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3.2 LAND USE IMPACTS

3.2.1 Introduction

Transportation projects can have a wide range of influence on land use along their corridors. Direct impacts are the most immediate and are initiated when right-of-way (ROW) is purchased to convert the land from its original use into a transportation use; however, projects can also produce indirect and/or cumulative effects. Direct impacts are the easiest to predict. These are defined by the Council on Environmental Quality (CEQ) as “changes to the human environment from the proposed action” (40 CFR 1508). Indirect impacts are reasonably foreseeable and have a reasonably close causal relationship to the proposed action. For example, a new interstate interchange may induce commercial or residential growth around that location. In this hypothetical situation the project may directly cause the change in five acres of land use from forest to roadway while the indirect effects of the surrounding development may result in the additional conversion of 200 acres. Cumulative impacts are those direct or indirect effects that add to the effects of past, present, and reasonably foreseeable future actions to create effects that may be individually minor but collectively significant over a period of time. Cumulative impacts are discussed relative to specific resources. For example, the 205 acres of land-use change from forest to urban properties which contains mostly impervious surfaces may cause a decline in water quality for a nearby waterbody. The intent of considering indirect and cumulative is limited to those estimations that are reasonably foreseeable. That is, they are sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision.

Indirect and cumulative impacts will be discussed further in **Section 3.6**. This section will focus on direct impacts associated with the ROW footprints and access features for the alternatives. **Figure 3.2-1** shows the Study area and alternatives analyzed in this EIS.

3.2.2 Methodology

The analysis of land-use impacts included (1) a review of all land-use plans adopted by counties in the Study Area, (2) an evaluation of the alternatives to determine consistency with land-use plans and (3) quantifying the direct impacts of each alternative on different land-use types.

The land-use plan review assessed countywide land-use plans for the 12 counties in the Mid-States Corridor Study Area. The date of adoption and horizon year of growth projections were included where available. Where county-wide land-use plans were not adopted, municipal and sub-area plans were reviewed. Consistency with land-use plans was evaluated by comparing routes with growth, development and conservation patterns identified within each plan. This review is provided in **Appendix U – Land Use Plan Review**.

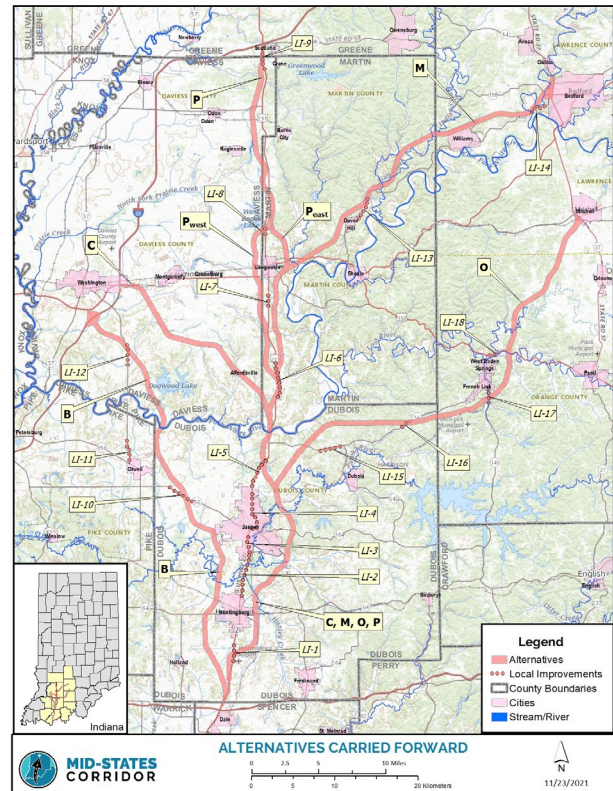


Figure 3.2-1: Mid-States Study Area with Routes Carried Forward



The direct impacts of each alternative were calculated using the project's Geographic Information System (GIS). The project GIS is discussed further in **Section 3.1**. Direct land-use impacts for each alternative are the ROW footprints for each of the working alignments. The working alignment includes ROW for both road mainline and access features. Current land cover was represented by the 2016 National Land Cover Database layer, which was updated for forests and farmland using 2018-19 aerial photography. Land cover impacted by the working alignment ROW is grouped into four categories: forest, agriculture, developed areas and other. The "other" category includes emergent and forested wetlands, open water areas, quarries, bare rock areas, shrubland and non-agriculture grasses. Direct impacts are given as ranges to reflect the potential range of facility types for each alternative. Decisions about facility types, as well as exact alignments, will be made in Tier 2 studies. Refer to **Section 3.1** for a description of the Tier 1 approach to impact calculations.

3.2.3 Analysis

This section addresses the impacts of Mid-States alternatives upon current and planned land uses in the 12-County Study Area. Analysis was based on a review of land-use plans and direct impact calculations.

3.2.3.1 Review of Land-use Plans

Comprehensive planning is a process that identifies community goals and documents community development aspirations. These goals and aspirations are formally documented in "Comprehensive Plans." These are used to guide public policies on transportation, utilities, land use, recreation and housing.

