

Appendix B

Gateway Connector Analysis and Evaluation of Alternative Corridors Engineering and Environmental Review



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1.0 Introduction

All data represented within this analysis are based on the review of information of record including topographical, aerial, and geographical information system data. This analysis takes into account environmental and engineering information based on information of record and field reconnaissance but does not include a detailed consideration of facility type. Additionally, it does not entail a detailed impact analysis that incorporates the results of more intensive environmental investigation (i.e., wetland delineation, Phase I cultural studies, noise modeling, etc.) as would be appropriate for the analysis of alternatives in a Phase I study.

Information has been obtained through agency correspondence, field reconnaissance, and other sources of previously recorded information. The analysis in this report summarizes the evaluation of all of the final corridors studied. These corridors were based on a width of 400 feet to account for a “worst-case” right of way footprint of a controlled-access freeway. However, this study was not intended to study facility type. The freeway assumption was only used to size the 400-foot corridor width. Some portions of the study corridors are slightly wider to account for possible interchanges along the corridor. However, as mentioned above, the facility type is not part of this study. Issues specific to access management were not developed in detail for this study.

The study area was divided into five sections, within which, final study corridors were developed as described in Section 3.0 of the Corridor Protection Report. Each section was evaluated independently of the other and each was divided as follows:

- Section A – Begins at the I-55/70/U.S. Route 40 interchange in Troy and extends southeasterly to Troy-O’Fallon Road at the Madison County / St. Clair County line;
- Section B – Extends southerly along existing Troy-O’Fallon Road and Illinois Route 158 from the Madison/St. Clair County line to the intersection at Illinois Route 161;
- Section C – From the intersection of Routes 158 and 161 southwesterly to Illinois Route 13 just south of Belleville;
- Section D – From Illinois Route 13 just south of Belleville westerly to a location approximately south of Millstadt in the vicinity of Freeburg Douglas Road and Illinois Route 158; and,
- Section E – From the western limit of Section D to the I-255/Fish Lake Road interchange in Monroe County. The southern limit of this section runs approximately 1 mile south of the corporate limit of Columbia and the northern limit runs approximately along Quarry Road north of Columbia.

2.0 Corridors

2.1 Overview of Scope and Level of Analysis

A detailed evaluation was performed for each final corridor based upon known “critical flaws” as well as the best available information regarding the environmental conditions of the study area. This analysis included an evaluation of environmental and engineering data based on information obtained from agency correspondence, field reconnaissance, literature review, traffic data review and municipal agencies. As mentioned in the previous chapter, this analysis did not involve specific engineering issues relating to type of facility or access and did not incorporate the level of detailed impact analysis that considers the results of more intensive environmental investigation (i.e., wetland delineation, Phase I cultural studies, noise modeling, etc.) as would be appropriate for the analysis of alternatives in a Phase I environmental study.

2.2 Description of Corridors Considered

The final study corridors that were the make-up of this analysis are shown pictorially in the five figures in this chapter. The Preferred Corridor is shown in green (more discussion on the Preferred Corridor can be found in the next chapter). The following represents a breakdown of the number of final corridor alternates considered:

- Section A – 5 corridors (A1 through A5)
- Section B – 2 corridors (B1 and B2)
- Section C – 2 corridors (C1 and C2)
- Section D – 15 corridors (D1 through D15)
- Section E – 18 corridors (E1 through E18) (see below)

Consideration of a wide range of engineering and environmental constraints resulted in the development of preliminary 1,000-foot wide alternative corridors as presented in Figure 3-2 of the Corridor Protection Report (primary document).

Subsequent to the development of these preliminary alternative corridors, and their presentation to the Study Management Group, elected officials, agencies and the public, these corridors were refined and narrowed to 400-foot wide “final corridor alternatives.” In order to provide for the full range of future transportation facilities, the 400-foot wide corridor was expanded in selected areas (e.g., potential future interchange locations). Alternative development within each section was undertaken by formulating “reasonable” alternatives that satisfactorily met the overall project Purpose and Need, while also avoiding and minimizing environmental and engineering constraints. Particular emphasis was placed on:

- avoiding or minimizing impacts to those resources that by law require avoidance and minimization measures [federally listed threatened and endangered species, Illinois listed nature preserves, wetlands – e.g., 404(b)(1) of the Clean Water Act, the U.S. Department of Transportation policy on lands, wildlife and waterfowl refuges and historic sites for Section 4(f) resources, Executive Orders 11988, 11990 and 12898, etc.]; and
- avoiding or minimizing impacts that would result in high mitigation commitments and overall project cost (e.g., disruption of businesses, displacement of existing infrastructure or utilities, clean-up activities of properties listed as containing hazardous materials, extensive wetland mitigation, etc.).

3.0 Evaluation

Following a series of input, comment, and corridor adjustments as described in Section 6.0 of the Corridor Protection Report, the final corridor alternatives were evaluated in detail to select a single Preferred Corridor (see Corridor Protection Report Figure 3-4) that would form the basis of the preserved corridor. This alternative evaluation process utilized extensive quantitative data developed for each final alternative corridor as a basis for decision-making. In all, a total of 24 separate criteria were used to evaluate each alternative. The evaluation was conducted independently for each section of the study area (i.e., Section A alternatives were evaluated independently of Section B alternatives, etc.), which allowed the study team to focus on issues unique to each section during the evaluation.

The evaluation conducted on each of the final corridor alternatives involved a simple rank scoring approach. Each corridor was evaluated based on a range of criteria and then the scores were tabulated and analyzed for reasonableness. The criteria were broken down into the following major headings:

1. Engineering;
2. Traffic;
3. Social and Economic; and
4. Environmental.

A range of scores from 1 to 5 was given to each corridor. The scores were given based on the following relative rank scoring scale:

1. Zero benefit, high adverse impact;
2. Low benefit, moderate-high adverse impact;
3. Moderate benefit, moderate adverse impact;
4. Moderate-high benefit, low-moderate adverse impact; and
5. High benefit, low adverse impact.

For Sections A, B and C, the evaluation of alternative corridors in each section was performed in a single evaluation phase. However, the evaluation within Sections D and E were conducted in two phases. The evaluation in Section D first involved a quantitative evaluation of alternative segment corridors immediately south of Millstadt. This paired corridors D1 vs. D2, D3 vs. D4, D6 vs. D7 and D9 vs. D10. In this evaluation, all corridors containing the segment nearest Millstadt were eliminated (i.e., D1, D3, D6, D9) based on their longer length, greater agricultural impact, and greater residential impact. The second phase entailed the use of quantitative data in support of a qualitative scoring for each of the remaining final corridor alternatives.

The evaluation in Section E was also conducted in two phases. The first evaluation involved nine corridors. In that evaluation, five corridors were eliminated. These were the two corridors north of Columbia and the three corridors north of The Pines subdivision south of Columbia (E1, E2, E4, E5, and E6 respectively). However, nine new corridors were added that provided additional options to avoid the sensitive environmental characteristics of the Stemler Cave Recharge Area, Sinking Creek Nature Preserve, and high densities of sinkholes along existing Illinois Route 158. The second evaluation involved 13 corridors (four carried over from the first

evaluation and the nine new ones). In total, 18 final corridor alternatives were considered in Section E.

As a result of this thorough analysis, the Preferred Corridor selected within each section is as follows:

- Section A – Corridor A2;
- Section B – Corridor B2;
- Section C – Corridor C2;
- Section D – Corridor D2; and
- Section E – Corridor E13.

Summaries of each corridor considered in the final corridor alternatives evaluation, and the Preferred Corridor for each section, are provided in the following sections. Supporting quantitative and qualitative tabular data are presented for each section in Attachment 1.

3.1 Summary of Corridors within Section A

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
A1	29,800 feet Cost = \$80.2 million Good continuity of traffic flow with I-55/70 Potential to improve safety at I-55/70 High agricultural impacts Moderate residential impacts (19) Potential displacement of church
A2	28,900 feet Cost = \$79.2 million Good continuity of traffic flow with I-55/70 Potential to improve safety at I-55/70 Moderate-high agricultural impacts Moderate residential impacts (18) Potential displacement of church
A3	28,500 feet Cost = \$78.5 million Good continuity of traffic flow with I-55/70 Potential to improve safety at I-55/70 Moderate-high agricultural impacts Moderate residential impacts (19) Potential stream relocation/impact to riparian corridor required Potential displacement of church
A4	26,700 feet Cost = \$55.6 million Reduced continuity of traffic flow with I-55/70 Does not correct safety issue at I-55/70 Moderate agricultural impacts Moderate residential impacts (14)

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
A5	25,800 feet Cost = \$55.1 million Reduced continuity of traffic flow with I-55/70 Does not correct safety issue at I-55/70 Moderate agricultural impacts Moderate residential impacts (15) Potential stream relocation/impact to riparian corridor required
Shared Characteristics: <ul style="list-style-type: none"> ▪ Relatively high impact on agricultural resources ▪ Low impact to floodplains, wetlands, cultural resources ▪ Crossing of Penn Central RR ▪ Low consistency with existing land use ▪ No significant impact on rare, threatened or endangered species or natural areas 	

Preferred Rationale:

Traffic Continuity Issue → Improvement of Safety → Stream Relocation/Riparian Corridor Effects → Visual Effects → Noise

Cost Assumptions:

Length: Interstate (4-lane freeway) = \$7 million/mile
 4-lane expressway = \$6.5 million/mile
 2-lane upgrade = \$2 million/mile

Interchanges: Diamonds = \$6 million each
 @ Troy/Scott Rd. (Corridors A1 through A5)
 I-55/70 Directional = \$35 million (Corridors A1, A2 and A3)
 (as compared to the I-270/170 interchange)
 US 40 Three-leg = \$10 million (Corridors A4 and A5)

3.2 Summary of Corridors within Section B

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
B1	47,400 feet Cost = \$69.0 million Disruption to Parkview Terrace Trailer Court Potential displacement of future church (New Life in Christ) Potential future impacts to Keck Ridge Development High residential impacts (51)
B2	47,600 feet Cost = \$69 million Disruption to Sunny Hill Lakes development Moderate to high residential impacts (43)

Shared Characteristics:

- Increased potential for noise impacts due to greater proximity to receptors
- Low floodplain encroachment
- Low cultural resources impact (high potential areas along stream valleys)
- Low impact to wetlands
- Moderate to high consistency with existing land use (transportation corridor)
- No significant impact on rare, threatened or endangered species or natural areas
- No adverse impact to SAFB and its environs

Preferred Rationale:

Potential Residential Impacts → Impacts Future Church

Cost Assumptions:

Length: Interstate (4-lane freeway) = \$7 million/mile
 4-lane expressway = \$6.5 million/mile
 2-lane upgrade = \$2 million/mile

Interchanges: I-64/US 50 = \$30 million (Corridors B1 and B2)
 Cloverleaf at Siebert Road (Corridors B1 and B2)

3.3 Summary of Corridors within Section C

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
C1	24,550 feet Cost = \$53.5 million Constructability more difficult due to ravines associated with Sugar Creek. Greater potential to impact to higher potential archaeological areas.
C2	23,860 feet Cost = \$52.6 million Less impact on water resources.
<p>Shared Characteristics:</p> <ul style="list-style-type: none"> ▪ Relatively high impact on agricultural resources ▪ Low impact to floodplains and wetlands. ▪ Low consistency with existing land use ▪ Similar impact to visual landscape. 	

