U.S. Route 30 Corridor Study
Addendum

From the junction of U.S. Route 30 and Illinois Route 136 to the U.S. Route 30 Spur north of Interstate Route 88 in Whiteside County, Illinois

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Prepared for:

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The U.S. Route 30 Corridor Study was completed in July 2005. This study was conducted to determine a transportation system improvement that will enhance east-west mobility while accommodating projected year 2023 travel demand within the study area located in northwestern Illinois.

The transportation system improvement was evaluated to:

- Improve Regional Mobility. This need addresses providing alternate access to residential areas and job centers around the City of Morrison and minimizing truck traffic through the City of Morrison.
- Accommodate Land Use Planning Goals. This need addresses implementing a transportation system improvement that promotes attainment of local planning priorities.
- Address Local System Deficiencies. This need relates to improving local access, mobility, and safety.

1.2 PURPOSE OF U.S. ROUTE 30 CORRIDOR STUDY ADDENDUM

During the Corridor Study, two issues developed that need to be resolved for better corridor alternatives evaluation in the U.S. Route 30 Corridor National Environmental Policy Act (NEPA) process. These issues include a better understanding of the traffic characteristics within the study area and additional options for the western terminus of the recommended corridor alternatives.

This U.S. Route 30 Corridor Study Addendum presents the results of the traffic characteristics analysis and the western terminus analysis.

1.3 SUMMARY OF ANALYSIS

The U.S. Route 30 Corridor study area is located in Whiteside County, Illinois. U.S. Route 30 (America's first coast to coast highway also known as Federal Aided (FA) Route 309 or Lincoln Highway) is an east-west highway facility that passes through the City of Morrison within the project limits. The City of Fulton is located near the western limits of the study area. Other cities located in the vicinity include: Sterling, Rock Falls, Coleta, Lyndon, Prophetstown, Albany, and Clinton, Iowa. The study limits along U.S. Route 30 extend approximately 19 miles from the junction of U.S. Route 30, Illinois Route 136, and Frog Pond Road near Fulton, Illinois and the Mississippi River to the intersection of U.S. Route 30, Moline Road, and the U.S. Route 30 Spur (Como Road) located approximately 1 mile north of Interstate Route 88. Figure 1 presents the general location map.

1.3.1 Origin-Destination Study

A better understanding of the travel patterns is beneficial in evaluating the potential for vehicles to use the U.S. Route 30 Expressway instead of the existing U.S. Route 30 Corridor. In addition, this information helps with the evaluation of predicting the percent of users of a northern expressway alignment versus a southern expressway alignment. Along with determining the

location of the Expressway (northern or southern alignment), the results of the O-D study helps confirm from a traffic perspective, the ideal location for the Expressway's logical termini (U.S. Route 30/Frog Pond Road/Illinois Route 136 Intersection and U.S. Route 30/Moline Road/Como Road Intersection), and interchange location at Illinois Route 78. An origin-destination (O-D) study was conducted for the U.S. Route 30 Corridor to obtain a better understanding of the travel patterns.

Expressway Feasibility. An expressway is feasible. The results of the O-D study show that a majority of the traffic would use the Expressway, which would reduce the amount of traffic (cars and trucks) on U.S. Route 30.

Expressway Location. Southern corridor alternatives would attract more users than northern corridor alternatives. A southern corridor alternative is defined as having an alignment that extends south of U.S. Route 30.

Expressway Termini. The western terminus, located at the intersection of Frog Pond Road, U.S. Route 30, and Illinois Route 136, is a logical terminus for the Expressway from a traffic perspective. More traffic would access the Expressway through an eastern terminus located at the intersection of U.S. Route 30, Moline Road, and Como Road or the junction of U.S. Route 30 and Emerson Road than an eastern terminus that connects directly to I-88.

Expressway Interchange. An Expressway Interchange with Illinois Route 78 would be beneficial.

1.3.2 Western Terminus Option Analysis

As presented in the *U.S. Route 30 Corridor Study*, July 2005, the recommended alternatives are Corridor Alternative 3 with eastern Terminus Option B (Corridor Alternative 3B), Corridor Alternative 3 with eastern Terminus Option C (Corridor Alternative 3C), and Corridor Alternative 6. These three recommended alternatives included the same western terminus option that followed existing U.S. Route 30 alignment and included railroad bridge crossings with undesirable skews.

Six western terminus options were developed for the recommended alternatives. Three terminus options tie into Corridor Alternatives 3B and Corridor Alternative 3C (Terminus Option 3X, Terminus Option 3Y, and Terminus Option 3Z) and three terminus options tie into Corridor Alternative 6 (Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z). The original western terminus options (as shown in the Corridor Study Report) have been named Terminus Option 3T and Terminus Option 6T for comparison purposes.

Each of the western terminus options are evaluated and compared based on criteria that support the purpose and need. The criteria include Safety, Corridor Utilization Traffic Operations, Environmental Resources Affects, Agriculture, Community Planning/Land Use, ROW/Residences & Commercial Buildings, Public Support, and Cost.

1.4 SUMMARY OF RESULTS AND RECOMMENDATIONS

1.4.1 Origin-Destination Study

An O-D Survey was conducted in October 2005, and a thorough analysis of the survey results was completed. Results of the O-D Study indicate that an expressway is feasible, a southern corridor alternative is preferred over a northern corridor alternative, the eastern and western

termini locations are logical from a traffic perspective, and an interchange with the expressway and Illinois Route 78 would be beneficial.

It is recommended that the results of the O-D study be carried forward into the Phase I/NEPA Evaluation Process. The percentages generated from the O-D study for the amount of traffic that would use a northern corridor alternative or a southern corridor alternative should be used in the next phase of the study. A summary of the additional recommendations includes:

- As development occurs, the original projections and assumptions of the amount of traffic diverted to the U.S. Route 30 Expressway in relation to the future developments should be verified.
- The original assumption of 40 percent of traffic that is diverted from the existing U.S. Route 30 Corridor for all corridor alternatives should be revised to be 54 percent for northern corridor alternatives and 78 percent for southern corridor alternatives. These percentages must be added to the I-88 diversions and development diversions to obtain the total diversions.
- Northern Corridor Alternatives: With the revised U.S. Route 30 Corridor diversion and the original assumed I-88 and development diversions, approximately 61 percent of the projected traffic volumes on the western end would be diverted to the northern corridor alternatives and approximately 75 percent from the eastern end.
- Southern Corridor Alternatives: With the revised U.S. Route 30 Corridor diversion and the original assumed I-88 and development diversions, approximately 67 percent of the projected traffic volumes on the western end would be diverted to the southern corridor alternatives and approximately 86 percent from the eastern end.
- Eastern Terminus: Additional analysis of the eastern terminus is needed to determine the most appropriate location.
- The O-D Study did not include an evaluation of direct at-grade access to the Expressway. It is recommended for additional evaluation to be completed to determine access types along the expressway for all local road crossings.

1.4.2 Western Terminus Option Analysis

A comprehensive analysis of potential western terminus options for the recommended corridor alternatives has been completed. There is a need for a more detailed analysis to assess the potential benefits and affects of various alignments within the preferred corridor alternatives. The more detailed level of analysis involves the development of preliminary design, proposed right-of-way, and environmental evaluation based on the National Environmental Policy Act (NEPA).

Although the highest ranking western terminus options are recommended, all western terminus options are feasible and performed similar in the evaluation. As the corridors are refined in the next phase and criteria are potentially added to the evaluation, the results may more clearly define a preferred alternative. The western terminus options recommended in this Corridor Addendum Report include: Terminus Option 3Y, Terminus Option 3Z, Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z. They should be combined with the recommended corridor alternatives of the *U.S. Route 30 Corridor Study*, July 2005 (Corridor

Alternative 3B, Corridor Alternative 3C, and Corridor Alternative 6) as the starting point for the next phase of the study. Additional recommendations include:

- Traffic Volumes: It is recommended that the projected traffic volumes be updated in the next phase of the project based on updated assumptions and a new design year. The results of the O-D study should be carried forward into the next phase.
- Logical Termini and potential Corridor Extensions to Rock Falls and/or the Iowa border at the Mississippi River: Although the O-D Study results indicate that the termini are logical from a traffic perspective, the O-D study results cannot determine if improvements extending towards Rock Falls or the Iowa border would be beneficial. Preliminary analysis of the future traffic volumes do not indicate a need for additional capacity. Further analysis of the traffic demand should be conducted to establish if improvements to existing U.S. Route 30 or an extension of the Expressway beyond the current eastern terminus location are justified.
- Cemetery Impacts: The Cottonwood Cemetery is located within the 600-foot affect zone of the recommended alternatives. Further corridor refinements should avoid impacts to the cemetery.
- Construction Techniques and Structural Refinements: Construction techniques should be evaluated in greater detail for the corridor alternatives during preliminary design. For example, at the crossing of Terminus Option 3Y or Terminus Option 6Y over the UP Railroad and existing U.S. Route 30; there is a possibility of constructing a shoofly to lower the elevation of the UP Railroad. If the railroad was lowered, the elevation of expressway bridge (Terminus Option 3Y bridge or Terminus Option 6Y bridge) over the UP Railroad could also be lowered. Once detailed hydraulic and geotechnical analysis are completed other construction techniques could be explored.

2.0 ORIGIN – DESTINATION STUDY

2.1 PURPOSE OF ORIGIN-DESTINATION STUDY

Origin-Destination (O-D) studies are used to gather information about trip characteristics such as purpose, length, and/or destination for a specified study area. A license plate survey is one data collection method that identifies the origin and destination of vehicles based on their license plates. This type of study was conducted for the U.S. Route 30 Corridor to help determine travel patterns, such as how many trips are local trips versus through trips, within the study area.

Many factors influence the feasibility of an expressway including environmental concerns, traffic operations, and construction. This O-D Study helps refine the assumptions made in the traffic operations section of the *U.S. Route 30 Corridor Study*, July 2005. The results of the O-D Study are expected to:

- Verify the desired location (north or south of U.S. Route 30) of the Expressway alignment
- Verify that the termini for the Expressway are reasonable
- Verify that Illinois Route 78 is a suitable location for an Expressway interchange

A better understanding of the travel patterns is beneficial in evaluating the potential for vehicles to use the U.S. Route 30 Expressway instead of the existing U.S. Route 30 Corridor. In addition, this information helps with the evaluation of predicting the percent of users of a northern expressway alignment versus a southern expressway alignment. A northern or southern expressway alignment is defined as having an alignment that extends for any length either north or south of U.S. Route 30. Along with determining the location of the Expressway (northern or southern alignment), the results of the O-D study helps confirm the ideal location for the Expressway's logical termini and interchange location at Illinois Route 78.

2.2 LOCATION

The U.S. Route 30 O-D study area is located in Whiteside County, Illinois and follows U.S. Route 30 (Lincoln Highway) from the Sterling/Rock Falls area to the Fulton/Clinton area. Figure 1 presents the study area location map. The study area boundary is the same as in the *U.S. Route 30 Corridor Study*, July 2005. The license plate survey area includes the location of all the license plate survey checkpoints. Since some survey checkpoints are located outside the study area, the survey area extends beyond the limits of the study area.

2.3 O-D STUDY METHODOLOGY

The O-D study methodology included the following steps:

- Conduct License Plate Survey
- Evaluate Travel Characteristics
- Review Existing and Future Land Use
- Review Existing and Projected Traffic Volumes

- Review of Previous Traffic Projections
- Apply Travel Characteristics, Traffic Volumes, and Land Use to U.S. Route 30 Corridor Study

2.3.1 Conduct License Plate Survey

The license plate survey was conducted on October 5, 2005 from 7:00 AM to 6:00 PM. There were 34 survey locations throughout the study area. These locations were identified as primary entrances and exits along and near the U.S. Route 30 Corridor. The survey locations were chosen based on an evaluation of existing travel patterns, traffic volumes, and land use in the vicinity of the study area. A map of these locations is shown in Figure 2. The data collection occurred in 15-minute intervals and was recorded onto data sheets; except one location where it was recorded on cassette tape. The last three digits of the license plate and the classification (car or truck) were documented for each vehicle that passed the survey location. A database of this information was created and the origin and destination of the vehicles traveling through the study area were matched.

In addition to the license plate survey, traffic volumes were collected using automatic tube counters at each of the survey locations. The data from the tube counts were collected over a 24 hour period from October 4 to October 5, 2005. Table 1 presents a sample of the tube count results during the same 11-hour period as the O-D survey. Vehicles entering/ending their trips at the eastern end of the study area use Emerson Road, Como Road, or U.S. Route 30 east of Illinois Route 2. The results of the tube counts show that a total of 9,532 vehicles entered/exited the study area on the eastern end. The highest number of vehicles used U.S. Route 30, east of Illinois Route 2 (4,275 total vehicles). Vehicles entering/exiting their trips at the western end of the study area us Illinois Route 136 or U.S. Route 30 east of Illinois Route 84. According to the tube counts, a total of 6,434 vehicles entered/exited on the western end. Based on the tube counts, the traffic splits at the junction of U.S. Route 30 and Illinois Route 136 are approximately 60 percent and 40 percent, respectively. All details of the license plate survey can be found in *The U.S. Route 30 Origin-Destination Survey Report, Metro Transportation Group, Inc.*, August 10, 2006.

Table 1: 11-hour Counts Conducted on October 5, 2006

Location	No. of Autos	No. of Trucks	Total Vehicles
IL 136, East of IL 84	2,292	213	2,505
US 30, East of IL 84	2,611	1,318	3,929
Emerson Road, East of US 30	2,293	398	2,691
Como Road, South of US 30	1,153	1,413	2,566
US 30, East of IL 2	3,122	1,153	4,275

2.3.2 Evaluate Travel Characteristics

A matrix of trip origins and destinations during the survey period is presented in Table 2. A total of 9,033 trips were completed during the license plate survey. Of the total trips, 4,501 occurred within a one-hour time constraint. This time constraint is critical because it allows for travel time through the study area and any quick stops for gas or food. It is assumed that these convenience stops do not need to be made in the City of Morrison and may be made elsewhere along the trip. The O-D study focuses on those trips completed within the one-hour time constraint, as these are potential U.S. Route 30 Expressway trips. It is assumed that the trips lasting longer than an hour spent time in the City of Morrison and would continue to use existing U.S. Route 30. A matrix of the O-D trips that were completed during any one-hour time period is presented in Table 3.

The trips made within the survey area can be classified by the relationship of their origin and destination. The origin and destination can either be defined as inside (internal) or outside (external) of the survey area. Table 4 identifies the internal and external survey locations. The four trip combinations that can arise from this relationship include: internal-internal (local trips), external-external (through trips), internal-external (combination trips), and external-internal (combination trips). These relationships assist in determining which trips would potentially use the proposed U.S. Route 30 Expressway and which would continue to use the existing U.S. Route 30. Local trips are those trips considered to be generated/terminated primarily within the study area that would generally be completed by a local resident or business consumer. Local roads such as Garden Plain Road and Lyndon Road are considered internal roads. Non-local trips are those trips generated/terminated outside the study area. Roads connecting to other municipalities (such as Fulton; Clinton, Iowa; Rock Falls; or Sterling) or the interstate are considered external roads. For example, Illinois Route 136 and Illinois Route 78 (south) are considered external roads. An assumption can be made that local trips would continue to use the existing U.S. Route 30 and through trips would use the proposed Expressway. An assumption can be made that local trips would continue to use the existing U.S. Route 30 and through trips would use the proposed Expressway. Those trips that are a combination may or may not use the proposed Expressway; depending on their trip and location of Expressway (northern alignment versus southern alignment).

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Table 2: Total Vehicle Trips During Survey Period

7:00 AM - 6:00 PM

			DESTINATION																																	
	Survey Location		IL 84 @ IL 136		IL 136 @ IL 84			IL 84 @ US 30		US 30 @ IL 84			IL 78 (N)		Garden Plain Rd		IL 78 (S)		US 30		Lyndon Road (N)		Lyndon Road (S)		US 30 @ IL 2	Como/I-88 Interchange		Emerson Rd @ IL 2		Emerson Rd @ US 30		IL 2 @ US 30	
			SB Left	NB Right	WB Right	WB Thru	WB Left	SB Left	NB Right	WB Right	WB Thru	WB Left	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	NB	SB	EB	NB	SB	WB	EB	EB	WB	SB	NB
		NODE	**1**	**3**	**4**	**5**	**6**	**7**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**
ORIGIN	IL 84 @ IL 136 SB Left	**1**											15 0% trucks			21 0% trucks	75 3% trucks		128 7% trucks		11 9% trucks			8 0% trucks	69 3% trucks		34 18% trucks		59 5% trucks	49 2% trucks		37 3% trucks	48 2 % trucks
	IL 136 @ IL 84 EB Thru	**2**											56 2% trucks			55 0% trucks	198 0% trucks		392 2% trucks		36 0% trucks			18 0% trucks	206 1% trucks		89 2% trucks		162 1% trucks	177 0% trucks		105 1% trucks	118 1% trucks
	IL 84 @ IL 136 NB Right	**3**											5 0% trucks			6 0% trucks	17 0% trucks		20 0% trucks		3 0% trucks			1 0% trucks	19 0% trucks		3 0% trucks		15 0% trucks	11 0% trucks		13 0% trucks	12 0% trucks
	IL 136 @ IL 84 WB Right	**4**												25 0% trucks																			
	IL 136 @ IL 84 WB Left	**6**						4 0% trucks																									
	IL 136 @ IL 84 SB Left	**7**											14 7% trucks			5 20% trucks	27 4% trucks		54 26% trucks		5 20% trucks			4 25% trucks	29 21% trucks		28 25% trucks		19 0% trucks	20 0% trucks		21 5% trucks	18 6% trucks
	US 30 @ IL 84 EB Thru	**8**											61 11% trucks			60 5% trucks	246 3% trucks		582 20% trucks		48 10% trucks			33 9% trucks	248 13% trucks		204 43% trucks		194 6% trucks	178 2% trucks		132 12% trucks	128 8% trucks
	IL 84 @ US 30 NB Right	**9**											2 0% trucks			4 0% trucks	15 0% trucks		26 19% trucks		4 25% trucks			4 0% trucks	12 8% trucks		6 0% trucks		15 0% trucks	10 0% trucks		7 0% trucks	9 0% trucks
	US 30 @ IL 84 WB Right	**10**		5 0% trucks																													
	US 30 @ IL 84 WB Left	**12**													1 100% trucks																		
	IL 78 (N) NB	**13**	20 5% trucks																									87 2% trucks					
	IL 78 (N) SB	**14**			20 0% trucks	66 0% trucks	5 0% trucks			5 20% trucks	85 5% trucks	5 0% trucks				20 0% trucks	129 0% trucks		160 6% trucks		38 3% trucks			14 7% trucks	117 3% trucks		53 11% trucks		110 6% trucks	79 1% trucks		75 3% trucks	76 3% trucks
	Garden Plain Rd EB	**15**			24 0% trucks	59 0% trucks	2 0% trucks			5 0% trucks	85 4% trucks	6 0% trucks	37 0% trucks				157 1% trucks		262 3% trucks		27 0% trucks			28 4% trucks	122 4% trucks		56 5% trucks	99 1% trucks	107 1% trucks	108 0% trucks		73 1% trucks	76 1% trucks
	Garden Plain Rd WB	**16**							9 0% trucks																								
	IL 78 (S) SB	**17**																					65 5% trucks			123 6% trucks							
	IL 78 (S) NB	**18**			50 2% trucks	147 1% trucks	6 0% trucks			15 0% trucks	207 7% trucks	6 0% trucks	83 2% trucks			96 3% trucks			537 4% trucks		60 0% trucks			54 2% trucks	256 5% trucks		123 11% trucks		220 2% trucks	201 1% trucks		157 3% trucks	183 4% trucks
	US 30 EB	**19**																			137 7% trucks			101 5% trucks	634 10 trucks		370 31% trucks		546 3% trucks	619 2% trucks		338 6% trucks	364 5% trucks
	US 30 WB	**20**			104 10% trucks	399 2% trucks	12 0% trucks			36 14% trucks	655 22% trucks	14 50% trucks	157 6% trucks			213 3% trucks	686 2% trucks																	
	Lyndon Rd (N) NB	**21**												40 5% trucks															71 1% trucks			54 6% trucks	
	Lyndon Rd (N) SB	**22**			12 0% trucks	37 3% trucks	2 0% trucks			6 17% trucks	52 6% trucks	2 50% trucks	24 8% trucks			24 0% trucks	72 1% trucks			147 3% trucks			11 9% trucks	67 3% trucks		28 14% trucks		68 1% trucks	56 5% trucks		42 7% trucks	46 2% trucks
	Lyndon Rd (S) NB	**23**			10 0% trucks	26 0% trucks	1 0% trucks			2 50% trucks	46 22% trucks	0 0% trucks	27 15% trucks			18 6% trucks	69 1% trucks		121 7% trucks	11 0% trucks				55 11% trucks		14 0% trucks		55 2% trucks	53 0% trucks		37 5% trucks	37 0% trucks
	Lyndon Rd (S) SB	**24**																38 3% trucks							22 36% trucks							
	US 30 @ IL 2 WB	**26**			59 9% trucks	181 4% trucks	5 0% trucks			18 17% trucks	274 13% trucks	3 33% trucks	94 7% trucks			99 6% trucks	305 2% trucks	216 4% trucks		607 9% trucks	73 3% trucks			43 2% trucks			205 17% trucks	286 7% trucks			210 2% trucks		477 11% trucks
	Como/I-88 Interchange NB	**27**			27 26% trucks	86 6% trucks	5 0% trucks			9 22% trucks	244 48% trucks	3 100% trucks	40 15% trucks			43 9% trucks	122 6% trucks	86 8% trucks		366 37% trucks	26 4% trucks			28 11% trucks	214 21% trucks			147 12% trucks	132 14% trucks	96 8% trucks	93 9% trucks		229 14% trucks
	Como/I-88 Interchange SB	**28**																95 4% trucks					18 22% trucks										
	Emerson Rd @ IL 2 WB	**29**			54 4% trucks	183 2% trucks	6 0% trucks			13 0% trucks	208 8% trucks	5 0% trucks	69 3% trucks	100 6% trucks		77 1% trucks	279 2% trucks		532 4% trucks	57 5% trucks	58 5% trucks			48 4% trucks	291 7% trucks		123 8% trucks					483 4% trucks		
	Emerson Rd @ IL 2 EB	**30**																							335 8% trucks		173 9% trucks					378 10% trucks	
	Emerson Rd @ US 30 EB	**31**																							235 2% trucks		110 6% trucks		519 2% trucks			184 3% trucks	
	Emerson Rd @ US 30 WB	**32**			51 2% trucks	214 1% trucks	8 0% trucks			16 0% trucks	241 6% trucks	7 29% trucks	76 1% trucks			95 5% trucks	283 1% trucks	207 2% trucks		655 3% trucks	66 3% trucks			50 12% trucks	254 6% trucks		121 8% trucks						214 3% trucks
	IL 2 @ US 30 SB	**33**			27 11% trucks	107 3% trucks	5 0% trucks			7 29% trucks	153 10% trucks	3 0% trucks	64 6% trucks			65 3% trucks	213 3% trucks			316 6% trucks	35 3% trucks			33 9% trucks	439 12% trucks		205 12% trucks			158 3% trucks			
	IL 2 @ US 30 NB	**34**			37 5% trucks	131 2% trucks	4 0% trucks			11 0% trucks	150 8% trucks	4 0% trucks	74 4% trucks			70 1% trucks	225 2% trucks			333 5% trucks	42 0% trucks	50 2% trucks		45 7% trucks			152 14% trucks	348 6% trucks			191 3% trucks			
	IL 2 @ US 30 NB to Emerson Rd @ IL 2 WB	**34 to 29**			12 0% trucks	61 2% trucks	2 0% trucks			1 0% trucks	58 0% trucks	1 0% trucks	26 0% trucks			24 0% trucks	104 2% trucks			154 2% trucks	16 0% trucks			20 0% trucks							98 3% trucks			

