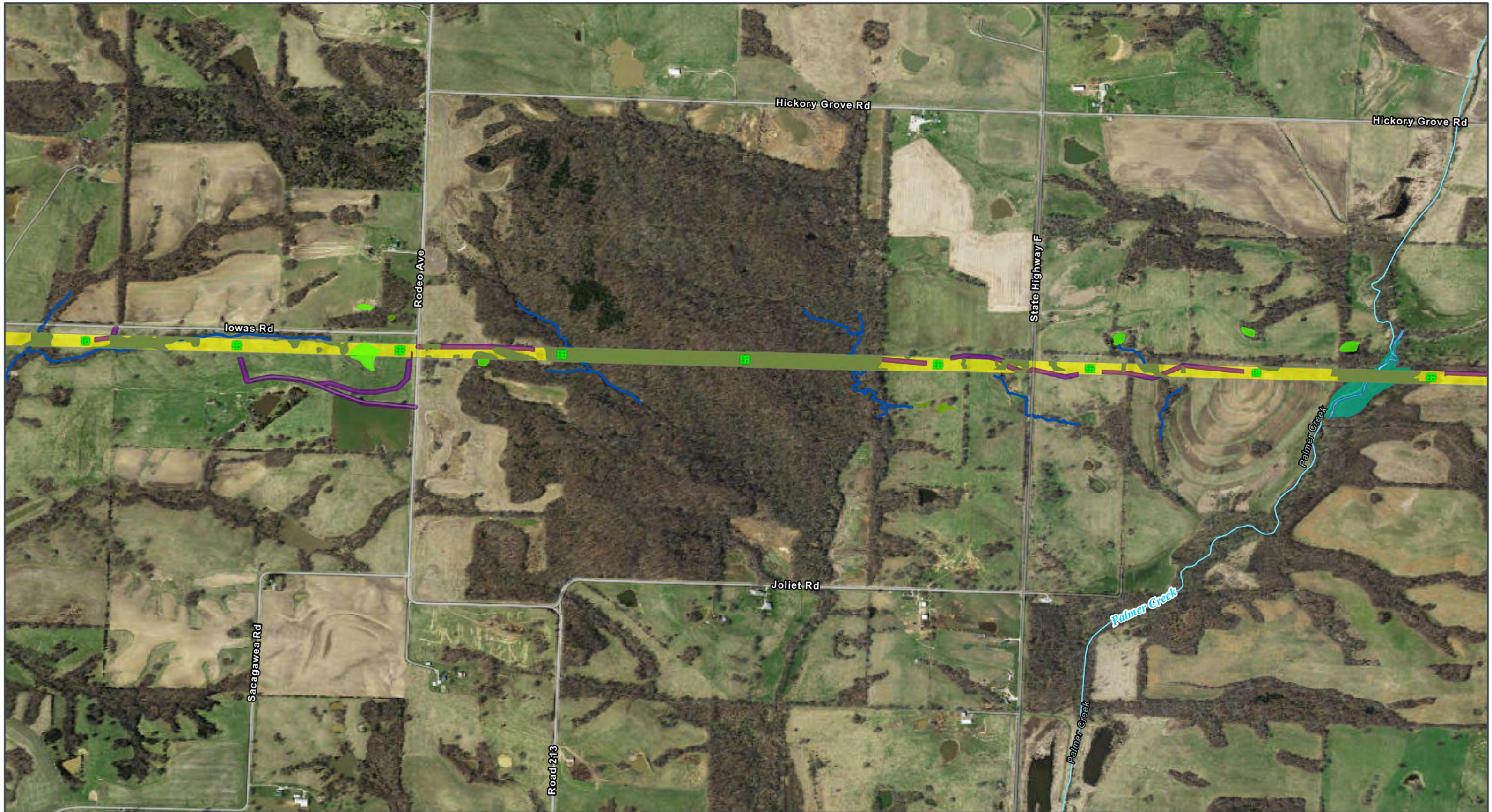


**Grain Belt Express Transmission Line  
Environmental Impact Statement  
Appendix 3.4: Wetlands and Waters Maps**

**Continued**





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 222 of 259

- ROW
- Permanent Project Component**
  - Transmission Structure
- Habitat Conversion**
  - Vegetation Clearing

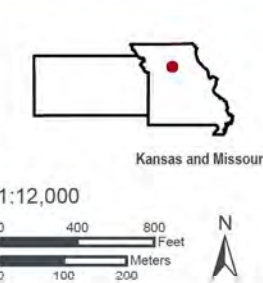
- Temporary Project Component**
  - Access Road
- Hydrology**
  - Delineated Stream
  - NHD Stream/River

- Delineated Wetland**
  - Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)
  - Delineated Waterbody

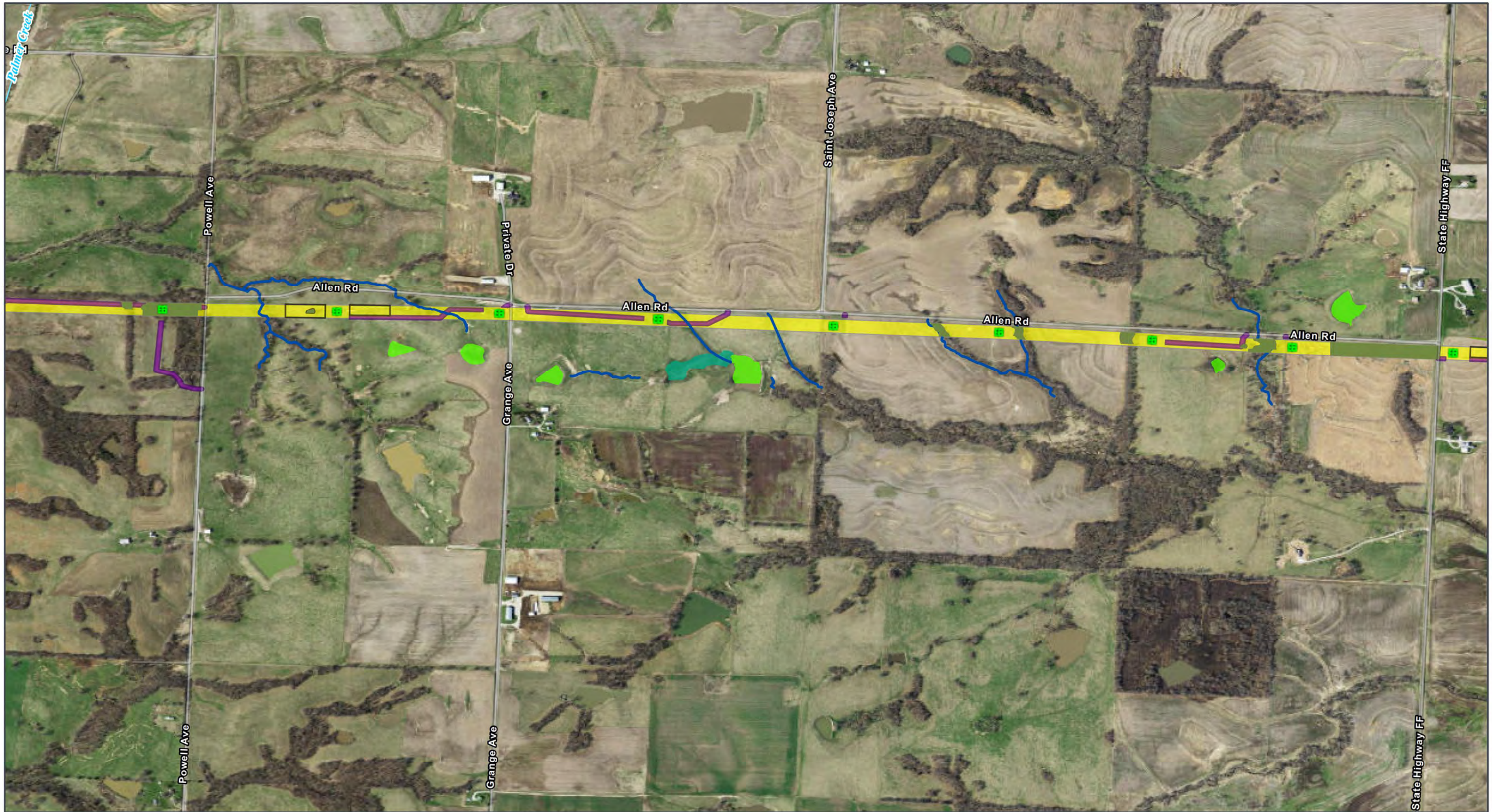
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
From: WetlandMapBook\_12K







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 223 of 259

- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
- Hydrology**
- Delineated Stream

- NHD Stream/River**
- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

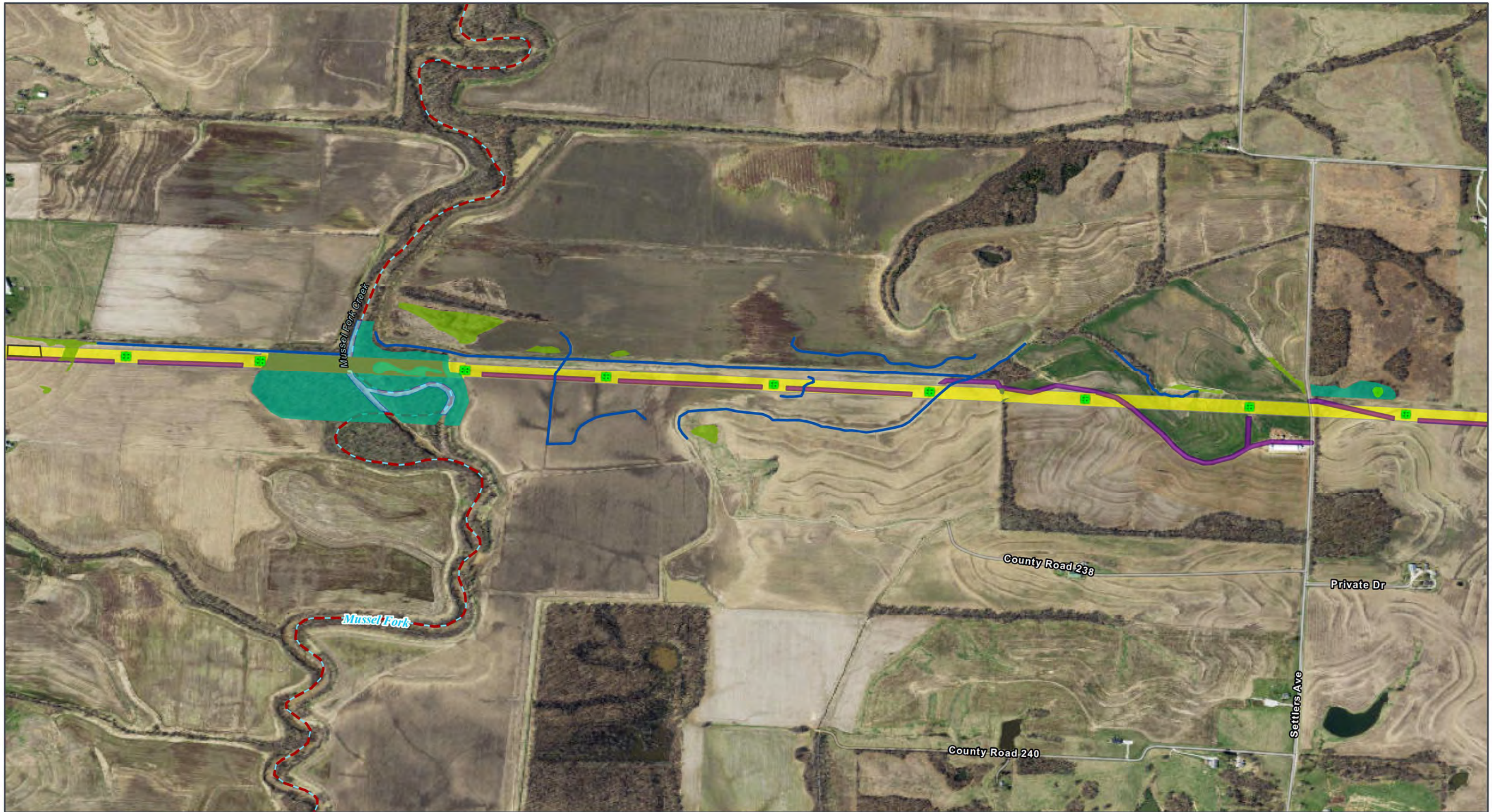
1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 224 of 259

ROW

**Permanent Project Component**

Transmission Structure

**Habitat Conversion**

Vegetation Clearing

**Temporary Project Component**

Access Road

Pull Site/Tension Site

**Hydrology**

Delineated Stream

NHD Stream/River

Impaired Waterway (303d)

**Delineated Wetland**

Palustrine Emergent (PEM)

Palustrine Forested (PFO)

Palustrine Unconsolidated Bottom (PUB)

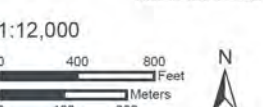
Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 225 of 259

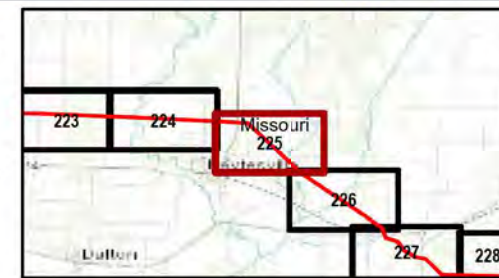
- Municipal Boundary Near the Project
- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
- Helipad / Fly Yard
- Pull Site/Tension Site
- Hydrology**
- Delineated Stream

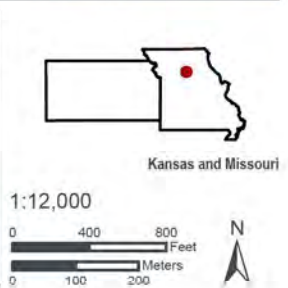
- NHD Stream/River
- Impaired Waterway (303d)
- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Scrub-Shrub (PSS)

- Palustrine Unconsolidated Bottom (PUB)
- Delineated Waterbody
- Transportation**
- State Highway

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
From: WetlandMapBook\_12K





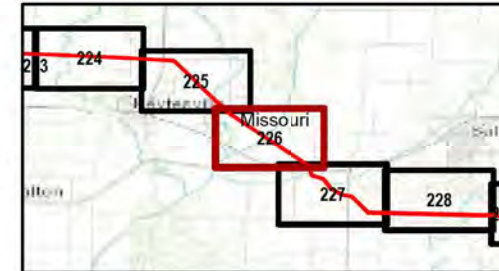


GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 226 of 259

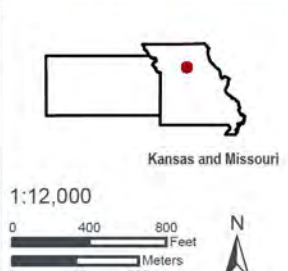
- |  |  |  |
|--|--|--|
| <b>ROW</b><br>Permanent Project Component<br>Transmission Structure<br>Habitat Conversion<br>Vegetation Clearing<br>Temporary Project Component<br>Access Road | <b>Hydrology</b><br>Delineated Stream<br>NHD Stream/River<br>Impaired Waterway (303d)<br>Delineated Wetland<br>Palustrine Emergent (PEM) | <b>Palustrine Forested (PFO)</b><br><b>Palustrine Scrub-Shrub (PSS)</b><br><b>Palustrine Unconsolidated Bottom (PUB)</b><br><b>Delineated Waterbody</b><br><b>Transportation</b><br>U.S. Highway |
|--|--|--|

- |  |
|--|
| <b>Palustrine Forested (PFO)</b><br><b>Palustrine Scrub-Shrub (PSS)</b><br><b>Palustrine Unconsolidated Bottom (PUB)</b><br><b>Delineated Waterbody</b><br><b>Transportation</b><br>U.S. Highway |
|--|

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k





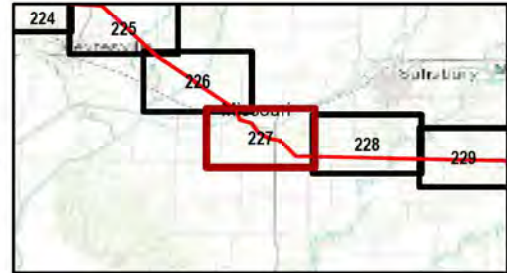


GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 227 of 259

- |                                    |                           |
|------------------------------------|---------------------------|
| <b>ROW</b>                         | Pull Site/Tension Site    |
| <b>Permanent Project Component</b> | <b>Hydrology</b>          |
| Transmission Structure             | Delineated Stream         |
| <b>Habitat Conversion</b>          | NHD Stream/River          |
| Vegetation Clearing                | <b>Delineated Wetland</b> |
| <b>Temporary Project Component</b> | Palustrine Emergent (PEM) |
| Access Road                        | Palustrine Forested (PFO) |

- |  |
|--|
| Palustrine Unconsolidated Bottom (PUB) |
| NHD Waterbody                          |
| <b>Transportation</b>                  |
| U.S. Highway                           |
| State Highway                          |
| Railroad                               |

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
From: WetlandMapBook\_12K

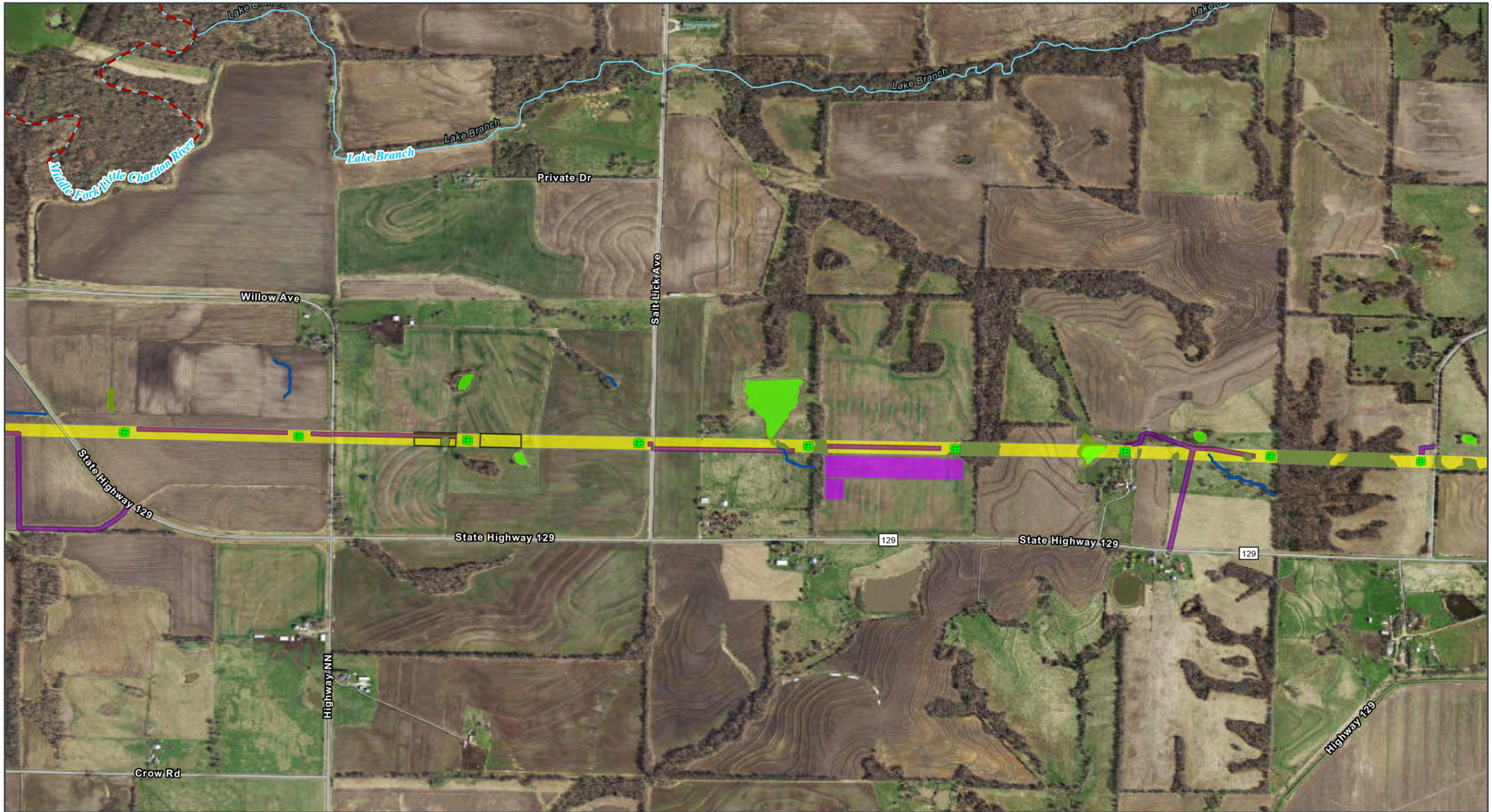
1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 228 of 259

ROW

**Permanent Project Component**

Transmission Structure

**Habitat Conversion**

Vegetation Clearing

**Temporary Project Component**

Access Road

Helipad / Fly Yard

Pull Site/Tension Site

**Hydrology**

Delineated Stream

NHD Stream/River

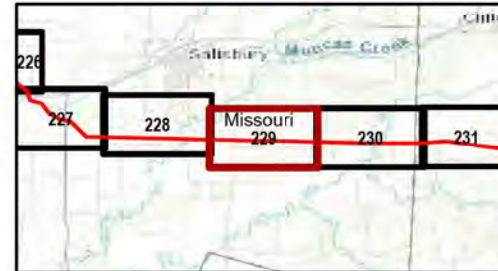
Impaired Waterway (303d)

**Delineated Wetland**

Palustrine Emergent (PEM)

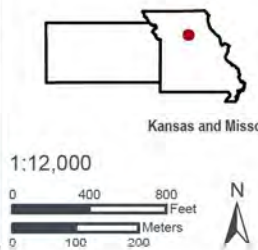
Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**Wetlands Map Book**

Map 229 of 259

**Grain Belt Express**  
An Invenergy Project

**ROW**

**Permanent Project Component**

- Transmission Structure

**Habitat Conversion**

- Vegetation Clearing

**Temporary Project Component**

- Access Road

**Hydrology**

- Delineated Stream
- NHD Stream/River
- Impaired Waterway (303d)

**Delineated Wetland**

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Unconsolidated Bottom (PUB)
- Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

Missouri 228

Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

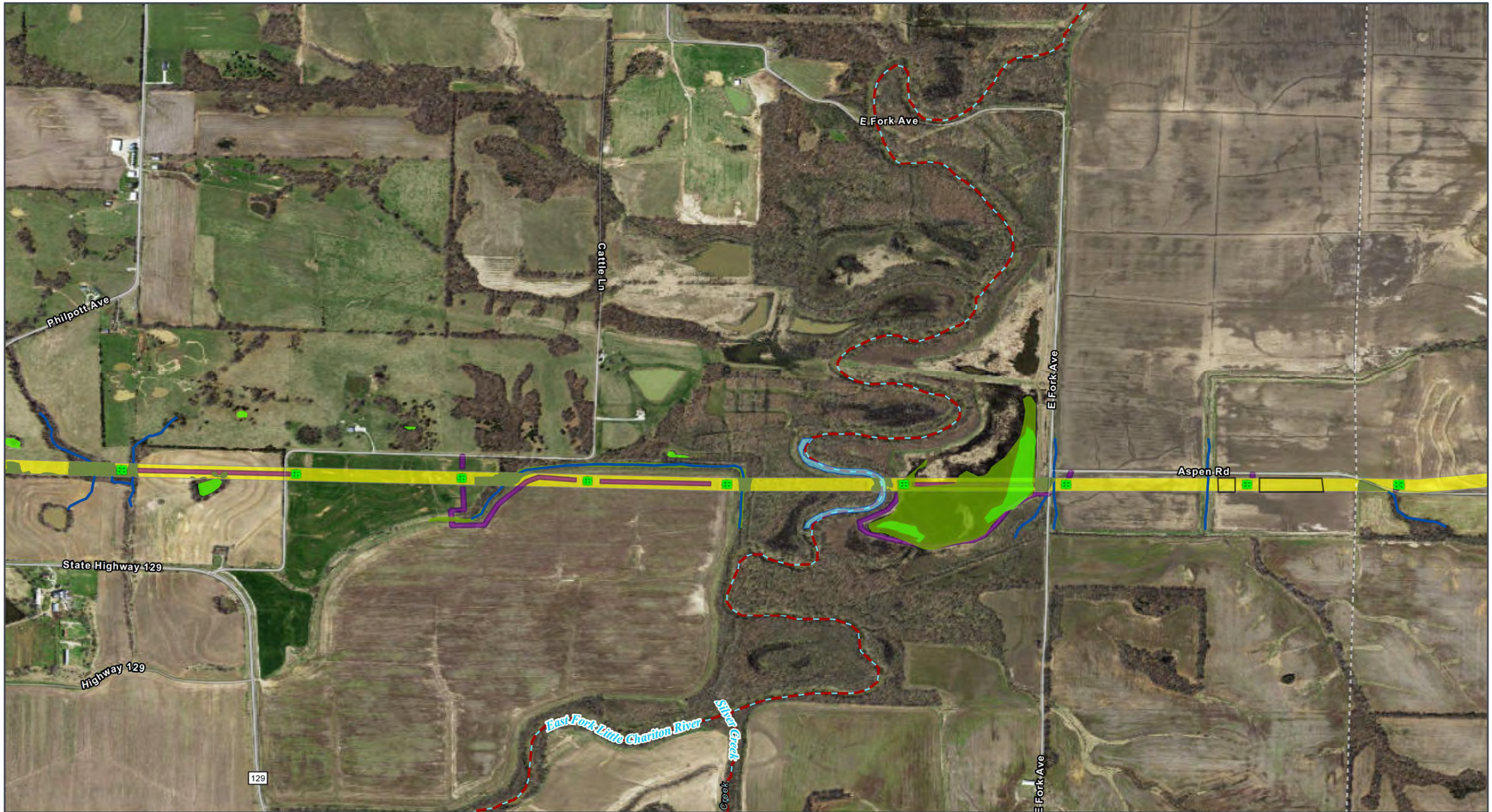
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No: 60694559  
Layout: Wetland Mapbook 12K  
From: WetlandMapBook\_12K

1:12,000

0 400 800 Feet  
0 100 200 Meters

N





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 230 of 259

- ROW**
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
- Hydrology**
- Delineated Stream
  - NHD Stream/River

- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Unconsolidated Bottom (PUB)
  - Delineated Waterbody

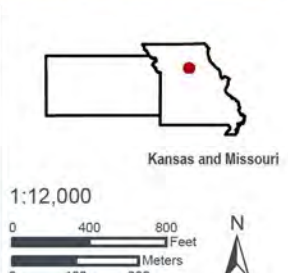
Impaired Waterway (303d)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

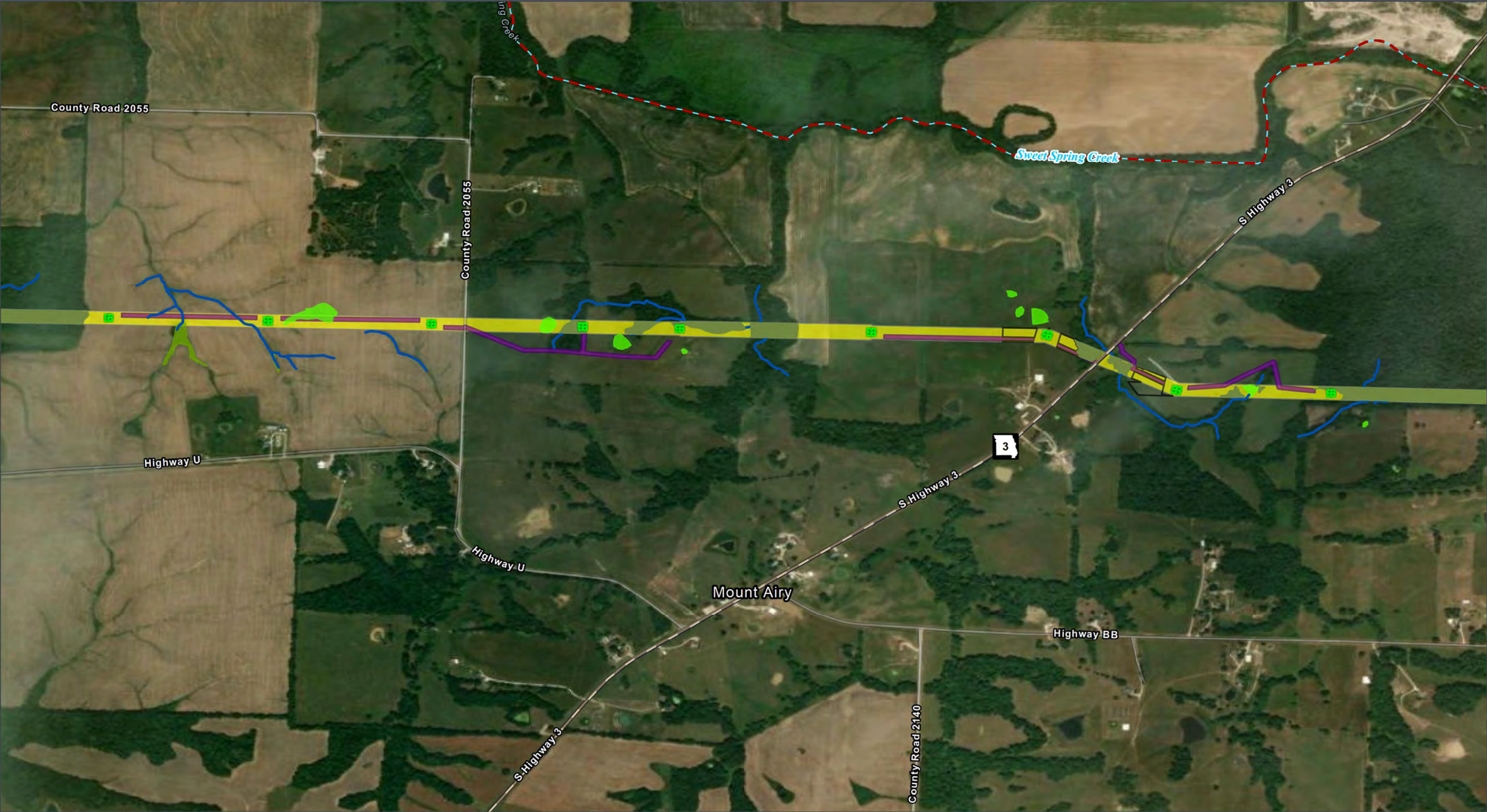


Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**Wetlands Map Book**

Map 231 of 259

Grain Belt Express  
An Invenery Project

**Permanent Project Component**

- Transmission Structure

**Habitat Conversion**

- Vegetation Clearing

**Temporary Project Component**

- Access Road

**Hydrology**

- Delineated Stream
- NHD Stream/River
- Impaired Waterway (303d)

**Delineated Wetland**

- Palustrine Emergent (PEM)

**ROW**

- ROW

**Palustrine Unoconsolidated Bottom (PUB)**

- PUB

**NHD Waterbody**

- NHD Waterbody

**Transportation**

- State Highway

**Pull Site/Tension Site**

- Pull Site/Tension Site

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

0 400 800 Feet

0 100 200 Meters

N





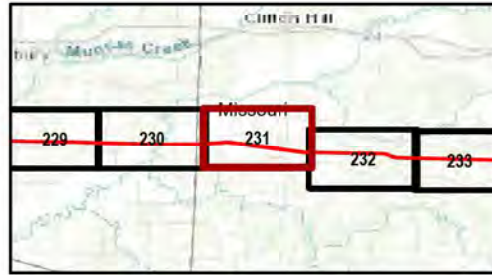
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 232 of 259

- Permanent Project Component**
- Transmission Structure
  - Habitat Conversion**
  - Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
  - Hydrology**
  - Delineated Stream

- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)
  - NHD Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





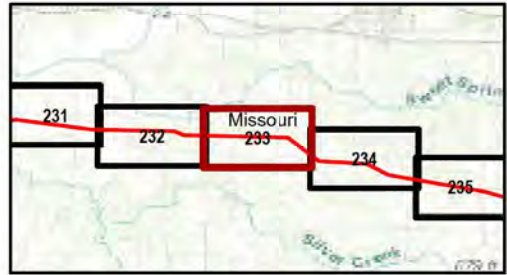
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 233 of 259



- ROW**
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing
- Temporary Project Component**
- Access Road
- Helipad / Fly Yard
- Pull Site/Tension Site
- Hydrology**
- Delineated Stream
- NHD Stream/River
- Impaired Waterway (303d)

- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)
- NHD Waterbody
- Transportation**
- State Highway

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

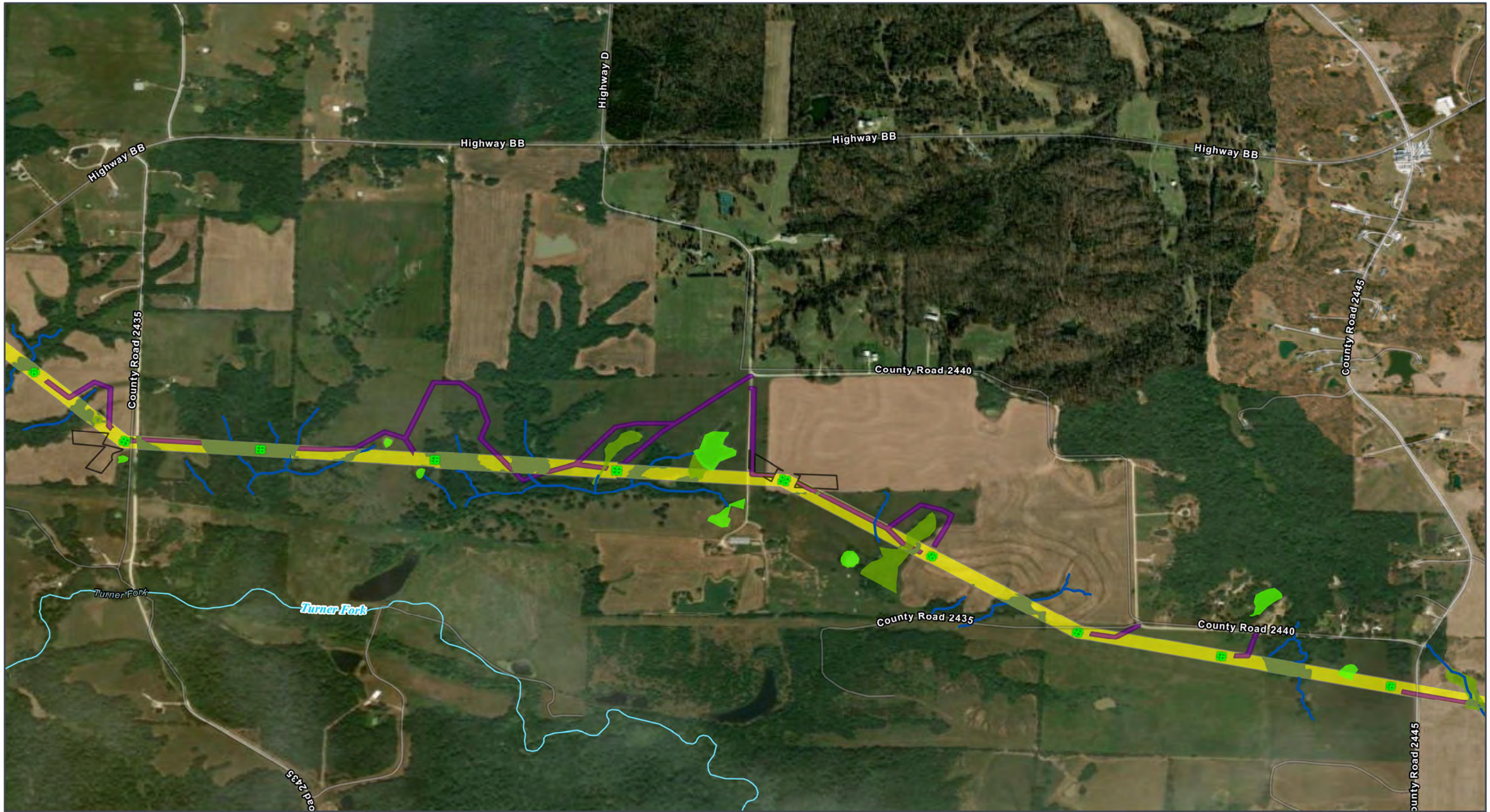
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 234 of 259

**Permanent Project Component**  
Transmission Structure  
**Habitat Conversion**  
Vegetation Clearing

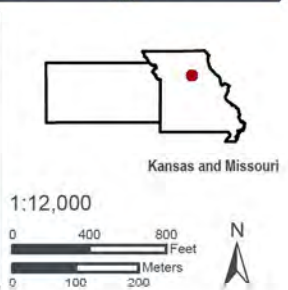
**Temporary Project Component**  
Access Road  
Pull Site/Tension Site  
**Hydrology**  
Delineated Stream

**NHD Stream/River**  
**Delineated Wetland**  
Palustrine Emergent (PEM)  
Palustrine Unconsolidated Bottom (PUB)

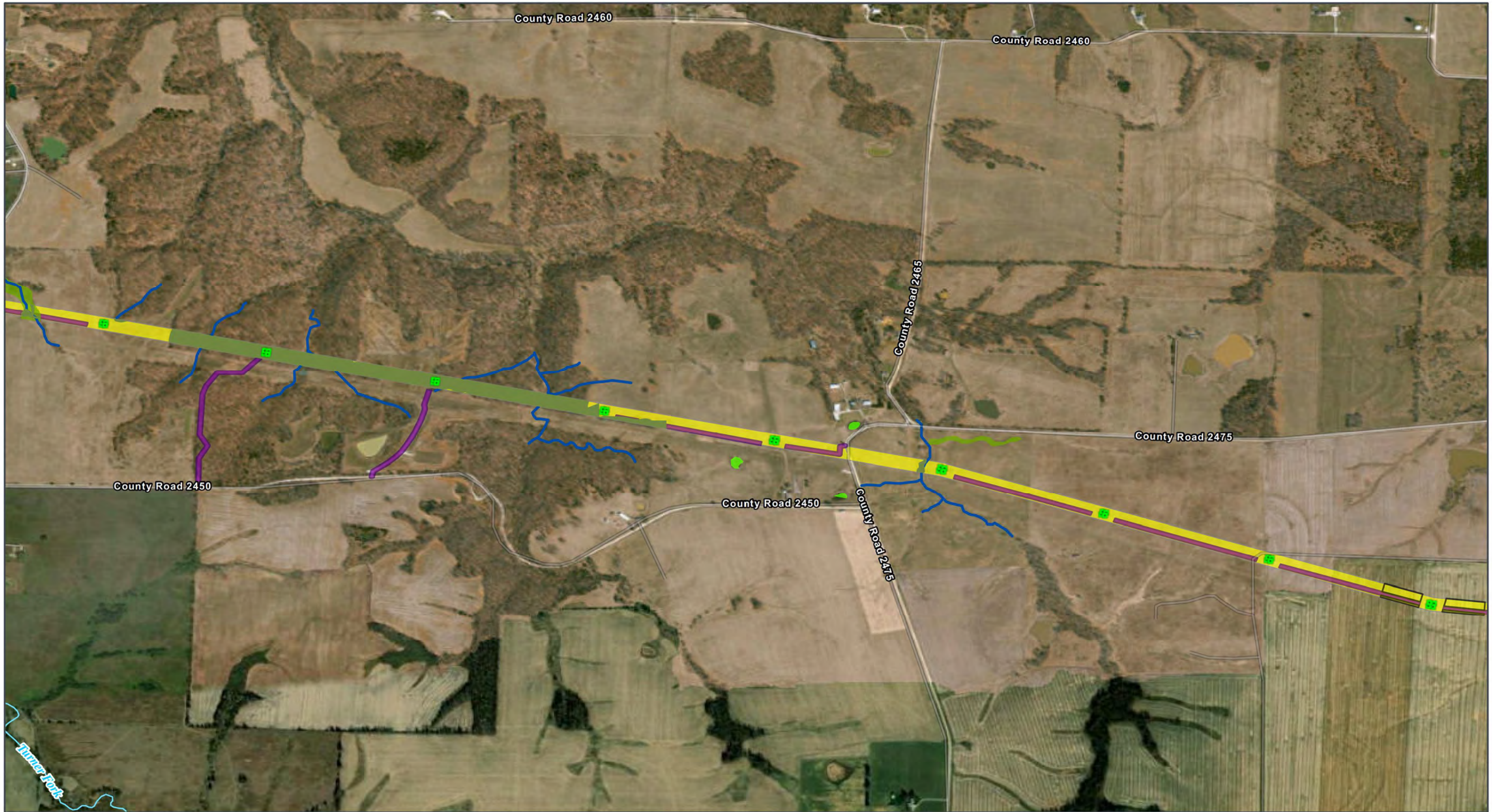
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 235 of 259

**ROW**  
Permanent Project Component  
Transmission Structure  
**Habitat Conversion**  
Vegetation Clearing

**Temporary Project Component**  
Access Road  
Pull Site/Tension Site  
**Hydrology**  
Delineated Stream

**NHD Stream/River**  
**Delineated Wetland**  
Palustrine Emergent (PEM)  
Palustrine Unconsolidated Bottom (PUB)

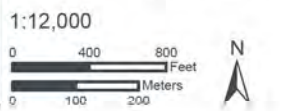
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W



Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
From: WetlandMapBook\_12K







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 236 of 259

- Municipal Boundary Near the Project
- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
- Pull Site/Tension Site
- Hydrology**
- Delineated Stream
- NHD Stream/River

- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)
- Transportation**
- U.S. Highway
- Railroad

