Preferred Alternative Selection Process

Callaway County Connector
Preferred Alternative Selection Process

Overview

Project Purpose and Need: Current and future traffic analysis indicates that the area could benefit from transportation improvements that:

- **Make travel safer**
  Improvements should, where practical, meet MoDOT engineering policy guidelines for sight distances, stopping distances, turns and grades.
- **Improve access from Route 54 to the east**
  Changes support those travelers moving east and west in the county
- **Update the roadway system**
  New or rebuilt roads should better withstand current and future vehicle loads
- **Improve access during floods**
  Improvements should provide residents and travelers with routes that are more reliable during local high-water events.

Alternatives

Numerous improvement alternatives have been developed for both new alignment configurations and methods to enhance existing roadways in the area. Because the configurations for new alignments could, in many cases, be matched in different ways, the study area was divided into four segments (West, West Central, Central and East).

Each of the improvement alternatives have been evaluated in the following terms:

- How well they address the project Purpose and Need
- Their impacts to cultural and environmental resources
- Their impacts to people and property
- Their cost

Public Input

Along with the technical and cost analyses, public outreach efforts sought community input on the study goals, impacts, and preferences for the improvement alternatives presented. The public involvement process included public meetings, website postings, and presentations to local community and local governing bodies. A brief overview of the feedback received:

- More than 100 comments were received from either the public meeting, presentations, or from the study website link.
- Eighty-nine comments were received providing comment on evaluation of the study goals and indication of preferred improvement alternatives.

As part of the public outreach efforts for this project, citizens were asked to rank the following:

1. Public rankings on the importance of the four components of the Purpose and Need. These rankings were used to weigh the study goals and resulted in the following:

- Safety – 45%
- Roadway improvements – 25%
- Connectivity to US 54 – 17.5%
- Access during floods – 12.5%

2. Public rankings on the importance of key environmental impacts. These rankings were used to weigh the study impacts and resulted in the following:

- Impacts to people and buildings – 35%
- Impacts to the environment – 25%
- Relative costs – 25%
- Impacts to historic site – 15%

3. Public rankings of each alternative segment. Ratings were assigned on a 4 point scale as follows:

- 0 –15% public reaction – 1 point
- 15 – 30% public reaction – 2 points
- 30 – 40 % public reaction – 3 points
- Greater than 40% – 4 points

Moving Forward

The technical data and community input provided an opportunity to evaluate alternatives based upon:

- How well the alternative addresses the study goals
- Alternative impacts and cost
- Public reaction to the proposed alternative

The team assigned 50% of the evaluation rating to each alternative's ability to meet Purpose and Need, 30% to impacts and cost, and 20% to public ranking. Public rankings and opinions were also used to assist in reviewing segments that received the same or nearly the same rating.

Assessing the Rankings

Limited Build Alternatives

Segment	Weighted Total
No-Build	2.35
Tennyson	3.05
Route O East	2.05
Route O West	2.33
Route CC	1.85
AD Extension	2.18

The use of Tennyson Road extended to Route O East of Fulton yielded the highest ranking. No other limited build alternative yielded a raking above the total received from the No-Build alternative. All the other alternatives are seen by the public as providing limited benefit, and impacts to people and property would be significant relative to the proposed improvement. Additionally, while the alternatives will marginally improve safety along the corridor, the costs to construct, combined with limited overall roadway improvements for the entire roadway segment, have limited impact on the project goals.

New Build Alternatives

Segment	Weighted Total
No-Build	2.35
West 1	2.88
West 2	2.48
West 3	3.03
West 4	2.43
No-Build	2.30
West Central 1	2.13
West Central 2	2.13
West Central 3	2.85
West Central 4	2.13
No-Build	2.10
Central 1	2.80
No-Build	2.10
East 1	2.05
East 2	2.58
East 3	1.98

West Options
Alternatives West 1 and West 3 ranked above the others as noted above. Further review of the rankings illustrated a much stronger public support for West 3, with West 1 receiving higher marks in the ability to meet project goals.

West Central Options
West Central 3 received significantly higher marks overall than the other 3 options under consideration. The other West Central options received rankings less than the No-Build Alternative.

East Options
East 2 received higher marks than the other 2 options under consideration. The other East options received ranking less than the No-Build Alternative.