Note: Reference Figure 2 for Nodes
Note: Origin "34 to 29" includes trips northbound on IL 2 through checkpoint 34, then turning left to Emerson Road and through checkpoint 29, then to the destination checkpoint.
Note: Data represents the total traffic for each O-D pair throughout the study period.
Note: Table values cannot be added together to get total number of trips because of possible double counting

TOTAL TRAFFIC
% Trucks

Source: *U.S. Route 30 Origin-Destination Survey Report* , April 5, 2006

Table 3: Vehicle Trips within One-Hour Time Constraint

7:00 AM - 6:00 PM

			DESTINATION																																			
	Survey Locations		IL 84 @ IL 136		IL 136 @ IL 84			IL 84 @ US 30		US 30 @ IL 84			IL 78 (N)		Garden Plain Rd		IL 78 (S)		US 30		Lyndon Road (N)		Lyndon Road (S)		US 30 @ IL 2	Como/I-88 Interchange		Emerson Rd @ IL 2		Emerson Rd @ US 30		IL 2 @ US 30							
			SB Left	NB Right	WB Right	WB Thru	WB Left	SB Left	NB Right	WB Right	WB Thru	WB Left	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	NB	SB	EB	NB	SB	WB	EB	EB	WB	SB	NB						
		NODE	**1**	**3**	**4**	**5**	**6**	**7**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**						
ORIGIN	IL 84 @ IL 136 SB Left	**1**											3 0% trucks			2 0% trucks	34 6% trucks		73 11% trucks		3 0% trucks			3 0% trucks	24 4% trucks		14 21% trucks		23 4% trucks	19 0% trucks		6 0% trucks	13 8% trucks						
	IL 136 @ IL 84 EB Thru	**2**											20 0% trucks			21 0% trucks	88 0% trucks		272 3% trucks		12 0% trucks			7 0% trucks	98 1% trucks		44 5% trucks		76 0% trucks	121 0% trucks		25 0% trucks	42 2% trucks						
	IL 84 @ IL 136 NB Right	**3**											2 0% trucks			2 0% trucks	6 0% trucks		15 0% trucks		3 0% trucks			1 0% trucks	5 0% trucks		1 0% trucks		5 0% trucks	7 0% trucks		4 0% trucks	3 0% trucks						
	IL 136 @ IL 84 WB Right	**4**												3 0% trucks																									
	IL 136 @ IL 84 WB Left	**6**						2 0% trucks																															
	IL 136 @ IL 84 SB Left	**7**											3 0% trucks			3 0% trucks	18 6% trucks		40 33% trucks		3 33% trucks			2 0% trucks	18 28% trucks		17 29% trucks		8 0% trucks	10 0% trucks		7 0% trucks	7 0% trucks						
	US 30 @ IL 84 EB Thru	**8**											25 12% trucks			17 0% trucks	122 3% trucks		469 24% trucks		19 11% trucks			17 6% trucks	148 14% trucks		158 51% trucks		96 5% trucks	104 3% trucks		42 12% trucks	56 5% trucks						
	IL 84 @ US 30 NB Right	**9**											0 0% trucks			3 0% trucks	6 0% trucks		18 28% trucks		3 33% trucks			3 0% trucks	5 20% trucks		2 0% trucks		9 0% trucks	6 0% trucks		3 0% trucks	3 0% trucks						
	US 30 @ IL 84 WB Right	**10**		2 0% trucks																																		
	US 30 @ IL 84 WB Left	**12**													1 100% trucks																							
	IL 78 (N) NB	**13**	5 20% trucks																										29 0% trucks									
	IL 78 (N) SB	**14**			4 0% trucks	22 0% trucks	1 0% trucks			3 0% trucks	25 0% trucks	0 0% trucks				6 0% trucks	54 0% trucks		59 5% trucks		12 0% trucks			6 0% trucks	31 0% trucks		11 0% trucks		30 3% trucks	28 0% trucks		23 0% trucks	16 0% trucks						
	Garden Plain Rd EB	**15**			7 0% trucks	21 0% trucks	0 0% trucks			0 0% trucks	29 0% trucks	1 0% trucks	14 0% trucks				94 1% trucks		181 4% trucks		13 0% trucks			11 9% trucks	51 2% trucks		19 5% trucks	21 0% trucks	45 0% trucks	57 0% trucks		22 5% trucks	15 0% trucks						
	Garden Plain Rd WB	**16**							1 0% trucks																													
	IL 78 (S) SB	**17**																					23 4% trucks			34 0% trucks												
	IL 78 (S) NB	**18**			26 0% trucks	71 1% trucks	2 0% trucks			5 0% trucks	107 9% trucks	0 0% trucks	18 6% trucks			44 5% trucks			375 3% trucks		28 0% trucks			18 0% trucks	96 4% trucks		39 13% trucks		83 1% trucks	85 0% trucks		48 4% trucks	47 6% trucks						
	US 30 EB	**19**																			90 6% trucks			56 2% trucks	418 11% trucks		268 38% trucks		364 3% trucks	526 2% trucks		129 5% trucks	154 7% trucks						
	US 30 WB	**20**			69 15% trucks	298 3% trucks	9 0% trucks			24 21% trucks	537 26% trucks	8 75% trucks	69 3% trucks			149 3% trucks	472 2% trucks																						
	Lyndon Rd (N) NB	**21**												19 5% trucks															17 0% trucks			13 8% trucks							
	Lyndon Rd (N) SB	**22**			4 0% trucks	13 8% trucks	0 0% trucks			2 50% trucks	24 0% trucks	2 50% trucks	9 11% trucks			9 0% trucks	40 3% trucks			100 3% trucks				4 0% trucks	27 4% trucks		10 10% trucks		27 0% trucks	29 7% trucks		13 8% trucks	16 0% trucks						
	Lyndon Rd (S) NB	**23**			3 0% trucks	9 0% trucks	0 0% trucks			1 100% trucks	13 15% trucks	0 0% trucks	7 29% trucks			5 0% trucks	37 0% trucks			82 1% trucks	5 0% trucks				20 15% trucks		5 0% trucks		19 0% trucks	24 0% trucks		9 11% trucks	8 0% trucks						
	Lyndon Rd (S) SB	**24**																	13 0% trucks							7 14% trucks												
	US 30 @ IL 2 WB	**26**			37 14% trucks	77 4% trucks	2 0% trucks			10 20% trucks	153 20% trucks	1 0% trucks	31 7% trucks			36 11% trucks	112 0% trucks	52 6% trucks		391 10% trucks	28 4% trucks			14 0% trucks			113 13% trucks	123 12% trucks			72 1% trucks		357 13% trucks						
	Como/I-88 Interchange NB	**27**			11 45% trucks	34 12% trucks	3 0% trucks			6 33% trucks	201 56% trucks	2 100% trucks	10 10% trucks			7 14% trucks	43 7% trucks	26 15% trucks		283 45% trucks	7 0% trucks			5 0% trucks	131 23% trucks			86 13% trucks	41 15% trucks	21 14% trucks	28 11% trucks		185 13% trucks						
	Como/I-88 Interchange SB	**28**																27 4% trucks					7 14% trucks															
	Emerson Rd @ IL 2 WB	**29**			31 3% trucks	87 2% trucks	0 0% trucks			3 0% trucks	105 5% trucks	2 0% trucks	23 0% trucks	32 3% trucks		35 3% trucks	127 2% trucks			364 3% trucks	33 3% trucks	19 5% trucks		19 0% trucks	96 5% trucks		49 10% trucks					402 4% trucks							
	Emerson Rd @ IL 2 EB	**30**																							148 8% trucks		89 10% trucks					244 10% trucks							
	Emerson Rd @ US 30 EB	**31**																							82 2% trucks		34 3% trucks		444 2% trucks			65 5% trucks							
	Emerson Rd @ US 30 WB	**32**			23 0% trucks	131 2% trucks	5 0% trucks			7 0% trucks	137 3% trucks	6 17% trucks	25 0% trucks			54 9% trucks	146 1% trucks	92 1% trucks		544 2% trucks	34 3% trucks			18 17% trucks	80 8% trucks		41 12% trucks						69 3% trucks						
	IL 2 @ US 30 SB	**33**			13 15% trucks	35 6% trucks	1 0% trucks			1 0% trucks	55 7% trucks	1 0% trucks	19 0% trucks			17 0% trucks	81 2% trucks			128 5% trucks	13 0% trucks			10 0% trucks	340 13% trucks		157 11% trucks			39 3% trucks							
	IL 2 @ US 30 NB	**34**			16 13% trucks	26 4% trucks	2 0% trucks			4 0% trucks	42 0% trucks	0 0% trucks	19 0% trucks			23 0% trucks	68 0% trucks			127 4% trucks	11 0% trucks	10 0% trucks		13 0% trucks			47 11% trucks	239 8% trucks			67 3% trucks							
	IL 2 @ US 30 NB to Emerson Rd @ IL 2 WB	**34 to 29**			5 0% trucks	7 0% trucks	0 0% trucks			0 0% trucks	12 0% trucks	0 0% trucks	4 0% trucks			4 0% trucks	14 0% trucks			43 2% trucks	5 0% trucks			4 0% trucks							27 7% trucks							

Note: Reference Figure 2 for Nodes
Note: Origin "34 to 29" includes trips northbound on IL 2 through checkpoint 34, then turning left to Emerson Road and through checkpoint 29, then to the destination checkpoint.
Note: Data represents the total traffic for each O-D pair occurring during any on-hour time period.
Note: Table values cannot be added together to get total number of trips because of possible double counting

TOTAL TRAFFIC
% Trucks

Source: *U.S. Route 30 Origin-Destination Survey Report* , April 5, 2006

Table 4: Internal and External Origin-Destination Locations

Internal Origin-Destination Location		External Origin-Destination Location	
Survey Location	**Checkpoints**	**Survey Location**	**Checkpoints**
Illinois Route 78 (North)	13, 14	Illinois Route 136/Illinois Route 84	1, 2, 3, 4, 5, 6
Garden Plain Road	15, 16	U.S. Route 30/Illinois Route 84	7, 8, 9, 10, 11, 12
Lyndon Road (North of U.S. Route 30)	21, 22	Illinois Route 78 (South)	17, 18
Lyndon Road (South of U.S. Route 30)	23, 24	U.S. Route 30, east of Illinois Route 2	25, 26
		U.S. Route 30, Moline Road, and Como Road	27, 28
		Emerson Road	31, 32
		Illinois Route 2, North of U.S. Route 30	33, 34

The license plate survey resulted in a total of 4,501 trips completed within any one-hour time period between 7 AM and 6 PM. Of the total one-hour trips, 1,877 (42 percent) were through trips, 434 (10 percent) were local trips, and 2,190 (48 percent) were combination trips. Figure 3 shows the total vehicle trip types at the survey locations. The through trips would likely be candidates to use the U.S. Route 30 Expressway. The local trips would likely continue to use the existing U.S. Route 30. For instance, trips that occur from Garden Plain Road to Lyndon Road most likely would not use the Expressway. In addition, the combination trips may use at least part of the Expressway, depending on where they initiated or ended and depending on a northern Expressway alignment or southern Expressway alignment. For example, trips that initiate or end at Illinois Route 78 (north) traveling to Clinton, Iowa may use a northern Expressway alignment starting at Illinois Route 78.

Travel characteristics were also evaluated based on vehicle classification. Table 5 presents the automobiles, trucks, and total vehicle trips based on trip type during the one-hour time constraint. There were a total of 4,104 automobile trips completed within the one-hour time constraint. Of the total automobile trips, 1,566 (38 percent) were through trips, 425 (10 percent) were local trips, and 2,113 (52 percent) were combination trips. The automobile trip types at the survey locations are shown in Figure 4.

Within the one-hour time constraint there were 397 truck trips completed. Through trips accounted for 78 percent (311 trips) of the total truck trips, 2 percent (9 trips) were local trips, and 20 percent (77 trips) were combination trips. Figure 5 presents the truck trip types at the survey locations.

Table 5: Time Constrained Trips by Type

Trip Type	Autos		Trucks		Total Vehicles	
	Number	Percent	Number	Percent	Number	Percent
Through	1,566	38%	311	78%	1,877	42%
Local	425	10%	9	2%	434	10%
Combination						
North to/from East	326	8%	9	2%	335	8%
North to/from West	186	5%	10	3%	196	4%
South to/from East	973	24%	36	9%	1,009	22%
South to/from West	628	15%	22	6%	650	14%
TOTAL	4,104	100%	397	100%	4,501	100%

All through trips (1,877 trips, 42 percent of total trips) are assumed to take the U.S. Route 30 Expressway regardless of its location (northern alignment versus southern alignment) and a percentage of the combination trips would take the Expressway based on its location. Of the total vehicle trips within the one-hour time constraint, 531 combination trips (12 percent) would use a northern corridor alternative and 1,659 combination trips (36 percent) would use a southern corridor alternative.

Of the total vehicle trips that would use a northern corridor alternative, 196 combination trips (4 percent) initiate/end near the western limits of the survey area and 335 combination trips (8 percent) initiate/end near the eastern limits of the survey area. Of the total vehicle trips that would use a southern corridor alternative, 650 combination trips (14 percent) initiate/end near the western limits of the survey area and 1,009 (22 percent) initiate/end near the eastern limits of the survey area. All details of the license plate survey can be found in *The U.S. Route 30 Origin-Destination Survey Report, Metro Transportation Group, Inc.*, August 8, 2006.

2.3.3 Review Existing and Future Land Use

Within the study area the land use is primarily agricultural with sporadic uses of residential and industrial. The non-agricultural land uses are located along U.S. Route 30 within the City of Morrison and in close proximity to the surrounding cities.

Within the City of Morrison, the primary land use is residential. Industrial and small businesses are located throughout the city limits, in addition to several schools (elementary, middle school, high school, and a community college). The primary businesses located in the vicinity of the study area include industrial, health care, and social services. Recent development in the study area includes the Morrison Industrial Park, located southeast of the City of Morrison and the Wal-Mart Distribution Center, near the intersection of U.S. Route 30/Moline Road/U.S. Route 30 Spur.

The Sterling/Rock Falls area is approximately 16 miles east of the City of Morrison and the Fulton/Clinton, Iowa area is approximately 13 miles west of the City of Morrison. Residents of the City of Morrison must travel to these or other surrounding cities for several of their needs.

Table 6 presents examples of the different land uses within the City of Morrison and the surrounding cities.

Table 6: Destinations in the Vicinity of the Study Area

City	Destination
Morrison	Industrial Park
	Local Retailers
	Schools
	Recreation (Morrison-Rockwood State Park, Morrison Country Club)
	Wal-Mart Distribution Center*
	Hospital – 63 beds (Morrison Community Hospital)
Sterling / Rock Falls	Industrial/Manufacturing (including J.P. Agriculture, Frante Manufacturing)
	Large Retailers (Menards, Kroger/Eagle Food Center)
	Northland Mall
	Hospital – 125 beds (CGH Medical Center)
	Entertainment (Movie Theater, Restaurants)
Fulton / Clinton, Iowa	Industrial (Drives, Inc., Agri King)
	Large Retailers (Wal-Mart, Kohl's, Target, Jewel Osco)
	Recreation (Eagle Point Park, Clinton Country Club)
	Hospital – 349 beds (Mercy Medical Center)
	Entertainment (Riverboat Casino, Restaurants, Movie Theaters)

** The Wal-Mart Distribution Center was not in operation at the time of the study, but has since been opened.*

2.3.4 Review Existing and Projected Traffic Volumes

2.3.4.1 Existing Volumes (2003)

The existing 2003 average daily traffic (ADT) volumes for the U.S. Route 30 were obtained. The ADT volumes along U.S. Route 30 are shown to be 6,500 (east of Frog Pond Rd.) and 7,400 (west of Emerson Rd.). The highest volume of traffic travels along U.S. Route 30 through the center of the City of Morrison. Along U.S. Route 30, there is more traffic east of the City than west of the City.

Peak periods of travel were observed during the license plate survey. Overall, the peak period within the survey area in the morning is between the hours of 7:00 AM and 9:00 AM. The afternoon peak period is between the hours of 3:00 PM and 5:00 PM.

2.3.4.2 Projected Volumes (2023)

Throughout the study area, the ADT volumes vary along U.S. Route 30. The projected traffic volumes along U.S. Route 30 for the 2023 No-Action Alternative were projected assuming a

1 percent per year growth rate. The 2023 No-Action ADT are shown to be 12,000 (western end) and 12,250 (eastern end). Figure 6 presents the 2003 Existing ADT volumes and the 2023 No-Action ADT volumes along U.S. Route 30.

2.3.5 Review of Previous Traffic Projections

The amount of traffic diverted to the U.S. Route 30 Expressway, as calculated for the *U.S. Route 30 Corridor Proposed Expressway Traffic Projections Memo*, December 23, 2003, was based on the following assumptions:

- a one percent per year growth rate was assumed for background traffic on U.S. Route 30
- the Expressway would divert the same amount of traffic (40 percent) from U.S. Route 30 regardless of corridor alternative
- the Expressway would divert 0.5 percent of traffic from I-88
- the Expressway would include 22 percent of the traffic generated from Wal-Mart and industrial developments in the City of Morrison and Rochelle, Illinois

Based on these assumptions, the amount of traffic that would travel along the Expressway varies between 6,815 vehicles per day west of Illinois Route 78 and 8,140 vehicles per day east of Illinois Route 78. The traffic break-down is summarized in Table 7.

Table 7: Projected (2023) Traffic on U.S. Route 30 Expressway*

(All Corridor Alternatives)

Source	Percent Diverted	West of IL 78	East of IL 78
Diverted from U.S. Route 30	40 %	3,160	3,600
Diverted from I-88	0.5 %	120	120
Wal-Mart	5 %	420	420
Rochelle	17 %	470	470
Industrial Development	40 %	2,645	3,530
Total	**-**	**6,815**	**8,140**

*Taken from *U.S. Route 30 Corridor Study*, July 2005

Of the estimated traffic volumes along the Expressway (Table 7), the assumption that 40 percent of the traffic that would be diverted to the Expressway from the existing U.S. Route 30 Corridor has been reevaluated based on the results of the O-D study. The assumption of traffic volumes that would be diverted from I-88 and other developments are assumed to be the same as the previous study.

2.3.6 Apply Travel Characteristics, Traffic Volumes, and Land Use to the U.S. Route 30 Corridor Study

Based on the travel characteristics, land use, and existing/projected traffic volumes an evaluation was conducted to determine the amount of traffic expected to be diverted off the existing U.S.

Route 30 Corridor and ultimately the traffic volumes for the Expressway in 2023. The traffic volumes were determined for the existing U.S. Route 30 Corridor, a northern corridor alternative, and a southern corridor alternative.

The land use evaluation supports the travel characteristics (majority of trips, 90 percent, are either external trips or combination trips) developed from the results of the license plate survey. Based on the travel characteristics, the following assumptions were made in determining the trips:

- through traffic would use the expressway
- local traffic would not use the expressway
- combination trips may or may not use the expressway based on origin/destination and expressway location (northern corridor alignment versus southern corridor alignment)

As a result of the license plate survey and land use evaluation, it was determined that the southern corridor alternatives would be more attractive than the northern corridor alternatives; thus diverting more traffic off of the existing U.S. Route 30 Corridor. The percent of traffic diverted off of the existing U.S. Route 30 Corridor to the Expressway was developed based on the percent of trips that traveled through the corridor (External Trips) and those that started or ended at an external location (Combination Trips). The traffic projections calculated based on the O-D study use the same assumptions as the previously projected volumes for the amount of traffic diverted from I-88 and from new developments, such as Wal-Mart and other industrial sites. Based on the results of the O-D study, it is not possible to predict induced traffic from the Expressway.

Table 8: Projected Traffic on U.S. Route 30 Expressway

Source	Northern Corridor Alternatives		Southern Corridor Alternatives	
	West of IL 78	East of IL 78	West of IL 78	East of IL 78
Diverted from U.S. Route 30	3,635	4,500	4,425	5,760
Diverted from I-88	120	120	120	120
Wal-Mart	420	420	420	420
Rochelle	470	470	470	470
Industrial Development	2,645	3,530	2,645	3,530
Total	**7,290**	**9,040**	**8,080**	**10,300**

Based on these assumptions, a northern corridor alternative is projected to carry between 7,290 vehicles (western end) and 9,040 vehicles (eastern end). Between 8,080 vehicles (western end) and 10,300 vehicles (eastern end) are projected to travel along a southern corridor alternative. A northern corridor alternative would leave between 3,210 vehicles and 11,810 vehicles along U.S. Route 30. Between 1,950 vehicles and 11,020 vehicles would remain along U.S. Route 30 as a result of a southern corridor alternative. Table 9 presents a sampling of the ADT volumes along

U.S. Route 30 for the No-Action Alternative, northern corridor alternative, and southern corridor alternative. Figure 7 shows the projected ADT volumes along U.S. Route 30, throughout the study area.

Table 9: 2023 ADT Projections

Roadway	East of Frog Pond Rd.	Center (between IL 78S and IL 78N)	West of Emerson Rd.
U.S. Route 30			
No-Action Alternative	12,000	18,450	12,250
With Northern Corridor Alternative	4,710	11,160	3,210
With Southern Corridor Alternative	3,920	10,370	1,950
Northern Expressway	7,290	-	9,040
Southern Expressway	8,080	-	10,300

* May be compared to Table 17 in the *U.S. Route 30 Corridor Study*, July 2005

The projected 2023 ADT volumes along existing U.S. Route 30 are lowest with the implementation of a southern corridor alternative. A southern corridor alternative attracts more automobile and truck traffic than a northern corridor alternative.

Along U.S. Route 30, the projected (2023) traffic is lower on the western end than on the eastern end. More traffic would be diverted from the existing U.S. Route 30 Corridor on the eastern end than on the western end. As a result, the U.S. Route 30 Expressway would carry more traffic on its eastern end than on its western end.

The peak periods of travel through the study area occurred from 7:00 AM to 9:00 AM and 3:00 PM to 5:00 PM. These time periods likely represent commuter travel through the study area. Many of the residents of the City of Morrison travel outside of the study area for some activities. Within the study area, the land use is primarily residential and agricultural. While there are some small businesses located within the City of Morrison, most of the commercial and industrial land use is located in communities in close proximity to the City of Morrison. The surrounding cities of Sterling, Rock Falls, Fulton, and Clinton, Iowa provide more opportunities for jobs, healthcare, entertainment, and recreation.

