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5 COMPARISON OF ALTERNATIVES

The following substantive changes have been made to this chapter since the Draft Environmental Impact Statement (DEIS) was published:

- During the Screening of Alternatives, preliminary Alternative R was evaluated before being removed from further consideration. Alternative R consists of upgrading US 231 from I-64 to I-69. Many comments on the DEIS requested further consideration of an upgrade of US 231 in addition to the five alternatives presented in the DEIS. In response to these comments, this FEIS further evaluates the costs, impacts and benefits of Alternative R. See **Section 2.5.1** for details about Alternative R.
- Multiple comments were received from local officials in Loogootee and Martin County about the alignment of Alternative P in Martin County, in particular in the vicinity of Loogootee. The DEIS showed Alternative P with an alignment west of Loogootee. Portions of this alignment are in Daviess County. These comments requested modifications to Alternative P to bring it through or to the east of Loogootee.
- In response to these comments, three additional variations of Alternative P have been added in Martin County. All variations of Alternative P are within Section of Independent Utility (SIU) 4. See **Section 2.7** for a discussion of Tier 2 sections for all alternatives. Alternative P with these variations has been designated as Refined Alternative P (RPA P). It is evaluated separately from any alternative considered in the DEIS. A single variation of RPA P will be selected in Tier 2 studies for SIU 4. See **Section 2.5.2** for details about the variations of RPA P near Loogootee.
- This chapter has been updated to reflect the new information associated with the development of RPA P and Alternative R.
- Costs associated with the SIUs for the Preferred Alternative (RPA P) have been added.

This chapter compares alternatives' performance on core goals, cost and key environmental impacts. Key environmental impacts are those that require additional regulatory review or permitting. The analysis shows which alternative best balances addressing the needs in the Study Area with the impacts of Build Alternatives. It also considers whether the No-Build Alternative is the appropriate selection.

The Mid-States project is being evaluated as a Tiered EIS. The purpose of this Tier 1 document is to determine if a Build Alternative is warranted, and if so, what is the appropriate corridor and associated design elements to carry forward into full project development in Tier 2. The environmental impacts identified within this document are appropriate to make this determination at a Tier 1 level of analysis. Tier 2 studies will further define the project design, the environmental resources within the corridor, specific impacts of Tier 2 alternatives and identify appropriate efforts to avoid and minimize impacts.

5.1 Summary of Alternatives

Table 5-1 summarizes key project benefits, design elements and environmental impacts of each of the seven Build Alternatives carried forward for detailed study. Where applicable, the table highlights primary and secondary reasons for not selecting an alternative. It includes a "favorability index" associated with the key metrics used to rank the alternatives. These qualitative indices provide a quick visual comparison of the comparative performance of alternatives on each metric. The index offers five ranking options. Where results are similar or identical, more than one alternative may share the same rank.

Table 5-2 provides a secondary index of the core goals as a measurement of adequacy. As identified in **Chapter 1 – Purpose and Need**, the core goals are required to provide adequate performance in addressing primary goals

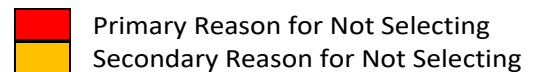


to meet the purpose and need. Adequacy for this study is defined as providing at least half the benefit of the best-performing alternative across all goals. Because each core goal measures different types of variables (minutes, hours, and number of people), their values were converted to ratios relative to each goal. This normalizes the variables and establishes a method to average across all goals. The performance index determined Alternatives B and C did not meet the adequacy test; however, **Table 5-1** highlights the worst performing measures that most strongly influenced the indices.

The No-Build Alternative is not summarized in the table because it does not have any benefits, impacts or costs. This alternative has been carried forward for the baseline comparison and remains under consideration throughout the Tier 1 Study. This section evaluates each alternative, including the No-Build Alternative, and identifies the Preferred Alternative.