Preferred Rationale:

Constructability → Improvement of Safety → Stream Relocation/Riparian Corridor
 Effects → Cultural Resources → Noise

Cost Assumptions:

Length: Interstate (4-lane freeway) = \$7 million/mile
 4-lane expressway = \$6.5 million/mile
 2-lane upgrade = \$2 million/mile

Interchanges: Diamonds = \$6 million each
 @ IL-Route 161/177 split diamond (Corridors C1 and C2))
 @ IL-Route15 (Corridors C1 and C2)
 Clover Leaf @ IL-Route15 = \$15 million

3.4 Summary of Corridors within Section D

Alternative	Differentiating Impacts, Benefits, and Other Characteristics
D2	60,880 feet Cost = \$105.7 million Low consistency with existing land use. Lower residential impact (17) but impact to cell tower. Moderate-high agricultural impacts Less potential for noise impacts
D4	60,090 feet Cost = \$104.7 million Low consistency with existing land use. Lower residential impact (16) but potential impact to cell tower. Moderate agricultural impacts Less potential for noise impacts
D5	62,140 feet Cost = \$112.4 million Extra interchange at Freeburg Douglas Rd. More difficult constructability due to existing development. High consistency with existing land use. Higher residential impacts (27) Moderate agricultural impacts Greater potential for noise impacts Potential for special waste issues.
D7	60,460 feet Cost = \$112.4 million Low consistency with existing land use. Moderate residential impact (25) but potential impact to cell tower. Moderate-high agricultural impacts Less potential for noise impacts Potential for stream relocation (tributary of Richland Creek) High impact to water bodies. Potential for impact to potential Section 4(f) sites at Route 159 interchange.
D8	62,410 feet Cost = \$112.7 million Extra interchange at Freeburg Douglas Rd. More difficult constructability due to existing development. High consistency with existing land use. Higher residential impacts (36) Moderate agricultural impacts Greater potential for noise impacts Potential for stream relocation (tributary of Richland Creek) High impact to water bodies. Potential for impact to potential Section 4(f) sites at Route 159 interchange. Potential for special waste issues.

Alternative	Differentiating Impacts, Benefits, and Other Characteristics
D10	61,880 feet Cost = \$107.0 million Least consistent with existing land use Moderate residential impacts (20) Moderate-high agricultural impacts Less potential for noise impacts Potential for impact to potential Section 4(f) sites at Route 159 interchange.
D11	63,840 feet Cost = \$114.6 million. Extra interchange at Freeburg Douglas Rd. More difficult constructability due to existing development. Moderately consistent with existing land use. Higher residential impacts (31) Moderate agricultural impacts Greater potential for noise impacts Potential for impact to potential Section 4(f) sites at Route 159 interchange Potential for special waste issues.
D12	62,300 feet Cost = \$106.5 million More difficult constructability due to existing development. High consistency with existing land use. Moderate residential impacts (22) Moderate agricultural impacts Greater potential for noise impacts
D13	61,460 feet Cost = \$106.5 million More difficult constructability due to existing development. High consistency with existing land use. Moderate residential impacts (21) Moderate agricultural impacts Greater potential for noise impacts
D14	61,670 feet Cost = \$106.8 million More difficult constructability due to existing development. Moderately consistent with existing land use. Higher residential impacts (30) Moderate agricultural impacts Potential for stream relocation (tributary of Richland Creek) High impact to water bodies. Greater potential for noise impacts Potential for impact to potential 4(f) sites at Route 159 interchange.
D15	63,520 feet Cost = \$109.2 million More difficult constructability due to existing development. Moderately consistent with existing land use. Moderate residential impacts (25) Moderate agricultural impacts Greater potential for noise impacts
Shared Characteristics: <ul style="list-style-type: none"> ▪ Moderate to high impact on agricultural uses ▪ No impact to utilities. ▪ Similar impacts to floodplains and wetlands. ▪ No impact to natural areas. 	

Alternative	Differentiating Impacts, Benefits, and Other Characteristics
Note: D1, D3, D6, and D9 were eliminated from consideration in a preliminary evaluation as compared to Alternatives D2, D4, D7, and D10 based on the longer length, high agricultural impact, high residential impacts, and greater skew through agricultural lands.	

Preferred Rationale:

Traffic Continuity Issue → Improvement of Safety → Agricultural Impacts → Residential Impacts → Water Resource Impacts

Cost Assumptions:

Length: Interstate (4-lane freeway) = \$7 million/mile
 4-lane expressway = \$6.5 million/mile
 2-lane upgrade = \$2 million/mile

Interchanges: Diamonds = \$6 million each
 @ Floraville Road
 @ IL-158 Millstadt
 Clover Leaf @ IL-Route 159 = \$15 million
 Trumpet @ Freeburg-Douglas Road (\$4 million)

3.5 Summary of Corridors within Section E

3.5.1 Phase I

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
E1 (1-2-3)	43,200 feet Greatest potential for impact to water resources High length through recharge area (13,000 feet) Low residential impacts (<10) Impact to golf course
E2 (1-2-4)	34,400 feet Greatest potential for impact to water resources High length through recharge area (9,200 feet) Low residential impacts (<10) Impact to quarry land
E3 (1-5-6)	35,700 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet Highest residential impacts (50 to 100) Lowest potential for impact to cultural resources, natural habitats, wetlands (aligns with existing Illinois Route 3) Does not alleviate congestion along Illinois Route 3

Corridor	Differentiating Impacts, Benefits, and Other Characteristics
E4 (1-5-7-8-9-16-14)	41,600 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet Potential future impacts to planned residential developments High residential impacts (40 to 50) Reduced continuity of traffic flow with I-255 Relieves existing congestion along Illinois Route 3 Potential indirect impact on traffic-dependent businesses along Illinois Route 3
E5 (1-5-7-8-9-16-17)	44,500 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet High residential impacts (50 to 60) Greater continuity of traffic flow with I-255 Relieves existing congestion along Illinois Route 3 Potential indirect impact on traffic-dependent businesses along Illinois Route 3
E6 (1-5-7-8-9-10-15)	47,900 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet High residential impacts (40 to 50) Potential impacts to wetlands at Fish Lake interchange Relieves existing congestion along Illinois Route 3 Potential indirect impact on traffic-dependent businesses along Illinois Route 3
E7 (1-5-7-11-12-16-14)	43,600 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet Moderate residential impacts (20 to 30) Reduced continuity of traffic flow with I-255 Relieves existing congestion along Illinois Route 3 Potential indirect impact on traffic-dependent businesses along Illinois Route 3 Greater impact on floodplains of the Mississippi River
E8 (1-5-7-11-12-16-16)	46,600 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet Moderate residential impacts (30 to 40) Relieves existing congestion along Illinois Route 3 Greater continuity of traffic flow with I-255 Potential indirect impact on traffic-dependent businesses along Illinois Route 3 Greater impact on floodplains of the Mississippi River
E9 (1-5-7-11-13-15)	49,200 feet Moderate potential for impact to water resources Length through recharge area: 5,500 feet Moderate residential impacts (20 to 30) Potential impacts to wetlands at Fish Lake interchange Relieves existing congestion along Illinois Route 3 Potential indirect impact on traffic-dependent businesses along Illinois Route 3 Greater impact on floodplains of the Mississippi River
Shared Characteristics: <ul style="list-style-type: none"> ▪ Relatively low-moderate impact to agriculture ▪ Low impact to known NRHP cultural resources ▪ Low impact to wetlands and surface water resources ▪ No significant impact on rare, threatened or endangered species or natural areas—all alternatives require crossing of Stemler Cave recharge area and the Sinkhole Plain 	

3.5.2 Phase II

Alternative	Differentiating Factors, Benefits, and Other Characteristics
E3	36,000 feet Cost = \$38.2 million Greater constructability issues due to length through karst Most consistent with existing land use. Potential for future degradation in traffic operations and safety Highest potential for displacements (83). Highest potential for commercial displacements (32) Low impact to farmland. Higher potential impact to natural area and Stemler Cave Recharge Area Highest impact to public/semi-public lands. Greatest potential noise and air quality impact. Low impact to wetlands.
E7	45,200 feet Cost = \$82.9 million Greater constructability issues due to length through karst Moderate impact to farmland. Higher potential impact to natural area and Stemler Cave Recharge Area Low impact to wetlands.
E8	48,220 feet Cost = \$86.9 million Greater constructability issues due to length through karst Moderate impact to farmland. Higher potential impact to natural area and Stemler Cave Recharge Area
E9	50,920 feet Cost = \$85.5 million Greater constructability issues due to length through karst Interchange at Fish Lake has potential for loss of system continuity. High impact to farmland. Higher potential impact to natural area and Stemler Cave Recharge Area Least impact to public/semi-public lands.
E10	45,000 feet Cost = \$82.7 million Greater constructability issues due to length through karst Moderate impact to farmland. Moderate potential impact to Stemler Cave Recharge Area Low impact to wetlands.
E11	47,900 feet Cost = \$86.5 million Greater constructability issues due to length through karst Moderate displacements (27) Moderate impact to farmland. Moderate potential impact to Stemler Cave Recharge Area

Alternative	Differentiating Factors, Benefits, and Other Characteristics
E12	51,000 feet Cost = \$85.6 million Greater constructability issues due to length through karst Interchange at Fish Lake has potential for loss of system continuity. Moderate displacements (27) Moderate impact to farmland. Moderate potential impact to Stemler Cave Recharge Area Least impact to public/semi-public lands.
E13	55,900 feet Cost = \$98.1 million Avoids Stemler Cave Recharge Area and associated karst system. Moderate impact to farmland. Moderate-Low impact to wetlands. No impact to threatened and endangered species.
E14	53,900 feet Cost = \$99.5 million Avoids Stemler Cave Recharge Area and associated karst system. Impact to airport runway. Moderate displacements (28) High impact to farmland. No impact to threatened and endangered species.
E15	57,000 feet Cost = \$98.7 million Avoids Stemler Cave Recharge Area and associated karst system. Interchange at Fish Lake has potential for loss of system continuity. Highest impact to agricultural land Moderate displacements (28) High impact to farmland. Least impact to public/semi-public lands. No impact to threatened and endangered species.
E16	49,100 feet Cost = \$101.6 million Avoids Stemler Cave Recharge Area and associated karst system. Greater constructability complexity and effects to water quality with on Wese Fork of Richland Creek Moderate impact to farmland. Low impact to wetlands. No impact to threatened and endangered species.
E17	52,300 feet Cost = \$105.6 million Avoids Stemler Cave Recharge Area and associated karst system. Greater constructability complexity and effects to water quality with on West Fork of Richland Creek Impact to airport runway. High impact to farmland. No impact to threatened and endangered species.

