

CHAPTER II

Alternatives

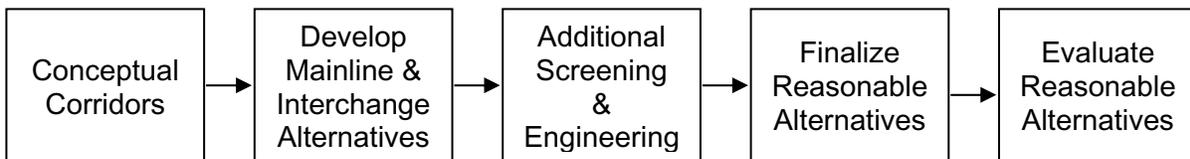
This chapter describes the process used to develop and evaluate potential improvements within SIU 7 that address the project’s purpose and need. This process began at the completion of the First Tier EIS and included a number of improvement concepts. The initial I-70 SIU 7 improvement concepts included a variety of options for I-70, from the possibility of making modest improvements to the existing highway to constructing a new freeway in a new location. In addition, alternatives were explored at each interchange to meet anticipated development and projected traffic and travel demands.

Ultimately, a reasonable set of alternatives was developed in the Draft EIS for both the mainline and at each interchange within the project corridor. Each alternative was evaluated for its ability to meet the purpose and need requirements for this project. In accordance with the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 - 1508), only those reasonable alternatives that passed the screening process were selected for detailed evaluation. Those alternatives that did not meet the purpose and need requirements of this project are also described in this section.

A. Summary of Alternatives

The initial I-70 SIU 7 improvement concepts included a variety of options for I-70, from the possibility of making modest improvements to the existing highway to constructing a new freeway in a new location. These initial concepts were first evaluated at the conceptual screening level. In the second step of the process, interchange options were explored and mainline alternatives developed that addressed the project purpose. As engineering review and refinement was completed, the alternatives were refined or eliminated from further consideration. These were further refined in light of environmental constraints. In the third analysis phase, a set of reasonable project alternatives was evaluated in greater detail. This process is illustrated below:

Figure II-1: Alternatives Development Process



A range of conceptual corridor alternatives was developed for the I-70 SIU 7 project corridor. Each of these conceptual corridor alternatives was evaluated for its ability to meet the purpose and need requirements of this project. In accordance with the Council on Environmental Quality (CEQ) guidelines, only those reasonable alternatives that passed the screening process were selected for detailed evaluation in the Draft EIS.

A conceptual corridor screening process was the first element in a series of major steps undertaken to study the I-70 corridor and recommend a series of improvement strategies. The report generated from this effort reflected a community-based planning approach used to determine if the corridors identified in the First Tier EIS most efficiently met the project's purpose and need and merited advancement for additional study.

Four conceptual corridors were located in the central and eastern sections of the SIU 7 study corridor. In addition to existing I-70, three conceptual corridors on new alignment were considered:

- **South Conceptual Corridor** – this conceptual corridor was located south of the existing interstate. It began east of the I-70 interchange at Route A/B in Warren County, traveled to the south of Warrenton, stayed to the north of the Village of Innsbrook and tied into the future Page Avenue extension at US 40/61 in St. Charles County.
- **Near North Conceptual Corridor** – this conceptual corridor was located just to the north of the existing interstate. It began west of the Route A/B interchange with I-70 in Warren County and traveled to the east. It skirted the northern reaches of Warrenton, Wright City and Wentzville and reconnected with I-70 between exit 212 (Route A in St. Charles County) and exit 214 (Lake St. Louis Boulevard).
- **Far North Conceptual Corridor** – this conceptual corridor began at Jonesburg and traveled due east, following the Warren/Lincoln county line, running north of Incline Village. It reconnected with existing I-70 between exit 212 (Route A in St. Charles County) and exit 214 (Lake St. Louis Boulevard).

