

FINAL MEMORANDUM

TO: Jill Townley, MNDNR Project Manager

FROM: Amy Denz and Alicia Dowdy

DATE: May 4, 2015

SUBJECT: Fargo-Moorhead Flood Risk Management Project EIS - Organic Farms Inventory

Introduction

An inventory of organic farms was completed to inform the Socioeconomics section in the Fargo-Moorhead Flood Risk Management Project (Project) Environmental Impact Statement (EIS) being prepared by the Minnesota Department Natural Resources (MNDNR). The purpose of the inventory is to identify certified organic farms within the project area that may be impacted by the Project or Project Alternatives. Information collected includes owners, lessees, addresses, contact information, crops, and acreage. The information will be used as part of the socioeconomic analysis for the EIS to evaluate potential social and economic effects from potential flooding of organic farm land in the project area.

Organic farming is performed in accordance with United States Department of Agriculture (USDA) organic standards and regulations, which are administered through the National Organic Program (NOP). Organic farms must maintain or enhance soil and water quality without the use of synthetic fertilizers, sewage sludge, irradiation, and genetic engineering. The NOP maintains the National List of Allowed and Prohibited Substances. This list identifies substances that may and may not be used in organic crop and livestock production or in or on processed organic products. The list also includes provisions of use for allowable substances, such as applicable crops for usage; and application criteria, such as use of, amount limits, and timing of application. A current version of the National List of Allowed and Prohibited Substances can be found in 7CFR§205 – National Organic Program, Subpart G - Administrative.

The NOP works with third-party agents to certify organic farm operations. Organic farms/farming practices require certification prior to selling their goods as certified organic. In order to become certified organic, a farm must submit an application to a USDA-accredited certifying agent and must include a detailed description of the operations to be certified; a history of substances applied to the land for the previous three years; the names of the organic products grown, raised, or processed; and a written organic system plan describing practices and substances to be used. The application also requires an associated fee. A certifying agent reviews the application, an inspector conducts an on-site inspection, and then a certification decision is made. Once certified, a farm must be recertified yearly by submitting the proper paperwork and fees.

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Organic certification is for the farm operation and the products produced by the operation. The farmer receives organic certification for the land from which the crops are grown; however, certification is non-transferable and does not stay with the land if the land is sold. According to the USDA, a certified organic farm would lose their certification if a farmer purposely or accidentally applies a prohibited substance to their organic crops. As determined on a case-by-case basis by USDA certification personnel through the USDA NOP program, a farm may not lose their organic certification due to potential contamination from natural disasters such as floods according to the NOP Federal Regulations. In these cases, a temporary variance may be issued to farms that experience negative effects from natural disasters.

In addition, the USDA randomly selects five percent of all certified organic farms annually to undergo tissue testing of their crops to determine if the crops have residues/contaminants in them. If the plant tissues are found to have a certain level of contamination of prohibited substances, the crops could not be sold as certified organic, but would be sold as traditional crops. In addition, if the crops are found to have a certain level of contamination of prohibited substances, the USDA would allow them to continue growing and harvesting crops in that field as organic, but require them to sell them as traditional for three years in an effort to transition their field back to certified organic. The USDA does not perform soil or water testing of certified organic farms.

Organic Farm Concerns

Wenck reviewed and documented public comments received during the May 2013 comment period of the *Minnesota Department of Natural Resources Scoping Environmental Assessment Worksheet*. In one comment received, a certified organic farmer indicated there are four certified organic farms within the upstream staging area, totaling 2,400 acres of organic farmland that would be directly affected by the Project. The farmer raised a concern about the impacts the Project would have on certified organic farms, specifically about it causing the loss of the organic certification. It was the public comment that brought attention to this concern and subsequently resulted in the addition of organic farms to the scope of the socioeconomic section. Additional concern was raised during the creation of this technical memorandum indicating there could be risk of consumers rejecting purchase of certified organic produce if there was the perception that the produce was contaminated by flood inundation.

Organic Farm Information

Wenck consulted with organic farm authorities and reviewed publically available information on organic farming and organic farmsteads for the project area. Both North Dakota and Minnesota authorities and resources were utilized. Below provides a summary of resources used by Wenck in the development of the organic farm description and inventory.

North Dakota Department of Agriculture

Mr. Jamie Good, a Local Foods Marketing Specialist for the North Dakota Department of Agriculture (NDDA), provided a list of certified organic farms within Cass and Richland Counties, North Dakota.