The Mid-States Project Study Area consists of Spencer, Dubois, Perry, Warrick, Pike, Daviess, Crawford, Orange, Martin, Lawrence, Greene and Monroe counties. Counties with comprehensive plans include Daviess, Dubois, Greene, Martin, Monroe, Perry, Pike and Spencer. Where countywide comprehensive plans were not available, municipal and other plans were reviewed. Warrick County has a Land Use and Development Thoroughfare Plan. Crawford, Lawrence and Orange counties do not have comprehensive plans but do have municipalities with comprehensive plans.

Detailed summaries of this review are given in **Appendix U – Land Use Plan Analysis**. **Appendix U** includes maps, figures and sources for all countywide and municipal plans.

3.2.3.1.1 Key Growth Areas

These planning documents anticipate low to modest growth and development in the Study Area. Areas forecasted for growth most commonly are proximate to Interstate highways (I-64 and I-69) and connections to those highways. Multiple countywide and local plans emphasized improved mobility near US 231 in Martin, Dubois and portions of Daviess counties. Modest growth also was forecasted in and near Jasper, Loogootee, Washington, Petersburg, and Bloomington, as well as in other areas of Spencer and Warrick counties. Growth in rural portions of the Study Area is limited by terrain and access to utility services including water, gas, electricity and internet.

3.2.3.1.2 Conflicts

Where countywide plans exist, most were adopted prior to 2010. Orange, Crawford, and Lawrence counties have no land-use plans. Inconsistencies and conflicts between future land-use plans and the Mid-States Corridor alternatives were identified. Some of these inconsistencies may be attributed to the length of time since some plans were adopted. **Table 3.2-1** shows each alternative and identifies whether there are conflicts between Mid-States alternatives and county/local land-use plans.



CONSISTENCY OF MID-STATES ALTERNATIVES AND COUNTY LAND USE PLANS					
County	Alternative B	Alternative C	Alternative P	Alternative O	Alternative M
Crawford	--	--	--	--	--
Daviess	Conflict: Recreation	Conflict: Recreation	Conflict: Industrial	--	--
Dubois	Consistent	Consistent	Consistent	Consistent	Consistent
Greene	--	--	Consistent	--	--
Lawrence	--	--	--	Consistent	Conflict: Agriculture, open space (Bedford Comprehensive Plan)
Martin	--	--	Conflict: Residential (Loogootee Comprehensive Plan); State managed lands, conservations lands	--	Conflict: Open Space (NSA Crane Joint Land Use Study)
Monroe	--	--	--	Consistent	Consistent
Orange	--	--	--	--	Consistent
Perry	--	--	--	--	--
Pike	Conflict: Residential	--	--	--	--
Spencer	Consistent	Consistent	Consistent	Consistent	Consistent
Warrick	--	--	--	--	--

"--" indicates that alternative does not serve that county, or that county has no comprehensive plan.

Table 3.2-1: Consistency of Mid-States Alternatives and Existing Land-use Plans

A conflict also was identified between a countywide and municipal plan in Martin County. Martin County’s Comprehensive Plan, adopted in 2009, anticipates a future bypass of US 231 west of the City of Loogootee. The Loogootee Comprehensive Plan, adopted in 2014, anticipates a future bypass of US 231 east of Loogootee. Alternative P has two variations, one passing Loogootee to the east and the other passing Loogootee to the west.

3.2.3.1.3 Mid-States Coordination

None of the countywide plans explicitly reference the Mid-States project. Both Jasper and Huntingburg published municipal comprehensive plans in 2019. These plans state no alternative preference for the Mid-States corridor. Both direct their respective municipalities to make necessary plans to be consistent with the selected corridor. See Section 2.3 of **Appendix U** for details.

3.2.3.1.4 Summary of Land-use Plan Reviews

The land-use plan review concluded the following:

- Perry and Warrick counties are not impacted by any alternative, therefore; consistency with these counties’ comprehensive plans is not a concern.
- Alternative B generally is consistent with future land-use plans in Daviess and Pike counties. It may impact land designated in the comprehensive plan for residential development in Pike County along SR 356 near the Dubois County boundary. Alternative B has the potential to impact land designated in the comprehensive plan for rural residential development in Dubois County.
- Alternative C generally is consistent with Dubois County plans. Route C in Daviess County impacts land designated in the comprehensive plan for industrial use north of Dogwood Lake. However, Alternative C could provide improved access to this area to support development.



- Alternative P is consistent with a previously identified US 231 Huntingburg-Jasper relocation documented in the region’s 25-year long range transportation plan. In Martin County, Alternative P has variations to the east or west of the City of Loogootee. The western variation is consistent with land-use plans in Davies and Martin counties but impacts planned residential development identified in the City of Loogootee Comprehensive Plan. The eastern variation is consistent with planned future roadways and development in the City of Loogootee Comprehensive Plan. The eastern variation may negatively impact land designated for residential infill in Martin County’s Comprehensive Plan.
- Alternative O is consistent with the Dubois County Comprehensive Plan and the City of Bedford Comprehensive Plan.
- Alternative M has the potential to impact designated open space in the Bedford Comprehensive Plan. It also could support development of incompatible land uses near Naval Surface Warfare Center – Crane.
- Though no alternatives directly impact Perry County, induced development pressure from the construction of the Mid-States Corridor could result in indirect impacts to agriculture land near I-64 identified for preservation.
- The No-Build Alternative will have no impact on land-use plans.