2.3.6.1 Western Terminus

The western terminus is located at the intersection of U.S. Route 30 and Illinois Route 136. As described in the *U.S. Route 30 Corridor Study*, July 2005, the traffic volumes at the western terminus are split relatively evenly between U.S. Route 30 (55 percent of the volume) and Illinois Route 136 (approximately 45 percent of the volume). This distribution is similar to the data collected during the OD Study. Based on the time constraint analysis, a total of 1,153 trips (42 percent) initiated/ended along Illinois 136 and approximately 1,570 trips (58 percent) initiated/ended along U.S. Route 30 west of the split. The location of the western terminus for the U.S. Route 30 Corridor Study is supported based on these results.

2.3.6.2 Eastern Terminus

The eastern terminus is located at the intersection of U.S. Route 30, Como Road, and Illinois Route 2/Moline Road. Of the three major eastern connections to the corridor (Emerson, U.S. Route 30 east of the study area, and Como Road); a total of 649 trips (20 percent) were initiated/ended along Como Road, 1,496 trips (47 percent) initiated/ended along U.S. Route 30, and 1,076 trips (33 percent) initiated/ended along Emerson Road, within the one-hour time constraint. These percentages are consistent with the 2003 ADT. Illinois Route 2/Moline Road at the existing eastern terminus was not included in the license plate survey and the number of trips initiated/ended at this location is unknown.

Corridor Alternative 3. The *U.S. Route 30 Corridor Study, July 2006* recommended two eastern terminus options for Corridor Alternative 3 (Terminus Option B and Terminus Option C). Terminus Option B terminates at the intersection of U.S. Route 30, Como Road and Moline Road and Terminus Option C terminates west of Terminus Option B with a new interchange at I-88. Terminus Option B would be used by trips initiating/ending on U.S. Route 30, Como Road, Illinois Route 2, and a percentage of the Emerson Road trips. If the terminus options were to terminate at the intersection of U.S. Route 30 and Emerson Road, the terminus would be used by the Emerson Road trips, U.S. Route 30 trips, Illinois Route 2 trips, and Como Road trips. These two locations are both reasonable terminus locations from a traffic perspective. The results of the O-D study support Terminus Option B or the intersection of Emerson Road and U.S. Route 30.

The majority of users of an eastern terminus located at the Expressway and I-88 (Terminus Option C from the *U.S. Route 30 Corridor Study Report*, July 2005) would be trips initiated/ended on Como Road. Trips generated to/from Emerson Road, Illinois Route 2, and U.S. Route 30 would more likely use the local route instead of the Expressway due to out-of-direction travel. The results of the O-D Study do not support an eastern terminus at a new connection of the Expressway and I-88 (Terminus Option C) for Corridor Alternative 3.

Corridor Alternative 6. Corridor Alternative 6 terminates at the intersection of U.S. Route 30, Como Road and Moline Road. Traveling westbound, the Expressway alignment splits from U.S. Route 30 just west of Emerson Road. With the location of the split, trips initiating/ending on U.S. Route 30, Como Road, Illinois Route 2, and Emerson Road would likely use the Expressway. The results of the O-D study support Corridor Alternative 6 and its terminus.

2.3.6.3 Interchange

Illinois Route 78 (South) is another major entrance point into the study area. Illinois Route 78 has access to I-88 a few miles south of the study area. The corridor alternatives recommended for further study both include an interchange at the expressway and Illinois Route 78 (South). A majority of the combination trips either begin or end along Illinois Route 78 (South). The O-D study results support an interchange along the Expressway at Illinois Route 78. Of the combination trips completed within any one-hour time period, 279 (11 percent) initiated/ended along Illinois Route 78 (North) and 1,134 (43 percent) initiated/ended along Illinois Route 78.

2.4 RESULTS/FINDINGS

Results and findings are provided for the U.S. Route 30 O-D Study under four categories including expressway feasibility, expressway location, expressway termini, and expressway interchange.

2.4.1 Expressway Feasibility

An expressway is feasible. The results of the O-D study showed that a majority of the traffic would use the expressway, which would reduce the amount of traffic (cars and trucks) on U.S. Route 30.

The U.S. Route 30 Expressway would substantially reduce the amount of truck traffic traveling along existing U.S. Route 30. Based on existing traffic characteristics, a northern corridor alternative would carry approximately 83 percent of the truck traffic and a southern corridor alternative would carry approximately 93 percent of the truck traffic diverted from existing U.S. Route 30.

2.4.2 Expressway Location

Southern corridor alternatives would attract more users than northern corridor alternatives. A southern corridor alternative is defined as having an alignment that extends south of U.S. Route 30. As part of the O-D study, it was assumed that all of the traffic completing through trips and part of the combination trips would use the U.S. Route 30 Expressway. Based on the results of this analysis, the original assumption of 40 percent of traffic that is diverted from U.S. Route 30 for all corridor alternatives should be revised to be 54 percent for northern corridor alternatives and 78 percent for southern corridor alternatives.

For the northern corridor alternatives, assuming the I-88 diversion and development diversion are the same as in the previous study and the revised 54 percent diversion from the existing corridor the total diverted percentage from the western end would be approximately 61 percent and from the eastern end approximately 75 percent. For the southern corridor alternatives, using the revised 78 percent diversion from the existing corridor the total diverted percentage from the western end would be approximately 67 percent and approximately 86 percent from the eastern end.

2.4.3 Expressway Termini

As described in the *U.S. Route 30 Corridor Study*, July 2005, the western terminus is located at the intersection of U.S. Route 30, Frog Pond Road, and Illinois Route 136. The western terminus is located at a major traffic split between U.S. Route 30 (approximately 60 percent) and Illinois Route 136 (approximately 40 percent). The high amount of traffic carried by U.S. Route 30 and Illinois Route 136 west of the split supports this location as an appropriate western terminus.

The eastern terminus is located at the intersection of U.S. Route 30, Moline Road, and Como Road. More traffic would access the Expressway through an eastern terminus located at the intersection of U.S. Route 30 and Emerson Road or U.S. Route 30, Moline Road, and Como Road than an eastern terminus that connects directly to I-88.

2.4.4 Expressway Interchange

An expressway interchange with Illinois Route 78 would be beneficial. A majority of the combination trips entered/exited the study area by traveling along Illinois Route 78. An interchange between Illinois Route 78 and the Expressway would provide a majority of the combination trips access to the Expressway.

2.5 RECOMMENDATIONS FOR THE PHASE I/NEPA EVALUATION PROCESS

The 2023 projected ADT volumes were developed based on a number of assumptions, including a one percent annual growth rate for U.S. Route 30, a three percent annual growth rate for I-88, the percentage of traffic that would use the Expressway over the existing corridor, and traffic volumes generated by new developments and their travel patterns. A detailed explanation of the traffic developed for this study is located in the *U.S. Route 30 Corridor Proposed Expressway Traffic Projections Memo*, December 23, 2003. As this project proceeds into the Phase I/NEPA Evaluation Process, it is recommended that projected traffic volumes are re-evaluated. In the Phase I/NEPA Evaluation Process updated assumptions and a new design year (2030) will be used.

It is recommended that the results of the O-D study be carried forward into the Phase I/NEPA Evaluation Process. The percentages generated from the O-D study for the amount of traffic that would use a northern corridor alternative or a southern corridor alternative should be used in the next phase of the study.

A summary of the additional recommendations includes:

- As development occurs, the original projections and assumptions of the amount of traffic diverted to the U.S. Route 30 Expressway in relation to the future developments should be verified.
- The original assumption of 40 percent of traffic that is diverted from the existing U.S. Route 30 Corridor for all corridor alternatives should be revised to be 54 percent for northern corridor alternatives and 78 percent for southern corridor alternatives. These percentages must be added to the I-88 diversions and development diversions to obtain the total diversions.
- Northern Corridor Alternatives: With the revised U.S. Route 30 Corridor diversion and the original assumed I-88 and development diversions, approximately 61 percent of the projected traffic volumes on the western end would be diverted to the northern corridor alternatives and approximately 75 percent from the eastern end.
- Southern Corridor Alternatives: With the revised U.S. Route 30 Corridor diversion and the original assumed I-88 and development diversions, approximately 67 percent of the projected traffic volumes on the western end would be diverted to the southern corridor alternatives and approximately 86 percent from the eastern end.
- Eastern Terminus: Additional analysis of the eastern terminus is needed to determine the most appropriate location.
- The O-D Study did not include an evaluation of direct at-grade access to the Expressway. It is recommended for additional evaluation to be completed to determine access types along the expressway for all local road crossings.

2.6 OTHER CONSIDERATIONS

Logical termini are based on factors other than traffic data and traffic characteristics such as segmentation. Segmentation should be avoided. Logical termini should be chosen to ensure a meaningful evaluation of alternatives. The alternatives should have logical termini, have independent utility, and not restrict consideration of alternatives for other reasonably foreseeable improvements. Based on the O-D Study, the eastern and western termini are logical. In regards to the western terminus location, it is logical to have the Expressway begin at the junction of U.S. Route 30, Illinois Route 136, and Frog Pond Road to collect traffic from U.S. Route 30 and Illinois Route 136. Based on the 2003 traffic counts and 2023 traffic projections (approximately 7,700 ADT), a two-lane highway between the Mississippi River and the western terminus accommodates the demand.

The eastern terminus is a logical location based on the results of the O-D study. However, further information is required (such as traffic counts in and around major connections in Sterling and Rock Falls and potentially a facility user survey) to determine if a more eastern location (closer to Rock Falls) for the limit of the Expressway is beneficial. Based on the 2003 traffic counts and 2023 traffic projections (approximately 11,900 ADT), a two-lane highway between the Mississippi River and the western terminus accommodates the demand.

3.0 WESTERN TERMINUS OPTIONS CONSIDERED

The recommended alternatives of the *U.S. Route 30 Corridor Study, July 2005* are Corridor Alternative 3 with eastern Terminus Option B (Corridor Alternative 3B), Corridor Alternative 3 with eastern Terminus Option C (Corridor Alternative 3C), and Corridor Alternative 6. These three Corridor Alternatives include the same western terminus that follows existing U.S. Route 30 alignment and includes two railroad bridge crossings that have undesirable skews. Because of the undesirable skews, three western terminus options for Corridor Alternative 3 and three westerns terminus options for Corridor Alternative 6 were developed. For the purposes of this report, the western terminus options developed for Corridor Alternative 3B and Corridor Alternative 3C will be referred to collectively as Corridor Alternative 3 western terminus options.

The western terminus options were assessed through an evaluation process. This process compared the relative benefits and affects of the western terminus options based on how effectively they meet the established evaluation criteria. The result of the evaluation process is the Recommended Western Terminus Option(s) for each recommended corridor alternative that best meets the purpose and need, while minimizing environmental affects.

Since the exact location of the roadway alignments have not been identified for the western terminus options, potential affect zones were developed for each terminus option to conduct the evaluation process. Each affect zone is 600 feet in width. The affect zones presented in the layouts are intended to provide an evaluation measure; they are not intended to provide the exact impact of a specific corridor. As the U.S. Route 30 Corridor Study proceeds through the Phase I/NEPA evaluation process, the actual impact will be calculated based on the exact location of the roadway alignment and its proposed right-of-way (ROW).

3.1 WESTERN TERMINUS OPTIONS EVALUATION CRITERIA

Criteria for determining the Recommended Western Terminus Option(s) were developed based on the U.S. Route 30 Corridor Study Purpose and Need. Each of the individual criterions was given a measure of effectiveness that was used to assess the benefits and potential affects of the terminus options. Table 10 shows the evaluation criteria and measures of effectiveness for the western terminus options evaluation. The criteria includes safety, corridor utilization, traffic operations, environmental resources affects, community planning/land use, ROW/residences & commercial buildings, agriculture, public support, and cost.

Table 10: Comparative Analysis Criteria

Criterion	Measure of Effectiveness
Safety	Does the corridor alternative meet full design standards?
Corridor Utilization	a. What is the number of access points per mile? b. Does the terminus option encourage continuous flow movement towards the Expressway?
Traffic Operations	a. What is the estimated corridor travel time? b. What is the length that the terminus option and U.S. Route 30 have the same alignment? c. To what level does the construction of the terminus option affect traffic operations?
Environmental Resources Affects	a. What are the potential cultural (archaeological and historical) affects? b. What are the potential natural resources (nature preserves/natural areas, threatened and endangered (T&E) species, and vegetation/wildlife habitat) affects? c. What are the potential water resource/water quality affects? d. What are the potential floodplain affects? e. What are the potential wetland affects? f. What are the potential special waste affects? g. What are the potential special lands affects? h. What are the potential air quality affects? i. What are the potential traffic noise affects?
Agriculture	a. How many centennial farms are located within the corridors? b. What is the potential of farm severance affects?
Community Planning/Land Use	Does the terminus option easily support future expansion?
ROW/Residences & Commercial Buildings	a. What is the required ROW acquisition? b. How many residences and commercial buildings are located in the corridors?
Public Support	a. Does the terminus option negatively affect the viewshed of the bluffs? b. To what level does the terminus option affect railroad operations? c. What is the level of difficulty in constructing the terminus option?
Cost	What is the estimated construction cost of the terminus option?

3.1.1 Safety

Roadway safety was evaluated for each western terminus option based on Illinois Department of Transportation (IDOT), Federal Highway Administration (FHWA), and American Association of State Highway and Transportation Officials (AASHTO) design standards. Safety criteria reflect

the ability to reasonably construct the western terminus options alignments to meet minimum design criteria for the facility type.

3.1.2 Corridor Utilization

Corridor utilization was evaluated based on the amount of access to each western terminus option and continuity of flow in the direction of the expressway. A larger amount of access provides more opportunities to use the corridor and thus is considered positive. The amount of access was calculated using the number of access points divided by the length of the alignment in miles. The continuity of flow in the direction of the Expressway is also considered positive. This measure evaluates the geometrics and determines if drivers are encouraged to use the Expressway or existing U.S. Route 30.

3.1.3 Traffic Operations

Traffic operations was analyzed based on several factors including estimated travel time, length of expressway alignment that is shared with existing U.S. Route 30, and construction impacts. Projected travel times for each terminus option were calculated by dividing the length of the alignment with the travel speed and adding delay time for traffic signals and roundabouts. Shorter travel times are considered positive. The length of alignment shared by the Expressway and U.S. Route 30 is calculated along the length of the terminus options starting east of the U.S. Route 30, Illinois Route 136, and Frog Pond Road Intersection to the eastern limit of the terminus option. This length is where the projected traffic volumes on both the expressway and existing U.S. Route 30 will be on the proposed expressway four-lane cross-section (two lanes in each direction). The combination of expressway traffic and existing U.S. Route 30 alignment traffic (total of approximately 12,000 vehicles) will lead to a need for capacity improvements sooner on a shared alignment facility than on two separate facilities (four lanes verses six total lanes). A shorter shared length is considered positive. Construction impacts on traffic operations include the need for detour routes. No detour routes are considered positive.

3.1.4 Environmental Resources Affects

Potential environmental resources affects for each western terminus option, in addition to the No-Action Option, were evaluated based on established environmental evaluation criteria including the following resources; cultural (including archaeological and historical), natural (including nature preserves/natural areas, T&E species, and vegetation/wildlife habitat), water resources/water quality, floodplains, wetlands, special waste, special lands, air quality, and traffic noise. The analysis is quantitative in nature and primarily includes potential affects that would be a direct result of the improvements. For comparative purposes the environmental resources were evaluated based on a 600-foot wide affect zone for each western terminus option with the exception of the traffic noise, which was evaluated using a 1,600-foot wide affect zone. This analysis is similar to the environmental analysis conducted in the original Corridor Study. Minimal affects to the environment are considered positive.

3.1.5 Agriculture

Potential agricultural affects for each western terminus option were evaluated based on established agricultural criteria including the number of centennial farms within the 600-foot wide affect zone and the potential for farm severance. A low severance potential means the corridor touches property edges whereas a high severance potential cuts many properties in half.

Minimal number of centennial farms affected and low severance potential are considered positive.

3.1.6 Community Planning/Land Use

The flexibility of the western terminus options to accommodate future growth within the study area indicates how adaptable the western terminus options are to future community planning and land use. This was assessed for each western terminus option based on the potential for converting the intersection of U.S. Route 30, Illinois Route 136, Frog Pond Road, and the western terminus option to an interchange in the future. An easy upgrade such as converting to a simple diamond interchange is considered positive.

3.1.7 ROW/Residences & Commercial Buildings

ROW and relocation affects were evaluated for each western terminus option based on typical ROW requirements and the number of buildings located within the 600-foot wide affect zone. Relatively minimal ROW requirements and number of houses within the 600-foot affect zone are considered positive.

3.1.7.1 ROW Acquisition

ROW acquisition represents the area in acres of land potentially required for the expressway facility. The ROW was calculated based on the proposed typical section (200-foot wide) and length of the western terminus option.

3.1.7.2 Number of Residences and Commercial Buildings

The number of residences and commercial buildings include any building (residence, business, or farming unit) within the 600-foot wide affect zone.

3.1.8 Public Support

Generally, the public is more likely to support an option that impacts their daily routine and quality of life the least. Public support was estimated based on several factors including impacts to the viewshed of the bluffs, the affect of construction on railroad operations, and the level of construction difficulty. The bluffs are considered scenic and it is assumed the public would prefer an option that does not traverse through them. The railroads are owned and operated by public stakeholders. Minimal affects to railroad operations is considered positive. The level of construction difficulty is assumed to be related to the expressway length, amount of earthwork, bridge structure type, and bridges to be constructed on curves; the less difficult the terminus option is to construct, the shorter the construction schedule. Assuming this relationship, the less difficulty of construction is considered positive.

3.1.9 Cost

Conceptual cost estimates for the terminus options were developed based on total construction cost of a four-lane Expressway in 2003 dollars including engineering, construction management, environmental studies, ROW requirements, and potential relocations as described in the IDOT BDE Manual (BDE Figure 12-4B, Cost Estimate Format for Project Reports). Similar assumptions were used for each western terminus option, and a 20-percent contingency was added to the overall cost in determining the capital cost. Unit costs were taken from 2003 IDOT Pay Item reports with awarded prices, where possible. Other unit costs were estimated based on

past project experience. It should be noted that unit costs regularly fluctuate based on market values.

3.2 WESTERN TERMINUS OPTIONS

Three new western terminus options (Terminus Option 3X, Terminus Option 3Y, and Terminus Option 3Z) were developed for the recommended Corridor Alternative 3 and three new western terminus options (Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z) were developed for the recommended Corridor Alternative 6. These western terminus options were evaluated against each other and the original western terminus (Terminus Option 3T and Terminus Option 6T). These original options were not specifically called out in the *U.S. Route 30 Corridor Study*, July 2005; however, they are described in the discussions of the corridor alternatives.

The western terminus options for Corridor Alternative 3, though similar, are not comparable to the western terminus options for Corridor Alternative 6. The western terminus options are described in detail in the following paragraphs of this memorandum. Figures 8 through 11 show the layouts for the Corridor Alternative 3 western terminus options and Figure 12 through 15 show the layouts for the Corridor Alternative 6 western terminus options.

For ease of comparison, each western terminus option begins and ends at a common point along the recommended alternatives. All the western terminus options for Corridor Alternative 3 end between Millard Road and Hillside Road (approximately 1.3 miles northwest of the intersection of Hillside Road and Corridor Alternative 3). All the western terminus options for Corridor Alternative 6 end approximately 1,000 feet west of Hillside Road. Detailed geometric analysis of the Western Terminus Options is provided in the *U.S. Route 30 Corridor Study Western Terminus Options Geometrics*, August 4, 2006.

All of the western terminus options impact the operations of the UP Railroad and the BNSF Railroad during bridge construction; although the extent of the impact varies between terminus options. The original alignments (Terminus Option 3T and Terminus Option 6T) were designed to pass under the UP Railroad and the BNSF Railroad; however, this created an undesirable skew. Because of the skew, the new western terminus options were developed for Corridor Alternative 3 and for Corridor Alternative 6. All of the new western terminus options include bridge concepts that carry the expressway over the BNSF Railroad and UP Railroad. The expressway was not designed for the expressway to pass under the railroads because of impacts to the railroad operations (such as service shut downs and/or the requirement for shooflies (railroad detours)) and the complexity of cutting into the bluffs under the existing railroad to make an opening for the expressway.

3.2.1 Terminus Option 3T

Terminus Option 3T is the western most 5.2 miles of Corridor Alternative 3. The alignment begins at the junction of U.S. Route 30 and Illinois Route 136 and terminates approximately 1.3 miles west of the intersection of Hillside Road and Corridor Alternative 3. This option uses the existing U.S. Route 30 alignment for a majority of its length. This segment of Expressway was designed to pass under both the UP Railroad and the BNSF Railroad.

3.2.1.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 8: Illinois Route 136, Frog Pond Road, Acker Road, existing U.S. Route 30, and Millard Road. A single-lane roundabout with a bypass lane is proposed at the Existing U.S. Route 30/Expressway/Illinois Route 136/Frog Pond Road Intersection. The remaining access locations along the expressway will either be stop-controlled on the minor street or signalized.

3.2.1.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of Expressway involve crossings of railroads and waterways. There are four bridges proposed for Terminus Option 3T. It should be noted that the proposed alignment could use the existing spans of the BNSF Railroad structure; this requires the need to re-align Spring Brook. Additional hydraulic analysis would be required to determine if this is feasible. The list below identifies the four bridge locations and types.

- Expressway over Spring Brook
- UP Railroad over Expressway
- BNSF Railroad over Expressway
- Frog Pond Road over Cattail Creek

3.2.2 Terminus Option 3X

Terminus Option 3X is approximately 5.8 miles in length. The alignment begins at the junction of U.S. Route 30 and Illinois Route 136 and continues northeast of existing U.S. Route 30. The alignment crosses over Acker Road and the BNSF Railroad and then curves to the south and continues over Spring Brook and the UP Railroad. The alignment curves again to the east and continues over the existing U.S. Route 30 approximately 2,000 feet east of the BNSF Railroad. The alignment continues in a southeast direction until it terminates at Corridor Alternative 3 approximately 1.3 miles west of Hillside Road.

3.2.2.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 9: Illinois Route 136, Frog Pond Road, existing U.S. Route 30 (in two locations), and Millard Road. Acker Road remains serviced by existing U.S. Route 30. A cul de sac is proposed along existing U.S. Route 30 just east of the BNSF Railroad. Access to the

expressway from existing U.S. Route 30 is available for local residents at the junction of Illinois Route 136 and the Expressway.

A multi-lane roundabout is proposed at the crossing of the expressway and Illinois Route 136/realigned U.S. Route 30. The remaining access locations along the expressway will either be stop-controlled on the minor street or signalized.

3.2.2.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of Expressway involve crossings with railroads and waterways. There are four bridges proposed for Terminus Option 3X. It should be noted that the proposed alignment could cross over both the BNSF Railroad and Acker Road with a single structure. In addition, a single structure could also cross over Spring Brook and the UP Railroad. These opportunities will be explored in greater detail during the preliminary design and environmental analysis phase of the project. The list below identifies the four bridge locations and types.

