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3.24 AGRICULTURAL IMPACTS

3.24.1 Introduction

Agriculture has been a way of life in Indiana for thousands of years and continues to be an important industry and economic driver for the state. As cities expand and other industries develop, the loss of farmland, specifically prime farmland, remains a concern. Data from the 2017 United States Department of Agriculture (USDA) Census of Agriculture¹ shows 14.9 million acres of Indiana's 22.9 million acres are farmland, which accounts for 65 percent of the total land use. The state's cropland and pastureland totaled 12.9 million and 509,000 acres, respectively. This is 87 percent and 3 percent of all farmland acres, respectively. The remaining 1.5 million acres is used for other agricultural production, including wood products, and numerous specialty crops, including blueberries, peppermint, processing tomatoes, watermelon, cantaloupe, snap beans and cucumbers.

In 2015, 12.6 million acres of Indiana was considered prime farmland. Prime farmland is identified by the U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) as having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. Indiana has maintained a fairly consistent amount of prime farmland, with estimated losses of only 3.8 percent between 1982 and 2015 (2015 National Resources Inventory). The estimated price per acre of prime farmland in the Southwest region of Indiana is \$9,150 (Purdue Agricultural Economics Report).

Farmland preservation and the conversion/loss of prime and unique farmland are important issues in Indiana. As technology and industries evolve, land use needs continue to evolve as well. To protect and slow the loss of farmland, Congress enacted the Farmland Protection Policy Act (FPPA) in 1981. The purpose of the FPPA was not to stop development of farmland, but to guide industries to develop areas that are less suitable for farming. This action serves to protect the more valuable high-quality farmland while balancing the need for urban and rural uses. Detailed analyses and agency coordination under the FPPA for impacts to prime farmland will be conducted in the Tier 2 NEPA studies.

Approximately 31 percent of the total land area for the 12-county Study Area is used for growing pasture/hay, row crops and small grains. Approximately 9.5 percent of the total prime farmland in Indiana is within the Study Area. Within the Study Area, there is also a major poultry and poultry product producer. Any impacts to major structures used for agribusiness, such as poultry facilities, will be addressed in **Section 3.5 - Relocation Impacts**.

3.24.2 Methodology

Impacts to agricultural lands resulting from direct conversion to transportation use were assessed using three measures: total farmland acres impacted, total prime farmland acres impacted and potential annual loss in crop production.

Agricultural impacts for each alternative were calculated using the project's Geographic Information System (GIS) as discussed in Section 3.1. Direct impacts to agricultural lands were calculated using the 2016 United States Geological Survey (USGS) National Land Cover Database (NLCD) layer, which was updated for agricultural and forest land uses using 2018-19 aerial photography. The updated land cover layer includes three categories that represent agricultural

1 The Census of Agriculture is taken every five years by the U.S. Department of Agriculture. It is a complete survey of U.S. farms and ranches. Even small plots of land - whether rural or urban - growing fruit, vegetables or some food animals are surveyed if \$1,000 or more of such products were raised and sold, or normally would have been sold, during the Census year. The Census tabulates land use and ownership, operator characteristics, production practices, income and expenditures. The most recent Census of Agriculture was taken in 2017. See <https://www.nass.usda.gov/AgCensus/> for more information.



use in pasture/hay and row crops for the purpose of this assessment. Working alignment footprints for each of the alternatives was overlain the land cover data to determine the acreage of land within agriculture land use categories. Direct impacts are given as ranges within the tables to reflect the different facility types for each alternative. Impacts to prime farmland were determined using GIS data from the USDA Natural Resource Conservation Service SSURGO database for the 12-county Study Area. Prime farmland included soils designated as “All prime farmland” from areas not designated as a developed land use category within the 2016 NLCD. The 2019 National Agricultural Statistics Service (NASS) State Agriculture Overview provided the information used to determine the dollar loss for each commodity. Additional details about the analysis of agricultural impacts presented in this Section are provided in Appendix FF – Agricultural Impacts Appendix.

3.24.3 Analysis

The results of the assessment for the alternatives allow for general comparisons of potential total farmland impacted, estimated prime farmland impacted and estimated loss of crop production. **Table 3.24-1** details the impacts to agricultural lands based on the various proposed alternatives. **Table 3.24-2** illustrates the total estimated loss of crop production based on two key agricultural types, row crops and pasture/hay.

Agricultural Land Impacts*					
Alternatives**	Cropland (acres)	Pastureland / Hay (acres)	Total Agricultural Land Use in the Working Alignment (acres)	Percentage of the Working Alignment ROW in Agriculture (%)	Prime Farmland Soils ^ (acres)
B	1,267 - 1,492	250 - 271	1,517 - 1,763	68% - 70%	531 - 602
C	833 - 1,099	248 - 309	1,082 - 1,408	57% - 59%	234 - 321
M	973 - 1,285	491 - 572	1,465 - 1,857	35% - 38%	571 - 724
O	667 - 887	424 - 494	1,091 - 1,381	34% - 37%	304 - 378
P	1,039 - 1,402	307 - 430	1,354 - 1,832	52% - 58%	520 - 733

* Agriculture land was calculated from the "Cropland" and "Pasture/Hay" landcover classes of the 2016 National Landcover Dataset (USGS, 30m).