Alternative	Differentiating Factors, Benefits, and Other Characteristics
E18	55,400 feet Cost = \$104.6 million Avoids Stemler Cave Recharge Area and associated karst system. Greater constructability complexity and effects to water quality with on West Fork of Richland Creek Interchange at Fish Lake has potential for loss of system continuity. No commercial displacements. High impact to farmland. Least impact to public/semi-public lands. No impact to T/E species.
Shared Characteristics: <ul style="list-style-type: none"> ▪ No impact to utilities 	

Preferred Rationale:

Traffic Continuity Issue → Improvement of Safety → Improved LOS on Existing Illinois Route 3 → Constructability in Karst Terrain → Potential Effects on Stemler Cave Recharge Area → Residential and Commercial Displacements → Potential Noise Impacts

Cost Assumptions:

Length: Interstate (4-lane freeway) = \$7 million/mile
 4-lane expressway = \$6.5 million/mile
 2-lane upgrade = \$2 million/mile

Interchanges: Diamonds = \$6 million each
 @ IL Route 3 (Corridors E13 through E18)
 @ Quarry Road
 Partial Cloverleaf
 @ IL Route 3 (Corridors E3 and E7 through E12)
 @ Fish Lake (Corridor E9, E12, E15 and E18)

**Gateway Connector
Quantitative Alternative Evaluation
Section A**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)				
			1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)
1.0 Engineering							
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length	29,774 feet (5.64 miles)	28,912 feet (5.48 miles)	28,463 feet (5.39 miles)	26,692 feet (4.98 miles)	25,843 feet (4.89 miles)
		Number of interchanges	2	2	2	2	2
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations	2*	3*	3*	3*	3*
		Length along existing roadways	0	0	0	0	0
		Length through karst	0	0	0	0	0
		Length through previously mined areas	5,401 feet	3,869 feet	3,869 feet	1,801 feet	1,801 feet
		Number of mine shafts crossed	0	0	0	0	0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of stream crossings	3	1	3	2	4
		Number of bridges	5†	7†	5†	5†	7†
		Number of floodplains crossed	1	1	3	1	3
2.0 Traffic							
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	All Alternatives: LOS improves on existing Troy-O'Fallon Road by diverting traffic to the new facility.				
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS Potential for reduced turning movement conflicts	See above for explanation of LOS. An improved LOS also reduces the potential for accidents on existing Troy-O'Fallon Road.				
3.0 Social and Economic							
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.)	Agriculture (acres)	434.46	428.62	414.39	277.59	263.36
		Cemetery (acres)	0	0	0	0	0
		Church** (acres)	6.85	6.85	6.85	0	0
		Commercial (acres)	0	0	0	0	0
		Industrial (acres)	6.94	6.94	6.94	0	0
		Public (acres)	0	0	0	0	0
		Railroad (acres)	1.48	1.63	1.63	1.63	1.63
		School (acres)	0	0	0	0	0
		Single Family (acres)	32.23	28.92	39.18	25.82	36.08
		Utility (acres)	0.24	0.24	0.24	0	0
		Additional Ag (acres)	0	0	0	35.9	35.9
		Existing Road (acres)	18.91	18.64	18.83	2.6	2.79
		Total (acres)	501.11	491.84	488.06	343.54	339.76
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial).	Probable number of residences displaced	19	18	19	14	15
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Probable number of commercial/industrial displacements	2	2	2	0	0
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Number of major utility crossings	2	3	4	2	2
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Length through agricultural lands (feet)	37,018.50	30,317‡	26,315‡	17,008.50	13,006.50
		Degree of skew within agricultural lands	Moderate-High	Moderate	Moderate	Moderate	Moderate

**Gateway Connector
Quantitative Alternative Evaluation
Section A**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)				
			1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	1**	1**	1**	1**	1**
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	0	0	0	0	0
		Potential changes in neighborhood access/circulation	None	None	None	None	None
4.0 Environmental							
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	Low	Low	Low	Low	Low
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet)	5	4	3	4	5
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	1***	0	0	0	0
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of floodplains within corridor (acres)	5.18	5.18	10.33	5.18	10.33
		Number of skewed crossings	0	0	0	0	0
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of NWI wetlands within corridor (acres)	0.36	0.22	0.22	0.22	0.22
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	3	1	4	2	5
		Acreage of water bodies within corridor	1.51	2.06	1.92	2.1	1.96
		Length within Stemler recharge area	0	0	0	0	0
		Number of water intakes affected	0	0	0	0	0
		Number of wells affected	10	6	4	6	4
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected, distance to listed species	NA	NA	NA	NA	NA
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Number of sites affected, distance	0	0	0	0	0
		Length through high potential areas (acres)	0.23	0.23	0.23	0.23	0.23
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	1	1	1	0	0
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	Low	Low	Low	Low	Low
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acres of agricultural land†††	434.46	428.62	414.39	277.59	263.36

**Gateway Connector
Quantitative Alternative Evaluation
Section A**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)				
			1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to natural areas	NA	NA	NA	NA	NA
		Length through natural area	NA	NA	NA	NA	NA
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor	0	0	0	0	0
		Acreage of previously mined lands	162.42	147.75	147.75	65.47	65.47
		Potential mineral resources	0	0	0	0	0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Acreage of CRP lands	0	0	7.44	0	7.44
		Number of centennial farms affected	0	0	0	0	0

* Grade separations are assumed at the B&O Railroad crossing and just south of Parkview Terrace.
† The number of bridges does not include structures at interchanges, only at grade separations and streams.
** One facility impacted by Alternative 1 is a future church to be located in the Keck Ridge Development.
‡ These totals exclude a future platted subdivision (3,700 feet).
*** This is the potential historic structure owned by Mueller which is already quantified in Section 4.8.
††† Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

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Gateway Connector Qualitative Alternative Evaluation Section A



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)				
		1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)
1.0 Engineering						
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 4	Ranking: 4
		The differentiators are the shorter length and simpler interchange design under Alternatives 4 and 5.				
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 4	Ranking: 4
		Key differentiators are the ease of construction at the interchange for Alternatives 4 and 5. Length through previously mined areas are lacking sufficient detail to affect rankings.				
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, Hill Lake Creek.	Ranking: 4	Ranking: 4	Ranking: 2	Ranking: 4	Ranking: 2
		Key differentiators include the increased degree of armoring required when crossing larger creeks and the increased scour potential incurred by longitudinal creek crossings under Alternatives 3 and 5.				
2.0 Traffic						
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 1	Ranking: 1
		The main differentiator is the interchange at I-55/70. The weave inherent in the design of Alternatives 4 and 5 would reduce traffic operations and efficiency.				
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 2	Ranking: 2
		Retaining existing conditions at the 55/70 interchange would not address the issue of safety at that interchange (Alternatives 4 and 5); Alternatives 1, 2, and 3 have the potential to improve the existing 55/70 interchange.				
3.0 Social and Economic						
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.))	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2
		All alternatives traverse undeveloped land; therefore, all alternatives are inconsistent with existing land use.				
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
		The difference in the number of displacements would not be significant enough to differentiate between various alternatives.				
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 1	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3
		Alternative 1 will result in high agricultural impacts, Alternatives 2 and 3 will result in moderate high impacts, and Alternatives 4 and 5 will result in moderate impacts.				

Gateway Connector Qualitative Alternative Evaluation Section A



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)					
		1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)	
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.0 Environmental							
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 2
Alternatives 1, 4, and 5 would result in greater impacts to existing noise receptors.							
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 2
Alternatives 3 and 5 have a greater potential of resulting in parallel stream impacts.							
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
Alternatives 1, 2, and 3 may impact a substation; however, impacts would not be significant.							
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 2
Alternatives 1, 4, and 5 would result in greater visual impacts; Alternatives 2 and 3 align along existing transmission corridor.							
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 1	Ranking: 1	Ranking: 1	Ranking: 2	Ranking: 2	Ranking: 2
Alternatives 4 and 5 would result in fewer impacts to prime farmlands.							

**Gateway Connector
Qualitative Alternative Evaluation
Section A**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)				
		1 (A1,A7,A8)	2 (A2,A4,A5,A7,A8)	3 (A2,A4,A6,A8)	4 (A3,A4,A5,A7,A8)	5 (A3,A4,A6,A8)
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
There are no natural areas located within the study area in Section A.						
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
The amount of acreage of impacts to previously mined areas is not a differentiator; none of the impacts would be significant.						
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
The amount of acreage of impacts to CRP lands is not a differentiator; none of the impacts would be significant.						
Total Score		68	71	68	68	65
<i>Scoring</i>	<i>1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.</i>					Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004

**Gateway Connector
Quantitative Alternative Evaluation
Section B**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			1 (B1,B3,B4)	2 (B2,B3,B4)
1.0 Engineering				
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length	47,393 feet (8.98 miles)	47,561 feet (9.01 miles)
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of interchanges	3	3
		Number of grade separations	2*	2*
		Length along existing roadways	47,393 feet	47,561 feet
		Length through karst	0	0
		Length through previously mined areas	4,803 feet	4,803 feet
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of mine shafts crossed	0	0
		Number of stream crossings	10	10
		Number of bridges	12†	12†
		Number of floodplains crossed	3	3
2.0 Traffic				
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	For both alternatives, the LOS improves on existing Scott-Troy Road by the upgrade of the existing roadway from a two-lane to a four-lane highway	
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS Potential for reduced turning movement conflicts	See above for explanation of LOS. As LOS improves, the potential for accidents drops.	
3.0 Social and Economic				
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.)	Agriculture (acres)	194.51	213.76
		Cemetery (acres)	0	0
		Church** (acres)	0	0
		Commercial (acres)	9.82	9.82
		Industrial (acres)	0	0
		Public (acres)	31.69	31.69
		Railroad (acres)	1.85	1.85
		School (acres)	0.61	0.61
		Single Family (acres)	99.58	85.55
		Utility (acres)	0.26	0.26
		Additional Ag (acres)	0	0
		Existing Road (acres)	258.94	254.46
		Total (acres)	597.26	598.00
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Probable number of residences displaced	51	43
		Probable number of commercial/industrial displacements	8	7
		Number of major utility crossings	0	0

**Gateway Connector
Quantitative Alternative Evaluation
Section B**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			1 (B1,B3,B4)	2 (B2,B3,B4)
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acreage of agricultural lands	194.51	213.76
		Degree of skew within agricultural lands	Low	Low
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	3**	2
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	4 Parkview Terrace	4 Sunny Hill Estates Parkview Terrace
		Potential changes in neighborhood access/circulation	Medium	Medium
4.0 Environmental				
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	Low	Low
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet)	68	71
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	2 (existing bike trails) 1 (proposed bike trail)	2 (existing bike trails) 1 (proposed bike trail)
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of floodplains within corridor (acres)	19.3	18.31
		Number of skewed crossings	0	0
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of NWI wetlands within corridor (acres)	2.13	1.12
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	11	10
		Acreage of water bodies within corridor	3.38	3.87
		Length within Stemler recharge area	0	0
		Number of water intakes affected	0	0
		Number of wells affected	28	28
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected, distance to listed species	NA	NA
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Number of sites affected, distance	0	0
		Length through high potential areas (acres)	0	0