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

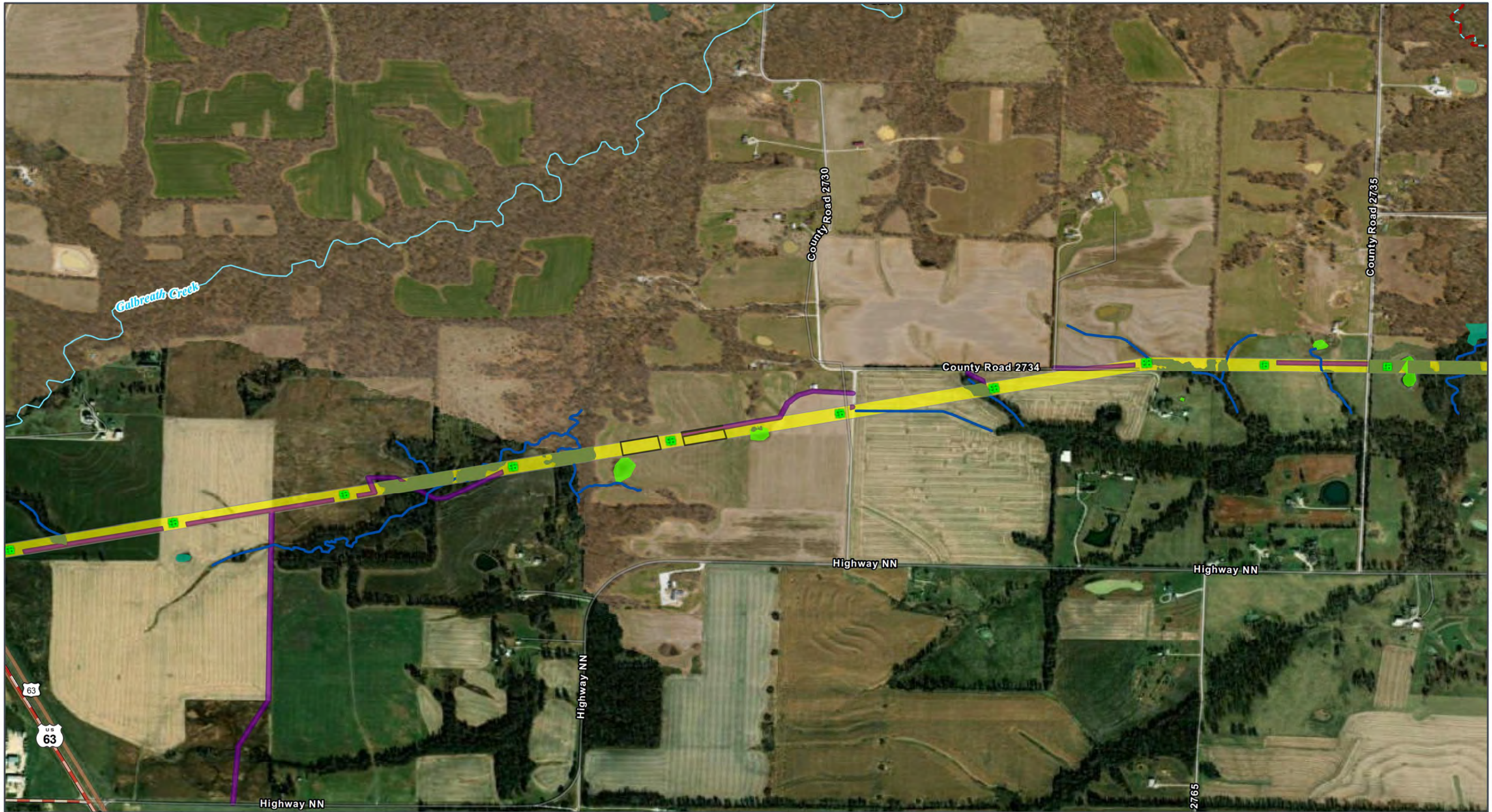
0 400 800 Feet

0 100 200 Meters

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 237 of 259

- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
- Hydrology**
- Delineated Stream
  - NHD Stream/River

- Delineated Wetland**
- Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)
- Transportation**
- U.S. Highway

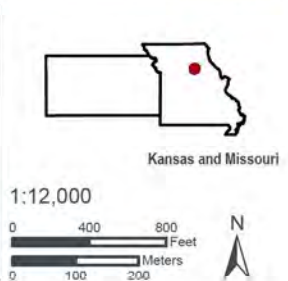
Impaired Waterway (303d)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Apoc: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 238 of 259

- Municipal Boundary Near the Project
- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
- Helipad / Fly Yard
- Pull Site/Tension Site
- Hydrology**
- Delineated Stream
- NHD Stream/River

- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)
- Transportation**
- U.S. Highway
- Railroad

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

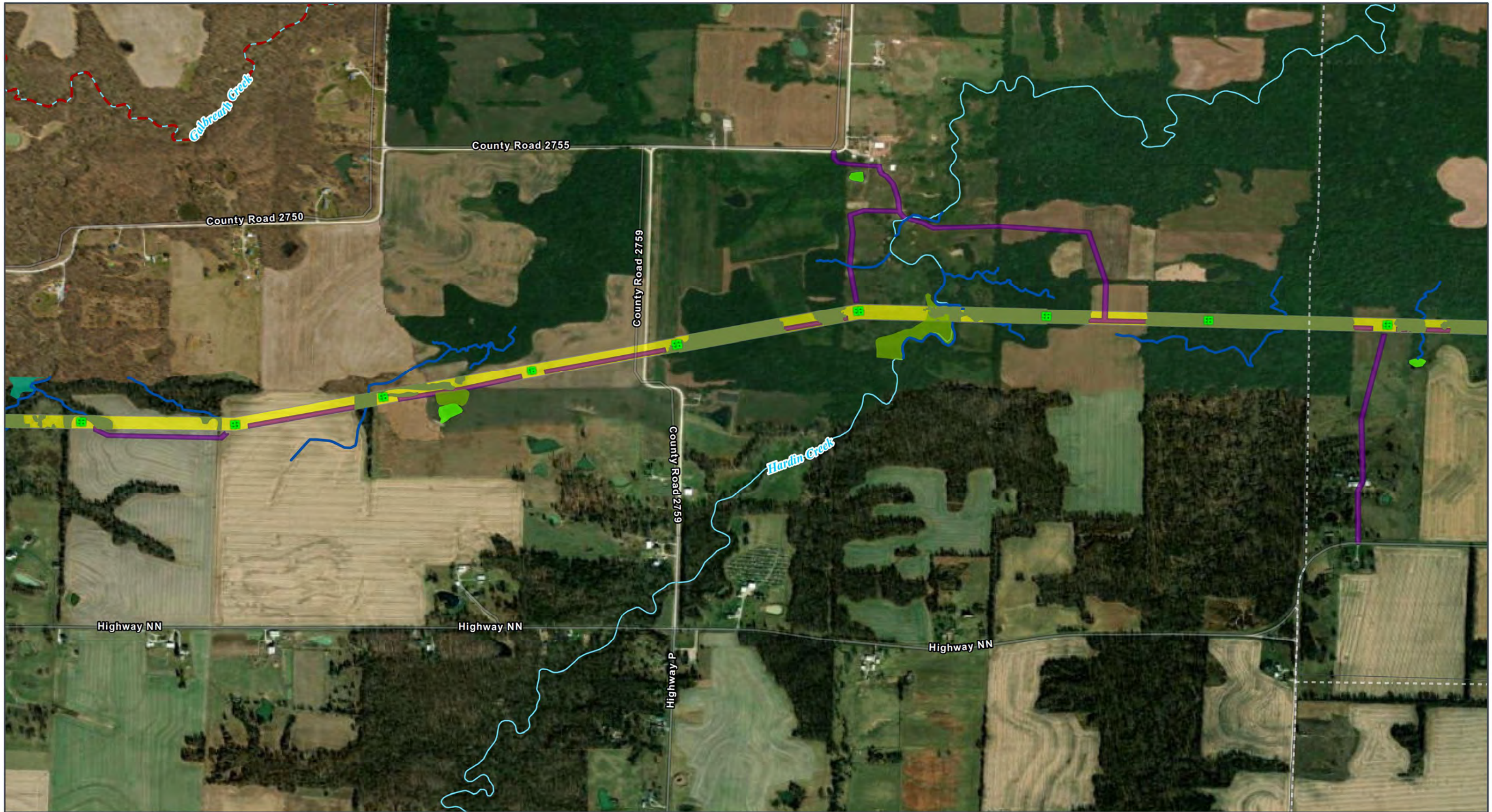
0 400 800 Feet

0 100 200 Meters

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 239 of 259

**ROW**  
Permanent Project Component  
Transmission Structure  
**Habitat Conversion**  
Vegetation Clearing

**Temporary Project Component**  
Access Road  
**Hydrology**  
Delineated Stream  
NHD Stream/River  
Impaired Waterway (303d)

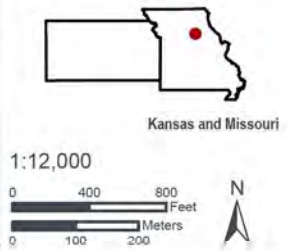
**Delineated Wetland**  
Palustrine Emergent (PEM)  
Palustrine Forested (PFO)  
Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aron: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 240 of 259

**ROW**  
Permanent Project Component  
Transmission Structure  
Habitat Conversion  
Vegetation Clearing

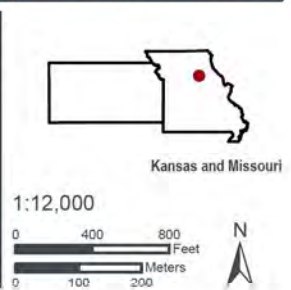
**Temporary Project Component**  
Access Road  
Pull Site/Tension Site  
**Hydrology**  
Delineated Stream

**NHD Stream/River**  
**Delineated Wetland**  
Palustrine Unconsolidated Bottom (PUB)

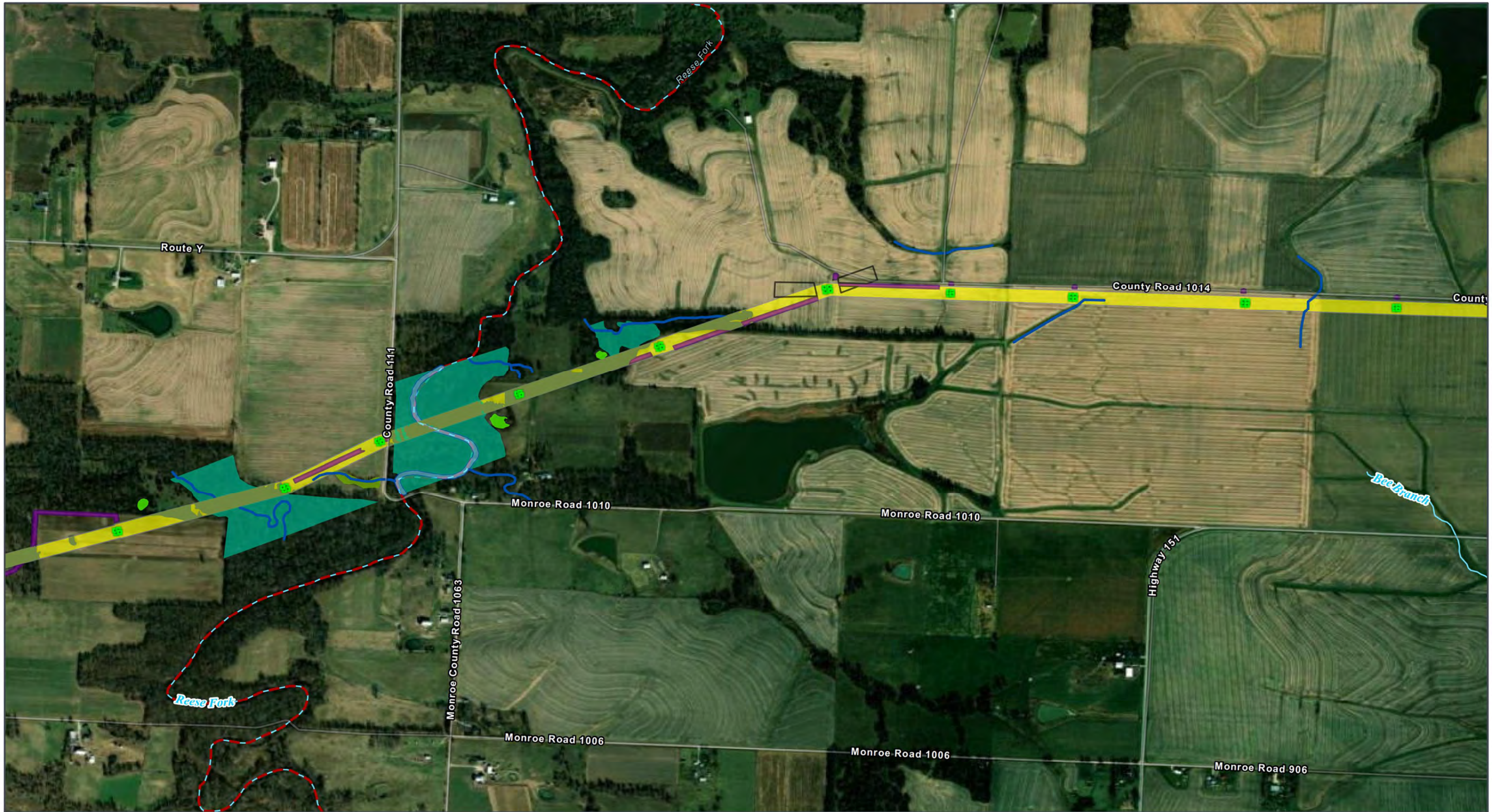
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
Apx: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 241 of 259

ROW

**Permanent Project Component**

Transmission Structure

**Habitat Conversion**

Vegetation Clearing

**Temporary Project Component**

Access Road

Pull Site/Tension Site

**Hydrology**

Delineated Stream

NHD Stream/River

Impaired Waterway (303d)

**Delineated Wetland**

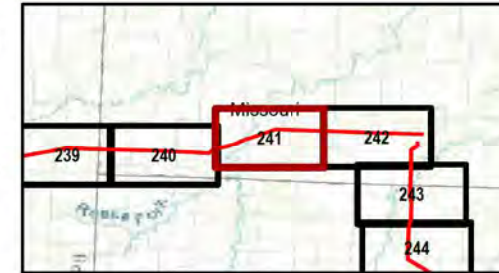
Palustrine Emergent (PEM)

Palustrine Forested (PFO)

Palustrine Unconsolidated Bottom (PUB)

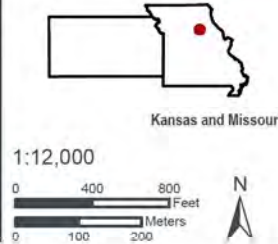
Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

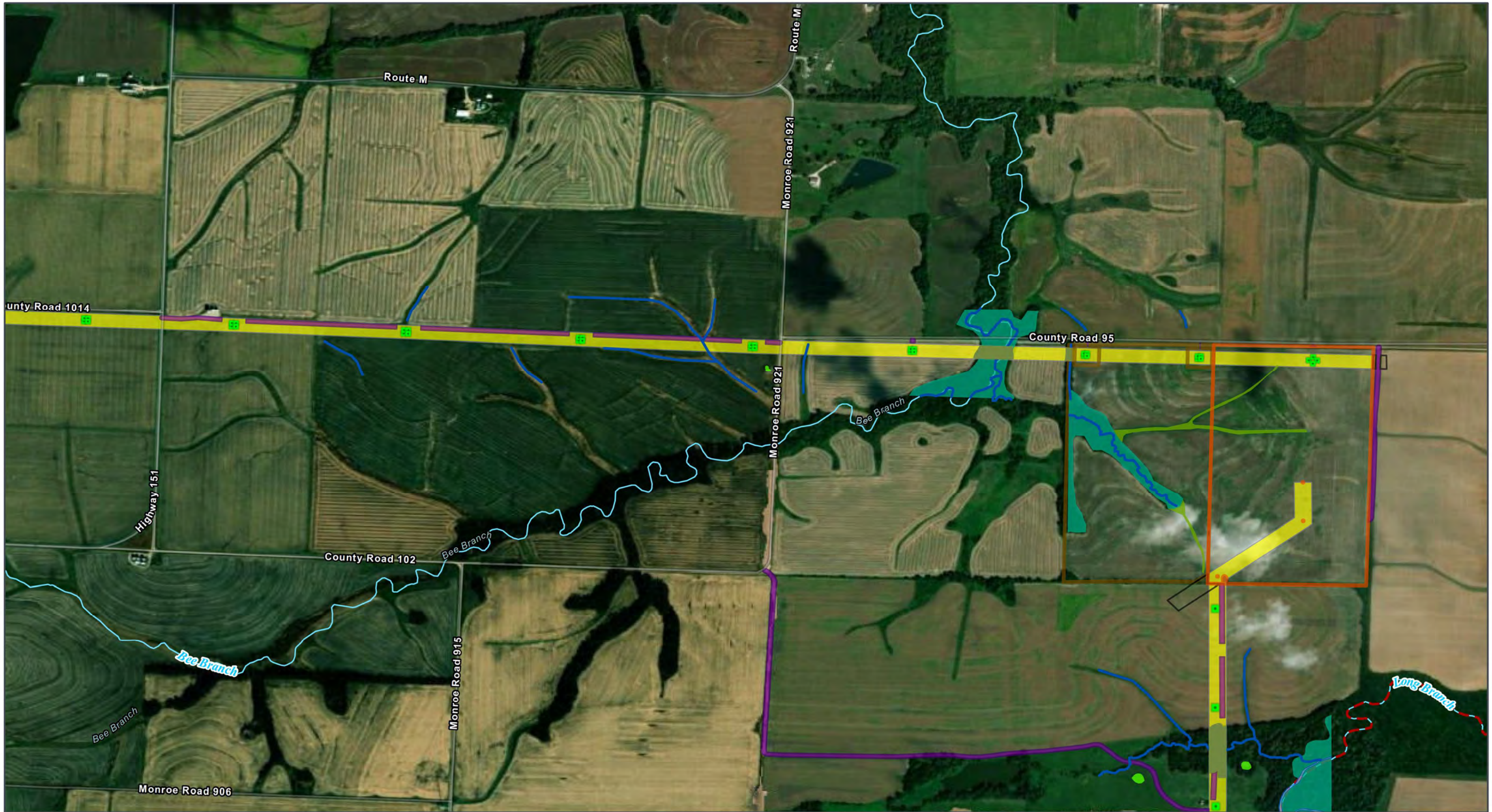


Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 242 of 259



- |  |  |   |
|--|--|---|
| <b>Permanent Project Component</b> <ul style="list-style-type: none"><li>Transmission Structure</li><li>Converter Station</li><li><b>Habitat Conversion</b><ul style="list-style-type: none"><li>Vegetation Clearing</li></ul></li></ul> | <b>Temporary Project Component</b> <ul style="list-style-type: none"><li>Access Road</li><li>Converter Station</li><li>Pull Site/Tension Site</li><li><b>Hydrology</b><ul style="list-style-type: none"><li>Delineated Stream</li><li>NHD Stream/River</li></ul></li></ul> | <ul style="list-style-type: none"><li>Impaired Waterway (303d)</li><li>Delineated Stream</li><li><b>Delineated Wetland</b><ul style="list-style-type: none"><li>Palustrine Emergent (PEM)</li><li>Palustrine Forested (PFO)</li><li>Palustrine Unconsolidated Bottom (PUB)</li><li>Delineated Waterbody</li></ul></li></ul> |
|--|--|---|

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online, accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aron: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N





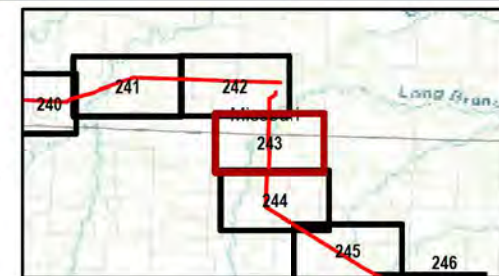
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 243 of 259

**Permanent Project Component**  
Transmission Structure  
**Habitat Conversion**  
Vegetation Clearing

**Temporary Project Component**  
Access Road  
**Hydrology**  
NHD Stream/River  
Impaired Waterway (303d)  
Delineated Stream

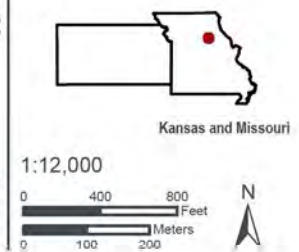
**Delineated Wetland**  
Palustrine Emergent (PEM)  
Palustrine Forested (PFO)  
Palustrine Unconsolidated Bottom (PUB)  
Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







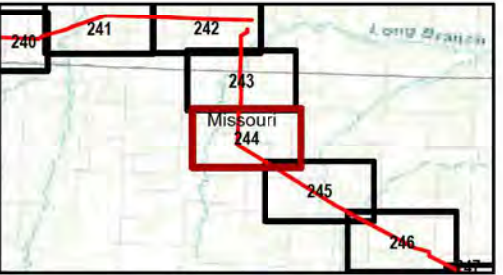
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 244 of 259

- Permanent Project Component**
- Transmission Structure
  - Habitat Conversion**
  - Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
  - Hydrology**
  - NHD Stream/River
  - Impaired Waterway (303d)
  - Delineated Stream

- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Scrub-Shrub (PSS)
  - Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





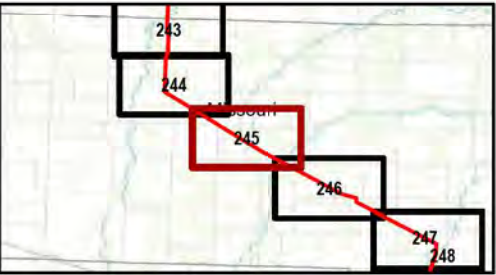
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 245 of 259

- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

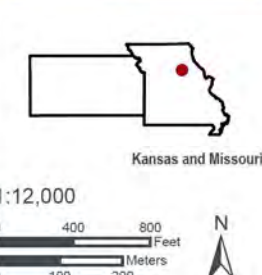
- Temporary Project Component**
- Access Road
- Hydrology**
- NHD Stream/River
- Delineated Stream

- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Unconsolidated Bottom (PUB)

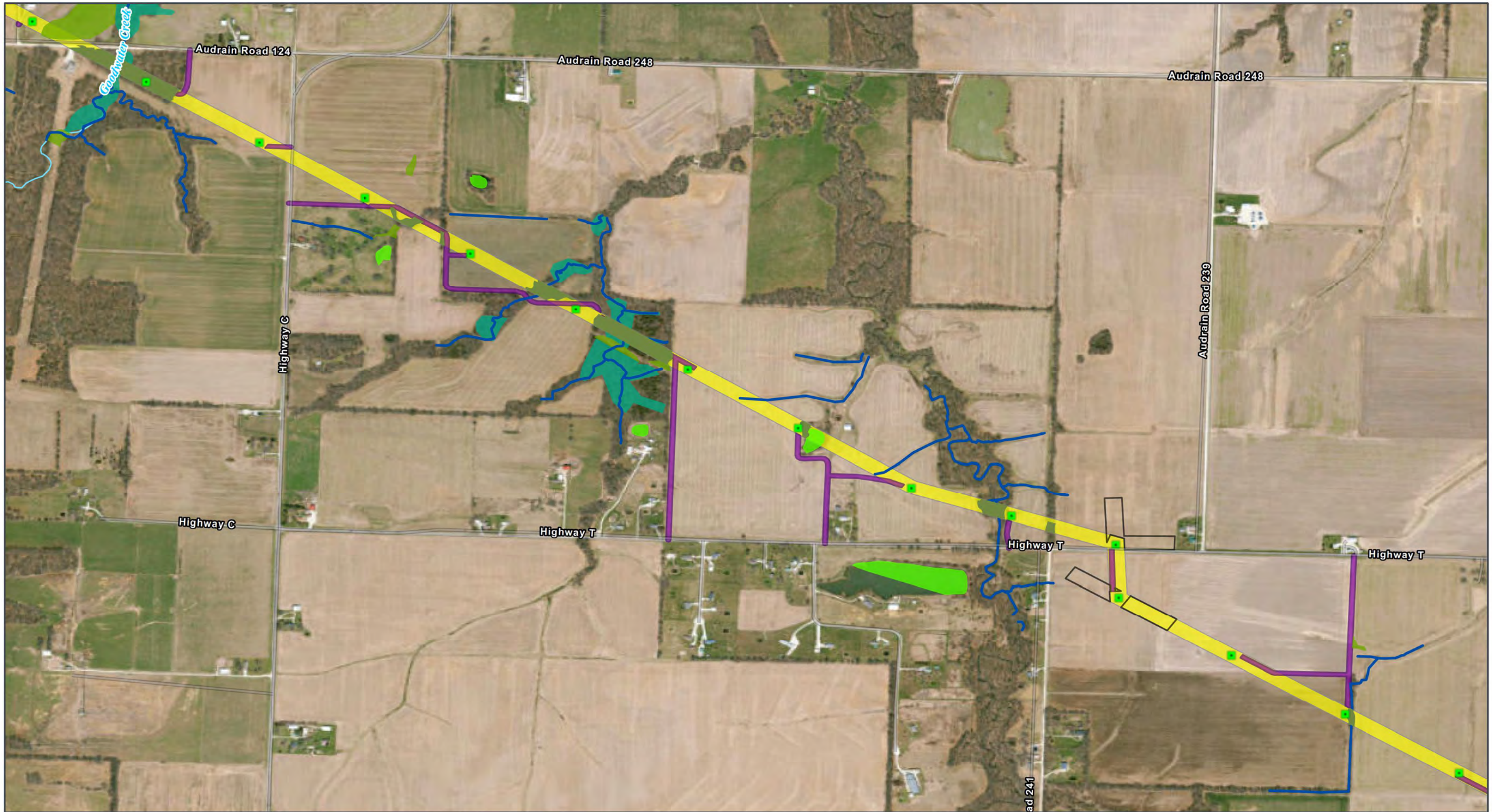
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







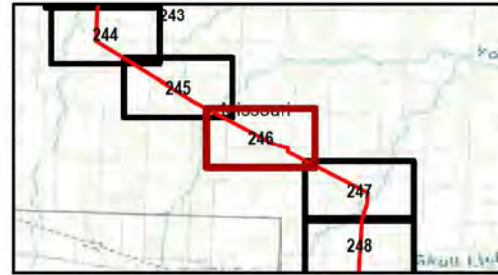
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 246 of 259

- ROW**
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
- Hydrology**
- NHD Stream/River

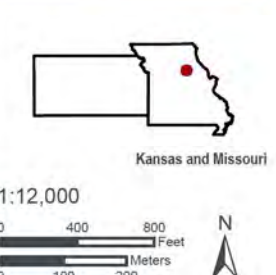
- Delineated Stream**
- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

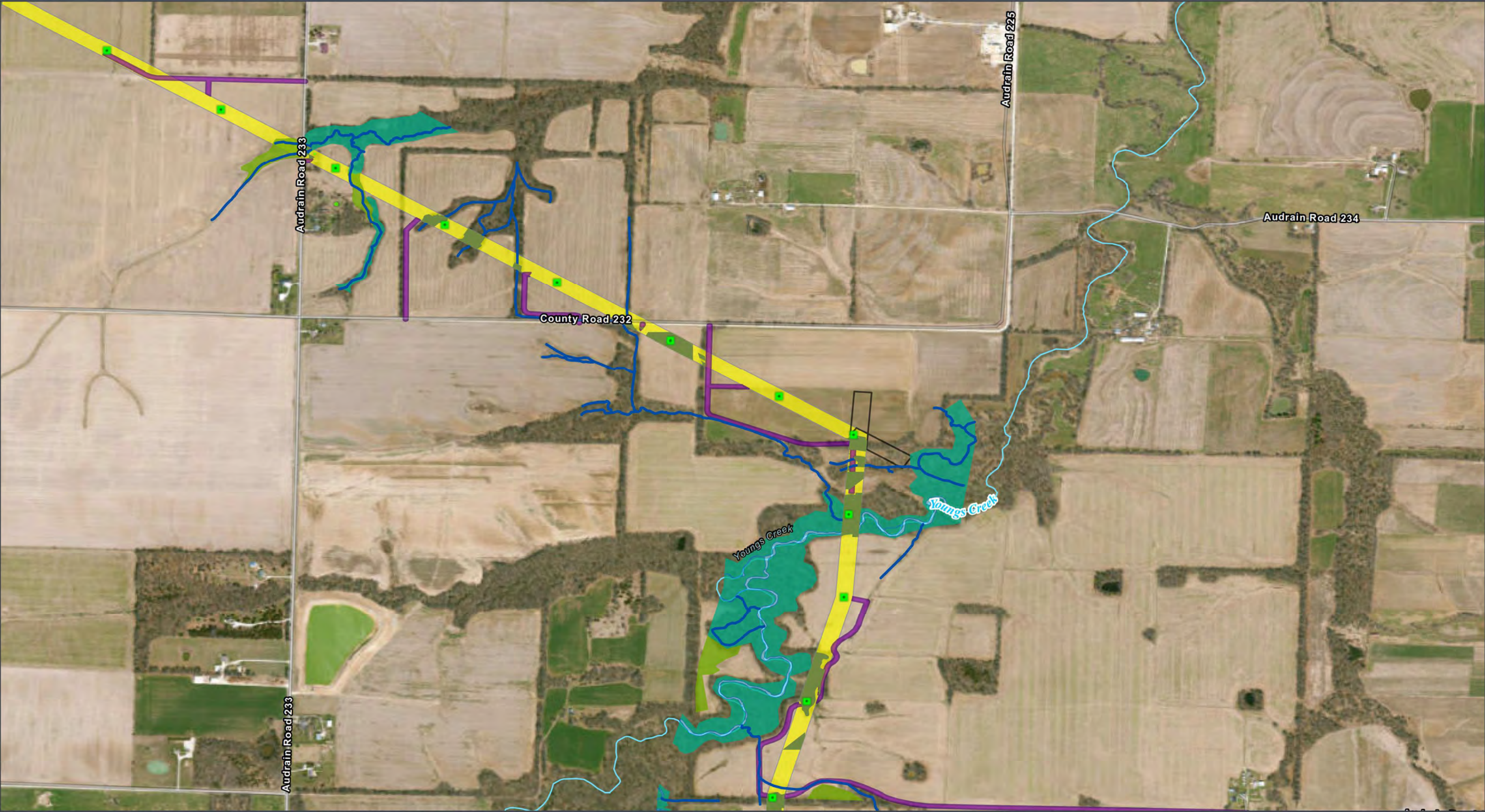


Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 247 of 259

- ROW**
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
- Hydrology**
- NHD Stream/River
  - Delineated Stream

- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)
  - Delineated Waterbody

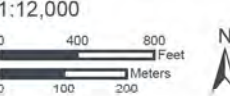
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



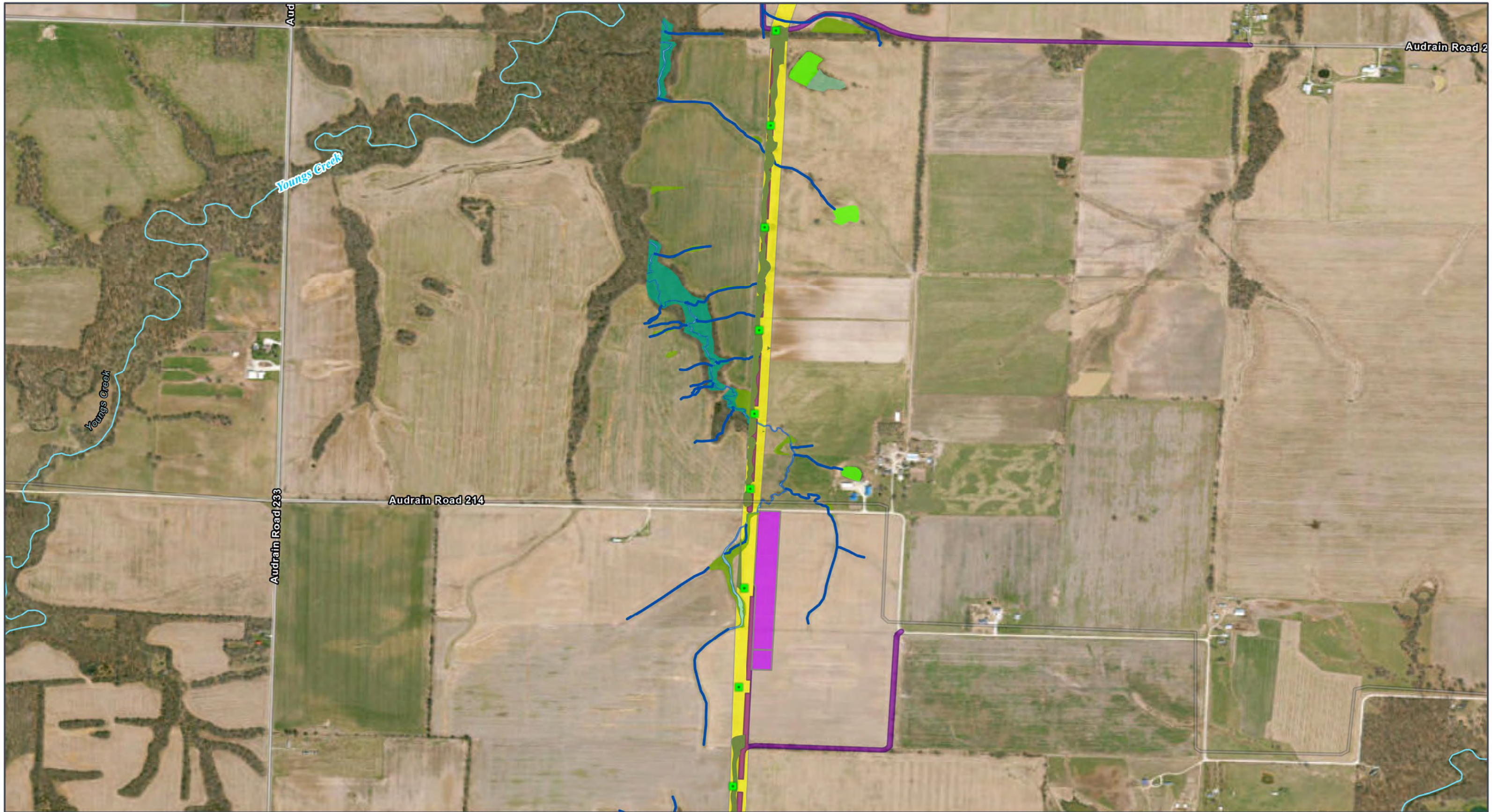
Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W



Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aero: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 248 of 259

- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
- Helipad / Fly Yard
- Hydrology**
- NHD Stream/River
- Delineated Stream

- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Scrub-Shrub (PSS)
- Palustrine Unconsolidated Bottom (PUB)
- Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
Aron: WetlandMapBook\_12K

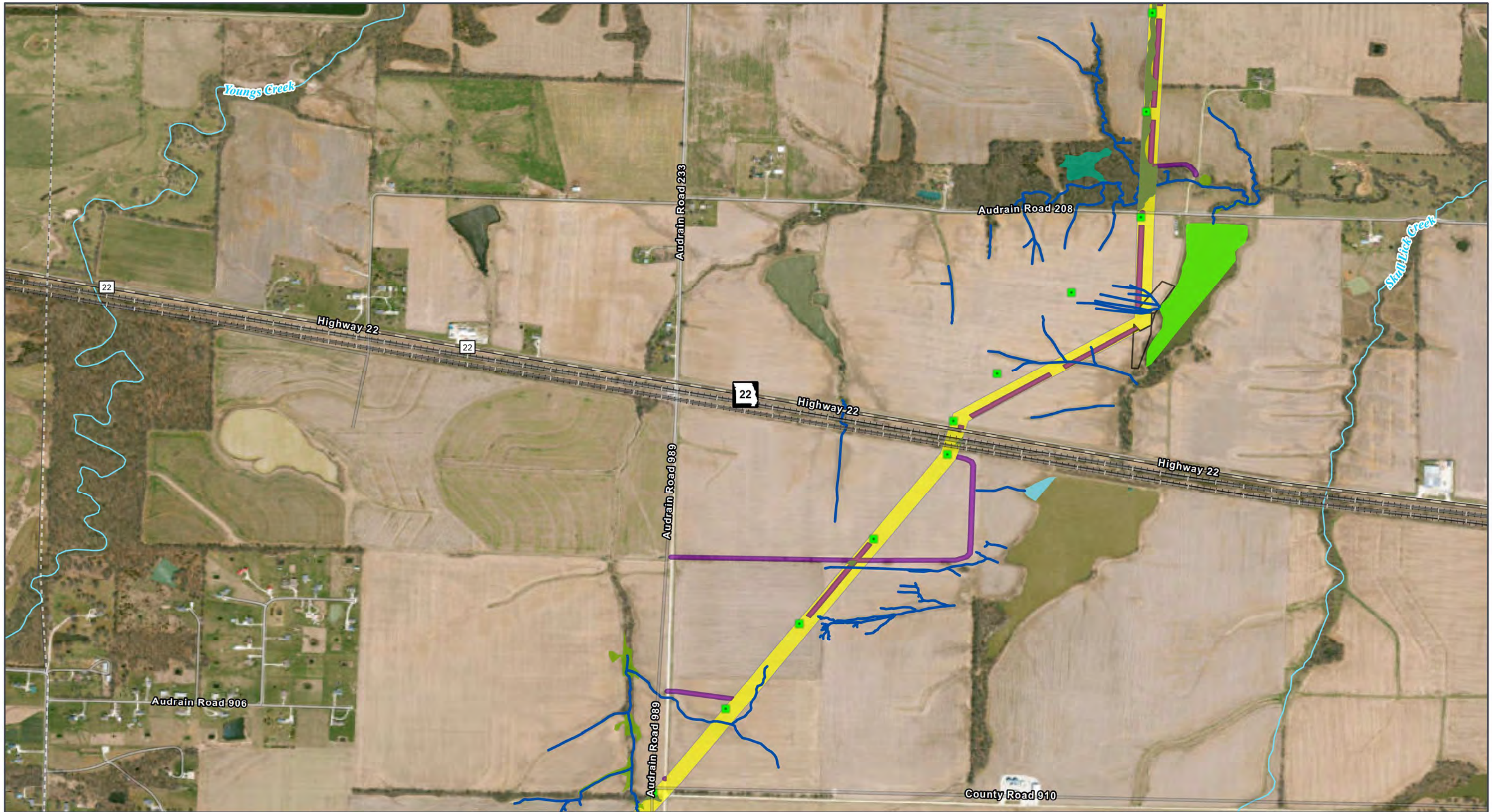
1:12,000

0 400 800 Feet

0 100 200 Meters

N





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 249 of 259

- ROW
- Permanent Project Component**
  - Transmission Structure
- Habitat Conversion**
  - Vegetation Clearing
- Temporary Project Component**
  - Access Road

Pull Site/Tension Site

**Hydrology**

- NHD Stream/River
- Delineated Stream

**Delineated Wetland**

- Lacustrine Unconsolidated Bottom (L1U)

Palustrine Emergent (PEM)

Palustrine Forested (PFO)

Palustrine Unconsolidated Bottom (PUB)

**Transportation**

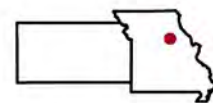
- State Highway
- Railroad

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



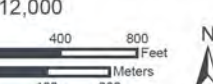
Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
Aron: WetlandMapBook\_12K

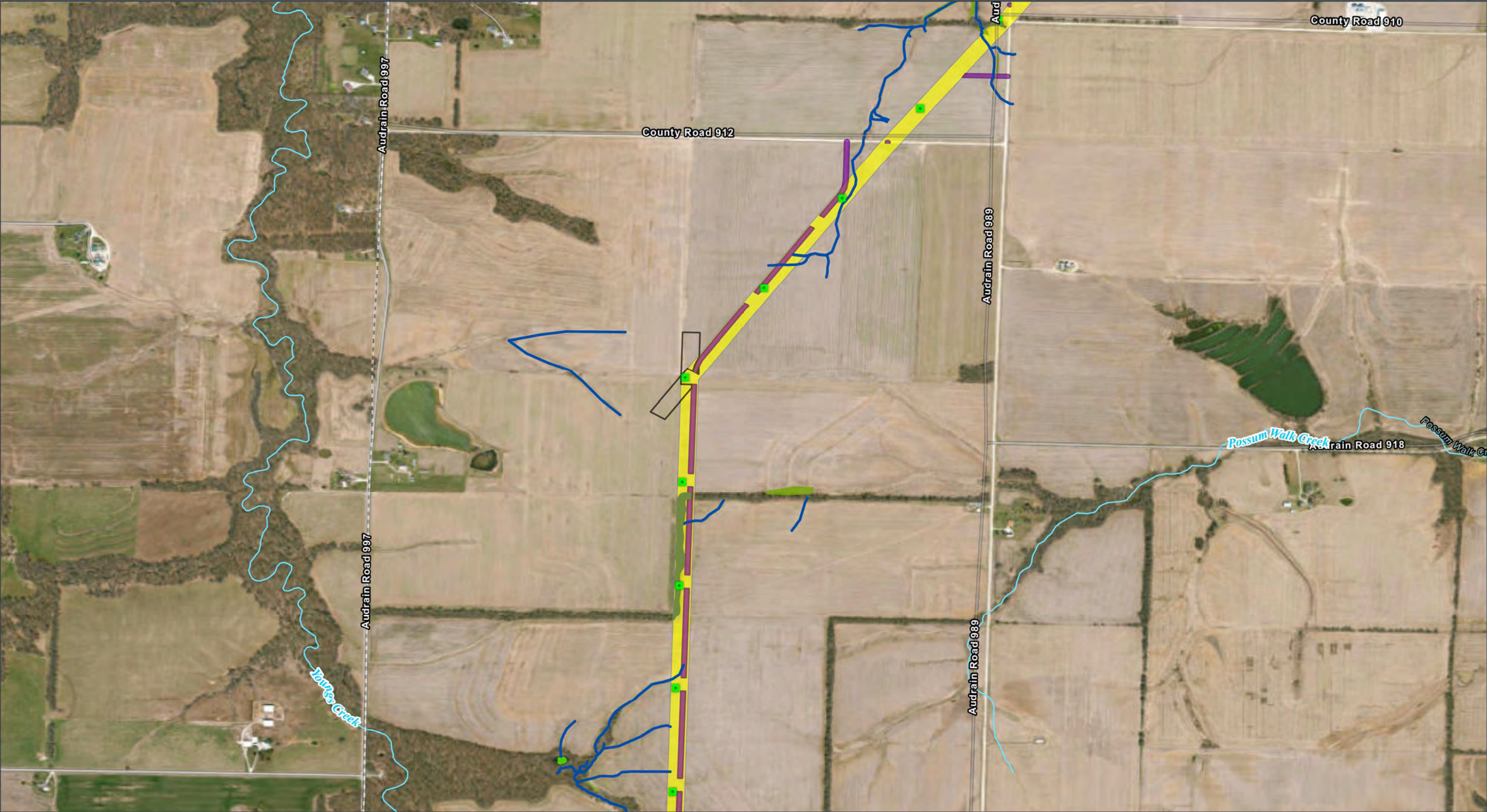


Kansas and Missouri

1:12,000







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**Wetlands Map Book**

Map 250 of 259

**Permanent Project Component**

- Transmission Structure

**Habitat Conversion**

- Vegetation Clearing

**Temporary Project Component**

- Access Road
- Pull Site/Tension Site

**Hydrology**

- NHD Stream/River

**Delineated Stream**

- Delineated Stream

**Delineated Wetland**

- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12K  
Aon: WetlandMapBook\_12K

