

NEBRASKA

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Pete Ricketts, Governor

March 10, 2017

Matthew J. Effken, Legal Counsel
Nebraska Public Service Commission
300 The Atrium, 1200 N Street
P. O. Box 94927

RE: Application of TransCanada Keystone Pipeline, L.P.: Docket No. OP-003

Dear Mr. Effken:

This is in response to your February 17, 2017 letter regarding the Application of TransCanada Keystone Pipeline, L.P. Areas of this department's (NeDNR) jurisdiction and expertise include: surface water rights, groundwater well registrations, and floodplain management. Comments of NeDNR would focus on the pipeline's impacts on these areas.

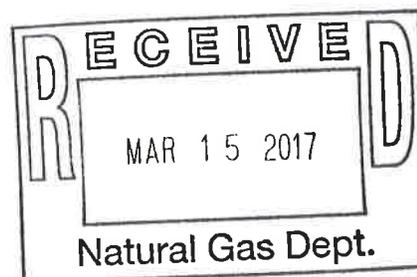
Based on NeDNR's comments on the pipeline project prepared in 2012, I do not anticipate the review of the application or preparation of a report addressing potential issues would result in a substantial cost to NeDNR, assuming access is provided to the current data concerning the present proposed route of the pipeline. NeDNR will provide a report on the Keystone Pipeline if requested.

If you have any questions or need additional information, please contact me.

Sincerely,

A handwritten signature in blue ink that reads "Gordon W. Fassett".

Gordon W. Fassett, P.E.
Director



Gordon W. "Jeff" Fassett, P.E., Director

Department of Natural Resources

301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509

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June 14, 2017

Tim Schram, Chair
Nebraska Public Service Commission
300 The Atrium, 1200 N Street
P.O. Box 94927
Lincoln, NE 68509



Pete Ricketts, Governor

RE: Request for Report on Application of TransCanada Keystone Pipeline, L.P.:
Docket No. OP-0003

Dear Mr. Schram,

In response to the request in your letter dated May 23, 2017, for a report on Application of TransCanada Keystone Pipeline L.P. (Keystone), the Department of Natural Resources (Department) has reviewed the TransCanada's Preferred Keystone Route within Nebraska and the associated application information and provides the following information and comments. Areas of Departmental jurisdiction and expertise include surface water rights, groundwater well registrations, and floodplain management. The Keystone route reviewed by the Department was based on the latest submission of the Keystone Pipeline data, provided to the Department by Kea Morovitz of the Public Service Commission on April 3, 2017. This letter serves as our agency's report on the Keystone Pipeline application.

The Department previously provided feedback to NDEQ with a letter dated June 14, 2012, and to the Nebraska Pipeline Review Project with a letter dated September 20, 2012. This review included the entire approximately 275.2-mile alignment within Nebraska, including portions of Keya Paha, Boyd, Holt, Antelope, Boone, Nance, Merrick, Polk, York, Fillmore, Saline, and Jefferson counties. The current alignment is largely the same as the alignment considered in September 2012, except for a few modifications to avoid impacting the wells we highlighted in our previous review. Additionally, the current review includes primarily the approximately 110-foot wide pipeline corridor, created with a 55-foot buffer on each side of the centerline of the preferred route. An overview of the areas reviewed can be seen on the enclosed set of maps. Note that due to the scale, the 110-foot wide corridor appears as a solid single line. Also shown on the enclosed set of maps is a larger 1,000 foot buffered area along both sides of the

Gordon W. "Jeff" Fassett, P.E., Director

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pipeline corridor, which was also reviewed for the existence of any Public Water Supply wells. This review did not identify any such wells. More detailed information regarding surface water rights, groundwater well registrations, and floodplain management for a particular geographic location can be obtained by following the Departments' interactive web map links located near the bottom of the web page at <https://dnr.nebraska.gov/data>.

Surface Water Rights

Department records indicate that several surface water appropriations are appurtenant to lands associated with property crossed by the proposed 110-foot wide pipeline corridor, please see the enclosed overview figures and tabular summary of appurtenant surface water rights.

1. Generally, pipeline excavation and installation activities are unlikely to impact surface water rights. However, care should be taken during pipeline construction activities to not physically impact or alter the irrigation or related infrastructure of existing surface water users.
2. If the conditions of a surface water right are permanently modified in some way by the project, appropriate water right modification requests will need to be provided to the Department for review.
3. If construction or hydrostatic testing activities will utilize surface water resources from reservoirs, natural water courses, channels or streams, this will require a proper temporary appropriation permit from the Department. A separate application would be required for each requested water source and the place of use of the water.
4. The primary statutes governing surface water, for reference, are contained in *Nebraska Revised Statutes* Chapter 46, Article 2 and Chapter 61, Article 2.
 - a. This information can be found at <http://www.nebraskalegislature.gov/laws/browse-statutes.php>.

If you have any questions about surface water appropriations or use permits, please contact Mike Thompson at (402) 471-0587 or reference the surface water links below.

Surface water rights data:

<https://nednr.nebraska.gov/dynamic/waterrights/SelectSearchOptions.aspx>

Surface water rights forms: <http://dnr.nebraska.gov/swr/surface-water-forms>

Notice of change of ownership:

<https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/surface-water/permits/49CHG-OWN2008.pdf>

Relinquishment by landowner:

<https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/surface-water/permits/51IndividualRelinquishmentForm.pdf>

Groundwater Resources

According to Department records, there are three wells (two of which have been decommissioned) within the proposed 110-foot wide pipeline corridor. An overview of information concerning these wells is provided on the enclosed maps along with a tabular summary of the wells and current designated use for the wells within the corridor.

1. Care should be taken to locate and avoid physically impacting the infrastructure of these wells and the water uses derived therefrom, as a result of construction activities.
2. If the registration status, use, or ownership of any well changes due to the project, a water well registration modification form and/or a change of ownership form must be filed with the Department. The appropriate natural resources district (NRD), which may have additional rules and regulations regarding such changes, should also be notified.
3. If any groundwater is proposed to be used during the course of construction activities or for hydrostatic testing, then a permit to transfer groundwater may be required from the Department and/or with the local NRD, or a transfer notice may be required to be filed with the Department. A separate application or notice would be required for each requested source well and the place of use of the water. Each entity should be contacted to discuss permitting requirements.
4. The primary statutes governing groundwater, for reference, are contained in *Nebraska Revised Statutes* Chapter 46, Articles 6 and 7.
 - a. This information can be found at <http://www.nebraskalegislature.gov/laws/browse-statutes.php>.

If you have any additional questions on groundwater well registration, or if you have any questions regarding the requirements for industrial groundwater transfer permits (or notices of transfer if less than 150 Acre-feet), please contact Mike Thompson at (402) 471-0587. Additional information can also be found at the groundwater links below.

Groundwater well data: <https://nednr.nebraska.gov/dynamic/wells/Menu.aspx>

Groundwater forms: <https://dnr.nebraska.gov/groundwater/forms>

Industrial groundwater transfer forms: <https://dnr.nebraska.gov/groundwater/>

Floodplain Management

Multiple sections of the proposed pipeline corridor are located within the regulated (1% annual chance) floodplain and/or floodway; please see the enclosed overview figures. Generally, the Department provides technical assistance to local governments who have the actual floodplain regulatory authorities. The following comments and information reflect the Minimum Standards for Floodplain Management Programs within the State of Nebraska, which can be found at *455 Neb. Admin. Code Chapter 1*.

1. The Department understands that the proposed pipeline project will consist of an underground pipeline with periodic pumping booster stations along the alignment.
 - a. All development within a regulated floodplain and/or floodway needs to comply with local floodplain regulations, which includes obtaining a floodplain development permit. Development includes any excavation in a floodplain and/or floodway as well as building construction, such as for pump stations or the possible temporary construction camp.
 - b. If any of the planned pump stations or the possible temporary construction camp fall within the floodplain and/or floodway, additional requirements may apply, such as the requirement to elevate or floodproof the structures to one foot above base flood elevation and/or the requirement to demonstrate no impact on flood elevations along the floodway profile if within the floodway, or to demonstrate the cumulative impact on flood elevations if within a floodplain without a floodway. For more information, reference applicable local floodplain management ordinances and the Nebraska Minimum Standards for Floodplain Management at *455 Neb. Admin. Code Chapter 1*.
 - c. Any above-ground construction that would cause an obstruction to be placed into the floodway must demonstrate to the floodplain permitting authority that no rise in the flood elevations along the floodway profile will occur. For more information, reference applicable local floodplain management ordinances and the Nebraska Minimum Standards for Floodplain Management at *455 Neb. Admin. Code Chapter 1*.
 - d. Any construction activity within the floodplain and/or floodway must comply with any other permitting requirements; this may include a 404 permit from the U.S. Army Corps of Engineers which may be applicable if any activity results in alteration of a stream channel or wetland area.

- e. If you have any questions concerning floodplain management and permitting, please contact the relevant county floodplain administrator. Information regarding Department's records of current county floodplain administrators can be found at:
<https://nednr.nebraska.gov/dynamic/floodplain/CommunityStatusList.aspx>
 2. Two counties along the proposed pipeline corridor do not have regulated floodplain maps and do not participate in the National Flood Insurance Program (NFIP). This includes Keya Paha and Holt counties. However, these counties still contain numerous river or stream channels crossed by the alignment.
 - a. It is suggested that construction in a potential flood hazard area comply with Nebraska Minimum Standards for Floodplain Management Programs when such construction is located in an area where no local government is enforcing floodplain management. This would mean that the pipeline design would need to take flood hazards into account as if floodplain regulations were in place, to the extent practicable. In some circumstances, additional flood study or floodplain data may be available, or under development, at the time the design of the pipeline is being determined that may be useful for this purpose. This is a suggestion only.
 - b. Along the proposed pipeline corridor within the counties that do not participate in the NFIP, multiple rivers and stream channels will potentially be crossed by the pipeline. This includes the Niobrara River portion within Holt County. Generally, care should be taken not to disturb or modify the relevant river and stream channels with construction activities. If any channel is to be modified by the project, other permit requirements may apply, including the requirement to obtain a U.S. Army Corps of Engineers 404 permit.
 3. The primary statutes governing floodplain management, for reference, are contained in *Nebraska Revised Statutes* Chapter 31, Article 10.
 - a. This information can be found at
<http://www.nebraskalegislature.gov/laws/browse-statutes.php>.
 4. Additional information on Nebraska Minimum Standards for Floodplain Management Programs can be found at:
455 Neb. Admin. Code Chapter 1 at
https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/about/rules/Title_455_0708.pdf
- 

Tim Schram
Keystone Pipeline Review
June 14, 2017
Page 6 of 6

If you have any questions about this letter, please contact the Department at (402) 471-2363.