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According to the NDDA, organic farm information, submitted voluntarily by farmers, is not required to be disclosed to the State of North Dakota, and therefore, the NDDA does not have complete records. The North Dakota Organics website, a sector of the NDDA, also provides the same publically available information.

Minnesota Department of Agriculture

Ms. Meg Moynihan, the Principal Administrator of the organic/diversification program for the Minnesota Department of Agriculture (MDA), provided a list of certified organic farms within Clay and Wilkin Counties, Minnesota. According to MDA, the organic farm information, submitted voluntarily by farmers, is not required to be disclosed to the State of Minnesota, and therefore, the MDA does not have complete records. Wenck reviewed the *Directory of Minnesota Organic Farms 2012-2013* from the MDA website. This directory provided the most comprehensive list of organic farms in Minnesota that was publically available. It included detailed information for each farm listed, such as owner's name, farm name, address, phone number, email, county, certification number, length certification held, crops grown and number of certified organic acres.

Driftwatch

Driftwatch is a website that is a voluntary specialty crop site registry that aims to assist in avoiding spraying specialty crops with various pesticides and herbicides. Using Driftwatch, Wenck located one organic farm in Clay County, Minnesota.

U.S. Department of Agriculture Organic Operations

The 2012 List of Certified U.S. Department of Agriculture (USDA) Organic Operations list provided information on the NOP which oversees USDA accredited certifying agents and their subsequent certification of organic production and handling operations. The list included detailed information such as certification numbers, certifying agency, contact information, and crops.

MNDNR Volunteer Information

One local resident became a registered MNDNR volunteer to assist with data collection. The volunteer contacted organic farmers in the project area and obtained additional information needed to complete this inventory. The volunteer collected information about owner/operator names, property address, parcel identification number (PID), property legal description, crops, total acres, and estimated farm acres affected by Project.

Additional follow-up with each organic farmer was completed by the MNDNR to further clarify organic acreage location and land ownership (as some was rented and not owned by the farmer). Three farmers provided additional PIDs, legal descriptions, and landowner information for their certified organic acreage.

Other information collected from the farmers included year they certified their farm, whether their farm has experienced flooding since being certified, and whether the flooding affected their certification. In general, the farmers have been operating certified organic farms since the late 1990s/early 2000s. During that time, two of the four farmers indicated they had experienced flooding at unknown levels on portions of their organic acreage. All of the farmers have maintained their organic certification since it was originally approved.

Identification of Organic Farms

Wenck used this available information to identify 19 certified organic farms located within Cass and Richland County, North Dakota, and Clay and Wilkin County, Minnesota. Through the additional information provided by the MNDNR volunteer, the list was refined to identify only certified organic farms located within the vicinity of the Project inundation area. This resulted in the identification of four farms that would be potentially impacted by the Project for the 100-year flood.

The four identified organic farms potentially impacted by the Project were also evaluated relative to the Northern Alignment Alternative (NAA) 100-year flood inundation areas. Under the NAA, four farms would be potentially impacted by new flood inundation. Of the four farms impacted by the NAA, two of the farms would not be significantly impacted, as a percentage of their overall acreage, compared to existing conditions.

Table 1 provides a summary of the four known organic farms within the vicinity of the Project and NAA staging areas. Each organic farm identified includes several parcels of land associated with the organic certification. These parcels of land are not typically contiguous. The certified organic acreage location and amount was reported by the farmer, which included PIDs for the parcels containing the organic acreage and information on parcel ownership. Figure 1 shows the location of the parcels reported by the individual farmers to contain their organic acreage relative to the Project and NAA staging boundaries and new flood inundation. Table 2 summarizes known organic farms located within the vicinity of the Project and NAA staging areas but that through modeling have been identified as occurring outside the Project and NAA 100-year flood inundation areas.

The property information gathered also allowed Wenck to locate and map the organic parcels for each farmer relative to the Project 100-year flood inundation area and staging area boundary based on PID. Using the parcels identified for the Project, the NAA acreage was also calculated for each of the four farms relative to 100-year flood inundation during existing conditions and NAA operation.

Figure 2 shows the four identified organic farms relative to the Project staging area and 100-year flood inundation area during Project operation. Figure 3 shows the four identified organic farms relative to the NAA staging area and 100-year flood inundation area during NAA operation.

