3.2 Agricultural Resources

The production of crops, livestock, and dairy products (agricultural resources) is essential to maintaining human health and food sources. In addition, farm production is an important source of revenue for the study area counties. Conversion of agricultural land to highway right of way can lead to reductions in agricultural production. Minimizing these effects is required by the Federal Farmland Protection Policy Act and the Illinois Farmland Preservation Act.

What are the characteristics of area farms?

Agriculture is the primary land use in the seven counties and comprises 65 to 98% of the land, depending on the county.

Table 3.2-1 summarizes farm characteristics for the counties within the study area. Shelby County has the most farms (1,185) and Washington County has the fewest number of farms (779). The average farm size is largest in Christian County (494 acres), which is over two times larger than those in Marion County (242 acres) and Jefferson County (201 acres) (United States Department of Agriculture-National Agricultural Statistics Service, US Census of Agriculture, 2007).

Row crops account for more than 80% of the farmland use in each county, with corn and soybeans being the primary crops accounting for 36 to 89% of farm revenue in each county. The remaining agricultural land uses include pasture, seed farming, fruits, vegetables, livestock operations, and greenhouse operations.

Table 3.2-1: Farm Characteristics

State and Counties	Total Number of Farms (2007)	Total Acres in Farm (2007)	Average Size of Farm (Acres, 2007)	Cropland as a Percent of Total Farmland (Acres)
Illinois	76,860	26,775,100	348	88.5
Jefferson	1,156	232,531	201	80.0
Washington	779	353,903	454	91.8
Clinton	1,031	268,441	260	91.8
Marion	1,077	260,679	242	81.4
Fayette	1,132	303,258	268	83.9
Shelby	1,185	387,288	327	89.6
Christian	910	449,512	494	95.7

Source: USDA-NASS, US Census of Agriculture, 2007.

What is "Prime Farmland"?

Prime Farmland is 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. Prime Farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage.

How much of the area is Prime or Important Farmland?

Prime Farmland is of major importance in meeting the Nation's short- and long-range needs for agricultural products. Prime Farmland in the counties ranges from around 44% to almost 90% in Christian County (89.9%). Farmland of Statewide Importance in the counties ranges between approximately 6 and 44%. Clinton County (44.2%) has the greatest number of acres of Farmland of Statewide Importance. Approximately 80 to 96% of the soil in each county is either Prime Farmland or Farmland of Statewide Importance. Table 3.2-2 summarizes the percent of prime and Farmland of Statewide Importance in the seven counties of the study area.

What is "Farmland of Statewide Importance"?

Farmland of Statewide Importance is farmland other than Prime Farmland that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate State agency. Important farmland includes prime farmland soils with steep slopes or eroded farmland.

Table 3.2-2: Prime and Farmland of Statewide Importance Statistics

County	Prime Farmland, % of County	Farmland of Statewide Importance, % of County
Jefferson	60.4	20.2
Washington	47.7	41.9
Clinton	46.1	44.2
Marion	44.6	42.3
Fayette	69.1	18.1
Shelby	76.0	11.3
Christian	89.9	6.3

Source: USDA-NRCS, Acreage and Proportionate Extent of the Soils, 2006, 2008, 2010, and 2011; USDA-NRCS, Prime and Other Important Farmlands, 2006, 2008, 2010, 2011.