** 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.

^ Prime farmland includes soils designated as "All prime farmland" in the NRCS soil data. Conditional prime farmland and farmland of statewide importance is NOT included. Prime farmland soils overlapping "developed" landcover categories in NCLD Landcover data were not included as they can no longer be converted to agriculture.

Table 3.24-1: Impacts to Agricultural Land



Agricultural Production*			
Alternatives**	Loss of Cropland Production Income [^] (Thousand \$)	Loss of Hay Production Income ^{^^} (Thousand \$)	Total Loss of Select Agriculture Production Income (Thousand \$)
B	1,054 - 1,242	87 - 164	1,141 - 1,406
C	693 - 914	87 - 187	780 - 1,101
M	810 - 1,069	171 - 346	981 - 1,415
O	555 - 738	148 - 299	703 - 1,037
P	864 - 1,166	107 - 260	977 - 1,426

* Agriculture land was calculated from the "Cropland" and "Pasture/Hay" landcover classes of the 2016 National Landcover Dataset (USGS, 30m).

** 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.

[^] Calculated at \$832 per acre. Price per acre was determined from Corn (Grain) harvested acres and dollar value produced published in the 2020 State Agriculture Overview for the state of Indiana, USDA, NASS. [https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=INDIANA]

^{^^} Calculated at \$349 per acre for the low price and \$605 per acre for the high price. The price range reflects the differences in value ranging between alfalfa hay and other hay. Prices were determined from the harvested acres and the value produced of alfalfa hay and hay excluding alfalfa published in the 2020 State Agriculture Overview for the state of Indiana, USDA, NASS. [https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=INDIANA] Dollar value ranges reported in the table are determined by the minimum and maximum agriculture acreage and the minimum and maximum price per acre, showing the lowest and highest estimates from the least acres at the lowest price to the most acres at the highest price.

Table 3.24-2: Impacts to Agricultural Production and Income

To eliminate repetition, only unique points have been addressed in the analysis below.

3.24.3.1 Alternative B

Alternative B requires the least amount of total right-of-way acquisition; however, it has the largest percentage of agricultural land use within its working alignment at 68-70 percent. Approximately 34 percent of the agricultural land is considered prime farmland. Although it has one of the shortest working alignments, it has one of the highest impacts to prime farmland and agricultural production. It has the highest crop production loss at \$1,141,000-\$1,406,000.²

3.24.3.2 Alternative C

Alternative C has both the second lowest potential for farmland right-of-way acquisition and crop production losses. It also has the lowest impacts to prime farmland.

² This total is presented as a range as the cost for pastureland ranges from \$349 per acre to \$605 per acre, depending on the type of hay plant grown on the land. More information regarding this can be found in **Appendix FF – Agricultural Impacts Appendix**



3.24.3.3 Alternative M

Alternative M is the longest alternative and requires the most right-of-way. While only 36-38 percent of the working alignment contains agricultural land uses, Alternative M still impacts more acres of agricultural lands than all other alternatives. It also impacts the highest amount of prime farmland. This has the second highest impact to of annual farm income at \$981,000-1,415,000. These impacts are similar to Alternative P.

3.24.3.4 Alternative O

Alternative O impacts similar percentages of agricultural land as Alternative M. However, it impacts the least amount of row crop agricultural land. Due to these lower row crop impacts, this alternative causes the smallest loss of agricultural income at \$703,000-\$1,037,000.

3.24.3.5 Alternative P

Alternative P has the second highest potential for impacts to row crop agricultural lands. It impacts the highest percentages of prime farmland soils, 38-40 percent. Pastureland/hay impacts are greater than Alternatives B and C, but less than M and O. This alternative has the widest range of lost agricultural income at \$977,000-\$1,426,000. This wider range is due to bypass variations at Loogootee. The western bypass impacts more farmland than the eastern bypass.

3.24.4 Mitigation

Mitigation of impacts will focus on minimizing farmland impacts and designing alignments to minimize disruptions of agricultural operations. These detailed engineering assessments will be made during Tier 2 studies.

3.24.5 Summary

Agricultural impacts are difficult to avoid with any transportation project in Indiana, particularly one of this size. Each alternative provides unique challenges to avoiding agricultural impacts. Alternative B is one of the shortest alignments but has the potential to impact the most prime farmland and have the highest loss of farm income. Alternative C impacts the least amount of prime farmland, and the second least total acres of row crop agricultural lands. Alternative M impacts the most agricultural land, including the highest percentage of pastureland/hay of all alternatives. Alternative O is one of the longest alternatives but impacts the least amount of prime farmland and has the smallest loss of farm income. Preferred Alternative P's right-of-way impacts are approximately 52-58 percent agriculture land use. Due to the bypass variations at Loogootee, it has a wide range of impacts than other alternatives. The No-Build Alternative would not impact any agricultural lands.