Table 1: Organic Farms Located Within the Vicinity of the Proposed Project and Northern Alignment Alternative Inundation Areas During the 100-year Flood ¹

Farm	Identification Number	Crops/ Forages	Organic Certifying Agency/ Cert. #	Farmer Reported Organic Acres	Parcel Acres	Acres within Project Staging Area Boundary	Acres within NAA Staging Area Boundary	Source
Farm 1	Property Identification Number (PID)# 15.004.3000, 15.009.2700, 15.009.3700, 15.015.3000, 15.016.4000, 15.016.1800, 15.017.1800; Farm Service Agency (FSA)# 8097	Soybeans, Spring Wheat, Corn, Flaxseed	OCIA 15980	889 Acres	995 Acres	843 Acres	706 Acres	Farmer 1, MDA Directory of Organic Farms 2012-2013, USDA Website, MDA E-mail
Farm 2	PID# 15.028.4000, 15.034.1000, 15.034.2000, 15.035.2000; FSA# 6741	Alfalfa, Corn, Soybeans, Pasture	OTCO	1,256.1 Acres	1,330 Acres	606 Acres	None	Farmer 2, MDA Directory of Organic Farms 2012-2013, USDA Website, MDA E-mail
Farm 3	PID# 15.015.4700, 15.022.1000, FSA# 6849	Soybeans, Wheat, Corn, Alfalfa	OTCO 00775	767.16 Acres	835 Acres	241 Acres	None	Farmer 3, MDA Directory of Organic Farms 2012-2013, USDA Website, MDA E-mail

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Farm	Identification Number	Crops/ Forages	Organic Certifying Agency/ Cert. #	Farmer Reported Organic Acres	Parcel Acres	Acres within Project Staging Area Boundary	Acres within NAA Staging Area Boundary	Source
Farm 4	PID# 15.011.3000, 15.014.2000, 15.015.1000, 22.006.0200, 22.006.0300, 22.006.0310, 22.006.0320, 22.006.0330, FSA# 9477	Corn, Soybeans, Wheat	OneCert	714.6 Acres	1,208 Acres	1,208 Acres	474 Acres	Farmer 4, USDA Website, MDA E-mail

¹This table provides a summary for organic farms located within the vicinity of inundation areas and identifies parcel acres located within the staging area boundaries. It does not reflect acreages of inundation. Estimated acres of inundation are presented in Table 3 below.

Table 2: Organic Farms Located Outside the Proposed Project and Northern Alignment Alternative Inundated Areas During the 100-year Flood

Farm	County, State	Source
Farm 5	Cass County, North Dakota	ND Gov't Website – Organic Directory NDDA E-mail
Farm 6	Cass County, North Dakota	ND Gov't Website – Organic Directory, NDDA E-mail
Farm 7	Cass County, North Dakota	ND Gov't Website – Organic Directory, NDDA E-mail
Farm 8	Cass County, North Dakota	USDA website
Farm 9	Cass County, North Dakota	USDA website
Farm 10	Clay County, Minnesota	MDA Directory of Organic Farms 2012-2013, USDA Website, MDA E-mail
Farm 11	Clay County, Minnesota	MDA Directory of Organic Farms 2012-2013, USDA Website, MDA E-mail
Farm 12	Clay County, Minnesota	USDA Website
Farm 13	Clay County, Minnesota	USDA Website, MDA E-mail
Farm 14	Clay County, Minnesota	MDA E-mail
Farm 15	Clay County, Minnesota	MDA E-mail
Farm 16	Richland County, North Dakota	ND Gov't Website – Organic Directory, NDDA E-mail
Farm 17	Richland County, North Dakota	ND Gov't Website – Organic Directory, NDDA E-mail
Farm 18	Wilkin County, Minnesota	USDA Website
Farm 19	Wilkin County, Minnesota	USDA Website, MDA E-mail

Source: Wenck, 2015

Potential Impacts to Organic Farms

The total parcel-based land acreage calculated was 4,370 acres. The actual acreage reported by the farmers used for organic farming does not comprise full parcels of land, and therefore, is less than the total parcel acreage identified for the parcel as either owned or rented by the farmer for the purposes of organic farming. The actual farmer-reported total organic farm acreage for the four farms identified in the vicinity of the Project and NAA staging areas is 3,627 acres which is a difference of 743 acres

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between the total land acreage and the farmer-reported organic farm acreage. It should be noted that surveys and delineations to verify organic farm acreage reported by the farmers was not completed as part of this analysis.