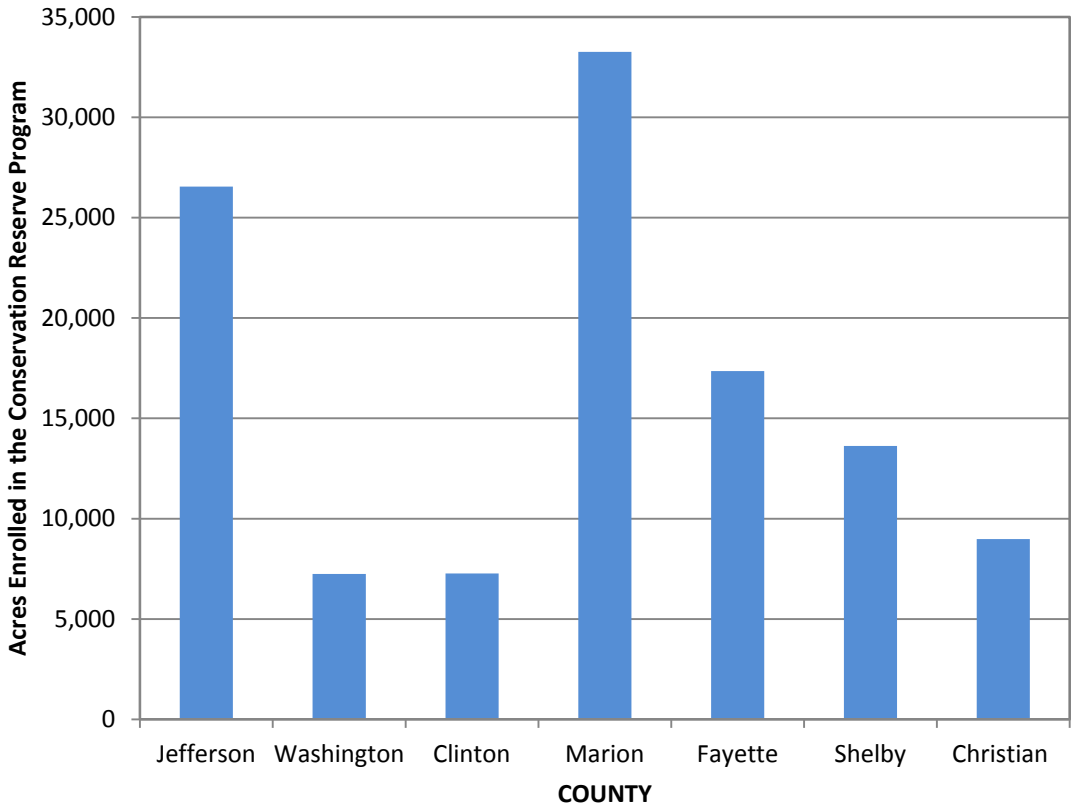
What Agricultural Lands have special recognition or are protected?

Protected Agricultural Lands are determined by local planning administrations to preserve and protect agricultural land from future development. Currently, Jefferson, Washington, Clinton, Marion, Fayette, Shelby, and Christian counties do not have farmland protection areas.

The federal Conservation Reserve Program (CRP) encourages farmers to voluntarily plant permanent areas of grass and trees on land that need protection from erosion, to act as windbreaks, or in places where vegetation can improve water quality or provide food and habitat for wildlife. In return, they receive annual rental payments, incentive payments for certain activities, and cost-share assistance to establish the protective vegetation.

Marion County has the greatest number of acres of land associated with CRP. The amount of land enrolled in the CRP within the study area is presented in Figure 3.2-1.

Figure 3.2-1: Land Enrolled in the Conservation Reserve Program



Source: USDA-FSA, CRP, Monthly Contract Report Summary for Active Contracts for All Program years (1996-2010), 2009.

Centennial and Sesquicentennial Farms are recognized in the study area through the Illinois Department of Agriculture registry; however, there are no regulatory requirements for protecting the farms. Shelby County has the greatest number of both Centennial (154) and Sesquicentennial Farms (15). Table 3.2-3 details the number of Centennial and Sesquicentennial Farms in the seven county area. Figure 3.2-2 shows the locations of Centennial and Sesquicentennial Farms near the study area.

What are Centennial and Sesquicentennial Farms?

A Centennial Farm is an agricultural property that has been owned by the same family of descendants for at least 100 years. The Illinois Centennial Farms program honors generations of farmers who have worked to maintain family farms in Illinois. The Sesquicentennial Farms Program recognizes farms that have been held by descendants of the same family for 150 years or more.

Table 3.2-3: Centennial and Sesquicentennial Farm Statistics

County	Number of Centennial Farms	Number of Sesquicentennial Farms
Jefferson	43	4
Washington	143	8
Clinton	87	3
Marion	63	9
Fayette	99	8
Shelby	163	15
Christian	138	3

Source: IDOA, Centennial/Sesquicentennial Farms Program, Query May 15, 2013.