- Expressway over BNSF Railroad
- Expressway over Acker Road
- Expressway over Spring Brook
- Expressway over UP Railroad

The alternative bridge option includes two bridges as opposed to four bridges:

- Expressway over BNSF Railroad and Acker Road
- Expressway over Spring Brook and UP Railroad

3.2.3 Terminus Option 3Y

Terminus Option 3Y is approximately 5.2 miles in length. The alignment begins at the junction of U.S. Route 30 and Illinois Route 136 and continues northeast of existing U.S. Route 30. The alignment quickly curves southeast and crosses over Spring Brook, the UP Railroad, and existing U.S. Route 30. The alignment continues east where it crosses over the BNSF Railroad and cuts through the prairie remnant and forested area before curving southeast. The alignment continues southeast until it terminates at Corridor Alternative 3 approximately 1.3 miles west of Hillside Road.

3.2.3.1 Access

Access to this segment of the Expressway is provided for the following crossroads as shown on Figure 10: Illinois Route 136, Frog Pond Road, existing U.S. Route 30, and Millard Road. The improvement (realignment) at Millard Road requires relocation of the existing intersection of U.S. Route 30 and Millard Road to the east. A multi-lane roundabout is proposed at the crossing of the Expressway and Illinois Route 136/realigned U.S. Route 30. The remaining access locations along the Expressway will either be stop-controlled on the minor street or signalized.

3.2.3.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of expressway involve crossings of railroads and waterways. There are three bridges proposed for Terminus Option 3Y. It should be noted that the proposed alignment could cross over Spring Brook, the UP Railroad, and existing U.S. Route 30 with a single structure. This opportunity will be explored in greater detail during the preliminary design and environmental analysis phase of the project. The list below identifies the three bridge locations and types.

- Expressway over Spring Brook
- Expressway over UP Railroad and existing U.S. Route 30
- Expressway over BNSF Railroad

The alternative bridge option includes two bridges as opposed to three bridges:

- Expressway over Spring Brook, UP Railroad, and existing U.S. Route 30
- Expressway over BNSF Railroad

3.2.4 Terminus Option 3Z

Terminus Option 3Z is approximately 4.9 miles in length. The alignment begins just west of the junction of U.S. Route 30 and Illinois Route 136 and continues east over Cattail Creek and the UP Railroad. At the UP Railroad crossing the alignment curves southeast and continues southeast for approximately 2.3 miles along the south ridge of the 100-year floodplain. The alignment then curves east and crosses the 100-year floodplain, Cattail Creek, the BNSF Railroad, and the prairie remnant and forested area. The alignment then curves southeast and continues until it terminates at Corridor Alternative 3 approximately 1.3 miles west of Hillside Road.

3.2.4.1 Access

Access to this segment of the Expressway is provided for the following crossroads as shown on Figure 11: Illinois Route 136, existing U.S. Route 30, and Millard Road. Access to Frog Pond Road is available from existing U.S. Route 30. A single-lane roundabout is proposed with a by-pass lane at the U.S. Route 30/Expressway/Illinois Route 136 Intersection. The remaining access locations along the Expressway will either be stop-controlled on the minor street or signalized.

3.2.4.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of Expressway involve crossings with railroads, a roadway, and waterways. There are five bridges proposed for Terminus Option 3Z. Two of the bridges cross over Cattail Creek at separate locations. The list below identifies the five bridge locations and types.

- Expressway over Cattail Creek
- Expressway over Frog Pond Road

- Expressway over UP Railroad
- Expressway over Cattail Creek
- Expressway over BNSF Railroad

3.2.5 Terminus Option 6T

Corridor Alternative 6T is the western most 5.6 miles of Corridor Alternative 6 beginning from the junction of U.S. Route 30 and Illinois Route 136 and terminates approximately 1,000 feet west of the intersection of Hillside Road and Corridor Alternative 6. This option uses the existing U.S. Route 30 alignment for a majority of its length. This segment of expressway was designed to pass under both the UP Railroad and the BNSF Railroad.

3.2.5.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 12: Illinois Route 136, Frog Pond Road, Acker Road, Millard Road, and Fulfs Road. A single-lane roundabout with a bypass lane is proposed at the existing U.S. Route 30/Expressway/Illinois Route 136/Frog Pond Road Intersection. The remaining access locations along the expressway will either be stop-controlled on the minor street or signalized.

3.2.5.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of expressway involve crossings of railroads and waterways. There are four bridges proposed for Terminus Option 6T. It should be noted that the proposed alignment could use the existing spans of the BNSF Railroad structure; this requires the need to re-align Spring Brook. Additional hydraulic analysis would be required to determine if this is feasible. The list below identifies the four bridge locations and types.

- Expressway over Spring Brook
- UP Railroad over expressway
- BNSF Railroad over expressway
- Frog Pond Road over Cattail Creek

3.2.6 Terminus Option 6X

Terminus Option 6X is approximately 6.2 miles in length. The alignment begins at the junction of U.S. Route 30 and Illinois Route 136 and continues northeast of existing U.S. Route 30. The alignment crosses over Acker Road and the BNSF Railroad and then curves to the south and continues over Spring Brook and the UP Railroad. The alignment curves again to the east and joins existing U.S. Route 30 approximately 2,000 feet east of the BNSF Railroad. The alignment continues in a southeast direction along the alignment of existing U.S. Route 30 until it terminates at Corridor Alternative 6 approximately 1,000 feet west of Hillside Road.

3.2.6.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 13: Illinois Route 136, Frog Pond Road, existing U.S. Route 30, Millard Road, and

Fulfs Road. Acker Road remains serviced by existing U.S. Route 30. A cul de sac is proposed along existing U.S. Route 30 just east of the BNSF Railroad. Access to the expressway from existing U.S. Route 30 is available for local residents at the junction of Illinois Route 136 and the Expressway.

A multi-lane roundabout is proposed at the crossing of the Expressway and Illinois Route 136/realigned U.S. Route 30. The remaining access locations along the Expressway will either be stop-controlled on the minor street or signalized.

3.2.6.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of Expressway involve crossings of railroads and waterways. There are four bridges proposed for Terminus Option 6X. It should be noted that the proposed alignment could cross over both the BNSF Railroad and Acker Road with a single structure. In addition, a single structure could also cross over Spring Brook and the UP Railroad. These opportunities will be explored in greater detail during the preliminary design and environmental analysis phase of the project. The list below identifies the four bridge locations and types.

- Expressway over BNSF Railroad
- Expressway over Acker Road
- Expressway over Spring Brook
- Expressway over UP Railroad

The alternative bridge option includes two bridges as opposed to four bridges:

- Expressway over BNSF Railroad and Acker Road
- Expressway over Spring Brook and UP Railroad

3.2.7 Terminus Option 6Y

Terminus Option 6Y is approximately 5.6 miles in length. The alignment begins at the junction of U.S. Route 30 and Illinois Route 136 and continues northeast of existing U.S. Route 30. The alignment quickly curves southeast and crosses over Spring Brook, the UP Railroad, and existing U.S. Route 30. The alignment continues east where it crosses over the BNSF Railroad, cuts through the prairie remnant and forested area, and then joins the existing U.S. Route 30 alignment west of Millard Road. The alignment continues southeast along the existing U.S. Route 30 alignment until it terminates at Corridor Alternative 6 approximately 1,000 feet west of Hillside Road.

3.2.7.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 14: Illinois Route 136, Frog Pond Road, existing U.S. Route 30, Millard Road, and Fulfs Road. Acker Road remains serviced by existing U.S. Route 30. A cul de sac is proposed along existing U.S. Route 30 just west of the Millard Road. Access to the expressway from existing U.S. Route 30 is available for local residents at the junction of Illinois Route 136 and the Expressway.

A multi-lane roundabout is proposed at the crossing of the expressway and Illinois Route 136/realigned U.S. Route 30. The remaining access locations along the expressway will either be stop-controlled on the minor street or signalized.

3.2.7.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of expressway involve crossings of railroads and waterways. There are three bridges proposed for Terminus Option 6Y. It should be noted that the proposed alignment could cross over Spring Brook, the UP Railroad, and existing U.S. Route 30 with a single structure. This opportunity will be explored in greater detail during the preliminary design and environmental analysis phase of the project. The list below identifies the three bridge locations and types.

- Expressway over Spring Brook
- Expressway over UP Railroad and Existing U.S. Route 30
- Expressway over BNSF Railroad

The alternative bridge option includes two bridges as opposed to three bridges:

- Expressway over Spring Brook, UP Railroad, and Existing U.S. Route 30
- Expressway over BNSF Railroad

3.2.8 Terminus Option 6Z

Terminus Option 6Z is approximately 5.5 miles in length. The alignment begins just west of the junction of U.S. Route 30 and Illinois Route 136 and continues east over Cattail Creek and the UP Railroad. At the UP Railroad crossing the alignment curves southeast and continues southeast for approximately 2.3 miles along the south ridge of the 100-year floodplain. The alignment then curves east and crosses the 100-year floodplain, Cattail Creek, the BNSF Railroad, and the prairie remnant and forested area. The alignment continues east until it terminates at Corridor Alternative 6 approximately 1,000 feet west of Hillside Road.

3.2.8.1 Access

Access to this segment of the expressway is provided for the following crossroads as shown on Figure 15: Illinois Route 136, Frog Pond Road, existing U.S. Route 30, and Millard Road. A cul-de-sac is proposed along existing U.S. Route 30 approximately 3,000 feet west of Hillside Road. Residents that live along existing U.S. Route 30 between approximately the UP Railroad crossing and Fulfs Road can access the expressway at the intersection of the Expressway, Illinois Route 136, and existing U.S. Route 30 to the west, via local roads to the east (Fulfs Road eastbound to Hillside southbound), or via Millard Road.

A single-lane roundabout with a by-pass lane is proposed at the U.S. Route 30/Expressway/Illinois Route 136 Intersection. The remaining access locations along the expressway will either be stop-controlled on the minor street or signalized.

3.2.8.2 Structural Considerations

Preliminary roadway geometrics have been developed and drainage analyses have been conducted to identify structures for this terminus option. The bridges identified for this segment of Expressway involve crossings of railroads, a roadway, and waterways. There are five bridges proposed for Terminus Option 6Z. Two of the bridges cross over Cattail Creek at separate locations. The list below identifies the five bridge locations and types.

- Expressway over Cattail Creek
- Expressway over Frog Pond Road
- Expressway over UP Railroad
- Expressway over Cattail Creek
- Expressway over BNSF Railroad

4.0 ANALYSIS RESULTS

The Analysis was conducted to determine the relative benefits and potential affects of the western terminus options in relation to one another. The analysis was based on the established criteria shown in Table 10, which includes safety, traffic operations, corridor utilization, environmental resources affects, agriculture, community planning/land use, ROW/residences & commercial buildings, public support, and cost.

A comparison of how well the western terminus options address the criteria is presented in Table 11A for the Corridor Alternative 3 western terminus options and in Table 11B for the Corridor Alternative 6 western terminus options. The results were presented in a matrix evaluation that shows whether the western terminus option is least favorable, moderate, or most favorable. A least favorable rating is represented by a minus sign, a moderate rating is represented by a circle, and a most favorable rating is represented by a plus sign as shown in Table 12A for the Corridor 3 western terminus options and Table 12B for the Corridor Alternative 6 western terminus options.

Based on the results of the Analysis, Terminus Option 3Y is recommended for Corridor Alternative 3. Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z are the recommended western terminus options for Corridor Alternative 6. A detailed description of each of the criteria is contained in the following sections.

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Table 11A: Summary of Analysis for Corridor Alternative 3 Western Terminus Options

Criterion	Measure of Effectiveness	No – Action*	Corridor Alternative 3			
			Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Safety	Does the corridor alternative meet full design standards?	No	Yes	Yes	Yes	Yes
Corridor Utilization	What is the number of access points per mile?	1.3	1.4	1.0	1.2	0.8
	Does the terminus option encourage continuous flow movement towards the Expressway?	N/A	Yes	Yes	Yes	No
Traffic Operations	What is the estimated corridor travel time? (minutes)	5.0	7.2	7.8	6.2	5.9
	What is the length that the terminus option and U.S. Route 30 have the same alignment? (miles)	N/A	2.5	2.6	0	0
	To what level does the construction of the terminus option affect traffic operations?	N/A	High	Medium	Low	Medium
Environmental Resources Affects	What are the potential affects to environmental resources? *(Refer to Tables 14A and 14B)*	N/A	24	27	20	19
Agriculture	How many centennial farms are located within the corridors?	0	1	1	1	1
	What is the potential of farm severance affects?	None	Low	Medium	Medium	Medium
Community Planning / Land Use	Does the terminus option easily support future expansion?	No	No	No	Yes	No
ROW/Residences & Commercial Buildings	What is the required ROW acquisition? (acres)	0	150	210	190	170
	How many residences and commercial buildings are located in the corridors?	0	21	11	10	7
Public Support	Does the terminus option negatively affect the viewshed of the bluffs?	N/A	Moderate	No	Yes	Yes
	To what level does the terminus option affect railroad operations?	N/A	Low	Low	Medium	Low
	What is the level of difficulty in constructing the terminus option?	N/A	Low	Medium	Medium	Low
Cost	What is the estimated construction cost in terminus option? (millions)	0**	$49	$34	$40	$28

Note:

** The No-Action Option is shown as a baseline for comparative purposes only.*

*** The No-Action Option has no construction cost, however, the cost of maintaining the existing route would be greater than maintaining a new terminus option.*

Table 11B: Summary of Analysis for Corridor Alternative 6 Western Terminus Options

Criterion	Measure of Effectiveness	No – Action*	Corridor Alternative 6			
			Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Safety	Does the corridor alternative meet full design standards?	No	Yes	Yes	Yes	Yes
Corridor Utilization	What is the number of access points per mile?	1.1	0.9	0.8	0.9	0.7
	Does the terminus option encourage continuous flow movement towards the Expressway?	N/A	Yes	Yes	Yes	No
Traffic Operations	What is the estimated corridor travel time? (minutes)	6.2	6.6	7.3	6.6	6.5
	What is the length that the terminus option and U.S. Route 30 have the same alignment? (miles)	N/A	4.3	4.4	3.9	0
	To what level does the construction of the terminus option affect traffic operations?	N/A	High	Medium	Medium	Medium
Environmental Resources Affects	What are the potential affects to environmental resources? (*Refer to Tables 14A and 14B)*	N/A	22	24	22	23
Agriculture	How many centennial farms are located within the corridors?	0	1	1	1	1
	What is the potential of farm severance affects?	None	Low	Medium	Medium	Medium
Community Planning / Land Use	Does the terminus option easily support future expansion?	No	No	Yes	Yes	No
ROW/Residences & Commercial Buildings	What is the required ROW acquisition? (acres)	0	130	190	180	180
	How many residences and commercial buildings are located in the corridors?	0	23	13	15	8
Public Support	Does the terminus option negatively affect the viewshed of the bluffs?	N/A	Somewhat	No	Somewhat	Yes
	To what level does the terminus option affect railroad operations?	N/A	Low	Low	Medium	Low
	What is the level of difficulty in constructing the terminus options?	N/A	Low	Medium	Medium	Low
Cost	What is the estimated construction cost of the terminus option? (millions of dollars)	0**	$51	$35	$41	$30

Note:

** The No-Action Option is shown as a baseline for comparative purposes only.*

*** The No-Action Option has no construction cost, however, the cost of maintaining the existing route would be greater than maintaining a new terminus option.*

Table 12A: Analysis Results for Corridor Alternative 3 Western Terminus Options

Criterion*	Measure of Effectiveness	No-Action	Corridor Alternative 3			
			Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Safety	Does the corridor alternative meet full design standards?	–	+	+	+	+
Corridor Utilization	What is the number of access points per mile? Does the terminus option encourage continuous flow movement towards the Expressway?	–**	+	+	+	o
Traffic Operations	What is the estimated corridor travel time? (minutes) What is the length that the terminus option and U.S. Route 30 have the same alignment? (miles) To what level does the construction of the terminus option affect traffic operations?	–**	–	–	+	+
Environmental Resources Affects	What are the potential affects to environmental resources? *(Refer to Tables 15A and 15B)*	+	o	–	o	o
Agriculture	How many centennial farms are located within the corridors? What is the potential of farm severance affects?	+	+	o	o	o
Community Planning / Land Use	Does the terminus option easily support future expansion?	–	–	–	+	–
ROW/Residences & Commercial Buildings	What is the required ROW acquisition? (acres) How many residences and commercial buildings are located in the corridors?	+	o	–	o	o
Public Support	Does the terminus option negatively affect the viewshed of the bluffs? To what level does the terminus option affects railroad operations? What is the level of difficulty in constructing the terminus options?	+	o	o	–	o
Cost	What is the estimated construction cost of the terminus option? (millions of dollars)	+	o	o	o	+
Preliminary Point Subtotal***	[+ = 5 points, o = 3 points, and – = 1 point]		29	23	33	31
Preliminary Ranking****			3	4	1	2

Note:

* *The information contained in Legend for Analysis Category Rating provides an explanation of how the western terminus options were rated under each of the categories.*

** *Although the measure of effectiveness for Corridor Utilization and Traffic Operations criteria are not applicable to the No-Action Option, a negative rating is assigned to reflect the objective of the criterion (See Section 3.1.2 and 3.1.3).*

*** *Each of the category ratings (+, o, and –) was given a point value to distinguish overall rankings for the western terminus options. The western terminus option with the highest point total is the recommended alternative. It is assumed that all of the categories are equally weighted. The No-Action Option is shown for comparative purposes only.*

**** *The preliminary ranking is based on point totals. Higher point totals equate to a higher overall ranking, thus a better option for the Corridor Alternative.*

Legend for Analysis Category Rating

Criterion	+	o	–
Safety (based on constructability to IDOT standards)	Yes	-	No
Corridor Utilization (Refer to Table 13A and Table 13B)	< 5	5 – 8	> 8
Traffic Operations (Refer to Table 14A and Table 14B)	< 5	5 – 8	> 8
Environmental Resources Score (Refer to Table 15A and Table 15B)	< 15	15 – 25	> 25
Agriculture	< 3	3 – 6	> 6
Community Planning/ Land Use	Yes	-	No
ROW / Residences & Commercial Buildings Score (Refer to Table 18)	< 3	3 – 6	> 6
Public Support (Refer to Table 21A and Table 21B)	< 4	4 – 9	> 9
Cost (millions of dollars)	< 30	30 – 49	> 49

Table 12B: Analysis Results for Corridor Alternative 6 Western Terminus Options

Criterion*	Measure of Effectiveness	No-Action	Corridor Alternative 6			
			Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Safety	Does the corridor alternative meet full design standards?	–	+	+	+	+
Corridor Utilization	What is the number of access points per mile? Does the terminus option encourage continuous flow movement towards the Expressway?	–**	+	+	+	o
Traffic Operations	What is the estimated corridor travel time? (minutes) What is the length that the terminus option and U.S. Route 30 have the same alignment? (miles) To what level does the construction of the terminus option affect traffic operations?	–**	–	–	o	+
Environmental Resources Affects	What are the potential affects to environmental resources? *(Refer to Tables 15A and 15B)*	+	o	o	o	o
Agriculture	How many centennial farms are located within the corridors? What is the potential of farm severance affects?	+	+	o	o	o
Community Planning / Land Use	Does the terminus option easily support future expansion?	–	–	+	+	–
ROW/Residences & Commercial Buildings	What is the required ROW acquisition? (acres) How many residences and commercial buildings are located in the corridors?	+	o	o	o	o
Public Support	Does the terminus option negatively affect the viewshed of the bluffs? To what level does the terminus option affect railroad operations? What is the level of difficulty in constructing the terminus option?	+	o	o	–	o
Cost	What is the estimated construction cost of the terminus option? (millions)	+	–	o	o	+
Preliminary Point Subtotal***	[+ = 5 points, o = 3 points, and – = 1 point]		27	31	31	31
Preliminary Ranking****			4	1	1	1

Note:

* *The information contained in Legend for Analysis Category Rating provides an explanation of how the western terminus options were rated under each of the categories.*

** *Although the measure of effectiveness for Corridor Utilization and Traffic Operations criteria are not applicable to the No-Action Option, a negative rating is assigned to reflect the objective of the criterion (See Section 3.1.2 and 3.1.3).*

*** *Each of the category ratings (+, o, and –) was given a point value to distinguish overall rankings for the western terminus options. The western terminus option with the highest point total is the recommended alternative. It is assumed that all of the categories are equally weighted. The No-Action Option is shown for comparative purposes only.*

**** *The preliminary ranking is based on point totals. Higher point totals equate to a higher overall ranking, thus a better option for the Corridor Alternative.*

Legend for Analysis Category Rating

Criterion	+	o	–
Safety (based on constructability to IDOT standards)	Yes	-	No
Corridor Utilization (Refer to Table 13A and Table 13B)	< 5	5 – 8	> 8
Traffic Operations (Refer to Table 14A and Table 14B)	< 5	5 – 8	> 8
Environmental Resources Score (Refer to Table 15A and Table 15B)	< 15	15 – 25	> 25
Agriculture	< 3	3 – 6	> 6
Community Planning/ Land Use	Yes	-	No
ROW / Residences & Commercial Buildings Score (Refer to Table 18)	< 3	3 – 6	> 6
Public Support (Refer to Table 21A and Table 21B)	< 4	4 – 9	> 9
Cost (millions of dollars)	< 30	30 – 49	> 49

4.1 SAFETY

The No-Action Option does not meet IDOT full standards in regards to profile, alignment, and cross-section. The existing profile along U.S. Route 30 near the UP Railroad crossing, east of Frog Pond Road has a zero percent grade. Alignment deficiencies include four roadways intersecting at substandard angles and limited sight distance around one curve. Cross-section deficiencies include substandard side slopes, substandard shoulder widths, substandard taper lengths, and substandard turn lanes.

All terminus options can be designed to meet IDOT full standards.

4.2 CORRIDOR UTILIZATION

The Corridor Utilization Criterion evaluates the number of access points per mile along the Expressway and whether or not the option encourages continuous flow towards the Expressway. The corridor utilization criterion evaluates how well drivers are encouraged to use a roadway. The No-Action Option discourages utilization of the existing U.S. Route 30. There are a high number of access points along the corridor. Generally, the higher number of points results in easier access; however, in this case, the higher number of points results in an over-congested roadway.

4.2.1 Corridor Alternatives 3

The number of access points does not vary greatly between the terminus options. Of the western terminus options for Corridor Alternative 3, the most amount of access is provided by Terminus Option 3T (1.4 access points per mile) and the least amount of access is provided by Terminus Option 3Z (0.8 access points per mile). These can be compared to 1.3 access points per mile for the No-Action Option.

Terminus Option 3T, Terminus Option 3X, and Terminus Option 3Y best encourage continuous flow movement towards the Expressway and Terminus Option 3Z does not encourage continuous flow movement towards the Expressway. Continuous flow movement towards the Expressway is not applicable for the No-Action Option. The results of corridor utilization are presented in Table 13A.