As previously discussed, the potential impacts from flooding on the organic certification of a particular farm would be determined on a case by case basis by a third-party certifying agency. The ability to farm a particular parcel of land would be dependent on numerous factors, including, but not limited to, weather and temperature, soil type, topography, and crop type. The 100-year flood under Project conditions and NAA conditions was evaluated to determine where a particular parcel of identified organic farm land was located relative to existing and new flood inundation. The potential for contamination of an organic farm could result from contact with floodwater that contains prohibited substances per the NOP List. A third-party certifying agency would determine whether flood water and/or its depth and duration on a parcel of land would affect a particular farm's organic certification.

Consultation with a certification agency would be required to determine appropriate action for the certification following a flood. Certification agencies have indicated that each farms' organic certification would be evaluated on a case by case basis. It is unknown at this time how that evaluation would be conducted and whether or not a variance would be given, how the variance would be applied (for the whole certified organic farm acreage or for only the portion affected by flood), or if organic certification would be lost or other result.

Table 3 provides a summary of total acres for the identified organic farm parcels along with percentages of flooded acres. This table provides a rough estimate and percentage of how much of the organic farm acreage would be flooded under the Project or NAA during a 100-year flood and how many organic farm acres would be flooded under a Base No Action scenario.

Table 3: Organic Farm Parcel Acreage By 100-Year Flood for Proposed Project and Northern Alignment Alternative

Farm 1	Base No Action Alternative	<i>Flood</i>	131	13%	133	13%
		<i>Non-flood</i>	867	87%	864	87%
998 acres	Proposed Project or NAA	<i>Flood</i>	913	91%	610	61%
		<i>Non-flood</i>	85	9%	388	39%
Farm 2	Base No Action Alternative	<i>Flood</i>	168	13%	168	13%
		<i>Non-flood</i>	1,162	87%	1,162	87%
1,330 acres	Proposed Project or NAA	<i>Flood</i>	369	28%	187	14%
		<i>Non-flood</i>	961	72%	1,143	86%
Farm 3	Base No Action Alternative	<i>Flood</i>	10	1%	10	1%
		<i>Non-flood</i>	824	99%	824	99%
835 acres	Proposed Project or NAA	<i>Flood</i>	80	10%	24	3%
		<i>Non-flood</i>	755	90%	811	97%
Farm 4	Base No Action Alternative	<i>Flood</i>	0	0%	0	0%
		<i>Non-flood</i>	1,208	100%	1,208	100%
1,208 acres	Proposed Project or NAA	<i>Flood</i>	848	70%	443	37%
		<i>Non-flood</i>	360	30%	765	63%
TOTAL	Base No Action Alternative	<i>Flood</i>	309	7%	312	7%
		<i>Non-flood</i>	4,061	93%	4,056	93%
4,370 acres	Proposed Project or NAA	<i>Flood</i>	2,210	51%	1,265	29%
		<i>Non-flood</i>	2,160	49%	3,105	71%

Source: Wenck, 2015

NOTES:

- Total acres for each farm are based on the total acreage in the parcel, not the total acres that are actually farmed. Acreages were rounded to the near acre. Totals and percentages provided are rough estimates based on rounded acreage.
- Flood and Non-flood conditions are based on the USACE elevations modeled for the 100-year flood. Flood indicates the estimated acreage that is anticipated to be inundated during the 100-year. Non-flood indicates the estimated acreage that is anticipated to not be inundated during the 100-year flood.
- Base No Action Alternative 100-year flood refers to the area that would flood under the existing 100-year flood. This flood inundation would occur whether or not the Project or NAA were constructed and operated.
- Proposed Project or NAA 100-year flood refers to the additional area that would flood for the 100-year flood during Project or NAA operation.

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- Total farm acreage is based on total parcel acreage for the PIDs provided by the farmers, which includes their reported organic farm acreage. In all cases the organic farm acreage reported by the farmer is less than the total parcel acreage associated with the farmed PIDs. ArcGIS was used to map and evaluate the organic farm acreage using the available PIDs data. Surveys and delineations of actual organic farm acreage were not available, and therefore, the PID information was the best available information at the time of EIS publication.

Proposed Project

There are 4,370 acres of total land associated with four organic farms located in proximity to the Project 100-year flood inundation area. All of this land, except two parcels farmed by Farmer 4, is located in Minnesota. Within the Project flood inundation area, approximately 2,210 acres would flood, which is approximately half of the total identified parcel acreage (Table 3). This is an increase in flooded parcel acreage of approximately 2,160 acres, which would affect all four farms. Figure 2 shows the areas of flood inundation associated with operation of the Project during the 100-year flood. Farm 1 and Farm 4 would experience the most significant increase in flooded parcel acreage (Table 3). Farm 2 and Farm 3 would also experience an increase in flood acreage, but not to the same degree as Farms 1 and 4.

