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TABLES

3.4 ECONOMIC IMPACTS

3.4.1 Introduction and Background

This section analyzes the economic impacts of the Mid-States Corridor. Impacts are quantified where information is readily available.

The analysis is done at the alternative family level. For more details at facility type level see **Appendix EE – Economic Impacts**. Methodologies for analyzing economic impacts are documented in **Section 3.4.2. Section 3.4.3** documents the positive and negative economic impacts of the Mid-States Corridor. The following resources were evaluated:

- Highway user costs and benefits
- Local property tax impacts
- Local property value impacts
- Project spending
- Timber income impacts

Section 3.4.4 addresses mitigation for negative economic impacts, and **Section 3.4.5** presents a summary of the economic impacts of the Mid-States Corridor.

Economic impacts are analyzed for the 12-county Study Area of Greene, Monroe, Daviess, Martin, Lawrence, Pike, Dubois, Orange, Crawford, Warrick, Spencer and Perry counties. These economic impacts are regional, occurring across multiple counties.

3.4.2 Methodology

3.4.2.1 Highway User Costs and Benefits

Highway user impacts are estimated based on forecasted vehicle miles traveled (VMT) and vehicle hours traveled (VHT) in the 12-county Study Area under the No-Build scenario and Build Alternatives. These forecasts are from the Mid-States Corridor Travel Demand Model which included the illustrative Local Improvements as components of each alternative.

The higher capacity and travel advantages of the Mid-States Corridor would provide clear travel time savings benefits in the Study Area, see **Chapter 3.7 – Traffic Impacts**. This is especially so for the transportation hubs such as Jasper, Huntingburg and Washington. It also would provide improved connections to the entire corridor from Indianapolis and Nashville, TN, and beyond.

Construction of the Mid-States Corridor would improve overall accessibility and safety within the region. It would attract travel to a higher-classification road. Some travelers would make longer trips within the same travel time budget. There also will be induced trips due to growth within the Study Area. The economic development induced by the new highway result in additional jobs and households locating in the area. This increase in households and jobs would cause added travel. These benefits will attract many motorists from other routes within the Study Area to the new Mid-States Corridor, even if the trip is longer. These longer trips increase VMT and VHT.

Highway user costs include the cost of operating a vehicle, such as fuel, maintenance and insurance, plus the cost of travel time and the cost of crashes. Operating costs are proportional to the distance traveled. User time costs are proportional to travel time. Highway user costs are also incurred due to crashes. Crashes result in property damage, and in some cases, injuries or fatalities.

VMT and VHT estimates were developed by post processing the Travel Demand Model outputs. Crashes were calculated using the TREDIS economic analysis tool for each alternative, including the illustrative Local Improvement projects.

3.4.2.2 Local Property Tax Impacts

The purchase of right-of-way for the Build Alternatives would convert taxable, privately-owned land to tax-exempt status. This reduces the local property tax base and decreases local government property tax revenue. **Section 3.4.3.2** presents the estimated value of the property acquired and the changes in the property tax base for each build alternative. Land improvement values were determined from real property parcel data accessed from INDIANA MAP website. The assessed property values are as of 2018. The tax rate used is referenced from STATS INDIANA website. As a conservative assumption, the median county tax rate or the median state tax rate has been used, whichever is higher.

3.4.2.3 Local Property Value Impacts

Impacts of the project on future property values were considered using accepted land use and development principles related to major transportation projects and by applying these principles to the Mid-States Corridor.

3.4.2.4 Project Spending (Construction Costs)

Design and construction of the Mid-States Corridor would include costs for preliminary engineering, right-of-way and relocations, mitigation, construction, utility relocation and contract administration. **Section 3.4.3.4** discusses project cost estimates in detail. See **Appendix E – Cost Estimating** for additional information.

3.4.2.5 Loss of Timber Income

The loss of timber income is a direct impact of the project. Owners of tracts of forested land have the option to harvest trees and sell their timber for commercial use. To determine the impacts to timber resources, GIS analysis was used to calculate total acres of forest land that would be purchased for right-of-way.

3.4.3 Analysis

3.4.3.1 Highway User Costs and Benefits

Annual changes in total VMT, VHT and crashes in the Study Area have been forecasted for the No-Build scenario and the Build Alternatives in Year 2045. This information is used to estimate changes in user costs. **Table 3.4-1** and **Table 3.4-2** compare the average daily vehicle operating cost and average daily user time cost for each alternative within the 12-county Study Area.