Table 13A: Corridor Utilization for Corridor Alternative 3 Western Terminus Options

Terminus Option	Access Points		Continuous Flow of Movement		Total Score (score 1 + score 2)	Final Rank
	# per mile	score 1	Yes/No	score 2		
No-Action*	1.3		N/A			N/A
3T	1.4	1	Yes	1	2	1
3X	1.0	3	Yes	1	4	3
3Y	1.2	2	Yes	1	3	2
3Z	0.8	4	No	4	8	4

** The No-Action Option length is based on the limits of the western terminus options, which are different for Corridor Alternative 3 and Corridor Alternative 6 western terminus options.*

4.2.2 Corridor Alternative 6

The number of access points does not vary greatly. Terminus Option 6T And Terminus Option 6Y (1.3 access points per mile) includes the most access and Terminus Option 6Z (0.7 access points per mile) includes the least amount of access for Corridor Alternative 6. These can be compared to 1.1 access points per mile for the No-Action Option.

Terminus Options 6T, Terminus Option 6X, and Terminus Option 6Y best encourage continuous flow movement towards the Expressway and Terminus Option 6Z does not encourage continuous flow movement towards the Expressway. Continuous flow movement towards the Expressway is not applicable for the No-Action Option. Table 13B presents the results of the corridor utilization analysis.

Table 13B: Corridor Utilization for Corridor Alternative 6 Western Terminus Options

Terminus Option	Access Points		Continuous Flow of Movement		Total Score (score 1 + score 2)	Final Rank
	# per mile	score 1	Yes/No	score 2		
No-Action*	1.1		N/A			N/A
6T	1.3	1	Yes	1	2	1
6X	1.0	3	Yes	1	4	3
6Y	1.3	1	Yes	1	2	1
6Z	0.7	4	No	4	8	4

** The No-Action Option length is based on the limits of the western terminus options, which are different for Corridor Alternative 3 and Corridor Alternative 6 western terminus options..*

4.3 TRAFFIC OPERATIONS

The traffic operations criterion includes the analysis of estimated travel time along the western terminus option, the length of alignment that is the same for the western terminus option and U.S. Route 30, and the impact on traffic operations during construction of the western terminus options. The traffic operations measures of effectiveness focus on the expressway; therefore the No-Action Option is not applicable to these measures. However, traffic operations are negatively ranked because the capacity of the existing facility can not support the projected demand resulting in poor operations.

4.3.1 Corridor Alternatives 3

Table 14A presents the results of the traffic operations analysis for Corridor Alternative 3 western terminus options.

Table 14A: Traffic Operations for Corridor Alternative 3 Western Terminus Options

Terminus Option	Travel Time		Existing U.S. Route 30 Utilized		Level of Construction Impact		Total Score (score 1 + score 2 + score 3)	Final Rank
	Minutes	score 1	Miles	score 2	High/ Medium/ Low	score 3		
No-Action*	5.0		N/A		N/A			N/A
3T	7.2	3	2.5	3	High	4	10	3
3X	7.8	4	2.6	4	Medium	2	10	3
3Y	6.2	2	0	1	Low	1	4	1
3Z	5.9	1	0	1	Medium	2	4	1

** The No-Action alternative length is based on the limits of the western terminus options, which is different for Corridor Alternative 3 and Corridor Alternative 6 western terminus options.*

4.3.2 Corridor Alternative 6

Table 14B presents the results of the traffic operations analysis for Corridor Alternative 6 western terminus options.

Table 14B: Traffic Operations for Corridor Alternative 6 Western Terminus Options

Terminus Option	Travel Time		Existing U.S. Route 30 Utilized		Level of Construction Impact		Total Score (score 1 + score 2 + score 3)	Final Rank
	Minutes	score 1	Miles	score 2	High/ Medium/ Low	score 3		
No-Action*	6.2		N/A		N/A			N/A
6T	6.6	2	4.3	3	High	4	9	3
6X	7.3	4	4.4	4	Medium	1	9	3
6Y	6.6	2	3.9	2	Medium	1	5	2
6Z	6.5	1	0	1	Medium	1	3	1

** The No-Action alternative length is based on the limits of the western terminus options, which are different for Corridor Alternative 3 and Corridor Alternative 6 western terminus options.*

4.3.3 Travel Times

Travel times were calculated for western terminus options associated with Corridor Alternative 3 and Corridor Alternative 6. Proposed roundabouts and traffic signals were included in the travel time calculations.

4.3.3.1 Corridor Alternative 3

Terminus Option 3Z is estimated to have the quickest travel time of 5.9 minutes between its western connection to U.S. Route 30 and its eastern connection to Corridor Alternative 3. The slowest travel time is estimated at 7.8 minutes for Terminus Option 3X. The approximate travel time for the No-Action Option is 5.0 minutes based on the limits of the Corridor Alternative 3 western terminus options. Although the No-Action Option has the quickest travel time; congestion is not taken into consideration in the calculations.

4.3.3.2 Corridor Alternative 6

Of the western terminus options for Corridor Alternative 6, the quickest travel time is estimated at 6.5 minutes (Terminus Option 6Z) and the slowest travel time is estimated at 7.3 minutes (Terminus Option 6X). The length of the No-Action Option is based on the limits of the Corridor Alternative 6 western terminus options and travel time for the No-Action Option is approximately 6.2 minutes. Although the No-Action Option has the quickest travel time; congestion is not taken into consideration in the calculations.

4.3.4 Alignment shared by Western Terminus Option and Existing U.S. Route 30

Several terminus options contain segments where the expressway alignment overlaps (shares) the existing U.S. Route 30 alignment. This length is where the projected traffic volumes on both the expressway and existing U.S. Route 30 will be on the proposed expressway four-lane cross-section (two lanes in each direction).

4.3.4.1 Corridor Alternative 3

Terminus Option 3Y and Terminus Option 3Z do not share any of their alignment with U.S. Route 30 east of the intersection of U.S. Route 30, Illinois Route 136, and the western terminus option. Terminus Option 3T shares approximately 2.5 miles (47 percent) of alignment with U.S. Route 30 and Terminus Option 3X shares approximately 2.6 miles (45 percent) of alignment with U.S. Route 30. The amount of shared alignment is not applicable to the No-Action Option.

4.3.4.2 Corridor Alternative 6

No portion of the U.S. Route 30 alignment is shared Terminus Option 6Z. Terminus Option 6Y shares the least amount (approximately 3.9 miles) of alignment with U.S. Route 30. U.S. Route 30 and Terminus Option 6T have approximately 4.3 miles (77 percent) of the same alignment and U.S. Route 30 and Terminus Option 6X have approximately 4.4 miles (72 percent) of the same alignment. The amount of shared alignment is not applicable to the No-Action Option.

4.3.5 Construction Impacts

Construction impacts were estimated for western terminus options associated with Corridor Alternative 3 and Corridor Alternative 6. For each of the options, estimated impacts are based on the likelihood that traffic detours will be required during construction.

4.3.5.1 Corridor Alternative 3

Terminus Option 3Y is expected to have relatively low impacts due to construction. There is no detour necessary for this western terminus option. Terminus Option 3X and Terminus Option 3Z do not require detours; however, additional easement may be needed for maintenance of traffic. A traffic detour may be required during a portion of the construction of Terminus Option 3T, which will impact to traffic operations. The construction impacts criteria is not applicable to the No-Action Option.

4.3.5.2 Corridor Alternative 6

Medium traffic impacts to traffic operations are expected to occur as a result of the construction of Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z. These western terminus options may require additional easement for maintenance of traffic, but would not require a detour. Terminus Option 6T may require a traffic detour during its construction, which results in a high impact to traffic operations. The construction impacts criteria is not applicable to the No-Action Option.

4.4 ENVIRONMENTAL RESOURCES AFFECTS

Affects to numerous environmental resources were evaluated for each western terminus option. Resources included cultural (archaeological and historic), natural (natural areas, threatened and endangered species, and wildlife habitat), water, floodplains, wetlands, special waste, special lands, air quality, and traffic noise. Figures 16 through 19 show a majority of these resources surrounding the western terminus options. This section summarizes the affects the western terminus options may have to some of these resources. The environmental resources affects evaluated are summarized in Table 15A for Corridor Alternative 3 western terminus options and Table 15B for Corridor Alternative 6 western terminus options. The western terminus option ranking for each environmental resource based on the calculated effect is presented in Table 16A for Corridor Alternative 3 western terminus options and in Table 16B for Corridor Alternative 6 western terminus options. The No-Action Option is not ranked, but provided for comparative purposes only as it does not meet the purpose and need of the project.

The No-Action Option affects only a few environmental resources discussed in this chapter. The additional traffic volumes increase the noise levels from existing levels at homes and businesses. The local economy also experiences affects and energy consumption increases. The No-Action Option is not responsive to community planning efforts with respect to proposed development and growth.

Table 15A: Comparison of Environmental Resources Affects for Corridor Alternative 3 Western Terminus Options

Environmental Resources	Measure of Effectiveness	No-Action	Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Archaeological	Area of Archaeological High Probability (length corridor traverses high probability zones) (miles)	0	2.9	3.0	2.9	3.4
Historic	# of Historic Properties (# buildings with potentially historic structure)	0	1	1	0	0
Natural Areas/Nature Preserves	Area of Natural Areas (INAI) and Nature Preserve Affects (acres)	0	0	0	0	0
Threatened and Endangered Species	Federal and State Protected Species Area of Association (acres)	0	68.2	137.1	55.6	0
Vegetation/ Wildlife Habitat	Area of Vegetation and Wildlife Habitat (acres)	0	34	29	32	28
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (acres) *(Refer to Table 16A)*	0	2 / 43	1 / 57	1 / 51	2 / 49
Floodplains	Area of FEMA 100-year Floodplain (acres)	0	122	149	168	161
Wetlands	Total Wetland/Jurisdictional Wetland *(Refer to Table 17A)*	0	23.8 / 17.3	25.2 / 15.6	17.4 / 14.2	10.8 / 10.8
Special Waste	# of Affected Special Waste Sites	0	0	0	0	0
Special Lands	Area of Special Lands Affected	0	0	0	0	0

Table 15A: Comparison of Environmental Resources Affects for Corridor Alternative 3 Western Terminus Options

Environmental Resources	Measure of Effectiveness	No-Action	Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Air Quality	Negative Affect to Air Quality	No	No	No	No	No
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	24	38	25	23	20

Table 15B: Comparison of Environmental Resources Affects for Corridor Alternative 6 Western Terminus Options

Environmental Resources	Measure of Effectiveness	No-Action	Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Archaeological	Area of Archaeological High Probability (length corridor traverses high probability zones) (miles)	0	2.9	3.0	2.9	3.4
Historic	# of Historic Properties (# buildings with potentially historic structure)	0	1	1	1	0
Natural Areas/Nature Preserves	Area of Natural Areas (INAI) and Nature Preserve Affects (acres)	0	0	0	0	0
Threatened and Endangered Species	Federal and State Protected Species Area of Association (acres)	0	48.0	137.1	55.6	0
Vegetation/ Wildlife Habitat	Area of Vegetation and Wildlife Habitat (acres)	0	24	21	27	28
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (acres) *(Refer to Table 16B)*	0	2 / 38	1 / 52	1 / 48	2 / 55
Floodplains	Area of FEMA 100-year Floodplain (acres)	0	125	149	168	161

Table 15B: Comparison of Environmental Resources Affects for Corridor Alternative 6 Western Terminus Options

Environmental Resources	Measure of Effectiveness	No-Action	Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Wetlands	Total Wetland/Jurisdictional Wetland *(Refer to Table 17B)*	0	20.0 / 15.0	23.0 / 13.3	17.4 / 14.2	10.8 / 10.8
Special Waste	# of Affected Special Waste Sites	0	0	0	0	0
Special Lands	Area of Special Lands Affected	0	0	0	0	0
Air Quality	Negative Affect to Air Quality	No	No	No	No	No
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	24	38	26	24	21

Table 16A: Ranking of Environmental Resources Affects for Corridor Alternative 3 Western Terminus Options

Environmental Resources	Measure of Effectiveness	Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Archaeological	Area of Archaeological High Probability (length corridor traverses high probability zones) (miles)	1	3	1	4
Historic	# of Historic Properties (# buildings with potentially historic structure)	3	3	1	1
Natural Areas/ Nature Preserves	Area of Natural Areas (INAI) and Nature Preserve Affects (acres)	1	1	1	1
Threatened and Endangered Species	Federal and State Protected Species Area of Association (acres)	3	4	2	1
Vegetation/ Wildlife Habitat	Area of Vegetation and Wildlife Habitat (acres)	4	2	3	1

Table 16A: Ranking of Environmental Resources Affects for Corridor Alternative 3 Western Terminus Options

Environmental Resources	Measure of Effectiveness	Terminus Option 3T	Terminus Option 3X	Terminus Option 3Y	Terminus Option 3Z
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (acres)	1	3	1	3
Floodplains	Area of FEMA 100-year Floodplain (acres)	1	2	4	3
Wetlands	Total Wetland/ Jurisdictional Wetland	3	3	2	1
Special Waste	# of Affected Special Waste Sites	1	1	1	1
Special Lands	Area of Special Lands Affected	1	1	1	1
Air Quality	Negative Affect to Air Quality	1	1	1	1
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	4	3	2	1
	Total Score	24	27	20	19
	Overall Environmental Resources Affect (Ranking)*	3	4	2	1

*Note: * The ranking of overall environmental resources represents a decreasing order of the amount of the amount overall environmental resources impacts. (i.e. A terminus option with a ranking of "1" will impact the least amount of environmental resources in the study area, while a terminus option with a ranking of "4" will impact the most environmental resources in the study area)*

Table 16B: Ranking of Environmental Resources Affects for Corridor Alternative 6 Western Terminus Options

Environmental Resources	Measure of Effectiveness	Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Archaeological	Area of Archaeological High Probability (length corridor traverses high probability zones) (miles)	1	3	1	4

Table 16B: Ranking of Environmental Resources Affects for Corridor Alternative 6 Western Terminus Options

Environmental Resources	Measure of Effectiveness	Terminus Option 6T	Terminus Option 6X	Terminus Option 6Y	Terminus Option 6Z
Historic	# of Historic Properties (# buildings with potentially historic structure)	2	2	2	1
Natural Areas/Nature Preserves	Area of Natural Areas (INAI) and Nature Preserve Affects (acres)	1	1	1	1
Threatened and Endangered Species	Federal and State Protected Species Area of Association (acres)	2	4	3	1
Vegetation/ Wildlife Habitat	Area of Vegetation and Wildlife Habitat (acres)	2	1	3	4
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (acres)	2	2	1	4
Floodplains	Area of FEMA 100-year Floodplain (acres)	1	2	4	3
Wetlands	Total Wetland/Jurisdictional Wetland	4	3	2	1
Special Waste	# of Affected Special Waste Sites	1	1	1	1
Special Lands	Area of Special Lands Affected	1	1	1	1
Air Quality	Negative Affect to Air Quality	1	1	1	1
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	4	3	2	1
	Total Score	22	24	22	23
	Overall Environmental Resources Affect (Ranking)*	1	4	1	3

*Note: * The ranking of overall environmental resources represents a decreasing order of the amount of the amount overall environmental resources impacts. (i.e. A terminus option with a ranking of "1" will impact the least amount of environmental resources in the study area, while a terminus option with a ranking of "4" will impact the most environmental resources in the study area)*

4.4.1 Cultural Resources

Cultural resources affects within the study area fall into two categories: archaeological resources and historic resources.

4.4.1.1 Archaeological

Archaeological affects were evaluated through measurement of the length of archaeological high probability zone that is located within the terminus option alignment.

Corridor Alternative 3. Terminus Options 3T and Terminus Option 3Y affect approximately 2.9 miles of high probability zones. Terminus Option 3X affects approximately 3.0 miles and Terminus Option 3Z affects approximately 3.4 miles of high probability zones.

Corridor Alternative 6. Terminus Options 6T and Terminus Option 6Y affect approximately 2.9 miles. Terminus Option 6T and Terminus Option 6Z affect approximately 3.0 miles and 3.4 miles of high probability zone, respectively.

4.4.1.2 Historic

There is one historic property (Cottonwood Cemetery) located within the vicinity of the western terminus options.

Corridor Alternative 3. The Terminus Options 3T and Terminus Option 3X affect one historic property; whereas Terminus Options 3Y and Terminus Option 3Z do not affect any historic properties.

Corridor Alternative 6. The western terminus options affect one historic property with the exception of Terminus 6Z, which does not affect any historic properties.

4.4.2 Natural Resources

Natural Resources analyzed in this study include natural areas, Nature Preserves, threatened and endangered species, vegetation, and wildlife habitat.

4.4.2.1 Natural Areas (INAI) and Nature Preserves

Due to the special protection status and high quality vegetation of natural areas (INAI) and nature preserves, the western terminus options were developed to avoid these areas. The natural areas and nature preserves are not affected by any of the Corridor Alternative 3 western terminus options or the Corridor Alternative 6 western terminus options.

4.4.2.2 Threatened and Endangered Species (T&E)

T&E species are potentially located within the study area. The T&E area of association affected by the western terminus options was evaluated to assess potential impacts to T&E species.

Corridor Alternative 3. No federal and state protected species area of association is affected by Terminus Option 3Z. Terminus Options 3T and Terminus Option 3Y affect approximately 68.2 acres and approximately 55.6 acres, respectively, of federal and state protected species area of association. Terminus Option 3X affects the greatest area of approximately 137.1 acres.

Corridor Alternative 6. For Corridor Alternative 6, Terminus Option 6Z has no affect on the federal and state protected species area of association. Terminus Option 6X has the largest affect (approximately 137.1 acres) on the federal and state protected species area of association.

4.4.2.3 Vegetation and Wildlife Habitat

Vegetation and wildlife habitats within the study area are affected by all of the western terminus options. The impacts to vegetation and wildlife were assessed by calculating the area of vegetation and wildlife habitat impacted by the western terminus options. Figure 20 shows the natural features of the study area.

Corridor Alternative 3. The western terminus options affect between approximately 28 acres (Terminus Option 3Z) and 34 acres (Terminus Option 3T).

Corridor Alternative 6. Terminus Option 6X affects the least amount of vegetation and wildlife habitat (approximately 21 acres) and Terminus Option 6Z affects the most amount of vegetation and wildlife habitat (approximately 28 acres).

4.4.3 Water Resources

Affects to water quality may be directly related to the number of new bridges over a water resource and the increase in impervious surface area.

4.4.3.1 Corridor Alternative 3

The western terminus options require 1 bridge (Terminus Options 3X and Terminus Option 3Y) or 2 bridges (Terminus Options 3T and Terminus Option 3Z) over a water resource. The increase in impervious surface area ranges between approximately 43 acres (Terminus Option 3T) and 57 acres (Terminus Option 3X). Based on these two criteria, Terminus Option 3T and Terminus Option 3Y have the least affect on water resources. The results of the water resources analysis are presented in Table 17A.

Table 17A: Water Resources Affects by Corridor Alternative 3 Western Terminus Options

Terminus Options	New Bridges		Impervious Surface Area		Total Score (score 1 + score 2)	Final Rank
	#	score 1	Acres	score 2		
No-Action	0		0			N/A
3T	2	3	43	1	4	1
3X	1	1	57	4	5	3
3Y	1	1	51	3	4	1
3Z	2	3	49	2	5	3

4.4.3.2 Corridor Alternative 6

The western terminus options require 1 bridge (Terminus Options 6X and Terminus Option 6Y) or 2 bridges (Terminus Options 6T and 6Z) over a water resource. The smallest increase

in impervious area is approximately 38 acres (Terminus Option 6T) and the largest increase in impervious area is approximately 55 acres (Terminus Option 6Z). The water resources analysis shows that Terminus Option 6Y has the least affect on water resources and Terminus Option 6Z has the greatest impact on water resources. Table 17B shows the results of the water resources analysis.

Table 17B: Water Resources Affects by Corridor Alternative 6 Western Terminus Options

Terminus Options	New Bridges		Impervious Surface Area		Total Score (score 1 + score 2)	Final Rank
	#	score 1	Acres	score 2		
No-Action	0		0			N/A
6T	2	3	38	1	4	2
6X	1	1	52	3	4	2
6Y	1	1	48	2	3	1
6Z	2	3	55	4	7	4

4.4.4 Floodplains

Directs impacts to the 100-year floodplain are essential to assessing the amount of floodplain, associated with each western terminus option, requiring mitigation.

4.4.4.1 Corridor Alternative 3B and 3C

The Terminus Options affect between approximately 122 acres (Terminus Option 3T) and approximately 168 acres (Terminus Options 3Y) of FEMA 100-year floodplain.

4.4.4.2 Corridor Alternative 6

The least amount of FEMA 100-year floodplain is affected by Terminus Option 6T (approximately 125 acres) and the most amount of FEMA 100-year floodplain is affected by Terminus Option 6Y (approximately 168 acres).

4.4.5 Wetlands

Although minimizing affects to all wetlands is essential, jurisdictional wetlands are of particular concern. Jurisdictional wetlands are those wetlands that have a direct surface connection to navigable waters. Because of this connection, jurisdictional wetlands can represent a higher valued wetland in terms of function. The wetland affects analysis is based on two criteria: the total wetlands affected and the jurisdictional wetlands affected.

4.4.5.1 Corridor Alternative 3

Terminus Option 3Z (approximately 10.8 acres) affects the least amount of total wetlands, all of which is considered jurisdictional. Terminus Option 3X affects the greatest amount of wetlands, approximately 25.2 acres, of which approximately 15.5 acres are considered jurisdictional wetlands. As shown in Table 18A, Terminus Option 3Z has the least overall impact based on these two criteria.

Table 18A: Wetland Affects by Corridor Alternative 3 Western Terminus Options

Terminus Options	Total Wetland Affected Area		Jurisdictional Wetland Area Affected		Total Score (score 1 + score 2)	Final Rank
	#	score 1	Acres	score 2		
No-Action	0		0			N/A
3T	23.8	3	17.3	4	7	3
3X	25.2	4	15.5	3	7	3
3Y	17.4	2	14.2	2	4	2
3Z	10.8	1	10.8	1	2	1

4.4.5.2 Corridor Alternative 6

The least amount of total wetlands affected is approximately 10.8 acres (Terminus Option 6Z). The largest amount of total wetlands affected is approximately 23.0 acres (Terminus Option 6X). The terminus options affect between approximately 10.8 acres (Terminus Option 6Z) and 15.0 acres (Terminus Option 6T) of jurisdictional wetlands. Terminus Option 6Z has the least overall impact on wetlands and Terminus Option 6T has the largest overall impact on wetlands, as shown in Table 18B.

Table 18B: Wetland Affects by Corridor Alternative 6 Western Terminus Options

Terminus Options	Total Wetland Affected Area		Jurisdictional Wetland Area Affected		Total Score (score 1 + score 2)	Final Rank
	#	score 1	Acres	score 2		
No-Action	0		0			N/A
6T	20.0	3	15.0	4	7	4
6X	23.0	4	13.3	2	6	3
6Y	17.4	2	14.2	3	5	2
6Z	10.8	1	10.8	1	2	1

4.4.6 Special Waste

Special waste includes hazardous wastes, potentially infectious medical wastes, industrial process waste, and pollution control waste. There is only one potential special waste site (Fulton Municipal Landfill) located in the study area. The Corridor Alternative 3 western terminus options and the Corridor Alternative 6 western terminus options do not affect this potential special waste site.