Decision Points

The West and East segments both contain topics of additional discussion:

West Segment
Two options, West 1 and West 3, were both well supported by the public and ranked well in meeting the project goals.

- West 1

This option, which includes a new access point to US 54, received higher rankings in many of the project goal categories. The new connection point to US 54 and the low density of access points gave West 1 higher rankings in both connectivity and safety. West 1 received moderate public support overall and particularly strong support from residents of Holts Summit and Jefferson City.

West 1 has a significant drawback in the amount of travel demand draw that could be expected from the Fulton area. In general, motorists will almost always choose a route based upon travel time. West 1 would require 7.2 minutes of additional travel as compared to West 3 for motorists in the Fulton area. An additional concern with West 1 is that it requires use of Option West Central 1, which received a less favorable ranking than the No-Build.

- West 3

This option would use the existing access point to US 54. West 3 received higher rankings in cost effectiveness and received significant public support, particularly with Fulton residents and Fulton officials.

The drawbacks of West 3 include the number of people and buildings impacted and a lower safety ranking due to the increasing number of vehicles at the existing US 54 interchange and the numerous access points that would be needed along the corridor to serve existing entrances. West 3 could have some travel pull for drivers from the area south of the study boundary, particularly those from Holts Summit.

While close in ranking to West 1, West 3 provides a better overall facility that has the potential to serve a larger number of users.

- Other West Segment Options

The new build alternatives were developed in accordance with MoDOT guidelines for interchanging spacing on US 54. The use of an alternative configuration that would add a new interchange at Route NN, which is approximately 1 mile south of the US 54/Business 54 interchange, has been reviewed using the same ranking techniques. (Note: A public opinion of this option was assigned a 2 for comparison purposes).

The Route NN Option received a ranking of 2.75, below Option West 1 (2.88) and West 3 (3.03) but exceeded the no build ranking (2.35). A Route NN Option would provide improved connectivity and promote a good balance for users from either Fulton or the Jefferson City area. Downfalls include project expense, crossing difficult terrain, and impacts to people and buildings.

Discussions with MoDOT have indicated that a new access point at Route NN is feasible and would not be ruled out from future consideration. A separate engineering report that would analyze the impact of a new interchange on Route 54 would be required to be developed.

East Segment

The East 2 option received the highest ranking. Factors contributing to the higher ranking included lower cost and public support for a more direct route to the Callaway Plant, specifically from Ameren Missouri employees. The drawbacks of East 2 include potential impacts to property either controlled by or of interest to the Missouri Department of Conservation and impacts to homes and property. Public comments indicated concern with impacts to homes and property along County Road 428 that would result from construction of East 2.

The East 1 option received the second highest ranking for the build options. East 1 would eliminate any potential conflicts with Missouri Department of Conservation properties and would utilize a larger segment of the existing state highway system, which is favored by the public. The East 1 option represents a higher construction cost due to the terrain that would be traversed and a longer structure required to cross the Auxvasse River.

An additional consideration for the eastern segment is the feasibility of future roadway improvements within southeastern Callaway County. East 1 would facilitate future roadway improvements that could connect to I-70, as the need arises. I-70 lies approximately 12 miles north of the study area. The East 1 option, which utilizes the existing connection with Route CC to serve the Callaway Plant, would provide for a wider range of options in the future.

Recommendation

The Limited Build option shows an extension of Tennyson Road could function well as an enhancement to the mobility of southeastern Callaway County. An extension of Tennyson Road would only provide improvement in the connectivity to US 54 and reduction in accident potential. A relatively short portion of the roadway segment in the project corridor would be improved. While additional limited build projects could be pursued along Route O East, the improvements would be expensive, have large impacts to people and buildings, and provide minimal improvement to the overall roadway quality.

Option West 3, West Central 3, Central 1 and East 1provide a well functioning roadway that is supported well by the members of the public who attended the various outreach sessions. Similarly ranked, Option West 1 could be substituted for Option West 3; however, the increased travel times from the Fulton area will impact the overall use of the roadway facility. The Route NN Option is also a viable alternative to Option West 3 and fulfills the project goals, but it would increase project cost. Option East 2 would provide a more direct connection to Route 54, but East 1 would provide for a wider range of options for future connections to I-70, would maximize the use of existing public right-of-way, and would minimize impacts to homes and property.