Based on the analysis presented, the Improve Existing I-70 conceptual corridor was the sole conceptual corridor carried forward for further study. Each of the factors considered in the analysis contributed to this conclusion. Taken together, these impacts clearly indicated that the Improve Existing I-70 conceptual corridor was the appropriate option. Local and regional traffic impacts alone were sufficient to remove the Near North and Far North conceptual corridors from further consideration. The substantial negative impacts to land use and an estimated total project life cycle cost that was approximately \$230 million higher than the estimated project costs for the Improve Existing I-70 option supply sufficient additional rationale to not advance the South conceptual corridor for additional study.

The process of evaluating the conceptual corridors and selecting a preferred conceptual corridor involved a balance of the benefits and impacts with regard to social and environmental considerations, capacity and safety issues and engineering constraints. It also must serve the state of Missouri's goals of preserving the existing transportation network, while reducing construction and maintenance costs. The preferred conceptual alternative – to widen and improve the existing I-70 corridor in SIU 7 – is the conceptual corridor that best met projected travel and safety needs in the corridor, while giving careful consideration to socioeconomic and environmental issues. Further, the preferred conceptual corridor is the one that most fully met the purpose and need as stated in the First Tier EIS.

The study process then proceeded to a preliminary alternative development stage and a detailed study stage. The detailed study stage was a thorough evaluation of those reasonable alternatives. The impacts of each reasonable alternative were presented and compared, consistent with the level of detail used for the analysis at each stage of the development process.

The initial screening process involved consideration of whether a specific alternative would meet the identified purpose and need requirements for this project. The primary requirements were that the alternative must:

- Provide a roadway consistent with Missouri statewide planning efforts and the intended highway function as a route of national, state, regional and local importance.
- Provide capacity and an adequate Level of Service for current and projected traffic volumes through 2030.
- Reduce congestion and travel time.
- Improve the safety of the highway by reducing traffic conflicts and the potential for crashes.
- Provide appropriate system linkages to other travel modes.
- Attempt to meet MoDOT's Access Management Guidelines.
- Fit within national, regional and local national defense and homeland security plans.

The alternative must also:

- Avoid or minimize adverse environmental disturbances, including impacts to wetlands and other natural resources and cultural resources such as historical and archaeological features.
- Support local community needs and interests, and be consistent with local development patterns.
- Minimize impacts due to right of way acquisition and relocation.

Only the alternatives that met the purpose and need requirements of this project were selected for detailed evaluation in the Draft EIS.

A No-Build Alternative was also evaluated in detail, as required by CEQ rule 40 CFR 1502.14, because it served as a baseline to evaluate the improvement alternatives.

Up to this point, the alternatives were initially developed and modified based on the criteria and inputs mentioned previously. They were then broken out by sections into a set of reasonable alternatives, to be carried forward for further analysis. To facilitate the evaluation of the environmental impacts of each reasonable alternative, the corridor was divided into 17 subsections with each subsection containing one to four reasonable alternatives. The following table provides the limits of the alternative subsections and the corresponding preliminary mainline and interchange alternatives that make up the definition of the proposed alternatives.