Figure 3.2-2: Location of Centennial and Sesquicentennial Farms (Page 1 of 2)

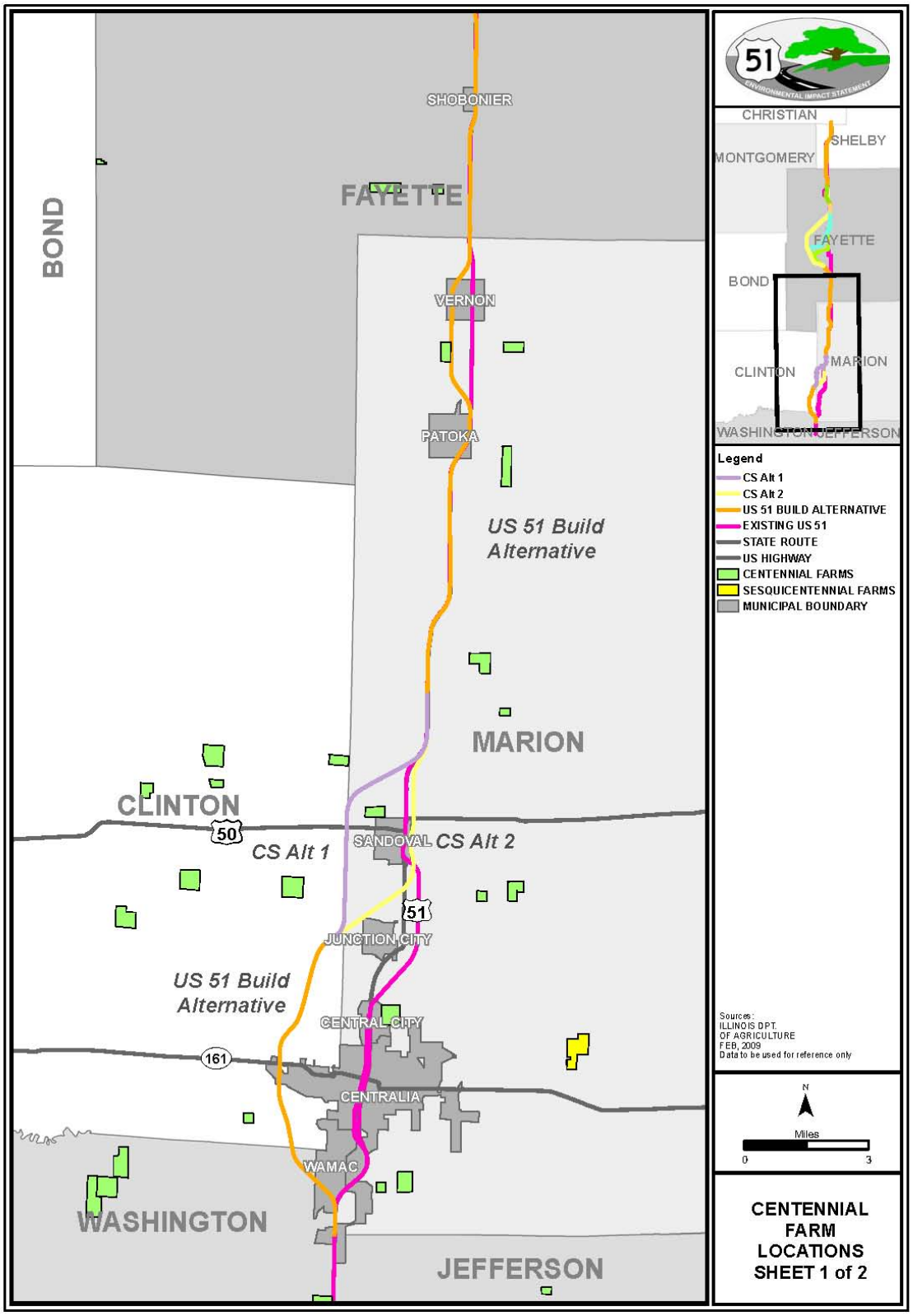
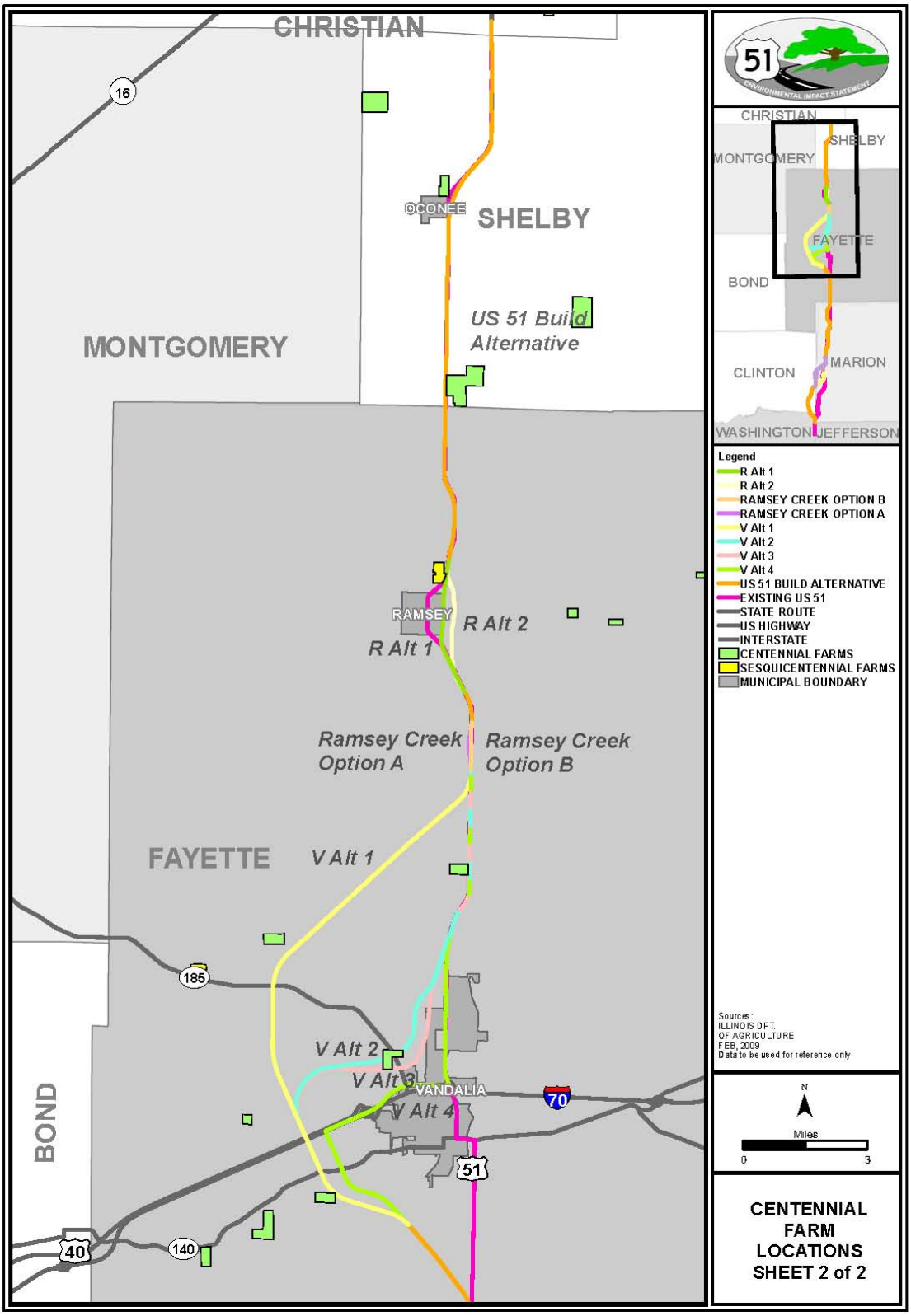