**Gateway Connector
Quantitative Alternative Evaluation
Section B**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			1 (B1,B3,B4)	2 (B2,B3,B4)
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	3	3
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	Low	Low
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acres of agricultural land**	194.51	213.76
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to natural areas Length through natural area	NA NA	NA NA
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor Acreage of previously mined lands Potential mineral resources	0 43.81 0	0 43.81 0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Acreage of CRP lands Number of centennial farms affected	0 1 (3.52 acres)	0 1 (10.22 acres)

* Grade separations are assumed at the B&O Railroad crossing and just south of Parkview Terrace.
† The number of bridges does not include structures at interchanges, only at grade separations and streams.
** Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

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Gateway Connector Qualitative Alternative Evaluation Section B



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		1 (B1,B3,B4)	2 (B2,B3,B4)
1.0 Engineering			
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 3	Ranking: 3
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Ranking: 3	Ranking: 3
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, Hill Lake Creek.	Ranking: 3	Ranking: 3
2.0 Traffic			
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 4	Ranking: 4
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 4	Ranking: 4
3.0 Social and Economic			
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.).	Ranking: 4	Ranking: 4
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: 1	Ranking: 2
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 3	Ranking: 3
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 3	Ranking: 3
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 3	Ranking: 3

Gateway Connector Qualitative Alternative Evaluation Section B



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		1 (B1,B3,B4)	2 (B2,B3,B4)
4.0 Environmental			
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 4	Ranking: 4
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 2	Ranking: 2
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 3	Ranking: 3
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Ranking: 3	Ranking: 3
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Ranking: 3	Ranking: 3
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Ranking: 3	Ranking: 3
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 3	Ranking: 3
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Ranking: 3	Ranking: 3
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 2	Ranking: 2

Gateway Connector Qualitative Alternative Evaluation Section B



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		1 (B1,B3,B4)	2 (B2,B3,B4)
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Ranking: 3	Ranking: 3
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 3	Ranking: 3
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3
Total Score		72	73
<p><i>Scoring</i></p> <p>1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.</p> <p style="text-align: right;"><i>Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004</i></p>			

Gateway Connector

Quantitative Alternative Evaluation

Section C



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			C1 (1,19,13)	C2 (1,20,13)
1.0 Engineering				
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length (miles)	4.65	4.52
		Number of interchanges	2	2
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations	4	4
		Length along existing roadways	0	0
		Length through karst	0	0
		Length through previously mined areas	1,250	1,300
		Number of mine shafts crossed	0	0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of stream crossings	3	3
		Number of bridges	0	0
		Number of floodplains crossed	2	2
2.0 Traffic				
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	Yes	Yes
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS	Yes	Yes
		Potential for reduced turning movement conflicts	Yes	Yes
3.0 Social and Economic				
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.))	Agriculture (acres)	345.9	333.9
		Cemetery (acres)	0	0
		Church** (acres)	0	0
		Commercial (acres)	0	0
		Industrial (acres)	0	0
		Public (acres)	0.5	8
		Railroad (acres)	0	0
		School	0	0
		Single Family (acres)	45.5	46.5
		Utility (acres)	0	0
		Additional Ag (acres)	0	0
		Existing road (acres)	0	0
		Total (acres)	391.9	388.4

Gateway Connector

Quantitative Alternative Evaluation

Section C



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			C1 (1,19,13)	C2 (1,20,13)
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial).	Probable number of residences displaced	3	3
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Probable number of commercial/industrial displacements	0	0
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Number of major utility crossings	0	0
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acres of agricultural lands	345.90	333.9
		Degree of skew within agricultural lands	Low/Moderate	Low
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	1 (SAVE); not displaced but parcel impacted	1 (SAVE); not displaced but parcel impacted
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	0	0
		Potential changes in neighborhood access/circulation	Low	Low
4.0 Environmental				
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	High	High
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet)	10	8
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	1 (historic site)	1 (historic site)
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acres of floodplains within corridor (acres)	56.7	55
		Number of skewed crossings	2	2

Gateway Connector

Quantitative Alternative Evaluation

Section C



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			C1 (1,19,13)	C2 (1,20,13)
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of NWI wetlands within corridor (acres)	0	0
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	3	3
		Acreage of water bodies within corridor	1.52	1.01
		Length within Stemler recharge area	0	0
		Number of water intakes affected	0	0
		Number of wells affected	1	3
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected, distance to listed species	0	0
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Number of sites affected, distance	1 (historic site)	1 (historic site)
		Length through high potential areas (acres)	9,285 feet	8,105 feet
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	0	0
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	0	0
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acres of agricultural land*	345.9	333.9
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to natural areas	NA	NA
		Length through Stemler Cave recharge area	0	0
		Length through natural areas	0	0

Gateway Connector Quantitative Alternative Evaluation Section C



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)	
			C1 (1,19,13)	C2 (1,20,13)
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor	0	0
		Acreage of previously mined lands	16.6	16.6
		Potential mineral resources	0	0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Acreage of CRP lands	0	0
		Number of centennial farms affected	1	1
<p>* Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.</p>				<p>Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004</p>

Gateway Connector Alternative Evaluation -- Section C Qualitative Evaluation



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		C1 (1,19,13)	C2 (1,20,13)
1.0 Engineering			
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 3	Ranking: 3
		Both alternatives are similar in length and potential cost.	
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Ranking: 3	Ranking: 4
		No disruption to traffic, very easy to construct, but C1 requires greater effort to fill ravines associated with tributaries near Route 15.	
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, Hill Lake Creek.	Ranking: 4	Ranking: 4
		No complex structures or need for special scour/erosion controls.	
2.0 Traffic			
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 4	Ranking: 4
		Potential for improvement for future capacity.	
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 4	Ranking: 4
		Potential for improvement of future safety.	
3.0 Social and Economic			
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.).	Ranking: 3	Ranking: 3
		Land use characteristics are not significantly different, not consistent with agricultural land use.	
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to	Ranking: 4	Ranking: 4
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Ranking: 5	Ranking: 5
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: 5	Ranking: 5
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 2	Ranking: 2

Gateway Connector Alternative Evaluation -- Section C Qualitative Evaluation



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		C1 (1,19,13)	C2 (1,20,13)
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 3	Ranking: 3
		C1 has minimal acreage impact; C2 has greater impact to acres, but no opposition expressed by SAVE.	
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 3	Ranking: 3
		No impact.	
4.0 Environmental			
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 3	Ranking: 3
		Insufficient information to evaluate.	
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 3	Ranking: 3
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 4	Ranking: 4
		One potential historic structure could be impacted, but avoidable in design phase.	
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 5	Ranking: 5
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Ranking: 3	Ranking: 4
		C1 -- Drainage near curve on Route 15 is impacted to a greater degree; spring reported under alignment; C2 -- Route located on higher ground, less impact on water resources. Wells are easy to seal, close and replace.	
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Ranking: 5	Ranking: 5
		No effects.	
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Ranking: 3	Ranking: 4
		Greater potential effect on high potential archaeological areas. No impact on historic structures as it is available.	

Gateway Connector Alternative Evaluation -- Section C Qualitative Evaluation



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)	
		C1 (1,19,13)	C2 (1,20,13)
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 5	Ranking: 5
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment. Little length on previously impacted corridors, similar impact on visual landscape.	Ranking: 3	Ranking: 3
		Ranking: 2	Ranking: 2
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 5	Ranking: 5
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Ranking: 3	Ranking: 3
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 3	Ranking: 3
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3
Total Score		93	96
Scoring 1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.		Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004	

**Gateway Connector
Quantitative Alternative Evaluation
Section D Phase I**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)							
			D1 (1,3,5,15,11,12)	D2 (1,3,5,15,11,13)	D3 (1,3,6,8,9,16,11,12)	D4 (1,3,6,8,9,16,11,13)	D6 (1,4,7,8,9,16,11,12)	D7 (1,4,7,8,9,16,11,13)	D9 (2,7,8,9,16,11,12)	D10 (2,7,8,9,16,11,13)
1.0 Engineering										
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length (miles)	11.79	11.53	11.64	11.38	11.71	11.45	11.98	11.72
		Number of interchanges	4	4	4	4	4	4	4	4
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations	5	5	5	5	5	5	5	5
		Length along existing roadways (feet)	11,818	11,818	11,818	11,818	5,575	5,575	0	0
		Length through karst	0	0	0	0	0	0	0	0
		Length through previously mined areas (ft)	2,000	2,000	950	950	950	950	2,250	2,250
		Number of mine shafts crossed	0	0	0	0	0	0	0	0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of stream crossings	5	5	5	5	4	4	4	4
		Number of bridges	0	0	0	0	0	0	0	0
		Number of floodplains crossed	2	2	2	2	2	2	2	2
2.0 Traffic										
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Potential for reduced turning movement conflicts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.0 Social and Economic										
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.).	Agriculture (acres)	617	612.8	616.4	612.2	641.1	637	623.5	619.4
		Cemetery (acres)	0	0	0	0	0	0	0	0
		Church (acres)	0	0	0	0	0	0	0	0
		Commercial (acres)	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
		Industrial (acres)	0	0	0	0	0	0	0	0
		Public (acres)	0	0	0	0	0	0	0	0
		Railroad (acres)	1.4	1.4	1.4	1.4	1.4	1.4	1.1	1.1
		School	0	0	0	0	0	0	0	0
		Single Family (acres)	36.9	30.4	32.8	26.3	47.1	40.6	45	38.4
		Utility (acres)	0	0	0	0	0	0	0	0
		Additional Ag (acres)	0	0	0	0	0	0	0	0
		Length along existing roadways (feet)	11,818	11,818	11,818	11,818	5,575	5,575	0	0
		Total (acres)	668	657.3	663.3	652.7	702.3	691.7	682.2	671.6
		3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Probable number of residences displaced	20	17	19	16	28	25
Probable number of commercial/industrial displacements	1			1	1	1	1	1	1	1
Number of major utility crossings	0			0	0	0	0	0	0	0
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acreage of agricultural lands	617.00	612.8	616.40	612.2	641.10	637	623.50	619.4
		Degree of skew within agricultural lands	Moderate	Low	Moderate	Low	Moderate	Low	Moderate	Low
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	0	0	0	0	0	0	0	0
		Potential changes in neighborhood access/circulation	None	None	None	None	None	None	None	None