Based on the analysis and public feedback, it is recommended that the following segments be selected as the preferred alternative and carried forward for detailed evaluation in the Environmental Assessment:

- West 3
- West Central 3
- Central 1
- East 1

It is recommended that the following segments be selected as an additional alternative ("Southern Alternative") to be carried forward for detailed evaluation in the Environmental Assessment:

- West 1
- West Central 1 and 2
- Central 1
- East 2

Traffic Study

CALLAWAY COUNTY CONNECTOR – TRAFFIC STUDY

A. Existing Traffic Volumes

The study area includes US-54, BUS-54, Missouri Route 94, Route C, Route CC, Route H, and Route O in Callaway County. Existing average daily traffic (ADT) and peak hour traffic volumes along the study routes were provided by the Missouri Department of Transportation (MoDOT). Within the study area US-54 is the major highway carrying approximately 12,000 vehicles near the city of Fulton. Along the county routes in the study area, the average daily traffic volumes vary between 900 and 3,000 vehicles per day.

In addition, turning movement counts were collected during the AM peak period (7:00 to 9:00 am) and PM peak period (4:00 to 6:00 pm) in February 2009 and October 2010. These traffic volumes were used to evaluate the existing level of service at each of the study intersections during the peak hours of operation.

B. Existing Level of Service Analysis

Intersection operational analysis was performed for the existing year at intersections where the projected Callaway County Connector will intersect major routes or at locations that are expected to serve traffic related to the proposed project. This includes the evaluation of the following existing intersections:

- US-54 and Route H/BUS-54 interchange ramps
- BUS-54 and Rice Road/Route NN (frontage road)
- Route CC and Route O
- Route CC and CR 428 (future Callaway Plant entrance)

These intersections are currently unsignalized intersections with stop control on the minor approaches and no turning bays on any of the approaches.

Synchro, which uses Highway Capacity Manual (HCM) 2000 methodology, was used for the analysis of the study intersections. Intersection capacity analysis was performed for the existing unsignalized intersections in the study area. The intersection capacity analysis uses level of service (LOS) as a qualitative measure to describe the operational characteristics of traffic flow. Letters A through F are used to denote LOS, with LOS A being the most

favorable driving condition and F the least desirable condition. MoDOT considers a LOS D or better as acceptable LOS for the unsignalized intersections. Table 1 shows the results of the analysis for the existing condition. All traffic movements at the study intersections are currently operating at LOS C or better.

Table 1: Existing Level of Service Result for Study Intersections

Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
BUS-54/Route H and US-54 SB Ramp				
Eastbound	0.0	A	0.0	A
Westbound	5.2	A	4.6	A
Southbound	11.0	B	13.9	B
BUS-54/Route H and US-54 NB Ramp				
Eastbound	3.2	A	2.0	A
Westbound	0.0	A	0.0	A
Northbound	10.0	B	10.0	B
BUS-54 and Rice Road/Route NN				
Eastbound	0.2	A	0.4	A
Westbound	1.9	A	3.4	A
Northbound	13.6	B	15.4	C
Southbound	9.6	A	9.5	A
Route O and Route CC				
Eastbound	0.0	A	0.6	A
Westbound	5.7	A	3.3	A
Northbound	9.8	A	9.6	A
Southbound	9.2	A	9.9	A
Route CC and CR 428 (Callaway Plant Entrance)				
Eastbound	10.1	B	9.7	A
Westbound	11.1	B	9.3	A
Northbound	0.9	A	0.3	A
Southbound	0.1	A	0.0	A

C. Future Conditions

In order to accurately analyze the surrounding roadway network, traffic destined for the Callaway Plant at its highest peak was estimated. Traffic associated with the addition of Unit 2 will incrementally increase until it reaches maximum levels in the 4th and 5th year of the planned construction schedule and then dissipate the following year. For the purposes of evaluation, the maximum levels were assumed to occur during year 2017. However, this year is subject to change pending project permitting and financing. The results of the traffic analysis would be typical for any

construction year. During the Callaway Plant Unit 2 construction, the plant workforce at Unit 1 will be 867 workers while the Unit 2 construction workforce is estimated to be 3,950. At this maximum employment, the highest number of workers on site would be during first shift. The first shift workforce would consist of 658 Unit 1 plant workforce vehicles and 2,469 Unit 2 construction workforce vehicles. Based on existing workforce traffic distributions, the maximum workforce vehicles were then added to background traffic grown at a rate of 1.007 per year to result in total peak period traffic on the network around the Callaway plant.