Figure 3.2-2: Location of Centennial and Sesquicentennial Farms (Page 2 of 2)

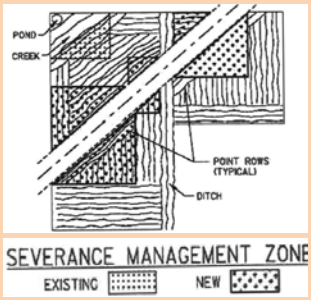


How would agricultural operations or land be affected for each Alternative?

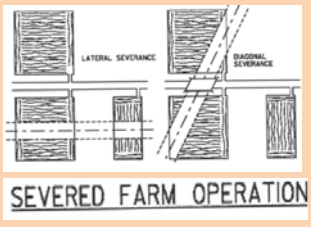
Table 3.2-4 summarizes the various types of effects on farm operations caused by the proposed alternatives. The effects include not only the direct loss of farmland but changes in operations. Effects are measured in terms of:

- *Number of Affected Farms.*
- *Farmstead Displacement*—The number of farm residences displaced and number of other farm buildings displaced.
- *Farm Businesses Affected*— The number of businesses displaced and the number of buildings displaced.
- *Acres of Agricultural Land Used*— Land within the proposed right-of-way that is currently used or could potentially be used as agricultural land. These areas do not include land within the proposed project right-of-way that is paved, covered by water, or urban development.
- *Number of Farm Operations Affected, Severances, and Severance Management Zones*—Severed farm operations occur when a new roadway divides a farm and separates one or more parcels from others within a single farm operation. Severances usually result in adverse travel and operational difficulties for the farm operator. Severance management zones are areas (measured in acres) within or adjacent to severed parcels used to measure the disruption to normal farming operations. Triangular shaped farmland remnants are the basis of many of the problems caused by diagonal land severance and right-of-way takings that are not square with the farmed acreage. Point rows, caused by angular field ends, harvest losses because of excessive turning, and overlapping application of herbicides are consequences leading to waste, additional expense, increased field work time, and additional use of fuel. Point rows are taken into account in the severance management acreage. **S**everance and severance management zones are not associated with farm land on the edge/perimeter of a farm tract when taken for a new roadway. Instead farm land taken on the edge of a farm tract is presented as "otherwise affected farm operations."
- *Number of Landlocked Parcels*—A land-locked parcel is created by the taking of right-of-way for road construction in such a way that remaining land is not accessible by a public road or permanent easement after construction.

Severance Management Zone



Severed Farm Operation



- *Number of Uneconomical Remnants*—Uneconomical remnants are severed portions or landlocked portions of a property where the owner is left with an interest after the partial acquisition of the owner's property, and the acreages may have little or no value or utility to the owner.

- *Number of Farms with Adverse Travel and Miles of Adverse Travel*—Adverse travel occurs when a new roadway causes additional travel distance from one part of a farm operation to another part. Added travel is typically caused by severance of a farm operation by a new roadway or by a road closure, and is calculated as the extra round trip mileage per field visit. Adverse travel equals the old trip distance minus the new trip distance times two to represent one round trip.

- *Farm Revenue Loss*—Farm revenue loss occurs when farm land is taken out of production for highway use. Annual farm revenue per acre in the study area's counties was determined by dividing total farm revenue by the number of farm acres in each county. An average annual farm revenue loss was determined by multiplying the average revenue per acre by the acres of farmland used for each alternative.

US 51 Build Alternative Effects

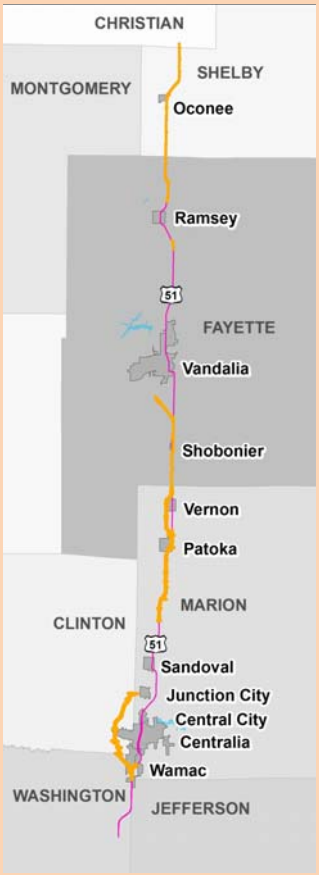
The areas where there is only one alternative are collectively referred as the US 51 Build Alternative. These areas are a combination of alignment on new terrain, such as the bypass of Centralia, and expansion of the existing US 51. The US 51 Build Alternative starts at the northern border of Jefferson County and affects farmland throughout the project corridor. Farmland impacts are minimized to the greatest extent possible where the US 51 Build Alternative widening occurs adjacent to existing US 51. The projected impacts can be summarized as follows:

- Would impact 245 farms.
- Would impact 877 acres of agricultural land.
- About half (416 of 877 acres) of the agricultural land is prime farmland.
- Fifty-eight parcels would be severed creating 24 uneconomic remnants under five acres.

Thirty farms would have adverse travel for a total combined roundtrip distance of 21.6 miles.

US 51 Build Alternative

The alternative between the larger towns where there is only one remaining alternative is referred to collectively as the US 51 Build Alternative. The US 51 Build Alternative is shown in orange below. Existing US 51 is shown in pink.