Operating cost benefits are strongly dependent upon the directness of the alternative. Alternatives B, C, M and P generally show operating cost increases from the No-Build, and have the higher operating costs in all categories. In some categories, Alternative O shows decreased operating costs from the No-Build scenario.

Alternatives	Auto		Truck		Total	
Routes	Vehicle Miles Traveled (1,000s)	Operating Cost (Millions)[1]	Vehicle Miles Traveled (1,000s)	Operating Cost (Millions)[1]	Vehicle Miles Traveled (1,000s)	Operating Cost (Millions)[1]
No Build	12,368	$2,065	647	$342	13,015	$2,408
B Alternatives	12,417 - 12,443	$2,074 - $2,078	655	$346	13,072 - 13,098	$2,420-$2,424
C Alternatives	12,445 - 12,452	$2,078 - $2,079	651 - 653	$344 - $346	13,098 - 13,103	$2,424
M Alternatives	12,406	$2,072	649 - 650	$343 - $344	13,055	$2,415
O Alternatives	12,435 - 12,475	$2,077 - $2,083	649 - 651	$343 - $345	13,086 - 13,124	$2,241 - $2,427
P Alternatives	12,403 - 12,409	$2,071 - $2,072	648 - 650	$343 - $344	13,051 - 13,059	$2,414 - $2,416

1. Daily operating cost per 1,000 mi = $167 for auto and $529 for truck.

Source: Travel Demand Model (Daily VMT), TREDIS Model (cost/mile).

Table 3.4-1: Year 2045 Average Daily Vehicle Operating Costs

Alternatives	Auto		Truck		Total	
Routes	Vehicle Hours Traveled (1,000s)	Travel Time Cost (1,000s)[1]	Vehicle Hours Traveled (1,000s)	Travel Time Cost (1,000s)[1]	Vehicle Hours Traveled (1,000s)	Travel Time Cost (1,000s)[1]
No Build	293	$6,353	11.9	$361	305	$6,715
B Alternatives	293 - 294	$6,359 - $6,380	11.9	$361 - $363	305 - 306	$6,720 - $6,743
C Alternatives	293 - 294	$6,351 - $6,382	11.8 - 11.9	$358 - $361	305 - 306	$6,709 - $6,744
M Alternatives	292 - 293	$6,336 - $6,357	11.8 - 11.9	$358 - $361	304 - 305	$6,694 - $6,718
O Alternatives	293 - 295	$6,348 - $6,398	11.8 - 11.9	$360 - $362	305 - 307	$6,707 - $6,760
P Alternatives	292 - 293	$6,338 - $6,366	11.8 - 11.9	$358 - $362	304 - 305	$6,696 - $6,728

1. Daily time cost per hour = $21.7 for auto and $30.4 for truck

Source: Travel Demand Model (Daily VHT), TREDIS Model (cost/hour).

Table 3.4-2: Year 2045 Average Daily Travel Time Costs

Table 3.4-3 presents the forecasted annual crash costs projected within the Study Area in the year 2045 for the No-Build scenario and each Build Alternative.

Alternatives	Property Damage		Fatal/Injury		Total	
Routes	Crash-Involved Vehicles number (1000s)	Crash-Involved Vehicles cost (Millions)	Fatalities and Injuries (1000s)	Fatalities and Injuries Cost (Millions)	Total (1000s)	Total Cost (Millions)
No Build	60.2	$271	17.1	$4,902	77.3	$5,173
B Alternatives	60.2 - 60.3	$271	17.0 - 17.1	$4,897 - $4,907	77.2 - 77.4	$5,167 - $5,178
C Alternatives	60.0 - 60.3	$270 - $271	17.0 - 17.1	$4,882 - $4,910	77.0 - 77.4	$5,152 - $5,181
M Alternatives	60.1	$270	17.0	$4,892	77.1	$5,162
O Alternatives	59.9 - 60.1	$270 - $271	17.0	$4,878 - $4,893	76.9 - 77.1	$5,148 - $5,164
P Alternatives	59.8	$269 - $270	16.9 - 17.0	$4,865 - $4,877	76.7 - 76.9	$5,134 - $5,147

Sources: TREDIS Model (crash costs and crash rates)

Table 3.4-3: Year 2045 Annual Crash Costs

3.4.3.2 Local Property Tax Impacts

Table 3.4-4 shows the estimated value of the property acquired for the Mid-States Corridor, and **Table 3.4-5** provides an estimate of the estimated property tax loss for each Build Alternative. See **Appendix EE** for details about the methodology used for these calculations.