After construction of Callaway Unit 2 reaches its peak period of employment, the construction workforce will dissipate until completion. After completion of construction, it is estimated that Callaway Unit 2 will employ 364 plant workers in addition to the 867 employees in the Unit 1 workforce. The highest number of workers on site continues to be during the first shift, resulting in 658 Unit 1 workforce vehicles and 276 Unit 2 workforce vehicles. The background traffic was projected to the design year, 2037, again using a growth rate of 1.007 per year.

Intersection operational analysis was performed for the existing year at intersections where the projected Callaway County Connector will intersect major routes or at locations which are expected to serve traffic related to the proposed project. This includes the evaluation of the following intersections:

- US-54 and Route H/BUS-54 interchange ramps
- BUS-54 and New Route
- Route C and New Route
- Route CC and Route O
- Route CC and New Route/CR 428 (future Callaway Plant entrance)
- Route CC and CR459

D. Year 2017 No Build Conditions

The first future scenario that was evaluated was year 2017 No Build, which is assumed to be the peak of construction activities. As noted above, the assumption of a peak construction year of 2017 was an assumption made for the purposes of performing this analysis, and is subject to change. In this scenario, No Build is defined as no construction of the Callaway County Connector. The results of the year 2017 No Build Condition are shown below in Table 2.

As shown in Table 2, during construction many movements at various intersections are expected to operate at unsatisfactory conditions. This is due to the large influx of short-term workers serving the construction activities at the site. As traffic nears the project site along Route CC, traffic is expected to become more congested, and localized improvements could

Table 2: Year 2017 No Build Level of Service Result for Study Intersections

Intersection	AM Peak		PM Peak	
	Delay	**LOS**	**Delay**	**LOS**
BUS-54/Route H and US-54 SB Ramp				
Eastbound	0.0	A	0.0	A
Westbound	5.4	A	5.2	A
Southbound	12.1	B	24.3	C
BUS-54/Route H and US-54 NB Ramp				
Eastbound	2.5	A	2.0	A
Westbound	0.0	A	0.0	A
Northbound	11.7	B	10.7	B
Route O and Route CC				
Eastbound	0.0	A	0.6	A
Westbound	7.7	A	3.2	A
Northbound	222.7	F	N/A	F
Southbound	32.9	D	9.9	A
Route CC and CR 428 (Callaway Plant Entrance)				
Eastbound	28.4	C	71.0	E
Westbound	58.6	B	159.8	F
Northbound	184.0	F	116.7	F
Southbound	32.4	C	264.7	F
Route CC and CR 459 (Callaway Plant Entrance)				
Westbound	72.7	F	230.0	F
Northbound	0.0	A	0.0	A
Southbound	12.4	B	1.5	A

be considered to attempt to mitigate the poor operating conditions of the roadway network. However, the poor operating conditions at Business 54 with the new road, along with Route CC with the new road, go away once construction is completed. To help mitigate the poor operating conditions at Route O and Route CC, a dedicated eastbound right turn lane should be considered as should a dedicated northbound left turn lane. During the duration of construction, a temporary span wire traffic signal should also be considered. At the intersection of Route CC with CR428 (Callaway Plant Entrance), the poor operating

conditions go away once construction is completed. However, at the intersection of Route CC with CR 459 (Callaway Plant Entrance), this is not the case. At this location, a dedicated southbound left turn lane and a dedicated eastbound right turn lane should be considered. Additionally, during the duration of construction, a temporary span wire traffic signal should also be considered.

E. Year 2017 Build Conditions

The second future scenario that was evaluated was year 2017 Build, which is expected to be the peak of construction activities. In this scenario, Build is defined as construction of the Callaway County Connector. The results of the year 2017 Build Condition are shown below in Table 3.

