Level 1 Screening (Project Goals)

Alternative Corridor	Length of Corridor (miles)	Travel Time (minutes)						Level of Access to Industrial Development	Effectiveness as an alternate truck route for US 641	Summary
		Corridor	I-24 @ Livingston / Lyon County Line	I-24 @ Wendell H. Ford (WK) Parkway	Wendell H. Ford (WK) Parkway at County Line	Kentucky Dam Village State Resort Park	Mineral Mounds State Park			
No Build	9.8	11.4	20.4	16.5	14.9	28.3	15.6	Low	Low	Low
1	9.3	9.3	20.7	14.1	9.3	28.6	17.8	High	Medium	Medium
1A	9.8	9.8	21.2	14.6	9.8	29.1	18.3	High	Medium	Medium
2	9.4	9.4	18.4	14.5	12.9	26.3	13.6	Medium	Medium	High
2A	9.9	9.9	18.9	15.0	13.4	26.8	14.1	Medium	High	High
2B	10.1	10.1	18.2	11.6	13.4	26.2	13.6	High	Medium	High
2C	10.6	10.6	18.7	12.1	13.9	26.7	14.1	High	High	High
3	13.0	13.0	15.9	16.8	21.5	23.8	19.8	Low	Medium	Low
3A	14.4	14.4	17.3	18.2	22.9	25.2	21.2	Medium	High	Medium
3B	10.6	10.6	17.0	14.0	16.7	24.9	13.8	Low	Low	Medium
3C	12.0	12.0	18.4	15.4	18.1	26.3	15.2	Low	Medium	Low
3D	10.9	10.9	18.1	15.1	16.2	26.0	13.3	Low	Low	Low
3E	12.3	12.3	19.5	16.5	17.6	27.4	14.7	Low	Medium	Low
4	9.4	9.4	19.2	10.9	11.0	27.1	16.3	High	Medium	High
4A	9.9	9.9	19.7	11.4	11.5	27.6	16.8	High	High	High

Level 1 Screening (Environmental)

Alternative Corridor	Environmental Concerns																Summary
	Water Lines	Sewer Lines	Streams	Utility Lines	Fault Lines	Archaeology Sites	Dry & Abandoned Well (Oil/Gas)	Historic Structure	PLS-EPA Site	RCRIS-EPA Site	Cemetery	Church	Waterwell	Relocation Impacts	Prime Farmland Impact	Additional Concerns	
1	3	1	9	2	5	1	1	1	1	0	1	0	0	55	High	Part of Rock Quarry & W. KY St. Pen Farm	Low
1A	3	1	6	2	4	1	2	4	0	0	1	0	0	44	High	Part of W. KY St. Pen Farm	Low
2	9	8	6	2	3	1	2	5	1	2	0	1	1	108	Medium		Medium
2A	10	8	8	2	4	1	1	2	1	2	0	1	1	115	Low		Medium
2B	12	5	6	3	3	1	2	5	1	2	0	1	2	138	Medium		High
2C	14	5	9	3	5	1	2	2	1	2	0	1	2	145	Low		High
3	12	0	11	3	2	1	2	4	0	0	0	0	0	95	High		Medium
3A	10	2	17	3	3	1	1	1	1	0	0	0	0	100	Medium		Low
3B	8	0	7	2	3	1	2	4	0	1	0	0	0	96	High		Medium
3C	6	2	14	2	4	1	1	1	1	1	0	0	0	111	Medium		Low
3D	17	7	6	2	4	2	2	4	0	1	0	0	0	143	High		High
3E	15	9	14	2	4	2	1	1	1	1	0	0	0	158	Medium		High
4	5	4	6	2	3	2	2	5	1	0	0	0	0	48	Medium	Part of W. KY St. Pen. Farm	Medium
4A	6	4	8	2	4	2	1	2	1	0	0	0	0	63	Low	Part of W. KY St. Pen. Farm	Low

Level 1 Screening (Cost)

Alternative Corridor	Length of Corridor (miles)	Cost Per Mile	Maintenance of Traffic Adjustment	Adjusted Cost Per Mile	Subtotal	Interchange	Railroad Crossing	Total*
No Build	9.8	$0		$0	$0			$0
1	9.3	$8,000,000		$8,000,000	$74,400,000	$15,000,000		$89,400,000
1A	9.8	$8,000,000		$8,000,000	$78,400,000	$15,000,000		$93,400,000
2	9.4	$8,000,000	10%	$8,800,000	$82,720,000		$3,000,000	$85,720,000
2A	9.9	$8,000,000	12%	$8,960,000	$88,704,000		$3,000,000	$91,704,000
2B	10.1	$8,000,000	12%	$8,960,000	$90,496,000	$15,000,000	$3,000,000	$108,496,000
2C	10.6	$8,000,000	14%	$9,120,000	$96,672,000	$15,000,000	$3,000,000	$114,672,000
3	13.0	$8,000,000		$8,000,000	$104,000,000	$15,000,000		$119,000,000
3A	14.4	$8,000,000	10%	$8,800,000	$126,720,000	$15,000,000		$141,720,000
3B	10.6	$8,000,000	8%	$8,640,000	$91,584,000		$3,000,000	$94,584,000
3C	12.0	$8,000,000	12%	$8,960,000	$107,520,000		$3,000,000	$110,520,000
3D	10.9	$8,000,000	8%	$8,640,000	$94,176,000		$3,000,000	$97,176,000
3E	12.3	$8,000,000	12%	$8,960,000	$110,208,000		$3,000,000	$113,208,000
4	9.4	$8,000,000		$8,000,000	$75,200,000	$10,000,000		$85,200,000
4A	9.9	$8,000,000	8%	$8,640,000	$85,536,000	$10,000,000		$95,536,000

** Estimate includes costs for all phases of work including preliminary engineering, design, right of way, utilities, and construction.*

Level 1 Screening Assumptions

The assumptions used to arrive at conclusions reached in the Level 1 Screening are presented below:

Cost

Cost per Mile: The cost per mile applied to each corridor was $8,000,000 and is assumed to cover all future project phases.