Sincerely,



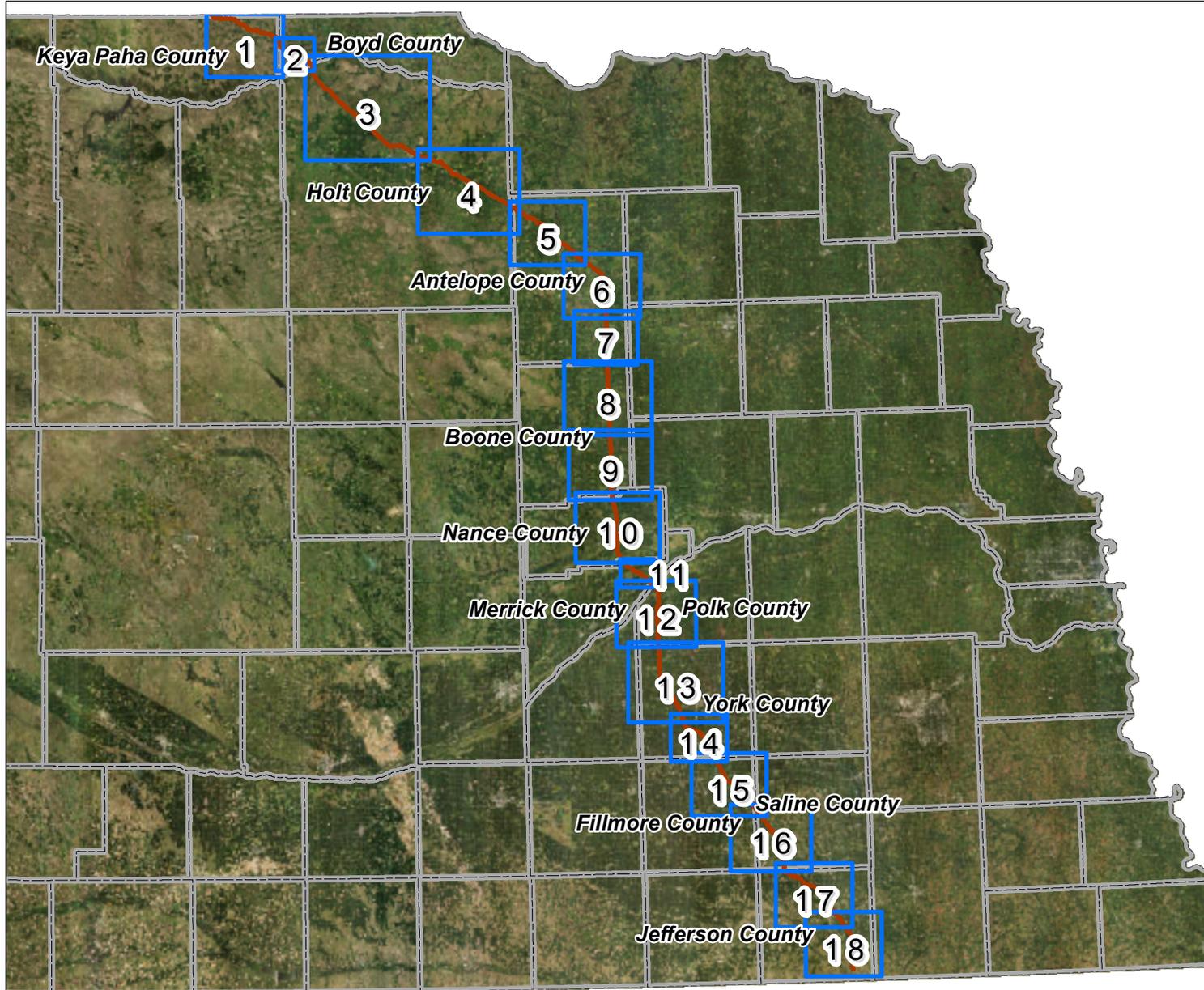
Gordon W. Fassett, Director
Nebraska Department of Natural Resources

Enclosures



Keystone XL Pipeline Preferred Route Review - Map Index

Nebraska
June 13, 2017

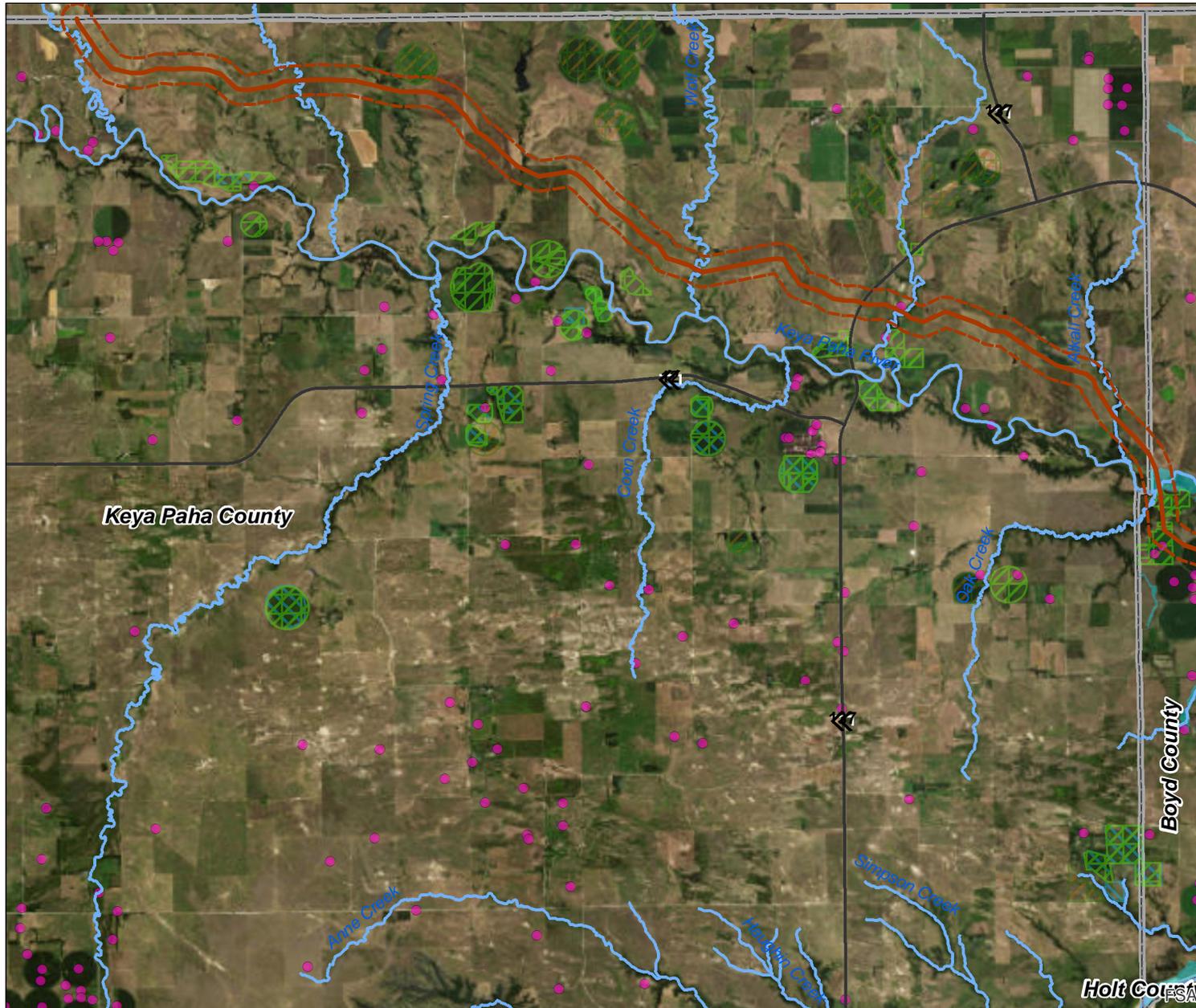


Legend

-  Approximate Project Area
-  MapNumber
-  County

Keystone XL Pipeline Preferred Route Review - Map 1

Keya Paha County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

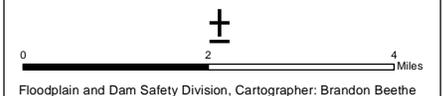
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Keystone XL Pipeline Preferred Route Review - Map 2