**Gateway Connector
Quantitative Alternative Evaluation
Section D Phase I**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)								
			D1 (1,3,5,15,11,12)	D2 (1,3,5,15,11,13)	D3 (1,3,6,8,9,16,11,12)	D4 (1,3,6,8,9,16,11,13)	D6 (1,4,7,8,9,16,11,12)	D7 (1,4,7,8,9,16,11,13)	D9 (2,7,8,9,16,11,12)	D10 (2,7,8,9,16,11,13)	
4.0 Environmental											
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	High	High	High	High	High	High	High	High	
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet)	16	14	12	10	13	12	11	8	
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	1 proposed bike trail, 1 potential historic site	1 proposed bike trail, 4 potential historic sites	1 proposed bike trail, 4 potential historic sites	1 proposed bike trail, 3 potential historic sites	1 proposed bike trail, 2 potential historic sites				
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of floodplains within corridor (acres)	35.3	35.3	35.8	35.8	42.5	42.5	35.7	35.7	
		Number of skewed crossings	0	0	0	0	2	2	0	0	
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of NWI wetlands within corridor (acres)	2.24	2.02	2.21	1.99	1.01	0.79	3.28	3.06	
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	5	5	5	5	4	4	4	4	
		Acreage of water bodies within corridor	1.36	1.17	1.86	1.67	1.87	1.68	5.25	5.06	
		Length within Stemler recharge area	0	0	0	0	0	0	0	0	
		Number of water intakes affected	0	0	0	0	0	0	0	0	
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of wells affected	6	7	6	7	8	9	6	7	
		Number of sites affected	1 (common moorhen)	1 (common moorhen)	1 (common moorhen)	1 (common moorhen)	1 (common moorhen)				
		Acreage through sensitive habitats	95.25	95.25	95.21	95.19	120.57	120.57	139.96	139.96	
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites, and historical architectural sites.	Length through Stemler Cave recharge area	0	0	0	0	0	0	0	0	
		Number of sites affected, distance	1	1	1	1	4	4	3	3	
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Length through high potential areas (feet)	9,115	9,115	9,090	9,090	11,195	11,195	6,400	6,400	
		Number of sites within corridor	0	0	0	0	0	0	0	0	
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	0	0	0	0	0	0	0	0	
		Length along previously impacted corridors	11,818	11,818	11,818	11,818	5,575	5,575	0	0	
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acreage of agricultural land†	617	612.8	616.4	612.2	641.1	637	623.5	619.4	
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to natural areas	NA	NA	NA	NA	NA	NA	NA	NA	
		Length through Stemler Cave recharge area	0	0	0	0	0	0	0	0	
		Length through natural areas	0	0	0	0	0	0	0	0	
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor	0	0	0	0	0	0	0	0	
		Acreage of previously mined lands	16.1	16.1	14.4	14.4	14.4	14.4	26.7	26.7	
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Potential mineral resources	0	0	0	0	0	0	0	0	
		Acreage of CRP lands	0	0	0	0	0	0	0	0	
		Number of centennial farms affected	2	2	2	2	2	2	1	1	

* D1, D3, D6, and D9 were eliminated from consideration in a preliminary evaluation as compared to Alternatives D2, D4, D7, and D10 based on the longer length, high agricultural impact, high residential impacts, and greater skew through agricultural lands.
† Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

Prepared by/date:
SCC/2004
Checked by/date:
WJE/10-20-2004

**Gateway Connector
Quantitative Alternative Evaluation
Section D Phase II**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)										
			D2 (1,3,5,15,11,13)	D4 (1,3,6,8,9,16,11,13)	D5 (1,3,6,8,10,19)	D7 (1,4,7,8,9,16,11,13)	D8 (1,4,7,8,10,19)	D10 (2,7,8,9,16,11,13)	D11 (2,7,8,10,19)	D12 (1,3,5,14,18,19)	D13 (1,3,6,8,9,17,18,19)	D14 (1,4,7,8,9,17,18,19)	D15 (2,7,8,9,17,18,19)
1.0 Engineering													
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length (miles)	11.53	11.38	11.77	11.45	11.82	11.72	12.09	11.8	11.64	11.68	12.03
		Number of interchanges	4	4	5	4	5	4	5	4	4	4	4
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations	5	5	6	5	6	5	6	5	5	5	5
		Length along existing roadways	11,818	11,818	34,667	5,575	28,424	0	22,849	30,622	30,622	24,379	22,849
		Length through karst	0	0	0	0	0	0	0	0	0	0	0
		Length through previously mined areas	2,000	950	4,250	950	4,250	2,250	5,550	4,200	3,150	3,150	5,550
		Number of mine shafts crossed	0	0	0	0	0	0	0	0	0	0	0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of stream crossings	5	5	5	4	4	4	5	5	4	4	
		Number of bridges	0	0	0	0	0	0	0	0	0	0	
		Number of floodplains crossed	2	2	2	2	2	2	2	2	2	2	
2.0 Traffic													
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Potential for reduced turning movement conflicts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.0 Social and Economic													
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.))	Agriculture (acres)	612.8	612.2	612.3	637	637.1	619.4	619.5	609.7	605.7	630.4	612.8
		Cemetery (acres)	0	0	0	0	0	0	0	0	0	0	0
		Church (acres)	0	0	0	0	0	0	0	0	0	0	0
		Commercial (acres)	0.17	0.17	11.6	0.17	11.6	0.17	11.6	8.1	8.1	8.1	8.1
		Industrial (acres)	0	0	0	0	0	0	0	0	0	0	0
		Public (acres)	0	0	0	0	0	0	0	0	0	0	0
		Railroad (acres)	1.4	1.4	1.4	1.4	1.4	1.1	1.1	1.4	1.4	1.4	1.4
		School	0	0	0	0	0	0	0	0	0	0	0
		Single Family (acres)	30.4	26.3	45.4	40.6	59.7	38.4	57.5	35.7	31.6	45.9	43.7
		Utility (acres)	0	0	0	0	0	0	0	0	0	0	0
		Additional Ag (acres)	0	0	0	0	0	0	0	0	0	0	0
		Length along existing road (feet)	11,818	11,818	34,667	5,575	28,424	0	22,849	30,622	30,622	24,379	22,849
		Total (acres)	644.77	640.07	670.7	679.17	709.8	659.07	689.7	654.9	646.8	685.8	665.7
		3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Probable number of residences displaced	17	16	27	25	36	20	31	22	21
Probable number of commercial/industrial displacements	1 (cell tower)			1 (cell tower)	4	1 (cell tower)	4	1	4	2	2	2	2
Number of major utility crossings	0			0	0	0	0	0	0	0	0	0	0
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acreage of agricultural lands	612.80	612.2	612.30	637	637.10	619.4	619.50	609.7	605.7	630.40	612.8
		Degree of skew within agricultural lands	Low	Low	Low	Low	Moderate	Low	Moderate	Moderate	Moderate	Moderate	Moderate
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)	1 (proposed bike trail)
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	0	0	0	0	0	0	0	0	0	0	0
		Potential changes in neighborhood access/circulation	None	None	None	None	None	None	None	None	None	None	None
4.0 Environmental													
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	High	High	High	High	High	High	High	High	High	High	High
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet)	14	10	13	12	15	8	15	19	17	20	18
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	1 (proposed bike trail) 1 (potential historic site)	1 (proposed bike trail) 1 (potential historic site)	1 (proposed bike trail) 2 (potential historic sites)	1 (proposed bike trail) 4 (potential historic sites)	1 (proposed bike trail) 5 (potential historic sites)	1 (proposed bike trail) 2 (potential historic sites)	1 (proposed bike trail) 3 (potential historic sites)	1 (proposed bike trail) 2 (potential historic sites)	1 (proposed bike trail) 5 (potential historic sites)	1 (proposed bike trail) 3 (potential historic sites)	
		Acreage of floodplains within corridor (acres)	35.3	35.8	35.8	42.5	42.5	35.7	35.7	35.3	35.8	42.5	35.7
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Number of skewed crossings	0	0	0	2	2	0	0	0	0	2	0
		Acreage of NWI wetlands within corridor (acres)	2.02	1.99	1.81	0.79	0.61	3.06	2.88	1.84	1.81	0.61	2.88
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.												

**Gateway Connector
Quantitative Alternative Evaluation
Section D Phase II**



Evaluation Factor	Definition/Clarification	Indicators	Alternative (Segments Composing Alternative)										
			D2 (1,3,5,15,11,13)	D4 (1,3,6,8,9,16,11,13)	D5 (1,3,6,8,10,19)	D7 (1,4,7,8,9,16,11,13)	D8 (1,4,7,8,10,19)	D10 (2,7,8,9,16,11,13)	D11 (2,7,8,10,19)	D12 (1,3,5,14,18,19)	D13 (1,3,6,8,9,17,18,19)	D14 (1,4,7,8,9,17,18,19)	D15 (2,7,8,9,17,18,19)
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	5	5	5	4	4	4	4	5	5	4	4
		Acreage of water bodies within corridor	1.17	1.67	12.68	1.68	12.68	5.06	16.06	8.3	8.8	8.81	12.19
		Length within Stemler recharge area	0	0	0	0	0	0	0	0	0	0	0
		Number of water intakes affected	0	0	0	0	0	0	0	0	0	0	0
		Number of wells affected	7	7	15	9	17	7	15	10	11	13	11
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected -- Common moorhen -- all alternatives	1	1	1	1	1	1	1	1	1	1	
		Acreage through sensitive habitats	95.25	95.19	95.2	120.57	120.57	139.96	139.96	95.25	95.25	120.57	139.96
		Length through Stemler Cave recharge area	0	0	0	0	0	0	0	0	0	0	
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Number of sites affected, distance	1 NA	1 NA	2 NA	4 One <10 ft (unnamed burial mound)	5 One <10 ft (unnamed burial mound)	3 NA	4 NA	0 NA	2 NA	5 One <10 ft (unnamed burial mound)	4 NA
		Distance to listed sites											
		Length through high potential areas (feet)	9,115	9,090	9,090	11,195	11,195	6,400	6,400	9,115	9,090	11,195	6,400
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	0	0	3 (Equip. Serv. Co., Carrors, and Hartman)	0	3 (Equip. Serv. Co., Carrors, and Hartman)	0	3 (Equip. Serv. Co., Carrors, and Hartman)	1 (Hartman Farm Supply)	1 (Hartman Farm Supply)	1 (Hartman Farm Supply)	1 (Hartman Farm Supply)
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	0	0	0	0	0	0	0	0	0	0	0
		Length along previously impacted corridors	11,818	11,818	34,667	5,575	28,424	0	22,849	30,622	30,622	24,379	22,849
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acreage of primarily prime agricultural land*	612.8	612.2	612.3	637	637.1	619.4	619.5	609.7	605.7	630.4	612.8
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to natural areas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Length through Stemler Cave recharge area	0	0	0	0	0	0	0	0	0	0	0
		Length through natural areas	0	0	0	0	0	0	0	0	0	0	0
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor	0	0	0	0	0	0	0	0	0	0	0
		Acreage of previously mined lands	16.1	14.4	39	14.4	39	26.7	51.3	32.5	29.1	29.1	41.4
		Potential mineral resources	0	0	0	0	0	0	0	0	0	0	0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Acreage of CRP lands	0	0	0	0	0	0	0	0	0	0	0
		Number of centennial farms affected	2	2	2	2	3	1	2	3	3	3	2

* Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

Prepared by/date:
SCC/2004
Checked by/date:
WJE/10-20-2004

**Gateway Connector
Qualitative Alternative Evaluation
Section D Phase II**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)										
		D2 (1,3,5,15,11,13)	D4 (1,3,6,8,9,16,11,13)	D5 (1,3,6,8,10,19)	D7 (1,4,7,8,9,16,11,13)	D8 (1,4,7,8,10,19)	D10 (2,7,8,9,16,11,13)	D11 (2,7,8,10,19)	D12 (1,3,5,14,18,19)	D13 (1,3,6,8,9,17,18,19)	D14 (1,4,7,8,9,17,18,19)	D15 (2,7,8,9,17,18,19)
1.0 Engineering												
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
				Has additional fly-over interchange at Freeburg-Douglas Road		Has additional fly-over interchange at Freeburg-Douglas Road		Has additional fly-over interchange at Freeburg-Douglas Road				
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Ranking: 4	Ranking: 2	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, Hill Lake Creek.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
	No differentiation between alternatives with respect to potential hydraulic issues (scour, etc.)											
2.0 Traffic												
2.1 Traffic Operations/Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
	Travel times and overall system efficiency greatly enhanced with all build alternatives relative to No Build alternatives. Not scored as a "5" as future LOS under No Build is not degraded to "F."											
2.2	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
3.0 Social and Economic												
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.). Compatibility: Evaluate the compatibility of a transportation facility with future land use plan.	Ranking: 2	Ranking: 2	Ranking: 4	Ranking: 2	Ranking: 4	Ranking: 1	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 3
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial).	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
	No major utilities along any alternative.											
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
4.0 Environmental												
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
	Noise impacts sporadic throughout all alternatives; but development along Freeburg-Douglas Road would be susceptible to greater impacts with south alternatives as compares to Alternatives 2, 4, 7, and 10.											
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3
	No NRHP listed sites are affected. Not enough information is available to ascertain NRHP eligibility of structures at this time. However, Alternatives 7, 8, and 14 have greater potential for affecting a historic property at Illinois Route 159 interchange.											
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
	No significant differences in acreage, Alternatives 6, 7, 8, and 14 have slightly skewed crossings of Richland Creek floodplain.											
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
	Very low potential impacts to wetlands with all alternatives.											

**Gateway Connector
Qualitative Alternative Evaluation
Section D Phase II**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)										
		D2 (1,3,5,15,11,13)	D4 (1,3,6,8,9,16,11,13)	D5 (1,3,6,8,10,19)	D7 (1,4,7,8,9,16,11,13)	D8 (1,4,7,8,10,19)	D10 (2,7,8,9,16,11,13)	D11 (2,7,8,10,19)	D12 (1,3,5,14,18,19)	D13 (1,3,6,8,9,17,18,19)	D14 (1,4,7,8,9,17,18,19)	D15 (2,7,8,9,17,18,19)
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3
Alternatives 7, 8, and 14 have high potential for channel relocation west of Illinois Route 159 (tributary of Richland Creek). There is a greater degree of water body impacts to strip mine lakes along Roachtown Road.												
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
Insufficient information is available to precisely locate common moorhen location. Sensitive habitat data is very imprecise.												
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3
Length through high potential archaeological areas used as the primary indicator.												
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
Potential impact greater with Alternatives 5, 8, and 11.												
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
Total Score		91	88	88	87	86	89	85	91	91	86	90
Scoring	1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.	Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004										

**Gateway Connector
Quantitative Alternative Evaluation
Section E Phase I**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)								
			E1	E2	E3	E4	E5	E6	E7	E8	E9
1.0 Engineering											
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length (miles) Number of interchanges	8.3 3	6.5 2	6.8 2	7.9 3	8.5 3	9.2 3	8.6 3	9.1 3	9.6 3
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations Length along existing roadways (feet) Length through karst Length through previously mined areas (ft) Number of mine shafts crossed	 2,840 24,040 0 0	 2,840 18,090 0 0	 36,000 13,390 0 0	 16,680 20,660 0 0	 16,680 20,660 0 0	 16,680 20,660 0 0	 16,680 22,320 0 0	 16,680 22,320 0 0	 16,618 22,320 0 0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of stream crossings Number of bridges Number of floodplains crossed	4 4 1	6 (1 longitudinal) 6 2	6 (2 longitudinal) 4 1	11 11 3	11 11 3	11 11 2	9 9 3	9 9 3	9 9 2
2.0 Traffic											
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS) Potential Future ADT on Alternative (maximum volume east of I-255) Potential Future ADT on existing Routes 3 and 158 (based on no build volume of 23,000)	Low 24,000 20,000	Low 28,000 20,000	Low 37,000 (44,000 at Quarry Road) 37,000	High 25,000 4,000	High 25,000 4,000	High 25,000 4,000	High 35,000 4,000	High 35,000 4,000	High 35,000 4,000
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS Potential for reduced turning movement conflicts	Low Low	Low Low	Low Moderate	High Low	High Low	High Low	High Low	High Low	High Low
3.0 Social and Economic											
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.))	Agriculture (acres) Cemetery (acres) Church (acres) Commercial (acres) Industrial (acres) Public (acres) Railroad (acres) School (acres) Single Family (acres) Utility (acres) Airport (acres) Length along existing roadways* (feet) Total (acres)	451.1 0 0 13.7 0 0 1.1 0 41.1 0 0 2,840 507	236.5 0 0 15.9 21.2 0 1.2 0 43.8 0 0 2,840 318.6	140 0 1 16.5 0 0.9 0 5.1 42.3 0 0 36,000 205.8	300.5 0 0 0.2 16.9 1 0 57.5 0 0 0 16,680 376.1	400.2 0 0 2 0 1.7 0 0 36.6 0 8.1 16,680 448.6	421.9 0 0 0.2 0.4 0 0.9 0 36.6 0 0.8 16,680 460.8	332.2 0 0 0 16.9 1 0 47.3 0 0 0 16,680 397.4	435.7 0 0 1.8 0 1.7 0 0 26.2 0 9 16,680 474.4	490.3 0 0 0 0.4 0 0.9 0 26.2 0 0.8 16,680 518.6
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Probable number of residences displaced Probable number of commercial/industrial displacements Number of major utility crossings†	32 3 N/A	46 7 N/A	84 30 N/A	45 5 N/A	41 3 N/A	41 0 N/A	31 5 N/A	27 3 N/A	27 0 N/A
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acreage of agricultural lands Degree of skew within agricultural lands	464.20 High	247.3 Moderate	140.40 Low	297 Moderate	409.00 Moderate	457.2 High	328.60 Moderate	445.4 Moderate	491.8 High
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	0	3 (IDOT Maintenance Yard)	5 (schools, church, PW department)	3 (2-Columbia Historical Society; 1-Columbia Flying Club)	4 (Columbia Flying Club)	0	3 (2-Columbia Historical Society; 1-Columbia Flying Club)	4 (Columbia Flying Club)	0
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected Potential changes in neighborhood access/circulation	1 1	1 1	2 0	2 0	1 0	1 0	1 0	0 0	0 0
4.0 Environmental											
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	Moderate	Moderate	Low	High	High	High	High	High	High
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet) (dispersed noise receptors not likely to be impacted; mitigative measures are not considered during scoping process -- i.e., subdivisions)	21	28	>200	42	33	31	41	31	31

**Gateway Connector
Quantitative Alternative Evaluation
Section E Phase I**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)								
			E1	E2	E3	E4	E5	E6	E7	E8	E9
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	3 [2 bike trails (proposed); 1 potential historic structure]	1 bike trail (proposed)	3 potential historic structures	3 potential historic structures	1 potential historic structure	1 potential historic structure	5 potential historic structures	3 potential historic structures	3 potential historic structures
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of floodplains within corridor (acres)	78.9	56.6	6.1	43.9	147.3	100.5	59.2	160.9	110.3
		Number of skewed crossings	0	1	0	1	0	0	2	1	1
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acreage of NWI wetlands within corridor (acres)	13.6	2.4	0.6	0.6	6.7	9.9	0.6	6.7	9.9
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	4	6 (1 longitudinal)	6 (2 longitudinal)	11	11	11	9	9	9
		Acreage of water bodies within corridor	1.3	0.8	0.7	1.7	2	2.3	1.4	1.7	2
		Length within Stemler Recharge Area (feet)	16,062	11,003	6,672	6,672	6,672	6,672	6,672	6,672	6,672
		Number of water intakes affected	0	0	0	0	0	0	0	0	0
		Number of wells affected	4	5	5	10	10	9	9	8	7
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected	0	0	0	0	0	0	0	0	0
		Distance to listed species (amphipod) (feet)	1,712	4,219	6,974	6,974	6,974	6,974	6,974	6,974	6,974
		Length within Stemler Recharge Area (feet)	16,062	11,003	6,672	6,672	6,672	6,672	6,672	6,672	6,672
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites, and historical architectural sites.	Number of sites affected	0	0	1 arch. Site	1 arch site	0	0	2 arch. Sites	1 arch. Site	1 arch. Site
		Length through high potential areas (feet)	12,523	4,985	0	16,580	19,805	23,917	16,211	19,235	22,162
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	0	3	1	2	1	0	2	1	0
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	40,940	31,690	0	25,150	28,370	31,840	28,520	31,540	34,240
		Length along previously impacted corridors	2,840	2,840	36,000	16,680	16,680	16,680	16,680	16,680	16,680
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acres of agricultural land**	464.2	247.3	140.4	297	409	457.2	328.6	445.4	491.8
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to Stemler Woods (feet)	95	2,650	5,235	5,265	5,265	5,265	5,265	5,265	5,265
		Distance to Pruitt Nature Preserve (feet)	1,711	3,484	5,235	5,235	5,235	5,235	5,235	5,235	5,235
		Distance to Sinking Creek (feet)	0	0	110	110	110	110	110	110	110
		Length within Stemler Recharge Area (feet)	16,062	11,003	6,672	6,672	6,672	6,672	6,672	6,672	6,672
		Length through natural areas (feet)	413 (Sinking Creek)	450 (Sinking Creek)	0	0	0	0	0	0	0
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Number of mine shafts within corridor	0	0	0	0	0	0	0	0	0
		Acreage of previously mined lands	0	0	0	0	0	0	0	0	0
		Potential mineral resources	0	0	0	0	0	0	0	0	0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Acreage of CRP lands	0	0	0	0	0	0	0	0	0
		Number of centennial farms affected	1	0	1	0	0	1	0	0	1

* Length along existing roadways not included in total acreage.
† There is insufficient information available to evaluate this category at this time.
** Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