Base No Action Alternative

Under Base No Action Alternative, approximately 310 acres of organic farm land parcels, or approximately seven percent, flood during the 100-year flood. Farm 1 and Farm 2 each have over 100 acres that floods under the existing 100-year flood. Farm 3 has approximately 10 acres, while Farm 4 does not have any flooded acreage.

No Action Alternative (with Emergency Measures)

Under No Action Alternative (with Emergency Measures), acres organic farm land flooded during the 100-year flood would be the same as described for the Base No Action Alternative.

Northern Alignment Alternative

The four organic farms identified for the Project were reviewed for impacts associated with operation of the NAA during the 100-year flood. Through mapping and analysis, parcels of organic farm land, identified by the farmers, was determined to be located within the NAA 100-year flood inundation area. Two of these farms have parcels located within the NAA staging area boundary (Figure 1). Within the NAA flood inundation area, approximately 1,265 acres would flood, which is approximately one-third of the total identified parcel acreage (Table 3). This is an increase from the existing conditions during the 100-year flood, but a decrease of approximately 945 acres of inundated parcels compared to the Project. Figure 3 shows the areas of flood inundation associated with operation of the NAA during the 100-year flood. Flood inundation from operation of the NAA would most significantly impact Farm 1 and Farm 4. During the 100-year flood, Farm 2 and Farm 3 would experience a similar acreage of flooded area under NAA as they experience now under existing conditions (Table 3).

Proposed Mitigation and Monitoring Measures

The Project Proposer has developed draft mitigation options to address impacts to agricultural lands, including organic farms. This mitigation may include flowage easements, voluntary acquisitions, supplemental crop insurance or other compensation for impacted agricultural land.

A staging area boundary has been identified by the USACE for Project and for the NAA. The staging area includes parcels that would have one foot or greater of additional flood depth over existing conditions during the 100-year flood with Project operation. The FFREIS indicates that flowage easements would be acquired over agricultural land within the staging area. A flowage easement provides the legal ability to inundate property as part of the operation of the Project. Value of a flowage easement on an individual property would follow Federal/USACE process and would be determined by appraisal. Factors that would be considered are depth, duration, and frequency of additional flooding, and the highest and best

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use of the property. USACE policy defines a flowage easement as a one-time payment made at the time that the easement is acquired, currently estimated in 2020.