3.2.3.2 Comparison of Alternative Impacts

Table 3.2-2 shows the range of acreage impacts of the ROW for each alternative. These represent the direct impacts of each alternative. For discussion of indirect and cumulative impacts of this project, see **Section 3.6**.

Land Use Impacts (acres)					
Alternative	Land Use Categories [^]				Total ROW
	Forests	Agriculture	Developed	Other	
B	306 - 341	1,517 - 1,764	284 - 299	113 - 121	2,220 - 2,525
C	408 - 536	1,082 - 1,408	288 - 319	122 - 141	1,900 - 2,403
M	1,973 - 2,284	1,465 - 1,857	517 - 550	184 - 208	4,138 - 4,900
O	1,572 - 1,734	1,091 - 1,381	367 - 465	133 - 149	3,162 - 3,730
P	613 - 902	1,354 - 1,832	360 - 400	140 - 166	2,497 - 3,226

Tier 1 alternative impacts are reported in ranges including all the alternative bypass and facility type options.

**Facility type 1, freeways, has been removed from consideration. Therefore, no modifications to existing US 231 in Section 1 and existing SR 37 in Section 3 are anticipated. No impacts are anticipated on either of these facilities.

[^] Agriculture = cropland and pastureland/hay; Forests = Deciduous, Evergreen, Mixed; Developed = Open, High, Medium, Low; Other= Barren, Emergent Wetland, Grassland/Herbaceous, Open Water, Scrub-Shrub, Woody Wetland

Table 3.2-2: Land-use Impacts by Alternative



3.2.3.2.1 Forests

The Northeastern Alternatives M and O have significantly greater forest impacts than the other alternative families. They impact two to five times the forest acreage of Alternatives B, C and P. Alternative B has the lowest forest impacts and the smallest range of such impacts.

3.2.3.2.2 Agriculture

Alternatives B, M and P have higher agricultural impacts. Alternatives C and O have lower agricultural impacts.

3.2.3.2.3 Developed Areas

The makeup of impacts to developed areas are similar for all alternatives. Each alternative impacts approximately 60-80 percent developed open space, 15-30 percent low intensity development, 5-15 percent medium intensity development and 1 percent high intensity development. Alternative M has the highest range of impacts to developed lands. This is caused largely by impacts near Bedford, where Alternative M accesses SR 37. Alternative B has the lowest range of impacts to developed lands. Alternative P has east and west bypass options around Loogootee; however, the range of impact is only 40 acres difference between the bypass options. Alternative P's impacts are below M and O but higher than B and C. The larger range of impacts for Route O is due to different connection options to SR 37 for different facility types.

3.2.3.2.4 Other Areas

"Other" land uses include barren land, emergent and woody wetlands, grasslands, shrublands and open water. Alternative B has the smallest impacts on these other uses while M has the most. Alternatives C, P and O fall between B and M and are relatively similar to impacts on these other land uses. Alternative M has the largest impacts largely due to the presence of non-agricultural grasslands in the rolling terrain in eastern Dubois County and Lawrence County.

3.2.3.2.5 Total Right-Of-Way

Northeastern Alternatives M and O require significantly more ROW than Northwestern and North Central Alternatives B, C and P. Alternative M and O are 62 and 53 miles in length, respectively. This difference accounts for the approximately 900 acres of additional ROW for Alternative M compared with Alternative O. Alternative B is the shortest, at 33 miles, but its ROW impacts are similar to those for Alternative C, at 40 miles. This is due to the large area required for the interchange with I-69. Route P has the widest range of impacts, due to the separate bypass options around Loogootee.

3.2.3.2.6 No Build Alternative

The No-Build Alternative will have no impact on land use.

3.2.4 Mitigation

Discussions of mitigation plans for various land-use resources are contained throughout **Chapter 3 – Environmental Resources, Impacts and Mitigation**. For a consolidated summary of proposed mitigation measures, see **Chapter 6 – Mitigation and Commitments**.



3.2.5 Summary

Alternative O is consistent with existing land-use plans. Alternatives B and C generally are consistent with existing land-use plans, while Alternatives P and M have some level of inconsistency with existing land-use plans. Alternative O's lack of conflicts is due in large part to the lack of land-use plans in areas of impact. The No-Build Alternative is neither consistent nor inconsistent with the land-use plans reviewed.

Alternative M has the highest impacts for total ROW and for all land-use types, except agriculture. Alternative O has higher forest and total ROW impacts. Alternative P, the preferred alternative, has the widest range of impacts, due to the occurrence of two bypass options of Loogootee. Alternative B, although it is the shortest route, has the highest impacts to agricultural land. Alternative C has overall low impacts in all categories.