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**Gateway Connector
Qualitative Alternative Evaluation
Section E Phase I**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)								
		E1	E2	E3	E4	E5	E6	E7	E8	E9
1.0 Engineering										
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2
Alternatives E1, E6, and E9 are longer; E1 and E2 would involve a more costly and complicated interchange design.										
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Ranking: 1	Ranking: 1	Ranking: 2	Ranking: 3					
E1 and E2 involve complex interchange design and increased variability due to unknowns related to karst areas.										
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas	Ranking: 4	Ranking: 3	Ranking: 3	Ranking: 2					
E4 through E9 result in more stream crossings with resultant increased cost to provide structures to accommodate hydrology (e.g., culverts, retaining walls, bridges, etc.)										
2.0 Traffic										
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 2	Ranking: 2	Ranking: 1	Ranking: 5	Ranking: 5	Ranking: 4	Ranking: 5	Ranking: 5	Ranking: 4
E3 may result in a degradation of LOS on exiting Route 3.										
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 3	Ranking: 4							
3.0 Social and Economic										
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.). Compatibility: Evaluate the compatibility of a transportation facility with future land use plan.	Ranking: 1	Ranking: 1	Ranking: 4	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial).	Ranking: 3	Ranking: 2	Ranking: 1	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Ranking: 4	Ranking: 3	Ranking: 1	Ranking: 4	Ranking: 4	Ranking: 5	Ranking: 4	Ranking: 4	Ranking: 5
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A	Ranking: N/A
There is insufficient information available to evaluate this category at this time.										
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 1	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 1	Ranking: 3	Ranking: 2	Ranking: 1
E1, E6, and E9 would result in the highest adverse impacts to agricultural land. E5 and E8 would result in moderate to high adverse impacts to agricultural land.										
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 5	Ranking: 5	Ranking: 1	Ranking: 3	Ranking: 5	Ranking: 5	Ranking: 3	Ranking: 5	Ranking: 5
E3 would result in adverse impacts to a school.										
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 2	Ranking: 1	Ranking: 3	Ranking: 1	Ranking: 1	Ranking: 1	Ranking: 4	Ranking: 5	Ranking: 5
E4, E5, and E6 would impact neighborhoods/subdivisions which could affect community cohesion.										
4.0 Environmental										
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 4					
There is insufficient information as to facility type to determine the impact to air quality.										
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 3	Ranking: 3	Ranking: 1	Ranking: 3					
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3

**Gateway Connector
Qualitative Alternative Evaluation
Section E Phase I**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)								
		E1	E2	E3	E4	E5	E6	E7	E8	E9
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular	Ranking: 4	Ranking: 4	Ranking: 5	Ranking: 4	Ranking: 2	Ranking: 3	Ranking: 4	Ranking: 2	Ranking: 3
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings,	Ranking: 2	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 4	Ranking: 3	Ranking: 2
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential	Ranking: 1	Ranking: 1	Ranking: 3	Ranking: 2					
E1 and E2 would have the greatest impact to the Stemler Cave Recharge Area. Alternatives E4 through E9 would have the highest number of stream crossings.										
4.7 Threatened and	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster.	Ranking: 2	Ranking: 2	Ranking: 3						
E1 and E2 would have the greatest impact to the Stemler Cave Recharge Area which could impact the cave amphipod and the cave-dwelling snail.										
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 2					
E4 through E9 would result in the greatest length through unimpacted high potential archaeological areas.										
4.9 Hazardous Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Ranking: 3	Ranking: 3	Ranking: 4	Ranking: 3					
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 2	Ranking: 3	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 2
E1, E5, E6, E8, and E9 would result in the greatest impacts to agricultural lands.										
4.12 Natural Areas	Evaluate potential impacts to natural areas including Stemler Cave and Recharge Area, Stemler Woods, and Sinking Creek Nature Preserve.	Ranking: 2	Ranking: 2	Ranking: 4						
E1 and E2 would result in moderate to high impacts to natural areas whereas Alternatives E3 through E9 would not impact natural areas.										
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
Total Score		65	68	74	76	73	71	80	79	77
Scoring	<p>1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.</p>									<p>Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004</p>

**Gateway Connector
Quantitative Alternative Evaluation
Section E Phase II**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)												
			E3	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18
1.0 Engineering															
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance costs.	Corridor length (miles)	6.8	8.6	9.1	9.6	8.5	9.1	9.7	10.6	10.2	10.8	9.3	9.9	10.5
		Number of interchanges	2	3	3	3	3	3	3	3	2	2	2	2	2
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.	Number of grade separations													
		Length along existing roadways (feet)	36,000	16,680	16,680	16,680	9,600	3,800	3,800	5,600	0	0	6,250	0	0
		Length through karst	13,390	22,320	22,320	22,320	11,662	11,662	11,662	0	0	0	0	0	0
		Length through previously mined areas (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
1.3 Hydraulic Issues	Evaluate impacts to streams within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, and Hill Lake Creek.	Number of mine shafts crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
		Number of stream crossings	5	3	3	4	3	3	4	6	6	7	6	6	7
		Number of bridges	1	3	3	3	3	3	3	3	3	3	3	3	3
2.0 Traffic															
2.1 Traffic Operations/ Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Potential for improved level of service (LOS)	Low	High	High	High	High	High	High	High	High	High	High	High	High
		Potential Future ADT on Alternative (maximum volume east of I-255)	37,000 (44,000 at Quarry Road)	35,000	35,000	35,000	35,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000
		Potential Future ADT on existing Routes 3 and 158 (based on no build volume of 23,000)	37,000	4,000	4,000	4,000	4,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Potential for improved LOS	Low	High	High	High	High	High	High	High	High	High	High	High	High
		Potential for reduced turning movement conflicts	Moderate	High	High	High	High	High	High	High	High	High	High	High	High
3.0 Social and Economic															
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.))	Agriculture (acres)	125.5	313.9	430.6	477.2	323.5	440.2	486.7	453.3	570.1	616.6	486.1	602.8	649.3
		Cemetery (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0
		Church (acres)	0.9	0	0	0	0	0	0	0	0	0	0	0	0
		Commercial (acres)	17.6	0	1.8	0.3	0	1.9	0.03	0	1.9	0.03	0	1.9	0.03
		Industrial (acres)	14.9	31.9	14.9	15.3	30.8	13.9	14.3	17	0	0.4	17	0	0.4
		Public (acres)	0.9	1	1.7	0	1	1.7	0	1	1.7	0	1	1.7	0
		Railroad (acres)	0	0	0	0.9	0	0	0.9	0	0	0.9	0	0	0.9
		School (acres)	4.4	0	0	0	0	0	0	0	0	0	0	0	0
		Single Family (acres)	41.8	50.5	25.1	25.1	42.6	17.2	17.2	63.6	38.2	38.2	72	46.6	46.6
		Utility (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0
		Airport (acres)	0	0	9	0.5	0	9	0.5	0	9	0.5	0	9	0.5
		Length along existing roadways* (feet)	36,000	16,680	16,680	16,680	9,600	3,800	3,800	5,600	0	0	6,250	0	0
		Total (acres)	206.0	397.3	483.1	519.3	397.9	483.9	519.6	534.9	620.9	656.6	576.1	662.0	697.7
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial). Commercial/Industrial -- Number of commercial and industrial businesses taken. Utilities -- Potential need to relocate transmission lines or other major utilities.	Probable number of residences displaced	83	49	40	40	36	27	27	37	28	28	43	34	34
		Probable number of commercial/industrial displacements	32	4	3	2	4	3	2	2	2	2	2	1	0
		Number of major utility crossings†	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Acres of agricultural lands	220.10	408.5	525.2	571.8	418.1	534.8	581.3	502.0	618.8	665.3	486.1	602.8	649.3
		Degree of skew within agricultural lands	Low	Moderate	Moderate	High	Moderate	Moderate	Moderate	Moderate	High	High	High	High	High
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Number of facilities	5 (schools, church, PW department)	2 (Columbia Hist. Society and Columbia Flying Club)	2 (Columbia Flying Club and IDOT emissions)	0	2 (Columbia Hist. Society and Columbia Flying Club)	2 (Columbia Flying Club and IDOT emissions)	0	2 (Columbia Hist. Society and Columbia Flying Club)	2 (Columbia Flying Club and IDOT emissions)	0	2 (Columbia Hist. Society and Columbia Flying Club)	2 (Columbia Flying Club and IDOT emissions)	0
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Number of established neighborhoods affected	2	1	1	1	1	1	1	1	1	1	1	1	1
		Potential changes in neighborhood access/circulation	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
4.0 Environmental															
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Potential effects on reducing local congestion	Low	High	High	High	High	High	High	High	High	High	High	High	High
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Proximity to sensitive noise receptors (number within 200 feet) (dispersed noise receptors not likely to be impacted; mitigative measures are not considered during scoping process -- i.e., subdivisions)	>200	47	37	37	40	27	28	38	25	25	36	20	20
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Number of 4(f)/6(f) lands affected	5 (potential historic structures)	7 (potential historic structures)	5 (potential historic structures)	5 (potential historic structures)	5 (potential historic structure)	4 (potential historic structure)	4 (potential historic structure)	4 (potential historic structure)	3 (potential historic structures)	3 (potential historic structures)	3 (potential historic structures)	2 (potential historic structures)	2 (potential historic structures)
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acres of floodplains within corridor (acres)	6.1	59.2	160.9	110.3	68	169.9	117.3	74.3	176.2	123.7	83.3	185.2	132.7
		Number of skewed crossings	0	2	1	1	1	1	1	1	1	1	1	1	1
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Acres of NWI wetlands within corridor (acres)	0.6	0.6	6.7	9.9	0	6.02	9.36	2.3	8.37	11.66	0	6.07	9.36
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Number of streams crossed	6	4	4	5	4	4	5	6	6	7	6	6	7
		Acres of water bodies within corridor	4.3	5.0	4.3	5.6	4.5	4.8	5.1	2.7	3.0	3.3	2.49	2.79	3.11
		Length within Stemler Recharge Area (feet)	6,672	6,672	6,672	6,672	4,990	4,990	4,990	0	0	0	0	0	0
		Number of water intakes affected	0	0	0	0	0	0	0	0	0	0	0	0	0
		Number of wells affected	10	14	13	12	10	10	10	10	14	14	14	9	9