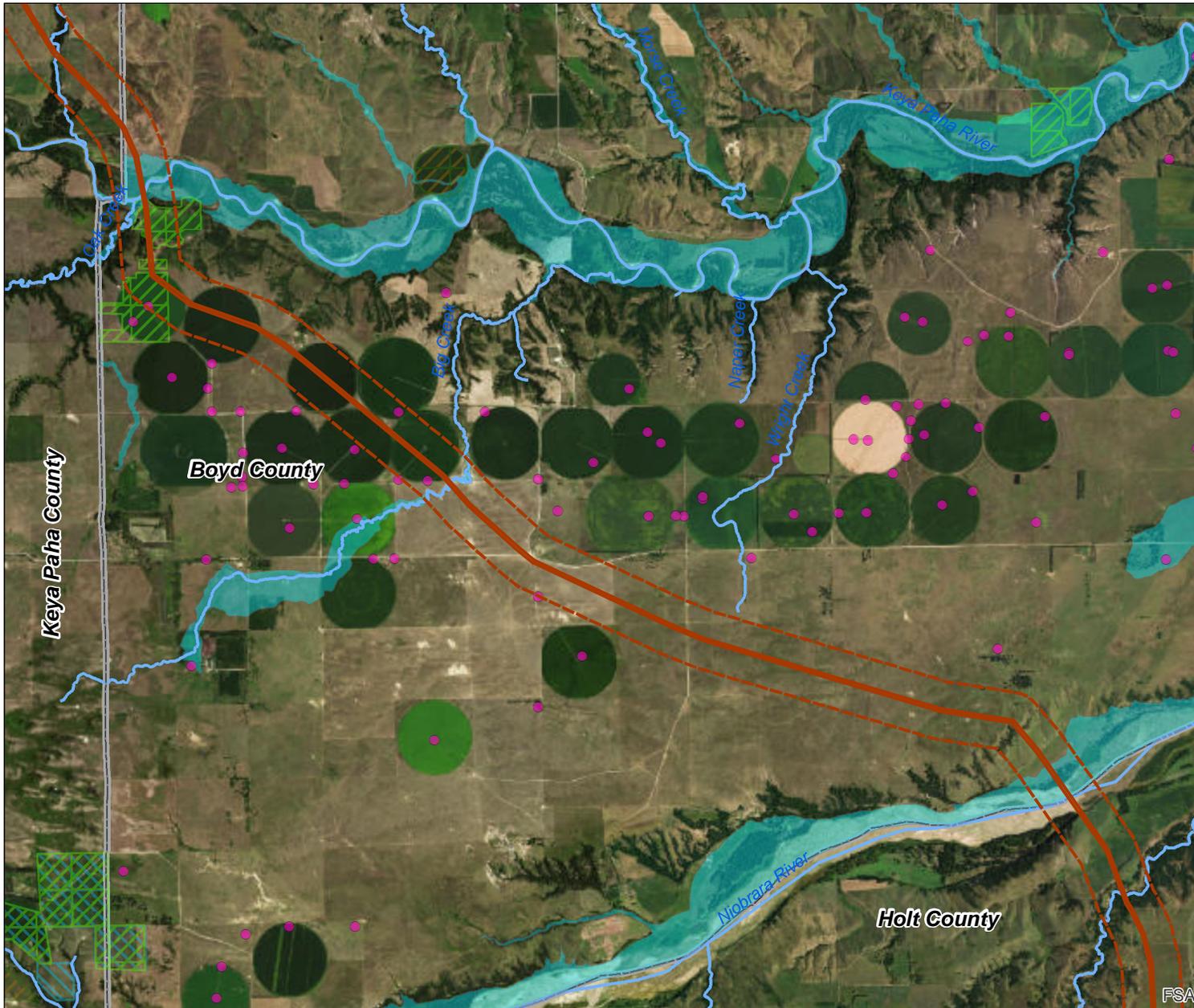
Boyd County, Nebraska

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

1% Annual Flood Chance

NDNR Work Maps

1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



0 1 2 Miles

Floodplain and Dam Safety Division, Cartographer: Brandon Beethle

Keystone XL Pipeline Preferred Route Review - Map 3

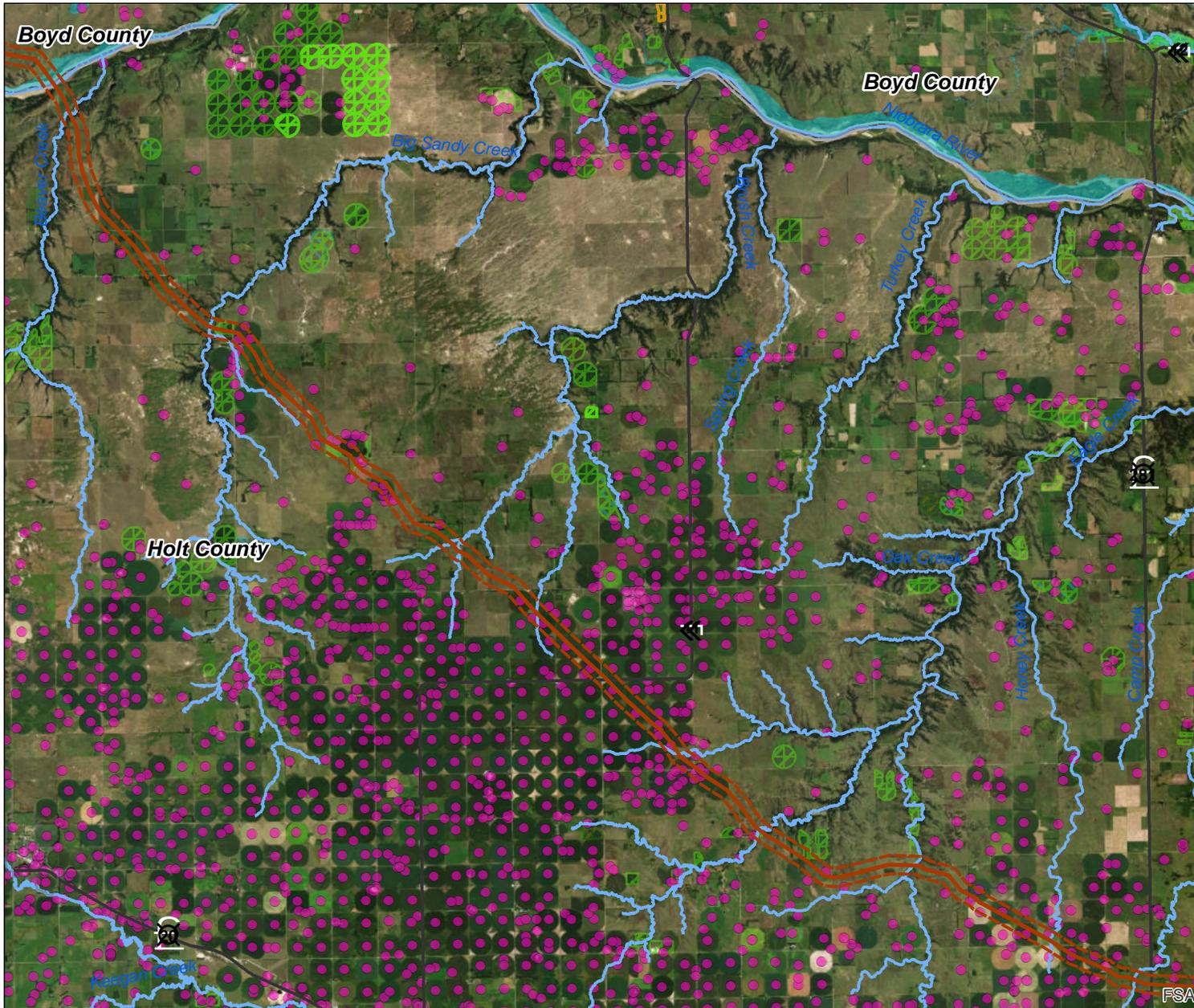
Holt County, Nebraska - Area West of US HWY 281

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area

0 3 6 Miles

Floodplain and Dam Safety Division, Cartographer: Brandon Beeth

Keystone XL Pipeline Preferred Route Review - Map 4

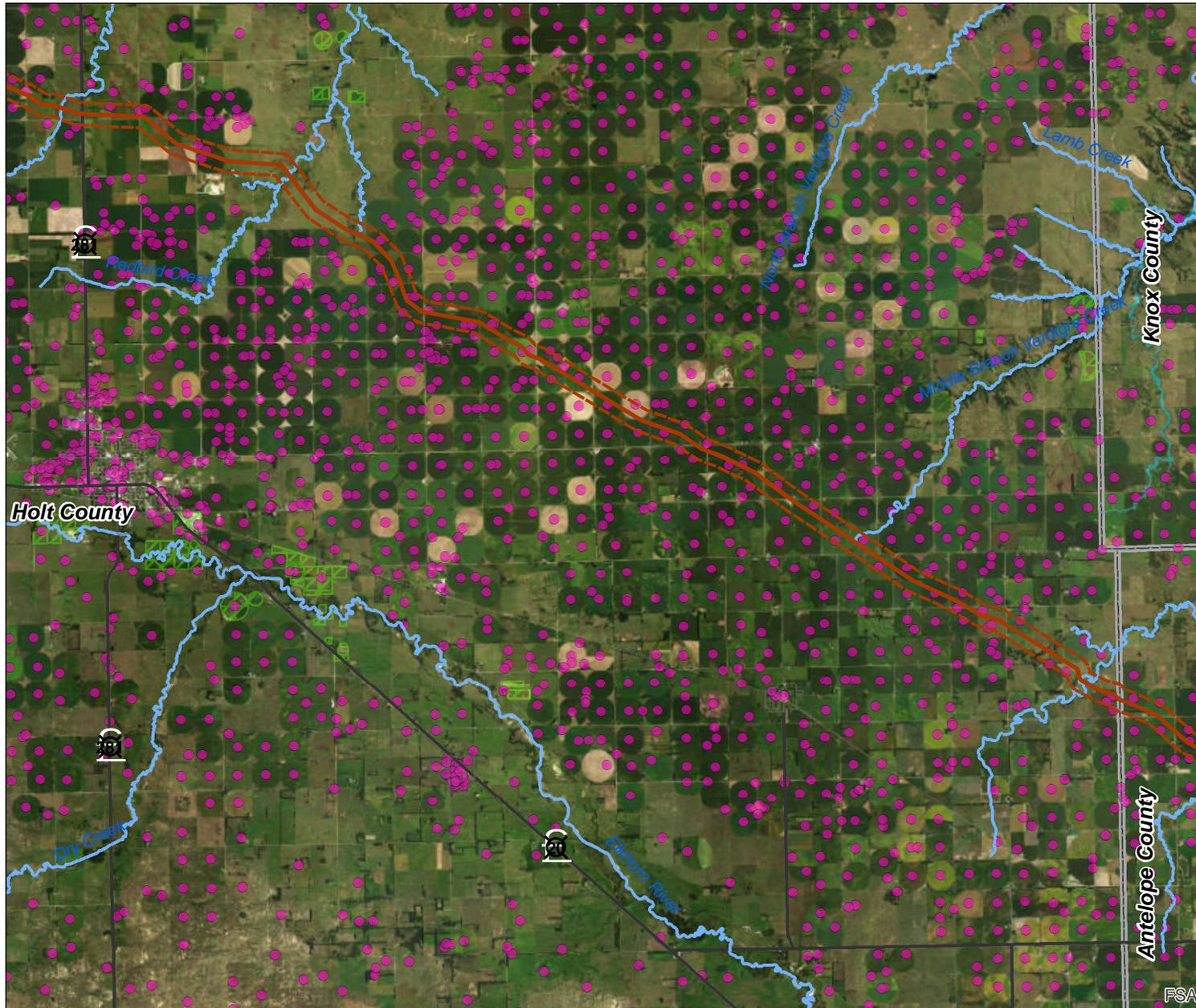
Holt County, Nebraska - Area East of US HWY 281

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

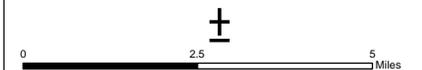
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Floodplain and Dam Safety Division, Cartographer: Brandon Beethle

FSA

Keystone XL Pipeline Preferred Route Review - Map 5

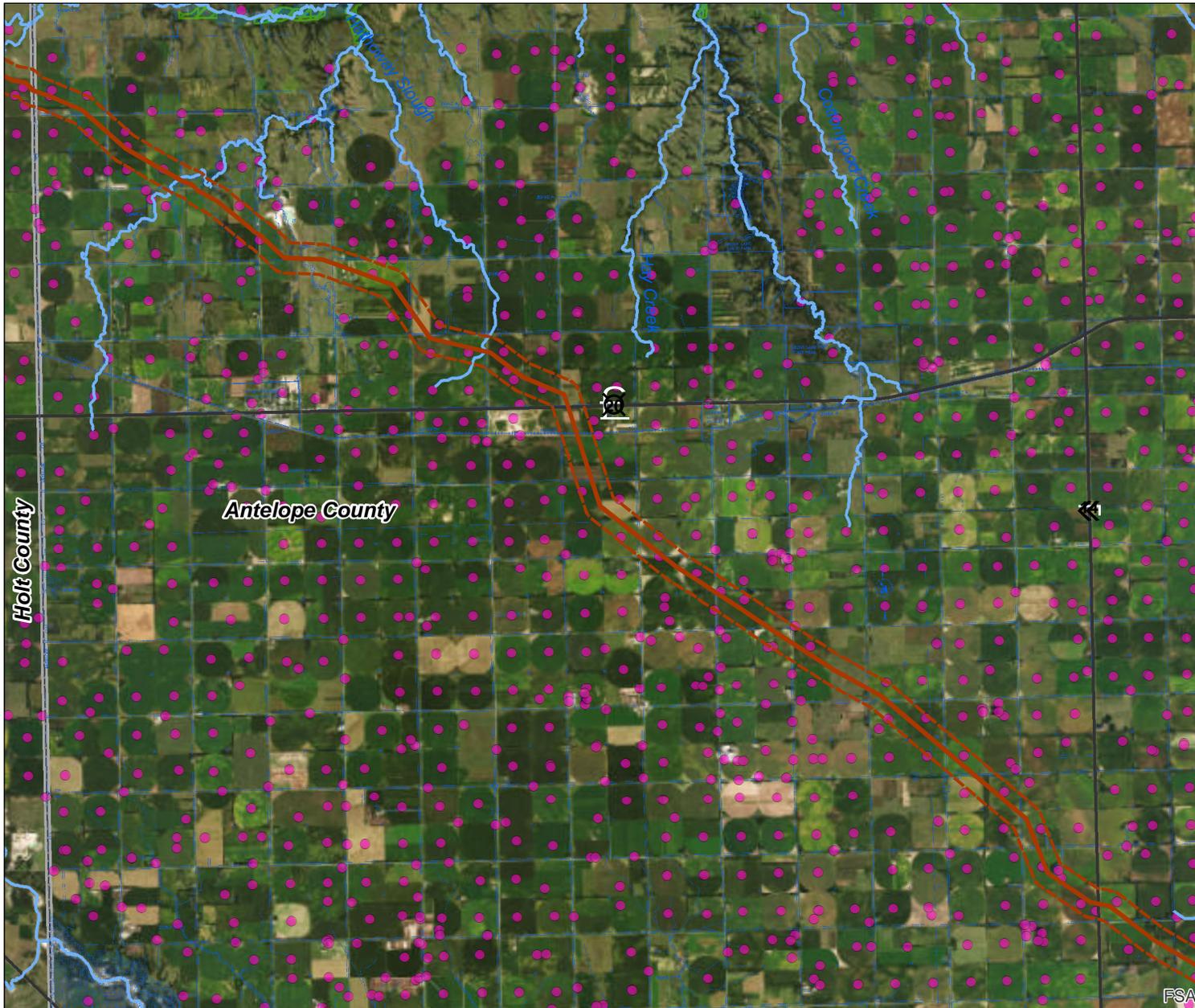
Antelope County, Nebraska - Area West of Nebraska HWY 14

June 13, 2017

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Legend

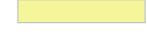
Registered Wells

() Wells in Use

Surface Water

-  Irrigation
-  Supplemental Irrigation
-  Domestic
-  Other

Effective Flood Zones

-  A, AE, AH,
-  AE, FLOODWAY
-  X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
-  X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

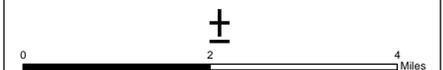
-  1% Annual Flood Chance

NDNR Work Maps

-  1% Annual Flood Chance

Other

-  Approximate Project Area
-  1,000 ft PWS Spacing
-  Major Stream
-  Road
-  Political Area