The US 51 Build Alternative is compared against the No Build Alternative. The US 51 Build Alternative and the remaining alternatives near the larger towns are described in Chapter 2.3.

Table 3.2-4: Farm Operation Impacts

	US 51 Build Alternative	CS Alt 1	CS Alt 2	V Alt 1	V Alt 2	V Alt 3	V Alt 4	Ramsey Creek Option A	Ramsey Creek Option B	R Alt 1	R Alt 2
Total Affected Farms (number)	245	39	47	78	84	84	67	9	8	21	15
Farmstead Displacement (total number)											
• Residences Displaced	28	4	4	9	19	13	14	0	0	2	3
• Other Buildings Displaced[1]	22	7	6	16	12	10	8	1	1	0	0
Farm Businesses Displaced (number)											
• Total	2	1	1	0	0	0	0	0	0	0	0
• Buildings Displaced	9	1	1	0	0	0	0	0	0	0	0
Agricultural Soils (total acres)[2]	877	169	148	500	433	408	279	22	13	68	94
• Prime Farmland (acres)	416	9	5	351	284	294	210	10	6	56	61
• Important Farmland(acres)	384	158	141	120	127	97	49	8.2	7	11	20
Farm Operations Affected											
• Severed (number of tracts)	58	11	27	39	29	26	14	1	1	7	5
• Otherwise Affected Farm Operations (number of tracts)	187	28	20	39	55	58	53	8	7	14	10
• Severance Management Zones (number)	51	12	21	46	43	40	15	0	0	5	3
• Severance Management Zones (acres)	90.6	20.5	23.8	93.5	73.3	59.2	27.1	0	0	2.7	2.2
• Landlocked Parcels (number)	0	0	0	0	0	0	0	0	0	0	0
• Uneconomical Remnants (number)	24	5	17	25	18	18	9	1	1	2	0
• Farms Affected by Adverse Travel (number)	30	7	9	25	15	12	5	0	0	4	5
• Total Adverse Travel Based on One Round Trip (miles)	21.6	13.0	6.9	30.6	4.8	3.3	1.4	0	0	0.6	0.9
Average Annual Farm Revenue Lost (thousands of dollars)	489	90	56	239	207	195	133	11	6	33	45

[1] *Garages, barns, sheds.*

[2] *Soil areas do not include land within the proposed project right-of-way that is paved, riverine cover, wetland, and urban development.*

Note: Revenue lost based on statistics from the Illinois Agricultural Statistics Service's 2011 Annual Bulletin.

Centralia-Sandoval Alternatives

The two alternatives for Centralia and Sandoval would have varying impacts. CS Alt 2 affects more farms and has more severances. CS Alt 1 takes more farmland and has more adverse travel for farmers. The difference in impacts is associated with CS Alt 2 being closer to the developed area of Sandoval where the farm tracts are smaller. CS Alt 1 is farther away from developed areas where there are larger farm tracts. The differences in impacts can be summarized as follows:

- CS Alt 2 would impact 47 farms compared to 39 farms impacted by CS Alt 1.
- CS Alt 2 would sever 27 farms compared to 11 farms severed by CS Alt 1.
- CS Alt 2 would have 17 uneconomic remnants compared to five by CS Alt 1.
- CS Alt 1 would impact 169 acres of farmland compared to 148 acres by CS Alt 2.
- CS Alt 1 would have 13 miles of roundtrip adverse travel for severed farms compared to seven miles for CS Alt 2.

Vandalia Alternatives

V Alt 1 would have more impacts to farmland acres, prime farmland, severances, uneconomical remnants, and adverse travel than all of the other Vandalia alternatives. The magnitude of impacts for V Alt 1 is attributed to the location, direction, and distance compared to the other alternatives.

V Alt 4 would have the fewest impacts to the number of farms, farmland acres, severances, uneconomical remnants, and adverse travel of all the alternatives. V Alt 2 and 3 fall in between the other two alternatives for the amount of impacts. V Alt 3 would have fewer impacts to farmland acres, severed tracts, and adverse travel and V Alt 2 would have fewer impacts to prime farmland. The projected impacts can be summarized as follows:

- V Alt 1 affects approximately 500 acres of farmland compared to 433 acres by V Alt 2, 408 acres by V Alt 3, and 279 acres by V Alt 4.
- V Alt 1 would sever 39 farms compared to 29 by V Alt 2, 26 by V Alt 3, and 14 by V Alt 4.
- V Alt 1 would create 25 uneconomic remnants compared to 18 by V Alt 2 or V Alt 3 and nine by V Alt 4.