LEGEND

Favorability Index



| | Metrics/Units | Alternative B | Alternative C | Alternative M | Alternative O | Alternative P | RPA P | Alternative R |
|---|--|---------------------------|--------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|-------------------|
| BENEFITS | Sum of time saved from all locations to key destinations/ Minutes (<i>Core Goal 1</i>) | 8-10 ■□ □□ | 15-18 ■□ □□ | 30-35 ■□ □□ | 18-24 ■□ □□ | 25-43 ■□ ■□ | 25-43 ■□ ■□ | 5 □□ □□ |
| | Time saved from Jasper | 4-5 | 2-4 | 5-7 | 3-3 | 6-13 | 6-13 | 3 |
| | Time saved from Crane | 4-5 | 7-7 | 12-14 | 8-10 | 12-21 | 12-21 | 2 |
| | Time saved from Bedford | 0-0 | 3-4 | 9-10 | 1-3 | 4-5 | 4-5 | 0 |
| | Time saved from French Lick | 0-0 | 3-3 | 4-4 | 6-8 | 3-4 | 3-4 | 0 |
| | Increase in Labor Force Access to all destinations/ # Persons (<i>Core Goal 1</i>) | 15,300-17,600 ■□ ■□ | 4,500-5,000 □□ □□ | 10,200-11,000 ■□ □□ | 26,300-26,900 ■□ ■□ | 10,400-11,200 ■□ □□ | 10,400-11,200 ■□ □□ | 100 □□ □□ |
| | Labor Force Access to Jasper | 2,100-4,300 | 1,700-2,200 | 7,600-7,800 | 8,400-8,600 | 8,700-8,900 | 8,700-8,900 | 100 |
| | Labor Force Access to Crane | 200-300 | 0-0 | 100-200 | 0-0 | 500-900 | 500-900 | 0 |
| | Labor Force Access to Washington | 12,900-13,000 | 2,000-2,000 | 0-200 | 0-0 | 400-300 | 400-300 | 0 |
| | Labor Force Access to French Lick | 0-100 | 800-800 | 600-800 | 17,000-17,200 | 900-1,000 | 900-1,000 | 0 |
| Labor Force Access to Bedford | 0-0 | 0-0 | 1,900-2,000 | 900-1,100 | 0-0 | 0-0 | 0 | |
| Sum of time saved from Crane & Jasper to major rail & air multi-modal centers/ Minutes (<i>Core Goal 7</i>) | 4-8 ■□ □□ | 3-4 □□ □□ | 17-22 ■□ ■□ | 10-13 ■□ □□ | 24-35 ■□ ■□ | 24-35 ■□ ■□ | 4 □□ □□ | |
| Time saved from Jasper | 2-5 | 1-2 | 9-14 | 6-9 | 14-21 | 14-21 | 3 | |
| Time saved from Crane | 2-3 | 2-2 | 8-8 | 4-4 | 10-14 | 10-14 | 1 | |
| Annual Truck Hours Saved/ Vehicle Hours Travel (<i>Core Goal 2</i>) | (-11,400)-150 □□ □□ | 1,800-34,150 ■□ □□ | 7,800-35,900 ■□ ■□ | (-3,000)-18,250 ■□ □□ | 8,400-36,850 ■□ ■□ | 8,400-36,850 ■□ ■□ | (-250) □□ □□ | |
| COSTS | Total Miles (SR66 / US231 to I69) / Miles | 33 ■□ ■□ | 41 ■□ ■□ | 62 □□ □□ | 53 ■□ □□ | 54 ■□ □□ | 54 ■□ □□ | 49 ■□ ■□ |
| | Total Construction Cost + Contingency / \$ Millions | 449-576 ■□ ■□ | 544-759 ■□ ■□ | 1,105-1,395 □□ □□ | 1,074-1,320 ■□ □□ | 735-1,052 ■□ □□ | 730-1,061 ■□ □□ | 599 ■□ ■□ |
| | New Right-of-Way / acres | 2,220-2,525 ■□ ■□ | 1,900-2,403 ■□ ■□ | 4,138-4,900 □□ □□ | 3,162-3,730 ■□ □□ | 2,497-3,226 ■□ □□ | 2,370-3,218 ■□ □□ | 1,198 ■□ ■□ |
| KEY IMPACTS | Potential Relocations (agricultural, business, institutions or residential) / # | 90-96 ■□ ■□ | 92-116 ■□ ■□ | 187-214 □□ □□ | 141-189 ■□ □□ | 109-149 ■□ □□ | 114-156 ■□ □□ | 418 □□ □□ |
| | Cultural – Above Ground Historic Sites (NRHP Listed or Potentially Eligible)/ # | 0 ■□ ■□ | 7 ■□ □□ | 4 ■□ ■□ | 16 □□ □□ | 6 ■□ □□ | 5-6 ■□ □□ | 20 □□ □□ |
| | Cultural – Archaeological Sites (Known Potential Sites)/ # | 33 ■□ □□ | 29 ■□ ■□ | 60 □□ □□ | 33 ■□ □□ | 35-44 ■□ ■□ | 50 ■□ □□ | 22 ■□ ■□ |
| | Cultural – Cemeteries / # | 5 ■□ □□ | 1 ■□ ■□ | 3 ■□ ■□ | 6 □□ □□ | 4 ■□ ■□ | 4 ■□ □□ | 6 □□ □□ |
| | Agricultural – General / acres | 1,517-1,763 ■□ □□ | 1,082-1,408 ■□ ■□ | 1,465-1,857 □□ □□ | 1,091-1,381 ■□ ■□ | 1,354-1,832 ■□ □□ | 1,272-1,832 ■□ □□ | 146 ■□ ■□ |
| | Agricultural – Prime Farmland / acres | 531-602 ■□ □□ | 234-321 ■□ ■□ | 571-724 ■□ □□ | 304-378 ■□ ■□ | 520-733 ■□ □□ | 495-693 ■□ □□ | 151 ■□ ■□ |
| | Protected Species – Potential Presence Within two miles / # of species (Federal) | 6 ■□ ■□ | 5 ■□ ■□ | 9 ■□ ■□ | 10 ■□ □□ | 11 □□ □□ | 11 □□ □□ | 11 □□ □□ |
| | Protected Species – Indiana Bat Forests within <i>maternity</i> area/ acres | 206-223 ■□ ■□ | 62-86 ■□ ■□ | 1,418-1,603 □□ □□ | 380-431 ■□ ■□ | 228-282 ■□ □□ | 200-281 ■□ □□ | 80 ■□ ■□ |
| | Protected Species – Indiana Bat Forests within <i>hibernacula</i> area/ acres | 0 ■□ ■□ | 0 ■□ ■□ | 0 ■□ ■□ | 493-516 □□ □□ | 0 ■□ ■□ | 0 ■□ ■□ | 0 ■□ ■□ |