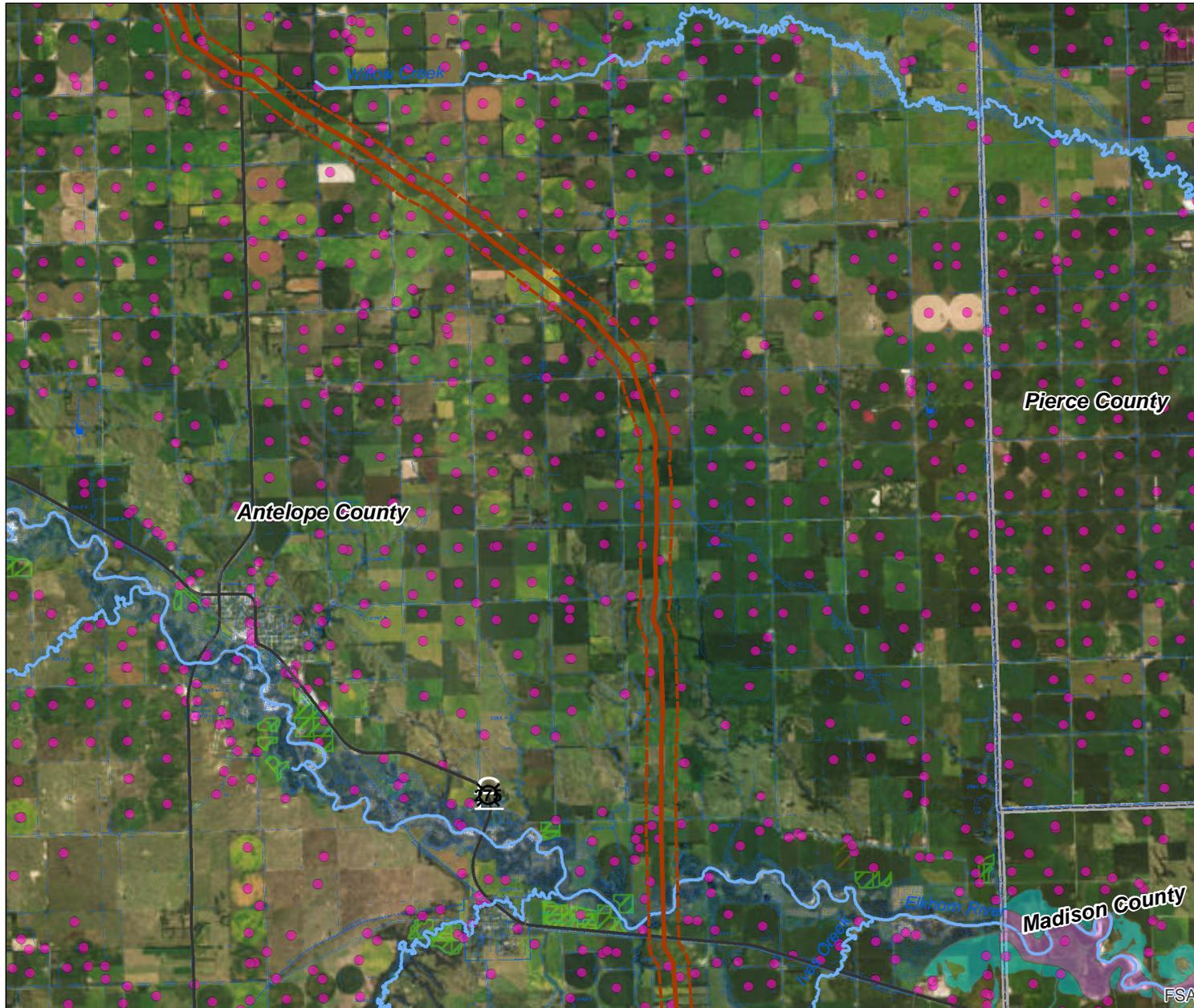


FSA

Floodplain and Dam Safety Division, Cartographer: Brandon Beethle

Keystone XL Pipeline Preferred Route Review - Map 6

Antelope County, Nebraska - Area East of Nebraska HWY 14, North of US HWY 275
June 13, 2017



Legend

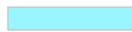
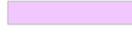
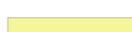
Registered Wells

() Wells in Use

Surface Water

-  Irrigation
-  Supplemental Irrigation
-  Domestic
-  Other

Effective Flood Zones

-  A, AE, AH,
-  AE, FLOODWAY
-  X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
-  X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

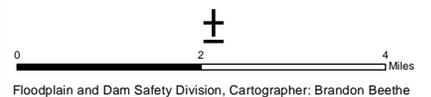
-  1% Annual Flood Chance

NDNR Work Maps

-  1% Annual Flood Chance

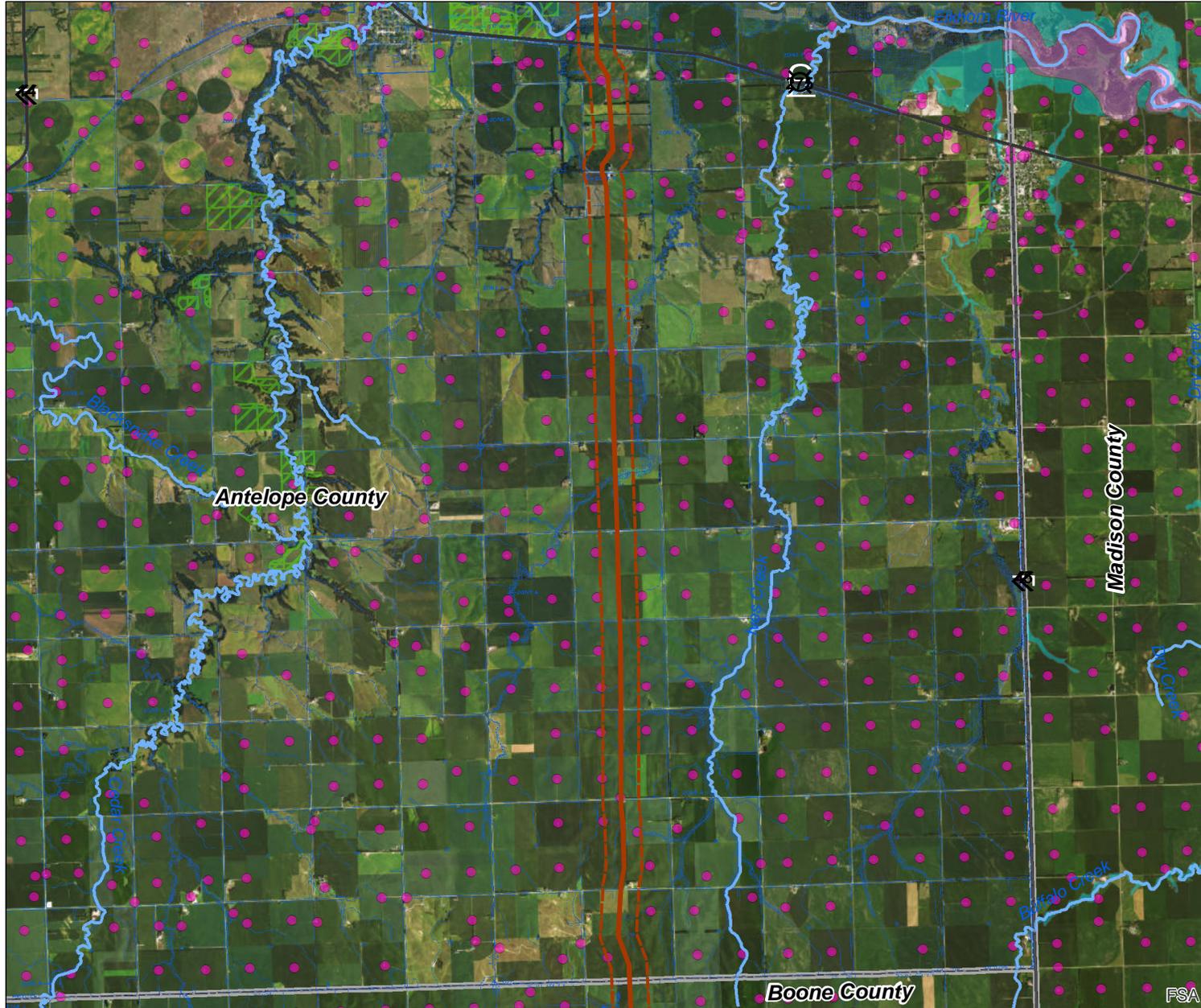
Other

-  Approximate Project Area
-  1,000 ft PWS Spacing
-  Major Stream
-  Road
-  Political Area



Keystone XL Pipeline Preferred Route Review - Map 7

Antelope County, Nebraska - Area East of Nebraska HWY 14, South of US HWY 275
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

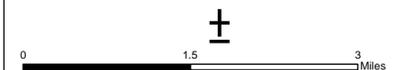
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Keystone XL Pipeline Preferred Route Review - Map 8

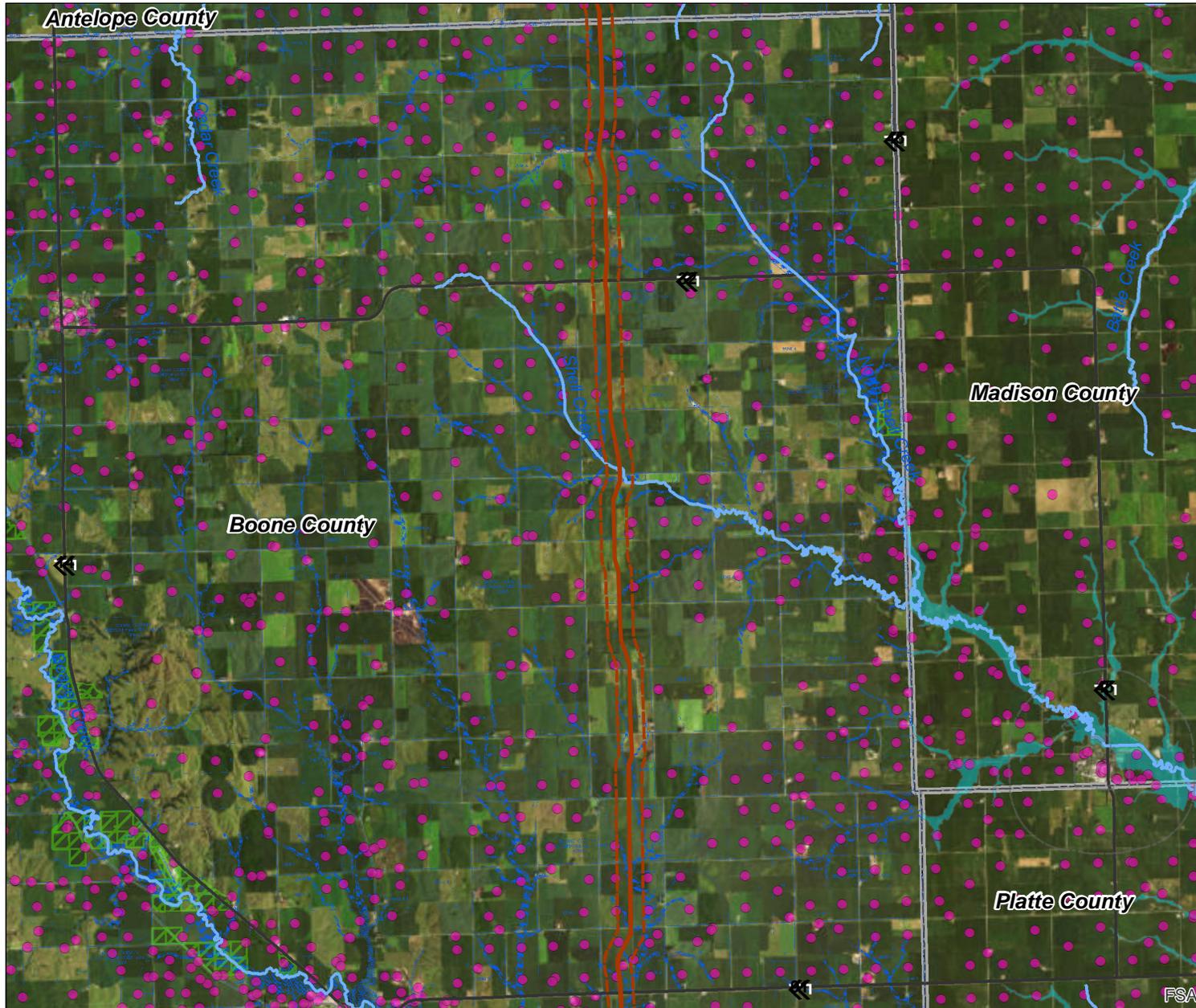
Boone County, Nebraska - Area North of Nebraska HWY 91