1:12,000

0 400 800 Feet  
0 100 200 Meters

N





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**Wetlands Map Book**

Map 251 of 259

**Permanent Project Component**

- Transmission Structure
- Habitat Conversion
  - Vegetation Clearing

**Temporary Project Component**

- Access Road
- Pull Site/Tension Site

**Hydrology**

- NHD Stream/River

**Delineated Wetland**

- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)
- Delineated Waterbody

**Delineated Stream**

- Delineated Stream

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aron: WetlandMapBook\_12k

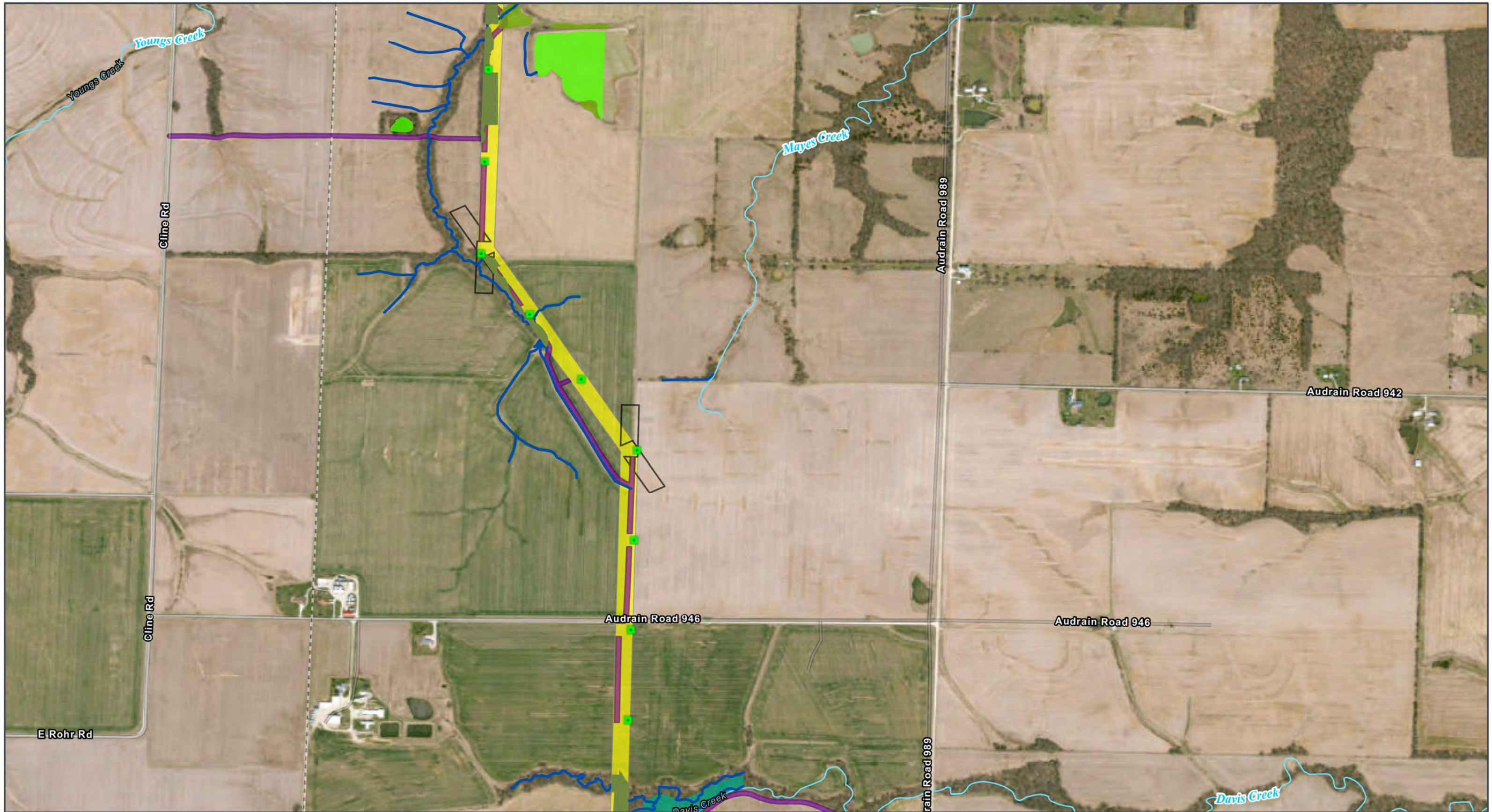
1:12,000

0 400 800 Feet

0 100 200 Meters

N





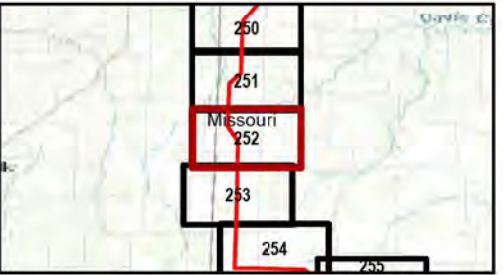
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 252 of 259

- Permanent Project Component**
- Transmission Structure
  - Habitat Conversion**
  - Vegetation Clearing

- Temporary Project Component**
- Access Road
  - Pull Site/Tension Site
  - Hydrology**
  - NHD Stream/River

- Delineated Wetland**
- Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**Wetlands Map Book**

Map 253 of 259

**ROW**

**Permanent Project Component**

- Transmission Structure

**Habitat Conversion**

- Vegetation Clearing

**Temporary Project Component**

- Access Road

**Hydrology**

- NHD Stream/River
- Delineated Stream

**Delineated Wetland**

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Unconsolidated Bottom (PUB)
- NHD Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

Missouri 253

Kansas and Missouri

GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online, accessed November 2024  
Updated: 11/26/2024  
Project No: 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

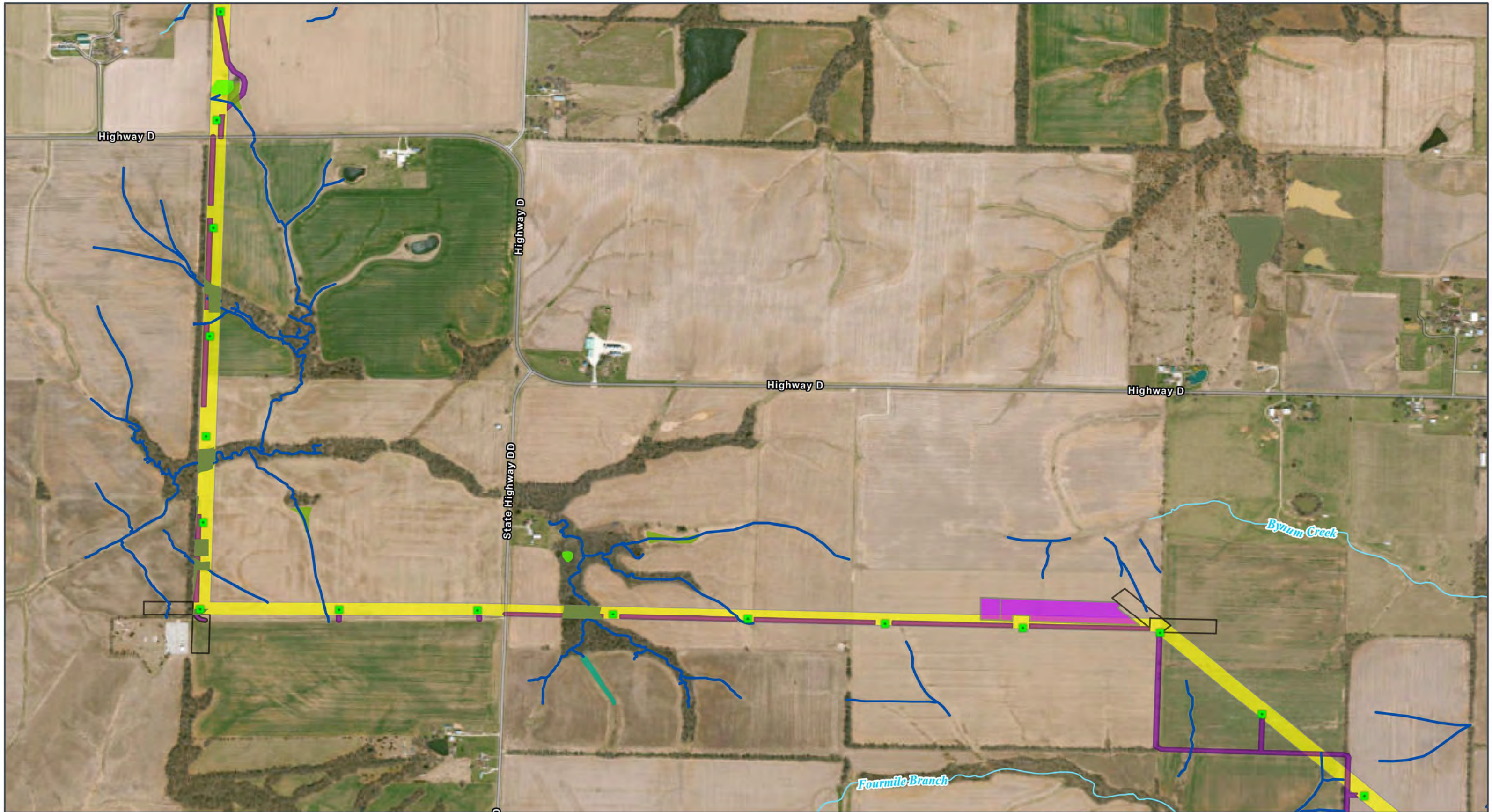
1:12,000

0 400 800 Feet

0 100 200 Meters

N





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 254 of 259

ROW

**Permanent Project Component**

Transmission Structure

**Habitat Conversion**

Vegetation Clearing

**Temporary Project Component**

Access Road

Helipad / Fly Yard

Pull Site/Tension Site

**Hydrology**

NHD Stream/River

Delineated Stream

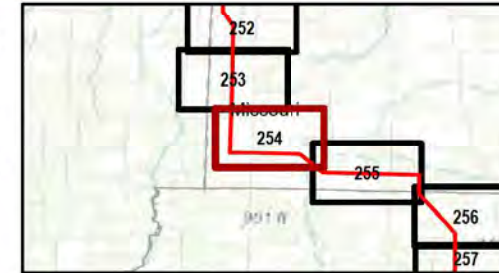
**Delineated Wetland**

Palustrine Emergent (PEM)

Palustrine Forested (PFO)

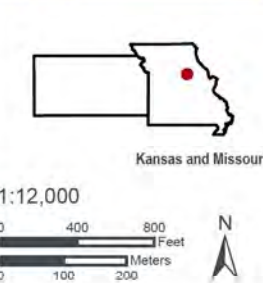
Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented

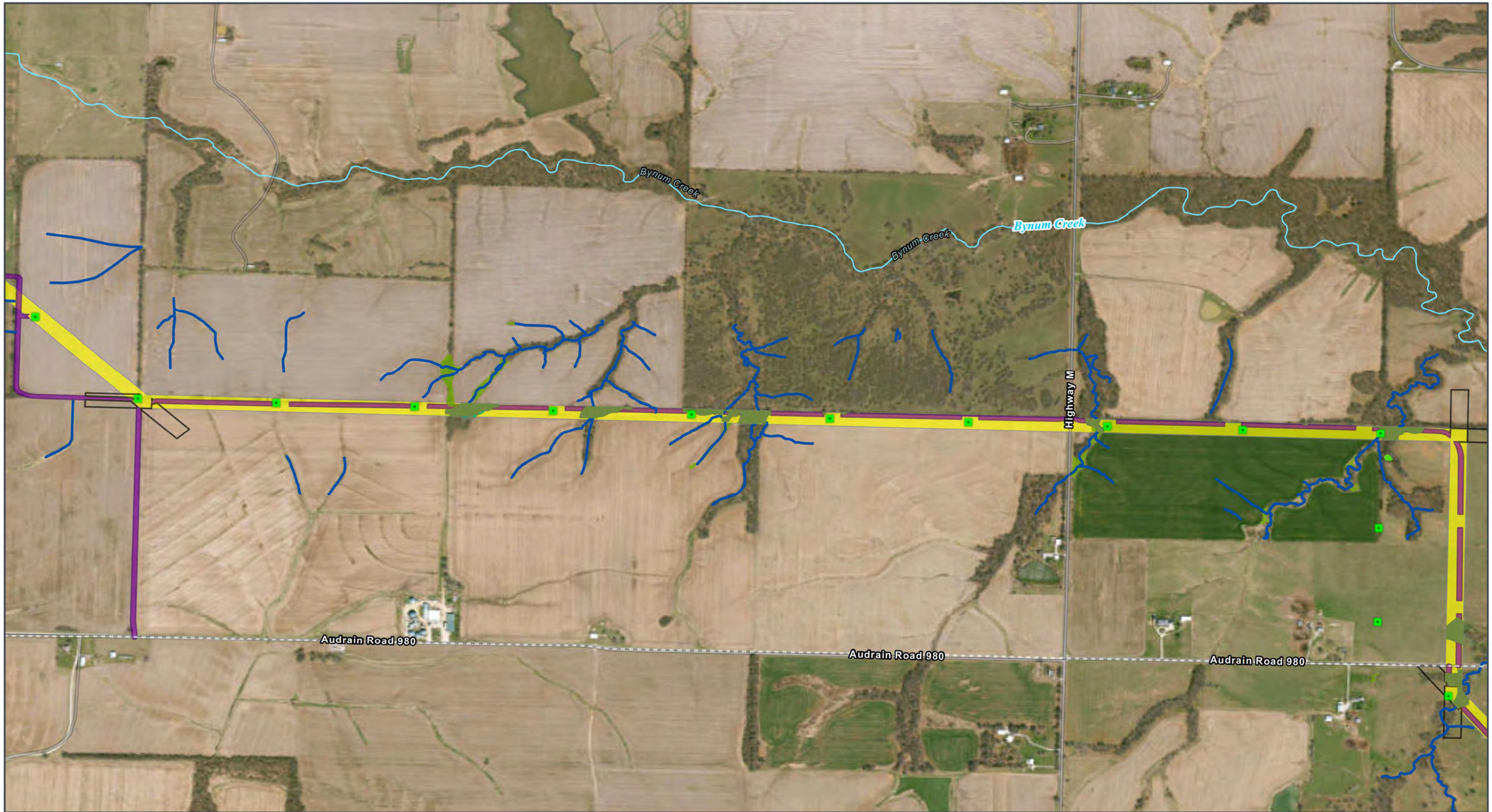


Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







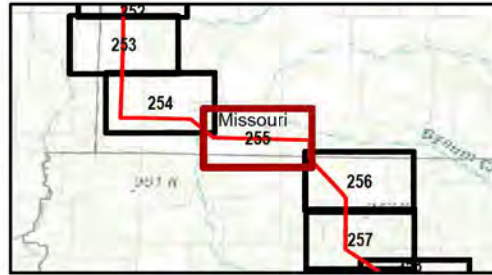
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 255 of 259

**Permanent Project Component**  
Transmission Structure  
**Habitat Conversion**  
Vegetation Clearing

**Temporary Project Component**  
Access Road  
Pull Site/Tension Site  
**Hydrology**  
NHD Stream/River

**Delineated Stream**  
**Delineated Wetland**  
Palustrine Emergent (PEM)  
Palustrine Forested (PFO)  
Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



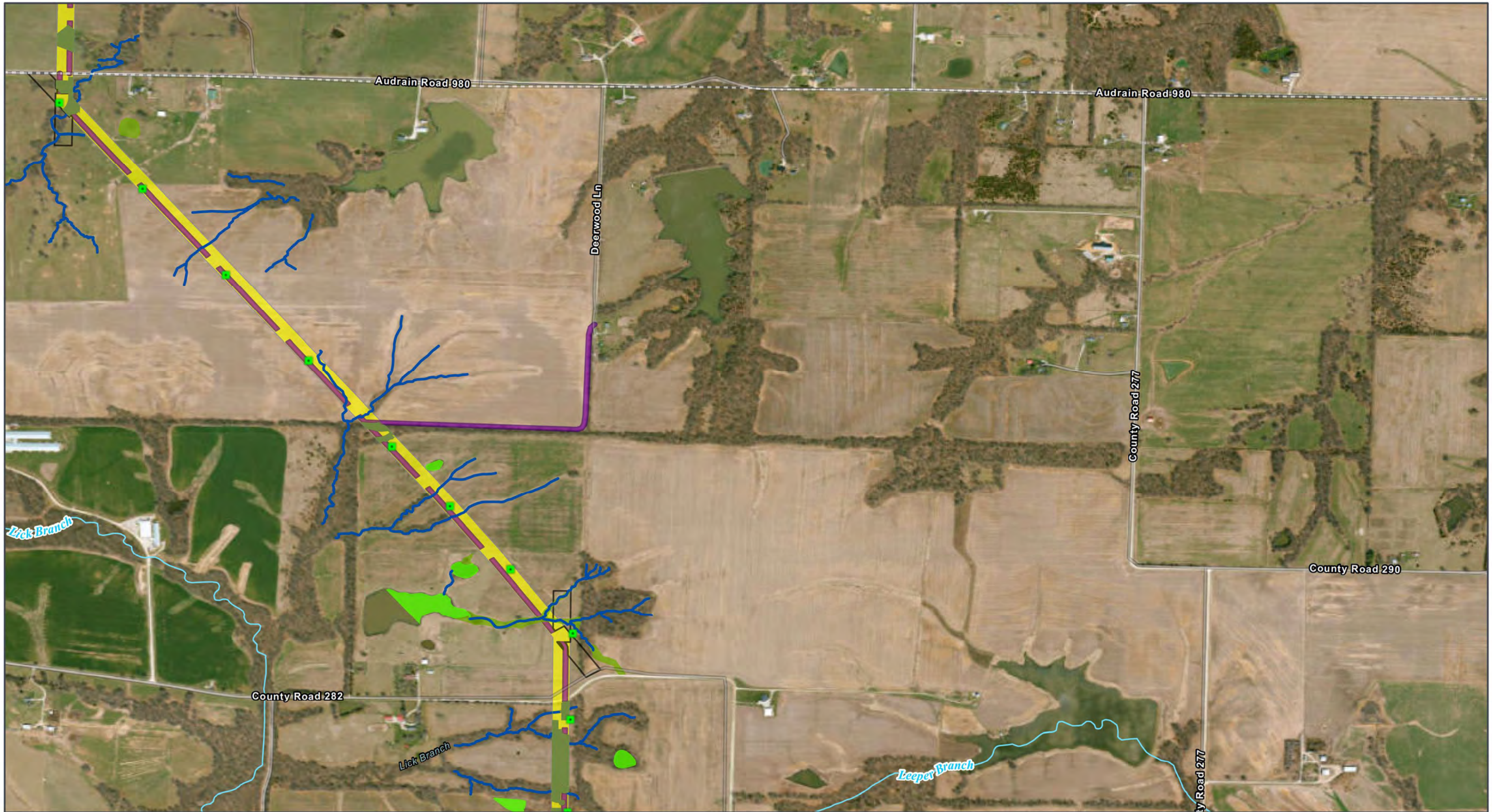
Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k

1:12,000  
0 400 800 Feet  
0 100 200 Meters

Kansas and Missouri





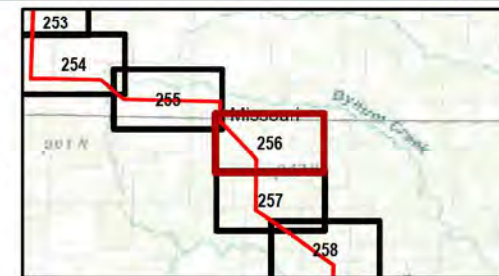
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 256 of 259

- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

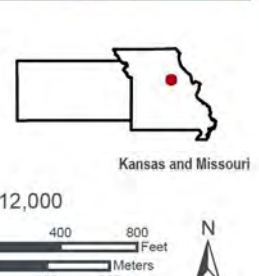
- Temporary Project Component**
- Access Road
- Pull Site/Tension Site
- Hydrology**
- NHD Stream/River

- Delineated Stream
- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 257 of 259

ROW

**Permanent Project Component**

- Transmission Structure
- Habitat Conversion
- Vegetation Clearing

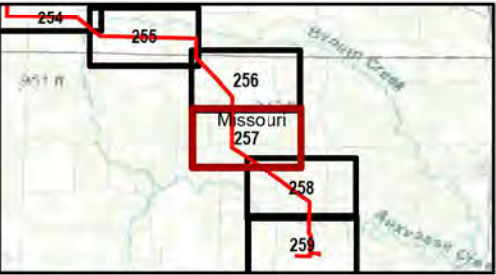
**Temporary Project Component**

- Access Road
- Pull Site/Tension Site
- Hydrology
- NHD Stream/River

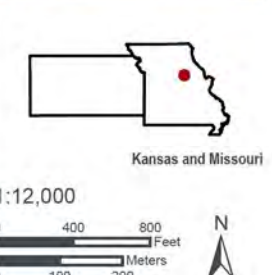
**Delineated Stream**

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Unconsolidated Bottom (PUB)

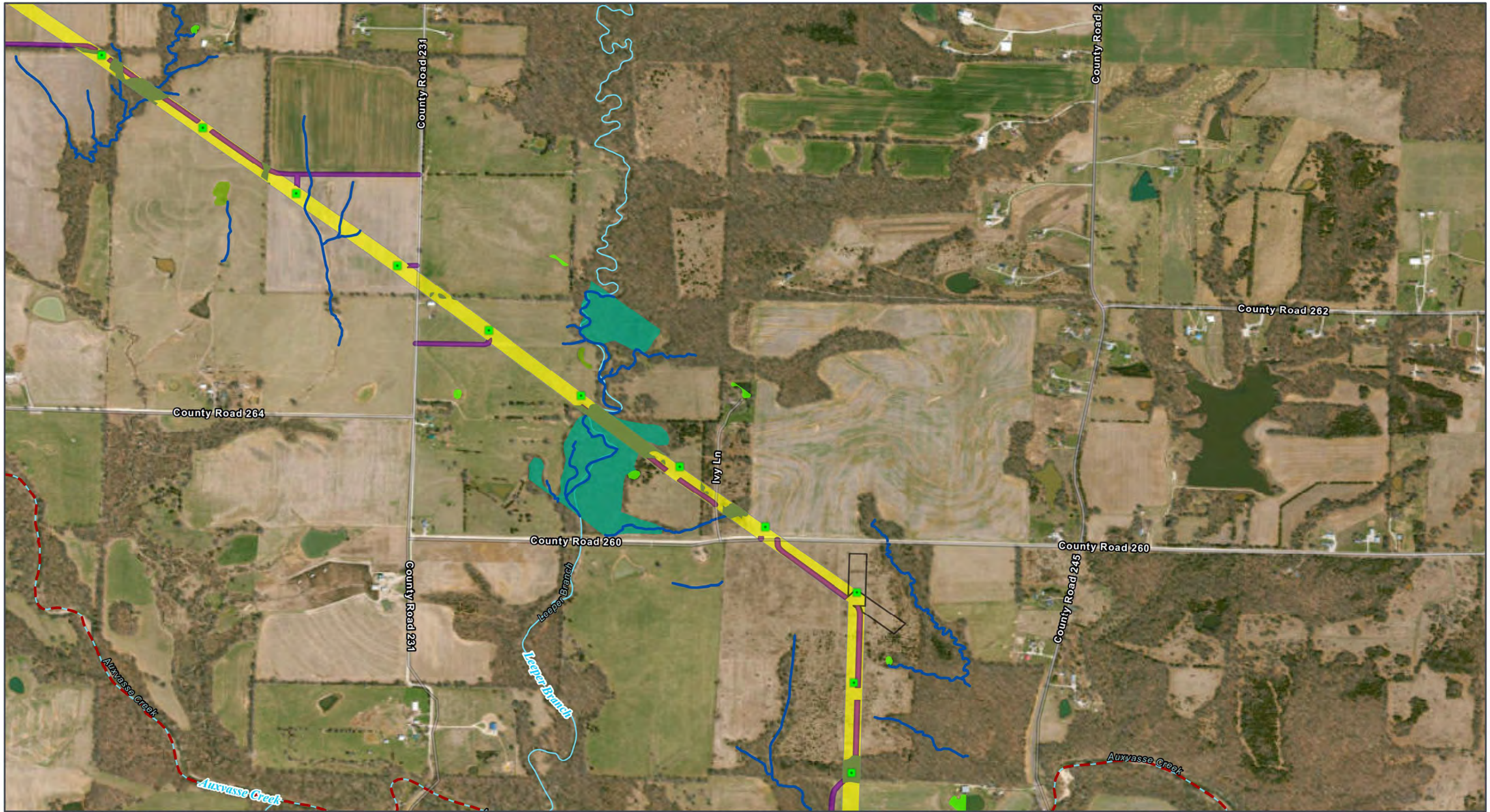
All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W  
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
From: WetlandMapBook\_12k







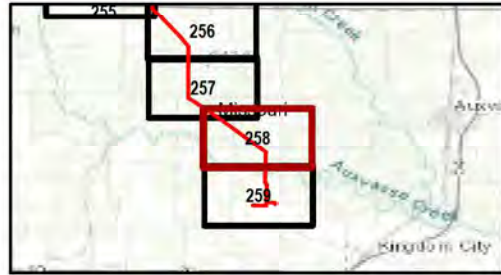
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 258 of 259

- ROW
- Permanent Project Component**
- Transmission Structure
- Habitat Conversion**
- Vegetation Clearing

- Temporary Project Component**
- Access Road
- Pull Site/Tension Site
- Hydrology**
- NHD Stream/River
- Impaired Waterway (303d)

- Delineated Stream**
- Delineated Wetland**
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Unconsolidated Bottom (PUB)

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aron: WetlandMapBook\_12k

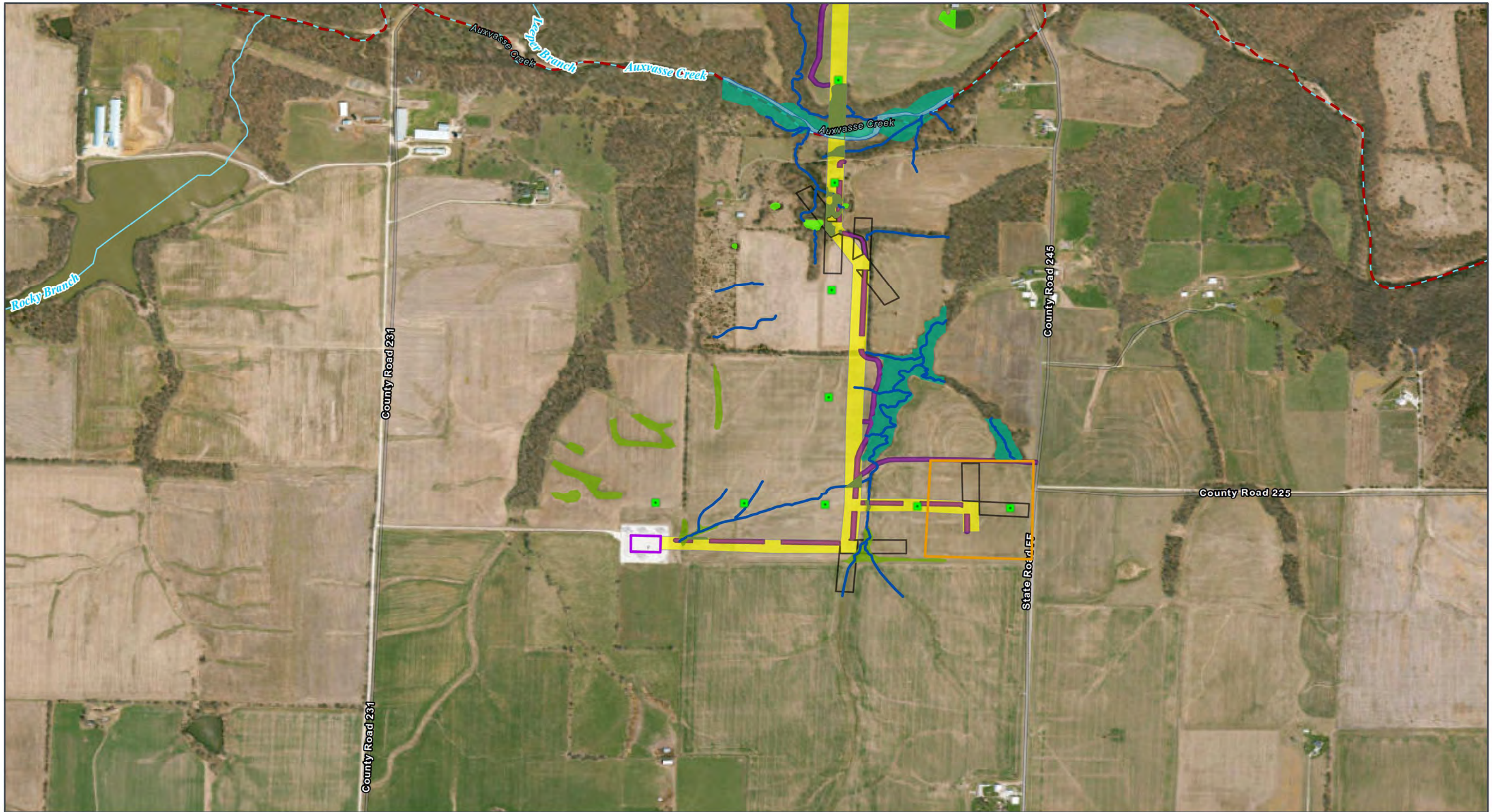
1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri





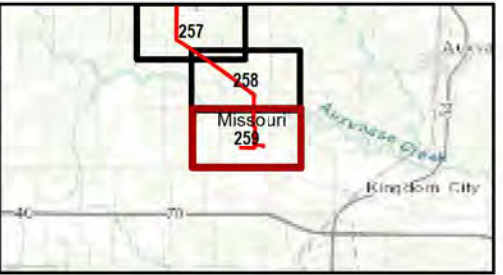
GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**Wetlands Map Book**  
Map 259 of 259

- Existing Burns Substation
- Existing McCredie Substation
- ROW
- Permanent Project Component**
  - Transmission Structure
- Habitat Conversion**
  - Vegetation Clearing

- Temporary Project Component**
  - Access Road
  - Pull Site/Tension Site
- Hydrology**
  - NHD Stream/River
  - Impaired Waterway (303d)
  - Delineated Stream

- Delineated Wetland**
  - Palustrine Emergent (PEM)
  - Palustrine Forested (PFO)
  - Palustrine Unconsolidated Bottom (PUB)
  - Delineated Waterbody

All disturbance areas are likely an over-estimation of direct impacts and based on assumptions presented in the Chapter 2 disturbance model (Table 2-1). These impact areas will be refined and finalized once field surveys are complete and avoidance and/or mitigation measures are implemented



Kansas and Missouri  
GCS North American 1983  
38.3365°N 95.5783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 60694559  
Layout: Wetland Mapbook 12k  
Aero: WetlandMapBook\_12k

1:12,000

0 400 800 Feet  
0 100 200 Meters

N

Kansas and Missouri



**Grain Belt Express Transmission Line  
Environmental Impact Statement**

**Appendix 3.6: Programmatic Agreement**



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**WHEREAS**, Grain Belt Express LLC (Applicant) has applied for, and the U.S. Department of Energy (DOE) Loan Programs Office (DOE LPO) is considering the issuance of, a loan guarantee under Section 1703 of the Energy Policy Act of 2005 for the construction and energization of the Grain Belt Express Transmission Project, Phase 1 (Project); and,

**WHEREAS**, DOE LPO has determined the Project constitutes an Undertaking that may have an adverse effect on historic properties listed or eligible for inclusion in the National Register of Historic Places (NRHP), and is therefore preparing this Programmatic Agreement (PA) under Section 106 of the National Historic Preservation Act of 1966 (54 United States Code [U.S.C.] section [§] 306108) (NHPA) and its implementing regulations, “Protection of Historic Properties” (36 Code of Federal Regulations [CFR] Part 800); and,

**WHEREAS**, the Project includes a 600-kilovolt (kV) overhead high-voltage direct current (HVDC) transmission line with supporting infrastructure between interconnection points in southwest Kansas and northeast Missouri. The HVDC line will be capable of delivering approximately 5,000 megawatts of power. An overview map of the Project is included in Attachment 3. The HVDC line spans 542 miles across private land in Ford, Hodgeman, Edwards, Pawnee, Barton, Russell, Osborne, Mitchell, Cloud, Washington, Marshall, Nemaha, Brown, and Doniphan Counties in Kansas, and Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, and Monroe Counties in Missouri. The Project also includes optical regeneration facilities and associated driveways, an HVDC converter station, alternating current (AC) switchyard, and 0.2-mile AC transmission line in Ford County, Kansas to connect to the Kansas electric grid, as well as an HVDC converter station and AC switchyard in Monroe County, Missouri, the “Tiger Connector,” an approximate 36-mile 345-kVAC transmission line across private land in Monroe, Audrain and Callaway Counties, Missouri to connect to electric grids in Missouri, and temporary construction workspaces, temporary access routes, concrete batch plants, and fly yard and helipads; and,

**WHEREAS**, DOE LPO is consulting with the Kansas State Historic Preservation Office (KS SHPO) and the Missouri State Historic Preservation Office (MO SHPO), who are Signatories to the PA pursuant to 36 CFR § 800.6(c)(1)(ii); and,

**WHEREAS**, DOE LPO has notified the Advisory Council on Historic Preservation (ACHP) pursuant to Section 106 and its implementing regulations (36 CFR § 800.2(b) and 36 CFR § 800.6(a)(1)), and the



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

ACHP has elected to participate in consultation and is a Signatory to the PA (36 CFR § 800.6(c)(1)(ii)); and,

**WHEREAS**, DOE LPO is consulting with the Applicant regarding the potential effects of the Undertaking on historic properties, and because the Applicant has responsibilities under this PA, DOE LPO has invited them to be an Invited Signatory to the PA (36 CFR § 800.6(c)(2)(iii)); and,

**WHEREAS**, DOE LPO recognizes its government-to-government obligation to consult with Federally-recognized Native American Indian Tribes (Tribes) (36 CFR § 800.16(m)) that may attach religious and cultural significance to historic properties that may be affected by the Undertaking and will continue to consult with affected Tribes regarding their concerns under Section 106; and,

**WHEREAS**, DOE LPO invited the following Tribes to participate as consulting parties: Absentee-Shawnee Tribe of Indians of Oklahoma; Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cheyenne and Arapaho Tribes, Oklahoma; Comanche Nation, Oklahoma; Delaware Nation, Oklahoma; Delaware Tribe of Indians; Eastern Shawnee Tribe of Oklahoma; Fort Sill Apache Tribe of Oklahoma; Ho-Chunk Nation of Wisconsin; Iowa Tribe of Kansas and Nebraska; Iowa Tribe of Oklahoma; Kaw Nation, Oklahoma; Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas; Kickapoo Tribe of Oklahoma; Kiowa Indian Tribe of Oklahoma; Miami Tribe of Oklahoma; Northern Arapaho Tribe of the Wind River Reservation, Wyoming; Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana; Oglala Sioux Tribe; Omaha Tribe of Nebraska; Otoe-Missouria Tribe of Indians, Oklahoma; Pawnee Nation of Oklahoma; Ponca Tribe of Indians of Oklahoma; Ponca Tribe of Nebraska; Prairie Band Potawatomi Nation; Sac & Fox Nation of Missouri in Kansas and Nebraska; Sac & Fox Nation, Oklahoma; Sac & Fox Tribe of the Mississippi in Iowa; Seneca-Cayuga Nation; Shawnee Tribe; The Osage Nation; Wyandotte Nation; Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma; and,

**WHEREAS**, the following Tribes have elected to consult on the Undertaking pursuant to 36 CFR § 800.2(c)(ii) and this PA pursuant to 36 CFR § 800.6(c)(3): Delaware Nation, Oklahoma; Iowa Tribe of Kansas and Nebraska; Pawnee Nation of Oklahoma; Ponca Tribe of Indians of Oklahoma; Northern Arapaho Tribe of the Wind River Reservation, Wyoming; Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana; The Osage Nation; Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie); and,

**WHEREAS**, DOE LPO acknowledges that Tribes possess special expertise in assessing the NRHP eligibility of properties with religious and cultural significance to them and that Tribal leaders of the consulting Tribes, and, as appropriate, their representatives, which may include Tribal Historic Preservation Officers (THPOs), may decide who meets the qualifications and standards as defined by their Tribes for review of the Undertaking on behalf of the Tribe; and,

**WHEREAS**, DOE LPO and the Applicant have invited consulting Tribes to participate in identification efforts by sharing information related to their areas of interest and through the engagement of Tribal monitors during archaeological field investigations and construction activities in the Tribes' identified areas of interest; and,

**WHEREAS**, The Osage Nation has accepted to participate in consultation on the Undertaking and this PA, and the Undertaking crosses their ancestral territory, and The Osage Nation has shared information regarding their Areas of Interest along the Project route, and The Osage Nation is engaged in providing Tribal Monitors for archaeological field surveys within their Areas of Interest, and The Osage Nation will review the resulting archaeological survey reports and participate in government-to-government consultation, and because of this level of engagement to be carried out in accordance with the Stipulations of this PA, DOE LPO has invited them to be an Invited Signatory to the PA (36 CFR § 800.6(c)(2)(ii)); and,



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**WHEREAS**, the remaining Tribes that have accepted to participate in consultation may elect to sign this PA as a Concurring Party; and,

**WHEREAS**, construction of the Project requires Department of the Army authorization from the United States Army Corps of Engineers (USACE) for activities that would result in the discharge of dredged or fill material into jurisdictional wetlands and/or other waters of the United States pursuant to Section 404 of the Clean Water Act (33 U.S.C. § 1344), activities occurring in or affecting navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403), and activities requiring the permanent or temporary alteration or use of a USACE civil works project pursuant to Section 14 of the Rivers and Harbors Act (33 U.S.C. § 408), and USACE has been asked to issue these authorizations; and,

**WHEREAS**, DOE LPO invited USACE to consult on the Undertaking, and USACE accepted DOE LPO's invitation to consult and has designated DOE LPO as the lead Federal agency for Section 106 compliance, and because the required USACE authorizations would be issued following satisfactory implementation of the Stipulations of this PA, DOE LPO has invited USACE to be an Invited Signatory to the PA (36 CFR § 800.6(c)(2)(ii)); and,

**WHEREAS**, the Undertaking may affect the Fort Larned National Historic Site, which is a National Historic Landmark (NHL) administered by the National Park Service (NPS), and consideration of the potential effects to NHLs is required under NHPA Section 110(f) (54 U.S.C. § 306107) and 36 CFR § 800.10; and,

**WHEREAS**, the Undertaking may affect segments of, or properties associated with, the Santa Fe, California, Oregon, Lewis and Clark, and Pony Express National Historic Trails (NHTs), which have as their purpose the identification and protection of the historic routes, their historic remnants and artifacts for public use and enjoyment, and which are administered by the NPS; and,

**WHEREAS**, DOE LPO notified and invited the Secretary of the Interior (represented by the NPS) to consult regarding the Undertaking pursuant to the Section 106 regulations, and to identify planning actions that may be necessary to minimize potential effects on the Fort Larned National Historic Site NHL as required by 36 CFR § 800.10, and NPS accepted DOE LPO's invitation to consult and has acknowledged DOE LPO as the lead Federal agency for Section 106 compliance, and NPS may elect to sign this PA as a Concurring Party; and,

**WHEREAS**, DOE LPO invited entities to serve as Section 106 consulting parties (36 CFR § 800.2(c)), and the invited entities and those who accepted the invitation to participate as consulting parties are listed in Attachment 1—*Consulting Parties List*, and the participating entities listed in Attachment 1 will hereafter be referred to as the “Consulting Parties”; and,

**WHEREAS**, for purposes of the Undertaking, the DOE LPO is lead federal agency for compliance with Section 106 (36 CFR § 800.2(a)(2)), and is the primary contact for all Consulting Parties for this undertaking; and,

**WHEREAS**, 36 CFR § 800.14(b)(3) provides for developing programmatic agreements for complex or multiple undertakings, and 36 CFR § 800.14(b)(1) provides for using such agreements when effects on historic properties are similar and repetitive or are multi-State or regional in scope (36 CFR § 800.14(b)(1)(i)) or when effects on historic properties cannot be fully determined prior to approval of an undertaking (36 CFR § 800.14(b)(1)(ii)); and,

**WHEREAS**, 36 CFR § 800.4(b)(2) provides for phased final identification of historic properties and assessment of effects when provided in a Programmatic Agreement executed pursuant to 36 CFR § 800.14(b); and,



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**WHEREAS**, DOE LPO, in consultation with the Consulting Parties, has determined to use a phased process to identify historic properties (36 CFR § 800.4(b)(2)) and assess the effects on those properties (36 CFR § 800.5(a)(3)), such that completion of the identification of historic properties, assessments of effects on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects will be carried out in phases as part of tailored processes in this PA consistent with the Section 106 regulations; and,

**WHEREAS**, the Applicant's historic property identification efforts are underway and ongoing, and the procedures the Applicant shall follow for completing the historic property identification for the Undertaking are outlined in the Stipulations of this PA and its attachments; and,

**WHEREAS**, the historic property identification efforts completed prior to the execution of this PA included a review of previously recorded cultural resources within the APE for the Undertaking's HVDC Main Line, as well as field surveys to identify new cultural resources within the APE for the Undertaking's two HVDC Converter Stations, and those efforts identified 11 NRHP-listed historic properties, one potentially NRHP-eligible resource, 26 resources determined not eligible for inclusion in the NRHP, and 36 resources with unknown, undetermined, or unevaluated NRHP eligibility status; and,

**WHEREAS**, DOE LPO has and will continue to consult the Consulting Parties per the Stipulations of this PA on the results of the historic property identification efforts in order to inform DOE LPO's determinations of eligibility in accordance with 36 CFR § 800.4, to inform DOE LPO's assessments of effect in accordance with 36 CFR § 800.5, and to resolve adverse effects on historic properties in accordance with 36 CFR § 800.6; and,

**NOW, THEREFORE**, DOE LPO, KS SHPO, MO SHPO, ACHP, USACE, The Osage Nation, and the Applicant agree that the Undertaking will be implemented in accordance with the following stipulations, in order to take into account the effects of the Undertaking on historic properties.