As is similar to the year 2017 No Build, under the 2017 Build scenario, many movements at various intersections are expected to operate at unsatisfactory conditions during construction at the Callaway Plant. In particular, these intersections are along Route CC as traffic nears the project site. This is due to the large influx of short-term workers serving the construction activities at the site. As traffic nears the project site along Route CC, traffic is expected to become more congested, and localized improvements should be considered to attempt to mitigate the poor operating conditions of the roadway network. However, the poor operating conditions at Business 54 with the new road, along with Route CC with the new road, go away once construction is completed. To help mitigate the poor operating conditions at Route O and Route CC, a dedicated eastbound right turn lane should be considered, as should a dedicated northbound left turn lane. During the duration of construction, a temporary span wire traffic signal should also be considered. At the intersection of Route CC with CR428 (Callaway Plant Entrance), the poor operating conditions go away once construction is completed. However, at the intersection of Route CC with CR 459 (Callaway Plant Entrance), this is not the case. At this location, a dedicated southbound left turn lane and a dedicated eastbound right turn lane should be considered. Additionally, during the duration of construction, a temporary span wire traffic signal should also be considered.

Table 3: Year 2017 Build Level of Service Result for Study Intersections

Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
BUS-54/Route H and US-54 SB Ramp				
Eastbound	0.0	A	0.0	A
Westbound	5.4	A	5.2	A
Southbound	12.1	B	24.3	C
BUS-54/Route H and US-54 NB Ramp				
Eastbound	2.5	A	2.0	A
Westbound	0.0	A	0.0	A
Northbound	11.7	B	10.7	B
BUS-54 and New Road				
Westbound	79.5	E	96.9	F
Northbound	40.9	D	117.8	D
Southbound	2.3	A	134.5	F
Route CC and New Road				
Eastbound	24.3	C	5.6	A
Westbound	5.8	A	19.1	B
Northbound	14.8	B	24.9	C
Southbound	41.5	D	25.2	C
Route O and Route CC				
Eastbound	0.0	A	0.6	A
Westbound	7.7	A	3.2	A
Northbound	222.7	F	N/A	F
Southbound	32.9	D	9.9	A
Route CC and CR 428 (Callaway Plant Entrance)				
Eastbound	28.4	C	71.0	E
Westbound	58.6	B	159.8	F
Northbound	184.0	F	116.7	F
Southbound	32.4	C	264.7	F
Route CC and CR 459 (Callaway Plant Entrance)				
Westbound	72.7	F	230.0	F
Northbound	0.0	A	0.0	A
Southbound	12.4	B	1.5	A

F. Year 2037 No Build Conditions

The third future scenario that was evaluated was year 2037 No Build, which is the design year for the proposed roadway improvements. In this scenario, No Build is defined as no construction of the Callaway County Connector. The results of the year 2037 No Build Condition are shown below in Table 4.

As shown in Table 4, during the design year, some limited intersection approaches are expected to operate at unsatisfactory conditions. This is due to the large number of permanent plant employees needed to serve the site. At the locations of these key movements, localized improvements should be considered to attempt to mitigate the poor operating conditions of the roadway network. The primary intersections that should be considered for additional improvements for the future year are those on Route CC closest to the site. To help mitigate the poor operating conditions at Route O and Route CC, a dedicated

Table 4: Year 2037 No Build Level of Service Result for Study Intersections

Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
BUS-54/Route H and US-54 SB Ramp				
Eastbound	0.0	A	0.0	A
Westbound	5.4	A	4.9	A
Southbound	12.4	B	19.9	C
BUS-54/Route H and US-54 NB Ramp				
Eastbound	3.0	A	2.1	A
Westbound	0.0	A	0.0	A
Northbound	11.1	B	10.8	B
Route O and Route CC				
Eastbound	0.0	A	0.5	A
Westbound	6.9	A	3.1	A
Northbound	29.6	D	42.8	E
Southbound	11.3	B	10.0	A
Route CC and CR 428 (Callaway Plant Entrance)				
Eastbound	24.9	C	25.5	D
Westbound	26.3	D	19.9	C
Northbound	0.8	A	0.1	A
Southbound	7.4	A	0.0	A
Route CC and CR 459 (Callaway Plant Entrance)				
Westbound	68.8	F	168.5	F
Northbound	0.0	A	0.0	A
Southbound	9.0	A	6.2	A

eastbound right turn lane should be considered, as should a dedicated northbound left turn lane. During the duration of construction, a temporary span wire traffic signal should also be considered. At the intersection of Route CC with CR428 (Callaway Plant Entrance), the poor operating conditions go away once construction is completed. However, at the intersection

of Route CC with CR 459 (Callaway Plant Entrance), this is not the case. At this location, a dedicated southbound left turn lane and a dedicated eastbound right turn lane should be considered.