- V Alt 1 would have approximately 30.6 miles of adverse travel compared to 4.8 miles by V Alt 2, 3.3 miles by V Alt 3, and 1.4 miles by V Alt 4.

The main reason V Alt 1 would have so much more adverse travel and other impacts, compared to the other alternatives, is that it is on new terrain and much further away from developed areas while the other three alternatives are closer to Vandalia and uses more of existing US 51.

Ramsey Creek Options

The two options for Ramsey Creek have similar agricultural impacts with Ramsey Creek Option A affecting more farmland and prime farmland. Ramsey Creek Option B impacts less farmland because it uses more of existing US 51 than Ramsey Creek Option A. The projected impacts can be summarized as follows:

- Ramsey Creek Option A would impact 22 acres of farmland compared to 13 acres by Ramsey Creek Option B.
- Ramsey Creek Option A would impact ten acres of prime farmland compared to six acres by Ramsey Creek Option B.

Ramsey Alternatives

The two alternatives for Ramsey would have varying impacts with R Alt 1 affecting more farms, having more severances, and more uneconomic remnants and R Alt 2 taking more farmland and having more adverse travel. The main reason for the difference in impacts is that R Alt 1 is closer to Ramsey and impacts more, but smaller, farms than R Alt 2. R Alt 1 uses less farmland because it uses more of existing US 51 and the number of acres per farm it impacts is smaller than R Alt 2. The projected impacts can be summarized as follows:

- R Alt 1 would impact 21 farms compared to 15 farms by R Alt 2.
- R Alt 1 would sever seven farms compared to five farms by R Alt 2.
- R Alt 2 would impact 94 acres of farmland compared to 68 acres by R Alt 1.

How did the Natural Resources Conservation Service score the alternatives?

The IDOT and the Natural Resources Conservation Service (NRCS) use the Land Evaluation and Site Assessment (LESA) System to assess the viability of agricultural land for continued agricultural production when such land may be affected by state and federal projects. The results of the LESA evaluation are

provided on the NRCS's "Farmland Conversion Impact Rating," Form AD-1006. The NRCS evaluates the quality (productivity of the soils that would be affected), while the Illinois Department of Agriculture (IDOA) rates site-specific factors, including:

- The amount of agricultural land required
- The proximity of the land to be acquired to existing highway right-of-way
- Off-site land required for borrow materials and wetland mitigation
- Creation of (a) severed parcels, (b) uneconomical remnants, (c) landlocked parcels and (d) adverse travel
- Relocations of rural residents and farm buildings
- Whether highway design standards will be used that minimize impacts to agricultural land

LESA scores of 0 to 175 points indicate a low rating for protection, scores of 176 to 225 points indicate a moderate rating for protection, and scores of 226 to 300 indicate the land should be retained for agricultural use and an alternative alignment should be considered. The higher the LESA score, the more viable the farm land is for long-term agricultural use.

Completed LESA forms will be included in the FEIS. The LESA scores for the alternatives are expected to reflect the commonness of agricultural land in the study area. The use of agricultural land, minimizing impacts to agricultural operations, and placing improvements in proximity to currently developing areas were all factors considered in the identification of the alternatives.

What economic impact would the alternatives have on the region's agriculture? (i.e. farm revenue loss)

Farm acreage loss would reduce total revenue to existing operations. Farm production is an important source of total revenue generated in the study area counties. The reduction in farm revenue may temporarily reduce the total counties' revenues. Table 3.2-4 summarizes the lost revenue anticipated for each alternative. Lost revenue is less than 0.2% of the total farm revenue per county.

What impact would the alternatives have on agricultural land that has special recognition or is protected?

Currently, Jefferson, Washington, Clinton, Marion, Fayette, Shelby, and Christian counties do not have farmland protection areas. Thus, there would be no impacts by any alternative to farmland protection areas.