4.4.7 Special Lands

Special lands are divided into three groups; Section 4(f) properties, Section 6(f) properties, and Open Space Land Acquisition & Development (OSLAD) Program lands. Only Section 4(f) properties are located within the study area. None of the Corridor Alternative 3 western terminus options or the Corridor Alternative 6 western terminus options negatively affects any special lands within the study area.

4.4.8 Air Quality

The air quality status of the study area is currently designated as an attainment zone. The Corridor Alternative 3 western terminus options and the Corridor Alternative 6 western terminus options do not negatively affect air quality within the study area. Whiteside County will remain an attainment zone with the proposed improvements.

4.4.9 Traffic Noise

Traffic noise affects were evaluated by determining the number of potential noise sensitive receptors that will experience an increase in traffic noise levels with the development of the western terminus option. Noise sensitive receptors include residential development, commercial development, churches, parks, and recreational facilities.

4.4.9.1 Corridor Alternative 3

The number of potential noise sensitive receptors affected by the western terminus options ranges between approximately 20 receptors (Terminus Option 3Z) and approximately 38 receptors (Terminus Option 3T).

4.4.9.2 Corridor Alternative 6

Terminus Option 6Z affects the least number of potential noise sensitive receptors (approximately 21 receptors) and Terminus Option 6T contains the largest number of sensitive receptors (approximately 38).

4.5 AGRICULTURE

The number of centennial farms, the potential of farm severance affects, and prime farmland are important elements to evaluate. Figure 21 shows the area of prime farmland.

4.5.1 Corridor Alternative 3

The potential for farm severance is medium for all terminus options with the exception of Terminus Option 3T which has a low potential for farm severance. Each western terminus option potentially impacts one centennial farm and the area of prime farmland impacted is the same for all terminus options.

Table 19A: Agricultural Resources Affects by Corridor Alternative 3 Western Terminus Options

Terminus Option	Number of Centennial Farms		Potential of Farm Severance Affects		Total Score (score 1 + score 2)	Final Rank
	#	score 1	(High, Medium, Low)	score 2		
No-Action	0		None			N/A
3T	1	1	Low	1	2	1
3X	1	1	Medium	2	3	2
3Y	1	1	Medium	2	3	2
3Z	1	1	Medium	2	3	2

4.5.2 Corridor Alternative 6

The potential for farm severance is medium for all terminus options with the exception of Terminus Option 6T which has a low potential for farm severance. Each western terminus option potentially impacts one centennial farm and the area of prime farmland impacted is the same for all terminus options.

Table 19B: Agricultural Resources Affects by Corridor Alternative 6 Western Terminus Options

Terminus Option	Number of Centennial Farms		Potential of Farm Severance Affects		Total Score (score 1 + score 2)	Final Rank
	#	score 1	(High, Medium, Low)	score 2		
No-Action	0		None			N/A
6T	1	1	Low	1	2	1
6X	1	1	Medium	2	3	2
6Y	1	1	Medium	2	3	2
6Z	1	1	Medium	2	3	2

4.6 COMMUNITY PLANNING / LAND USE

The Community Planning / Land Use Criterion evaluated according to the ease of converting the intersection of existing U.S. Route 30, Illinois Route 136, and the western terminus option to a simple interchange. The No-Action Option does not support future expansion because the capacity of the existing facility cannot support the projected traffic demand.

4.6.1 Corridor Alternative 3

The intersection of U.S. Route 30, Illinois Route 136, and the western terminus option is most easily converted to a simple interchange for Terminus Option 3X and Terminus Option 3Y. Terminus Option 3T and Terminus Option 3Z require a more complex interchange design at this intersection, such as a fly-over ramp, based on the angle of intersection. There is also the potential for a trumpet interchange at the intersection of existing U.S. Route 30 and the Expressway for Terminus Option 3T and Terminus Option 3X. A higher number of interchanges corresponds to more design and analysis work, higher costs, and greater disruptions.

The possibility of two interchanges along Terminus Option 3X does not support community planning and land use. Community planning and land use is not well supported for Terminus Option 3T and Terminus Option 3Z due to the difficulty of converting the intersection to an interchange. Terminus Option 3Y includes only one possible simple interchange and best supports community planning and land use.

4.6.2 Corridor Alternative 6

Terminus Option 6X and Terminus Option 6Y are easily converted to interchanges at the intersection of U.S. Route 30, Illinois Route 136, and the western terminus option. The ease of converting this intersection to an interchange is complementary to community planning and land use. Terminus Option 6T and Terminus Option 6Z are not easily converted to interchanges at this location based on their geometry. A complex interchange such as a fly-over is likely required to convert the intersection to an interchange for Terminus Option 6T and Terminus Option 6Z. A simple interchange for Terminus Option 6X and Terminus Option 6Y better supports community planning and land use than a complex interchange for Terminus Option 6T and Terminus Option 6Z.

4.7 ROW / RESIDENCES AND COMMERCIAL BUILDINGS

Two elements were evaluated for the ROW/Residences and Commercial Buildings Criterion. These elements include ROW acquisition and the number of residences and commercial buildings located within the 600-foot wide affect zone.

4.7.1 Corridor Alternative 3

The ROW acquisition for the western terminus options ranges between approximately 150 acres (Terminus Option 3T) and 210 acres (Terminus Option 3X). Terminus Option 3T requires the least amount of ROW acquisition because it uses the most existing ROW.

The number of potential residences and commercial buildings within the 600-foot affect zone range between 7 (Terminus Option 3Z) and 21 (Terminus Option 3T). The most potential residences and commercial buildings are contained within Terminus Option 3T because it follows the existing alignment and several residences/commercial buildings are located adjacent to the roadway.

Terminus Option 3Z affects ROW/Residences and Commercial Buildings the least and Terminus Option 3X affects ROW/Residences and Commercial Buildings the least most on the two criteria. Table 20A presents the results of the ROW / Residences and Commercial Buildings analysis. The No-Action Option does not directly impact any ROW/residences or commercial buildings.

Table 20A: ROW / Residences & Commercial Buildings Affects by Corridor Alternative 3 Western Terminus Options

Terminus Option	ROW Acquisition		Potential Residences & Commercial Buildings Affects		Total Score (score 1 + score 2)	Final Rank
	acres	score 1	#	score 2		
No-Action	0		0			N/A
3T	150	1	21	4	5	2
3X	210	4	11	3	7	4
3Y	190	3	10	2	5	2
3Z	170	2	7	1	3	1

4.7.2 Corridor Alternative 6

Terminus Option 6X requires the greatest ROW acquisition (approximately 190 acres). The least amount of ROW acquisition is required by Terminus Option 6T (approximately 130 acres) because it uses more existing ROW.

The potential residences and commercial buildings affected by the western terminus options ranges between approximately 8 (Terminus Option 6Z) and 23 (Terminus Option 6T).

Overall, Terminus Option 6X has the greatest affect on ROW / Residences and Commercial Buildings and Terminus Options 6Y and Terminus Option 6Z have the least affect. The results of the ROW/Residences and Commercial Buildings analysis are shown in Table 20B. The No-Action Option does not directly impact ROW/residences or commercial buildings.

Table 20B: ROW / Residences & Commercial Buildings Affects by Corridor Alternative 6 Western Terminus Options

Terminus Option	ROW Acquisition		Potential Residences & Commercial Buildings Affects		Total Score (score 1 + score 2)	Final Rank
	acres	score 1	#	score 2		
No-Action	0		0			N/A
6T	130	1	23	4	5	2
6X	190	4	13	2	6	4
6Y	180	2	15	3	5	2
6Z	180	2	8	1	3	1

4.8 PUBLIC SUPPORT

Impacts to the viewshed of the bluffs, the effect of construction on railroad operations, and the level of difficulty of construction were evaluated to assess public support for the western terminus options. The No-Action Option minimally impacts the viewshed of the bluffs and does not affect the railroad operations. Construction difficulty is not applicable to the No-Action Option.

4.8.1 Corridor Alternative 3

Terminus Option 3X is located north of the bluffs and has no negative impact on the viewshed of the bluffs. Terminus Option 3T passes through the bluffs at approximately the same location as existing U.S. Route 30 and has a moderate impact on the viewshed of the bluffs. This alignment traverses through approximately 950 feet of the bluffs. Approximately 0.4 miles south of existing U.S. Route 30, Terminus Option 3X traverses through 400 feet of the bluffs. Terminus Option 3Z traverses across approximately 200 feet of the bluffs at a location approximately 1.3 miles south of existing U.S. Route 30. The view of the bluffs will be obstructed in two locations as a result of Terminus Option 3Y and Terminus Option 3Z (one by existing U.S. Route 30 and one by the terminus options); thus these terminus options have the greatest impact on the viewshed of the bluffs.

Each western terminus option has some impact on railroad operations. The impact to railroad operations is minimal for Terminus Option 3T, Terminus Option 3X, and Terminus Option 3Z. During construction of these western terminus options, railroad traffic must be slowed while the bridge beams for the UP Railroad and the BNSF Railroad bridges are swung over the train tracks. Terminus Option 3Y has a larger impact on railroad operations because a truss will be swung over the tracks to construct the bridge over the UP Railroad. The act of swinging a truss over the tracks, which is necessary to construct Terminus Option 3Y, is more difficult and would create greater operational delay than moving beams.

The level of difficulty to construct each western terminus option may impact the amount of public support for that option assuming, the more difficult it is to construct, the longer the construction schedule, the greater delay. Each terminus option has distinct features; each feature

is associated with construction challenges. There is a different level of difficulty associated with constructing each of the western terminus options. This study included the analysis of four factors related to construction difficulty including: earthwork, terminus option length, bridge structure types, and bridges constructed on curves. Based on these four criteria, Terminus Option 3T and Terminus Option 3Z have a low level of construction difficulty. Terminus Option 3Z has the shortest alignment (4.9 miles). The bridges for Terminus Option 3T and Terminus Option 3Z are relatively easy to construct. Terminus Option 3X and Terminus Option 3Y have a medium level of construction difficulty. Terminus Option 3X has the longest alignment (5.8 miles) and has some bridges along major curves in the alignment. The largest amount of earthwork (approximately 1.8 cubic yards) and the most difficult bridges to construct (including a truss bridge) is associated with Terminus Option 3Y.

It is expected for public support to be greatest for the western terminus option that impacts the public the least. Based on the impacts of each western terminus options on the public, including affects to the viewshed of the bluffs, impacts on railroad operations, and the level of construction difficulty, Terminus Option 3X is expected to have the greatest public support and Terminus Option 3Y is expected to have the least amount of public support.

Table 21A: Public Support for Corridor Alternative 3 Western Terminus Options

Terminus Option	Affect on Bluff Viewshed		Affect on Railroad Operations		Level of Construction Difficulty		Total Score (score 1 + score 2 +score 3)	Final Rank
	(Yes, Moderate, No)	score 1	(High, Medium, Low)	score 2	(High, Medium, Low)	score 3		
No-Action	N/A		N/A					
3T	Moderate	2	Low	1	Low	1	4	1
3X	No	1	Low	1	Medium	3	5	2
3Y	Yes	3	Medium	4	Medium	3	10	4
3Z	Yes	3	Low	1	Low	1	5	2

4.8.2 Corridor Alternative 6

Views of the bluffs are not affected by Terminus Option 6X. Terminus Option 6T affects the viewshed of the bluffs, but it is considered moderate since the alignment is at approximately the same location as existing U.S. Route 30. The alignment traverses approximately 900 feet of the bluffs. As a result of Terminus Option 6Y and Terminus Option 6Z have the greatest impact on the viewshed of the bluffs since it is obstructed in two locations (one by existing U.S. Route 30 and one by the terminus option). Terminus Option 6Y crosses approximately 400 feet of the bluffs at a location approximately 0.4 miles south of existing U.S. Route 30. Approximately 1.3 miles south of existing U.S. Route 30, Terminus Option 3Z traverses approximately 200 feet of the bluffs..

Railroad operations are minimally impacted by Terminus Option 6T, Terminus Option 6X, and Terminus Option 6Z. These western terminus options require railroad traffic to slow while beams

are being swung over the tracks to construct the bridges over the UP Railroad and the BNSF Railroad. It is more challenging to swing a truss over railroad tracks; as a result, Terminus Option 3Y will have the most impact on railroad operations.

Each terminus option has distinct features; each feature is associated with construction challenges. There is a different level of difficulty associated with constructing each of the western terminus options. This study included the analysis of four factors related to construction difficulty including: earthwork, terminus option length, bridge structure types, and bridges constructed on curves. Based on these four criteria, it was determined that Terminus Option 6T and Terminus Option 6Z have a lower level of construction difficulty. Terminus Option 6Z has the shortest alignment (5.5 miles). The bridges included in Terminus Option 6T and Terminus Option 6Z are relatively easy to construct. Terminus Option 6X and Terminus Option 6Y have a medium level of construction difficulty. Terminus Option 6X has the longest alignment (6.2 miles) and has some bridges along major curves in the alignment. The largest amount of earthwork (approximately 1.7 cubic yards) and the most difficult bridges to construct (including a truss bridge) is associated with in Terminus Option 6Y.

Based on the above criteria, Terminus Option 6X is expected to draw the most support from the public; while, Terminus Option 6Y is expected to be supported the least by the public.

Table 21B: Public Support for Corridor Alternative 6 Western Terminus Options

Terminus Option	Affect on Bluff Viewshed		Affect on Railroad Operations		Level of Construction Difficulty		Total Score (score 1 + score 2 +score 3)	Final Rank
	(Yes, Moderate, No)	score 1	(High, Medium, Low)	score 2	(High, Medium, Low)	score 3		
No-Action	N/A		N/A					
6T	Moderate	2	Low	1	Low	1	4	1
6X	No	1	Low	1	Medium	3	5	2
6Y	Yes	3	Medium	4	Medium	3	10	4
6Z	Yes	3	Low	1	Low	1	5	2

4.9 COST

The conceptual cost estimate for each of the terminus options is based on the construction cost of a four-lane expressway including engineering, construction management, environmental studies, ROW requirements, and potential relocations.

4.9.1 Corridor Alternative 3

The detailed cost of each western terminus option associated with Corridor Alternative 3 is presented in Table 22A. The estimated construction costs for the western terminus options range between approximately $28 million (Terminus Option 3Z) and approximately $49 million (Terminus Option 3T). The cost estimate is not applicable to the No-Action Option.

The estimated cost for bridges included in Terminus Option 3X, Terminus Option 3Y, and Terminus Option 3Z range between approximately $6.2 million and approximately $11.8 million; whereas and the bridges for Terminus Option 3T require a higher cost, approximately $19.8 million.

4.9.2 Corridor Alternative 6

Table 22B shows the detailed cost of each western terminus option associated with Corridor Alternative 6. The estimated construction costs for the western terminus options range between $30 million (Terminus Option 6Z) and $51 million (Terminus Option 6T). The cost estimate is not applicable to the No-Action Option.

The bridges for Terminus Options 6X, Terminus Option 6Y, and Terminus Option 6Z are estimated to cost between approximately $6.2 million and approximately $11.8 million; while the bridges for Terminus Option 6T are more costly (approximately $19.8 million).

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Table 22A: Estimated Cost Estimate of Corridor Alternative 3 Western Terminus Options

#	Item Description	Unit	Unit Cost	Terminus Option 3T		Terminus Option 3X		Terminus Option 3Y		Terminus Option 3Z	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	Clearing: Minor Removal Items [1]	acre	$2,000	29	$58,000	42	$84,000	38	$77,000	33	$66,000
2	Earthwork										
	Earth Excavation	yard^3 [2]	$4.10	911,208	$3,736,000	437,699	$1,795,000	271,568	$1,113,000	178,221	$731,000
	Borrow	yard^3 [2]	$2.85		-	692,231	$1,973,000	1,485,237	$4,233,000	1,029,207	$2,933,000
3	Erosion Control (1% of line 2)				$37,000		$38,000		$54,000		$37,000
4	Drainage (1% of line 2)				$37,000		$38,000		$54,000		$37,000
5	Subbase, Base, Surface, Shoulders										
	Subbase	yard^3 [2]	$22.00	83,795	$1,844,000	92,598	$2,037,000	82,794	$1,821,000	78,978	$1,737,000
	Base + Surface	ton[2]	$32.94	126,565	$4,169,000	139,862	$4,607,000	125,053	$4,119,000	119,289	$3,929,000
	Bituminous Shoulder	yard^2 [2]	$21.14	98,101	$2,074,000	108,408	$2,292,000	96,930	$2,049,000	92,462	$1,955,000
	Aggregate Shoulders	ton[2]	$15.00	8,459	$127,000	9,348	$140,000	8,358	$125,000	7,973	$120,000
6	Guardrail, Roadside Safety	per structure	$10,000	4.00	$40,000	4.00	$40,000	3.00	$30,000	5.00	$50,000
7	Traffic Signals/Intersections/Interchanges [3]	per intersection	$150,000	1	$150,000	1	$150,000	1	$150,000		-
8	Detours, Temp. Traffic Control (4% of line 2)				$150,000		$150,000		$214,000		$147,000
9	Railroad Crossing Improvements	per crossing	$250,000	2	$500,000	2	$500,000	2	$500,000	2	$500,000
10	Field Office and Laboratory	per month	$1,500	12	$18,000	12	$18,000	12	$18,000	12	$18,000
11	Environmental Mitigation/ Incidental Items (5% of 1 thru 10)				$647,000		$693,000		$728,000		$613,000
12	Roadway Subtotal (1-11)				$13,587,000		$14,555,000		$15,285,000		$12,873,000
13	Structure Removal	each	$250,000	1	$250,000		-	1	$250,000		-
14	Culverts										
	Major [4]	cubic yard	$400		-		-		-	213	$85,000
	Minor [4]	foot[2]	$80	1,280	$102,000	1,760	$141,000	1,600	$128,000	1,280	$102,000
15	Bridges				$19,728,000		$8,297,000		$11,750,000		$6,150,000
16	Structures for Detours and Temporary Traffic Control [5]				-		-		-		-
17	Structure Subtotal (13-16)				$20,080,000		$8,438,000		$12,128,000		$6,337,000
18	Roadway and Structure Subtotal (12+17)				$33,667,000		$22,993,000		$27,413,000		$19,210,000
19	Contingencies (20% of 18)				$6,734,000		$4,599,000		$5,483,000		$3,842,000
20	Total Construction Cost (18+19)				$40,401,000		$27,592,000		$32,896,000		$23,052,000
21	Utility Adjustments	per mile	$50,000	5.23	$261,000	5.77	$289,000	5.16	$258,000	4.93	$246,000

Table 22A: Estimated Cost Estimate of Corridor Alternative 3 Western Terminus Options

#	Item Description	Unit	Unit Cost	Terminus Option 3T		Terminus Option 3X		Terminus Option 3Y		Terminus Option 3Z	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
22	Land Acquisition and Relocation										
	Land	acre	$5,000	146	$730,000	211	$1,055,000	192	$960,000	167	$835,000
	Relocations [6]	per building	$300,000	7	$2,100,000	3.7	$1,100,000	3.3	$1,000,000	2.3	$700,000
23	Preliminary Engineering (12% of 20)				$4,848,000		$3,311,000		$3,947,000		$2,766,000
24	Construction Engineering (1% of 20)				$404,000		$276,000		$329,000		$231,000
25	**Total Project Cost**				$48,740,000		$33,620,000		$39,390,000		$27,830,000
	Overall Cost Ranking				4		2		3		1

Note:

(1) The Quantity is assumed to be 1/5th of the total land acquisition which is based on an assumed 200-foot ROW width.
(2) Unit cost taken from IDOT Pay Item Reports from March, June, August, and September 2003.
(3) The cost estimate for the proposed I-88 and IL 78 interchanges are lump sum costs which include all contingencies associated with the interchange. Therefore, the cost estimate does not include the cost of the interchanges when calculating items 11 and 19.
(4) Major Culvert: Assumed length of 160' based on the typical section and additional clear zone. Assumed structure was an 8' by 8' box culvert. Minor Culvert: Assumed length was 160' and assumed structure was a 30" –diameter RCP (averaged between a 24"-diameter and a 36" diameter RCP).
(5) The costs associated with 'Structures for Detours and Temporary Traffic Control' are accounted for in the contingency cost for this phase of the project.
(6) Includes commercial buildings, residential buildings, or farm units. A farm unit could include a residence, barn, and/or silos. The impacted units represent 1/3rd of the total relocations within the 600-foot affect zone based on an assumed 200-foot ROW width.

Table 22B: Estimated Cost Estimate of Corridor Alternative 6 Western Terminus Options

#	Item Description	Unit	Unit Cost	Terminus Option 6T		Terminus Option 6X		Terminus Option 6Y		Terminus Option 6Z	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	Clearing: Minor Removal Items [1]	acre	$2,000	25	$50,000	38	$76,000	36	$72,000	36	$72,000
2	Earthwork										
	Earth Excavation	yard^3 [2]	$4.10	1,088,932	$4,465,000	416,767	$1,709,000	292,676	$1,200,000	205,024	$841,000
	Borrow	yard^3 [2]	$2.85		-	681,951	$1,943,000	1,434,593	$4,089,000	1,040,198	$2,965,000
3	Erosion Control (1% of line 2)				$45,000		$37,000		$53,000		$38,000
4	Drainage (1% of line 2)				$45,000		$37,000		$53,000		$38,000
5	Subbase, Base, Surface, Shoulders										
	Subbase	yard^3 [2]	$22.00	90,127	$1,983,000	98,672	$2,171,000	89,638	$1,972,000	88,725	$1,952,000
	Base + Surface	ton[2]	$32.94	136,129	$4,484,000	149,036	$4,909,000	135,390	$4,460,000	134,010	$4,414,000
	Bituminous Shoulder	yard^2 [2]	$21.14	105,515	$2,231,000	115,519	$2,442,000	104,942	$2,218,000	103,873	$2,196,000
	Aggregate Shoulders	ton[2]	$15.00	9,098	$136,000	9,961	$149,000	9,049	$136,000	8,957	$135,000
6	Guardrail, Roadside Safety	per structure	$10,000	4.00	$40,000	4.00	$40,000	3.00	$30,000	5.00	$50,000
7	Traffic Signals/Intersections/Interchanges [3]	per intersection	$150,000		-		-		-		-
8	Detours, Temp. Traffic Control (4% of line 2)				$179,000		$146,000		$211,000		$152,000
9	Railroad Crossing Improvements	per crossing	$250,000	2	$500,000	2	$500,000	2	$500,000	2	$500,000
10	Field Office and Laboratory	per month	$1,500	12	$18,000	12	$18,000	12	$18,000	12	$18,000
11	Environmental Mitigation/ Incidental Items (5% of 1 thru 10)				$709,000		$709,000		$751,000		$669,000
12	Roadway Subtotal (1-11)				$14,885,000		$14,886,000		$15,763,000		$14,040,000
13	Structure Removal	each	$250,000	1	$250,000		-	1	$250,000		-
14	Culverts										
	Major [4]	cubic yard	$400		-		-		-	213	$85,000
	Minor [4]	foot[2]	$80	800	$64,000	960	$77,000	800	$64,000	1,280	$102,000
15	Bridges				$19,728,000		$8,297,000		$11,750,000		$6,150,000
16	Structures for Detours and Temporary Traffic Control [5]				-		-		-		-
17	Structure Subtotal (13-16)				$20,042,000		$8,374,000		$12,064,000		$6,337,000
18	Roadway and Structure Subtotal (12+17)				$34,927,000		$23,260,000		$27,827,000		$20,377,000
19	Contingencies (20% of 18)				$6,985,000		$4,652,000		$5,565,000		$4,075,000
20	Total Construction Cost (18+19)				$41,912,000		$27,912,000		$33,392,000		$24,452,000
21	Utility Adjustments	per mile	$50,000	5.62	$281,000	6.15	$308,000	5.59	$279,000	5.53	$277,000

Table 22B: Estimated Cost Estimate of Corridor Alternative 6 Western Terminus Options

#	Item Description	Unit	Unit Cost	Terminus Option 6T		Terminus Option 6X		Terminus Option 6Y		Terminus Option 6Z	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
22	Land Acquisition and Relocation										
	Land	acre	$5,000	127	$635,000	190	$950,000	180	$900,000	182	$910,000
	Relocations [6]	per building	$300,000	7.7	$2,300,000	4.3	$1,300,000	5	$1,500,000	2.7	$800,000
23	Preliminary Engineering (12% of 20)				$5,029,000		$3,349,000		$4,007,000		$2,934,000
24	Construction Engineering (1% of 20)				$419,000		$279,000		$334,000		$245,000
25	**Total Project Cost**				$50,580,000		$34,100,000		$40,410,000		$29,620,000
	Overall Cost Ranking				4		2		3		1

Note:

(1) The Quantity is assumed to be 1/5th of the total land acquisition which is based on an assumed 200-foot ROW width.
(2) Unit cost taken from IDOT Pay Item Reports from March, June, August, and September 2003.
(3) The cost estimate for the proposed I-88 and IL 78 interchanges are lump sum costs which include all contingencies associated with the interchange. Therefore, the cost estimate does not include the cost of the interchanges when calculating items 11 and 19.
(4) Major Culvert: Assumed length of 160' based on the typical section and additional clear zone. Assumed structure was an 8' by 8' box culvert. Minor Culvert: Assumed length was 160' and assumed structure was a 30" –diameter RCP (averaged between a 24"-diameter and a 36" diameter RCP).
(5) The costs associated with 'Structures for Detours and Temporary Traffic Control' are accounted for in the contingency cost for this phase of the project.
(6) Includes commercial buildings, residential buildings, or farm units. A farm unit could include a residence, barn, and/or silos. The impacted units represent 1/3rd of the total relocations within the 600-foot affect zone based on an assumed 200-foot ROW width.