Table II-1: Summary of Alternatives

Alternative	Begin MP	End MP	Length in Miles (km)	Description
1	174.0	175.5	1.5 (2.4)	Route 19 Diamond Interchange
2A	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – South widening
2B	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – North widening
2C	175.5	179.0	3.5 (5.6)	East of Route 19 to west side of High Hill – South widening with shifted south outer roadway
3A	179.0	180.5	1.5 (2.4)	Route F diamond interchange
3B	179.0	180.5	1.5 (2.4)	Route F Diamond Interchange with roundabout ramp terminals
4	180.5	183.0	2.5 (4.0)	High Hill to Jonesburg including RR crossing realignment
5A	183.0	185.0	2.0 (3.2)	Route E/Y Diamond Interchange – Jonesburg
5B	183.0	185.0	2.0 (3.2)	Route E/Y Diamond Interchange – Jonesburg – alternative alignments
5C	183.0	185.0	2.0 (3.2)	Route E/Y Diamond Interchange – Jonesburg – alternative alignments
6	185.0	189.0	4.0 (6.4)	Jonesburg to east of Route A/B including Route A/B diamond interchange
7A	189.0	193.0	4.0 (6.4)	East of Route A/B to Warrenton
7B	189.0	193.0	4.0 (6.4)	East of Route A/B to Warrenton – alternative widening
8A	193.0	194.0	1.0 (1.6)	Route 47 single point diamond interchange
8B	193.0	194.0	1.0 (1.6)	Route 47 single point diamond interchange with alternative widening
8C	193.0	194.0	1.0 (1.6)	Route 47 diamond interchange
8D	193.0	194.0	1.0 (1.6)	Route 47 diamond interchange with alternative widening
9A	194.0	196.0	2.0 (3.2)	East of Route 47 to MP 196
9B	194.0	196.0	2.0 (3.2)	East of Route 47 to MP 196 alternative widening
10A	196.0	198.5	2.5 (4.0)	MP 196 to Wright City
10B	196.0	198.5	2.5 (4.0)	MP 196 to Wright City alternative north outer road
10C	196.0	198.5	2.5 (4.0)	MP 196 to Wright City with different north outer road alignment
11A	198.5	200.0	1.5 (2.4)	Wright City West diamond interchange with roundabouts
11B	198.5	200.0	1.5 (2.4)	Wright City West diamond interchange
12	200.0	203.0	3.0 (4.8)	Route F/J diamond interchange with roundabouts
13A	203.0	205.0	2.0 (3.2)	Route T/W diamond interchange
13B	203.0	205.0	2.0 (3.2)	Route T/W single point diamond interchange
13C	203.0	205.0	2.0 (3.2)	Route T/W tight diamond interchange
14	205.0	209.0	4.0 (6.4)	Wentzville Parkway diamond interchange
15	209.0	211.5	2.5 (4.0)	US-40/61 and Route Z interchanges
16A	211.5	213.0	1.5 (2.4)	Route A – double connector
16B	211.5	213.0	1.5 (2.4)	Route A – single connector
17	213.0	214.0	1.0 (1.6)	Lake St. Louis Boulevard existing diamond interchange

Preferred Alternative is shaded in gray

In seven subsections of SIU 7, only one reasonable alternative is proposed. This is because either the subsection consists of only widening the mainline of the highway and there are no interchanges involved, or if during the interchange analysis and evaluation process, only one interchange could be effectively implemented that would meet the physical conditions of the interchange and also meet the project's purpose and need.

B. Clarification of Draft EIS

The following issues or questions were raised during the review of the Draft EIS that warrant correction, clarification or further elaboration:

- **General Description of the Mainline Alternative.** All of the mainline alternatives are planned with the intent of providing an acceptable Level of Service (LOS) on I-70

through the design year of 2030. (An acceptable LOS is considered to be LOS C in rural areas of the corridor and LOS D in the urban areas.) To provide sufficient through-lane capacity for the projected 2030 traffic volumes, any of the Build Alternatives considered will provide:

- Three through lanes in each direction from the western terminus of SIU 7 at MP 174 in Montgomery County to the interchange at Routes A/B at MP 188 in Warren County.
- Four through lanes in each direction from Route A/B eastward to Wentzville Parkway (MP 208) in St. Charles County
- Four through lanes and two auxiliary lanes in each direction east of Wentzville Parkway to the Route Z interchange (MP 209)
- Four through lanes in each direction and two auxiliary lanes westbound and one auxiliary lane eastbound from Route Z to the U.S. 40/61 interchange (MP 210)
- Three through lanes and one auxiliary lane westbound and four through lanes and one auxiliary lane eastbound from the U.S. 40/61 interchange to the Route A interchange at MP 212 in St. Charles County
- Three through lanes and one auxiliary lane in each direction from the Route A interchange through the eastern terminus of SIU 7 just east of the Lake St. Louis Boulevard interchange (MP 214)

Table II-2 summarizes the number of existing, committed and proposed lanes throughout the length of SIU 7. (“Committed” lanes are those already included in future projects that have been funded and are included in the current five-year Transportation Improvement Plan. “Proposed” lanes are those proposed as part of the Improve I-70 project addressed in this EIS.)