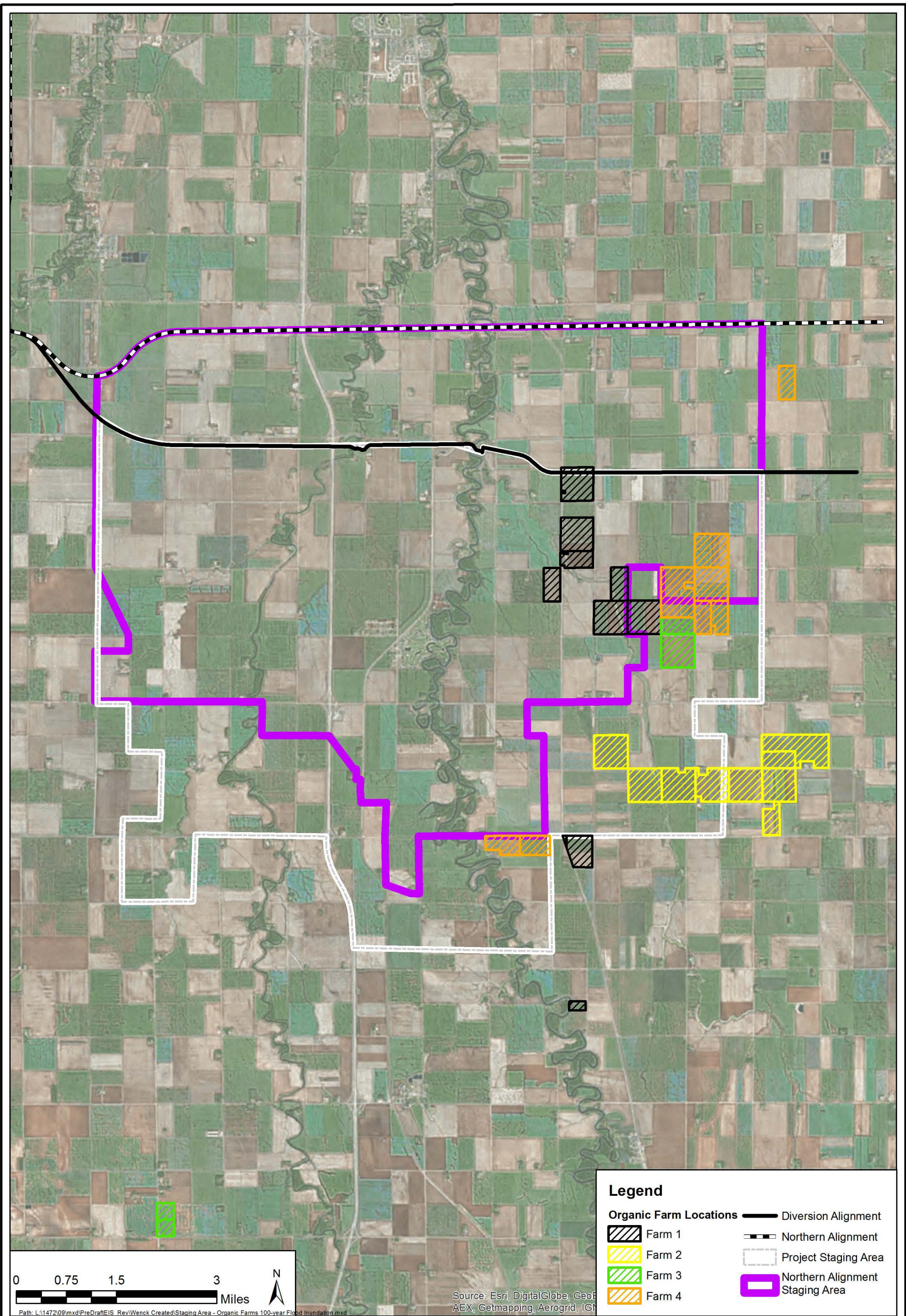
It is anticipated that agricultural lands would be impacted by the Project primarily in the spring, which would allow most cropland areas to be farmed that season. According to the FFREIS, USDA Risk Management Agency (RMA) has indicated the purchase of crop insurance in the staging areas could still be obtained, however flood impacts resulting from the Project may not be covered. Federal crop insurance would apply if a crop can be planted before the established late planting dates.

The Project Proposer has contracted with North Dakota State University's Department of Agribusiness and Applied Economic to evaluate impacts on farm land due to operation of the Project. The study would guide supplemental crop risk policies. The supplemental crop risk policies may provide supplemental income for producers when Project operations cause impacts and when federal crop insurance does not apply.

As described in the FFREIS, some areas along the Red River, Wild Rice River, and connected drains that are outside of the designated staging area would be affected by staging operations. Impacts outside of the designated staging area are estimated to be less than one foot of additional flood depth for a 100-year flood, and most of the impacted area would be inundated under existing conditions. The USACE has proposed to perform an analysis to determine if a taking has occurred for potential impacts outside of the staging area. Flowage easements would be obtained only where this analysis determines that an impact rises to the level of a taking under the Fifth Amendment of the U.S. Constitution and applicable state laws.

Organic farm land was addressed in Appendix U of the FFREIS (comment U-70) in response to a comment regarding impacts to organic farming. As indicated in Appendix U, it is anticipated that mitigation would be similar for organic farms as what is proposed for agricultural land, and generally would consist of flowage easements. The uncertainty is how the organic certification of an individual organic farm would be affected by the Project or NAA, which would be determined once operation occurs. Additional uncertainty is whether organic certification would influence the value of the property, and therefore, the value of the flowage easement required by USACE. Organic certification is associated with the farmer and the land that the farmer uses for organic crops. Landownership may also be a factor for implementation of mitigation.

In addition to the flowage easement that would be required by the USACE, the Project Proposer is working on an additional mitigation alternative for organic producers: voluntary relocation. The Project Proposer would work with interested organic farmers to appraise, purchase, and temporarily rent back their property prior to Project construction in order to establish organic certification on land outside of potential flood inundation impacts purchased by the farmer with proceeds of the sale. Organic certification may take up to five years depending on the land.