5.0 CONCLUSIONS

The U.S. Route 30 Corridor Study Addendum presents the results of two issues that developed during the U.S. Route 30 Corridor Study. These issues include a better understanding of the traffic characteristics within the study area and an analysis of the western terminus for recommended alternatives.

5.1 STUDY AREA TRAFFIC CHARACTERISTICS

An O-D survey was completed to more accurately account for traffic movements throughout the study area. The O-D study confirms that a corridor alternative with a southern alignment is more attractive than a corridor alternative with a northern alignment and an interchange between the Expressway and Illinois Route 78 is beneficial to the study area. The results of the O-D study reveal that a substantial amount of truck traffic would use the Expressway which reduces the amount of truck traffic through the City of Morrison. In addition, the O-D study verified that the eastern terminus and western terminus locations of U.S. Route 30, Moline Road, and Como Road, and Illinois Route 136, Frog Pond Road, and U.S. Route 30, respectively are supported from a traffic perspective.

5.2 WESTERN TERMINUS OPTIONS

Each of the four western terminus options evaluated has benefits and drawbacks. The recommendation of the western terminus options was developed based on the results of a comprehensive analysis process. The evaluation criteria used in the western terminus option analysis were developed based on the purpose and need of the project. The criteria included safety, corridor utilization, traffic operations, environmental resources affects, agriculture, ROW/residences and commercial buildings, public support, and cost. The terminus option that best addresses the criteria also, best meets the purpose and need.

5.2.1 Corridor Alternative 3

The recommended western terminus options for Corridor Alternative 3 are Terminus Option 3Y and Terminus Option 3Z. Terminus Option 3Y rated the best overall with Terminus Option 3Z close behind. Both options have the same rankings for the criteria for safety, traffic operations, environmental affects, agriculture, and ROW/residential and commercial buildings. Terminus Option 3Y addresses the corridor utilization criterion and is the only western terminus option to support community planning/land use. However, it is not expected to be well supported by the public due to its affect on the viewshed of the bluffs, it has the most affect on railroad operations compared to the other terminus options, and is considered to have a medium level of construction difficulty. Terminus Option 3Z addresses public support criterion and has the lowest cost but does not easily support future expansion to an interchange or encourage continuous flow onto the Expressway.

Although two of the terminus options are recommended for Corridor Alternative 3, generally all of the options are feasible and rated/performed similarly. With an available point range between 9 and 45 (45 being the best), all terminus options, except terminus option 3X with 23 points, scored between the middle and upper thresholds of the range (between 29 and 33 points). As the

corridors are refined in the next phase and criteria are potentially added to the evaluation, the results may more clearly define a preferred alternative.

5.2.2 Corridor Alternative 6

The recommended western terminus options for Corridor Alternative 6 are Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z. The analysis resulted in the three recommended western terminus options for Corridor Alternative 6 having the same preliminary points subtotal.

Although Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z are ranked the same; the extent of their impacts on each criterion differs between them. These three terminus options have similar affects on safety, agriculture, and ROW/residences and commercial buildings. The impacts of these western terminus options are different for the following criteria: corridor utilization, traffic operations, environmental resources affects, community planning/land use, public support, and cost.

Overall, the recommended terminus options have approximately the same impact on the environmental resources. Terminus Option 6X affects more than double the Federal and State Protected Species Area of Association as compared to the other recommended western terminus options and impacts the highest amount of wetlands. Terminus Option 6Y affects very few wetlands; however, the option encroaches on the largest amount of FEMA 100-year floodplain. Terminus Option 6Z has the most new bridges over a water resource and the highest increase in impervious surface area.

Terminus Option 6X supports community planning/land use, but it has the longest travel time, shares a significant portion of its alignment with U.S. Route 30, and has a medium level of construction difficulty. The corridor is most utilized, with Terminus Option 6Y, since it provides the most access and encourages continuous flow towards the Expressway; however, it is the most expensive. The most cost effective western terminus option is Terminus Option 6Z. It also is most effective for traffic operations; though, it least supports community planning/land use.

Although three of the terminus options are recommended for Corridor Alternative 6, generally all four of the options are feasible and rated/performed similarly. With an available point range between 9 and 45 (45 being the best), all terminus options scored between the middle and upper thresholds of the range (between 27 and 33 points). As the corridors are refined in the next phase and criteria are potentially added to the evaluation, the results may more clearly define a preferred alternative.

6.0 RECOMMENDATIONS

A comprehensive analysis of potential western terminus options for the recommended corridor alternatives has been completed. There is a need for a more detailed analysis to assess the potential benefits and affects of various alignments within the preferred corridor alternatives. The more detailed level of analysis involves the development of preliminary design, proposed right-of-way, and environmental evaluation based on the National Environmental Policy Act (NEPA). Under the NEPA process, all reasonable alternatives must be considered including the No-Action Alternative.

The western terminus options recommended in this Corridor Addendum Report (Terminus Option 3Y, Terminus Option 3Z, Terminus Option 6X, Terminus Option 6Y, and Terminus Option 6Z) should be combined with the recommended corridor alternatives of the *U.S. Route 30 Corridor Study*, July 2005 (Corridor Alternative 3B, Corridor Alternative 3C, and Corridor Alternative 6) as the starting point for the next phase of the study. The following items should be considered as the corridor alternatives are further developed and analyzed.

1. Traffic Volumes. It is recommended that the projected traffic volumes be updated in the next phase of the project based on updated assumptions and a new design year. The results of the O-D study should be carried forward into the next phase.
2. Logical Termini and potential Corridor Extensions to Rock Falls and/or the Iowa border at the Mississippi River. Although the O-D Study results indicate that the termini are logical from a traffic perspective, the O-D study results cannot determine if improvements extending towards Rock Falls or the Iowa border would be beneficial. Preliminary analysis of the future traffic volumes do not indicate a need for additional capacity. Further analysis of the traffic demand should be conducted to establish if improvements to existing U.S. Route 30 or an extension of the Expressway beyond the current eastern terminus location are justified.
3. Cemetery Impacts. The Cottonwood Cemetery is located within the 600-foot affect zone of the recommended alternatives. Further corridor refinements should avoid impacts to the cemetery.
4. Construction Techniques and Structural Refinements. Construction techniques should be evaluated in greater detail for the corridor alternatives during preliminary design. For example, at the crossing of Terminus Option 3Y and Terminus Option 6Y over the UP Railroad and existing U.S. Route 30; there is a possibility of constructing a shoofly to lower the elevation of the UP Railroad. If the railroad was lowered, the elevation of expressway bridge (Terminus Option 3Y bridge or Terminus Option 6Y bridge) over the UP Railroad could also be lowered. Once detailed hydraulic and geotechnical analysis are completed other construction techniques could be explored.

7.0 PUBLIC INVOLVEMENT

Public involvement activities associated with the additional analysis for the U.S. Route 30 Corridor Study included the development of a fifth newsletter. The purpose of the newsletter was to inform the public of the additional analysis conducted for the Corridor Study including the O-D Study and the Western Terminus Options and to update the public on the project status and anticipated schedule. The newsletter was distributed to the entire U.S. Route 30 Corridor Study mailing list in August 2006.

8.0 COORDINATION ACTIVITIES

Coordination activities associated with the additional analysis included a meeting with representatives from UP Railroad and presentations at special interest group meetings. Relevant correspondence is included at the end of the document.

FIGURES

REFER TO FIGURES FOLDER ON CD-ROM

CORRESPONDENCE

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION
TRANSPORTATION DIVISION / RAIL SAFETY SECTION

Michael E. Stead — *Rail Safety Program Administrator*

October 21, 2005

The Honorable Mike Boland
State Representative
4416 River Drive
Moline, IL 61265

R05-229

RE: Acker Road near Fulton, Whiteside County
(AAR/DOT #175 212M, railroad milepost 131.32)

Dear Representative Boland:

This is in follow-up to my letter dated August 31, 2005, with which I indicted that representatives of this office would meet with local officials to discuss the problem of Union Pacific Railroad Company (UP) trains blocking the Acker Road highway-rail grade crossing.

On September 22, 2005, representatives of this office participated in a field review with representatives of the Union Pacific Railroad Company (UP), the Illinois Department of Transportation (IDOT), Whiteside County, Ustick Township, and Fulton Township. The meeting was scheduled to address the concern of trains blocking the Acker Road crossing, and reviewing the alternative of closing the crossing and building a connector road to US 30. A list of the meeting attendees is enclosed for your reference.

While waiting for westbound clearance to cross the bridge to Clinton, it was acknowledged by the Union Pacific that trains occasionally block the Acker Road crossing. This was attributed to inexperienced train crews not familiar with their train size and clear distance between crossings. Generally, when there is a blockage the end of the train extends east of the crossing. This office has received numerous complaints from citizens who live in the area of the crossing. Each time we contacted the railroad and reminded them of current state law that prohibits stopped trains from blocking public highway-rail grade crossings for longer than 10 minutes. We also recommended the complainants contact local police the next time they witnessed the crossing blocked by a stopped train, since the law permits local police to issue fines to train crews for blocking crossings. Our records indicate that only one train-vehicle collision has occurred at this location (8/18/1989). Subsequently, automatic flashing light signals and gates were installed (March 1990).

The possibility of constructing a connector road beginning north of the crossing on Acker Road west to US 30 was reviewed and discussed. Items discussed included property acquisition, local agency support, IDOT's US 30 Corridor Study, and potential costs. It is estimated that approximately eleven (11) acres of property would be required to construct the new one-mile long road.

With substantial earthwork necessary, in addition to the typical roadway and drainage requirements, it is estimated that the project would cost approximately $875,000.

Construction of a new connector road would further divide the existing maintenance responsibilities along Acker Road. Currently, from US 30, jurisdiction alternates between Ustick and Fulton Townships. With closure of the Acker Road crossing Ustick Township would be left with a small section of "Old Acker Road" south to US 30. This would serve one resident, and includes maintenance of a bridge. Given this, the lack of complaints received by the Townships or County, the need to acquire property, and the potential costs, we believe the local agencies are not in favor of pursuing construction of a connector road.

Further, as an addendum to its Corridor Study, IDOT is examining the US 30 curve east of Acker Road and the US 30 underpass of the UP tracks west of Acker Road. There is a possibility that US 30 will be reconstructed to bridge over the UP tracks. As such, the US 30 alignment and new bridge approaches could affect how a connector road would intersect US 30 with regard to roadway profiles and sight lines. Currently, the US 30 Corridor Study Addendum is scheduled for completion in April 2006. IDOT will continue to coordinate its work with Whiteside County, Ustick and Fulton Townships, and this office.

With the apparent lack of local support and potential impacts of IDOT's US 30 Corridor Study, it is this office's recommendation that a connector route not be pursued at this time. We will continue to work with the Union Pacific Railroad, and monitor its train operations for compliance with 625 ILCS 5/18c-7402 (1) "*Obstruction of Crossings.*" If the problem persists, however, we may recommend that the local agency file a petition with the Commission seeking a remedy to the situation.

I trust this information will be helpful. If you have any questions, please contact me at (217) 557-1285 or mstead@icc.illinois.gov, or Brian Vercruysse, Railroad Safety Specialist, at (630) 424-8750 or bvercruy@icc.illinois.gov.

Very truly yours,

Michael E. Stead
Rail Safety Program Administrator

Enclosure
cc: Randy Smit, Ustick Township
Alfred Jordan, Fulton Township
Peter Petrowsky, Whiteside County
Jon McCormick, IDOT
Shawn Connolly, IDOT
Gary Wilwerding, UP
Mike Payette, UP

APPENDIX:

CORRECTIONS TO THE U.S. ROUTE 30 CORRIDOR REPORT, JULY 2005

CORRECTIONS TO THE U.S. ROUTE 30 CORRIDOR STUDY REPORT

A correction was made to the cost estimate for Corridor Alternative 5, Corridor Alternative 6, Corridor Alternative 3B, and Corridor Alternative 3C and several table references after the publication of the *U.S. Route 30 Corridor Study* in July 2005. The corrections affect several pages of the *U.S. Route 30 Corridor Study*, July 2005 including 57, 58, 64, 70, 71, 72, 75, 76, 87, 94, 95, 96, and 98 that are included in this appendix.

Table 15: Summary of Comparative Analysis

Criterion	Measure of Effectiveness	No-Action	Corridor Alternative 1	Corridor Alternative 2	Corridor Alternative 3			Corridor Alternative 4		
					Terminus Option A	Terminus Option B	Terminus Option C	Terminus Option A	Terminus Option B	Terminus Option C
Safety	Does the corridor alternative meet full standards?	no	yes	yes	yes	yes	yes	yes	yes	yes
Corridor Utilization	Year 2023 ADT reduction along U.S. Route 30 at critical location	0	550	550	6,700	6,700	6,700	6,700	6,700	6,700
Traffic Operations	Estimated travel time (minutes) Improve intersection LOS along U.S. Route 30?	34.9 no	22.9 no	22.5 no	23.9 yes	22.4 yes	22.8 yes	24.0 yes	22.5 yes	23.0 yes
Environmental Resources Affects	Potential affects to environmental resources (based on Table 20)	N/A	30	41	43	46	33	51	53	41
Community Planning/ Land Use	Consistent with existing and future land use plans? (ranked as consistent, not fully consistent, not consistent)	Not Consistent	Not Consistent	Not Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent
ROW/Residences & Commercial Buildings	ROW acquisition (acres)/Number of Residences & Commercial Buildings	0/0	598/23	594/24	695/40	748/32	697/27	567/44	620/36	569/31
Adverse Travel	Amount of out-of-direction travel (miles)	0	0.4	0	1.3	-0.1	0.3	1.4	0	0.4
Public Support*	Does the public support the corridor alternative?	yes	no	no	no	yes	yes	no	somewhat	somewhat
Economic Vitality	Distance to existing U.S. Route 30 from proposed IL Route 78 interchanges (miles)	0	4.2	1.2	1.4	1.4	1.4	2.6	2.6	2.6
Cost	Estimated construction cost (millions)	0**	$107	$131	$129	$122	$133	$122	$104	$119

** Public support results are based on limited input; therefore, results may change throughout the duration of the study.*

*** The No-Action Alternative has no construction cost; however, the cost of maintaining the existing route would be greater than maintaining a new corridor alternative.*

Table 16: Comparative Analysis Results*

Criterion	Measure of Effectiveness	No-Action	Corridor Alternative 1	Corridor Alternative 2	Corridor Alternative 3			Corridor Alternative 4		
					Terminus Option A	Terminus Option B	Terminus Option C	Terminus Option A	Terminus Option B	Terminus Option C
Safety	Does the corridor alternative meet full standards?	–	+	+	+	+	+	+	+	+
Corridor Utilization	Year 2023 ADT reduction along U.S. Route 30 at critical location	–	O	O	+	+	+	+	+	+
Traffic Operations	Estimated travel time (minutes) Improve intersection LOS along U.S. Route 30?	–	O	O	O	+	+	O	+	O
Environmental Resources Affects	Potential affects to environmental resources	O	+	O	O	O	+	–	–	O
Community Planning/ Land Use	Consistent with existing and future land use plans? (ranked as consistent, not fully consistent, not consistent)	–	–	–	+	+	+	+	+	+
ROW/Residences & Commercial Buildings	ROW acquisition (acres)/Number of Residences & Commercial Buildings	+	+	+	–	–	O	O	O	+
Adverse Travel	Amount of out-of-direction travel (miles)	+	O	O	–	+	O	–	O	O
Public Support	Does the public support the corridor alternative?	+	–	–	–	+	+	–	O	O
Economic Vitality	Distance to existing U.S. Route 30 from proposed IL Route 78 interchanges (miles)	+	–	+	+	+	+	O	O	O
Cost	Estimated construction cost (millions)	+	O	–	O	O	–	O	O	O
Preliminary Point Subtotal**	[+=5 points, O=3 points, and –=1 point]	32	30	30	32	42	42	30	36	38
Preliminary Ranking***		**5**	**7**	**7**	**5**	**1**	**1**	**7**	**4**	**3**

*Note: *=The information contained in Legend for Comparative Analysis Category Rating provides an explanation of how the corridor alternatives were rated under each of the categories.*

***=Each of the category ratings (+, O, and –) was given a point value to distinguish overall rankings for the corridor alternatives. The corridor alternative with the highest point total is the recommended alternative. It is assumed that all of the categories are equally weighted.*

****=The preliminary ranking is based on point totals. Higher point totals equate to a higher overall ranking, thus better addressing the U.S. Route 30 Corridor Study Purpose and Need.*

Legend for Comparative Analysis Category Rating

Criterion	+	O	–
Safety (based on constructability to IDOT standards)	yes	somewhat	no
Corridor Utilization	≥ 5,000	500 – 5,000	≤ 500
Traffic Operations (Refer to Table 18)	≤ 5	5 - 13	≥ 13
Environmental Resources Score (Refer to Table 20)	< 39	40 - 49	> 50
Community Planning/ Land Use	consistent	not fully consistent	not consistent
ROW/ Residences & Commercial Buildings Score (Refer to Table 23)	≤ 6	6 - 12	≥ 13
Adverse Travel (miles)	≤ 0.0	0.0 – 1.0	≥ 1.0
Public Support	yes	neutral	no
Economic Vitality (miles from city)	< 2.2	2.2 – 3.1	> 3.1
Cost (millions)	≤ $100	$100 - $130	≥ $130

Table 21: Ranking of Environmental Resources Affects

Environmental Resources	Measure of Effectiveness	Corridor Alternative 1	Corridor Alternative 2	Corridor Alternative 3			Corridor Alternative 4		
				Terminus Option A	Terminus Option B	Terminus Option C	Terminus Option A	Terminus Option B	Terminus Option C
Agriculture	Area of Prime Farmland (acres)	1	2	6	8	4	5	7	3
Archaeological	Area of Archaeological High Probability (length corridor traverses high probability zones) (miles)	2	8	4	2	1	7	6	4
Historic	# of Historic Properties (# buildings with potentially historic structure)	2	1	2	5	2	5	8	5
Natural Areas/Nature Preserves	Area of Natural Areas (INAI) and Nature Preserve Affects (acres)	1	1	1	1	1	1	1	1
Threatened and Endangered Species	Federal and State Protected Species Area of Association (acres)	1	1	1	1	1	1	1	1
Vegetation/Wildlife Habitat	Area of Vegetation and Wildlife Habitat (acres)	8	7	4	4	4	1	1	1
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (ranking – see Table 22)	1	5	5	8	3	4	5	1
Floodplains	Area of FEMA 100-year Floodplain (acres)	4	1	3	5	2	7	8	6
Wetlands	Total Wetland/Jurisdictional Wetland (ranking – see Table 23)	6	3	5	8	3	2	6	1
Special Waste	# of Affected Special Waste Sites	3	3	3	3	1	3	3	1
Special Lands	Area of Special Lands Affected (acres)	1	1	1	1	7	1	1	7
Air Quality	Affects to Air Quality	1	1	1	1	1	1	1	1
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	1	6	7	4	2	8	5	3
	Total Score	32	40	43	51	32	46	53	35
	Overall Environmental Resources Affect (Ranking)	1	4	5	7	1	6	8	3

Note: the ranking of overall environmental resources represents a decreasing order of the amount of overall environmental resources impacts.

larger range of out-of-direction travel and should be considered during future evaluation once additional traffic information is available.

5.9 PUBLIC SUPPORT

Based on the discussions with Whiteside County, City of Morrison, City of Fulton, City of Sterling, City of Rock Falls, and special interest groups it was determined that the public supports the southern corridor alternatives more than the northern corridor alternatives. In general, it was stated at a coordination meeting in the summer of 2003 that a southern alignment is more beneficial to the public than a northern alignment and the closer the alignment is to the existing U.S. Route 30 alignment the better.

5.10 ECONOMIC VITALITY

Economic Vitality of the proposed improvements is related to the distance from the corridor alternative to the City of Morrison. The closer the alternative is to the City, the more vital it is to the economy. The distance between the corridor and the City (measured along Illinois Route 78) ranges between 1.2 miles (Corridor Alternative 2) and 4.2 miles (Corridor Alternative 1). Although Corridor Alternative 2 is the closest to the City, Corridor Alternative 3 (regardless of terminus option) is just slightly more at a distance of 1.4 miles and may be considered just as vital.

5.11 COST

Table 25 presents the detailed cost estimate for each corridor alternative. The estimated construction costs for the corridor alternatives range between $104 million (Corridor Alternative 4B) and $133 million (Corridor Alternative 3C).

The earthwork for Corridor Alternative 1 and Corridor Alternative 3 (regardless of terminus option) require a large amount of earth excavation (between $9.1 million and $12.7 million), whereas Corridor Alternative 2 and Corridor Alternative 4 (regardless of terminus option) require more borrow than excavation.