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

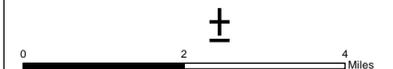
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Floodplain and Dam Safety Division, Cartographer: Brandon Beethle

Keystone XL Pipeline Preferred Route Review - Map 9

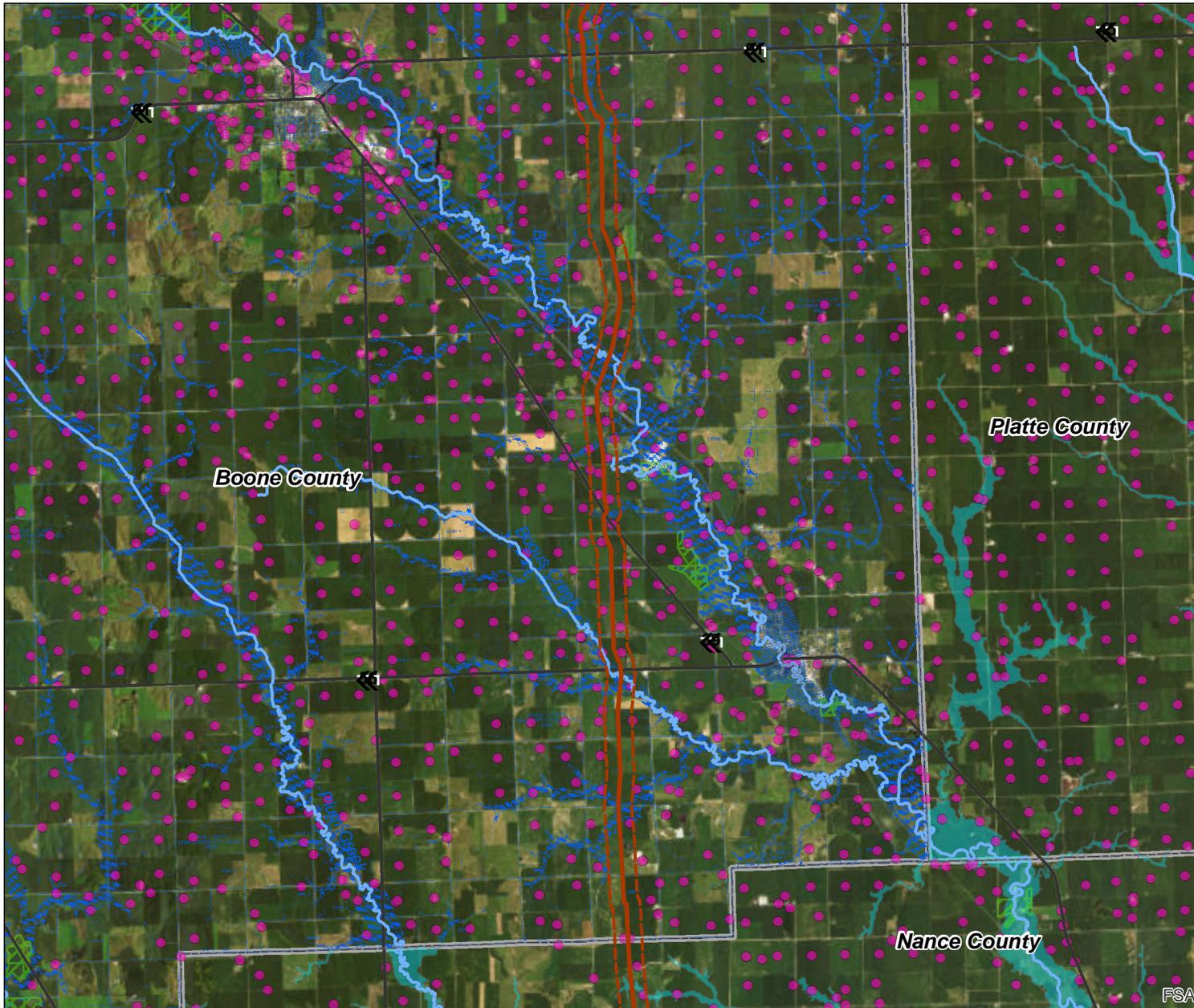
Boone County, Nebraska - Area South of Nebraska HWY 91

June 13, 2017

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Legend

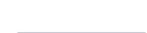
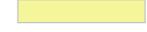
Registered Wells

() Wells in Use

Surface Water

-  Irrigation
-  Supplemental Irrigation
-  Domestic
-  Other

Effective Flood Zones

-  A, AE, AH,
-  AE, FLOODWAY
-  X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
-  X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

-  1% Annual Flood Chance

NDNR Work Maps

-  1% Annual Flood Chance

Other

-  Approximate Project Area
-  1,000 ft PWS Spacing
-  Major Stream
-  Road
-  Political Area



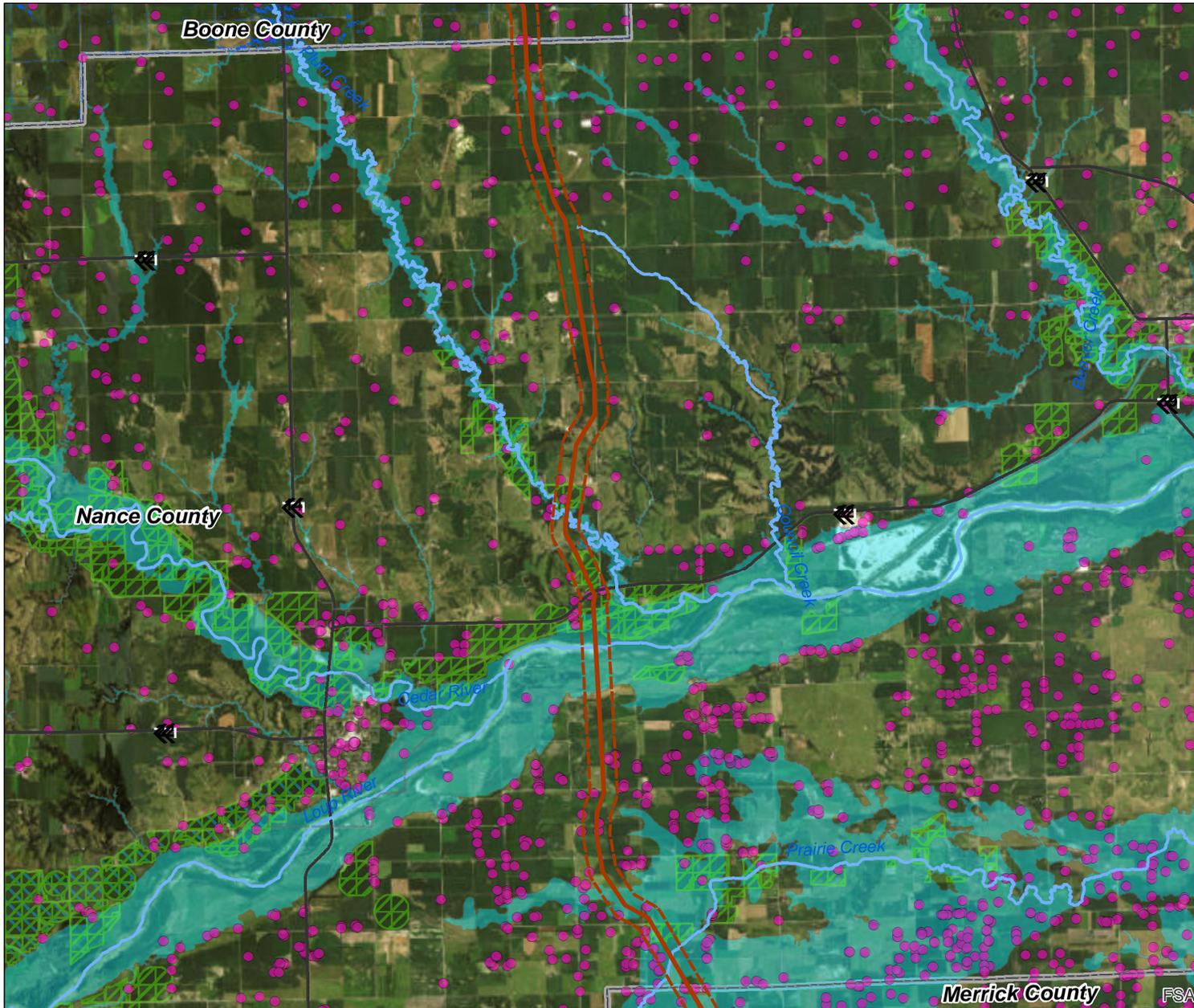
0 2 4 Miles

Floodplain and Dam Safety Division, Cartographer: Brandon Beethe

FSA

Keystone XL Pipeline Preferred Route Review - Map 10

Nance County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

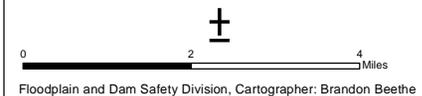
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