### **STIPULATIONS**

DOE LPO shall ensure that the following measures are carried out:

#### **1) Definitions**

- a) The definitions provided at 36 CFR § 800.16, in these stipulations, and found in Attachment 2—*Abbreviations, Acronyms, and Definitions* are applicable throughout this PA.
- b) References in this PA to a “party (or parties) to this PA” include the Signatories, Invited Signatories, and Concurring Parties (see definitions for these roles in Attachment 2). Concurring Parties have only agreed to participate in the consultation process as outlined in the PA; it is understood that their participation does not necessarily imply an endorsement of the Project in part or as a whole. Tribes and other parties consulting under Section 106 may decline to sign this PA; however, the decision not to sign shall not preclude their continued or future participation as Consulting Parties to this Undertaking in accordance with the Stipulations of this PA.
- c) References in this PA and its attachments to the “Consulting Parties” include the SHPO(s), The Osage Nation, consulting Tribes, and other confirmed consulting parties as listed in Attachment 1. Inclusion as a Consulting Party does not diminish other rights and responsibilities for any entity that is a “party to the PA” as defined in Stipulation 1.b (see definitions for these roles in Attachment 2).



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

### **2) Definition and Modification of the Area of Potential Effects**

- a) The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16(d)).
  - i) “Directly or indirectly” refers to the causality, and not the physicality, of the effect. This means that if the effect comes from the undertaking at the same time and place with no intervening cause, it is considered “direct” regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). “Indirect” effects are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.
- b) DOE LPO has defined the APE for the Undertaking in consultation with the Consulting Parties as described in Attachment 3—*Delineation of the Project Area of Potential Effects*. As described below and outlined further in Attachment 3—Section 2.0, the APE is comprised of areas where direct and indirect effects may occur.
  - i) The Direct Effects Area portion of the APE (hereafter referred to as the Direct APE) comprises the geographic areas where the Undertaking may directly affect historic properties and includes all elements of the Project as described above in the Preamble of this PA and as listed in Attachment 3.
  - ii) The Indirect Effects Area portion of the APE (hereafter referred to as the Indirect APE) comprises the geographic areas where certain reasonably foreseeable future actions that would be constructed because of the Undertaking (i.e., related non-Federal actions) may affect historic properties, thereby being indirectly affected by the Undertaking. These related non-Federal actions include the Kansas AC Collector System and the Network Upgrades.
- c) For the purposes of historic property identification and effects assessment, DOE LPO has subdivided the APE to delineate the areas where physical effects resulting from ground-disturbing activities or potential ground-disturbing activities may occur within the APE (hereafter referred to as the Physical APE), and in areas where no ground disturbance will occur but where nonphysical effects on historic properties may still occur (hereafter referred to as the Nonphysical APE). Delineation of these subdivisions is described below and further detailed in Attachment 3—Section 3.0.
  - i) The Physical APE is defined as the depth and breadth of the limits of disturbance (LOD) where ground-disturbing activities may occur that are necessary for construction and installation of infrastructure, including but not limited to vegetation clearing, grubbing, and grading for transmission structures, access routes, multi-use yards, helipads and fly yards, pull or tension sites, optical regeneration facilities, and converter stations. “Ground-disturbing activities” are further defined in Attachment 2.
    - (1) The Direct-Physical APE includes the LOD for all elements of the Undertaking as well as sections of the Undertaking’s Right-of-way (ROW) where ground-disturbing activities such as vegetation clearing, grubbing, and grading will be necessary for construction.
    - (2) The Indirect-Physical APE includes the area within the Kansas AC Collector System ROW corridors and the known locations of the Network Upgrades.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

- ii) The Nonphysical APE is defined as the geographic area inclusive of, and extending outward from, the LOD within which the Undertaking could pose permanent non-physical (such as visual and auditory) effects on historic properties.
  - (1) The Direct-Nonphysical APE includes the area within a variable viewshed distance radius ranging from 0.5-mile to 2.0-mile that is derived from viewshed modeling of the Undertaking.
  - (2) The Indirect-Nonphysical APE includes the area within a 0.5-mile radius surrounding the known route of the Kansas AC Collector System and known locations of the Network Upgrades.
- d) Under 36 CFR § 800.5(a)(1), adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. While DOE LPO has Section 106 authority over its own actions, including the Undertaking, DOE LPO is not permitted to exert influence or authority over activities that are not subject to its approvals or funding. DOE LPO does not have the authority to impose or enforce conditions or mitigation measures for separate actions that are not part of the Undertaking, including related non-Federal actions.
  - i) DOE LPO will consider creative solutions for resolving indirect or cumulative adverse effects on historic properties, should they occur, which may include DOE LPO outreach to the project proponents responsible for the related non-Federal actions or other reasonably foreseeable future actions to raise awareness of their opportunity to avoid, minimize, or mitigate adverse effects of their projects. Such measures would be determined through consultation and would be included in the appropriate Historic Property Treatment Plan (HPTP) developed for adversely affected historic properties in the Undertaking's APE, as described in Stipulations 3 and 4 of this PA. If there is a Federal role in the future development of any such separate undertaking, then the Federal agency with that role would comply with Section 106 for that future undertaking at the appropriate time.
- e) For the purposes of this PA, past, present, and reasonably foreseeable future actions will be considered for cumulative effects within the APE. Cumulative effects can result from actions that individually may not have an adverse effect on a historic property, but the actions' combined effects on a historic property may be considered adverse.
- f) The APE as defined in Attachment 3 and above encompasses areas sufficient to accommodate all components of the proposed Undertaking under consideration as of the date of the execution of this PA.
- g) Modifications to the APE:
  - i) If DOE LPO determines that the Project or proposed changes to the Project within the scope of the Undertaking may cause adverse effects to historic properties that were not foreseeable at the time the PA was executed beyond the extent of the established APE, DOE LPO may use the process set forth herein to determine whether to modify the APE, in consultation with the Consulting Parties.
  - ii) DOE LPO or any Consulting Party may propose modifications to the APE through written proposal. Such proposal will include justification and description of the requested APE modification, with any relevant cultural resources information as appropriate and in accordance with the considerations for confidentiality as provided in Stipulation 9 of this PA. In the event a Consulting Party proposes modifications, they will provide the proposal to DOE LPO. DOE LPO will provide copies of any proposal to the Consulting Parties.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

- iii) Upon provision of the written proposal, DOE LPO will consult with the Consulting Parties for no more than thirty (30) calendar days towards reaching consensus on the proposed modification. If the Consulting Parties agree to modify the APE consistent with the proposal, DOE LPO will render a decision consistent with that agreement and will notify the Consulting Parties of the decision. If the Consulting Parties cannot agree to modify the APE consistent with the proposed modification, then DOE LPO will consider the concerns expressed by the Consulting Parties, render a decision, and notify the Consulting Parties of that decision. If any Consulting Party objects to the decision rendered by DOE LPO, the dispute will be resolved following the process outlined in Stipulation 10.
- iv) DOE LPO's decision to modify the APE will not require an amendment to the PA. Regardless of whether there is agreement among the Consulting Parties as to the scope of the modified APE, and pending completion of dispute resolution procedures, as applicable, the description of the modified APE will be provided as a new section appended to Attachment 3—*Delineation of the Project Area of Potential Effects*, and will become effective upon distribution by DOE LPO to the Consulting Parties.

### **3) Phased Identification and Assessment Plan**

- a) As noted on page 3 of this PA and in accordance with 36 CFR § 800.4(b)(2) and 36 CFR § 800.5(a)(3), the Applicant, in coordination with DOE LPO and the Consulting Parties, will perform a phased identification of, and assessment of effects on, historic properties within the APE.
- b) To address the phased approach, the Applicant has prepared a Phased Identification and Assessment Plan (PIAP) in accordance with 36 CFR §§ 800.4 and 800.5 with oversight from DOE LPO and in consultation with the Consulting Parties. The PIAP is attached to the PA (Attachment 4) and is effective upon execution of the PA. DOE LPO and the Consulting Parties may modify the PIAP in accordance with Stipulation 12.c of this PA.
- c) The PIAP describes its purpose, specifies how the identification of historic properties and assessment of effects on historic properties for the Undertaking is to be carried out and when it will be completed via a schedule, and provides sufficient flexibility to permit Notices to Proceed with construction for segments of the Undertaking on a phased basis. The PIAP includes:
  - i) A process for the identification of potential historic properties in compliance with the fieldwork, documentation, and reporting standards of the KS SHPO or the MO SHPO, as applicable, current at the time of investigations, and in accordance with Stipulation 8 of this PA, and Attachment 5—*Field Survey Protocols Confirmed with The Osage Nation*.
  - ii) Implementation of the established NRHP process for determining the eligibility of cultural resources for inclusion in the NRHP, including roles and responsibilities, and duration of review and comment periods.
  - iii) Implementation of the established NRHP process for assessing the effects of the Undertaking on historic properties, including roles and responsibilities, criteria for assessing adverse effects, process for applying avoidance or minimization measures, and protocol for DOE LPO to issue findings of effect for specific segments of the Project.
  - iv) A process for resolving disputes among the Consulting Parties regarding the identification of historic properties, determinations of eligibility, and assessment of effects.
  - v) A process for incorporating design changes to the Project that would avoid or minimize adverse effects on historic properties when an adverse effect is identified.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

- vi) A process for developing mitigation measures to resolve adverse effects on historic properties, to be codified and implemented via an HPTP(s) (see Stipulation 4 below).
  - vii) Protocols for collection and curation of archaeological assemblages, in the event that archaeological excavations are necessary to determine the eligibility of an archaeological site.
  - viii) A process for incorporating construction monitoring, to be codified and implemented via a Monitoring Plan, and for managing inadvertent discoveries of cultural resources or human remains during construction, to be codified and implemented via an Inadvertent Discovery Plan (IDP) (see Stipulation 5 below).
- d) In consultation with the Consulting Parties, components of the PIAP, such as the survey and inventory procedures, may be prepared and implemented prior to the completion of the final PIAP and will be incorporated in the PIAP as agreed.

### **4) Resolution of Adverse Effects**

- a) In consultation with DOE LPO and the Consulting Parties, as referenced in Stipulation 3.c.vi above, the Applicant will develop the HPTP(s) to address the resolution of adverse effects on historic properties that cannot be avoided or where effects cannot be minimized to a finding of No Adverse Effect. The HPTP(s) will be developed after execution of this PA, pursuant to consultation on the identification of adversely affected historic properties.
- b) DOE LPO will consult to develop reasonable measures to minimize or mitigate the contribution of the Undertaking to adverse cumulative effects on historic properties. Such measures, as determined through consultation, would be included in the appropriate HPTP(s) developed for adversely affected historic properties in the Undertaking's APE.
  - i) DOE LPO does not have the authority to develop or enforce mitigation measures to be applied to actions that are not part of the Undertaking. DOE LPO will consider creative solutions for resolving cumulative adverse effects on historic properties, should they occur, which may include DOE LPO outreach to the project proponents responsible for the reasonably foreseeable future actions to raise awareness of their opportunity to avoid or minimize adverse effects of their projects. If there is a Federal role in the future development of a separate undertaking, then the Federal agency with that role would comply with Section 106 for that future undertaking at the appropriate time.
- c) DOE LPO will consider the potential for indirect effects on known, previously recorded historic properties within the Indirect APE as detailed in Attachment 4 of this PA.
  - i) DOE LPO cannot exert influence or authority over activities that are not subject to its approvals or funding, including imposing conditions on actions that are not part of the Undertaking. Because the related non-Federal actions are not part of the Undertaking and are outside of the agency's jurisdiction, DOE LPO does not have authority to condition the treatment of historic properties within the Indirect APE. DOE LPO will consider creative solutions for resolving indirect adverse effects on known historic properties, should they occur, which may include DOE LPO outreach to the project proponents responsible for the related non-Federal actions to raise awareness of their opportunity to avoid, minimize, or mitigate adverse effects of their projects. Such measures would be determined through consultation and would be included in the appropriate HPTP(s) developed for adversely affected historic properties in the Undertaking's APE. If there is a Federal role in the future development of the related non-Federal actions, then the Federal agency with that role would comply with Section 106 for that future undertaking at that time.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

- d) The HPTP(s) will:
  - i) Describe how adverse effects to historic properties will be resolved,
  - ii) Define the mitigation and treatment methods for adversely affected historic properties,
  - iii) Include processes for archaeological data recovery,
  - iv) Include a Monitoring Plan for detailing the participation of Tribal Monitors during construction that is specific to each Tribe, and for outlining the protocol for implementing monitoring measures to reduce or resolve adverse effects and/or in the event of inadvertent discoveries during construction,
  - v) Incorporate the procedures in the Applicant-prepared IDP, as referenced in Stipulation 3.c.viii above and outlined in Stipulation 5 below, and
  - vi) Specify the format and outline of the report(s) that the Applicant will prepare to document the results from implementation of the HPTP(s), following the appropriate reporting and documentation guidelines of the SHPOs, The Osage Nation Historic Preservation Office, and/or other consulting Tribes, as applicable.

### **5) Inadvertent Discovery of Human Remains and/or Cultural Resources**

- a) To address the procedures and protocols to be followed if potential human remains, funerary materials, and/or cultural resources are discovered during construction activities, the Applicant has prepared an Inadvertent Discovery Plan (IDP) with oversight from DOE LPO and in consultation with the Consulting Parties. The IDP is attached to the PA (Attachment 6). DOE LPO and the Consulting Parties may modify the IDP in accordance with Stipulation 12.c below.
- b) The IDP includes roles and responsibilities, procedures for contacting the authorities and chain of communications, jurisdiction over discoveries, measures to be taken to protect discoveries from disturbance or harm such as “no work” buffers and other avoidance or minimization measures, and a timeline for when activities may resume within the area of the encounter.
  - i) As appropriate, the protocols and standards in the IDP will follow the ACHP’s *Policy Statement Regarding Burial Sites, Human Remains, and Funerary Objects* (March 1, 2023) and subsequent June 30, 2023 guidance for said policy. Any additional subsequently issued guidance would also be followed, as appropriate. These protocols will assist DOE LPO in fulfilling any potential obligations under applicable state burial laws in the event that human remains or associated funerary objects are discovered during construction.
- c) The IDP includes a procedure for notifying Tribes of inadvertent discoveries and implementing Tribal Monitoring of inadvertent discovery locations as may be requested by the Tribes. In accordance with Stipulation 4 above, and in consultation with the requesting Tribe(s), the Applicant will prepare a Monitoring Plan that will describe the processes and protocols for Tribal Monitors’ participation during construction.

### **6) National Historic Landmarks**

- a) DOE LPO will comply with Section 110(f) of the NHPA, which requires agencies, to the maximum extent possible, to undertake such planning and actions as may be necessary to minimize harm to NHLs (36 CFR § 800.10(a)).
- b) DOE LPO will consider all prudent and feasible alternatives to avoid adverse effects on NHLs in accordance with the Secretary of the Interior’s Standards and Guidelines for Federal Agency



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

Historic Preservation Programs Pursuant to the National Historic Preservation Act (1998; available online: <https://www.nps.gov/fpi/Section110.html>).

- c) In the course of developing this PA, DOE LPO consulted the NPS and the Applicant regarding the development of measures to reduce potential visual effects on the Fort Larned National Historic Site NHL. Through consultation, the Applicant has committed to incorporating the following measures in the Project design within a 5-mile radius of Fort Larned National Historic Site, thereby preemptively avoiding potential adverse effects, which DOE LPO and NPS agree sufficiently represents planning and actions necessary to minimize harm to the Fort Larned National Historic Site NHL to the maximum extent possible:
  - i) To minimize visibility and/or visual contrast, the Applicant will reduce reflectivity of transmission structures using processes such as acid bathing the galvanized finish of the transmission structure angle members.
  - ii) To minimize visibility and/or visual contrast, the Applicant will reduce reflectivity of conductors via the use of non-specular conductors (i.e., the outer layer has been treated to reduce light reflectance).
  - iii) To minimize lighting effects, the Applicant will avoid the use of transmission structure lighting.
  - iv) To minimize lighting effects, the Applicant will avoid the use of aircraft warning systems by utilizing transmission structure heights of less than 200 feet.
- d) If during the implementation of this PA, DOE LPO anticipates that additional NHLs could be adversely affected and subject to harm from activities conducted as part of the undertaking, DOE LPO will notify the Secretary of the Interior of any consultation involving NHLs, as required in 36 CFR § 800.10(c), and will invite the Secretary to participate in consultation where there may be an adverse effect and will request the ACHP to participate in any consultation to resolve adverse effects on NHLs (see 36 CFR § 800.10(b)).

### **7) Continued Consultation**

- a) DOE LPO, as the lead Federal agency for Section 106 review and implementation of this Undertaking, and mindful of its government-to-government responsibilities, will continue to facilitate consultation with the Tribes. DOE LPO will carry out its responsibilities under Section 106 to consult with Tribes that request such government-to-government consultation.
- b) DOE LPO, as the lead Federal agency for Section 106 review and implementation of this Undertaking, will distribute all relevant Section 106 documents (such as draft cultural resource identification reports, finding of effect letters, and treatment plans) to the Consulting Parties to solicit their review and comment, and will continue to facilitate consultation regarding such documents with the Consulting Parties in a timely manner as described in the PIAP (Attachment 4) and throughout the Stipulations of this PA.

### **8) Standards**

- a) All work carried out pursuant to this PA shall be done by or under the direct supervision of historic preservation professionals who meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR § 61).
- b) All work carried out pursuant to this PA shall meet the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR § 68).



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

- c) All cultural field investigations, including archaeological field reconnaissance studies and historic standing structures surveys carried out pursuant to this PA shall be completed, at a minimum, in accordance with the KS SHPO or MO SHPO guidelines, as applicable, current at the time of investigation.
- d) All archaeological field investigations for elements of the physical APE coincident with the Osage Nation THPO-defined Osage Nation Area of Interest (AOI) carried out pursuant to this PA shall be completed in accordance with the Osage Nation THPO guidelines current at the time of the investigation. Archaeological survey efforts in elements of the physical APE located outside of Osage Nation AOI will follow additional protocols for archaeological field studies confirmed with the Osage Nation THPO, which are provided in Attachment 5— *Field Survey Protocols Confirmed with The Osage Nation*.
- e) Reporting on and documenting the work carried out under this PA shall conform to the *Secretary of Interior's Standards and Guidelines for Archaeological and Historic Preservation* (48 FR 44716-44740), and Kansas and Missouri SHPO requirements, as applicable.
- f) Materials collected and records resulting from the work carried out under this PA shall be curated in accordance with 36 CFR § 79. Collection and curation procedures are detailed in the PIAP.
- g) No human remains will be collected, curated, or photographed.

### **9) Confidentiality of Cultural Resources**

- a) To the extent consistent with NHPA Section 304 (54 U.S.C. § 307103), the Consulting Parties will treat cultural resources data and all other sensitive information as confidential and not release or disclose such information to any other party external to the confirmed Consulting Parties for this undertaking (see Attachment 1). Confidentiality concerns for properties that have traditional religious and cultural significance to Tribes will be respected and information pertaining to those concerns or properties will remain confidential to the fullest extent permitted by law. Related principles and procedures are further detailed in the PIAP.

### **10) Dispute Resolution**

- a) Should any Consulting Party object at any time to any actions proposed or the manner in which the terms of this PA are implemented, DOE LPO will consult with such party to resolve the objection. DOE LPO will initiate consultation with the objecting party within thirty (30) days, and DOE LPO will allow up to thirty (30) days of consultation before the dispute is referred to the ACHP. If DOE LPO determines that the objection cannot be resolved through consultation within the thirty (30)-day period, the following will apply:
  - i) DOE LPO will forward all documentation relevant to the dispute, including DOE LPO's proposed resolution, to the ACHP. The ACHP shall provide DOE LPO with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, DOE LPO shall prepare a written response that takes into account any advice or comments regarding the dispute received within the thirty (30)-day window from the ACHP and the Parties to the PA, and provide the Consulting Parties with a copy of this written response. DOE LPO will then proceed according to its final decision.
  - ii) If the ACHP does not provide its advice regarding the dispute within the thirty (30)-day period, DOE LPO may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, DOE LPO shall prepare a written response that considers any



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

timely comments regarding the dispute from the Parties to the PA, and provide the Consulting Parties and the ACHP with a copy of such written response.

- iii) DOE LPO's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

### **11) Progress Reporting**

- a) The Applicant will provide an annual report to the Consulting Parties that provides the status and progress of cultural resource surveys, document reviews and consultations, and treatments of affected historic properties from the previous calendar year by January 31 for each year of construction. This annual report will include updated summary tables of consultation progress and Project component completion status. Templates of these tables are included in Attachment 7—*Annual Report Progress Table Templates*.
- b) The Applicant will provide a summary letter report describing the implementation of the PIAP, IDP, and HPTP to the Consulting Parties within six (6) months of Undertaking completion.

### **12) Amendment and Coordination with Other Federal Reviews**

- a) Any Consulting Party may request that the Signatories or Invited Signatories consider amending the PA if circumstances change over time and warrant revision of the stipulations. An amendment must be agreed to in writing by all Signatories and Invited Signatories, and the amendment will be effective on the date a copy signed by all of the Signatories and Invited Signatories is filed with the ACHP.
- b) Any Consulting Party may propose an amendment to the PA through written proposal to DOE LPO with copies to the other Consulting Parties, including justification and description of the change. DOE LPO will consult with the Consulting Parties for no more than forty-five (45) calendar days towards reaching consensus on the proposed amendment. If the Consulting Parties agree to amend the PA consistent with the proposal, DOE LPO will render a decision consistent with that agreement and will notify the Consulting Parties of the decision. If the Consulting Parties cannot agree to the amendment, then DOE LPO will consider the concerns expressed by the Consulting Parties, render a decision, and notify the Consulting Parties of that decision. If any Signatory or Invited Signatory to this PA objects to the decision rendered by DOE LPO, the dispute will be resolved following the process outlined in Stipulation 10.
- c) If DOE LPO or a Consulting Party requests changes to an Attachment of this PA, that procedure will follow the process outlined above in Stipulation 12.b, above. DOE LPO's decision to modify an Attachment will not require an amendment to the PA requiring recirculation for signatures of the Signatories and Invited Signatories as outlined in Stipulation 12.a. The modified Attachment will be appended to the PA replacing the previous Attachment and become effective upon distribution by DOE LPO to the Consulting Parties. If any Signatory or Invited Signatory to this PA objects to the decision rendered by DOE LPO, the dispute will be resolved following the process outlined in Stipulation 10.
- d) In the event that an additional Federal agency receives an application for a license or permit for the Undertaking, and the Undertaking otherwise remains unchanged, this additional Federal agency may comply with Section 106 by agreeing in writing to the terms of this PA. DOE LPO will notify the Consulting Parties and maintain a record of these notifications for inclusion in the Applicant's annual progress report.
  - i) Such use of this PA by an additional Federal agency will not require an amendment to the PA, or the addition of that agency as a Signatory to the PA.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

### **13) General Provisions**

- a) This PA is neither intended nor shall be construed to diminish or affect in any way the right of any consulting Tribe to take any lawful action to protect Native American graves from disturbance or desecration, to protect archaeological sites from damage, or to protect the consulting Tribe's rights under cemetery and Native American graves protection laws or other applicable laws.
- b) No Federal, State, or Tribal government waives sovereign or governmental immunity by entering into this PA, and all retain immunities and defenses provided by law with respect to any action based on or occurring as a result of the PA.
- c) This PA in no way restricts any Signatory or Invited Signatory from participating in any activity with other public or private agencies, organizations, or individuals. This PA will be subject to and will be carried out in compliance with all applicable laws, regulations, and other legal requirements.
- d) Each Signatory and Invited Signatory to this PA assumes the risk of any liability arising from its own conduct. Each Signatory agrees they are not obligated to insure, defend, or indemnify any other Signatory or Invited Signatory to this PA. Nothing in this stipulation modifies any person's ability under the Administrative Procedure Act or the NHPA to bring an action or suit related to this Undertaking or this PA.

### **14) Termination and Severability**

- a) If any Signatory or Invited Signatory to this PA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other Signatories and Invited Signatories to attempt to develop an amendment per Stipulation 12, above. If within ninety (90) days an amendment cannot be reached, any Signatory or Invited Signatory may terminate the PA upon written notification to the other Signatories and Invited Signatories.
- b) Once the PA is terminated, and prior to work continuing on the Undertaking, DOE LPO must either (a) execute a memorandum of agreement pursuant to 36 CFR § 800.6, (b) execute a programmatic agreement pursuant to 36 CFR § 800.14, or (c) request, take into account, and respond to the comments of the ACHP pursuant to 36 CFR § 800.7. DOE LPO shall notify the Signatories and Invited Signatories as to the course of action it will pursue.
- c) Should any portion of this PA be judicially determined by a court established by Article III of the U.S. Constitution to be illegal or unenforceable, the remainder of the PA shall continue in full force and effect, and any Signatory or Invited Signatory may initiate consultation with the other Consulting Parties to consider the renegotiation of the term(s) affected by the severance in accordance with this Stipulation 14.

### **15) Sunset Terms**

- a) This PA shall remain in effect for six (6) years after the date of its execution hereof.
- b) The term of the PA may be extended by mutual written agreement of all Signatories and Invited Signatories following the process for amendment in Stipulation 12.

Execution of this PA by DOE LPO, KS SHPO, MO SHPO, ACHP, USACE, The Osage Nation, and the Applicant, and implementation of its terms evidence that DOE LPO has taken into account the effects of the Undertaking on historic properties and afforded the ACHP an opportunity to comment in accordance with Section 106 of the NHPA.



### **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**Signatures.** In witness whereof, the parties to this PA through their duly authorized representatives have executed this PA on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this PA as set forth herein.

The effective date of this PA is the date of the last Signatory or Invited Signatory signature affixed to these pages.



## **Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

### **ATTACHMENTS**

**Attachment 1: Consulting Parties List**

**Attachment 2: Abbreviations, Acronyms, and Definitions**

**Attachment 3: Delineation of the Project Area of Potential Effects**

**Attachment 4: Phased Identification and Assessment Plan**

**Attachment 5: Field Survey Protocols Confirmed with The Osage Nation**

**Attachment 6: Inadvertent Discovery Plan**

**Attachment 7: Annual Report Progress Table Templates**



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**SIGNATORY**

**U.S. Department of Energy, Loan Programs Office**

**TODD  
STRIBLEY**

Digitally signed by TODD  
STRIBLEY  
Date: 2025.06.10 08:45:01  
-06'00'

Name: Todd Stribley  
Title: Director, Environmental Compliance

\_\_\_\_ June 10, 2025 \_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**SIGNATORY**

**Kansas State Historic Preservation Office**



Name:  
Title: Katrina L. Ringler, Deputy SHPO

06/18/2025

Date



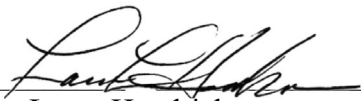
**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**SIGNATORY**

**Missouri State Historic Preservation Office**

  
Name: Laura Hendrickson  
Title: Director, Division of State Parks  
Missouri Department of Natural Resources

6/23/25  
Date




**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**SIGNATORY**

**Advisory Council on Historic Preservation**

  
\_\_\_\_\_  
Reid Nelson  
Executive Director

\_\_\_\_\_  
7/2/2025  
Date



**Programmatic Agreement**

Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG**

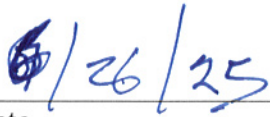
**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**INVITED SIGNATORY**

**The Osage Nation**

  
\_\_\_\_\_  
Geoffrey M. Standing Bear  
Principal Chief

  
\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**INVITED SIGNATORY**

**U.S. Army Corps of Engineers**

NIEWOHNER.ANDREW  
W.THOMAS.11475064  
96

Digitally signed by  
NIEWOHNER.ANDREW.THOMAS  
S.1147506496  
Date: 2025.07.10 10:07:11 -05'00'

\_\_\_\_\_  
Andrew T. Niewohner  
Colonel, Corps of Engineers  
District Commander

\_\_\_\_\_  
Date




**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**INVITED SIGNATORY**

**Grain Belt Express LLC**

DocuSigned by:  
  
F8477BE2851C419...  
Shashank Sane  
Transmission Executive Vice President

6/16/2025

Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Fort Larned Old Guard**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Iowa Tribe of Kansas and Nebraska**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Missouri Preservation**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Northern Arapaho Tribe of the Wind River Reservation, Wyoming**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Pawnee Nation of Oklahoma**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Ponca Tribe of Indians of Oklahoma**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**U.S. National Park Service**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



**Programmatic Agreement**  
Regarding the Grain Belt Express Transmission Project, Phase 1, Kansas to Missouri

**PROGRAMMATIC AGREEMENT  
AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**CONCURRING PARTY**

**Wichita and Affiliated Tribes (Wichita, Keechi, Waco, and Tawakonie), Oklahoma**

\_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
Date



# **ATTACHMENT 1**

## **PROGRAMMATIC AGREEMENT**

### **AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

## **CONSULTING PARTIES LIST**



## LIST OF CONFIRMED SECTION 106 CONSULTING PARTIES

The following is a list of entities participating in the Section 106 review of the Grain Belt Express Transmission Project, Phase 1, current as of October 10, 2024. Consultation is ongoing, and therefore, there may be additions or revisions to this list.

Entity, Government, or Organization	Contact Person
<b><i>Federally Recognized Tribes</i></b>	
Delaware Nation, Oklahoma	Carissa Speck, Katelyn Lucas
Iowa Tribe of Kansas and Nebraska	Alan Kelley
Northern Arapaho Tribe of the Wind River Reservation, Wyoming	Crystal C’Bearing
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana	Teanna Limpy, Gary LaFranier
Pawnee Nation of Oklahoma	Joseph Matt Reed
Ponca Tribe of Indians of Oklahoma	Liana Hesler
The Osage Nation	Dr. Andrea Hunter, Colleen Bell Michaela Conway, Sarah O’Donnell
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma	Amber Silverhorn-Wolfe, Gary McAdams Mary Botone, Robin Williams
<b><i>Federal Agencies</i></b>	
U.S. Advisory Council on Historic Preservation	Rachael Mangum, Bill Marzella
U.S. Army Corps of Engineers	Lucius Duerksen, Jennifer Skiles Timothy Meade, Dorothy Stimac
U.S. National Park Service	Todd Smith, Dena Sanford, Jordan Jarrett
<b><i>Preservation Organizations</i></b>	
Fort Larned Old Guard	Kristin Keith
Missouri Preservation	Riley Price
<b><i>State Historic Preservation Offices</i></b>	
Kansas State Historical Society (State Historic Preservation Office)	Katrina Ringler, Shelby Beltz, Robert Elder
Missouri State Historic Preservation Office	Amy Rubingh, Aaron Schmidt
<b><i>Applicant</i></b>	
Grain Belt Express LLC	Erin Leiberman, Kate Krebs Jennifer Stelzleni, Carol-Anne Garrison



## LIST OF INVITED PARTIES

The following is a list of entities that DOE LPO contacted from December 2022 to April 2023, inviting them to be a consulting party to the NHPA Section 106 review of the Phase 1 Grain Belt Express Transmission Project.

Entity, Government, or Organization
<i><b>Federally Recognized Tribes</b></i>
Absentee-Shawnee Tribe of Indians of Oklahoma
Apache Tribe of Oklahoma
Caddo Nation of Oklahoma
Cheyenne and Arapaho Tribes, Oklahoma
Comanche Nation, Oklahoma
Delaware Nation, Oklahoma
Delaware Tribe of Indians
Eastern Shawnee Tribe of Oklahoma
Fort Sill Apache Tribe of Oklahoma
Ho-Chunk Nation of Wisconsin
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Kaw Nation, Oklahoma
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
Kickapoo Tribe of Oklahoma
Kiowa Indian Tribe of Oklahoma
Miami Tribe of Oklahoma
Northern Arapaho Tribe of the Wind River Reservation, Wyoming
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
Oglala Sioux Tribe
Omaha Tribe of Nebraska
Otoe-Missouria Tribe of Indians, Oklahoma
Pawnee Nation of Oklahoma
Ponca Tribe of Indians of Oklahoma
Ponca Tribe of Nebraska
Prairie Band Potawatomi Nation
Sac & Fox Nation of Missouri in Kansas and Nebraska
Sac & Fox Nation, Oklahoma
Sac & Fox Tribe of the Mississippi in Iowa
Seneca-Cayuga Nation
Shawnee Tribe



<b>Entity, Government, or Organization</b>
<b><i>Federally Recognized Tribes (continued)</i></b>
The Osage Nation
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
Wyandotte Nation
<b><i>State Historic Preservation Offices</i></b>
Kansas State Historical Society (State Historic Preservation Office)
Missouri State Historic Preservation Office
<b><i>Federal Agencies</i></b>
U.S. Advisory Council on Historic Preservation
U.S. Army Corps of Engineers, Kansas City District
U.S. Army Corps of Engineers, St. Louis District
U.S. National Park Service, Fort Larned National Historic Site
U.S. National Park Service, Lewis and Clark National Historic Trail
U.S. National Park Service, National Trails Office
U.S. National Park Service, Natural Resources Division
<b><i>Certified Local Governments</i></b>
City of Dodge City
City of Fulton
City of Jefferson City
City of Marceline
City of Moberly
City of St Joseph
Doniphan County
<b><i>Preservation Organizations</i></b>
Fort Larned Old Guard
Kansas Preservation Alliance, Inc.
Missouri Preservation



## **ATTACHMENT 2**

### **PROGRAMMATIC AGREEMENT**

#### **AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

### **ABBREVIATIONS AND ACRONYMS**



## ABBREVIATIONS AND ACRONYMS

Abbreviation/Acronym	Definition
§	Section
AC	alternating current
ACHP	Advisory Council on Historic Preservation
AOA	Areas of Avoidance
AOI	Areas of Interest
APE	Area of Potential Effects
Applicant	Grain Belt Express LLC
CFR	Code of Federal Regulations
cm	centimeter
DOE	Department of Energy
FR	Federal Register
GIS	geographic information system
GPS	global positioning system
GSV	ground surface visibility
HPMP	Historic Properties Management Plan
HPTP	Historic Properties Treatment Plan
HVDC	high voltage direct current
IDP	Inadvertent Discovery Plan
KS	Kansas
kV	kilovolt
LOD	Limits of Disturbance
LPO	Loan Programs Office
MO	Missouri
MOA	Memorandum of Agreement
MW	megawatt
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHT	National Historic Trail
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PIAP	Phased Identification and Assessment Plan
Project	Grain Belt Express Transmission Project, Phase 1
ROD	Record of Decision



<b>Abbreviation/Acronym</b>	<b>Definition</b>
ROW	Right-of-way
SHPO	State Historic Preservation Officer
SOI	Secretary of the Interior
TCP	Traditional Cultural Place
THPO	Tribal Historic Preservation Officer
Tribes	Federally Recognized Native American Indian Tribes
UBS	Kansas Unmarked Burial Site Preservations Act of 1989
Undertaking	The construction and energization of the Grain Belt Express Transmission Project, Phase 1 (the Project), which is being funded in part by the potential issuance of a loan guarantee under Section 1703 of the Energy Policy Act of 2005 from DOE LPO.
USACE	United States Army Corps of Engineers
U.S.C.	United States Code



## DEFINITIONS

*Applicant* means an entity has applied for federal financial assistance for the construction of a proposed project. In this case, Grain Belt Express LLC (the Applicant) has applied to LPO for federal financial assistance in the form of a loan guarantee under Section 1703 of the Energy Policy Act of 2005 for the construction and energization of the Grain Belt Express Transmission Project, Phase 1.

*Area of potential effects* means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16(d)).

*Concurring party* means consulting parties invited by the agency official to concur in the Agreement; see 36 CFR 800.6(c)(3). The signatories may agree to invite others to concur. The refusal of any party invited to concur in the memorandum of agreement does not invalidate the memorandum of agreement.

*Consultation or Consult* means the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process; see 36 CFR § 800.16(f). Consultation involves the exchange of information, open discussion, and joint deliberations made between all parties in good-faith and in order to seek, discuss, and consider the views of all parties; strive for consensus, agreement, or mutually acceptable alternatives; and enable meaningful consideration of the Native American traditional knowledge of lineal descendants, Indian Tribes, and Native Hawaiian organizations.

*Consulting party* means individuals and organizations with a demonstrated interest in the project due to the nature of their legal and economic relation to the undertaking or affected properties, or their concern with the undertaking's effect on historic properties [36 CFR 800.2(c)(5)]. The agency official shall identify any other parties entitled to be consulting parties and invite them to participate as such in the section 106 process. The agency official may invite others to participate as consulting parties as the section 106 process moves forward. All consulting parties have the option to sign the PA as a *Concurring Party*, but this is not required of any consulting party, nor is it required to execute the PA, consistent with 36 CFR 800.6(c)(3). Certain consulting parties may be *Signatories* to the PA as required to execute the PA in accordance with 36 CFR 800.6(c)(1). Certain consulting parties that assume a responsibility under the PA in addition to the standard consultative role of a consulting party may be invited to sign the PA as *Invited Signatories* in accordance with 36 CFR 800.6(c)(2).

*Cultural resource(s)* means historic aboveground resources and the built environment, archaeological sites, and sites of religious and cultural significance to Tribes.

*Day(s)* means calendar days (36 CFR § 800.16(h)).



*Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR § 800.16(i)).

*Environmental Protection Measure(s)* means part of the Project design to avoid or minimize effects to environmental resources during construction, operations and maintenance, and/or decommissioning of the Project. These measures are proposed in addition to applicable federal, state, and local permit and consultation requirements and measures that may result from those permits and consultations.

*Ground disturbance or Ground-disturbing activity* means actions that have the potential to alter, compact, or otherwise physically affect the ground surface and subsurface. Ground disturbance includes use of hand tools (shovels, pick axe, posthole digger, etc.), heavy equipment (excavators, backhoes, bulldozers, trenching and earthmoving equipment, etc.), and heavy trucks (large pickup trucks, dump trucks, tractor trailers, etc.). Trenching, bulldozing, excavating, scraping, and vegetation clearing, grubbing, and grading are typical examples of ground-disturbing activities. The Grain Belt Express Transmission Project, Phase 1 has a defined limits of disturbance (LOD) indicating the areas within which ground-disturbing activities may occur that are necessary for construction and installation of Project infrastructure, including but not limited to any permanent or temporary construction areas such as transmission structures, access routes, multi-use yards, helipads and fly yards, pull or tension sites, optical regeneration facilities, and converter stations.

*Historic property* means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian Tribe or Native Hawaiian organization and that meet the NRHP criteria (36 CFR § 800.16(l)(1)).

*Invited Signatory* means consulting parties invited by the agency official to be signatories to an Agreement; see 36 CFR 800.6(c)(2). The agency official may invite Indian Tribes that attach religious and cultural significance to historic properties located off tribal lands to be a signatory to an Agreement concerning such properties. The agency official should invite any party that assumes a responsibility under a memorandum of agreement to be a signatory.

*National Register* means the National Register of Historic Places maintained by the Secretary of the Interior.

*National Register Criteria* means the criteria established by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register (see 36 CFR § 60.4).

*Programmatic Agreement* means a document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking or other situations in accordance with 36 CFR § 800.14(b) (36 CFR § 800.16(t))



*Right-of-way* means an authorized easement, established by grant from a property owner, that grants a utility the right to use, access, or pass along a piece of property according to the terms of the easement for the purpose of constructing, operating, and maintaining Project infrastructure, transmission lines, and other equipment.

*Qualified archaeologist* means a person who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 *Federal Register* [FR] 44738-44739) and has experience researching and analyzing North American archaeological data.

*Qualified architectural historian* means a person who meets the Secretary of the Interior's Professional Qualification Standards for architectural history (48 FR 44738-44739), and has experience analyzing structures, historic districts, and landscapes.

*Signatory* means consulting parties which have sole authority to execute, amend or terminate the Agreement in accordance with 36 CFR 800.6(c)(1), and include the lead federal agency, the SHPO(s), and the ACHP (if participating).

*Traditional Cultural Place* means a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, and/or the nature of the world. The term "traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. A traditional cultural place can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

*Tribe* means an Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 USC 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (36 CFR § 800.16(m)).

*Tribal Historic Preservation Officer (THPO)* means the tribal official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program who has assumed the responsibilities of the SHPO for purposes of section 106 compliance on tribal lands in accordance with section 101(d)(2) of the act (36 CFR § 800.16(w)).

*Tribal land* means all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities (36 CFR § 800.16(x)).

*Undertaking* means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval (36 CFR § 800.16(y)). Specific to this PA, the Undertaking is the construction and energization of the Grain Belt Express Transmission Project, Phase 1 (the Project), which is being funded in part by the potential issuance of a loan guarantee under



Section 1703 of the Energy Policy Act of 2005 from DOE LPO. The Undertaking is a 600-kilovolt (kV) overhead high-voltage direct current (HVDC) transmission line with supporting infrastructure between interconnection points in southwest Kansas and northeast Missouri. The HVDC line will be capable of delivering approximately 5,000 megawatts of power spanning 542 miles across private land. It includes optical regeneration facilities and associated driveways, an HVDC converter station, alternating current (AC) switchyard, and 0.2-mile AC transmission line in Ford County, Kansas to connect to the Kansas electric grid, as well as an HVDC converter station and AC switchyard in Monroe County, Missouri, the “Tiger Connector,” an approximate 36-mile 345-kVAC transmission line across private land in Monroe, Audrain and Callaway Counties, Missouri, and temporary construction workspaces, temporary access routes, concrete batch plants, and fly yard and helipads.



**ATTACHMENT 3**

**PROGRAMMATIC AGREEMENT  
AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**DELINEATION OF THE PROJECT AREA OF POTENTIAL EFFECTS (APE)**



Preliminary Draft prepared August 30, 2023

Draft v.1 prepared July 2024

Draft v.2 prepared October 2024

Draft v.3 prepared January 2025

Final Draft v.4 prepared April 2025

Final June 2025

# **DELINEATION OF THE AREA OF POTENTIAL EFFECTS FOR THE GRAIN BELT EXPRESS TRANSMISSION PROJECT, PHASE 1, KANSAS TO MISSOURI**

## **1. INTRODUCTION**

The purpose of this document is to delineate the Area of Potential Effects (APE) for the Grain Belt Express Transmission Project, Phase 1 (Project). The U.S. Department of Energy (DOE) Loan Programs Office (LPO) has determined that the Project constitutes an Undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) as amended (54 United States Code [USC] section [§] 306108) and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800), and that the Project activities proposed have the potential to affect historic properties. In accordance with Stipulation 2 of the Programmatic Agreement (PA) for the Project, this document provides a detailed description of the APE, the approach for delineating and subdividing the APE into areas for identifying historic properties and assessing effects, and figures illustrating the APE delineation for the Project.