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| Metrics/Units | Alternative B | Alternative C | Alternative M | Alternative O | Alternative P | RPA P | Alternative R |
|---|-----------------------|--------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------|------------------------|
| Protected Species – Northern Long-Eared Forests within <i>maternity</i> area/ acres | 130-135 ■ ■ ■ □ | 9-12 ■ ■ ■ ■ | 841-954 □ □ □ □ | 294-327 ■ □ □ □ | 161-188 ■ ■ □ □ | 159-189 ■ ■ □ □ | 61 ■ ■ ■ ■ |
| Protected Species – Northern Long-Eared Forests within <i>hibernacula</i> area/ acres | 0 ■ ■ ■ ■ | 0 ■ ■ ■ ■ | 651-712 □ □ □ □ | 1-2 ■ □ □ □ | 0 ■ ■ ■ ■ | 0 ■ ■ ■ ■ | 0 ■ ■ ■ ■ |
| Managed Lands / acres (& miles of trails*) | 0 / 0.0 ■ ■ ■ ■ | 5-10 / 0.5 ■ ■ □ □ | 32-46 / 0.3-0.4 □ □ □ □ | 5-10 / 0.3 ■ ■ □ □ | 10-16 / 0.3-0.4 ■ ■ □ □ | 10-16 / 0.3-0.6 ■ ■ □ □ | 28 / 4.3 □ □ □ □ |
| Special Lands – Section 4(f) & 6(f) / # | 0 / 0 ■ ■ ■ ■ | 0 / 0 ■ ■ ■ ■ | 2 / 0 ■ ■ □ □ | 0 / 0 ■ ■ ■ ■ | 1 / 1 ■ ■ □ □ | 1 / 1 ■ ■ □ □ | 2 / 0 ■ ■ □ □ |
| Forests – Total / acres | 312-347 ■ ■ ■ ■ | 424-556 ■ ■ ■ ■ | 1,994-2,311 □ □ □ □ | 1,588-1,756 ■ ■ □ □ | 629-923 ■ ■ ■ ■ | 607-874 ■ ■ ■ ■ | 97 ■ ■ ■ ■ |
| Forests – Core Blocks / # | 2 ■ ■ ■ ■ | 7 ■ ■ ■ ■ | 18 □ □ □ □ | 16 ■ ■ □ □ | 7-10 ■ ■ □ □ | 1-4 ■ ■ ■ ■ | 0 ■ ■ ■ ■ |
| Potential Karst Features (caves, springs and sinkholes) / # | 0** ■ ■ ■ ■ | 0 ■ ■ ■ ■ | 87 □ □ □ □ | 58 □ □ □ □ | 0 ■ ■ ■ ■ | 0 ■ ■ ■ ■ | 0 ■ ■ ■ ■ |
| Streams & Rivers (intermittent and perennial only) / miles | 7-8 ■ ■ ■ ■ | 6-7 ■ ■ ■ ■ | 12-14 □ □ □ □ | 11-13 ■ ■ □ □ | 8-11 ■ ■ □ □ | 8-12 ■ ■ □ □ | 4 ■ ■ ■ ■ |
| Floodplains / acres | 394-441 ■ ■ ■ ■ | 380-470 ■ ■ □ □ | 957-1,092 □ □ □ □ | 389-452 ■ ■ ■ ■ | 419-607 ■ ■ □ □ | 413-601 ■ ■ □ □ | 132 ■ ■ ■ ■ |
| Potential Wetlands / acres | 76-84 ■ □ □ □ | 46-56 ■ ■ □ □ | 98-111 □ □ □ □ | 46-55 ■ ■ ■ ■ | 39-56 ■ ■ ■ ■ | 38-52 ■ ■ ■ ■ | 13 ■ ■ ■ ■ |
| Potential Noise Impacts / # Receptors | 57-59 ■ ■ ■ ■ | 57-61 ■ ■ ■ ■ | 71-74 ■ ■ □ □ | 79-81 ■ ■ ■ ■ | 64-71 ■ ■ □ □ | 67-105 ■ ■ □ □ | 487 □ □ □ □ |