Legend

Farm 1	Diversion Alignment
Farm 2	Northern Alignment
Farm 3	Project Staging Area
Farm 4	Northern Alignment Staging Area

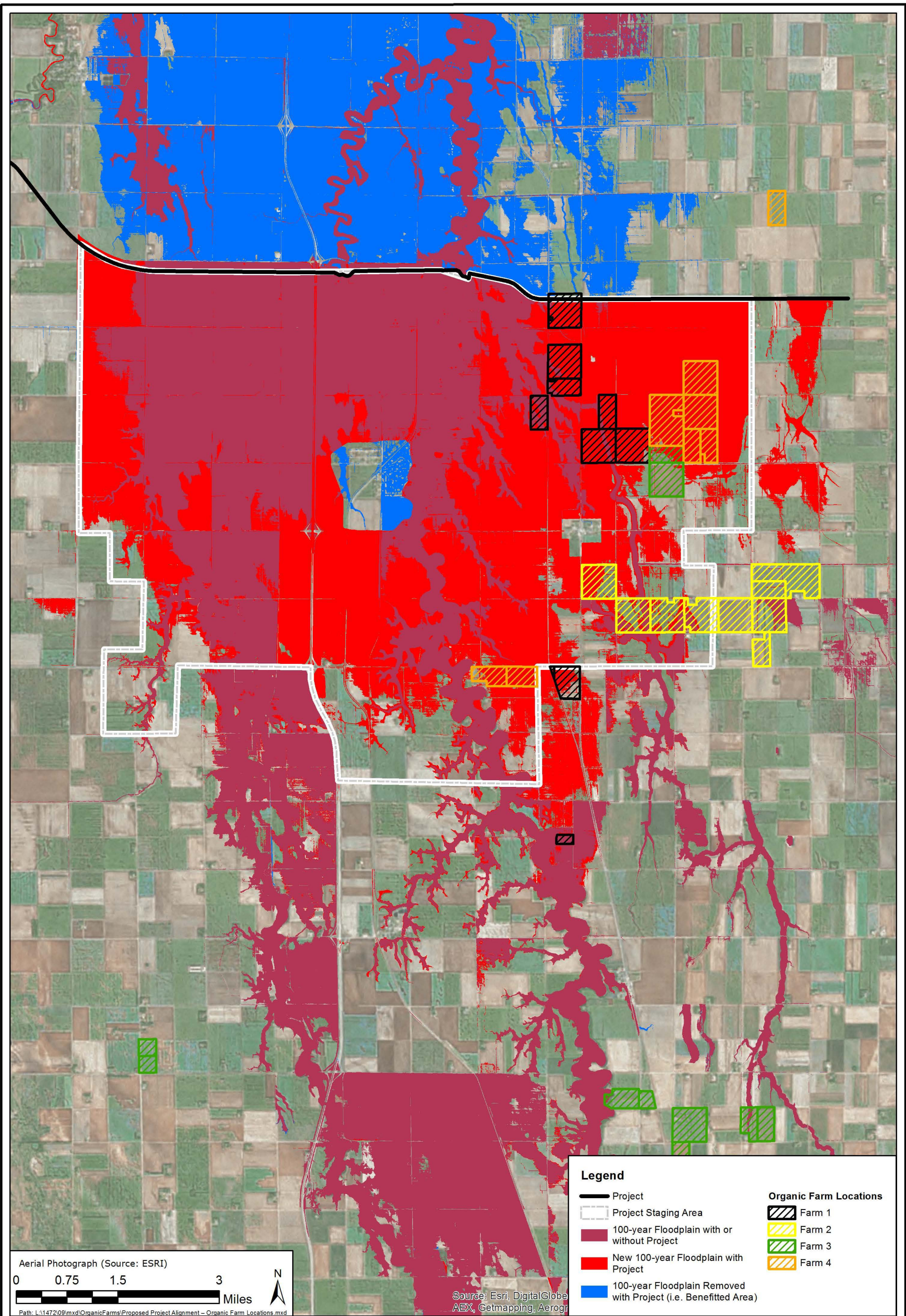
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Proposed Project and Northern Alignment
Alternative Staging Area - Organic Farms Locations

Created By: ShuJC0243 Date Created: 06/03/2015 Date Exported: 8/13/2015

Figure 1

Source: USACE; HMG; Flood Diversion Board Authority; Cass County, ND; Richland County, ND; Wilkin County, MN; MNDNR; Wenck, ESRI, MN GEO



Aerial Photograph (Source: ESRI)
 0 0.75 1.5 3 Miles
 Path: L:\1472\09\mxd\OrganicFarms\Proposed Project Alignment - Organic Farm Locations.mxd