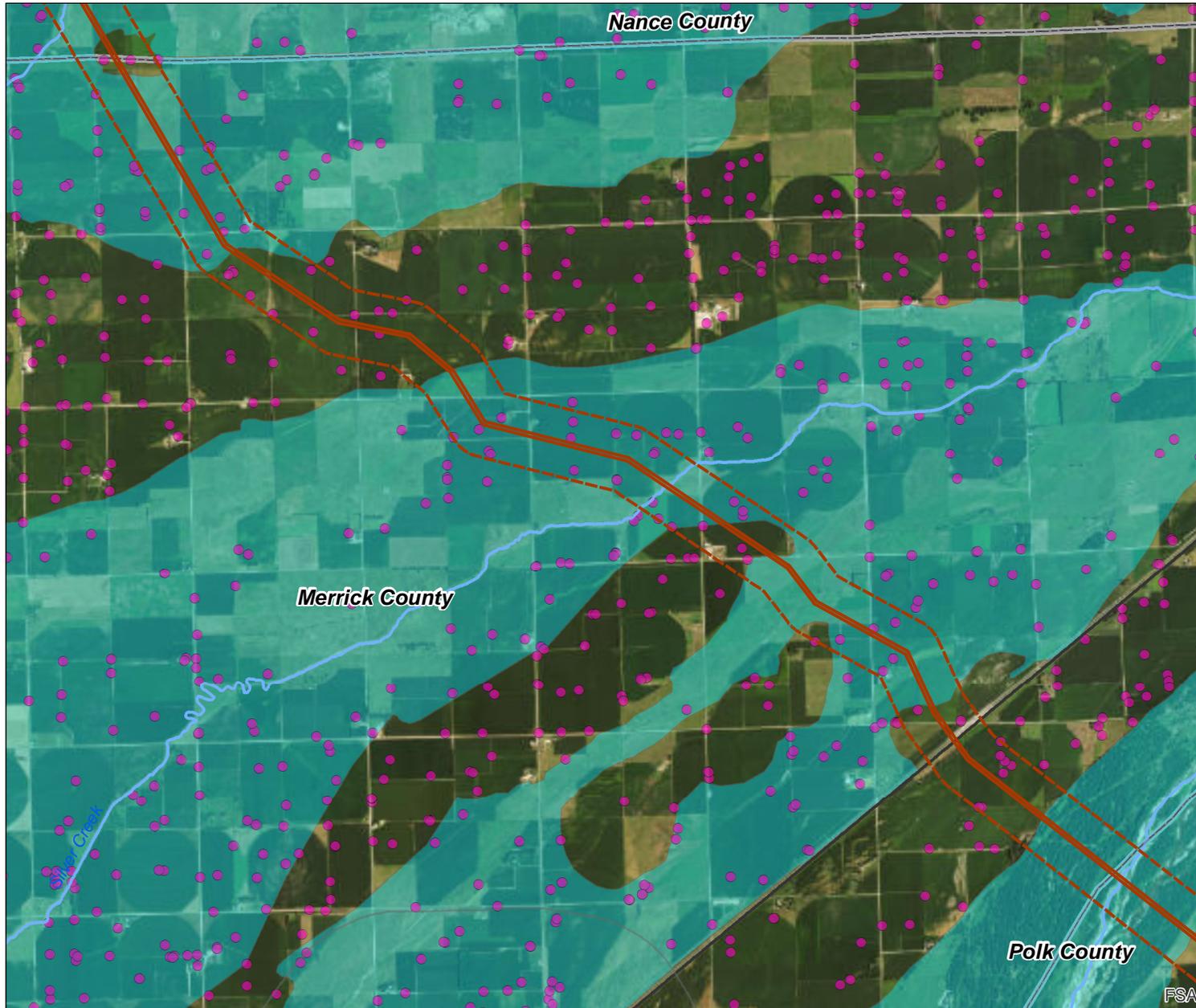
Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Keystone XL Pipeline Preferred Route Review - Map 11

Merrick County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

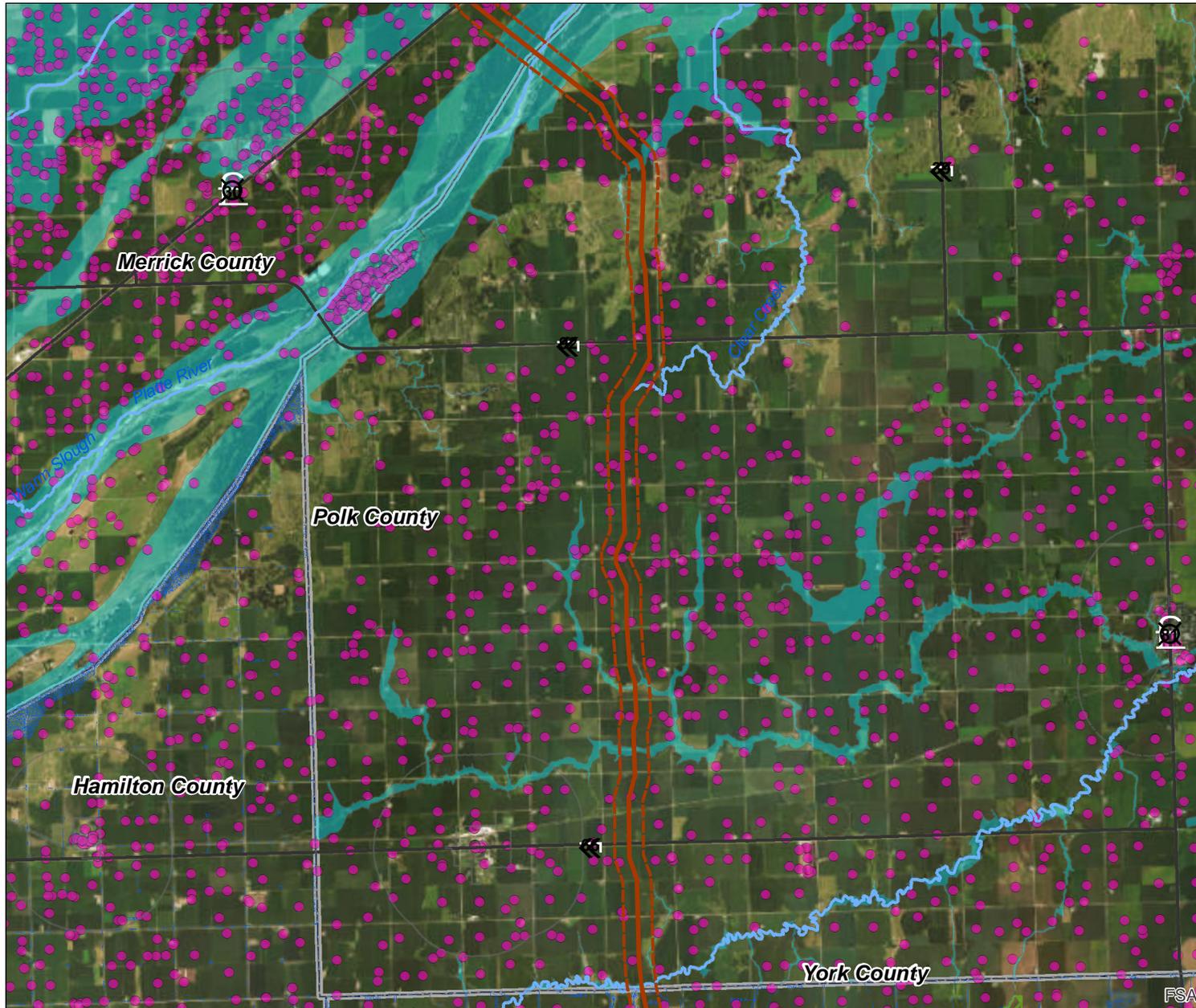
- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



0 0.85 1.7 Miles

Keystone XL Pipeline Preferred Route Review - Map 12

Polk County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

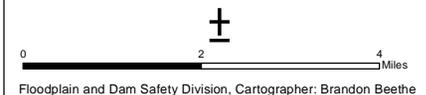
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Keystone XL Pipeline Preferred Route Review - Map 13

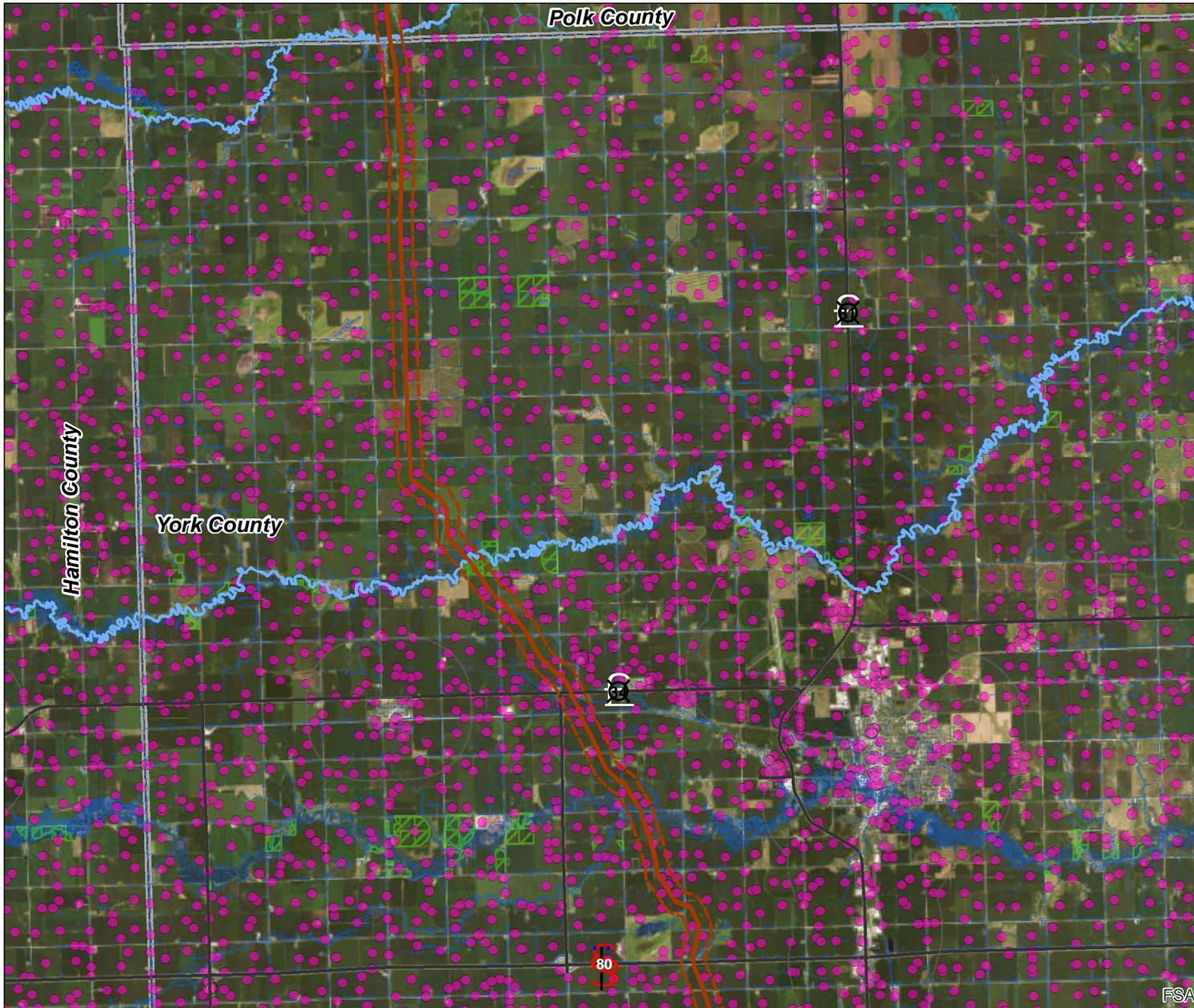
York County, Nebraska - Area North of Interstate 80

June 13, 2017

NEBRASKA

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Legend

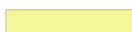
Registered Wells

() Wells in Use

Surface Water

-  Irrigation
-  Supplemental Irrigation
-  Domestic
-  Other

Effective Flood Zones

-  A, AE, AH,
-  AE, FLOODWAY
-  X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
-  X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

-  1% Annual Flood Chance

NDNR Work Maps

-  1% Annual Flood Chance

Other

-  Approximate Project Area
-  1,000 ft PWS Spacing
-  Major Stream
-  Road
-  Political Area