### **1.1 The Undertaking**

Grain Belt Express LLC (the Applicant), a subsidiary of Invenenergy Transmission LLC, has applied for Federal financial assistance, specifically a loan guarantee from the DOE LPO under Title XVII of the Energy Policy Act of 2005, as amended (EPAct). The loan guarantee would be used for eligible project costs as defined at 10 CFR 609.19(a), including the design, engineering, financing, construction, startup, commissioning, and shakedown of the Project. The Undertaking is the entirety of the Applicant's proposed Project, which is composed of the following elements that have the potential to affect historic properties:

- A 542-mile, overhead high-voltage direct current transmission line (HVDC Line) that would extend between Ford County in southwestern Kansas and Monroe County in northeastern Missouri and associated access roads;
- Optical regeneration facilities in support of the HVDC Line and associated access roads;
- Two HVDC converter stations and associated infrastructure, one located in Ford County, Kansas and one located in Monroe County, Missouri;
- The Ford County Interconnect, an approximately 0.2-mile 345-kilovolt (kV) alternating current (AC) transmission line located in Ford County, Kansas that would extend from the Project's Kansas HVDC converter station to the existing Saddle Substation, owned and operated by ITC Great Plains, to connect to the Kansas electric grid;
- The Tiger Connector, an approximately 36-mile 345-kV AC transmission line located in Monroe and Callaway counties, Missouri that would extend from the Project's Missouri HVDC converter



## CUI//SP-HISTP

### *Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

station in Monroe County to the existing McCredie Substation, owned and operated by Associated Electric Cooperative Incorporated (AECI), and the Burns Substation, owned and operated by Ameren, to connect to electric grids in Missouri; and,

- Temporary workspaces needed for construction, including temporary access routes, workspaces around transmission structures, pull or tension sites, multi-use construction yards, concrete batch plants, and fly yards and helipads.

## **2. AREA OF POTENTIAL EFFECTS**

In 36 CFR § 800.16(d), the APE is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” The APE includes all areas where construction activities are proposed to occur, as well as a broader area where the character or use of historic properties, if present, could be directly or indirectly affected by the Undertaking.

The terms “directly and indirectly” refer to the causality, and not the physicality, of the effect from the Undertaking. This means that if the effect comes from the Undertaking at the same time and place with no intervening cause, it is considered “direct” regardless of its specific type (e.g., whether it is visual, physical, auditory, vibrational, or atmospheric). “Indirect” effects are those caused by the Undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

DOE LPO has consulted with the Consulting Parties to establish the APE where the Undertaking may cause direct effects on historic properties. DOE LPO is also responsible for considering the Undertaking’s potential indirect effects on historic properties. In consultation with the Consulting Parties, DOE LPO has determined there are related non-Federal actions, specifically, the Kansas Alternating Current (AC) Collector System and Network Upgrades. These related actions are not aspects or elements of the Project, nor are they required for the Project to exist, and therefore they are not part of the Undertaking; they are separate reasonably foreseeable projects that are related to the Undertaking. The potential effects that the related non-Federal actions could cause on historic properties would be considered indirectly caused by the Undertaking; and therefore, the related non-Federal actions are included in the APE to consider the Undertaking’s potential indirect effects on historic properties.

Therefore, DOE LPO will consider both the direct and indirect effects caused by the Undertaking within the APE: direct effects are caused by the Project with no intervening cause; indirect effects may result from related non-Federal actions caused by the Undertaking that may occur later in time or are farther removed in distance from the Undertaking but are reasonably foreseeable.

The APE comprises the full geographic scope of the Undertaking and the related non-Federal actions. While DOE LPO has established a single APE for its Section 106 review, DOE LPO has delineated subsets within the APE based on the type of potential effects and the variable degree of Federal involvement, which will inform the reasonable and good faith identification effort and subsequent assessment of effects on historic properties. These subsets of the APE are described below and illustrated in the example figures that follow. The representative maps attached to this document are examples designed to illustrate the delineation of the APE for the purposes of consultation. Comprehensive map sets and the field inventory results will be included as appendices to the Undertaking’s survey reports.



## **2.1 Direct Effects**

The Direct Effects Area portion of the APE (hereafter referred to as the Direct APE) comprises the geographic areas where the Undertaking may directly affect historic properties, and includes all elements of the Project as described above. The Direct APE includes the specific construction footprint of all Project components as well as a variable 0.5-mile to 2-mile viewshed radius area.

## **2.2 Indirect Effects**

The Indirect Effects Area portion of the APE (hereafter referred to as the Indirect APE) comprises the geographic areas where the related non-Federal actions may affect historic properties, thereby constituting the potential indirect effects of the Undertaking. The Indirect APE includes the Kansas AC Collector System's 150-foot-wide rights-of-way (ROW) corridors, the known locations of the Network Upgrades, and a 0.5-mile viewshed radius area around the Kansas AC Collector System and the Network Upgrades.

## **2.3 Cumulative Effects**

Cumulative effects will be assessed in geographic areas where other past, present, and reasonably foreseeable future actions overlap with the location of an historic property within the APE. See Attachment 4, *Phased Identification and Assessment Plan*, Section 4.2 titled "Cumulative Effects" for a description of the geographic areas where cumulative effects would be assessed if historic properties are present.

## **3. SUBDIVISIONS FOR PHYSICAL AND NONPHYSICAL EFFECTS**

For the purposes of historic property identification and effects assessment, DOE LPO has coordinated with the Consulting Parties to subdivide both the Direct APE and the Indirect APE to delineate the areas where physical and nonphysical effects may occur:

- the subset of the APE within which physical effects resulting from ground-disturbing activities or potential ground-disturbing activities may occur is referred to as the Physical APE;
- the subset of the APE where no ground disturbance will occur but where nonphysical effects may still result from the Undertaking is referred to as the Nonphysical APE.

Defining these subdivisions of the APE functions to delineate the survey areas for the identification of historic properties, which may include archaeological resources, historic aboveground resources, and properties of religious and cultural significance to Tribes, as described below.

### **3.1 Direct-Physical APE**

The Direct-Physical APE is the area within which the Undertaking's ground-disturbing activities (including but not limited to vegetation clearing, grubbing, and grading for transmission structures, access routes, multi-use yards, helipads and fly yards, pull or tension sites, optical regeneration facilities, and converter stations) could affect historic properties, and is defined as the depth and breadth of the limits of disturbance (LOD). "Ground-disturbing activities" are further defined in Attachment 2.



## **CUI//SP-HISTP**

### *Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

The Undertaking's right-of-way (ROW) corridor is 150 feet wide on average. However, the Project design and the landscape over which the Undertaking traverses allow for construction to avoid incurring ground disturbance throughout the entire ROW. Therefore, the ROW is segmented into portions where ground-disturbing activities such as vegetation clearing, grubbing, and grading are necessary for construction, and portions where no ground disturbance will occur:

- Those portions of the Undertaking ROW where ground-disturbing activities are required are included in the Direct-Physical APE.
- The sections of the Undertaking ROW in which no ground-disturbing activities are proposed are not included in the Direct-Physical APE.
- Lastly, primary access routes and work areas associated with transmission structure locations are included in the Direct-Physical APE.

A representative set of maps showing the various Undertaking elements keyed to the Direct-Physical APE are provided at the end of this document. The sample figures display permanent and temporary Project elements which comprise the LOD (and therefore the Direct-Physical APE), as well as sections of the Project ROW that are excluded from the physical APE (ROW within which no ground-disturbing activities are proposed). During the archaeological field investigations, the extent of ROW sections that require ground disturbance (vegetation clearing, grubbing, and grading) will be verified, to ensure all such areas within the ROW are included within the Direct-Physical APE of the Project.

## **3.2 Direct-Nonphysical APE**

The Direct-Nonphysical APE is the geographic area inclusive of, and extending outward from, the Undertaking's LOD within which the Undertaking could pose nonphysical (e.g., visual, vibrational, atmospheric, or auditory) direct effects on historic properties; meaning the Direct-Nonphysical APE is not an "indirect APE" but rather an area for assessing visual, vibrational, auditory, and atmospheric effects in the Direct APE. The Direct-Nonphysical APE emanates from all new, permanent aboveground infrastructure proposed for the Project including the converter stations, transmission structure locations, and optical regeneration facilities.

The standard minimum distance of the nonphysical APE for the transmission structure locations and optical regeneration facilities is a 0.5-mile buffer. The nonphysical APE is expanded further, up to a maximum distance of 2 miles, for discrete components of the Project that display an increased visibility due to characteristics of the surrounding landscape, as determined through viewshed modelling (see representative maps attached to this document). Expansion of the nonphysical APE is therefore tailored to individual transmission structure locations and optical regeneration facilities. The expanded areas of the nonphysical APE are based on a viewshed model developed by SWCA Environmental Consultants as part of the visual impact assessment studies for the Project as well as a review of the prevailing topographic and landscape features surrounding the proposed new infrastructure. Elements of the landscape surrounding the new proposed Project infrastructure which were classified as displaying a moderate to high degree of visibility are included within the nonphysical APE considered for the Project; meaning that if areas outside the 0.5-mile baseline distance displayed moderate to high visibility in the viewshed model, the nonphysical APE was expanded to include those areas. For consistency, the limits of the nonphysical APE were established as either a 0.5-mile, 1.0-mile or 2.0-mile buffer surrounding proposed structure locations. Transitional areas between these buffer limits (see representative maps attached to this document) were projected from preliminary review of the modern aerial imagery and may be modified during the field investigations to better account for the visual extent of the Project without requiring formal amendment to the APE.



## **CUI//SP-HISTP**

### *Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

Due to the more pronounced visual profile (in both size and scale) of the proposed high-voltage direct current converter stations in Ford County, Kansas and Monroe County, Missouri, the nonphysical APE associated with these two locations was expanded to encompass a 1.0-mile buffer extending around the parcels that will contain the station facilities (see representative maps attached to this document).

During the aboveground field documentation and inventory investigations, architectural historians will assess the viewshed modeling on the ground and, if appropriate, expand the limits of the nonphysical APE in specific areas to account for current landscape conditions and overall visibility of the proposed new infrastructure. The viewshed modeling and any modifications resultant from the aboveground field investigations will be depicted on the full nonphysical APE map set for the Project.

### **3.3 Indirect-Physical APE**

The Indirect-Physical APE includes the known locations of the Network Upgrades and the Kansas AC Collector System ROW corridors. Because the related non-Federal actions that comprise this portion of the APE are reasonably foreseeable future actions, and neither DOE LPO nor the Applicant possess the specific designs for reasonably foreseeable future actions, the defined LOD for the related non-Federal actions is unknown; therefore, the Indirect-Physical APE is defined more broadly.

### **3.4 Indirect-Nonphysical APE**

The Indirect-Nonphysical APE for the related non-Federal actions is the area within a 0.5-mile radius of the known centerline of the Kansas AC Collector System and within a 0.5-mile radius of the known Network Upgrade locations.

## **4. SUMMARY**

Grain Belt Express LLC has applied for Federal financial assistance from the DOE LPO under Title XVII of the Energy Policy Act of 2005, as amended (EPAAct). DOE LPO has determined that the Project constitutes an Undertaking subject to review under Section 106 of the NHPA. To define the APE, DOE LPO identified 1) the proposed Project that is the Undertaking, and 2) related non-Federal actions that are not part of the Project but are related actions to the Undertaking. DOE LPO has delineated the APE to include the entirety of the Undertaking as well as the related non-Federal actions. Therefore, the APE includes all geographic areas where direct and indirect effects may be caused by the Undertaking.

In this PA Attachment, DOE LPO has documented the delineation of subdivisions of the APE for areas where Direct and Indirect Effects may occur, as well as areas where Physical and Nonphysical effects may occur, whether direct, indirect, or cumulative. Within the APE, the Undertaking and the related non-Federal actions constitute the Direct APE and the Indirect APE, respectively. For the purposes of historic property identification and effects assessment, the Direct APE and the Indirect APE are each subdivided to delineate the areas where physical and nonphysical effects may occur.



## **CUI//SP-HISTP**

### *Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

In summary, the APE consists of these subdivisions:

1. The Direct APE: the entirety of the proposed Project as listed under Section 1.1 above including the 542-mile HVDC transmission line, optical regeneration facilities and associated access roads, two HVDC converter stations, the Ford County Interconnect, the Tiger Connector, and all temporary workspaces needed for construction.
  - a. Direct-Physical APE: the depth and breadth of the Project limits of disturbance (LOD).
  - b. Direct-Nonphysical APE: the area within a variable 0.5-mile, 1-mile, or 2-mile radius emanating from all new, permanent aboveground infrastructure proposed for the Project including the converter stations, transmission structure locations, and optical regeneration facilities.
2. The Indirect APE: related non-Federal actions listed under Section 2.0 above including the Kansas AC Collector System and the Network Upgrades.
  - a. Indirect-Physical APE: the area within the Kansas AC Collector System ROW corridors and the known locations of the Network Upgrades.
  - b. Indirect-Nonphysical APE: the area within a 0.5-mile radius of the known centerline of the Kansas AC Collector System and within a 0.5-mile radius of the known Network Upgrades.

The methodology for identifying historic properties and assessing effects on identified historic properties within the APE is included in PA Attachment 4 – Phased Identification and Assessment Plan (PIAP).



**ATTACHMENT 3**

**PROGRAMMATIC AGREEMENT  
AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**DELINEATION OF THE PROJECT AREA OF POTENTIAL  
EFFECTS (APE)**

**MAPS**



**CUI//SP-HISTP**

*Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

**Project Overview Map**



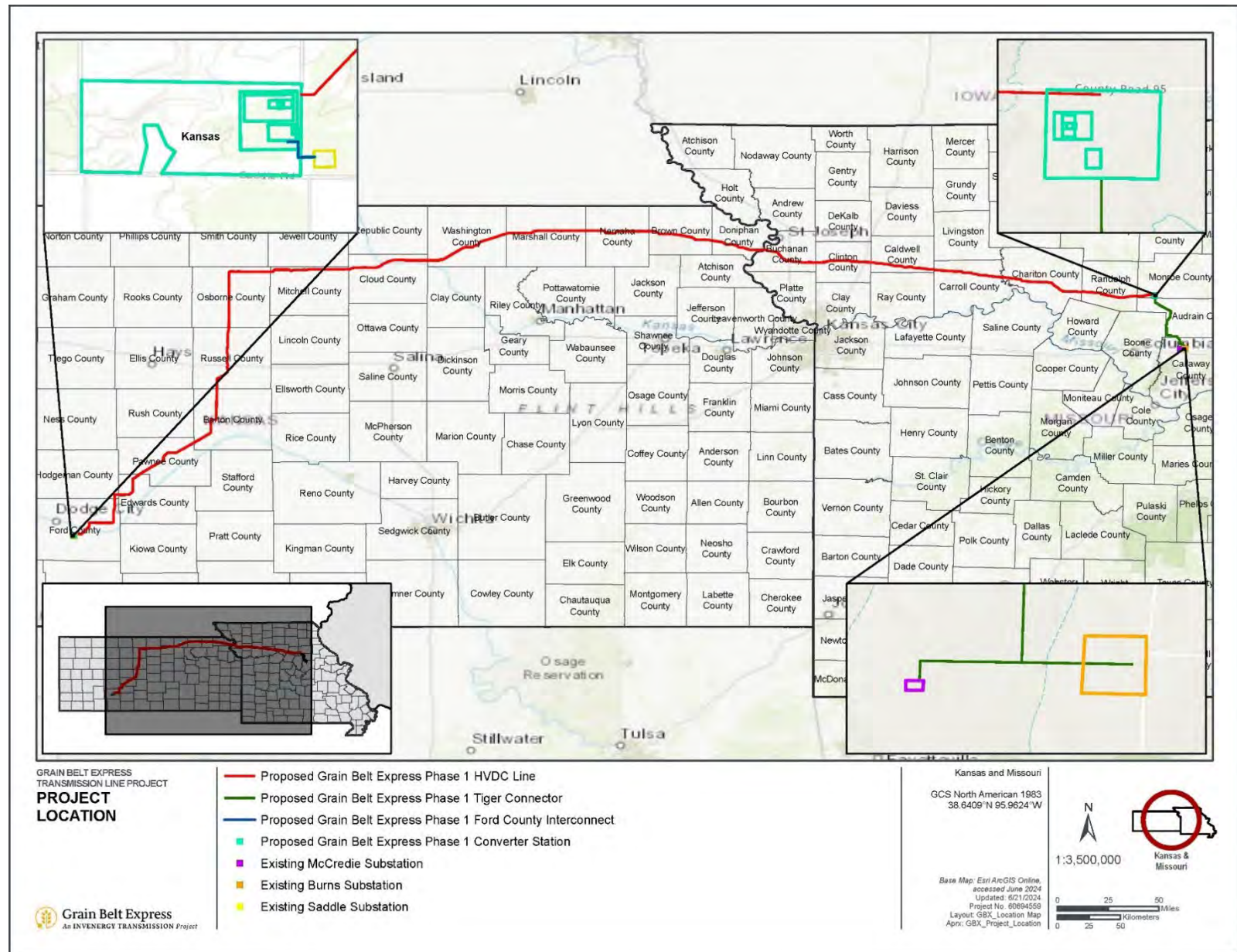


Figure 1-1. Project Location



## **CUI//SP-HISTP**

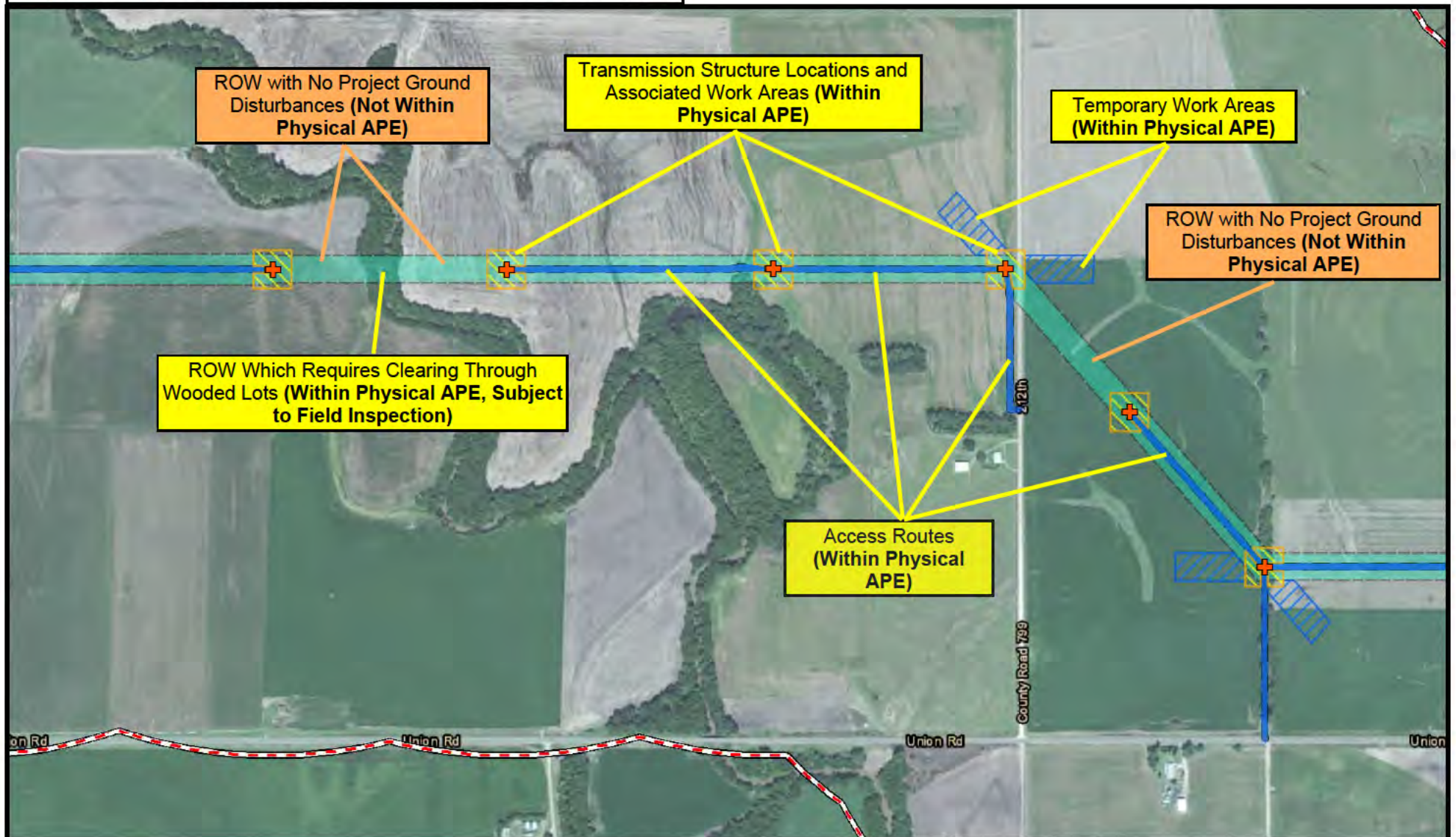
*Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

# **Direct-Physical APE**

## **Example Maps**



Figure 1. Representative Example of Physical APE Definition



**LEGEND**

Right-of-Way

**Physical APE**

Main Line Transmission Structure

Puller/Tensioner Site

Structure Temporary Work Space

Access Route



Limits of Non-Physical APE

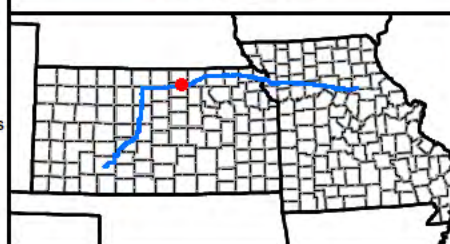
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors  
Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community



0 250 500 1,000 Feet  
0 75 150 300 Meters

\*Transmission Structure Locations are Based on Preliminary Design

Cloud County, Kansas



**Grain Belt Express Phase 1**

**GBX- Area of Potential Effects Definition**

Date: 7/18/2023

SCALE: 1 in = 305 meters

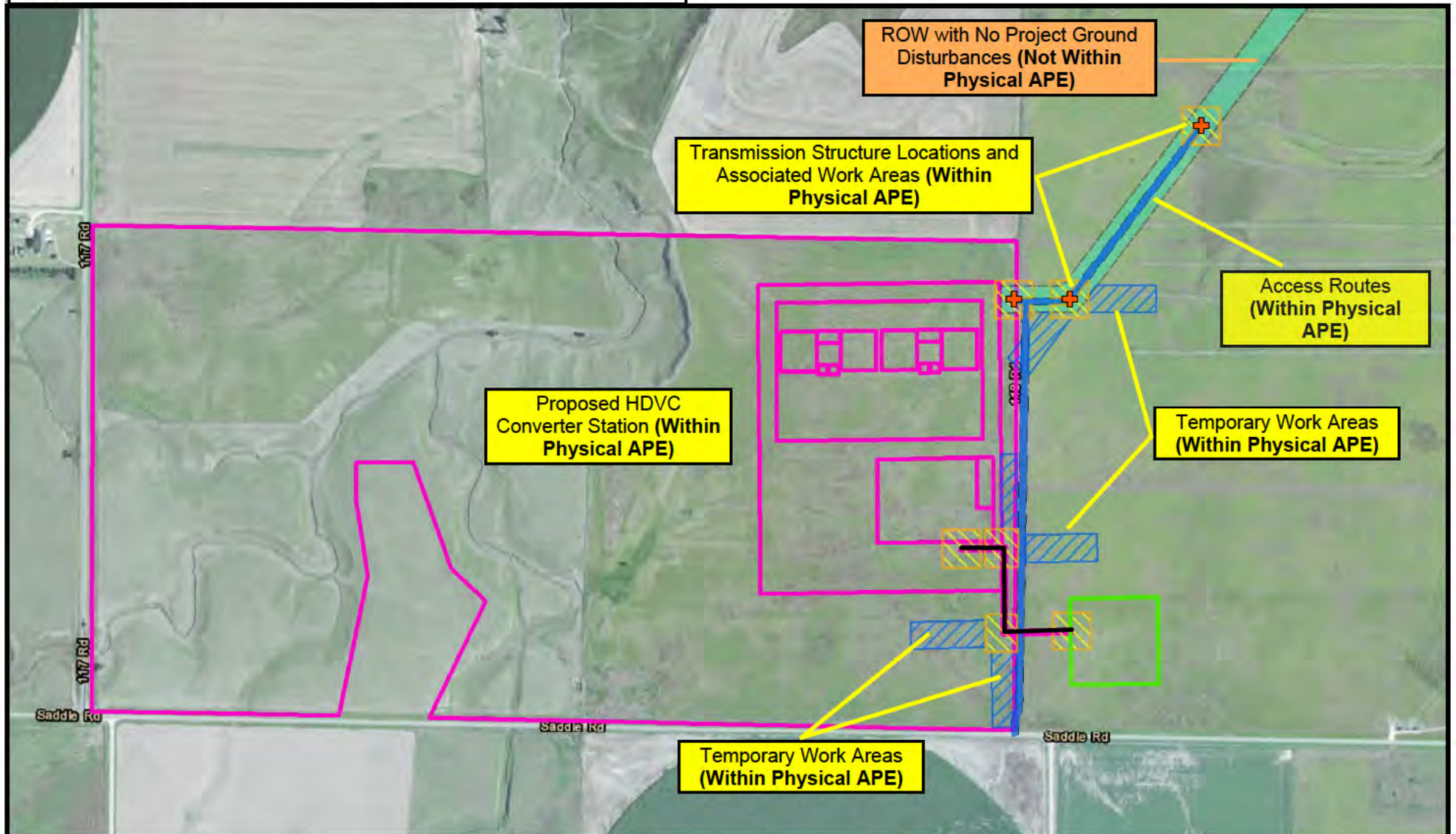
CREATED BY: BSG

CHECKED BY: CGL

**AECOM**



Figure 2. Representative Example of Physical APE Definition



**LEGEND**

- Right-of-Way
- Physical APE**
- + Main Line Transmission Structure
- Ford County Interconnect
- Converter Station Property and Switchyard Layout
- Puller/Tensioner Site
- Structure Temporary Work Space
- Access Route

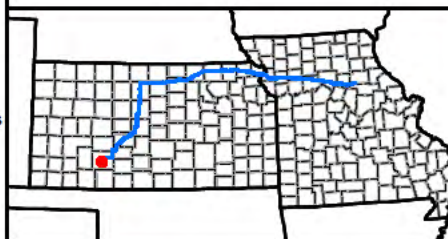
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors  
Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community



0 250 500 1,000 Feet  
0 75 150 300 Meters

\*Transmission Structure Locations are Based on Preliminary Design

Ford County, Kansas



**Grain Belt Express Phase 1**

**GBX- Area of Potential Effects Definition**

Date: 7/18/2023

SCALE: 1 in = 305 meters

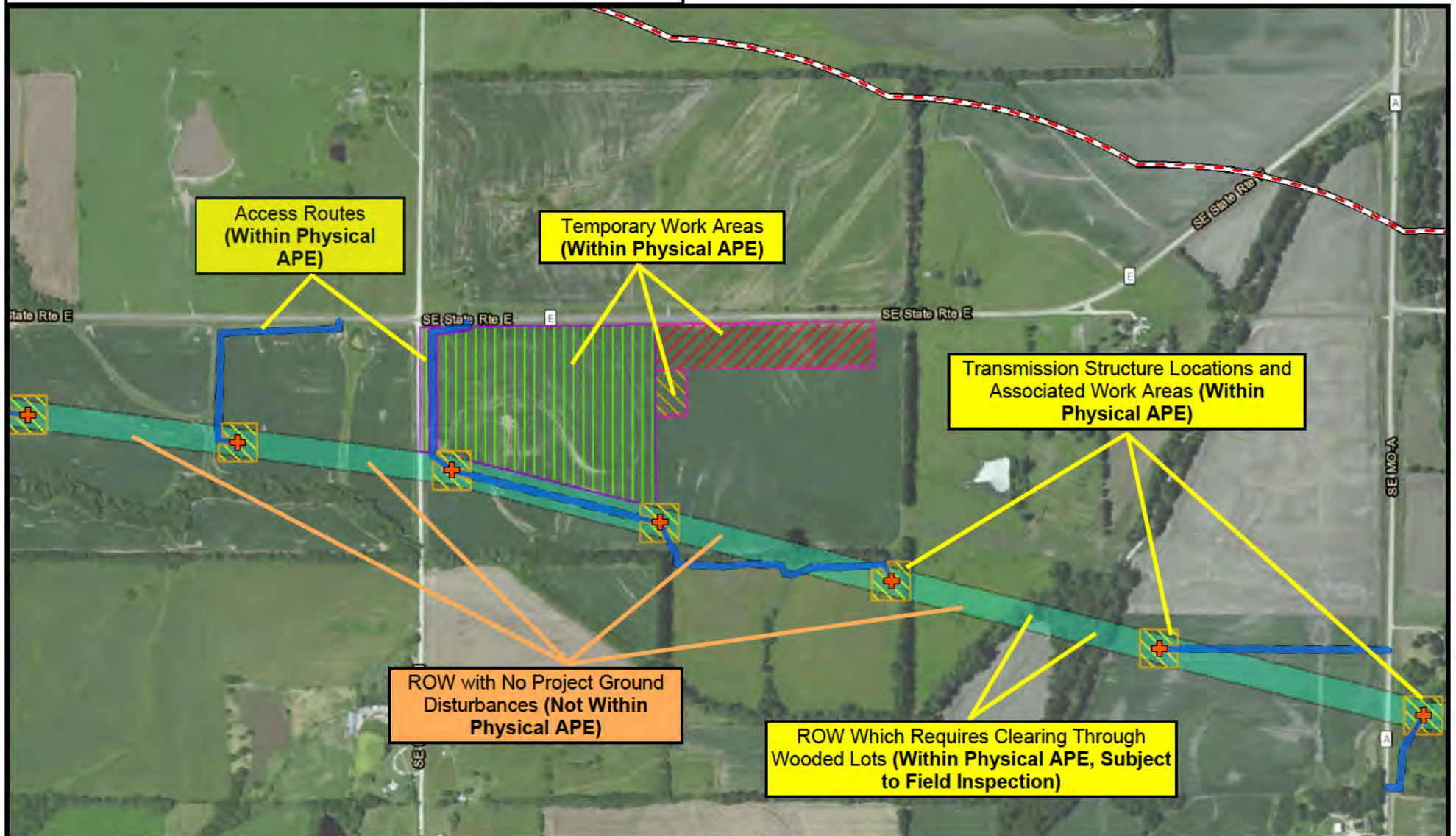
CREATED BY: BSG

CHECKED BY: CGL

**AECOM**



Figure 3. Representative Example of Physical APE Definition



**LEGEND**

Right-of-Way



Limits of Non-Physical APE

**Physical APE**

Main Line Transmission Structure

Fly Yard

Helipad

Laydown Yard

Structure Temporary Work Space

Access Route

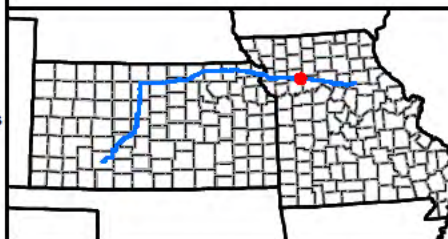
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors  
Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community



0 250 500 1,000 Feet  
0 75 150 300 Meters

\*Transmission Structure Locations are Based on Preliminary Design

Caldwell County, Missouri



**Grain Belt Express Phase 1**

**GBX- Area of Potential Effects Definition**

Date: 7/18/2023

SCALE: 1 in = 305 meters

CREATED BY: BSG

CHECKED BY: CGL

**AECOM**



## **CUI//SP-HISTP**

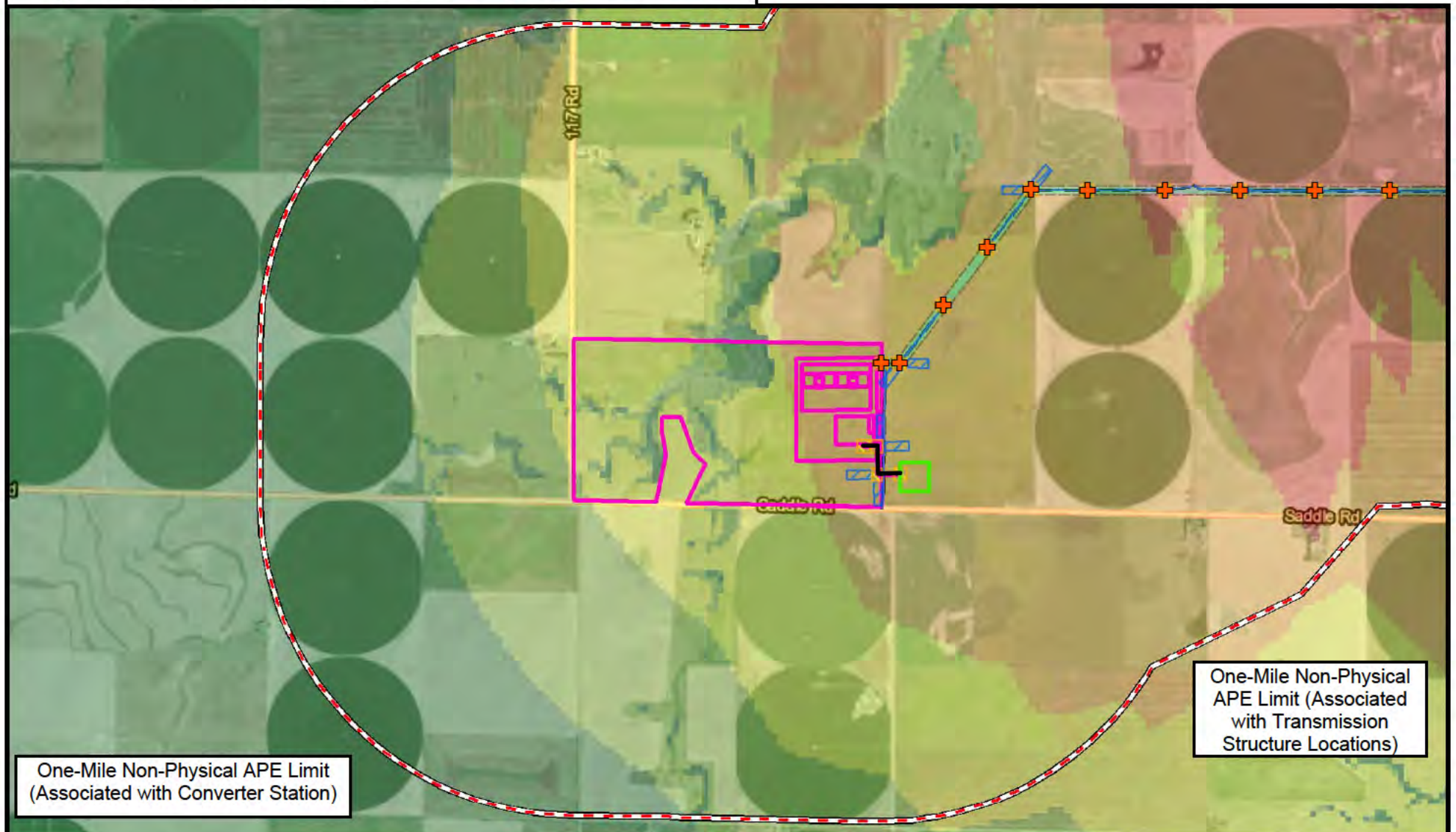
*Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

### **Direct-Nonphysical APE**

#### **Example Maps**



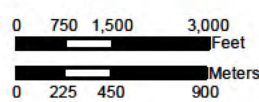
Figure 1. Representative Example of Non-Physical APE Definition



- LEGEND**
- Right-of-Way
  - Physical APE**
  - + Main Line Transmission Structure
  - Ford County Interconnect
  - Converter Station Property and Switchyard
  - Pulley/Tensioner Site
  - Structure Temporary Work Space
  - Access Route

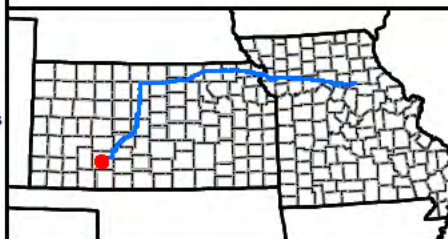
- Limits of Non-Physical APE**  
**SWCA GBX Viewshed Model**
- | Value                              |
|------------------------------------|
| 0 - 3 Visible Observation Points   |
| 3 - 8 Visible Observation Points   |
| 8 - 13 Visible Observation Points  |
| 13 - 19 Visible Observation Points |
| 19 - 32 Visible Observation Points |

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors  
 Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community



\*Transmission Structure Locations are Based on Preliminary Design

Ford County, Kansas



## Grain Belt Express Phase 1

### GBX- Area of Potential Effects Definition

Date: 7/18/2023

SCALE: 1 in = 914 meters

CREATED BY: BSG

CHECKED BY: CGL

**AECOM**



Figure 2. Representative Example of Non-Physical APE Definition

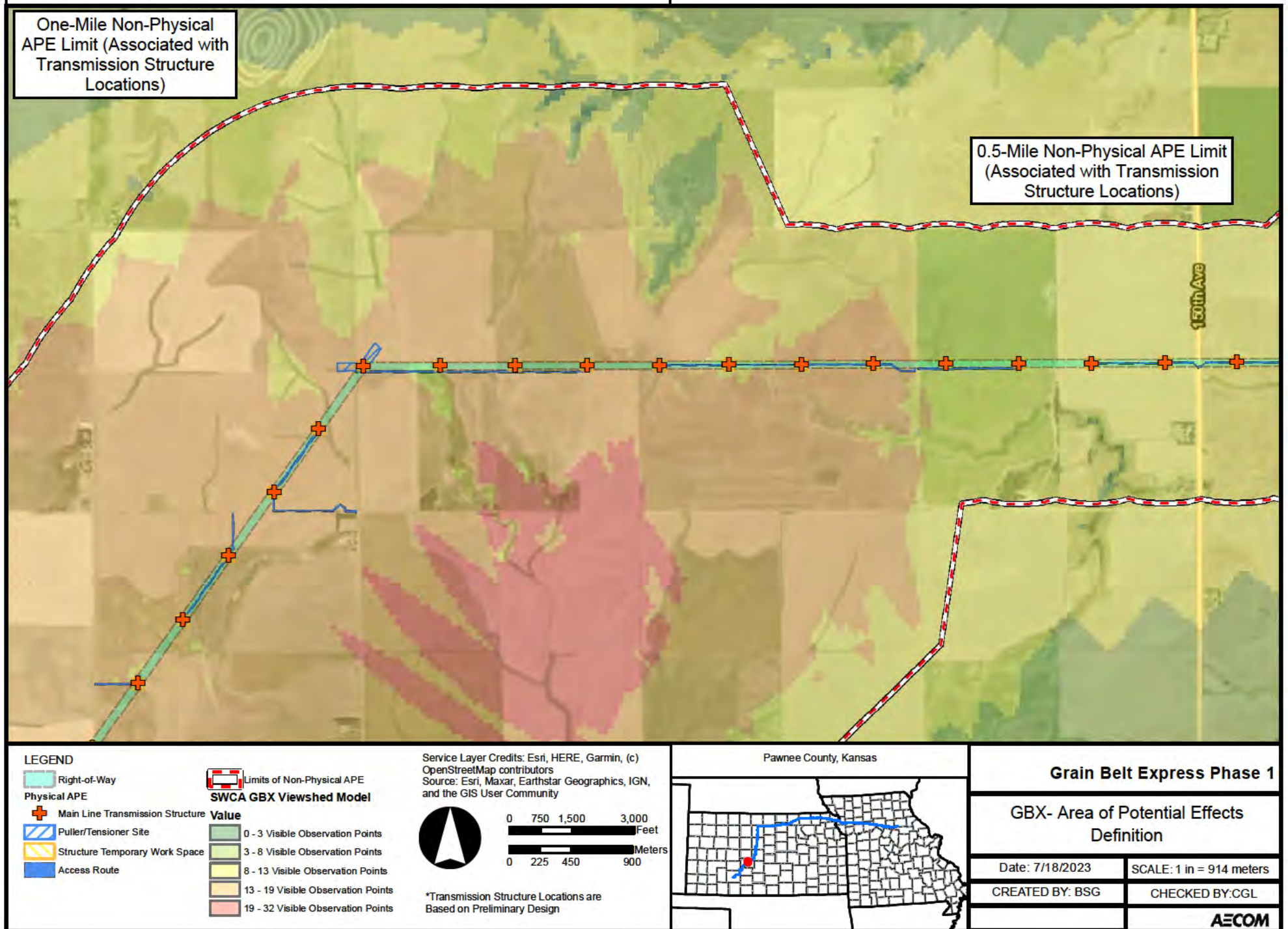
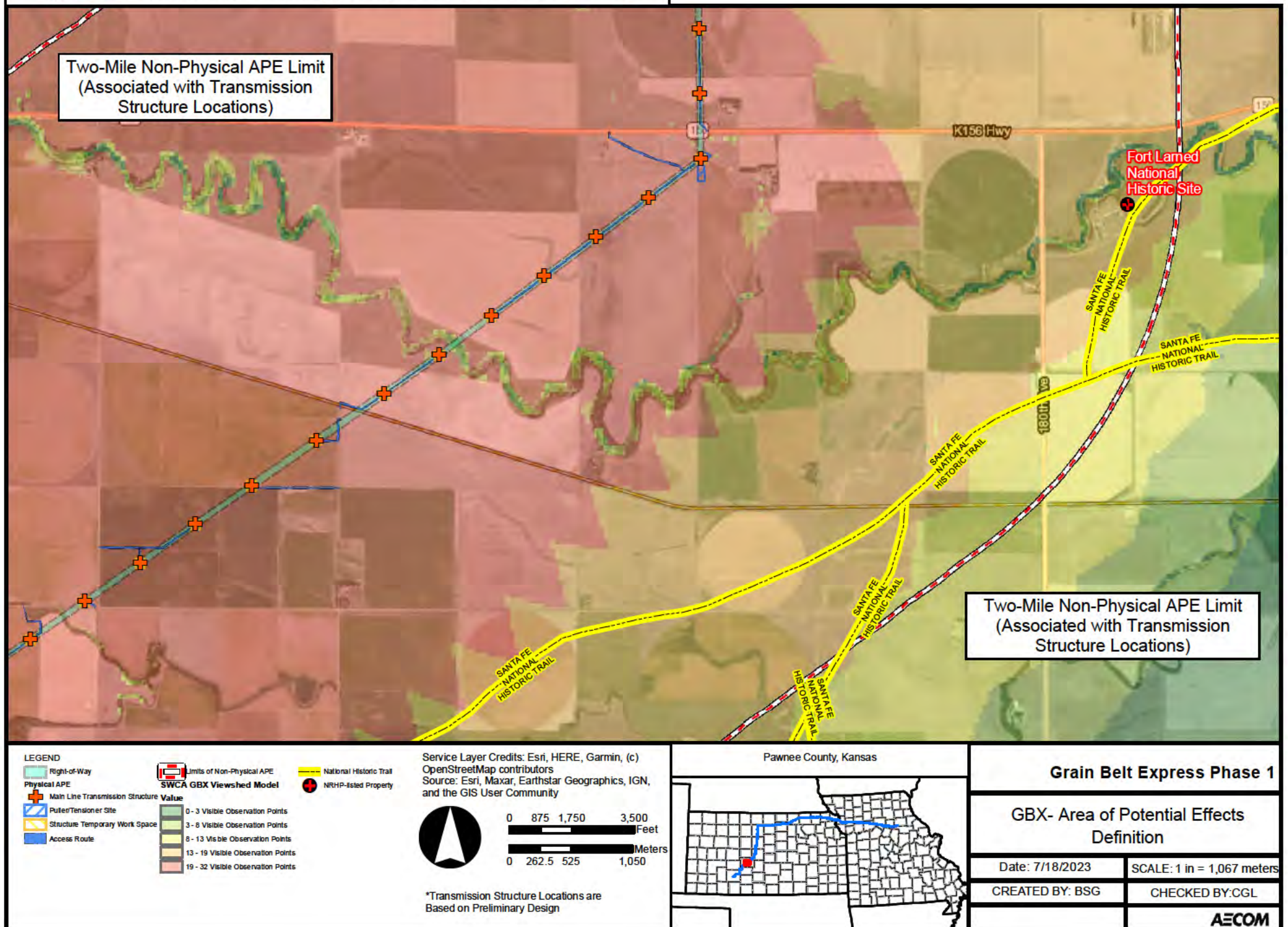