G. Year 2037 Build Conditions

The final future scenario that was evaluated was year 2037 Build, which is the design year for the proposed roadway improvements. In this scenario, Build is defined as construction of the Callaway County Connector. The results of the year 2037 Build Condition are shown below in Table 5.

As is similar to the year 2037 No Build Scenario, under the 2037 Build scenario, some limited intersection approaches are expected to operate at unsatisfactory conditions during the design year. This is due to the large number of permanent plant employees needed to serve the site. At the locations of these key movements, localized improvements should be considered to attempt to mitigate the poor operating conditions of the roadway network. The primary intersections that should be considered for additional improvements for the future year are those on Route CC closest to the site. To help mitigate the poor operating conditions at Route O and Route CC, a dedicated eastbound right turn lane should be considered, as should a dedicated northbound left turn lane. During the duration of construction, a temporary span wire traffic signal should also be considered. At the intersection of Route CC with CR428 (Callaway Plant Entrance), the poor operating conditions go away once construction is completed. However, at the intersection of Route CC with CR 459 (Callaway Plant Entrance), this is not the case. At this location, a dedicated southbound left turn lane and a dedicated eastbound right turn lane should be considered.

Table 5: Year 2037 Build Level of Service Result for Study Intersections

Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
BUS-54/Route H and US-54 SB Ramp				
Eastbound	0.0	A	0.0	A
Westbound	5.4	A	4.9	A
Southbound	12.4	B	19.9	C
BUS-54/Route H and US-54 NB Ramp				
Eastbound	3.0	A	2.1	A
Westbound	0.0	A	0.0	A
Northbound	11.1	B	10.8	B
BUS-54 and New Road				
Westbound	35.9	D	15.4	B
Northbound	2.2	A	9.6	A
Southbound	1.3	A	13.5	B
Route CC and New Road				
Eastbound	0.0	A	0.0	A
Westbound	0.5	A	0.4	A
Northbound	21.3	C	39.2	E
Southbound	21.1	C	22.6	C
Route O and Route CC				
Eastbound	0.0	A	0.5	A
Westbound	6.9	A	3.1	A
Northbound	29.6	D	42.8	E
Southbound	11.3	B	10.0	A
Route CC and CR 428 (Callaway Plant Entrance)				
Eastbound	24.9	C	25.5	D
Westbound	26.3	D	19.9	C
Northbound	0.8	A	0.1	A
Southbound	7.4	A	0.0	A
Route CC and CR 459 (Callaway Plant Entrance)				
Westbound	68.8	F	168.5	F
Northbound	0.0	A	0.0	A
Southbound	9.0	A	6.2	A