*Includes planned trails

**Alternative B has one known sinkhole present along the corridor, but this sinkhole is not associated with Karst topography

Table 5-1: Comparison of Alternatives

| Goal | Performance Measure | Alternative B (Range) | Alternative C (Range) | Alternative M (Range) | Alternative O (Range) | Alternative P (Range) | RPA P (Range) | Alternative R |
|------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|---------------|
| 1 | Business Center Access | 0.38 - 0.31 | 0.54 - 0.41 | 1.00 - 0.81 | 0.65 - 0.55 | 0.92 - 1.00 | 0.92 - 1.00 | 0.09 |
| 1 | Labor Force Access | 0.58 - 0.65 | 0.17 - 0.19 | 0.39 - 0.41 | 1.00 - 1.00 | 0.40 - 0.42 | 0.40 - 0.42 | 0.00 |
| 2 | Annual Truck Hours | (1.32) - 0.00 | 0.21 - 0.93 | 0.93 - 0.97 | (0.36) - 0.50 | 1.00 - 1.00 | 1.00 - 1.00 | (0.01) |
| 7 | Intermodal Center Access | 0.19 - 0.25 | 0.14 - 0.11 | 0.81 - 0.61 | 0.48 - 0.36 | 1.00 - 1.00 | 1.00 - 1.00 | 0.11 |
| Average - Range | | (0.04) - 0.30 | 0.27 - 0.40 | 0.78 - 0.70 | 0.44 - 0.60 | 0.83 - 0.86 | 0.83 - 0.86 | 0.05 |
| Average | | 0.13 | 0.34 | 0.74 | 0.52 | 0.84 | 0.84 | 0.05 |

Table 5-2: Core Goal Performance Index

5.1.1 Alternative B

Alternative B has the westernmost route, branching to the west of Jasper and connecting to I-69 near Washington. It is associated with six local improvement sections. This alternative had unfavorable ratings¹ on three of the four core goal performance measures. While it generally had favorable environmental impacts, it had the second most unfavorable wetland impacts.

Key Favorable Measures

- It has the most favorable ratings for project cost and length, being approximately half the cost of the most expensive alternative and has the shortest distance at roughly 33 miles of new alignment.
- It has the second-most favorable rating for new right-of-way with an approximate range between 2,200-2,500 acres. Only Alternative C has less right-of-way required.

¹ "Ratings" in this discussion refers to the favorability ratings provided in Table 5-1.



- It has the most favorable rating in several impact categories. These include impacts to relocations (90-96), cultural resources (no aboveground NHRP sites and only 23-27 NHRP archaeological sites), bat hibernacula (none), managed lands (two acres), forests (312-347 acres and only two core forest blocks) and floodplains (394-441 acres).

Key Unfavorable Measures

- It has the least favorable rating on the core goal performance measures of annual truck hours saved. It has the potential to add 11,400 hours rather than save time. For improved access to key destinations, it shows only 8-10 minutes of time saved.
- It has the second-worst favorability rating on the core goal performance measure of intermodal access with 4-8 minutes saved. Only Alternative C performed worse at 3-4 minutes.
- It has the second-worst favorability rating for wetland impacts with a range of 76-84 acres potentially impacted. Only Alternative M impacted more wetlands.

Based primarily on its low ratings on three of the four core goal performance measures, Alternative B was not selected. Its low rating on wetland impacts also was a factor in this determination.

5.1.2 Alternative C

Alternative C has an eastern route around Jasper then breaks west towards Washington north of the East Fork White River. It is associated with four local improvement sections. The alternative's ratings are similar to those for Alternative B. While it has high favorability on cost and most environmental impacts, it has unfavorable ratings on core goal performance measures.