Maintenance of Traffic Adjustment: A factor was applied to each corridor where access management and maintenance of traffic issues were anticipated due to portions of the corridor following an existing route. A 10% factor was assumed and factored based on the impacted length of the corridor.

Interchange: All corridors terminating at I-24 or the Wendell H. Ford Parkway would require an interchange estimated to cost $15,000,000. Alternatives 4 and 4A would utilize an existing interchange that would require upgrading. The assumed upgrade cost was $10,000,000.

Railroad Crossing: All corridors crossing the Paducah and Louisville Railway were assumed to require a grade separated crossing estimated to cost $3,000,000.

Environmental

Water Lines: All main and branch lines were counted within each corridor.

Archaeology Sites: All known archaeology sites (3) are just outside of the corridor. However, we felt they were still worth noting.

Relocation Impacts: Using aerial photography, the number of homes within each corridor was estimated. Keep in mind that each corridor is 2000' wide; therefore, not all of the homes would need to be relocated.

Prime Farmland Impacts: The impact on prime farmland was estimated in three ranges, with high meaning that a high level of impact is expected. What is and isn't prime farmland was determined from the aerial photography.

Project Goals

Travel Time: The destinations selected for travel time calculations were chosen to address access to both recreational facilities and the National Highway System. These serve to address several of the points highlighted in the first two goals. Travel speed was estimated to be (1) five miles per hour (mph) above the speed limit for the interstates, parkways, and proposed US 641 corridor and (2) the speed limit for all other

facilities. Travel speed was then multiplied by the corridor length to determine travel time.

Level of Access to Industrial Development: A low, medium, or high rating was assigned to each corridor based on how well that corridor appeared to provide access to the proposed Lyon County Industrial Park and other existing industrial facilities.

Effectiveness as an Alternate Truck Route for US 641: Based on a preliminary select link analysis of US 641 using the Statewide Traffic Model, it was determined that more trucks travel to and from the Memphis area than any other direction. Although more trucks go southwest, and therefore benefit from a western corridor, it was felt the corridor could not be too far from the existing US 641 corridor. If the corridor was too far to the west and didn't provide adequate connection to existing US 641, all other trucks would still use the existing corridor because a western corridor would take them too far out of the way. On the other hand, an eastern corridor, may take you too far out of the way for those seeking to go west.

A low, medium, or high rating was assigned to each corridor, with a low meaning the proposed corridor did not serve effectively as an alternate truck route for US 641.

Summary

Travel Time: Travel speed was estimated to be 60 mph along the new corridor. Travel speed was then multiplied by the corridor length to determine travel time.

Interchange Suitability: According to the Green Book (page 811), interchange spacing is recommended to be a minimum of 1 mile for an urban area and 2 miles for a rural area. It is noted where these corridors may not meet these requirements. There is also a question about whether some of the locations would be considered urban or rural.

Project Phasing Suitability: Understanding the entire corridor would likely not be built all at once, logical phasing breaks were evaluated. Ratings of low, medium, or high were assigned with a high rating meaning that the corridor, most likely, could be built in logical segments.

Safety Concerns: At this stage, no safety differences are anticipated between each proposed corridor. However, there could be safety concerns if the southern terminus does not provide access to a parkway or interstate because through trucks would remain on portions of the "local" road system. All corridors providing parkway or interstate access were rated as having low impacts, meaning there are minimal safety concerns.

Number of Intersecting US and State Routes: All state and US routes intersecting the proposed corridor were included in this calculation including the terminus roadways. Corridors providing the most access to the state and US routes were considered good, while corridors providing the least access were considered less desirable.

Environmental Impacts: A general low, medium, or high rating was applied to the environmental summary discussed previously.

Compatibility with Preliminary Project Goals: A general low, medium, or high rating was applied to the project goals summary discussed previously.

Public Comments Support Alternatives: A summary of the public meetings showed that 40 percent of the public meeting attendees preferred a connection to I-24 compared to 29 percent each for the Wendell H. Ford Parkway and US 62. When asked, more specifically, at what location, 16 percent felt it should be near the weigh station along I-24. Another 15 percent felt the southern terminus should be near the I-24/US 62 interchange. Ten percent felt it should be near the existing US 62/US 641 intersection, while another ten percent felt it should be near the Wendell H. Ford Parkway and US 62 interchange. All other options received less than ten percent support. The public meeting attendees felt the two biggest environmental features to avoid were personal properties or homes and prime farmland. Taking these results into consideration, a low, medium, or high rating was applied to each proposed corridor. A high rating meant that the corridor most closely met the publics' preferences.

Recommendations: A rating of low, low-medium, medium, medium-high, or high was assigned to each proposed corridor based on how well it met the established criteria.