The southern corridor alternatives (Corridor Alternative 3 and Corridor Alternative 4) require more potential relocations than the northern alternatives (between 3 and 20 additional relocations). With each relocation estimated at $300,000, the additional cost ranges between $900,000 and $6.0 million.

Table 25: Estimated Cost of each Corridor Alternative

#	Item Description	Unit	Unit Cost	Corridor Alternative 1		Corridor Alternative 2		Corridor Alternative 3						Corridor Alternative 4					
								Terminus Option A		Terminus Option B		Terminus Option C		Terminus Option A		Terminus Option B		Terminus Option C	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	Clearing: Minor Removal Items	acre	$2,000	106	$212,000	156	$313,000	107	$213,000	108	$217,000	84	$169,000	54	$107,000	55	$111,000	31	$63,000
2	Earthwork																		
	Earth Excavation	yard^{3} (2)	$4.10	2,208,367	$9,054,000	1,582,765	$6,489,000	3,069,340	$12,584,000	3,094,135	$12,686,000	2,722,438	$11,162,000	800,178	$3,281,000	632,476	$2,593,000	455,872	$1,869,000
	Borrow	yard^{3} (2)	$2.85	974,554	$2,777,000	5,626,546	$16,036,000	9,379	$27,000		-		-	2,135,370	$6,086,000	1,419,574	$4,046,000	1,862,008	$5,307,000
3	Erosion Control (1% of line 2)				$118,000		$225,000		$126,000		$127,000		$112,000		$94,000		$66,000		$72,000
4	Drainage (1% of line 2)				$118,000		$225,000		$126,000		$127,000		$112,000		$94,000		$66,000		$72,000
5	Subbase, Base, Surface, Shoulders																		
	Subbase	yard^{3} (2)	$22.00	347,502	$7,645,000	342,312	$7,531,000	361,733	$7,958,000	331,329	$7,289,000	284,881	$6,267,000	353,114	$7,769,000	321,739	$7,078,000	274,869	$6,047,000
	Base + Surface	ton$^{(2)}$	$32.94	524,871	$17,289,000	517,031	$17,031,000	546,364	$17,997,000	500,443	$16,485,000	430,287	$14,174,000	533,346	$17,568,000	485,957	$16,007,000	415,165	$13,676,000
	Bituminous Shoulder	yard^{2} (2)	$21.14	406,832	$8,600,000	400,756	$8,472,000	423,492	$8,953,000	387,898	$8,200,000	333,519	$7,051,000	413,402	$8,739,000	376,670	$7,963,000	321,798	$6,803,000
	Aggregate Shoulders	ton$^{(2)}$	$15.00	35,082	$526,000	34,558	$518,000	36,518	$548,000	33,449	$502,000	28,760	$431,000	35,648	$535,000	32,481	$487,000	27,749	$416,000
6	Guardrail, Roadside Safety	per structure	$10,000	14	$140,000	17	$170,000	17	$170,000	15	$150,000	13	$130,000	16	$160,000	14	$140,000	12	$120,000
7	Intersections/Interchanges																		
	Traffic Signals	per intersection	$150,000	1	$150,000	1	$150,000	2	$300,000	2	$300,000	2	$300,000	1	$150,000	1	$150,000	1	$150,000
	Interstate Route 88 Interchange (includes structure cost)	per interchange	$20 million		-		-		-		-	1	$20,000,000		-		-	1	$20,000,000
	Illinois Route 78 Interchange (includes structure cost)	per interchange	$12 million	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000
8	Detours, Temp. Traffic Control (4% of line 2)				$473,000		$901,000		$504,000		$507,000		$446,000		$375,000		$266,000		$287,000
9	Railroad Crossing Improvements	per crossing	$250,000		-		-		-		-		-	1	$250,000	1	$250,000	1	$250,000
10	Field Office and Laboratory	per month	$1,500	36	$54,000	36	$54,000	36	$54,000	36	$54,000	36	$54,000	36	$54,000	36	$54,000	36	$54,000
11	Environmental Mitigation/ Incidental Items (5% of 1 thru 10)				$2,358,000		$2,906,000		$2,478,000		$2,332,000		$2,020,000		$2,263,000		$1,964,000		$1,759,000
12	Roadway Subtotal (1-11)				$61,514,000		$73,021,000		$64,038,000		$60,976,000		$74,428,000		$59,525,000		$53,241,000		$68,945,000
13	Structure Removal	each	$250,000	1	$250,000	1	$250,000	3	$750,000	2	$500,000	2	$500,000	1	$250,000		-		-
14	Culverts																		
	Major$^{(3)}$	cubic yard	$400.00	1,493	$597,000	1,280	$512,000	1,280	$512,000	1,280	$512,000	853	$341,000	1,067	$427,000	1,067	$427,000	640	$256,000
	Minor$^{(3)}$	foot$^{(2)}$	$80.00	9,440	$755,000	6,560	$525,000	7,200	$576,000	5,920	$474,000	4,640	$371,000	7,840	$627,000	6,560	$525,000	5,280	$422,000
15	Bridges				$9,419,255		$15,269,905		$18,288,756		$18,029,736		$18,029,736		$17,594,043		$13,252,609		$13,252,609
16	Structures for Detours and Temporary Traffic Control$^{(4)}$				-		-		-		-		-		-		-		-

Table 25: Estimated Cost of each Corridor Alternative

#	Item Description	Unit	Unit Cost	Corridor Alternative 1		Corridor Alternative 2		Corridor Alternative 3						Corridor Alternative 4					
								Terminus Option A		Terminus Option B		Terminus Option C		Terminus Option A		Terminus Option B		Terminus Option C	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
17	Structure Subtotal (13-16)				$11,021,000		$16,557,000		$20,127,000		$19,516,000		$19,242,000		$18,898,000		$14,205,000		$13,931,000
18	Roadway and Structure Subtotal (12+17)				$72,535,000		$89,578,000		$84,165,000		$80,492,000		$93,670,000		$78,423,000		$67,446,000		$82,876,000
19	Contingencies (15% of 18)				$12,107,000		$15,516,000		$14,433,000		$13,698,000		$12,334,000		$13,285,000		$11,089,000		$10,175,000
20	Total Construction Cost (18+19)				$84,642,000		$105,094,000		$98,598,000		$94,190,000		$106,004,000		$91,708,000		$78,535,000		$93,051,000
21	Utility Adjustments	per mile	$50,000	22	$1,084,000	21	$1,067,000	23	$1,128,000	21	$1,033,000	18	$888,000	22	$1,101,000	20	$1,003,000	17	$857,000
22	Land Acquisition and Relocation																		
	Land	acre	$5,000	598	$2,990,000	594	$2,970,000	695	$3,475,000	748	$3,740,000	697	$3,485,000	567	$2,835,000	620	$3,100,000	569	$2,845,000
	Relocations	per building[1]	$300,000	23	$6,900,000	24	$7,200,000	40	$12,000,000	32	$9,600,000	27	$8,100,000	44	$13,200,000	36	$10,800,000	31	$9,300,000
23	Preliminary Engineering (13% of 20)				$11,003,460		$13,662,220		$12,817,740		$12,244,700		$13,780,520		$11,922,040		$10,209,550		$12,096,630
24	Construction Engineering (1% of 20)				$846,420		$1,050,940		$985,980		$941,900		$1,060,040		$917,080		$785,350		$930,510
25	**Total Project Cost**				$107,465,880		$131,044,000		$129,005,000		$121,750,000		$133,318,000		$121,683,000		$104,433,000		$119,080,000
	Overall Cost Ranking				**2**		**7**		**6**		**5**		**8**		**4**		**1**		**3**

Note:

(1) Includes commercial buildings, residential buildings, or farm units. A farm unit could include a residence, barn, and/or silos.
(2) Unit cost taken from IDOT Pay Item Reports from March, June, August, and September 2003
(3) Major Culvert: Assumed length of 160' based on the typical section and additional clear zone. Assumed structure was an 8' by 8' box culvert. Minor Culvert: Assumed length was 160’ and assumed structure was a 30” –diameter RCP (averaged between a 24”-diameter and a 36” diameter RCP)
(4) The costs associated with ‘Structures for Detours and Temporary Traffic Control’ are accounted for in the contingency cost for this phase of the project.

Table 26: Enhanced Comparative Analysis Summary

Criterion	Measure of Effectiveness	No-Action*	Corridor Alternative 3B	Corridor Alternative 3C	Corridor Alternative 5	Corridor Alternative 6
Safety	Does the corridor alternative meet full standards?	No	Yes	Yes	Yes	Yes
Corridor Utilization	Year 2023 Average Daily Travel (ADT) reduction along U.S. Route 30 at critical location (vehicles per day)	0	6,700	6,700	550	6,700
Traffic Operations	Estimated travel time (minutes) Improve intersection LOS along U.S. Route 30? Amount of out-of-direction travel (miles)	34.9 No 0	23.4 Yes -0.1	23.8 Yes 0.3	25.2 No 0.7	26.1 Yes 1.5
Environmental Resources Affects	Potential affects to environmental resources *(Refer to Tables 29 and 30)*	N/A	28	18	23	24
Community Planning/ Land Use	Consistent with existing and future land use plans? (ranked as consistent, not fully consistent, not consistent)	Not Consistent	Consistent	Consistent	Not Consistent	Consistent
ROW/Residences & Commercial Buildings	ROW acquisition (acres)/Number of Residences & Commercial Buildings	0/0	879/53	828/48	674/105	724/113
Agriculture	Number of Centennial Farms Area of Prime Farmland (acres) Potential of Farm Severance Affects	0 0 None	2 1,613 Medium	2 1,404 Medium	1 1,237 Low	2 1,440 Low
Public Support	Does the public support the corridor alternative?	Yes	Yes	Yes	Neutral	Yes
Economic Vitality	Distance to existing U.S. Route 30 from proposed IL Route 78 interchanges (miles)	0	1.4	1.4	1.2	1.4
Cost	Estimated construction cost (millions)	0**	$128	$139	$149	$146

Note:
** The No-Action Alternative is shown as a baseline for comparative purposes only. The No-Action did not pass through the fatal flaw analysis as a feasible alternative and therefore does not meet the Purpose and Need of the study.*

*** The No-Action Alternative has no construction cost; however, the cost of maintaining the existing route would be greater than maintaining a new corridor alternative.*

Table 27: Enhanced Comparative Analysis Results

Criterion	Measure of Effectiveness	No-Action	Corridor Alternative 3B	Corridor Alternative 3C	Corridor Alternative 5	Corridor Alternative 6
Safety	Does the corridor alternative meet full standards?	–	+	+	+	+
Corridor Utilization	Year 2023 Average Daily Travel (ADT) reduction along U.S. Route 30 at critical location (vehicles per day)	–	+	+	o	+
Traffic Operations	Estimated travel time (minutes) Improve intersection LOS along U.S. Route 30? Amount of out-of-direction travel (miles)	–	+	+	o	o
Environmental Resources Affects	Potential affects to environmental resources *(Refer to Tables 29 and 30)*	+	–	o	o	o
Community Planning/ Land Use	Consistent with existing and future land use plans? (ranked as consistent, not fully consistent, not consistent)	–	+	o	–	+
ROW/Residences & Commercial Buildings	ROW acquisition (acres)/Number of Residences & Commercial Buildings	+	o	o	o	o
Agriculture	Number of Centennial Farms Area of Prime Farmland (acres) Potential of Farm Severance Affects	+	+	o	o	–
Public Support	Does the public support the corridor alternative?	+	+	+	+	+
Economic Vitality	Distance to existing U.S. Route 30 from proposed IL Route 78 interchanges (miles)	+	o	o	o	o
Cost	Estimated construction cost (millions)	+	o	o	o	o
Preliminary Point Subtotal**	[+=5 points, o=3 points, and –=1 point]	34	40	38	32	36
Preliminary Ranking***		**4**	**1**	**2**	**5**	**3**

*Note: *=The information contained in Legend for Enhanced Comparative Analysis Category Rating provides an explanation of how the corridor alternatives were rated under each of the categories.*

***=Each of the category ratings (+, o, and –) was given a point value to distinguish overall rankings for the corridor alternatives. The corridor alternative with the highest point total is the recommended alternative. It is assumed that all of the categories are equally weighted.*

****=The preliminary ranking is based on point totals. Higher point totals equate to a higher overall ranking, thus better addressing the U.S. Route 30 Corridor Study Purpose and Need.*

Legend for Comparative Analysis Category Rating

Criterion	+	o	–
Safety (based on constructability to IDOT standards)	yes	somewhat	no
Corridor Utilization	≥ 5,000	500 – 5,000	≤ 500
Traffic Operations (Refer to Table 28)	≤ 3	3 - 6	≥ 7
Environmental Resources Score (Refer to Table 30)	< 39	40 - 49	> 50
Community Planning/ Land Use	consistent	not fully consistent	not consistent
ROW/Residences & Commercial Buildings Score (Refer to Table 34)	≤ 5	5 - 9	≥ 9
Adverse Travel (miles)	≤ 0.0	0.0 – 1.0	≥ 1.0
Public Support	yes	neutral	no
Economic Vitality (miles from city)	≤ 1	1.0 – 2.0	≥ 2.0
Cost (millions)	≤ $100	$100 - $150	≥ $150

Table 29: Comparison of Environmental Resources Affects

Environmental Resources	Measure of Effectiveness	No-Action	Corridor Alternative 3B	Corridor Alternative 3C	Corridor Alternative 5	Corridor Alternative 6
Water Resources/ Water Quality	# New Bridges/Increase Impervious Surface Area (acres) *(Refer to Table 31)*	0/0	5/191	5/162	6/172	5/182
Floodplains	Area of FEMA 100-year Floodplain (acres)	0	231	192	162	225
Wetlands	Total Wetland/Jurisdictional Wetland *(Refer to Table 32)*	0	93.8/72.8	60.3/41.8	53.8/31.3	78.8/60.8
Special Waste	# of Affected Special Waste Sites	0	1	1	1	1
Special Lands	Area of Special Lands Affected	0	0	0	0	0
Air Quality	Negative Affect to Air Quality	No	No	No	No	No
Traffic Noise	# of Sensitive Receptors that could experience an increase in traffic noise levels	268	83	74	170	166

6.2.9 Economic Vitality

Economic Vitality of the proposed improvements is related to the distance from the corridor alternative to the City of Morrison. The closer the alternative is to the City, the more vital it is to the economy. The closest distance between the corridor and the City (measured along Illinois Route 78) is 1.2 miles (Corridor Alternative 5). Although Corridor Alternative 5 is the closest to the City, the remaining corridor alternatives are just slightly more at a distance of 1.4 miles and may be considered just as vital.

6.2.10 Cost

Table 35 presents the detailed cost estimate for each corridor alternative. The estimated construction costs for the corridor alternatives range between $128 million (Corridor Alternative 3B) and $149 million (Corridor Alternative 5).

The earthwork for Corridor Alternative 3B, Corridor Alternative 3C, and Corridor Alternative 6 requires a large amount of earth excavation (between $11.4 million and $12.4 million) and a comparatively small amount of borrow (between no borrow and $1.4 million), whereas Corridor Alternative 5 requires more borrow than excavation.

The Corridor Alternatives that use the existing alignment (Corridor Alternative 5 and Corridor Alternative 6) require more potential relocations than the other alternatives (approximately twice as many).

Table 35: Estimated Cost of each Detailed Corridor Alternative

#	Item Description	Unit	Unit Cost	Corridor Alternative 5		Corridor Alternative 6		Corridor Alternative 3B		Corridor Alternative 3C	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
1	Clearing: Minor Removal Items [1]	acre	$2,000	135	$269,600	144.8	$289,600	176	$351,600	166	$331,200
2	Earthwork										
	Earth Excavation	yard^3 [2]	$4.10	1,861,245	$7,631,105	3,017,870	$12,373,265	3,153,622	$12,929,851	2,781,925	$11,405,893
	Borrow	yard^3 [2]	$2.85	2,511,587	$7,158,023	477,105	$1,359,748		-		-
3	Erosion Control (1% of line 2)				$147,891		$137,330		$129,299		$114,059
4	Drainage (1% of line 2)				$147,891		$137,330		$129,299		$114,059
5	Subbase, Base, Surface, Shoulders										
	Subbase	yard^3 [2]	$22.00	352284	$7,750,248	364645	$8,022,190	331329	$7,289,238	279898	$6,157,756
	Base + Surface	ton[2]	$32.94	532093	$17,527,143	550763	$18,142,133	500443	$16,484,592	422761	$13,925,747
	Bituminous Shoulder	yard^2 [2]	$21.14	412430	$8,718,770	426901	$9,024,687	387898	$8,200,164	327686	$6,927,282
	Aggregate Shoulders	ton[2]	$15.00	35564	$533,466	36812	$552,184	33449	$501,733	28257	$423,852
6	Guardrail, Roadside Safety	per structure	$10,000	13.00	$130,000	11.00	$110,000	9.00	$90,000	11.00	$110,000
7	Intersections/Interchanges										
	Traffic Signals	per intersection	$150,000	1	$150,000	2	$300,000	2	$300,000	2	$300,000
	Interstate Route 88 Interchange (includes structure cost) [3]	per interchange	$20 million		-		-		-	1	$20,000,000
	Illinois Route 78 Interchange (includes structure cost) [3]	per interchange	$12 million	1	$12,000,000	1	$12,000,000	1	$12,000,000	1	$12,000,000
8	Detours, Temp. Traffic Control (4% of line 2)				$591,565		$549,321		$517,194		$456,236
9	Railroad Crossing Improvements	per crossing	$250,000	1	$250,000	3	$750,000		-		-
10	Field Office and Laboratory	per month	$1,500	36	$54,000	36	$54,000	36	$54,000	36	$54,000
11	Environmental Mitigation/ Incidental Items (5% of 1 thru 10)				$2,552,985		$2,590,089		$2,348,848		$2,016,004
12	Roadway Subtotal (1-11)				$65,612,687		$66,391,877		$61,325,818		$74,336,087
13	Structure Removal	each	$250,000	1	$250,000	1	$250,000	2	$500,000	2	$500,000
14	Culverts										
	Major [4]	cubic yard	$400.00	1,067	$426,667	1,707	$682,667	1,280	$512,000	853	$341,333
	Minor [4]	foot[2]	$80.00	5,600	$448,000	4,320	$345,600	7,680	$614,400	5,120	$409,600
15	Bridges				$34,695,165		$30,923,763		$25,717,021		$25,717,021
16	Structures for Detours and Temporary Traffic Control [5]				-		-	-	-	-	-
17	Structure Subtotal (13-16)				$35,819,832		$32,202,030		$27,343,421		$26,967,954

Table 35: Estimated Cost of each Detailed Corridor Alternative

#	Item Description	Unit	Unit Cost	Corridor Alternative 5		Corridor Alternative 6		Corridor Alternative 3B		Corridor Alternative 3C	
				Units	Cost	Units	Cost	Units	Cost	Units	Cost
18	Roadway and Structure Subtotal (12+17)				$101,432,519		$98,593,906		$88,669,239		$101,304,042
19	Contingencies (20% of 18)				$17,886,504		$17,318,781		$15,333,848		$13,860,808
20	Total Construction Cost (18+19)				$119,319,023		$115,912,688		$104,003,087		$115,164,850
21	Utility Adjustments	per mile	$50,000	21.97	$1,098,447	22.74	$1,136,989	20.66	$1,033,108	17.45	$872,743
22	Land Acquisition and Relocation										
	Land	acre	$5,000	674	$3,370,000	724	$3,620,000	879	$4,395,000	828	$4,140,000
	Relocations [6]	per building	$300,000	32	$9,450,000	34	$10,170,000	15.9	$4,770,000	14.4	$4,320,000
23	Preliminary Engineering (12% of 20)				$14,318,283		$13,909,523		$12,480,370		$13,819,782
24	Construction Engineering (1% of 20)				$1,193,190		$1,159,127		$1,040,031		$1,151,648
25	**Total Project Cost**				$148,750,000		$145,910,000		$127,720,000		$139,470,000
	Overall Cost Ranking				**4**		**3**		**1**		**2**

Note:
(1) The Quantity is assumed to be 1/5th of the total land acquisition which is based on an assumed 200-foot ROW width.
(2) Unit cost taken from IDOT Pay Item Reports from March, June, August, and September 2003.
(3) The cost estimate for the proposed I-88 and IL 78 interchanges are lump sum costs which include all contingencies associated with the interchange. Therefore, the cost estimate does not include the cost of the interchanges when calculating items 11 and 19.
(4) Major Culvert: Assumed length of 160' based on the typical section and additional clear zone. Assumed structure was an 8' by 8' box culvert. Minor Culvert: Assumed length was 160' and assumed structure was a 30" –diameter RCP (averaged between a 24"-diameter and a 36" diameter RCP).
(5) The costs associated with 'Structures for Detours and Temporary Traffic Control' are accounted for in the contingency cost for this phase of the project.
(6) Includes commercial buildings, residential buildings, or farm units. A farm unit could include a residence, barn, and/or silos. The impacted units represent 1/3rd of the total relocations within the 600-foot affect zone based on an assumed 200-foot ROW width.

Community Planning/Land Use	The recommended alternatives are consistent with the City of Morrison Land Use Plan and the plans of the surrounding communities.
ROW/Residences & Commercial Buildings	The recommended alternatives require between approximately 724 acres and 879 acres of land and between 48 and 113 building structure relocations. As the project progresses into the Phase I/NEPA Evaluation Process, minimization measures will be evaluated to reduce the overall ROW acquisition and avoidance measures will be evaluated to minimize relocations.
Agriculture	The recommended alternatives potentially affect one Centennial Farm and have low to medium farm severance affect. They affect between approximately 1,400 acres and 1,613 acres of prime farmland. As the project progresses into the Phase I/NEPA Evaluation Process, avoidance and minimization measures will be evaluated to reduce the overall agriculture affects.
Public Support	The public generally supports all of the recommended alternatives. At the first public meeting 54 percent supported the corridor alternatives while 31 percent supported the No-Action Alternative. At the second public meeting 52 percent supported a recommended alternative while 13 percent supported the No-Action Alternative.
Economic Vitality	The recommended alternatives are approximately 1.4 miles south of the City of Morrison. This distance supports the economic vitality of the community.
Cost	The recommended alternatives cost between approximately $128 million and $145 million.

7.2 SUPPORTING REASONS FOR RECOMMENDATION

As previously stated in Chapter 2.0 Purpose and Need for Improvement, the transportation system improvement is needed to:

1. Improve Regional Mobility. This need addresses providing alternate access to residential areas and job centers around the City of Morrison and minimizing truck traffic through town.
2. Accommodate Land Use Planning Goals. This need addresses implementing a transportation system improvement that promotes attainment of local planning priorities.
3. Address Local System Deficiencies. This need relates to improving local access, mobility, and safety.

Corridor Alternative 3B, Corridor Alternative 3C, and Corridor Alternative 6 best address these needs while minimizing environmental affects at a cost lower than most considered alternatives. The evaluation criteria were developed based on the U.S. Route 30 Corridor Study Purpose and Need. The corridor alternative that best addresses the evaluation criteria also best meets the purpose and need.