Key Favorable Measures

- It has the most favorable rating for new acres of right-of-way with a range of 1,900-2,403 acres estimated.
- It has the second-most favorable rating for cost with a range between \$544-759 million. Only Alternative B was less expensive.
- It has the highest favorability for a number of impacts. These include impacts to prime farmland (243-321 acres), protected species (five potential species within two miles of the corridor), bat maternity areas (62-86 acres for Indiana bat and 9-12 acres for northern long-eared bat) and hibernacula (0), karst features (0), streams (6-7 miles of streams) and noise receptors (51-54 receptors).

Key Unfavorable Measures

- It has the least favorable rating on two core goal performance measures, labor force access and intermodal center access (increase of 4,500-5,000 persons and 3-4 minutes saved, respectively).
- It has the second-worst favorability rating on the core goal performance measure of improved access to key destinations with 15-18 minutes saved. Only Alternative B and R performed worse.

Based upon its unfavorable ratings on three of the four core goal performance measures, Alternative C was not selected.



5.1.3 Alternative M

Alternative M has an eastern route around Jasper then breaks east near Loogootee to connect to SR 37 at Bedford. It is associated with nine local improvement sections. This is one of the higher-performing alternatives, although it does not have the most favorable rating in any performance measure category. It has the least favorable rating in many environmental impact categories and is also the highest cost alternative.

Key Favorable Measures

- It has the second-most favorable rating for three core goal performance measures. These include travel time savings to key destinations (30-35 minutes), travel time savings to intermodal centers (17-22 minutes) and annual truck hours saved (7,800-35,900 hours).

Key Unfavorable Measures

- It has the least favorable rating on cost (~\$1.1-1.4 billion), acres of new right-of-way (4,138-4,900 acres) and length (62 miles).
- It has the least favorable rating in most environmental impact categories. Key unfavorable rating categories include relocations (187-214), agricultural land (1,465-1,857 acres), Indiana bat maternity areas (1,418-1,603 acres), northern long-eared bat maternity areas (841-954 acres), northern long-eared bat hibernacula areas (651-712 acres), forests (1,994-2,311 acres and 18 blocks of core forest), floodplains (957-1,092 acres), karst (87 features) and wetlands (98-111 acres).

Alternative M's high cost and high impacts to many resources resulted in its being not selected. Several resource agencies expressed their opposition to Alternatives M and O because of their overall high impacts. The U.S. Army Corps of Engineers stated in its April 15, 2020 comment letter on the Screening of Alternatives package that it did not believe either Alternative M or O could satisfy the requirements to select the Least Environmentally Damaging Practicable Alternative (LEDPA), as required under the Section 404(b)(1) guidelines (40 CFR 230). This letter cited these alternatives' impacts to forest, floodplains and karst in addition to their impacts to streams and wetlands. As a result, the agency would not likely be able to authorize Clean Water Act Section 404 permits for the construction of this alternative. Without these permits, the project cannot proceed.

5.1.4 Alternative O

Alternative O has an eastern route around Jasper then breaks east towards French Lick south of the US 231 crossing of the East Fork White River. It is associated with nine local improvement sections. Connection to I-69 is via SR 37 at Mitchell. This alternative has the most favorable rating on one core goal performance measure, labor force access. It also has mid-range favorability on two other core goal performance measures, travel time savings to key destinations and travel time savings to intermodal centers. It has unfavorable ratings on new acres of right-of-way and cost. It has unfavorable ratings for its impacts to a number of key resources.

Key Favorable Measures

- It has the most favorable rating on the core goal performance measure of improved labor force access with an increase range of 26,300-26,900 persons.
- It has the most favorable rating for agricultural land impacts (1,091-1,381 acres).
- It has favorable ratings for floodplain and wetland impacts (389-452 and 46-55 acres, respectively).



Key Unfavorable Measures

- It has a low rating on the core goal performance measure of annual truck hour savings with a potential to add 3,000 or save 18,250 hours of travel depending on the configuration. Only Alternative B and R performed worse.
- It has the least favorable rating on potential impacts to aboveground cultural resources (14 potential NRHP sites).
- It has the least favorable rating on impacts to Indiana bat hibernacula forested areas (493-516 acres).
- It has the least favorable rating on impacts to karst resources (58 features). Although Alternative M has more total karst features, this alternative crosses through the Lost River basin which has numerous highly sensitive features.
- It has the second worst favorability rating on impacts to forests (1,588-1,756 acres), several protected species categories (contains maternity and hibernacula areas for both the Indiana and northern long-eared bats) and noise receptors (80-82 receptors).