Cost Estimates

Callaway County Connector Preferred Alternative Opinions of Probable Cost

Bid Item	Unit Price	West - 3		West Central - 3		Central - 1		East -1		Total
		Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Cost
Excavation (C.Y.)	$ 3.00	123,919	$ 371,757	398,220	$ 1,194,660	392,432	$ 1,177,296	456,578	$ 1,369,734	$ 4,113,000
Compacted Embankment (C.Y.)	$ 0.75	10,268	$ 7,701	388,145	$ 291,109	412,958	$ 309,719	226,366	$ 169,775	$ 778,000
Pavement (S.Y.)	$ 45.00	24,310	$ 1,093,950	63,571	$ 2,860,695	48,130	$ 2,165,850	59,792	$ 2,690,640	$ 8,811,000
Type A2 Shoulder (S.Y.)	$ 27.00	10,419	$ 281,313	27,245	$ 735,615	20,627	$ 556,929	25,625	$ 691,875	$ 2,266,000
Aggregate Base (S.Y.)	$ 4.50	34,729	$ 156,281	90,818	$ 408,681	68,756	$ 309,402	85,418	$ 384,381	$ 1,259,000
Drainage (Per Mile)	$ 215,000.00	1.48	$ 318,200	3.87	$ 832,050	2.93	$ 629,950	3.64	$ 1	$ 1,780,000
Contingency (30%)	30%	1	$ 668,760	1	$ 1,896,843	1	$ 1,544,744	1	$ 1,591,922	$ 5,702,000
Bridge (S.F.)	$ 110.00	0	$ -	6,400	$ 704,000	0	$ -	14,933	$ 1,642,630	$ 2,347,000
TOTAL CONSTRUCTION COST:			**$ 2,898,000**		**$ 8,924,000**		**$ 6,694,000**		**$ 8,541,000**	**$ 27,057,000.00**
Right of Way & Easements (acres)	$ 3,500.00	29.3	$ 102,550	83.7	$ 292,950	71.4	$ 249,900	71.4	$ 249,900	$ 895,300
Residential Relocations					$150,000		$100,000		$200,000	$ 450,000
Commercial Relocations					$300,000					$ 300,000
TOTAL R/W & RELOCATION COST:			**$ 102,550.00**		**$ 742,950.00**		**$ 349,900.00**		**$ 449,900.00**	**$ 1,645,300.00**
TOTAL ENGINEERING & CONSTRUCTION ADMIN.:			**$ 435,000.00**		**$ 1,339,000.00**		**$ 1,004,000.00**		**$ 1,281,000.00**	**$ 4,059,000.00**
TOTAL COST:			**$ 3,435,550.00**		**$ 11,005,950.00**		**$ 8,047,900.00**		**$ 10,271,900.00**	**$ 32,761,300.00**

Callaway County Connector Southern Alternative Opinions of Probable Cost

Bid Item	Unit Price	West 1 + W. Central 1/2		Central - 1		East #2		Total
		Quantity	Cost	Quantity	Cost	Quantity	Cost	Cost
Excavation (C.Y.)	$ 3.00	1,088,840	$ 3,266,519	392,432	$ 1,177,296	389,015	$ 1,167,045	$ 5,610,860
Compacted Embankment (C.Y.)	$ 0.75	564,067	$ 423,050	412,958	$ 309,719	196,636	$ 147,477	$ 880,245
Pavement (S.Y.)	$ 45.00	113,391	$ 5,102,580	48,130	$ 2,165,850	48,617	$ 2,187,780	$ 9,456,210
Type A2 Shoulder (S.Y.)	$ 27.00	64,795	$ 1,749,456	20,627	$ 556,929	27,781	$ 750,096	$ 3,056,481
Aggregate Base (S.Y.)	$ 4.50	190,334	$ 856,505	68,756	$ 309,402	81,608	$ 367,235	$ 1,533,141
Drainage (Per Mile)	$ 215,000.00	6.9	$ 1,484,111	2.9	$ 629,950	3.0	$ 636,327	$ 2,750,388
Contingency (30%)	30%	1	$ 3,864,666	1	$ 1,544,744	1	$ 1,576,788	$ 6,986,197
Bridge (S.F.)	$ 110.00	10,800	$ 1,188,000	0	$ -	12,000	$ 1,320,000	$ 2,508,000
Diamond Interchange	$ 5,000,000.00	1	$ 5,000,000	0	$ -	0	$ -	$ 5,000,000
TOTAL COST:			**$ 22,935,000**		**$ 6,694,000**		**$ 8,153,000**	**$ 37,782,000**
Right of Way & Easements (acres)	$ 3,500.00	125.5	$ 439,272	71.4	$ 249,900	55.5	$ 194,250	$ 883,422
Potential Residentail Relocations			$ 700,000		$ 100,000		$ 650,000	$ 1,450,000
Potential Commercial Relocations							$ 150,000	$ 150,000
Total R/W & Relocation Cost:			**$ 1,139,271.69**		**$ 349,900.00**		**$ 994,250.00**	**$ 2,483,421.69**
Total Engineering & Construction Admn.:			**$ 3,440,000.00**		**$ 1,004,000.00**		**$ 1,223,000.00**	**$ 5,667,000.00**
Total Cost:			**$ 27,514,000.00**		**$ 8,048,000.00**		**$ 10,370,000.00**	**$ 45,932,000.00**