The US 51 Build Alternative would affect three Centennial Farms. One Marion County Centennial Farm is west of Willett Road and south of Dickey Pond Road having 68.8 acres, of which 1.1 acres would be used for project right-of-way. One Shelby County Centennial Farm is east of US 51 and north of CR 3300 N having 329.5 acres, of which, 0.6 acres would be used for project right-of-way. A second Shelby County Centennial Farm is west of US 51 and north of CR 500 N having 70.4 acres, of which, 0.1 acres would be used for project right-of-way.

V Alt 1 would affect one Centennial Farm. The Fayette County Centennial Farm is north of CR 1375 N and east of CR 475 E having 75.2 acres, of which, 1.0 acres would be used for project right-of-way.

What are "farmland protection areas"?

Farmland protection areas are registered with counties and overseen by the Illinois Department of Agriculture. Property enrolled in an Agricultural Area is designated for at least ten years. State agencies are not prohibited from acquiring land within a designated agriculture area.

V Alt 2 would affect three Centennial Farms. Like V Alt 1 this alternative affects 1.0 acres of the farm at CR 1375 N and east of CR 475 E. One Fayette County Centennial Farm is located on both the east and west side of IL 185 and north of CH 12 having 93.7 acres, of which, 27.9 acres would be used for project right-of-way. Within the 27.9 acres there are four residences and an outbuilding that would be displaced. A third Fayette County Centennial Farm is west of US 51 and south of CR 2215 N having 71.2 acres, of which, 1.6 acres would be used for project right-of-way.

V Alt 3 would affect the same three Centennial Farms as V Alt 2. However, only 8.4 acres, instead of 27.9 acres, would be used for project right-of-way at the farm that is located on both the east and west side of IL 185 and north of CH 12. Like V Alt 2, 1.0 acres would be used for project right-of-way at the farm at

CR 1375 N and east of CR 475 E and 1.6 acres would be used for project right-of-way at the farm west of US 51 and south of CR 2215 N.

V Alt 4 would affect one Centennial Farm which is one of the same farms that V Alt 2 and V Alt 3 affect west of US 51 and south of CR 2215 N. V Alt 4 would also use 1.6 acres of the farm for project right-of-way.

R Alt 1 and R Alt 2 would affect one Sesquicentennial Farm. The Fayette County Centennial Farm is located both south and north of CR 2900 N and west of US 51 having 81.4 acres, of which, 2.5 acres would be used for project right-of-way.

CS Alt 1, CS Alt 2, Ramsey Creek Option A, and Ramsey Creek Option B, would not affect any Centennial Farms. No buildings within the Centennial Farms would be displaced by any of the alternatives except for V Alt 2 which is discussed above.

What measures are proposed to minimize or mitigate agricultural impacts?

The project corridor is characterized predominantly by agriculture. Although the alternatives development and evaluation process minimized impacts to agricultural land, it would not be feasible to locate a rural roadway corridor that would not, to some extent, adversely affect farming operations or prime and important farmlands. The following management and design practices are consistent with guidance provided by IDOT to minimize farmland conversion and include appropriate mitigation (IDOT Bureau of Design and Environment Policy, 26-10.05(c)). The management and design practices would be incorporated into the project final design to help minimize disruptions to agricultural activities and residences, as well as help limit adverse effects to designated soils:

- Utilize existing right-of-way where practicable and consistent with planned land uses. Design standards used to generate preliminary engineering for the alternatives minimized right-of-way requirements in sensitive areas.
- Set alignments parallel to property lines and minimize diagonal severances to decrease the number of Severance Management Zones, severed farms and farm operations, and landlocked parcels.
- Design alignments to utilize frontage (or access) roads to decrease adverse travel, landlocked parcels, and severance of farm operations.
- Construct field access points for farm machinery, where deemed practical.

- Widen field entrances, when requested, to allow room for semi-trucks to enter and exit from the fields.
- Maintain existing surface and subsurface drainage and work proactively with landowners prior to construction to locate existing field tiles. Extend, intercept or redirect tile drainage as needed.
- Arrange informational meetings with the IDOA, local agricultural agencies, and the Illinois Farm Bureau to obtain firsthand knowledge and awareness of both favorable and unfavorable impacts to agriculture.
- Control sedimentation and erosion to minimize loss of topsoil into streams and roadside ditches, as well as from adjacent fields.
- Consider the use of acquired uneconomical remnants and landlocked parcels when choosing locations for project elements, such as storm water quality improvements.