Figure 3. Representative Example of Non-Physical APE Definition





**CUI//SP-HISTP**

*Delineation of the Area of Potential Effects for the Phase 1 Grain Belt Express Transmission Project*

**Indirect Effects Area Maps**

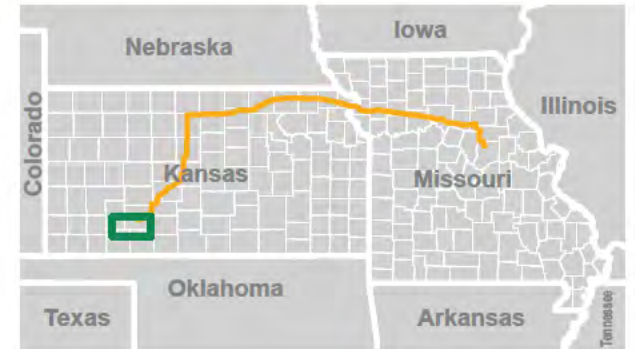
**(Related non-Federal Actions)**





## Legend

- Grain Belt Express Centerline
- Kansas AC Collector System Centerlines**
  - Meade - Dodge City
  - Bucklin - Dodge City
- Kansas AC Collector System APE (0.5-mile buffer)
- County Boundary



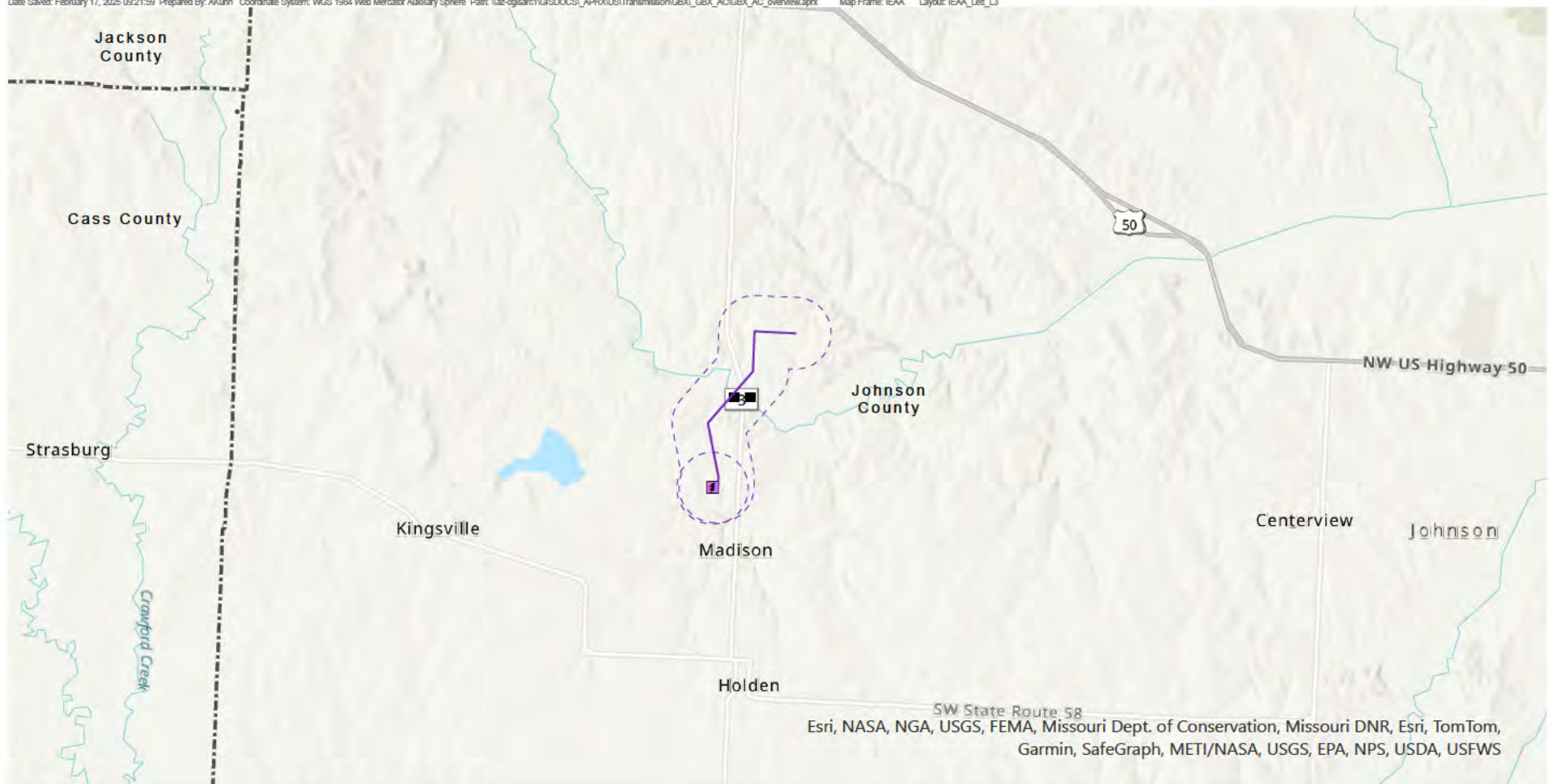
## Kansas AC Collector System APE

Grain Belt Express Transmission Project | Ford County, Kansas






January 30, 2025

 **Grain Belt Express**  
An Invenery Project





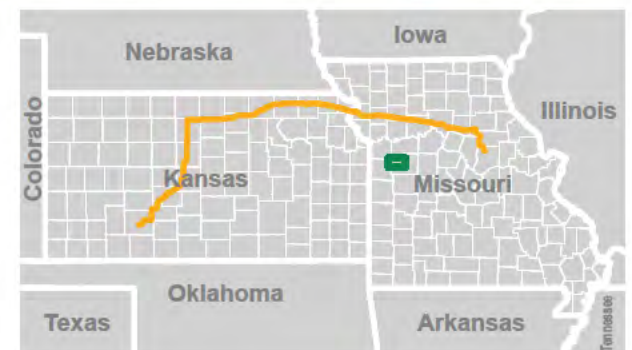
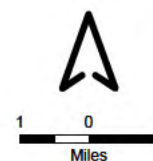
## Legend

-  Network Upgrade Substation
-  Network Upgrade Transmission Centerline
-  Network Upgrade APE (0.5-mile buffer)\*
-  County Boundary
-  State Boundary

\*APE considered for desktop review

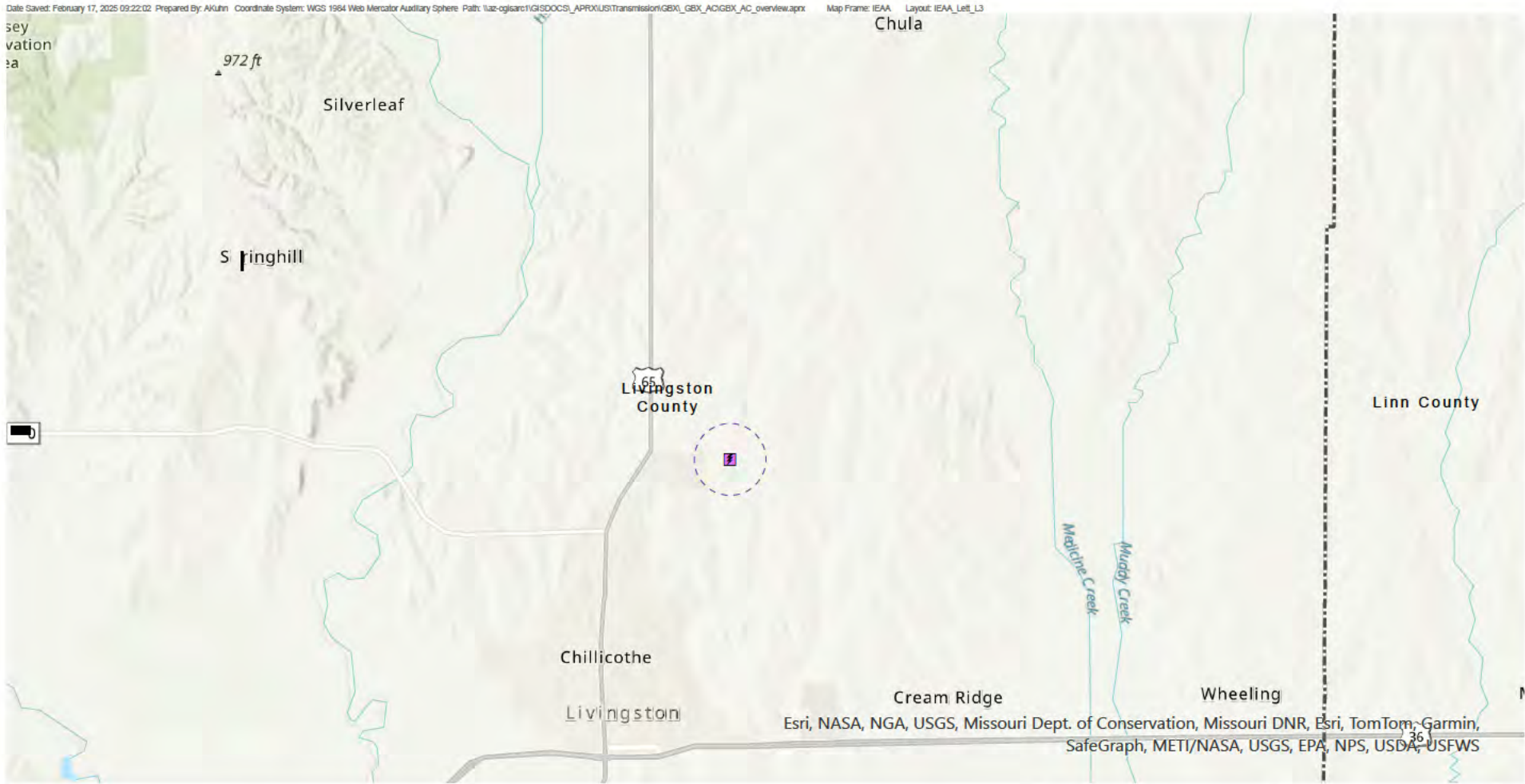
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri







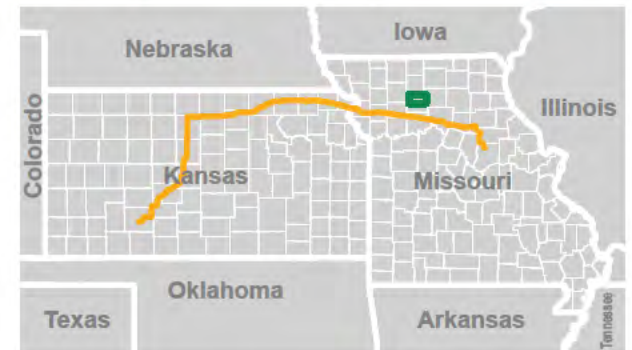
February 17, 2025





### Legend

-  Network Upgrade Substation
-  Network Upgrade APE (0.5-mile buffer)\*
-  County Boundary
-  State Boundary



\*APE considered for desktop review

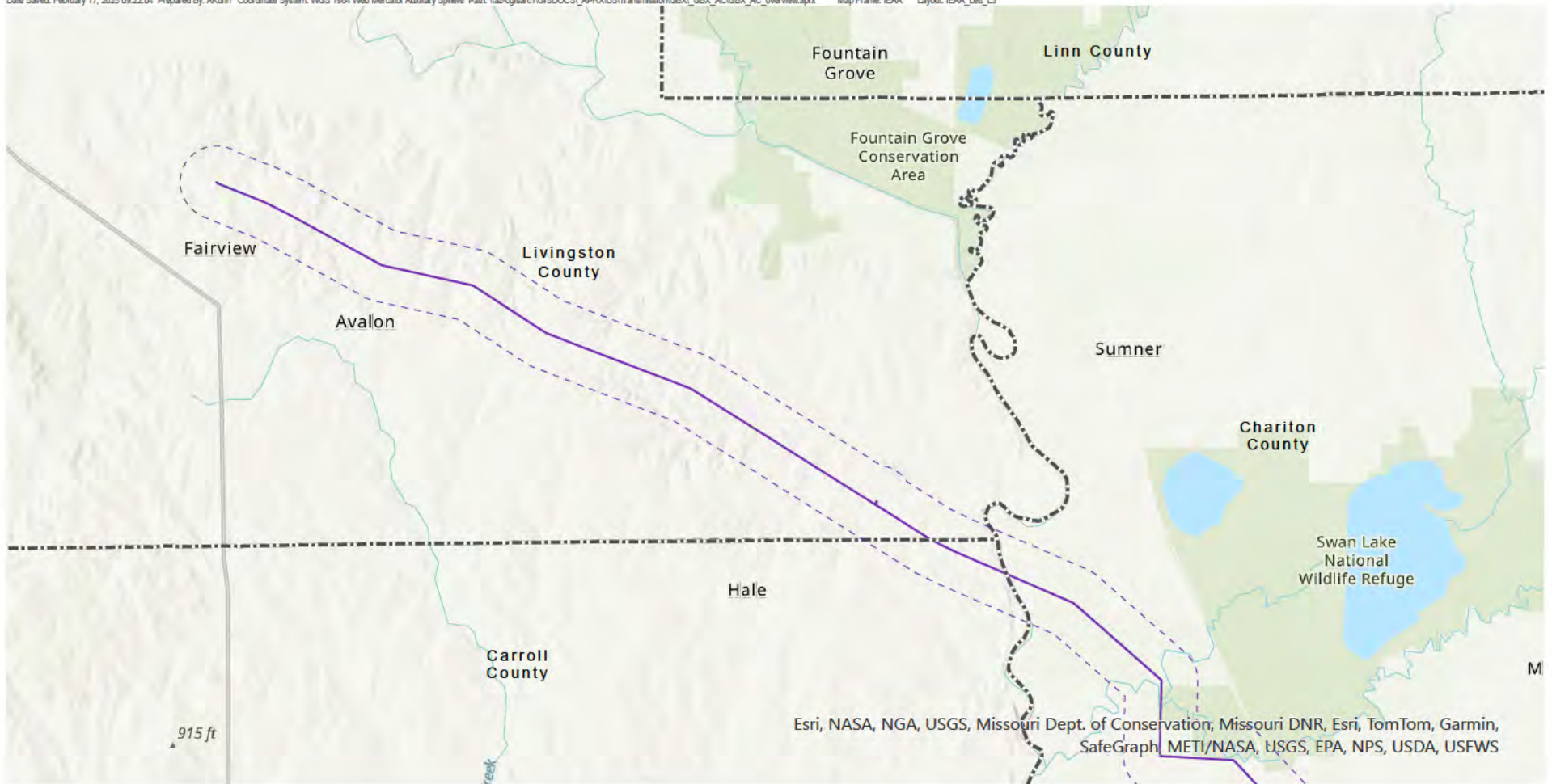
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

February 17, 2025

 **Grain Belt Express**  
An Invenery Project





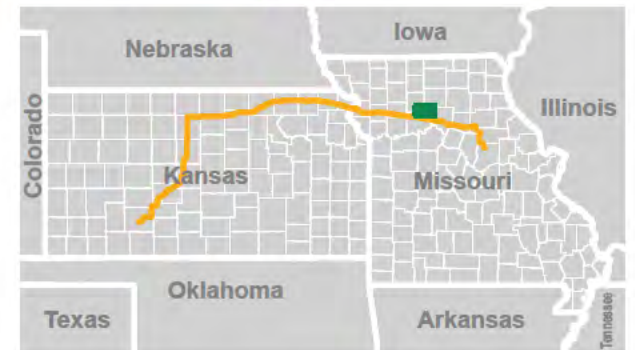
### Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

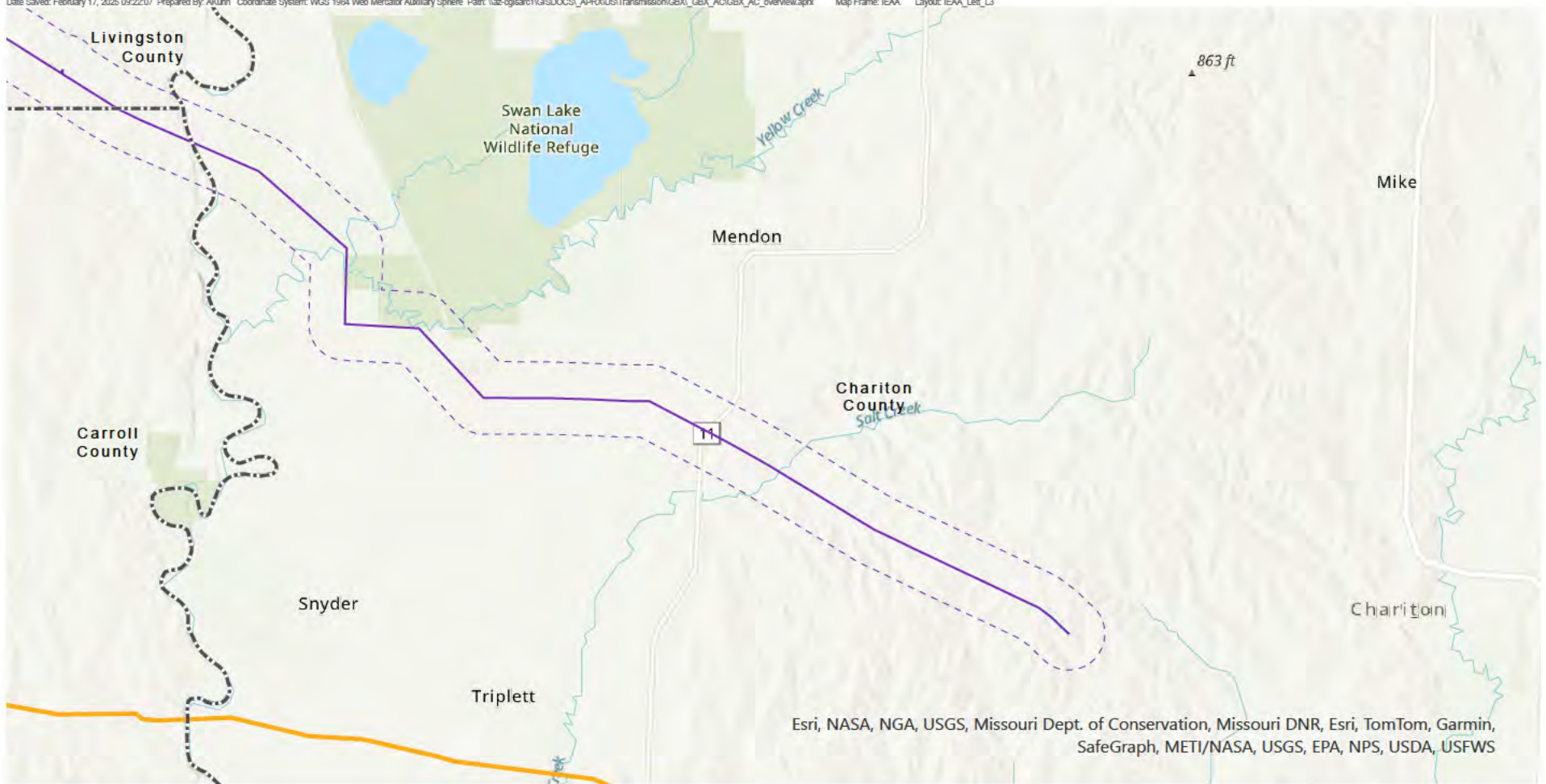
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





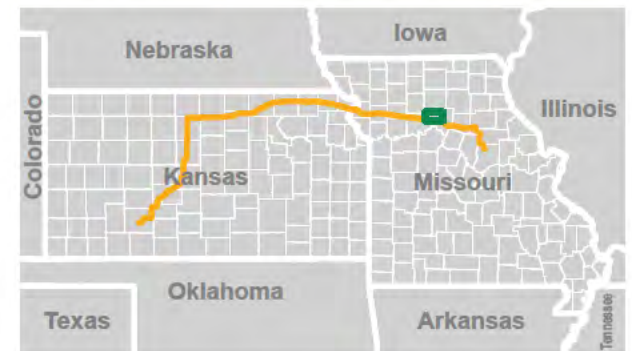
## Legend

- Network Upgrade Transmission Centerline
- Grain Belt Express Centerline
- - - Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

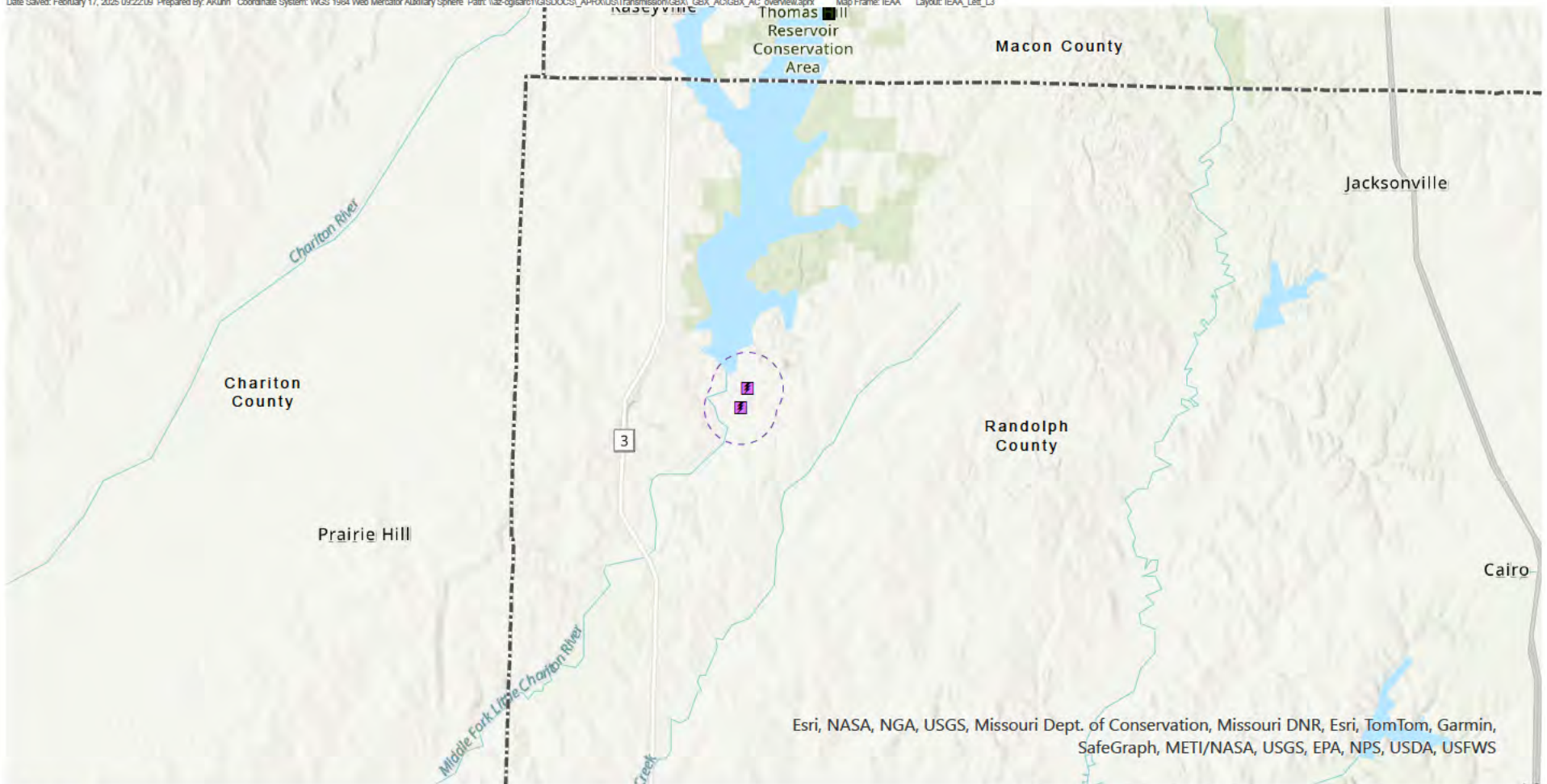
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





### Legend

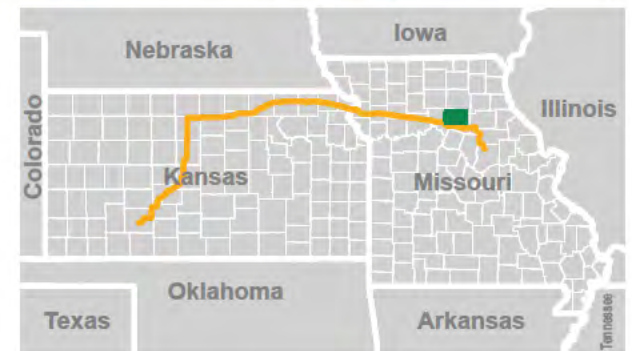
- Network Upgrade Substation
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

Esri, NASA, NGA, USGS, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

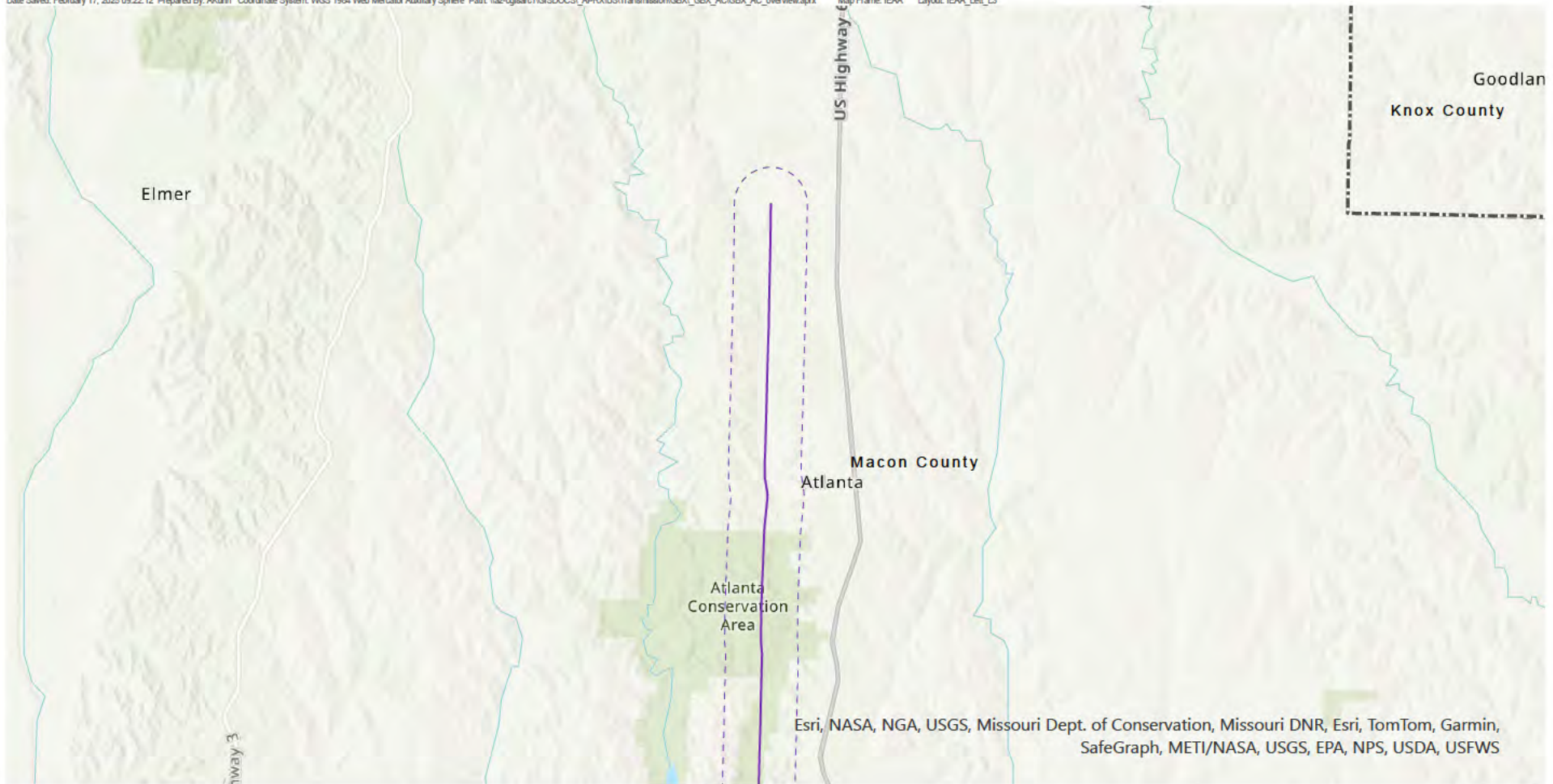


February 17, 2025



Grain Belt Express  
An Invenery Project





Esri, NASA, NGA, USGS, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

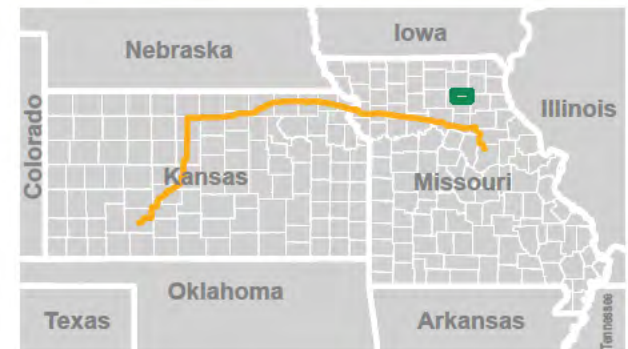
### Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

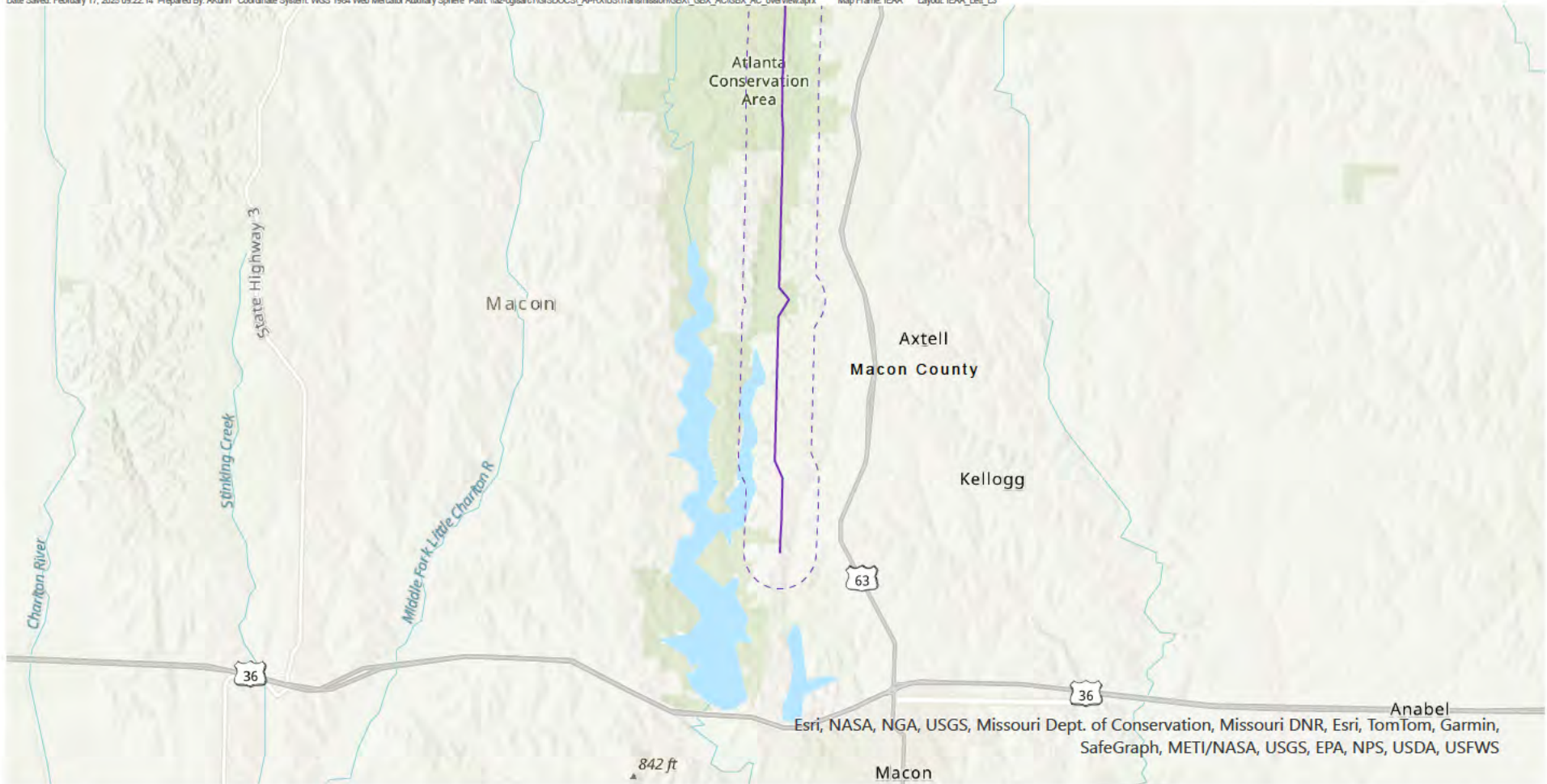


February 17, 2025



Grain Belt Express  
An Invenery Project





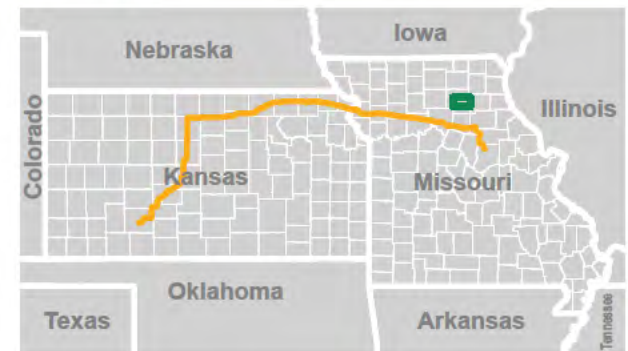
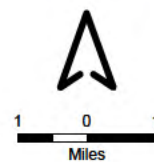
### Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

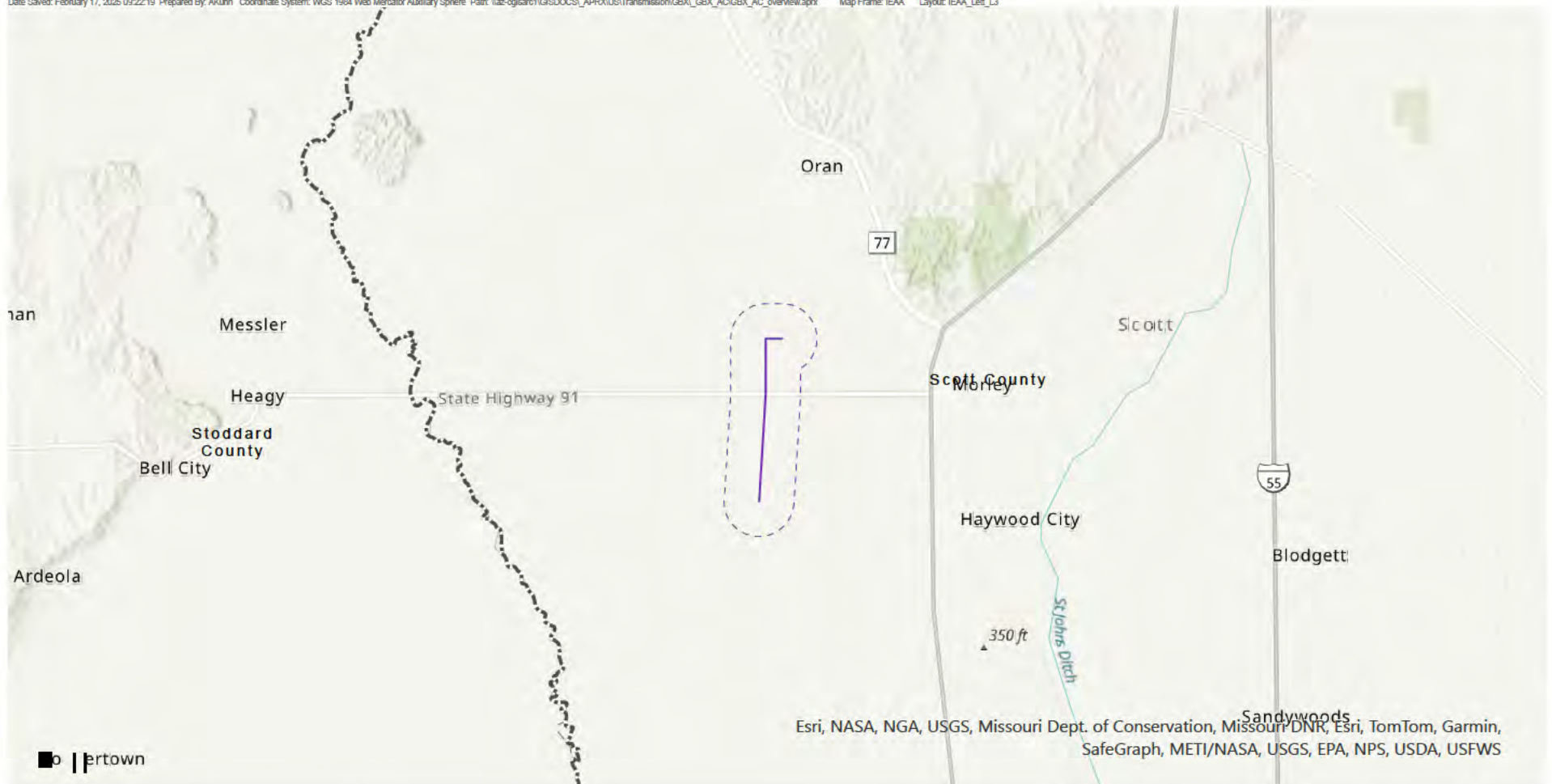


February 17, 2025



**Grain Belt Express**  
An Invenergy Project





## Legend

- Network Upgrade Transmission Centerline
- - - Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





### Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





## Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

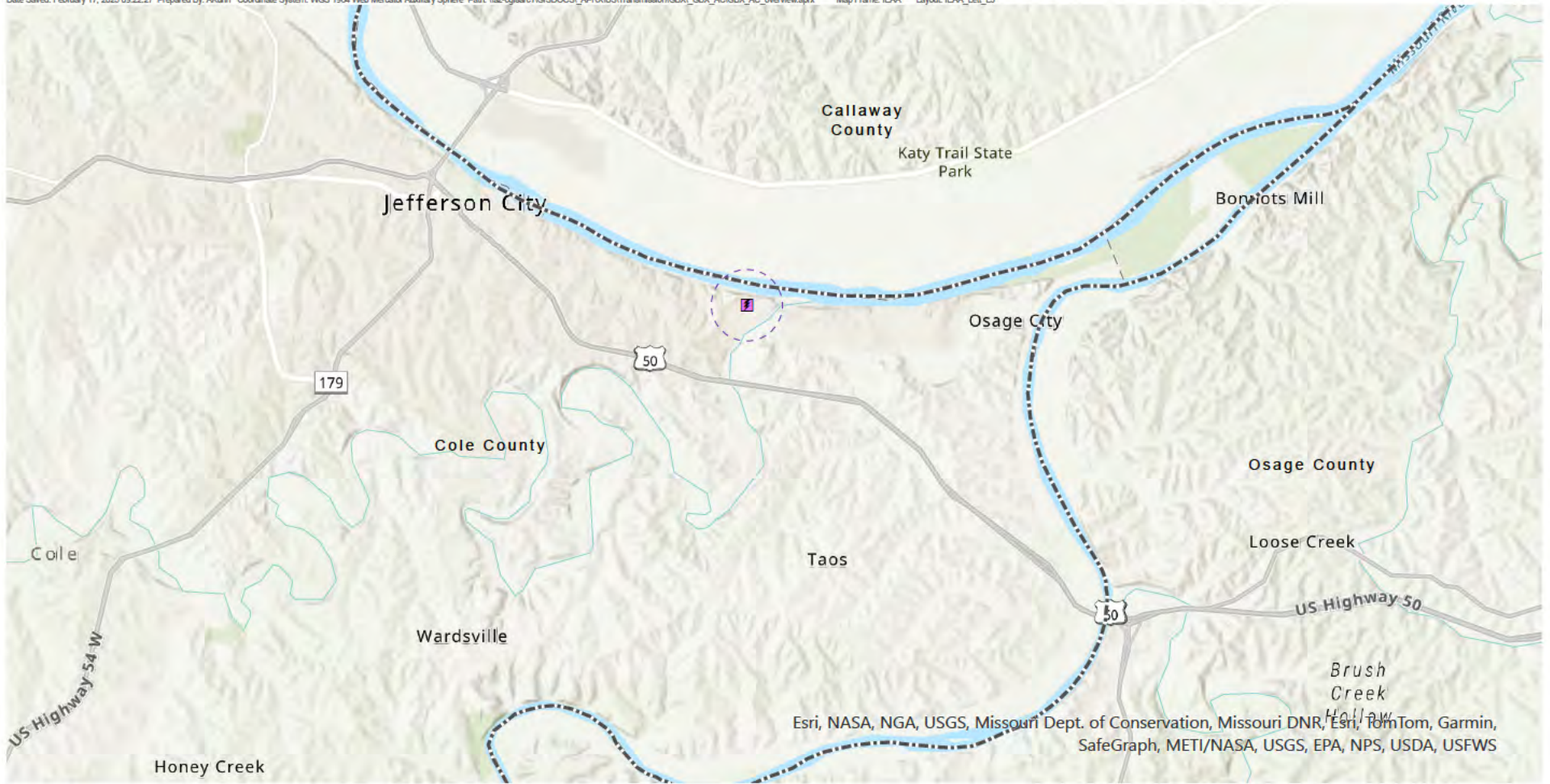


February 17, 2025



**Grain Belt Express**  
An Inveneyr Project





### Legend

- Network Upgrade Substation
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