Source: Esri, DigitalGlobe, AEX, Getmapping, Aerogr

Legend

Project	Organic Farm Locations
Project Staging Area	Farm 2
100-year Floodplain with or without Project	Farm 3
New 100-year Floodplain with Project	Farm 4
100-year Floodplain Removed with Project (i.e. Benefitted Area)	

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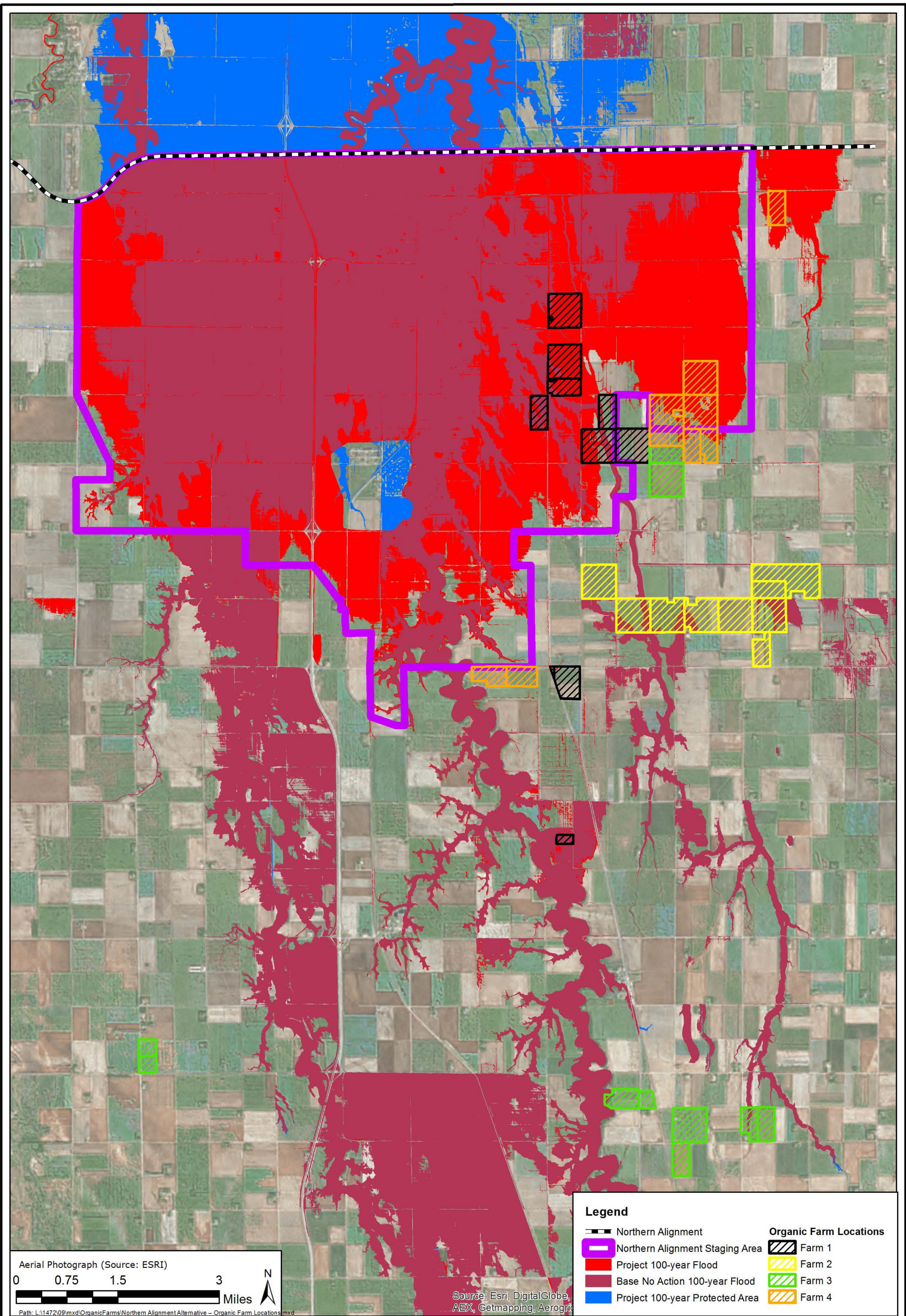
Proposed Project - Organic Farms 100-year Flood and Base No Action Alternative Inundation

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Figure 2

Source: Phase 7EA Socioeconomics



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Northern Alignment Alternative - Organic Farms 100-year Flood and Base No Action Alternative Inundation

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 Figure 3

Source: Phase 7EA Socioeconomics