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3.24 AGRICULTURAL IMPACTS

3.24.1 Introduction

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

- Impacts for Alternatives R and Refined Preferred Alternative P (RPA P) have been added
- Definitions have been added for prime and unique farmland
- Added discussion of avoiding impacts to major agricultural structures

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 totaled 12.9 million acres (or 87 percent of total farmland), and pastureland totaled 509,000 acres (or 3 percent of total farmland). The remaining 1.5 million acres (10 percent) 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 Indiana². 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 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 pasture/hay, row crops and small grains. Approximately 9.5 percent of the total prime farmland in Indiana is within the Study Area. The Study Area 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**.

¹ The Census of Agriculture is taken every five years by the U.S. Department of Agriculture (USDA). 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.

² Prime farmland is described by the USDA as "... land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture." Unique farmland is described by the USDA as "land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables." <https://efotg.sc.egov.usda.gov/references/public/SD/PrimeandUniqueFarmlands.pdf>.



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 - Methods**. 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 to 2019 aerial photography. The updated land cover layer includes three categories that represent agricultural use in pasture/hay and row crops for the purpose of this assessment. In order to calculate impacts, working alignment footprints for each of the alternatives were overlain with the land cover datasets 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 crop 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
RPA P	955 - 1,402	317 - 442	1,272 - 1,832	54% - 58%	495 - 693
R	68	78	146	20%	151

* 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 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
RPA P	794 - 1,166	111 - 268	905 - 1,426
R	89	45 - 78	134 - 167

* 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 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 to 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 to \$1,406,000.³

³ 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**



3.24.3.2 Alternative C

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

3.24.3.3 Alternative M

Alternative M is the longest alternative and requires the most right-of-way. While only 35 to 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 has one of the highest impacts to prime farmland soils. Alternative M has the second highest impact to annual farm income at \$981,000 to \$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 aside from Alternative R. Due to these lower row crop impacts, this alternative causes one of the smallest losses of agricultural income at \$703,000 to \$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 to 40 percent. Pastureland/hay impacts are greater than Alternatives B, C and R, but less than M, O, and RPA P. This alternative has one of the widest ranges of lost agricultural income at \$977,000 to \$1,426,000. This wider range is due to variations at Loogootee. The western variation impacts more farmland than the eastern variation. These impacts are similar to RPA P.

3.24.3.6 Alternative R

Alternative R is the least impactful alternative to total acres of cropland, pastureland/hay, and loss of farm income. The total amount of agricultural land is less than 250 acres. As such, the annual loss to farm income was estimated between only \$134,000 to \$167,000.

3.24.3.7 Refined Preferred Alternative P

RPA P has the most variable range of cropland, pastureland/hay, and total agricultural land use impacts. Impacts to prime farmland soils are greater than Alternatives B, C, O, and R. The percentage of agricultural land use within the working alignment is greater than Alternatives M, O, P, and R. This alternative has the widest range of lost agricultural income at \$905,000 to \$1,426,000. This wider range is due to several variations at Loogootee. Of the four variations, RPA P1 would have the greatest impact to agricultural lands and lost agricultural income while RPA P2 would be the least impactful. RPA P4 would have the greatest impact to prime farmland, while RPA P2 would impact the least amount of prime farmland.

3.24.4 Mitigation

Mitigation of impacts will focus on minimizing farmland impacts and designing alignments to minimize disruptions of agricultural operations. Emphasis will be placed on avoiding impacts to major agricultural structures, where reasonable. Such structures are difficult to replace and would result in high relocation costs. 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 second 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 second least amount of prime farmland and has the second smallest loss of farm income. Both Alternative P and RPA P have wider ranges of impacts to agricultural land, due to variations in Martin County. Alternative R is the least impactful alternative in terms of total agricultural land, prime farmland and loss of farm income. The No-Build Alternative would not impact any agricultural lands.