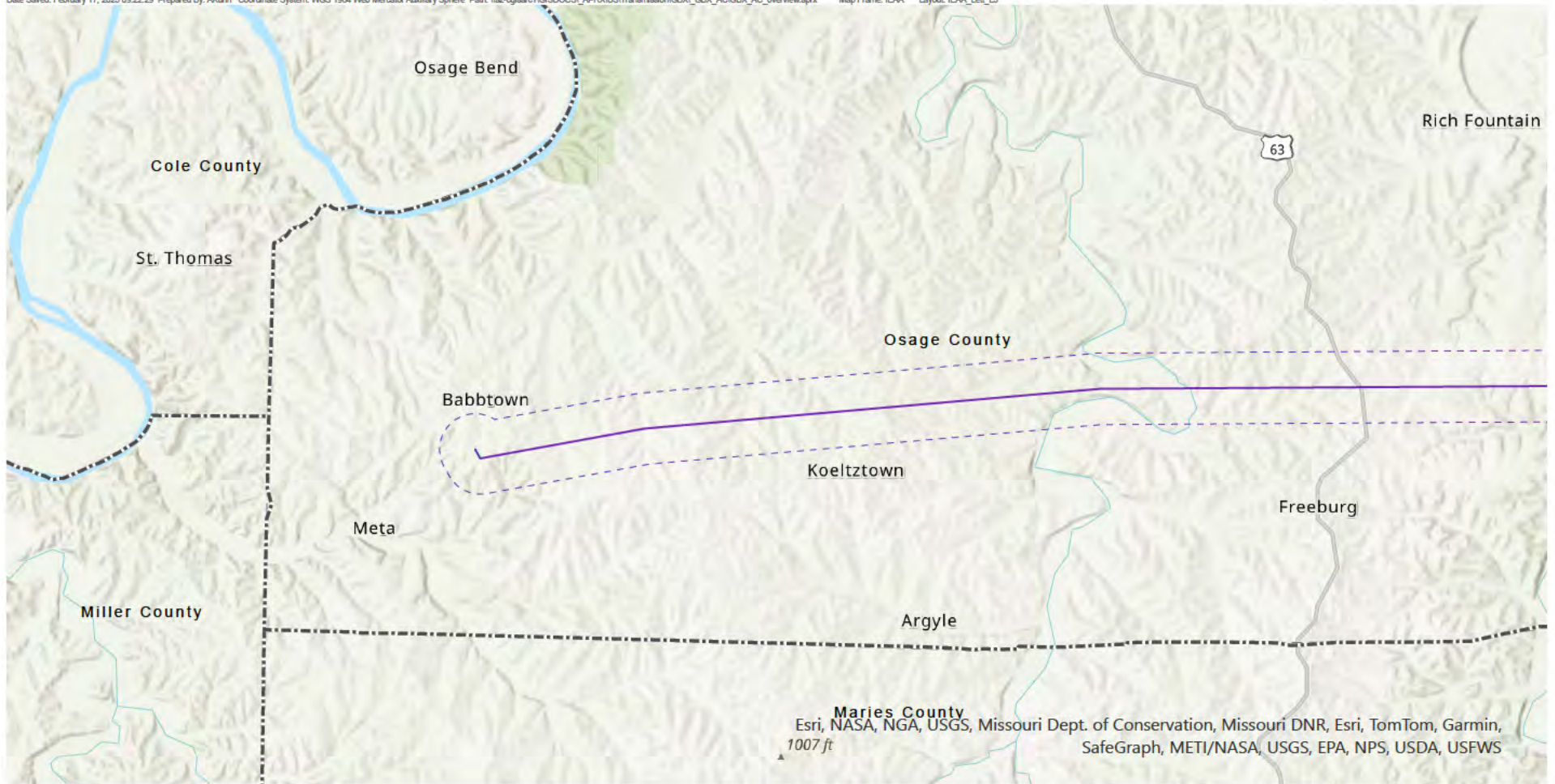
\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

February 17, 2025





### Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

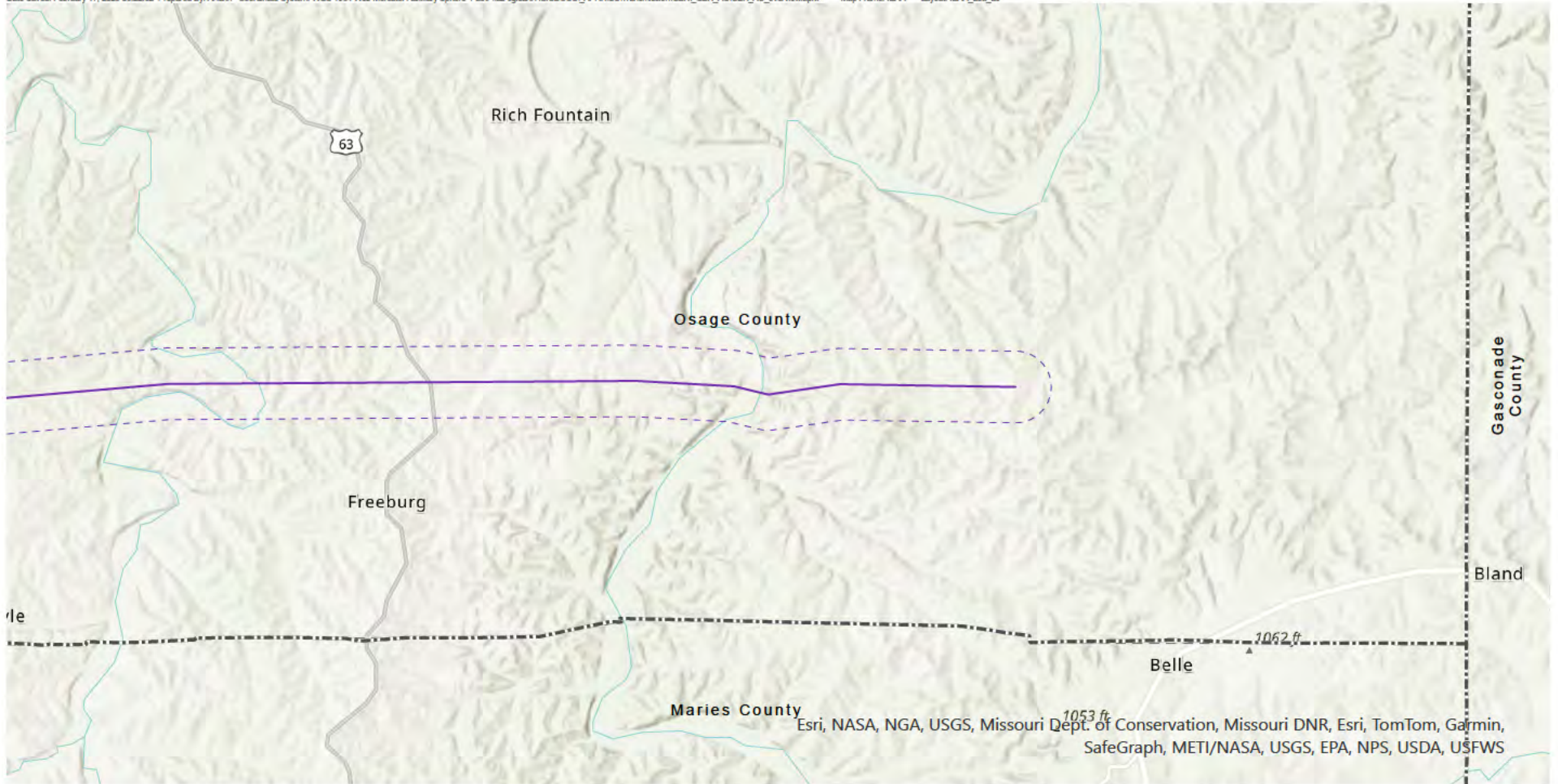


February 17, 2025



**Grain Belt Express**  
An Invenery Project





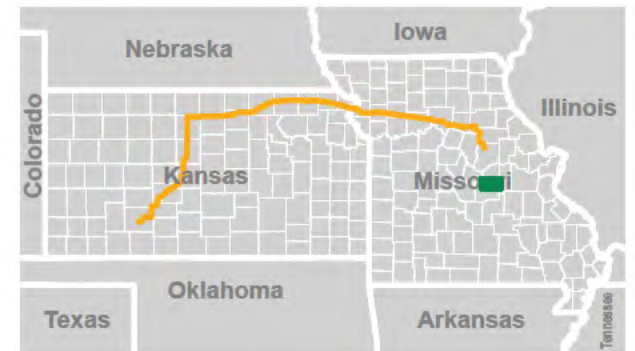
### Legend

- Network Upgrade Transmission Centerline
- - - Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

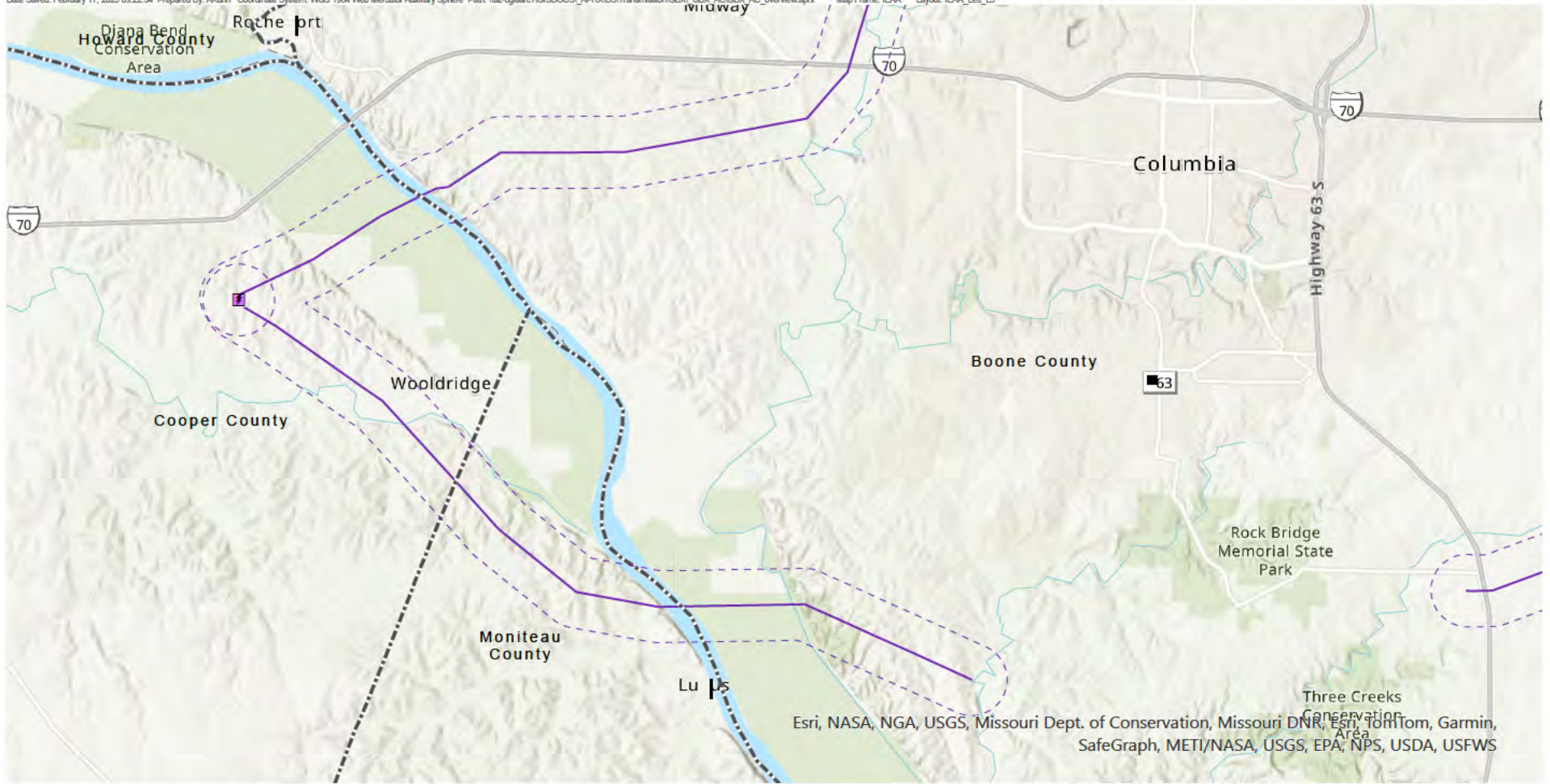


February 17, 2025



**Grain Belt Express**  
An Invenery Project





## Legend

- Network Upgrade Substation
- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

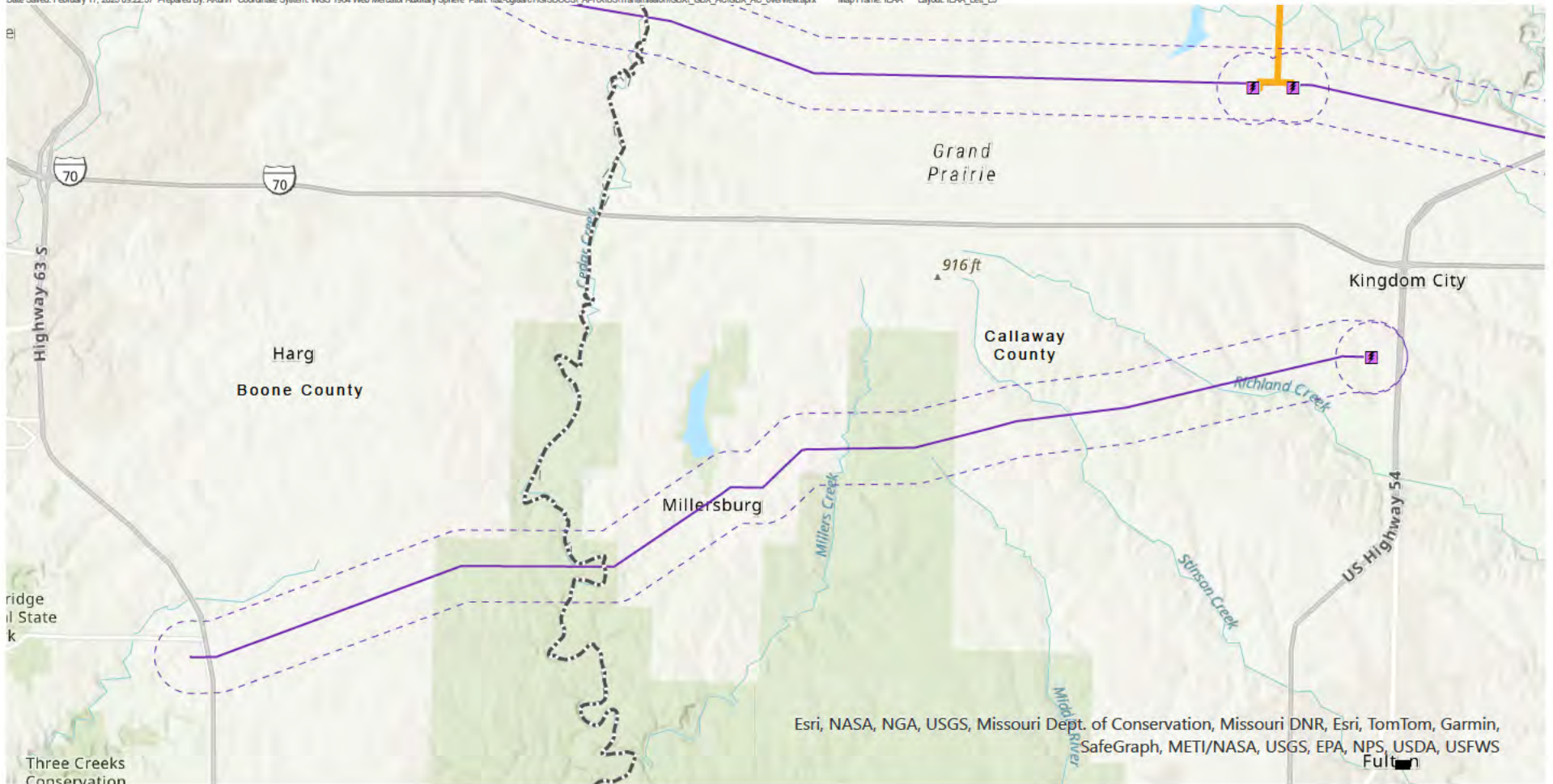
Grain Belt Express Transmission Project | Missouri

February 17, 2025



Grain Belt Express  
An Invenery Project

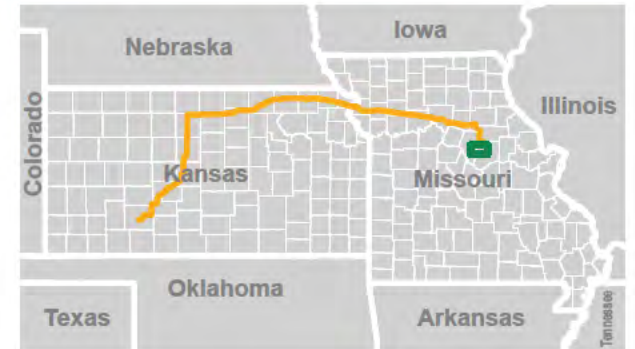




### Legend

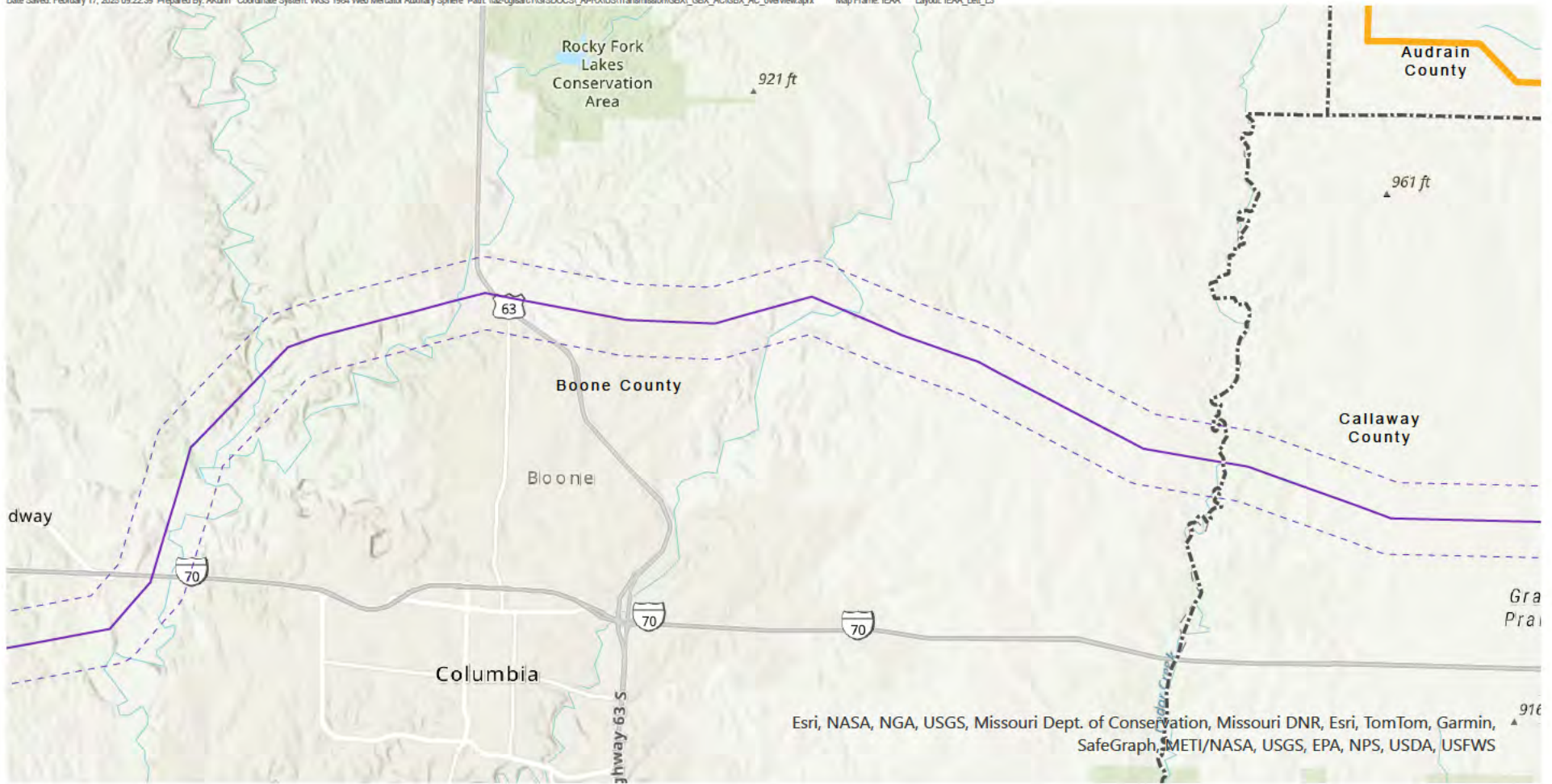
- Network Upgrade Substation
- Network Upgrade Transmission Centerline
- Missouri Tiger Connector
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review



## Non-Federal Related Actions: Network Upgrades





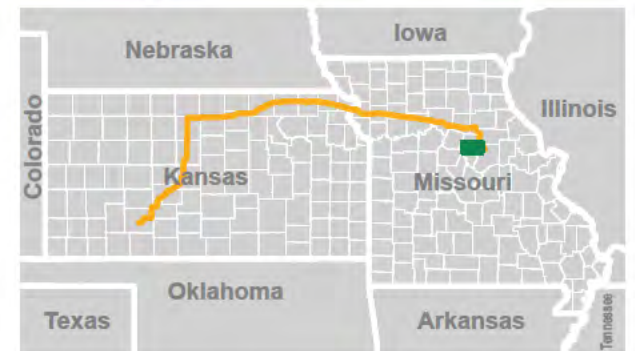
### Legend

- Network Upgrade Transmission Centerline
- Missouri Tiger Connector
- - - Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

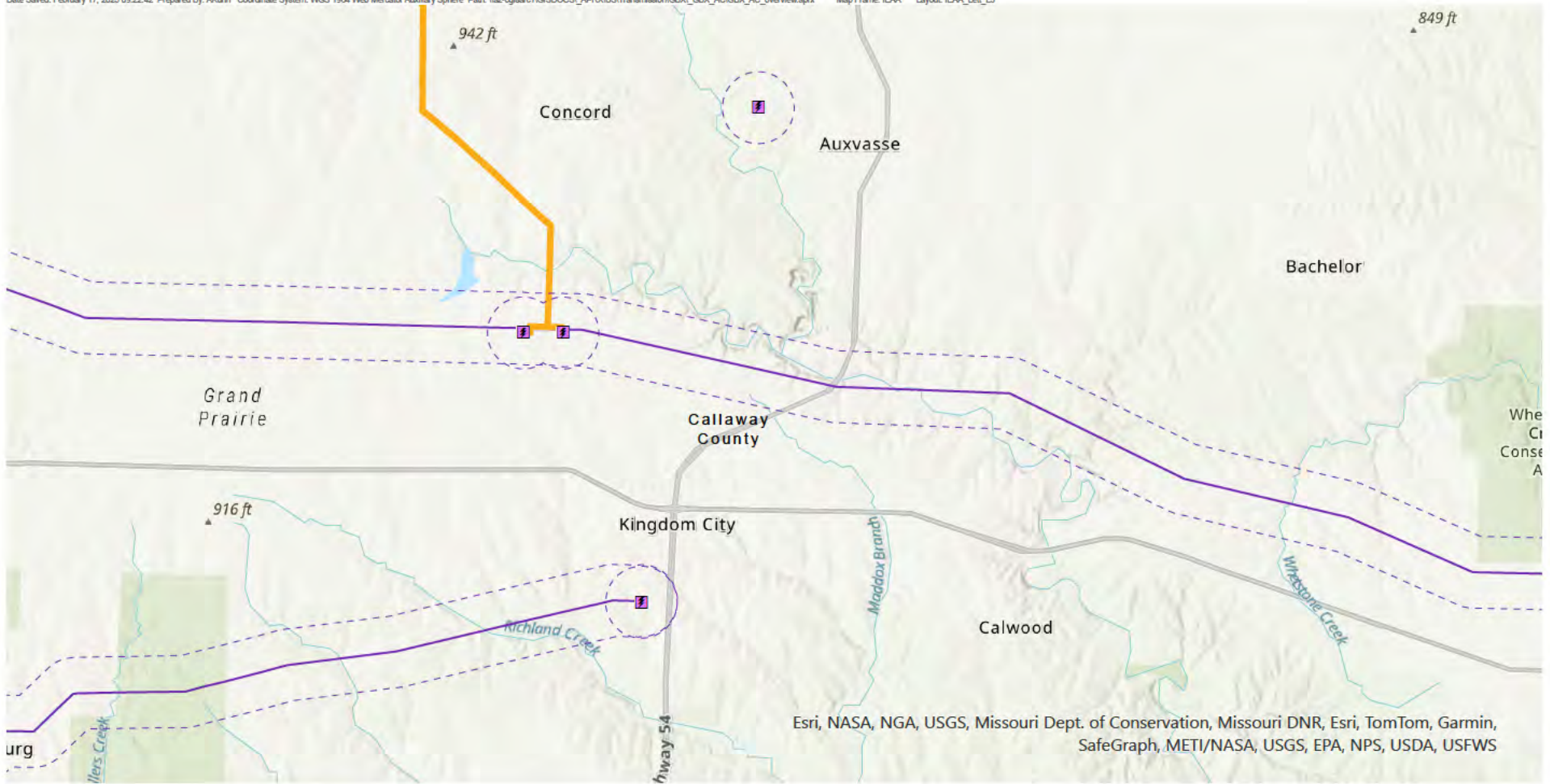


February 17, 2025



**Grain Belt Express**  
An Invenery Project





## Legend

- Network Upgrade Substation
- Network Upgrade Transmission Centerline
- Missouri Tiger Connector
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

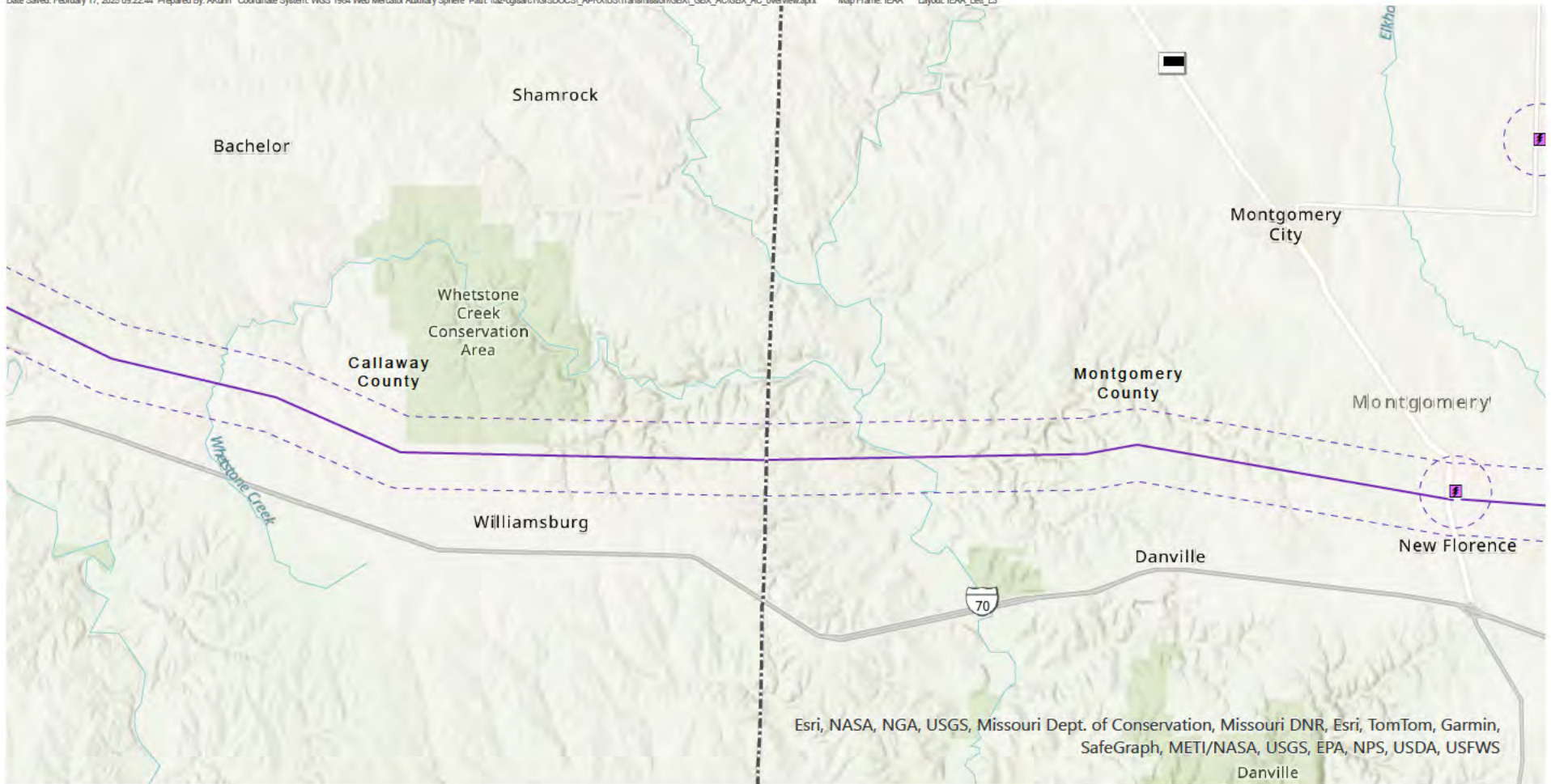
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





### Legend

- Network Upgrade Substation
- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

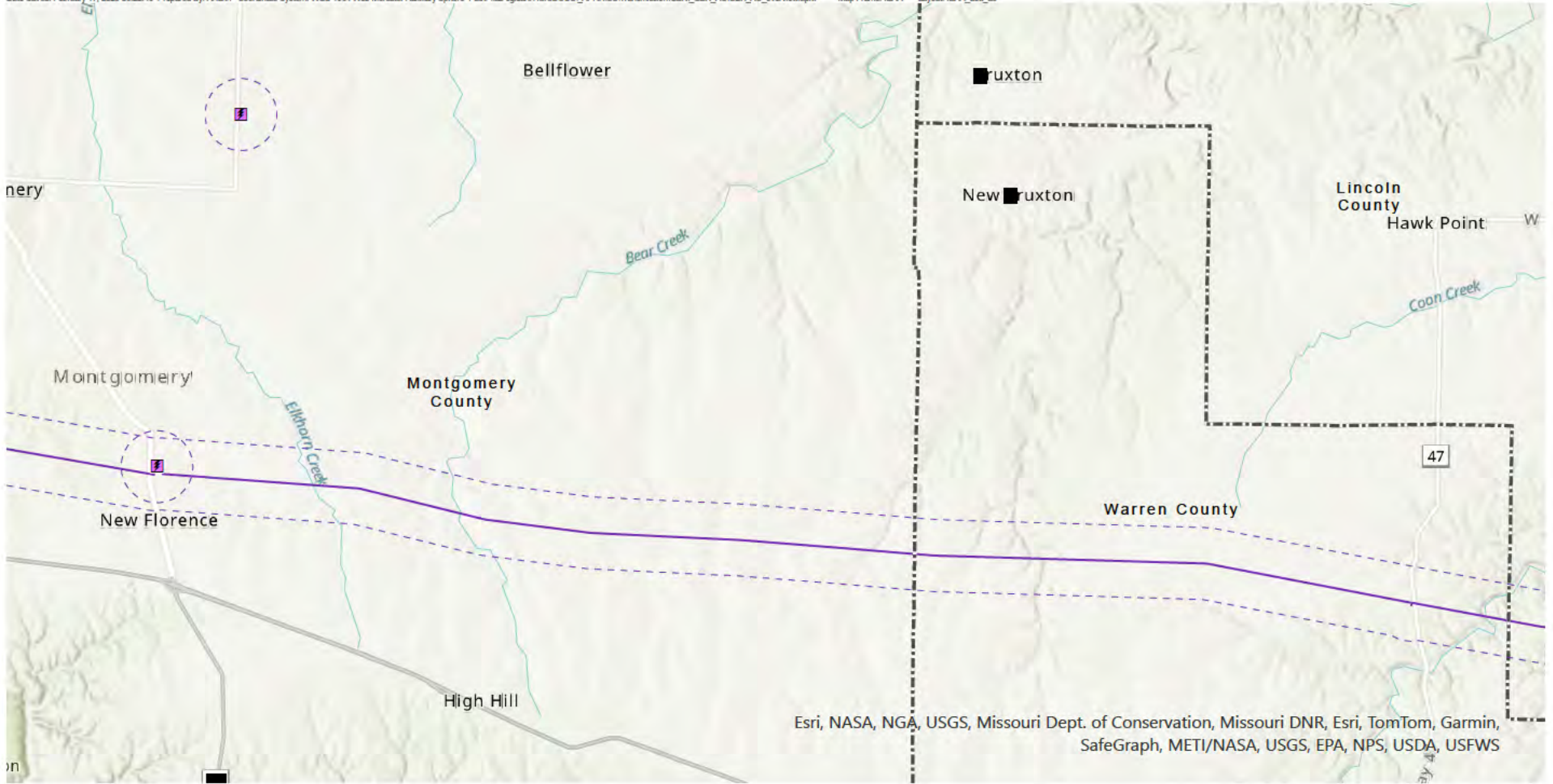
Grain Belt Express Transmission Project | Missouri



February 17, 2025

 **Grain Belt Express**  
An Invenery Project





Esri, NASA, NGA, USGS, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

### Legend

- Network Upgrade Substation
- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

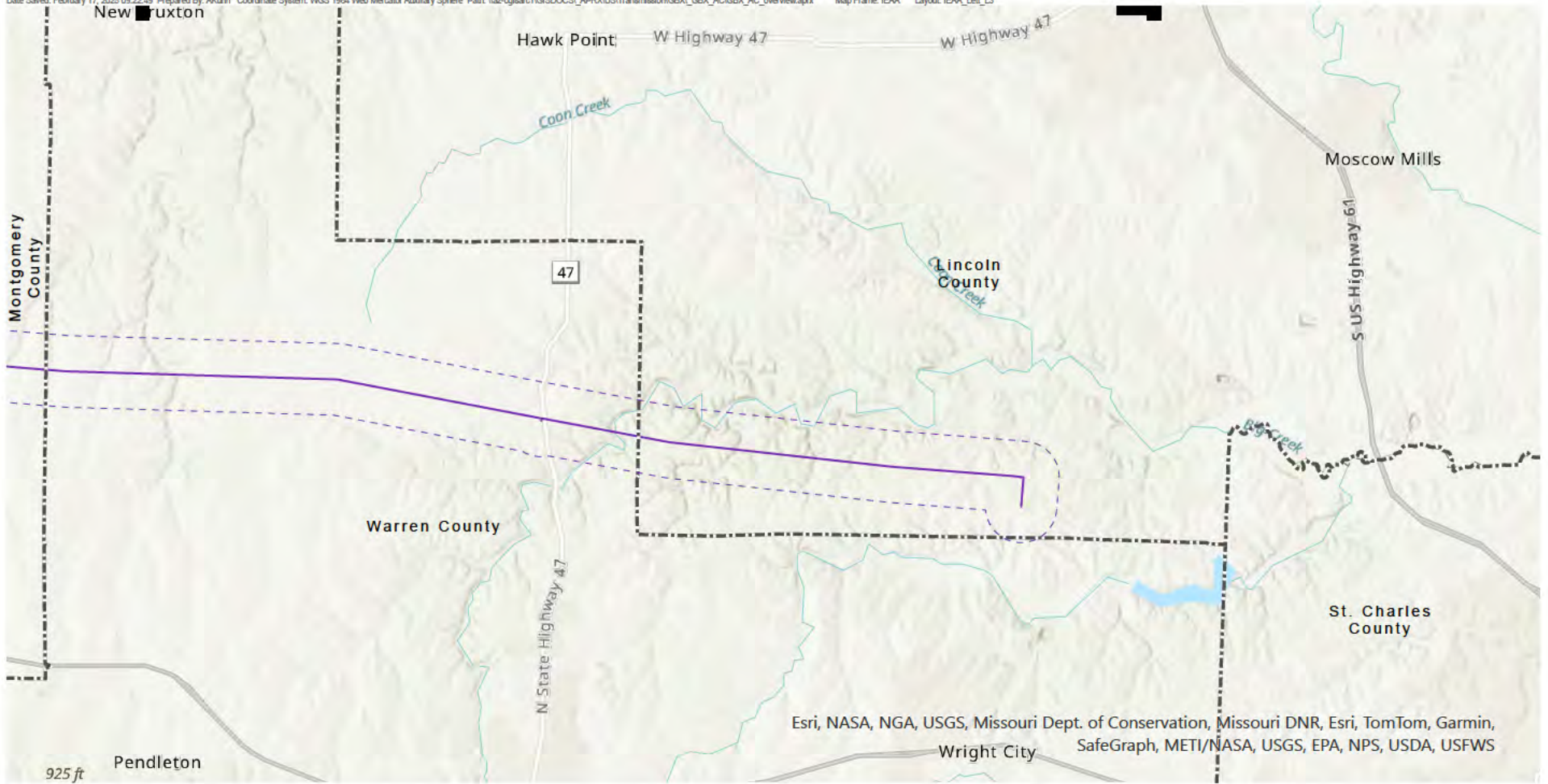
## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025





### Legend

- Network Upgrade Transmission Centerline
- - - Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri

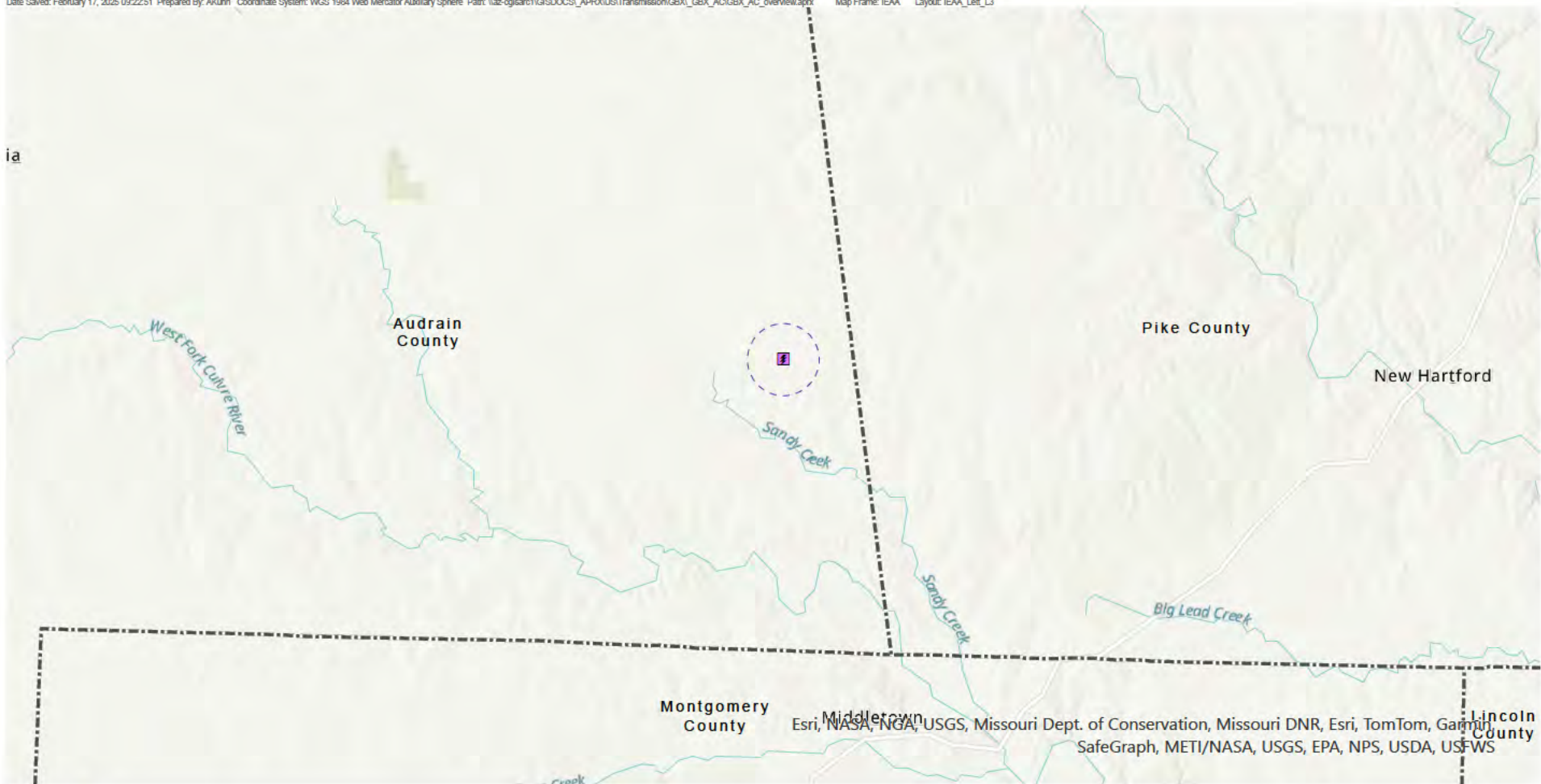


February 17, 2025



**Grain Belt Express**  
An Invenery Project





### Legend

- Network Upgrade Substation
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary



\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades





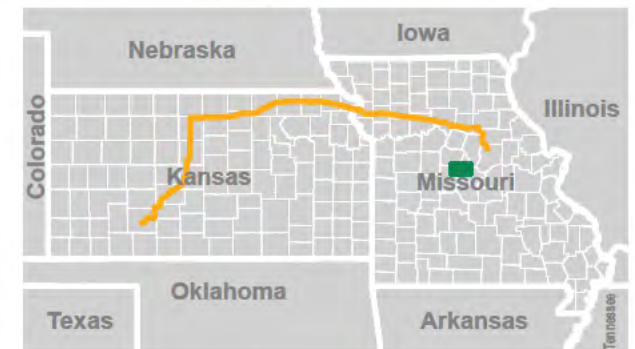
## Legend

- Network Upgrade Transmission Centerline
- Network Upgrade APE (0.5-mile buffer)\*
- County Boundary
- State Boundary

\*APE considered for desktop review

## Non-Federal Related Actions: Network Upgrades

Grain Belt Express Transmission Project | Missouri



February 17, 2025



## **ATTACHMENT 4**

**PROGRAMMATIC AGREEMENT  
AMONG U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**PHASED IDENTIFICATION AND ASSESSMENT PLAN**





# **Grain Belt Express Transmission Project, Phase 1, Phased Identification and Assessment Plan**

**Preliminary Draft prepared January 2024**

**Draft v.1 prepared July 2024**

**Draft v.2 prepared October 2024**

**Draft v.3 prepared January 2025**

**Final Draft v.4 prepared April 2025**

**Final June 2025**

**Document Prepared For  
Department of Energy, Loan Programs Office**

**Document Prepared ByInvenergy Transmission LLC in consultation with AECOM**



## **Grain Belt Express**

**An INVENERGY TRANSMISSION *Project***

---



# GRAIN BELT EXPRESS TRANSMISSION PROJECT, PHASE 1 PHASED IDENTIFICATION AND ASSESSMENT PLAN

Document Prepared for  
**Department of Energy  
Loan Programs Office**  
1000 Independence Ave. SW  
Washington, D.C. 20585

Document Prepared by  
**Invenergy Transmission LLC**  
One South Wacker Drive, Suite 1800  
Chicago, Illinois 60606  
(312) 224-1400

**AECOM**  
100 N. Broadway, 20<sup>th</sup> Floor  
St. Louis, MO 63102  
(314) 429-0100  
[www.aecom.com](http://www.aecom.com)

**Preliminary Draft January 2024**

**Draft v.1 July 2024**

**Draft v.2 October 2024**

**Draft v.3 January 2025**

**Final Draft v.4 April 2025**

**Final June 2025**

---



# TABLE OF CONTENTS

<b>1.0 INTRODUCTION TO THE PHASED IDENTIFICATION AND ASSESSMENT PLAN</b>	<b>1</b>
1.1 BACKGROUND	1
1.2 PROJECT DESCRIPTION	2
1.3 OBJECTIVES OF THE PHASED IDENTIFICATION AND ASSESSMENT PLAN	3
1.4 REGULATORY FRAMEWORK	3
1.5 ROLES AND RESPONSIBILITIES	4
<b>2.0 IDENTIFICATION OF CULTURAL RESOURCES</b>	<b>7</b>
2.1 PROJECT AREA OF POTENTIAL EFFECTS	7
2.2 ARCHIVAL RESEARCH	7
2.3 FIELD INVESTIGATIONS TO IDENTIFY CULTURAL RESOURCES	8
2.4 ARCHAEOLOGICAL RESOURCES	8
2.5 BUILT ENVIRONMENT RESOURCES	11
2.6 TRADITIONAL CULTURAL PLACES	12
2.7 CONFIDENTIALITY	12
<b>3.0 EVALUATING CULTURAL RESOURCES FOR NATIONAL REGISTER ELIGIBILITY</b>	<b>13</b>
3.1 ELIGIBILITY EVALUATION OF ARCHAEOLOGICAL SITES AND BUILT ENVIRONMENT RESOURCES	13
3.2 ELIGIBILITY EVALUATION OF TRADITIONAL CULTURAL PLACES	13
3.3 PROCESS FOR DETERMINING NRHP ELIGIBILITY	13
<b>4.0 ASSESSING EFFECTS ON HISTORIC PROPERTIES</b>	<b>15</b>
4.1 PROCESS FOR ASSESSING EFFECTS	15
4.2 PROCESS FOR ASSESSING INDIRECT AND CUMULATIVE EFFECTS	17
<b>5.0 PROCESS FOR INCORPORATING AVOIDANCE AND MINIMIZATION MEASURES</b>	<b>19</b>
5.1 BACKGROUND	19
5.2 AVOIDANCE MEASURES	19
5.3 MINIMIZATION AND ENVIRONMENTAL PROTECTION MEASURES	19
<b>6.0 RESOLUTION OF POTENTIAL ADVERSE EFFECTS</b>	<b>21</b>
6.1 DEVELOPING THE HISTORIC PROPERTIES TREATMENT PLAN	21
6.2 RELATIONSHIP BETWEEN PIAP AND HPTP	21
6.3 CURATION	22
<b>7.0 ISSUANCE OF NOTICE TO PROCEED TO BEGIN CONSTRUCTION</b>	<b>23</b>
<b>8.0 MANAGEMENT OF HISTORIC PROPERTIES DURING CONSTRUCTION</b>	<b>24</b>
8.1 RESOLUTION OF INADVERTENT DISCOVERIES OF HUMAN REMAINS AND/OR CULTURAL RESOURCES	24
8.2 MONITORING DURING CONSTRUCTION	24
<b>9.0 REVIEW AND UPDATE PROCEDURES</b>	<b>26</b>
<b>10.0 LITERATURE CITED</b>	<b>27</b>



---

## EXECUTIVE SUMMARY

This Phased Identification and Assessment Plan (PIAP) was prepared in support of the loan guarantee for the construction and energization of the Grain Belt Express Transmission Project, Phase 1 (Project) in Kansas and Missouri. The Project is a 2,500-megawatt 600-kilovolt overhead high-voltage direct current transmission line with supporting infrastructure between interconnection points in southwest Kansas and northeast Missouri across private land.