Table II-2: Number of Existing, Committed and Proposed Lanes

Location	Exit #	Number of Existing Lanes				Number of Committed Lanes				Number of Proposed Lanes			
		EB		W/B		EB		W/B		EB		W/B	
		Thru Lanes	Aux. Lanes	Thru Lanes	Aux. Lanes	Thru Lanes	Aux. Lanes	Thru Lanes	Aux. Lanes	Thru Lanes	Aux. Lanes	Thru Lanes	Aux. Lanes
Route 19	175	2		2		2		2		3		3	
Route F (High Hill)	179	2		2		2		2		3		3	
Route E/Y	183	2		2		2		2		3		3	
Route A/B	188	2		2		2		2		3		3	
Route 47 (Warrenton)	193	2		2		2		2		4		4	
Route H (WCW)	199	2		2		2		2		4		4	
Route J/F (WCE)	200	2		2		2		2		4		4	
Route W/T (Foristell)	203	2		2		2		2		4		4	
Wentzville Parkway	208	2		2		2		2		4	2	4	2
Route Z	209	2		2	1	3		3		4	2	4	1
US 40/61	210	2		2		3		3		4	1	3	1
Route A	212	2		2		3		3		3	1	3	1
Lake St. Louis Blvd.	214	3		2	1	3		3		3	1	3	1

C. Additional Alternative (5C)

During the Public Hearing for the Draft EIS, the owner of the large farm parcel in the northeast quadrant of the Jonesburg Interchange (Exit 183) expressed concern that the alternatives presented would do major harm to their property by dividing it into several pieces. The owner suggested that running the outer roadway on the north side of their property would eliminate the splitting of their farm property and still provide a good outer roadway connection.

To respond to this comment, Alternative 5C was developed for consideration in the Final EIS. Alternative 5C places the outer roadway connection with Oak Hall Road at the north property line of the large farm parcel in the northeast quadrant of the interchange (refer to exhibits in Appendix B). To the west the outer roadway curves back towards I-70 running to the east of the city sewage lagoon. To the east the outer roadway runs due east along the north property line of the farm, connecting to County Road NN. Existing County Road NN would be utilized as part of the outer roadway system to connect back with the relocated outer roadway on the north side of I-70. This alternative would also require the construction of an access road off of the outer roadway to continue to provide access to two residences located near the park and ride lot, also in the northeast quadrant of the interchange. Maps of each of the alternatives considered may be found in Appendix B.

D. Route 47

Following the publication of the Draft EIS, several new developments surrounding have been constructed near the interchange of Route 47 with I-70. These changes prompted a review of alternatives at this location. In the northwest quadrant of the interchange, the following new construction was observed:

- A strip shopping center at the east edge of the Wal-Mart shopping center
- A Sonic drive-in at the northwest corner of Route 47 and the new Wal-Mart entrance

Each of these new structures falls within the footprint of each of the reasonable alternative alignments for relocated Route 47, as evaluated in the Draft EIS. A review was made to determine if other possible alternatives could be identified that would have less impact and still meet necessary traffic, safety and access management goals of the project.

Keeping Route 47 on its existing alignment was ruled out during previous portions of this study due to the magnitude of impacts to businesses along Route 47 and the inability to implement acceptable levels of access management.

An alignment originally proposed as part of the First Tier EIS that would move the interchange just west of Wal-Mart was also re-examined. This alignment was not deemed feasible as it would require a much longer relocation of Route 47 which would in turn be more expensive to build, have a much larger area of impact and received unfavorable comments from some in the Warrenton community.

An alignment that would relocate Route 47 east of its existing location was also considered, but dismissed because of the larger number of businesses and homes that would be impacted and the difficulty in tying back to existing Route 47 on the south side of I-70.

Based on the lack of other reasonable alternatives to pursue, no changes to the geometrics of the alternatives have been made at this location. Additional costs for right of way acquisition have been added to the cost estimate for each alternative. Since each alternative affects the new development in the same way, there is no change in the relative degree of impact among the alternatives, and thus no change to the recommendation of the Preferred Alternative. The location of the new structures has been added to Exhibit 8C.1 which is included in this Final EIS in Appendix B.