0 2.5 5 Miles

Floodplain and Dam Safety Division, Cartographer: Brandon Beethel

Keystone XL Pipeline Preferred Route Review - Map 14

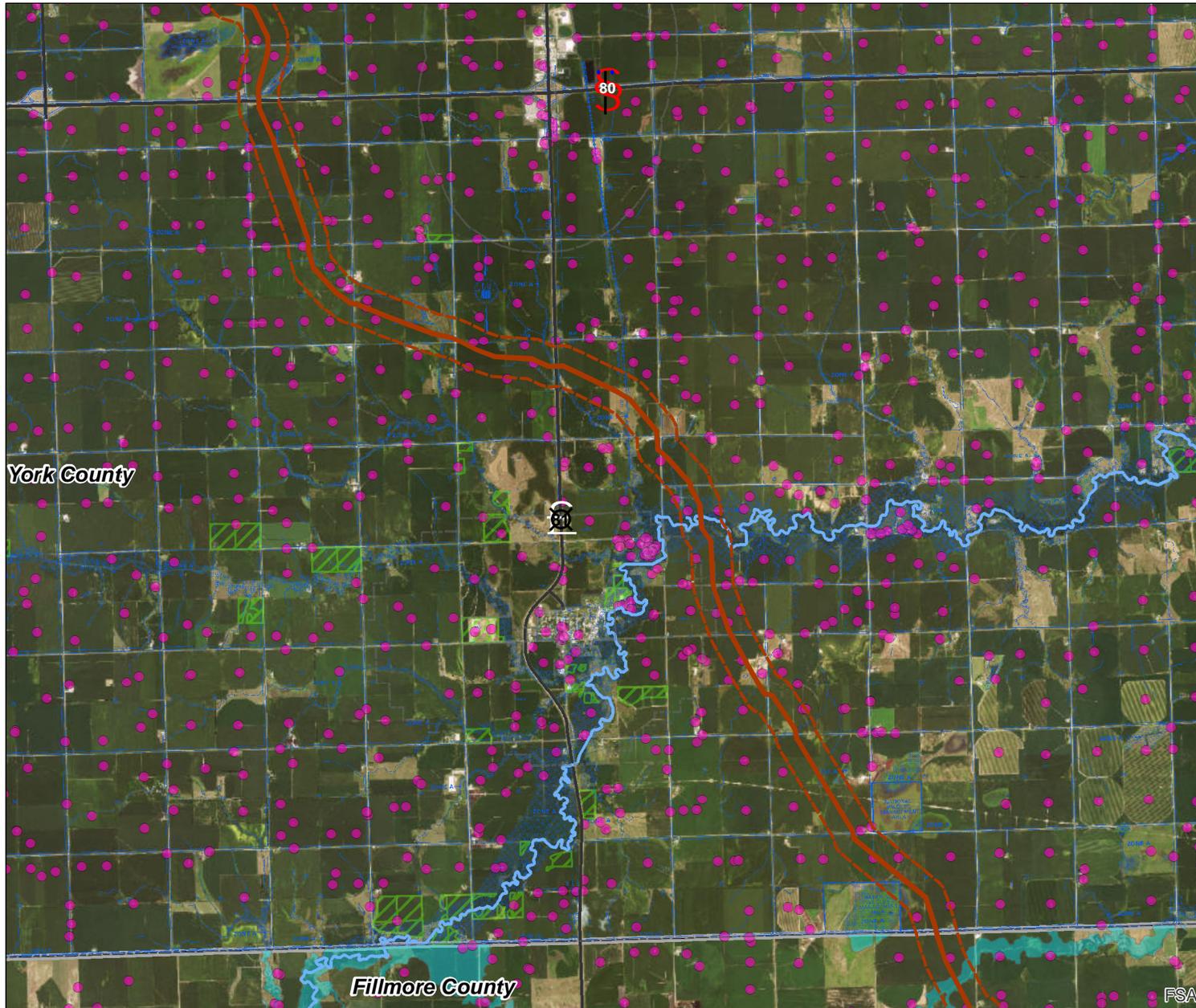
York County, Nebraska - Area South of Interstate 80

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

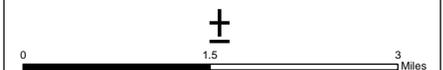
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

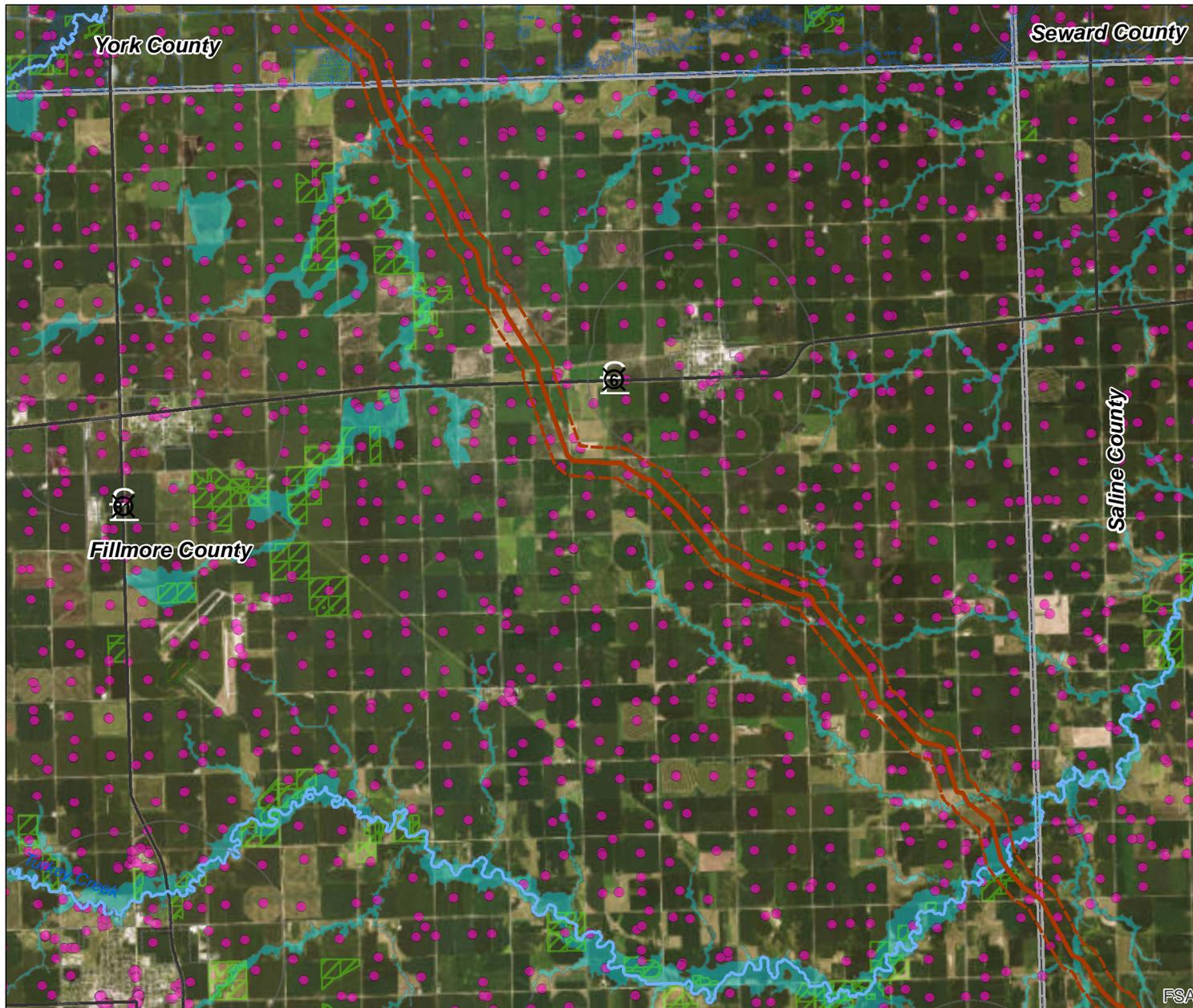
- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



FSA
Floodplain and Dam Safety Division, Cartographer: Brandon Beeth

Keystone XL Pipeline Preferred Route Review - Map 15

Fillmore County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

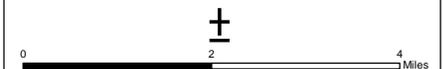
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

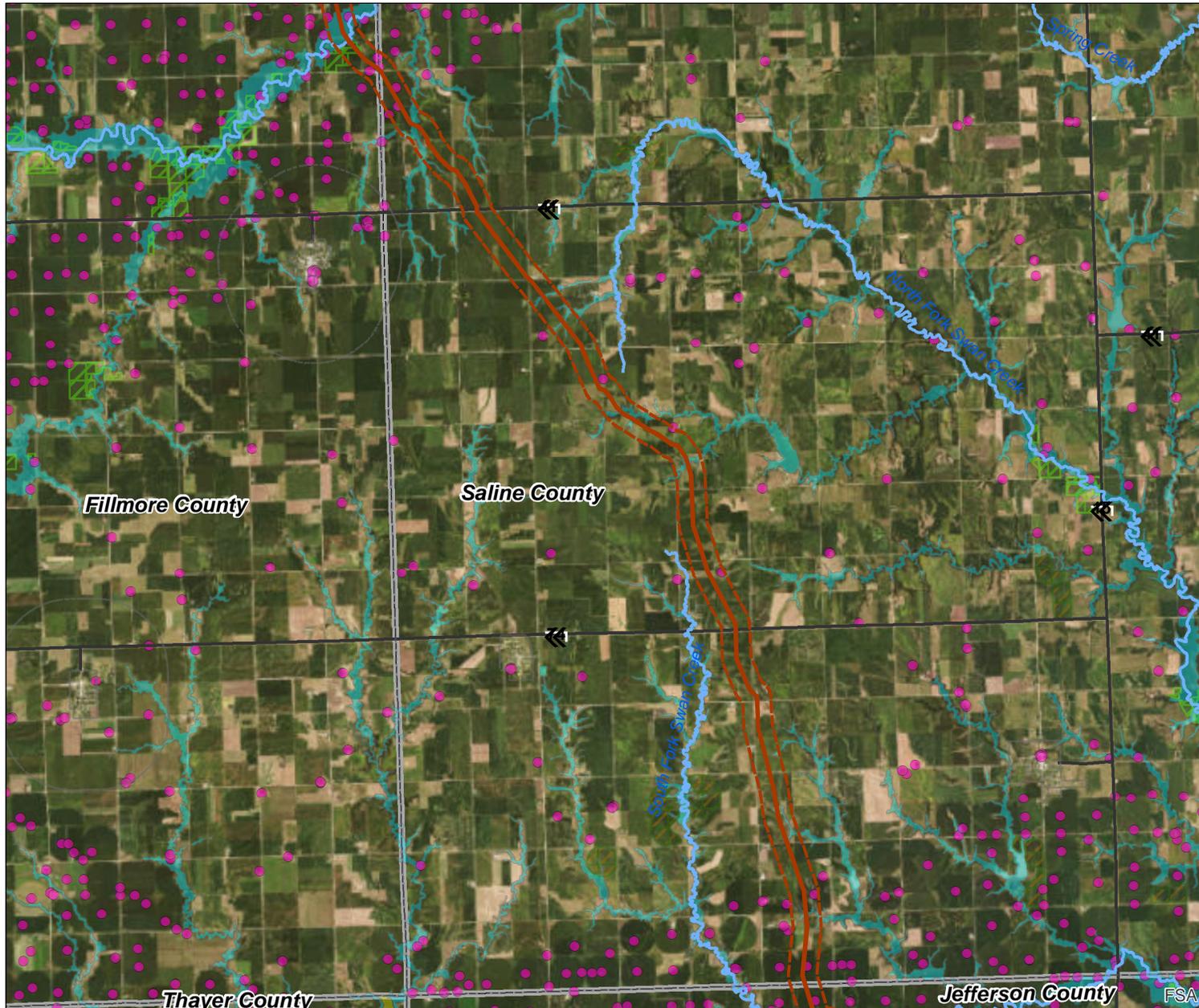
- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Floodplain and Dam Safety Division, Cartographer: Brandon Beethel