The potential annual loss in property tax revenue would be the highest for Alternative M, ranging between $423,000 and $487,000. The lowest annual loss in property tax revenue is estimated for Alternative C, ranging between $144,000 and $195,000.

Appendix EE also provides forecasts of property value and property tax revenues by county.

Alternatives	Assessed Value of Right-of-Way (1,000s)[1]							
Routes	Daviess	Dubois	Greene	Lawrence	Martin	Orange	Pike	Grand Total
B Alternatives	$5,247 - $5,380	$4,349 - $5,449					$340	$9,936 - $11,170
C Alternatives	$2,276 - $2,700	$4,688 - $6,745			$94 - $113			$7,058 - $9,558
M Alternatives		$4,689 - $6,749		$12,348 - $12,617	$3,678 - $4,505			$20,715 - $23,871
O Alternatives		$6,6607 - $8,571		$330 - $5,033		$3,379 - $3,660		$10,316 - $17,264
P Alternatives	$912 - $2,369	$4,689 - $6,763	$13 - $32		$2,454 - $3,638			$8,680 - $12,107
1. Assessed value as of 2018								
Source: INDIANA MAP website (Assessed value of parcels) - https://maps.indiana.edu/layerGallery.html?category=Land								

Table 3.4-4: Assessed Value of Right-Of-Way

Alternatives	Annual Property Tax Loss (1,000s)[1]							
Routes	Daviess	Dubois	Greene	Lawrence	Martin	Orange	Pike	Grand Total
B Alternatives	$107 - $110	$89 - $111					$9	$205 -$230
C Alternatives	$46 - $55	$96 - $138			$2			$144 - $195
M Alternatives		$96 - $138		$252 - $257	$75 - $92			$423 - $487
O Alternatives		$135 - $175		$7 - $103		$69 - $75		$210 - $352
P Alternatives	$19 - $48	$96 - $138	$0 - $1		$50 - $74			$177 - $247
1. Tax Rate for year 2020								
Source: STATS INDIANA (tax rate) - (https://www.stats.indiana.edu/dms4/propertytaxes.asp)								

Table 3.4-5: Estimated Annual Loss of Property Tax Revenue

In the longer term, there is projected to be new residential and commercial development induced by the project. These improvements would cause properties to increase in assessed value, adding to the local tax base. Also, some properties located near the proposed alternatives are likely to become more valuable. These resulting increases in assessed valuation will offset these tax base losses.

3.4.4 Local Property Value Impacts

During construction, property values near the project would be unaffected or could temporarily decrease. For example, some commercial properties with reduced access would be affected by a reduction in pass-by traffic.

Over time, there is the potential for a positive change in property values near access points to the new highway. Owners of land currently used for agriculture or forest would have the opportunity to sell or lease property for commercial purposes. These changed uses would make the properties more valuable. In addition, property values likely would increase over time due to demand for land to accommodate housing and commercial development.

It is not possible to provide a quantitative estimate of these longer-term increases in property value.

3.4.5 Project Spending

Estimated project spending is presented in **Table 3.4-6**. Alternative M has the highest costs, ranging from $1,105 million to $1,395 million. Alternative M is the longest alternative, at 62 miles. Alternatives M and O traverse more irregular terrain, which leads to higher construction costs. Alternative B has the lowest maximum cost, due to its shorter length and flatter terrain. Alternative P has the widest cost range of costs, with an almost $317 million difference between the low and high end of the range. This is due to the wider range of facility types for Alternative P.

Mid-States Corridor Total Cost Estimates			
Routes	**Miles**	**Total Cost (Millions)**	**Cost/Mile (Millions)**
B Alternatives	33.4	$449 - $576	$13.4 - $17.2
C Alternatives	41	$554 - $759	$13.5 - $18.5
M Alternatives	62	$1,105 - $1,395	$17.8 - $22.5
O Alternatives	53	$1,074 - $1,320	$20.3 - $24.9
P Alternatives	54	$735 - $1,052	$13.6 - $18.8
Sources: Construction Cost Calculations - DEIS Appendix E.			