E. Right of Way and Construction Costs

Table II-3 presents updated right of way and construction costs data. This table was updated because of a clarification in the counting of billboards, to present the estimated costs associated with Alternative 5C (discussed previously) and to account for the new commercial structures at Route 47 (also discussed previously).

Table II-3: Summary of Year 2005 Costs by Alternative

Alternative	Begin Mile Post	End Mile Post	Right of Way Costs			Design and Construction Costs (Millions)	Total Costs (Millions)
			Land (Millions)	Structures (Millions)	Relocation Expenses (Millions)		
1	174.0	175.5	\$16.22	\$0.78	\$0.20	\$31.4	\$48.6
2A	175.5	179.0	\$3.13	\$0.60	\$0.15	\$46.9	\$50.8
2B	175.5	179.0	\$2.83	\$0.46	\$0.12	\$46.3	\$49.7
2C	175.5	179.0	\$2.84	\$0.60	\$0.15	\$46.9	\$50.5
3A	179.0	180.5	\$9.74	\$1.44	\$0.36	\$29.4	\$40.9
3B	179.0	180.5	\$10.15	\$1.64	\$0.41	\$24.6	\$36.8
4	180.5	183.0	\$1.18	\$0.05	\$0.01	\$45.7	\$46.9
5A	183.0	185.0	\$3.13	\$0.95	\$0.24	\$32.3	\$36.6
5B	183.0	185.0	\$2.82	\$0.95	\$0.24	\$31.9	\$35.9
5C	183.0	185.0	\$3.06	\$0.95	\$0.24	\$31.8	\$36.0
6	185.0	189.0	\$4.59	\$1.55	\$0.39	\$71.8	\$78.3
7A	189.0	193.0	\$2.41	\$1.24	\$0.31	\$45.2	\$49.2
7B	189.0	193.0	\$3.06	\$1.34	\$0.33	\$42.7	\$47.4
8A	193.0	194.0	\$7.18	\$3.53	\$0.88	\$33.8	\$45.4
8B	193.0	194.0	\$7.63	\$3.73	\$0.93	\$34.1	\$46.4
8C	193.0	194.0	\$7.31	\$3.53	\$0.88	\$30.0	\$41.7
8D	193.0	194.0	\$7.63	\$3.73	\$0.93	\$30.3	\$42.6
9A	194.0	196.0	\$1.70	\$1.09	\$0.27	\$22.6	\$25.7
9B	194.0	196.0	\$1.53	\$1.43	\$0.36	\$22.4	\$25.7
10A	196.0	198.5	\$0.72	\$0.20	\$0.05	\$25.8	\$26.8
10B	196.0	198.5	\$0.87	\$0.60	\$0.15	\$27.8	\$29.4
10C	196.0	198.5	\$0.44	-	-	\$25.1	\$25.5
11A	198.5	200.0	\$6.97	\$0.26	\$0.06	\$27.0	\$34.3
11B	198.5	200.0	\$14.29	\$0.95	\$0.24	\$39.1	\$54.6
12	200.0	203.0	\$3.16	\$1.77	\$0.44	\$43.0	\$48.4
13A	203.0	205.0	\$9.69	\$1.71	\$0.43	\$42.2	\$54.0
13B	203.0	205.0	\$10.31	\$1.71	\$0.43	\$47.8	\$60.3
13C	203.0	205.0	\$10.33	\$1.71	\$0.43	\$43.3	\$55.8
14	205.0	209.0	\$3.06	\$2.82	\$0.70	\$47.7	\$54.3
15	209.0	211.5	\$10.34	\$0.60	\$0.15	\$110.3	\$121.4
16A	211.5	213.0	\$0.77	-	-	\$17.0	\$17.8
16B	211.5	213.0	\$0.28	-	-	\$17.0	\$17.3
17	213.0	214.0	\$0.71	-	\$0.20	\$8.4	\$9.1
Total (Preferred Alternative):			\$84.60	\$18.59	\$4.58	\$670.70	\$778.50

Shading indicates the Preferred Alternative