Keystone XL Pipeline Preferred Route Review - Map 16

Saline County, Nebraska
June 13, 2017



Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



0 2 4 Miles

Keystone XL Pipeline Preferred Route Review - Map 17

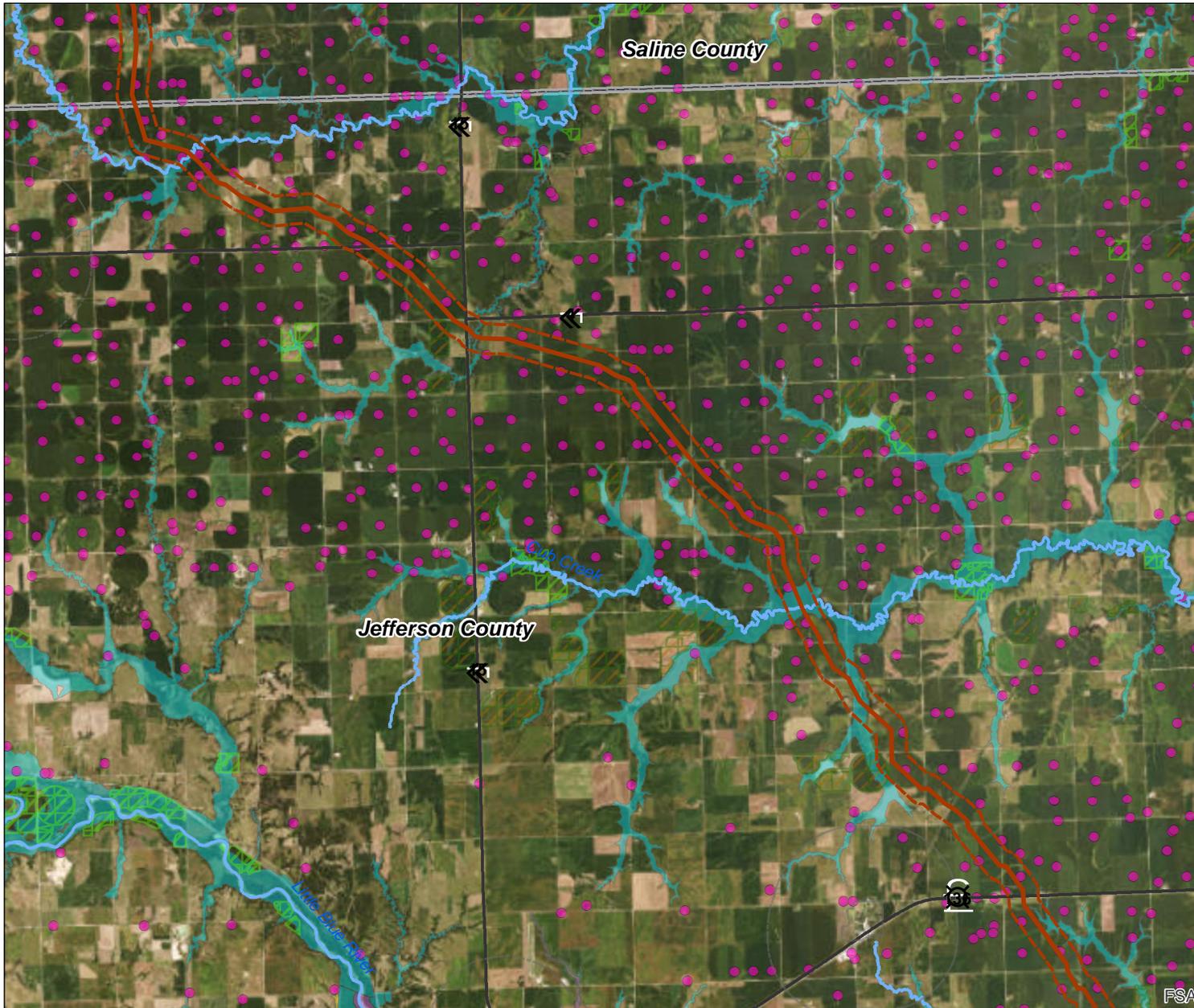
Jefferson County, Nebraska - Area North of US HWY 136

June 13, 2017

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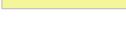
Registered Wells

() Wells in Use

Surface Water

-  Irrigation
-  Supplemental Irrigation
-  Domestic
-  Other

Effective Flood Zones

-  A, AE, AH,
-  AE, FLOODWAY
-  X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
-  X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

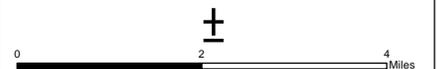
-  1% Annual Flood Chance

NDNR Work Maps

-  1% Annual Flood Chance

Other

-  Approximate Project Area
-  1,000 ft PWS Spacing
-  Major Stream
-  Road
-  Political Area



Floodplain and Dam Safety Division, Cartographer: Brandon Beeth

FSA

Keystone XL Pipeline Preferred Route Review - Map 18

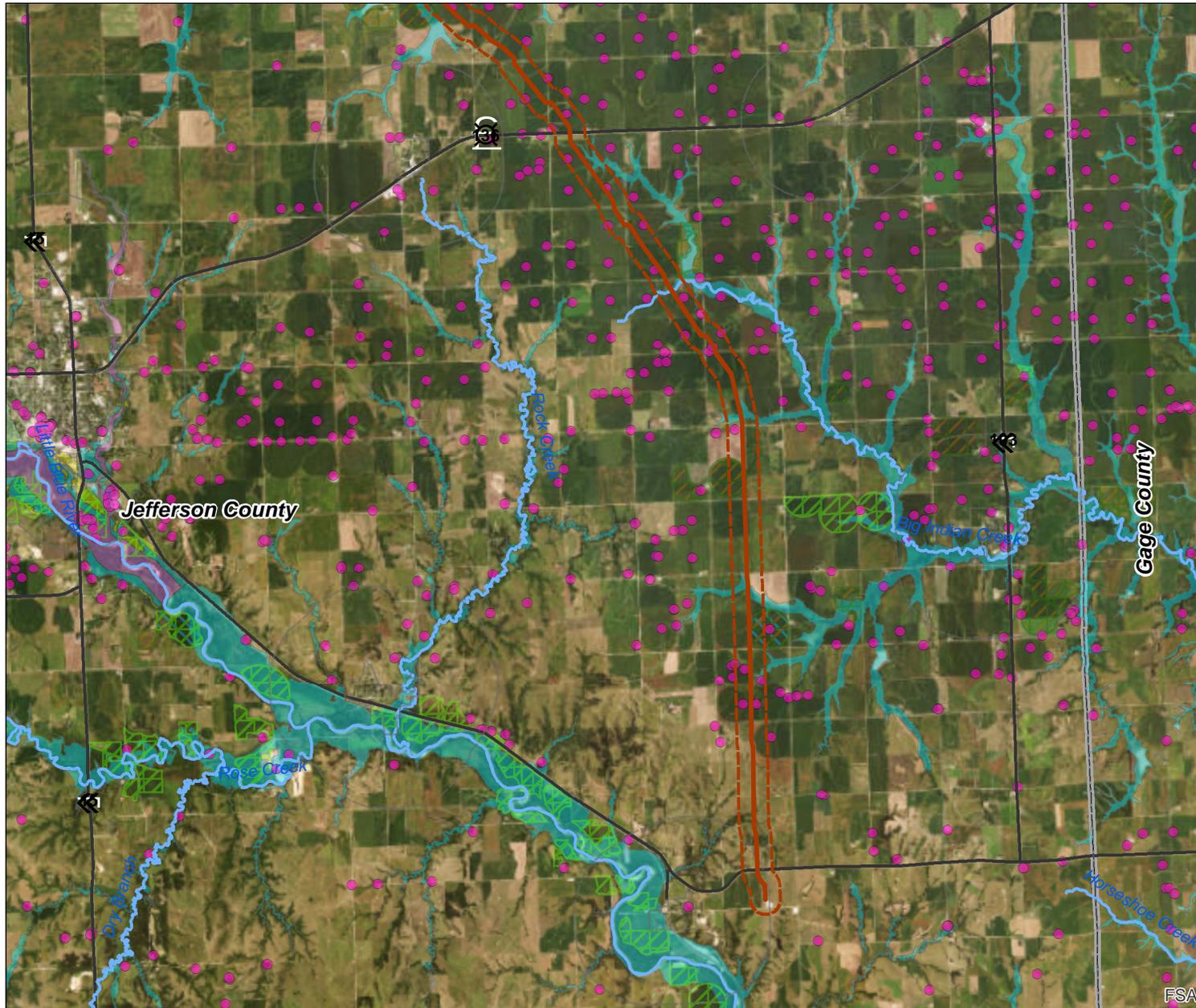
Jefferson County, Nebraska - Area South of US HWY 136

June 13, 2017

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Legend

Registered Wells

() Wells in Use

Surface Water

- Irrigation
- Supplemental Irrigation
- Domestic
- Other

Effective Flood Zones

- A, AE, AH,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

Paper Map - Effective Flood Zones

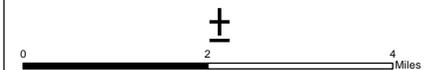
- 1% Annual Flood Chance

NDNR Work Maps

- 1% Annual Flood Chance

Other

- Approximate Project Area
- 1,000 ft PWS Spacing
- Major Stream
- Road
- Political Area



Floodplain and Dam Safety Division, Cartographer: Brandon Beethle

Surface Water Rights - Keystone XL Pipeline Re-route Agency Review Corridor as of June 13, 2017							
RightUse	Appropriation ID	Acres	LegalDescr	Sect	Township	Range	
IR	A4245	38	NW NW S34 T16N-R05W	34	16	5	
IR	A4245	31.3	NE NW S34 T16N-R05W	34	16	5	IR - Irrigation from Natural Stream
IR	A13658	7.6	NW SE S13 T11N-R04W	13	11	4	SI - Supplemental Irrigation
IR	A13658	26.7	SW SE S13 T11N-R04W	13	11	4	SO - Storage Use
IR	A9707	15.5	NW SE S25 T07N-R01W	25	7	1	
IR	A9707	8	SW SE S25 T07N-R01W	25	7	1	
IR	A16073B	12	NW SW S33 T17N-R05W	33	17	5	
IR	A16073B	10.5	NE NW S04 T16N-R05W	4	16	5	
IR	A16073B	32	NE SW S33 T17N-R05W	33	17	5	
IR	A16073B	35	SE SW S33 T17N-R05W	33	17	5	
IR	A16073B	15	SW SW S33 T17N-R05W	33	17	5	
IR	A10186	14.8	SE SW S02 T30N-R13W	2	30	13	
IR	A11148	38.4	NE NE S10 T32N-R15W	10	32	15	
IR	A11148	11.7	NW NE S10 T32N-R15W	10	32	15	
SI	A11149	38.4	NE NE S10 T32N-R15W	10	32	15	
SI	A11149	11.7	NW NE S10 T32N-R15W	10	32	15	
IR	A11746	34	NE NW S30 T34N-R16W	30	34	16	
IR	A14327	15.6	SE SW S19 T34N-R16W	19	34	16	
IR	A14327	26.4	NE SW S19 T34N-R16W	19	34	16	
IR	A11130	7.3	NE SW S04 T16N-R05W	4	16	5	
IR	A11130	35.3	SE NW S04 T16N-R05W	4	16	5	
IR	A13448	35	NW SW S28 T17N-R05W	28	17	5	
IR	A13448	13	SW SW S28 T17N-R05W	28	17	5	
IR	A18759	4.5	SE NW S03 T30N-R13W	3	30	13	
SO	A19332	37	NE SW S20 T02N-R04E	20	2	4	
SO	A19332	26.3	SE SW S20 T02N-R04E	20	2	4	
SO	CWG-5302	37	NE SW S20 T02N-R04E	20	2	4	
SO	CWG-5302	26.3	SE SW S20 T02N-R04E	20	2	4	
SO	CWG-5303	37	NE SW S20 T02N-R04E	20	2	4	
SO	CWG-5303	26.3	SE SW S20 T02N-R04E	20	2	4	

Registered Groundwater Wells - Keystone XL Pipeline Re-route Agency Review Corridor as of June 13, 2017											
Regnum	Status	Useid	County	Township	Range	Rangelet	Section_	SubSection	LatDD	LongDD	Pipeline/Adjacent Features
G-172435	A	I	York	11	3	W	32	SENW	40.88266	-97.686828	Centerline
	U	S	Antelope	24	5	W	32	NENW	42.01725	-97.921456	Centerline
	U	S	Antelope	23	5	W	20	SESW	41.94544	-97.921975	Centerline

Useid

I - Irrigation
S - Livestock

Status

A - Active
U - Unregistered Abandoned