**Gateway Connector
Quantitative Alternative Evaluation
Section E Phase II**



Evaluation Factor	Definition/ Clarification	Indicators	Alternative (Segments Composing Alternative)												
			E3	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Number of sites affected	0	0	0	0	0	0	0	0	0	0	0	0	0
		Distance to listed species (amphipod) (feet)	6,974	6,974	6,974	6,974	8,477	8,477	8,477	N/A	N/A	N/A	N/A	N/A	N/A
		Length within Stemler Recharge Area (feet)	6,672	6,672	6,672	6,672	4,990	4,990	4,990	0	0	0	0	0	0
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites, and historical architectural sites.	Number of sites affected	1 arch. Site	1 arch. Site	1 arch. Site	1 arch site	1 arch site	0	0	1 arch. Site	0	0	1 arch. Sites	0	0
		Number of potential historic structures	5 (potential historic structures)	7 (potential historic structures)	5 potential historic structures	5 potential historic structures	5 potential historic structure	4 potential historic structure	4 potential historic structure	4 potential historic structure	3 potential historic structures	3 potential historic structures	3 potential historic structures	2 potential historic structures	2 potential historic structures
		Length through high potential areas (feet)	0	16,211	19,235	22,162	16,230	19,260	22,520	19,255	22,285	25,545	22,425	25,455	28,715
4.9 Hazardous/Special Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Number of sites within corridor	1	2 (Luhr Bros. Construction and Center Point Energy)	1 (Shell Station)	0	2 (Luhr Bros. Construction and Center Point Energy)	1 (Shell Station)	0	2 (Luhr Bros. Construction and Center Point Energy)	2 (Shell Station, Old General Store/Gas Station)	1 (Old General Store/Gas Station)	3 (Luhr Bros. Construction, Old General Store/Gas Station, Center Point Energy)	2 (Shell Station, Old General Store/Gas Station)	1 (Old General Store/Gas Station)
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Length through sensitive visual landscapes	0	28,520	31,540	34,240	35,400	44,100	47,200	50,300	59,200	62,400	54,550	63,800	66,800
		Length along previously impacted corridors	36,000	16,680	16,680	16,680	9,600	3,800	3,800	5,600	0	0	6,250	0	0
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Acres of agricultural land**	220.1	408.5	525.2	571.8	418.1	534.8	581.3	502.0	618.8	665.3	486.1	602.8	649.3
4.12 Natural Areas	Evaluate potential impacts to natural areas including Dupo Hill Prairie, Sugar Loaf Hill Prairie, Stemler Cave and recharge area, Stemler Woods, Fosterburg Woods, and Silver Creek Bottomland Forest.	Distance to Stemler Woods (feet)	5,265	5,265	5,265	5,265	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Distance to Pruitt Nature Preserve (feet)	5,235	5,235	5,235	5,235	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Distance to Sinking Creek (feet)	0	0	110	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Length within Stemler Recharge Area (feet)	6,672	6,672	6,672	6,672	4,990	4,990	4,990	0	0	0	0	0	0
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Length through natural areas (feet)	0	0	0	0	0	0	0	0	0	0	0	0	0
		Number of mine shafts within corridor	0	0	0	0	0	0	0	0	0	0	0	0	0
		Acres of previously mined lands	0	0	0	0	0	0	0	0	0	0	0	0	0
4.14 CRP/WRP Lands	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Potential mineral resources	0	0	0	0	0	0	0	0	0	0	0	0	0
		Acres of CRP lands	0	0	0	0	0	0	0	0	0	0	0	0	0
		Number of centennial farms affected	2	1	1	2	1	1	1	1	1	1	1	1	1

* Length along existing roadways not included in total acreage.
 † There is insufficient information available to evaluate this category at this time.
 ** Acreage reflects total agricultural land and is used as an estimate of prime and unique agricultural land.

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**Gateway Connector
Qualitative Alternative Evaluation
Section E Phase II**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)											
		Alternative E3 (1,5,6)	Alternative E7 (1,5,7,11,12,14)	Alternative E8 (1,5,7,11,18)	Alternative E9 (1,5,7,11,13,15)	Alternative E10 (19,7,11,12,14)	Alternative E11 (19,7,11,18)	Alternative 12 (19,7,11,13,15)	Alternative E13 (21,25,11,12,14)	Alternative E14 (21,25,11,18)	Alternative E15 (21,25,11,13,15)	Alternative E16 (20,25,11,12,14)	Alternative E17 (20,25,11,18)
1.0 Engineering													
1.1 Length	Total length of alternative and its resultant impact on acquisition, construction, and operation and maintenance cost.	Ranking: 4	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2
Length for these alternates adjusted to compensate for differences in east terminus of alternate.													
1.2 Constructability	Evaluate alternatives with respect to staging, maintenance of traffic, and constructability.												
	Along existing	Ranking: 4	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2
	Karst	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
1.3 Hydraulic Issues	Evaluate impacts to streams (hydraulic impacts only) within the study area: tributaries to Silver Creek, Richland Creek, Douglas Creek, Palmer Creek, Hill Lake Creek.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2
	Higher number of crossings, but uses existing bridges.											Greater complexity with ravines/drainages near east terminus near Saxtown Road.	
2.0 Traffic													
2.1 Traffic Operations/Efficiency	Evaluate alternatives with respect to accessibility due to changes in travel time, and capacity to meet future demand.	Ranking: 2	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 3	Ranking: 4	Ranking: 4
Alternates at Fish Lake interchange (E9, E12, E15, and E18) -- loss of system continuity, system efficiency, and some reduction in traffic volumes (not sensed by model).													
2.2 Safety/Accident Potential	Evaluate alternatives with respect to reduction in accident rate.	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
3.0 Social and Economic													
3.1 Land Use	Consistency. Evaluate the consistency of the proposed improvement with existing land uses (transportation facility is a developed land use that is most consistent when aligned with other transportation land uses and least consistent when aligned with rural, undeveloped land uses (agricultural land, forest land, etc.). Compatibility: Evaluate the compatibility of a transportation facility with future land use plan.	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 2
	Alternative E3 has greatest consistency due to use of existing transportation facility. Alternatives E14, E15, E17, and E18 have high agricultural impacts coupled with airport impacts. Alternatives E8, E11, E14, and E17 have a higher disruption to Columbia Flying Club. Alternatives E9, E12, E15, and E18 have impact to north/south runway of Columbia Flying Club.												
3.2 Displacements	Residential -- Number of residences impacted and potential effects due to parcel takes (may be partial).	Ranking: 1	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2
	Commercial/Industrial -- Number of commercial and industrial businesses taken.	Ranking: 1	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 5
	Utilities -- Potential need to relocate transmission lines or other major utilities.	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
No known effects on utilities.													
3.3 Farmland Impacts	Identify potential impact of farm operation due to creation of severances, impacts to on-farm investments, creation of non-farmable lands, and changes in access.	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 1	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 1	Ranking: 1	Ranking: 2	Ranking: 1
	Alternatives E7 through E18 have high agricultural acreage impacts, are highly skewed, and are considered to have greatest potential impact.												
3.4 Public/Semi-Public Lands	Identify lands used for public/semi-public uses (i.e., churches, special interest groups, car pool parking lots, etc.).	Ranking: 1	Ranking: 3	Ranking: 3	Ranking: 5	Ranking: 3	Ranking: 3	Ranking: 5	Ranking: 3	Ranking: 3	Ranking: 5	Ranking: 3	Ranking: 3
3.5 Community Cohesion	Identify neighborhoods and communities along the corridor. Determine degree of disruption and impact on cohesion.	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
	Alternative E3 has greater sustained impact on cohesion within Columbia, north/south of Route 3. Alternatives E7 through E18 have potential effects on proposed expansion of Joyview Estates.												
4.0 Environmental													
4.1 Air Quality	Evaluate potential impact on air quality. Consideration of non-attainment areas.	Ranking: 3	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
	Alternative E3 has local degradation of air quality with increased congestion on Route 3.												
4.2 Noise	Evaluate potential impact on existing sensitive receptors (residence, church, school, library).	Ranking: 1	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.3 4(f)/6(f) Lands	Evaluate potential impact on potential 4(f)/6(f) lands including bike trails, parks, and historic properties/sites.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.4 Floodplains	Evaluate potential impact on floodplain encroachment. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 5	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 3
4.5 Wetlands	Evaluate potential impact on wetlands. Consider extent of alignment on structure, transverse vs. perpendicular crossings, etc.	Ranking: 5	Ranking: 5	Ranking: 3	Ranking: 2	Ranking: 5	Ranking: 3	Ranking: 2	Ranking: 4	Ranking: 2	Ranking: 2	Ranking: 5	Ranking: 3
4.6 Water Resources	Evaluate potential impact to streams and recharge areas, karst areas, sinkholes, sinking streams, soluble bedrock, potential impact on public water supplies and potential for water quality degradation.	Ranking: 1	Ranking: 1	Ranking: 1	Ranking: 1	Ranking: 2	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 2	Ranking: 2
	Alternatives E3 and E7 through E12 have a length through Stemler Cave Recharge Area that was viewed to be more detrimental along the existing alignment as compared to alternatives on alignment on a low ridge south of existing Route 158 (Alternatives E10 through E12). Alternatives E16, E17, and E18 may have potential effects on the West Fork of Richland Creek near Saxtown Road due to its higher quality and greater relief. Therefore, higher erodibility potential.												

**Gateway Connector
Qualitative Alternative Evaluation
Section E Phase II**



Evaluation Factor	Definition/Clarification	Alternative (Segments Composing Alternative)												
		Alternative E3 (1,5,6)	Alternative E7 (1,5,7,11,12,14)	Alternative E8 (1,5,7,11,18)	Alternative E9 (1,5,7,11,13,15)	Alternative E10 (19,7,11,12,14)	Alternative E11 (19,7,11,18)	Alternative 12 (19,7,11,13,15)	Alternative E13 (21,25,11,12,14)	Alternative E14 (21,25,11,18)	Alternative E15 (21,25,11,13,15)	Alternative E16 (20,25,11,12,14)	Alternative E17 (20,25,11,18)	Alternative E18 (20,25,11,13,15)
4.7 Threatened and Endangered Species	Evaluate potential impact on federal listed species including Indiana bat, Illinois cave amphipod, and decurrent false aster. State listed species include common moorhen and a cave-dwelling snail found only in Stemler Cave.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
E1 and E2 would have the greatest impact to the Stemler Cave Recharge Area which could impact the cave amphipod and the cave-dwelling snail.														
4.8 Cultural Resources	Evaluate potential effects on NRHP sites or sites likely to be NRHP eligible such as cemeteries, archaeological sites and historical architectural sites.	Ranking: 5	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4	Ranking: 4
E4 through E9 would result in the greatest length through unimpacted high potential archaeological areas.														
4.9 Hazardous Waste	Consider potential costs and liabilities incurred from the acquisition of sites potentially containing hazardous materials.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.10 Visual Environment	Evaluate potential effects of alternative alignments on existing visual environment.	Ranking: 4	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
4.11 Prime Farmland	Potential conversion of prime and unique farmland and farmland of statewide or local importance.	Ranking: 4	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 2	Ranking: 3	Ranking: 2	Ranking: 2
4.12 Natural Areas	Evaluate potential impacts to natural areas including Stemler Cave and Recharge Area, Stemler Woods, and Sinking Creek Nature Preserve.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
Alternatives E3 and E7 through E9 would be located immediately adjacent to Sinking Creek Natural Area. Alternatives E10 through E18 -- Natural Areas are avoided with sufficient buffer.														
4.13 Mines and Mineral Resources	Evaluate proximity of corridor to mine shafts and potential impacts to existing mines and potential mineral resources.	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5	Ranking: 5
4.14 CRP/WRP Lands and Centennial Farms	Evaluate potential impacts to CRP/WRP lands and to centennial farms.	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3	Ranking: 3
Total Score		85	88	82	83	92	86	88	93	88	89	92	86	88
<p><i>Scoring</i></p> <p>1: Zero benefit, high adverse impact. 2: Low benefit, moderate-high adverse impact. 3: Moderate benefit, moderate adverse impact. 4: Moderate-high benefit, low-moderate adverse impact. 5: High benefit, low adverse impact.</p>		<p>Prepared by/date: SCC/2004 Checked by/date: WJE/10-20-2004</p>												