Table 3.4-6: Mid-States Corridor Project Spending Cost Estimates

3.4.6 Loss of Timber Income

Table 3.4-7 shows direct forest land losses. Landowners potentially affected by the Mid-State Corridor may choose to accelerate harvesting timber to capture its value prior to selling their land. If this results in a short-term increase in available timber supply, it could affect the price of timber locally. Timber salvage from the Mid-State Corridor construction project also could affect the local area timber supply and market price.

Although direct changes to the amount of timber available for sale could occur with the Build Alternatives, they are likely to be small due to the small amount of forest land being acquired for the Mid-States Corridor project. Timber harvesting can occur on privately owned forested land at any point in time. Due to the comparatively limited impact to forested lands, lack of information on the suitability of impacted forests for commercial harvesting and the inability to forecast when landowners otherwise would choose to harvest forest, no costs for lost timber income are provided. Anecdotal observations during the construction of I-69 indicate that some landowners may accelerate timber harvesting if their lands are being purchased for right-of-way. This would affect the timing of timber harvesting income.

Alternatives M and O are the most heavily forested and have the highest forest impacts. Alternatives B and C have the

lowest forest impacts. Alternative P's impacts are somewhat lower than those for Alternatives O and M. Alternative P's impacts also have the widest range(when calculated as a percentage, due to its range of facility types and route variations near Loogootee.

Forest Impacts* (acres)	
Alternatives**	**Total Forest (acres)**
B	**312 - 347**
C	**424 - 556**
M	**1,994 - 2,311**
O	**1,588 - 1,756**
P	**629 - 923**
* Forest impacts include all forests in the NCLD land use dataset regardless of type or wetland status. Forested wetlands are analyzed in more detail in Chapter 3.18. Forest impacts will duplicate some forests discussed in the wetlands chapter. The impacts of the two chapters are NOT additive. Forest types will be studied in more detail in Tier 2.	
** Tier 1 Alternative impacts are reported in ranges including all the local improvements, facility types, and bypass variations. Facility type 1, freeways, has been removed from consideration. Therefore, no modifications to existing US 231 in Section 1 are anticipated.	

Table 3.4-7: Mid-States Corridor Forest Impacts

3.4.7 Mitigation

No mitigation will be offered for the economic impacts described in this section. As the discussion above notes, increases in economic activity and land values in the medium to long-term are expected to offset many of these cost increases.

3.4.8 Summary

This analysis presents the economic impacts of the Mid-States Corridor within the 12-county Study Area. A summary of the comparative economic impacts by alternative is provided below.

- **Vehicle Operating Costs.** All alternatives are forecasted to cause increases in vehicle operating costs. These increases are largest for Alternatives B and C. They are smallest for Preferred Alternative P, as well as Alternatives M and O.
- **Travel Time Costs**. Alternatives B and C have the greatest increase in travel time costs, due to their relatively indirect routing between I-64 and I-69. Alternative M and Preferred Alternative P show travel time savings for some facility types and have the lowest travel times costs.
- **Crash Costs.** Preferred Alternative P provides the largest decrease in crash costs. Alternatives M and O also show decreases in crash costs. Alternatives B and C show both decreases and increases in crash costs, depending upon the facility type.
- **Loss in Property Tax Revenues.** Alternatives C and B, as well as Preferred Alternative P, show the smallest

loss in property tax revenues. Alternative M shows the highest losses in property tax revenues. Acquiring taxable land for public right-of-way would remove that land from the tax base and, in the short term, reduce tax collections. In the longer term, induced development and improved access to existing development is anticipated to increase property values and offset the short-term loss in tax base.

- **Total Project Costs.** Total project costs range widely. This is due to significant differences in project length, facility type and terrain. Cost for Alternatives M and O are noticeably higher than for other alternatives. This is due to both their longer length and more irregular terrain. Alternative B has the lowest cost. Costs for Preferred Alternative P range widely due to its wider range of facility types.
- **Timber Income Loss.** There are too many unknowns to provide an estimate in losses of timber income due to acquiring forested land for the project. Alternatives M and O have the largest forest impacts and the largest potential for losses in timber income. Alternatives B and C have the smallest potential for losses in timber income. Preferred Alternative P has a moderate potential for lost timber income.