Alternative O's high cost and high impacts to many resources resulted in its being not selected. Several resource agencies expressed their opposition to Alternatives M and O because of their overall high impacts. The U.S. Army Corps of Engineers stated in its April 15, 2020 comment letter on the Screening of Alternatives package that it did not believe either Alternative M or O could satisfy the requirements to select the LEDPA, as required under the Section 404(b)(1) guidelines. This letter cited these alternatives' impacts to forest, floodplains and karst in addition to their impacts to streams and wetlands. As a result, the agency would not likely be able to authorize Clean Water Act Section 404 permits for the construction of this alternative. Without these permits, the project cannot proceed.

5.1.5 Alternative P

Alternative P generally follows the existing US 231 corridor but has an eastern route around Jasper and considered an eastern and western variation around Loogootee. This alternative has nine local improvement sections associated. It has the most favorable rating for three of the four core goal performance measures. It generally has moderate levels of impacts, having neither the highest nor lowest effects. An eastern and western variation were carried forward to allow greater flexibility during the evaluation process. A 4(f) resource (West Boggs Park) is located on the western side of Loogootee and a higher density of forest and water resources are present on the eastern side. The detailed analysis identified the western variation as having a greater potential impact to the human environment with more noise receptors and farmland while the eastern variation would have greater potential impact to natural features including wetlands, streams, floodplain, and forests (**Table 5-3**). Refinements made to the working alignment of the western variation indicate a Tier 2 project will be able to avoid a 4(f) use or be limited to a *de minimis* determination and avoid a 6(f) impact.

Key Favorable Measures

- It has the most favorable rating on three of the four core goal performance measures. These include travel time savings to key destinations (25-43 minutes), travel time savings to intermodal centers (24-35 minutes) and annual truck hours saved (8,400-36,850 hours).
- It has the most favorable rating for impacts to forests within hibernacula areas. In contrast to other Build Alternatives, this alternative impacts no forested areas near known hibernacula (0).
- It has the most favorable rating for impacts to karst features (0).
- It impacts fewer wetlands (39-56 acres) than any other Build Alternative other than Alternative R and RPA P.

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| Metrics/Units* | Western | Eastern | Difference | Greater Impact |
|--|-----------|-----------|------------|----------------|
| Cost (\$millions) | 124-166 | 192-202 | 36-69 | Eastern |
| Potential Relocations (agricultural, business, institutions, or residential) / # | 12-16 | 18 | 2-6 | Eastern |
| Cultural – Above Ground Historic Sites (NRHP Listed or Potentially Eligible)/ # | 12 | 14 | 2 | Eastern |
| Cultural – Archaeological Sites (NRHP Listed or Potentially Eligible)/ # | 9 | 7 | 2 | Western |
| Cultural – Cemeteries / # | 2 | 4 | 2 | Eastern |
| Agricultural – General / acres | 761-1,004 | 735-941 | 26-63 | Western |
| Agricultural – Prime Farmland / acres | 334-425 | 379-478 | 45-53 | Eastern |
| Protected Species – Potential Presence Within 2 miles / # of species (Federal) | --- | --- | --- | --- |
| Protected Species – Indiana Bat Forests within maternity area/ acres | --- | --- | --- | --- |
| Protected Species – Indiana Bat Forests within hibernacula area/ acres | --- | --- | --- | --- |
| Protected Species – Northern Long-Eared Forests within maternity area/ acres | --- | --- | --- | --- |
| Protected Species – Northern Long-Eared Forests within hibernacula area/ acres | --- | --- | --- | --- |
| Managed Lands / acres/miles of trails** | 12-18/1.3 | 12-18/1.3 | <0.5/<0.1 | Western |
| Special Lands – Section 4(f) & 6(f) / # | 2 | 0 | 2 | Western |
| Forests – Total / acres | 348-411 | 455-542 | 107-131 | Eastern |
| Forests – Core Blocks / # | 1 | 4 | 3 | Eastern |
| Potential Karst Features (caves, springs, and sinkholes) / # | --- | --- | --- | --- |
| Streams & Rivers (intermittent and perennial only) / miles | 4.4-5.3 | 5.8-6.4 | 1.1-1.4 | Eastern |
| Floodplains / acres | 134-160 | 222-261 | 88-101 | Eastern |
| Potential Wetlands / acres | 18-26 | 26-33 | 7-8 | Eastern |
| Potential Noise Impacts / # Receptors | 74-77 | 69-71 | 5-6 | Western |

*Comparison of metrics are generally confined to Section 3 (north of the White River)

**the less than half acre is associate with West Boggs for managed lands, for trails all but roughly 300 linear feet is associated with LI-8 which is common to both options

“- - -” are present where no difference is present between options

Table 5-3: Potential Impact Differences of Key Resources, Loogootee Variations

Key Unfavorable Measures

- It has the least favorable rating for protected species within two miles (11 species).

Alternative P overall has a median level of impacts to key natural resources.



5.1.6 Refined Preferred Alternative P (Preferred Alternative)

RPA P defers the decision of the final alignment in SIU 4 to Tier 2. RPA P maintains the DEIS alignment of Alternative P west of Loogootee. It has three new variations which diverge roughly one mile south of Loogootee. RPA P includes the original western variation P1 around Loogootee, a through town variation P2, an inner eastern variation P3, and an outer eastern variation P4. All nine local improvement sections from Alternative P remain associated with RPA P. The modification of the corridor at Loogootee was in response to local official and community comments on the DEIS, as well as continuing input from local officials after the close of the DEIS comment period. The primary difference of RPA P from Alternative P is that it provides flexibility to respond to local officials and community input on issues which could not be fully addressed in this Tier 1 study. RPA P and Alternative P have similar ranges of costs and impacts.

Key Favorable Measures

- It has the most favorable rating on three of the four core goal performance measures. These include travel time savings to key destinations (25-43 minutes), travel time savings to intermodal centers (24-35 minutes) and annual truck hours saved (8,400-36,850 hours).
- It has the most favorable rating for impacts to forests within hibernacula areas, with no forests impacted proximate to known hibernacula (0).
- It has the most favorable rating for impacts to karst features (0).
- It impacts fewer wetlands (38-52 acres) than any other Build Alternative other than Alternative R.

Key Unfavorable Measures

- It has the least favorable rating for protected species within two miles (11 species).

RPA P overall has a median level of impacts to key natural resources.

5.1.7 Alternative R

Alternative R is an upgrade of existing US 231. As an upgrade to the existing alignment, no local improvement sections are affiliated with this alternative. This corridor had been screened out due to the preliminary results of low performance and high impacts but included in the FEIS in response to comments on the DEIS. The results of the detailed analysis reinforced the findings of the alternative screening. This Build Alternative ranked lowest in nearly every performance category, was comparable in costs to several of the other Build Alternatives and had higher impacts to several key areas than other Build Alternatives.

Key Favorable Measures

- Impacts the fewest agricultural lands (146 acres) and prime farmland (151 acres).
- Impacts the fewest wetlands (13 acres) and floodplains (132 acres).

Key Unfavorable Measures

- It has the most unfavorable rating for travel time savings (5 minutes), increase in labor force access (100 persons) and annual truck hours saved (250 hours).
- It has the highest number of relocations (418), impacts to managed lands (127 acres) and potential noise receptors (487).
- It has the highest number of above ground historic sites (20)



The poor performance is a direct result of the alternative having upgrades but still requiring speed reductions through the communities it passes through. The number of anticipated relocations was one of the factors originally causing this alternative to be screened out. The results of the detailed study confirmed this alternative would result in the highest number of relocations of any Build Alternative. The necessary changes to the horizontal and vertical geometry of the roadway in addition to the widening means there are limited opportunities to avoid taking existing houses, commercial buildings and agricultural structures adjacent to the road. Cultural resource impacts are high for the same reason impacting 20 above ground resources.

5.1.8 No-Build Alternative

The No-Build Alternative would not result in any costs or impacts. The No-Build Alternative also would provide no transportation or economic benefits to the 12-county Study Area. This alternative would not meet the project's Purpose and Need.

5.2 Identification of the Preferred Alternative

After detailed analysis and review of the available alternatives, RPA P has been identified as the Preferred Alternative for the Mid-States Corridor for the following reasons:

- 1) It produces the best combination of benefits associated with the defined goals for the project.
 - a. Most time saved from all key destinations (Core Goal 1)
 - b. Third best increase in access to labor force (Core Goal 1)
 - c. Most time saved for annual truck hours (Core Goal 2)
 - d. Most time saved from major multi-modal centers in Crane and Jasper (Core Goal 7)
- 2) Although this alternative does not consistently produce the lowest impacts to environmental resources, it does produce the lowest impacts among Alternatives M, O and P. These three alternatives were considered to adequately address the project's Purpose and Need. While Alternatives B and C have lower impacts and costs, they also fail to adequately address the project's Purpose and Need. This alternative is a refinement of Alternative P based upon comments on the DEIS.
- 3) RPA P has favorable ratings for several key impacts.
 - a. Wetlands – It has the potential to produce the smallest impacts of those alternatives which meet the project's Purpose and Need.
 - b. Karst Features – No karst features are present along this corridor.

Figure 5-1 highlights the Preferred Alternative in comparison to the other Build Alternatives within the Study Area. This Tier 1 decision will defer the selection of the facility type and Loogootee variation to Tier 2 to provide maximum flexibility with future design to balance impacts, costs and benefits. **Chapter 6 – Environmental Commitments** summarizes avoidance, minimization and mitigation efforts carried forward into the Tier 2 studies if the Preferred Alternative is identified as the Selected Alternative in the Final Environmental Impact Statement (FEIS)/Record of Decision (ROD).

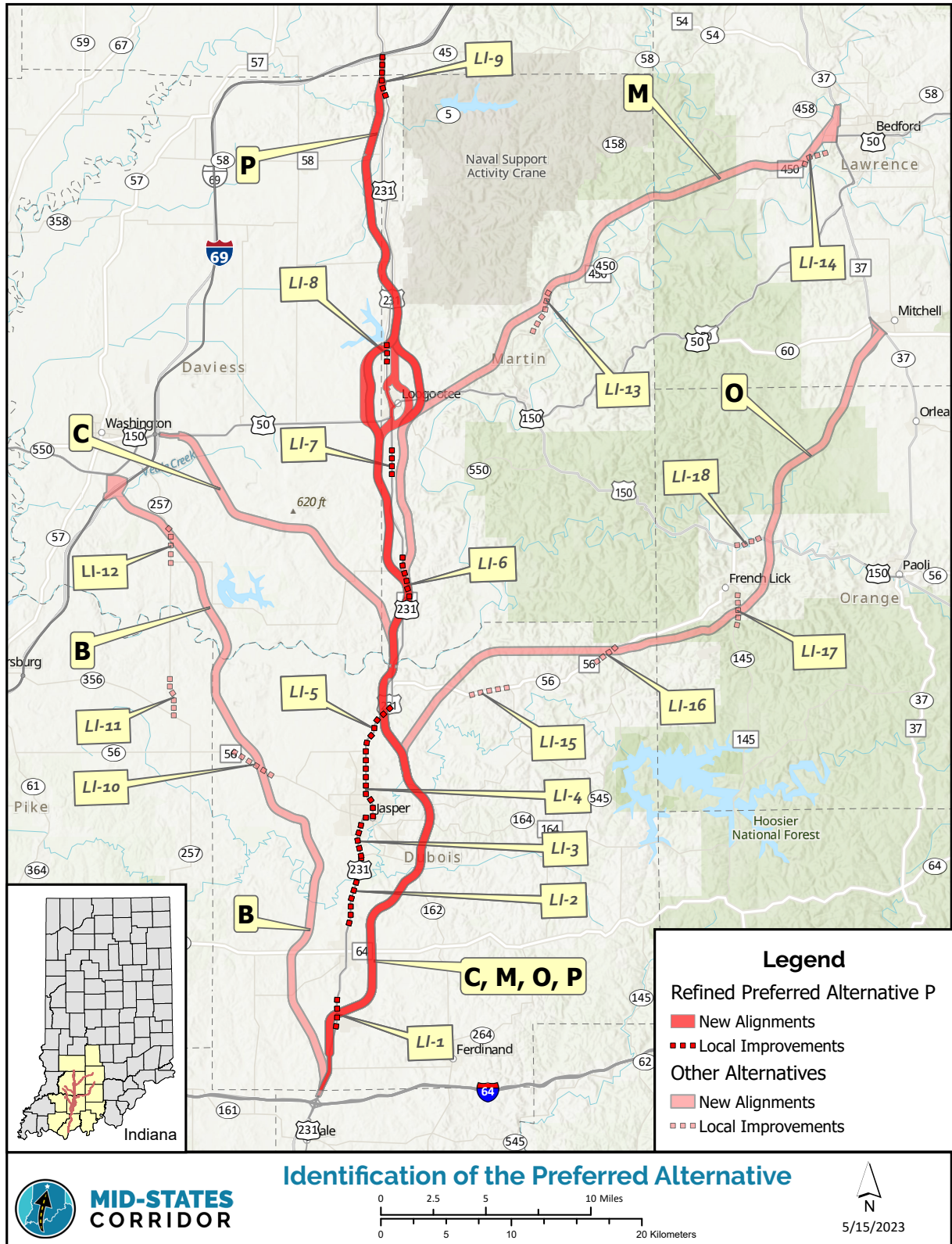


Figure 5-1: Identification of the Preferred Alternative