This document was prepared in accordance with the *Programmatic Agreement among U.S. Department of Energy, Loan Programs Office; Kansas State Historic Preservation Office; Missouri State Historic Preservation Office; The Osage Nation; and Grain Belt Express LLC, Regarding Compliance with Section 106 of the National Historic Preservation Act for the Grain Belt Express Transmission Project, Phase 1* (PA). As noted in the PA, Grain Belt Express LLC in coordination with the U.S. Department of Energy, Loan Programs Office (DOE LPO), the Kansas and Missouri State Historic Preservation Offices (SHPOs), the Advisory Council on Historic Preservation (ACHP), The Osage Nation, consulting Tribes, and consulting parties will perform a phased identification and assessment of historic properties within the Area of Potential Effects (APE). Grain Belt Express LLC prepared this PIAP to fulfill the PA requirement and document the provisions for phased identification and assessment of historic properties to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations. The PIAP includes an introduction providing the Undertaking description, regulatory framework, and roles of participants in the Section 106 process for the Undertaking (Section 1.0), and provides the processes for identifying potential historic properties (Section 2.0), evaluating cultural resources for eligibility for inclusion on the National Register of Historic Places (NRHP) (Section 3.0), assessing the effects from the Undertaking on historic properties (Section 4.0), the process for incorporating design changes to the Undertaking to avoid historic properties or minimize adverse effects (Section 5.0), and the process for resolving adverse effects (Section 6.0). The process for resolving disputes among consulting parties regarding the eligibility and effects assessment of historic properties are provided in Sections 3.0 and 4.0, respectively. The PIAP includes a schedule for when each phase of the Plan will be carried out and completed. Methods for resolving adverse effects on specific historic properties will be addressed in a future Historic Properties Treatment Plan(s), Monitoring Plan(s), and Inadvertent Discovery Plan.



## ACRONYMS AND ABBREVIATIONS

AC	Alternating Current
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
amsl	above mean sea level
AT&SF	Atchison, Topeka & Santa Fe Railroad
ca	circa
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
FS	Field Sample
GIS	Geographic Information System
HVDC	High-Voltage Direct Current
KCC	Kansas Corporation Commission
KHRI	Kansas Historic Resources Inventory
KHS	Kansas Historical Society
kV	kilovolt
LOK	Legends of Kansas
LPO	Loan Programs Office
MW	megawatt
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act of 1966
NHT	National Historic Trail
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRB	National Register Bulletin
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
PLSS	Public Land Survey System
POI	Points of Interconnection
PPK	Projectile point/knife
ROW	Right-of-Way
SL	Sample Loci
SHPO	State Historic Preservation Office
TCP	Traditional Cultural Place
THPO	Tribal Historic Preservation Office
Tribes	Federally-recognized Native American Indian Tribes
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USGS	U.S. Geological Survey
U.S.	United States
ybp	Years Before Present



# INTRODUCTION TO THE PHASED IDENTIFICATION AND ASSESSMENT PLAN

## Background

This Phased Identification and Assessment Plan (PIAP) was prepared in support of the loan guarantee for the construction and energization of the Grain Belt Express Transmission Project, Phase 1 (Project) in Kansas and Missouri. The Project is a 2,500-megawatt 600-kilovolt overhead high-voltage direct current transmission line with supporting infrastructure between interconnection points in southwest Kansas and northeast Missouri across private land.

This document was prepared in accordance with the *Programmatic Agreement among U.S. Department of Energy, Loan Programs Office; Kansas State Historic Preservation Office; Missouri State Historic Preservation Office; The Osage Nation; and Grain Belt Express LLC, Regarding Compliance with Section 106 of the National Historic Preservation Act for the Grain Belt Express Transmission Project, Phase 1* (PA). As noted in the PA, Grain Belt Express LLC (the Applicant), in coordination with the Department of Energy Loan Programs Office (DOE LPO), the Kansas and Missouri State Historic Preservation Offices (SHPOs), Advisory Council on Historic Preservation (ACHP), The Osage Nation, consulting Tribes, and consulting parties (hereafter, the “Consulting Parties” as listed in Attachment 1 of the PA), will perform a phased identification and assessment of historic properties within the area of potential effects (APE). The Applicant has prepared this PIAP to fulfill the PA requirement and document the provisions for phased identification and assessment of historic properties to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations. The “historic properties” referred to throughout the PIAP are defined as those cultural resources determined eligible for or listed in the National Register of Historic Places (NRHP).

The PIAP includes processes for identifying potential historic properties (Chapter 2), evaluating cultural resources for eligibility for inclusion in the NRHP (Chapter 3), assessing the effects from the Undertaking on historic properties (Chapter 4), the process for incorporating design changes to the Undertaking to avoid historic properties or minimize adverse effects (Chapter 5), and the process for developing minimization and mitigation measures to resolve adverse effects (Chapter 6). The process for resolving disputes among Consulting Parties regarding the eligibility and effects assessment of historic properties are provided in Chapters 3 and 4, respectively. The PIAP includes a schedule for when each phase of the Plan will be carried out and completed. Methods for resolving adverse effects on specific historic properties are noted in the Inadvertent Discovery Plan (IDP; PA Attachment 6) and will be addressed in a future Historic Properties Treatment Plan and Monitoring Plan.

Ongoing Native American consultation for the Undertaking is being conducted by DOE LPO with the Federally-recognized Native American Indian Tribes (Tribes) noted in the PA.

The Applicant’s cultural resources consultant, AECOM, is completing the primary field investigations to identify cultural resources within the APE through April 2025; the results of the investigations will be presented in the cultural resources reports to be prepared following the completion of the field investigations. The cultural resources inventory results will be summarized in the reports and will include a list of all cultural resources identified, recommendations as to their eligibility for inclusion in the NRHP, preliminary effects assessments for historic properties, and a summary of management implications. Investigations to determine the presence and integrity of a subsurface deposit will be required at archaeological sites when a definitive determination of eligibility is not able to be made at the identification stage, meaning that additional evaluation beyond the methods conducted as part of the primary field investigations may be necessary to determine their eligibility status. For the purposes of this Undertaking, these sites are categorized as unevaluated but are afforded the protection and management consideration of eligible sites until eligibility is ascertained.



## Undertaking Description

Grain Belt Express LLC applied for a loan guarantee from DOE LPO under Title XVII of the Energy Policy Act of 2005 (EPAct), as amended, in July 2021 (see Section 1.2.1 for more information on Title XVII of the EPAct).<sup>1</sup> The loan guarantee will be used to support the construction and interconnection of the Project.

The Undertaking includes a 600-kilovolt (kV) overhead high-voltage direct-current (HVDC) transmission line with supporting infrastructure between interconnection points in southwest Kansas and northeast Missouri. The HVDC line will be capable of delivering approximately 5,000 megawatts (MW) of power.<sup>2</sup> The Undertaking also includes converter stations in Kansas and Missouri and alternating-current (AC) interconnections from each converter station that connect to the existing power grids. The AC interconnections include the 0.2-mile Ford County Interconnect in Kansas and the 36-mile Tiger Connector in Missouri. To facilitate interconnection of the Undertaking to the existing power grids, network system upgrades to existing utility infrastructure will be required; however, Grain Belt Express LLC will not be responsible for or involved in the routing, design, or construction of the network system upgrades, and the loan guarantee will not be used to fund the network system upgrades.

The siting, route selection, and development approvals for the Project are governed by the respective state agencies with regulatory authority over transmission line facilities in each state—specifically, the Kansas Corporation Commission (KCC) and Missouri Public Service Commission (MPSC). Grain Belt Express LLC<sup>3</sup> commenced public outreach to support regulatory approvals for the Project within each state in 2010. After lengthy and thorough government agency and public review processes, the Project received its Certificate of Public Convenience and Necessity from the KCC on December 7, 2011, Siting Permit approval from the KCC on November 7, 2013, and its Certificate of Convenience and Necessity from the MPSC on March 20, 2019. In 2020, Grain Belt Express LLC updated the design and sequencing of the Project and requested amended regulatory approvals from the MPSC in August 2022 and the KCC in March 2023. The KCC granted Grain Belt Express LLC's Motion to Amend the Unanimous Settlement Agreement on June 13, 2023, and the MPSC's decision on the application to amend the existing Certificate of Convenience and Necessity was granted on October 12, 2023, and took effect on November 11, 2023. Past state regulatory approvals and amendment requests are available on Grain Belt Express LLC's website at <https://grainbeltexpress.com/resources-news/#RegulatoryandConstructionUpdates>.

## Reroutes

The Project team, composed of engineers, construction, and environmental specialists, will continue to review the approved project ROW with the goal of avoiding and minimizing potential impacts to resources, including cultural resources. As a result of these reviews and adherence to environmental protection measures, major and minor alignment adjustments may be made to the approved ROW. The minor adjustments generally would be made within the defined or approved APE and include elimination, or relocation of project elements to avoid or minimize impacts to cultural resources, reduce visual impact, or improve constructability as a result of engineering considerations. Many of the adjustments may involve significant routing changes, thus these are termed reroutes and are subject to secondary identification survey<sup>4</sup>.

---

<sup>1</sup> Amended and Restated Loan Guarantee Solicitation for Applications for Innovative Clean Energy Solicitation Number: DE-SOL-0007154.

<sup>2</sup> The HVDC Line will be designed to deliver approximately 5,000 MW of power at the outset; Phase 1 (the Project) is intended to provide approximately 2,500 MW of power, and an anticipated future Phase 2 would support an additional approximately 2,500 MW of power.

<sup>3</sup> The Project was initiated by Grain Belt Express Clean Line LLC, a wholly owned subsidiary of Grain Belt Express Holding LLC, which was a wholly owned subsidiary of Clean Line Energy Partners LLC. In 2020, Invenergy Transmission LLC acquired Grain Belt Express Clean Line LLC from Grain Belt Express Holding LLC, and Grain Belt Express LLC's name was changed from Grain Belt Express Clean Line LLC to Grain Belt Express LLC.

<sup>4</sup> Secondary survey uses the same methods and processes as primary survey but conducted in areas not previously surveyed during primary field investigations due to reroutes.



Reroutes are based on various project constraints and requirements, including but not limited to archaeological, biological, project design feasibility, and constructability. In addition to reroutes, a number of other project modifications may be undertaken during the final design phase in order to avoid and minimize impacts to various resources, including cultural resources. These modifications are likely to change the total number of new access roads; structures; wire pull sites; and construction yards. It is anticipated that reroutes and project design changes will result in a net reduction in the number of cultural resource sites that would be directly impacted during ground disturbance. The results of the secondary survey will be documented in the identification survey reports.

## Objectives of the Phased Identification and Assessment Plan

The PIAP's objectives are to:

- Describe the process for identification of cultural resources, and define the survey methods for identifying potential historic properties including any Traditional Cultural Places in the APE
- Describe the process for evaluating cultural resources for eligibility for inclusion in the NRHP
- Describe the process for assessing the effects from the Undertaking on potential historic properties, and for developing the measures to avoid, minimize, or mitigate adverse effects on historic properties
- Describe the process for incorporating design changes to the Undertaking to avoid historic properties or minimize adverse effects on historic properties
- Describe the process for developing mitigation measures to resolve adverse effects to historic properties
- Describe the process for requiring on-site monitoring by cultural resource professionals and participants from Tribes
- Describe the process for resolving disputes among Consulting Parties regarding determinations of eligibility or assessment of effects on historic properties
- Present a schedule for completing all actions required in the PIAP and a process for approving revisions to this schedule, if applicable

This PIAP does not address resolution of specific adverse effects, as those are currently unknown. Rather, this PIAP describes the process for developing mitigation measures and associated documents and implementation plans. The methods for implementing specific mitigation measures for resolving adverse effects on historic properties will be developed by Grain Belt Express LLC in consultation with DOE LPO and the Consulting Parties, and addressed in the Historic Properties Treatment Plan, Monitoring Plan, and Inadvertent Discovery Plan,

Attachment 2—*Abbreviations, Acronyms, and Definitions*, of the PA provides definitions of the terms used in the PIAP.

## Regulatory Framework

The basis for determining significance of cultural resources is driven by the National Historic Preservation Act of 1966, as amended (NHPA), 54 United States Code (USC) 306108, and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800 (Section 106).

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties listed or eligible for listing in the NRHP and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR § 800.1(a)). The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of Section 106 consultation is to identify historic properties potentially affected



by the undertaking, assess its effects and seek ways to avoid, minimize, or resolve any adverse effects on historic properties.

The Section 106 process includes the following steps:

- Initiate the process and consult with the SHPOs and/or Tribal Historic Preservation Officers (THPOs), Indian Tribes, interested parties, the public, and the ACHP on all phases of the Undertaking.
- Make a good faith and reasonable effort to identify and document historic properties within the APE. This includes recording all resources greater than 50 years in age and applying the NRHP criteria to those resources that cannot be avoided.
- Assess the effects of the undertaking on historic properties.
- Resolve adverse effects, as necessary.

A PA pursuant to 36 CFR § 800.14(b)(1)(i) and 36 CFR § 800.14(b)(1)(ii) of the Section 106 regulations has been developed for the Undertaking. This PIAP is an attachment to the PA. Development and implementation of this PIAP is to be executed pursuant to Stipulation 3 of the PA.

## Roles and Responsibilities

DOE LPO is the lead federal agency for Section 106 compliance. DOE LPO, the Kansas SHPO, Missouri SHPO, and the Advisory Council on Historic Preservation are Signatories to the PA. The Osage Nation, U.S. Army Corps of Engineers (USACE), and Grain Belt Express LLC are Invited Signatories to the PA. Other Consulting Parties may elect to sign the PA as Concurring Parties.

### Department of Energy, Loan Programs Office

- DOE LPO as the lead federal agency for Section 106 will make the final determinations of eligibility, findings of effect, and negotiate appropriate treatments or other actions to resolve adverse effects to historic properties in consultation as appropriate with the Consulting Parties.
- DOE LPO is responsible for ensuring all stipulations of the PA are followed and the procedures detailed in the PIAP are implemented. DOE LPO is coordinating with the Consulting Parties regarding the terms of the PA, the procedures in the PIAP, and the requirements of other implementation plans prior to approval of the Undertaking.
- While DOE LPO has Section 106 authority over the Undertaking, DOE LPO cannot exert influence or authority over activities that are not subject to its approvals or funding. DOE LPO does not have the authority to impose or enforce conditions or mitigation measures on activities that are outside of the agency's jurisdiction.

### Kansas State Historic Preservation Office

- The SHPO advises and assists Federal agencies in carrying out their Section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development (36 CFR 800.2(c)(1)(i)). The KS SHPO is Signatory to the PA, has consulted on this PIAP, and will continue to consult with DOE LPO, the Applicant, and the Consulting Parties to seek ways to avoid, minimize, or mitigate adverse effects on historic properties within Kansas.

### Missouri State Historic Preservation Office

- The SHPO advises and assists Federal agencies in carrying out their Section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development (36 CFR 800.2(c)(1)(i)). The MO SHPO is Signatory to the PA, has consulted on this PIAP, and will continue to consult with DOE LPO, the Applicant, and



the Consulting Parties to seek ways to avoid, minimize, or mitigate adverse effects on historic properties within Missouri.

### The Osage Nation

- The Osage Nation will identify their concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate their views on the Undertaking's effects on such properties, and participate in the development of measures to resolve adverse effects on such properties (36 CFR 800.2(c)(2)(ii)).
- The Osage Nation will provide Tribal Monitors to observe the field identification surveys within defined Osage Nation Areas of Interest. The Tribal Monitors will coordinate with the THPO, whose input and opinions will be incorporated into the delineation, testing, and evaluation of Indigenous sites.
- When The Osage Nation aids in the identification, evaluation, assessment of effects, and treatment of cultural resources, historic properties, or human remains, The Osage Nation's authorized representatives, traditional cultural authorities, or other religious/traditional practitioners need not meet Federal and/or state professional qualification standards for historic preservation or any other technical or professional discipline.

### U.S. Army Corps of Engineers

- USACE reviews and consults with consideration to effects on historic properties within USACE permit areas generally across the entirety of the project, and for the issuance of Section 408 permits for crossings at Wilson Lake and the Missouri River.

### U.S. National Park Service

- The U.S. National Park Service (NPS) reviews and consults with consideration to effects on historic properties managed by the NPS, including units of the National Park System, National Historic Landmarks, and National Historic Trails. The NPS is legally mandated to monitor the condition and integrity of all NHLs, regardless of ownership, in perpetuity and advises and assists Federal agencies in carrying out their responsibility under NHPA Section 110(f), including participation in the consultation process, to ensure that proof of substantive and documented efforts are executed to meet the benchmark of avoiding adverse effects to the greatest extent possible.

### Grain Belt Express LLC

- Grain Belt Express LLC is responsible for engaging qualified personnel to conduct all required cultural resource surveys, providing documentation meeting the standards of state and federal guidelines, developing and executing implementation plans, and coordinating with tribal monitors.

### Consulting Native American Tribes

- Consulting Native American Tribes identify their concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate their views on the Undertaking's effects on such properties, and participate in the resolution of adverse effects (36 CFR 800.2(c)(2)(ii)).

### Consulting Parties

- Consulting Parties review and consult on Section 106 documents developed in accordance with the PA and PIAP, provide comments regarding the Undertaking's effects on historic properties, and participate in developing avoidance, minimization, and mitigation measures. Certain individuals and organizations with a demonstrated interest in the Undertaking may participate as consulting parties due to the nature of their legal or economic relation to the Undertaking or affected properties, or their concern with the Undertaking's effects on historic properties (36 CFR 800.2(c)(5)).



All work carried out pursuant to the PA and this PIAP will be done by or under the direct supervision, including direct in-field supervision, of historic preservation professionals who meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61).



## IDENTIFICATION OF CULTURAL RESOURCES

### Area of Potential Effects

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16(d)). The APE for the Undertaking is defined in PA Stipulation 2 and detailed in PA Attachment 3, *Delineation of the Project Area of Potential Effects*. The APE comprises the full geographic scope of the Undertaking and the related non-Federal actions occurring later in time that are reasonably foreseeable that may occur as a result of the Undertaking. The portions of the APE corresponding with the Undertaking and the related non-Federal actions comprise the portions of the APE where direct and indirect effects may occur, respectively. The APE includes all areas where construction activities are proposed to occur, as well as a broader area where the character or use of historic properties, if present, could be affected. Effects caused by the Undertaking (i.e., direct effects) and the related non-Federal actions (i.e., indirect effects) could be physical or nonphysical (e.g., visual, vibrational, atmospheric, or auditory). DOE LPO will also consider potential cumulative effects within the Undertaking's APE.

For the purposes of historic property identification and assessment efforts conducted pursuant to this PIAP, DOE LPO has subdivided the APE into areas where Direct-Physical, Direct-Nonphysical, Indirect-Physical, and Indirect-Nonphysical effects may occur. The subsets of the APE are described further and illustrated in the example figures in Attachment 3 of the PA.

The methods for identifying historic properties within the APE are described below.

### Archival Research

Archival research will focus on identifying inventoried cultural resources recorded previously within the APE. The file search/literature review to identify known resources will be conducted for the areas of the APE where both direct and indirect effects may occur. The archival research area for the Direct APE extended 1 mile beyond the centerline of the proposed ROW and other physical elements of the Undertaking (whichever was greater) and extended further out to 2-miles beyond the centerline where the Nonphysical APE expands to two miles to provide more context for the identification and assessment of resources within the APE. The archival research area for the Indirect APE extended 0.5-mile beyond the centerline of the ROWs. Data sources included:

- Previous cultural resource management results (technical reports, Geographic Information System (GIS) data for site locations, site forms, survey areas, and heritage preservation planning documents).
- Miscellaneous digital and other environmental data (aerial imagery and information about topography, geology, soils, and vegetation).
- Historic and archival materials (General Land Office maps, Sanborn insurance maps, historical atlases, diaries, journals, state and city records, previous oral histories, and other historical documents) that will also provide important contextual information that may inform field methods and eligibility determinations.

As part of the historic property identification investigations, any inventoried cultural resources present within the APE will be subject to the same analytical studies as resources identified during the proposed field work. This will involve:

- Mapping of the previously defined resource boundary within and (if needed) outside of the APE,
- Review of available data regarding the nature, NRHP status, and characteristics of the resource,
- Identification of the need, if any, for reinvestigation and/or reinterpretation of the resource; and,



- Assessment of the NRHP eligibility of the resource.

Regarding previously inventoried resources present within the Direct-Physical APE, the previously defined boundaries of each resource will be buffered in the GIS data utilized during the field investigations. These locations will be afforded extra scrutiny during field investigations, to redefine the previously recorded site limits, identify any additional elements of the resource, and provide data sufficient towards confirming or (if necessary) revising any prior NRHP assessments of the resource. This additional scrutiny may involve both visual (pedestrian) inspection of the resource location and shovel-test excavations (if warranted).

## Field Investigations to Identify Cultural Resources

This section discusses the survey design and methods implemented in support of the Project's primary and secondary field survey and preliminary eligibility and assessment effort. DOE LPO, KS SHPO, MO SHPO, and The Osage Nation require a systematic, intensive survey of the Direct-Physical APE. The PIAP refers to these archaeological surveys (including archival record review and discussion) as field investigations and results will be documented in the cultural resources investigation reports.

The field investigations were designed using the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation [48 FR 44720–44726]) to ensure that the procedures are adequate and appropriate. Additionally, the field investigations are governed by several overlapping guidelines published by Project stakeholders, the KS SHPO, the MO SHPO, and the Osage Nation THPO survey guidelines for cultural resources. These guidelines are reflected in the methodologies outlined below; in all instances, the most intensive and/or focused methodologies take precedence.

The sections below describe the field investigations of the Direct APE that are being conducted by AECOM to adequately identify and describe specific cultural resources in the APE. Section 2.4 below describes the intensive archaeological inventory of all elements in the Direct-Physical APE. Section 2.5 below describes the viewshed analysis and reconnaissance inventory of built environment resources in the Direct-Nonphysical APE.

## Archaeological Resources

### Identification

The field survey efforts for archaeological resources will focus on the Direct-Physical APE defined for the Project. To efficiently and effectively complete the archaeological field investigations, a research design and methodology was developed prior to initiation of the field survey. In the conduct of these field investigations, the current KS SHPO and MO SHPO guidelines will be applied where appropriate. In addition to compliance with the relevant SHPO guidelines, the field studies will follow the guidelines established by the Osage Nation THPO (ONHPO 2023) for areas of interest (AOI) defined by The Osage Nation, and The Osage Nation-approved protocols for elements of the Direct-Physical APE situated outside of The Osage Nation-defined AOI (PA Attachment 5). The following section details these methodologies, as applied to the collection and processing of data which will be obtained from the field investigations.

Prior to entering the field, digital mapping files will be prepared based on geo-referenced boundaries of the Direct-Physical APE of the Project. Using the digital mapping files, the Direct-Physical APE will be overlain by a GIS-created transect grid of sample loci (SL), spaced at the SHPO and/or The Osage Nation-approved testing interval (depending on the location of the Direct-Physical APE element relative to The Osage Nation-defined AOI). Each SL represents a point from which data regarding topography, ground surface conditions, and soil descriptions are recorded, and a sample of the landscape is examined for cultural materials. The testing method used for an individual SL is determined by the character of the topography and ground surface observed at each locality.

All elements of the Direct-Physical APE will be visually examined for the presence of archaeological surface features, such as stone cairns and rock shelters, regardless of field conditions (steep incidence of slope, for example). Specialized training was provided by The Osage Nation to archaeological field staff in the identification of aboveground resources of



particular interest to their tribal history. This basic walkover of the Project will be conducted at no greater than a 15-meter (49-foot) interval. In accordance with best-practice approach suggested by The Osage Nation THPO, controlled pedestrian inspection of exposed ground surfaces within The Osage Nation AOI will be supplemented through the excavation of shovel tests (measuring at least 0.35 meters, or 14 inches, in diameter) at a standard 15-meter (49-foot) survey interval.

Systematic shovel testing will minimally consist of a 35-centimeter-diameter hole excavated to a depth of 20 centimeters into archaeological sterile soil (typically the B horizon) or 50 centimeters below ground surface. When cultural materials are identified within shovel tests, intra-site radial shovel tests will be excavated at 5-meter (16-foot) and 10-meter (33-foot) intervals to delineate the archaeological sites. Excavated soils will be screened through ¼-inch wire mesh and examined for evidence of cultural materials. Profiles will be recorded for each shovel test on SL forms, and notes recorded concerning the soil stratigraphy (including Munsell soil color designations and texture) and any archaeological resources encountered. The field crew will complete these forms with observations made at each SL throughout the entirety of the Direct-Physical APE. All shovel tests will be assigned a unique designation that will be mapped with sub-meter accurate Global Positioning system (GPS) equipment. Following the collection of these data, the shovel tests will be backfilled using all soil that was removed, and the deposit will be stabilized by compression.

This survey effort will follow a no-collection strategy, as approved by the KS SHPO and MO SHPO, and as preferred by The Osage Nation. Artifacts identified within shovel tests or from the ground surface will be photographed and returned to the location where they were discovered (either on the ground surface or within the corresponding shovel test). For mapping purposes, all field data will be mapped using sub-meter accurate GPS equipment. These data will be supplemented by notes on the SL forms and sketch maps of the sites and their locations as specified in the SHPO guidelines. All cultural materials discovered will be photographed and analyzed by the Field Director and field staff on site. Detailed photographs will then be provided to off-site laboratory staff to corroborate or refine assessment as best as possible.

All of the located prehistoric artifacts and many of the non-modern historic artifacts will be photographed and assigned to resource designations by the on-site Field Director, with photographs submitted to AECOM laboratory staff for further analysis. Laboratory staff will review photographs and descriptions of all recovered artifacts. Upon receipt of these photographs from the field, the laboratory supervisor will review all artifacts against the respective field paperwork to verify provenience data.

In lieu of traditional laboratory processing in accordance with the Project no-collection strategy, the Field Director and on-site field staff will clean and roughly classify recovered cultural material, providing photographs that will allow laboratory staff to refine in increasingly specific terms: material type, morphological attributes, and when possible specific types. Off-site analysts will enter their analyses by field sample (FS) number into class-based inventories within a Microsoft Access database.

Flaked stone and ground stone artifact analysis will address source material and specific issues of typological and functional variability in the recovered assemblage, including cultural/temporal attribution, technological function, lithic reduction processes employed, thermal modification, and intrasite variability.

Historic artifacts, in general, will be assessed for their material type, function, and diagnostic attributes. Glass typologies are based on function, closure type (on available rims), method of manufacture, color, and surface treatment/decoration. Ceramic sherds are categorized by paste, glaze, vessel form, and surface decoration. Where applicable, date ranges and references for these diagnostic attributes (e.g., form, style, and decoration) will be recorded.

AECOM's surveys will document the types of cultural resources that are present, the precise locations and boundaries of all identified resources, the method of survey (including the extent of survey coverage), and data on the appearance, significance, and integrity of each property. For this Project, full-coverage (100 percent) of the limits of disturbance



comprising the Direct-Physical APE is considered for the presence of cultural resources. Field methodologies will conform to the relevant and current SHPO guidelines and The Osage Nation THPO guidelines, where applicable.

In recommending the National Register eligibility of an archaeological resource, the appropriately qualified cultural resource specialist will apply the criteria for evaluation and criteria considerations found in 36 CFR § 60.4. All sites and resources will be evaluated under all four criteria guided by the *Secretary's Standards and Guidelines for Evaluation*, the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*, and appropriate historic contexts. The eligibility recommendation will include a discussion of the relevant criterion(ia) and of the integrity of setting, feeling, association, design, materials, workmanship, and location for all archaeological sites. No type of archaeological site is automatically eligible for listing in the National Register. However, if an archaeological site has integrity and meets one or more of the criteria, the specialist would recommend that it be considered an eligible historic property as defined in the NHPA and its implementing regulations (Section 106). When no archaeological sites of any kind are identified or only ineligible sites and/or isolated resources are found, the specialist will note that no historic properties were identified.

### Documentation

Documentation of archaeological sites and isolated finds will comply with the reporting specifications of the KS SHPO and MO SHPO and with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740). All prehistoric and historic sites identified during the inventory are being recorded on approved SHPO site forms.

Archaeological resources are being surveyed within the boundaries of the LOD. There may be instances when delineation testing to determine the site boundaries extends beyond the LOD, and in these scenarios survey would conclude with completion of the delineation testing. In instances when a site extends outside of the Project's LOD and the site's full boundary cannot be determined, the entire site will be assumed eligible and avoidance will be recommended. For sites discovered where there appears to be limited or no feasible way to avoid them and when those sites extend beyond the Project's LOD, the Project will consult with the SHPOs and The Osage Nation on the need for further testing outside of the LOD. When a site extends to a non-participating property owner and if survey is necessary, the Project will seek landowner approval for site delineation outside of the LOD.

To avoid a historic property and design the reroutes around it, the Applicant's archaeological team will consult with the Consulting Parties to design a buffer on a site-specific basis by considering topography, landform characteristics, individual site components, and/or access to properties outside the LOD.

All isolates and sites will be documented in the cultural resources investigation reports that will be prepared following primary and secondary survey work.

### Reporting

To expedite the evaluation and subsequent treatment of potentially eligible resources in the Direct-Physical APE, DOE LPO will require AECOM's draft cultural resources investigation reports to include for all inventory findings, an eligibility recommendation (as noted above), preliminary assessment of effects on resources recommended as eligible, and preliminary recommendations for avoidance, minimization, and mitigation measures.

Initial effects recommendations will be suggested by AECOM's qualified cultural resource specialist taking into account avoidance and minimization through standard treatment measures and/or Grain Belt Express LLC committed environmental protection measures as defined in PA Attachment 2 (Abbreviations, Acronyms, and Definitions).

The draft reports prepared by AECOM will be of sufficient detail to allow DOE LPO to proceed with consultation to evaluate the eligibility recommendations provided and concur with or recommend changes to the findings. AECOM's draft report will be provided to DOE LPO within six (6) months after the completion of the field work. DOE LPO will provide the



draft report for review and comment to the Consulting Parties for a forty-five (45) calendar day review period. A final evaluation report, meeting Secretary of the Interior Standards, will be provided by the applicant to DOE LPO within ninety (90) calendar days following receipt of Consulting Party comments. The final report will address the issues as resolved through the review of the draft report.

### Native American Participation

DOE LPO and the Applicant engaged with the Osage Nation THPO to address Osage Nation concerns regarding the identification and potential avoidance of Osage Nation cultural properties. This engagement resulted in the development of a protocol document governing the archaeological field reconnaissance for elements of the Project LOD both within and outside of Osage Nation AOI. The terms of this protocol document, as approved by the Osage Nation THPO, have been integrated into the preceding section and are provided in PA Attachment 4, *Field Survey Protocols Confirmed with the Osage Nation*.

## Built Environment Resources

Prior to conducting the field investigation, previous cultural resource surveys and historic built environment resources were identified in state and federal inventories, as described under the Archival Research section above. This information serves as a guide for the field investigations and development of an historic context for interpreting the historic built environment resources present within the Undertaking's APE. Following the investigations, additional background research will be conducted to inform the historic context and obtain information concerning the identified historic-period resources. Primary and secondary sources are to be considered to evaluate resources and determine if the resources qualified for NRHP eligibility. Sources being reviewed include historical local newspaper archives, historic context documents, prior survey reports, and various online resources.

The historic resources field investigations will include buildings and structures that appeared to have been constructed during the historic period, defined as any structures constructed before 1978, within the Direct-Nonphysical APE. The historic-period resources are being photographed from the public right-of-way, using digital photography that meets NPS standards (NPS 2013), and recorded on a GIS-generated topographic map. At this level of investigation, the following details for each historic-period resource are being documented:

- Resource number, as assigned in the field,
- Address or location,
- Historic and current name, if any,
- Estimated construction date,
- Architect or builder, if known,
- Style,
- Historic and current use,
- Current historic designations, if any,
- Property type and subtype,
- Inclusion within a potential historic district, and
- Architectural features and details of the resource.

In addition to documenting the identified historic-period resources, the field surveyors will travel nearby roadways that extend into or abut the Direct-Nonphysical APE to determine the presence of any potential historic districts. The field data



will then be used to compile a historic-period resources inventory table and architectural descriptions of the surveyed properties.

### Reporting

The reporting standards and requirements are the same as noted above for archaeological resources.

## Traditional Cultural Places

Per the updated National Register Bulletin (NRB) entitled *Identifying, Evaluating, and Documenting Traditional Cultural Places* (NPS 2024), a Traditional Cultural Place (TCP) is a resource that is associated with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. With sufficient integrity and importance to the community identity, TCPs may be considered historic properties that are eligible for inclusion in the National Register. TCPs include built or natural locations, features or landscapes considered culturally significant by Native Americans such as sacred places or traditional gathering, hunting, and fishing areas. Tribes may also identify areas of significant tribal importance and/or cultural identity that would not be considered as TCPs per the updated NRB guidelines (NPS 2024), but will still be considered for avoidance, minimization, and/or mitigation measures.

The identification, documentation, and assessment of TCPs is conducted at the discretion and under the authority of participating Tribes and their designated representatives. In the event a potential TCP is encountered by project team members during the cultural field investigations, further investigation of the potential TCP will be suspended until Tribal representatives are engaged. Any observed data will be considered confidential and provided directly to DOE LPO, for distribution to appropriate Tribal representatives. The cultural resources specialist will defer to the Tribal representative's direction as the appropriate formal recordation and documentation of TCPs. If the Tribal Nation(s) determine that the property should be considered for listing in the NRHP, then the updated NRB guidelines (NPS 2024) for formally identifying the property will be followed.

## Confidentiality

As noted in PA Stipulation 9, Confidentiality of Cultural Resources, to the extent consistent with NHPA Section 304 (54 U.S.C. § 307103), the Consulting Parties will treat cultural resources data and all other sensitive information as confidential and not release or disclose such information to any other party external to the confirmed Consulting Parties for this undertaking (see PA Attachment 1). Confidentiality concerns for properties that have traditional religious and cultural significance to Tribes will be respected and information pertaining to those concerns or properties will remain confidential to the fullest extent permitted by law.

The Consulting Parties agree that it is important to protect sensitive information regarding historic properties. DOE LPO may determine it necessary to withhold from disclosure this sensitive information pursuant to NHPA Section 304 (e.g., the location, character, and ownership of a historic resource, if disclosure would cause a significant invasion of privacy, risk harm to the historic resources, or impede the use of a traditional religious site by practitioners). DOE LPO will consult as needed to protect such information collected or generated pursuant to the PA and this PIAP. DOE LPO will follow, as appropriate, 36 CFR § 800.11(c) for authorization to withhold information pursuant to NHPA Section 304, and otherwise withhold sensitive information, as determined by DOE LPO and in accordance with the procedures at 36 CFR § 800.11(c), to the extent allowable by laws including the Freedom of Information Act, 5 U.S.C. § 552, through the Department of Energy regulations at 10 CFR part 1004. Furthermore, DOE LPO will request that the Consulting Parties agree that materials generated during consultation be treated as internal and pre-decisional until they are formally released, although the Consulting Parties understand that such materials may need to be released by one of the Signatories if required by law.



## EVALUATING CULTURAL RESOURCES FOR NATIONAL REGISTER ELIGIBILITY

This section discusses the process for NRHP eligibility evaluation of archaeological sites, built environment resources, and TCPs. This evaluation of eligibility will be conducted for all cultural resources identified as a result of inventory surveys conducted within the Direct APE. In the Indirect APE, known previously recorded historic properties will be identified through archival research. The initial eligibility recommendations for identified cultural resources will be included in the reports noted in Section 2.0 above.

### Eligibility Evaluation of Archaeological Sites and Built Environment Resources

The draft cultural resources inventory reports will include eligibility recommendations for each archaeological site and built environment resource identified in the inventories. DOE LPO will review the eligibility recommendations in consultation with the appropriate SHPO and the Consulting Parties and will seek consensus on the eligibility determinations. In making determinations on National Register eligibility, DOE LPO will apply the criteria for evaluation and criteria considerations found in 36 CFR § 60.4 and guided by the *Secretary's Standards and Guidelines for Evaluation* (NPS 1983), National Register Bulletin 15 *How to Apply the National Register Criteria for Evaluation* (NPS 1995), and appropriate historic contexts. The passage of time, changing perceptions of significance, or incomplete prior evaluations may require DOE LPO to reevaluate properties previously determined eligible or ineligible (36 CFR § 800.4(c)(1)).

If archaeological sites and/or built environment resources have integrity and meet one or more of the NRHP eligibility criteria, DOE LPO will determine it eligible and consider it an historic property as defined in the NHPA and its implementing regulations (Section 106).

If no archaeological sites or built environment resources of any kind are identified or only ineligible sites and/or isolated resources are found, DOE LPO will determine that no historic properties were identified.

### Eligibility Evaluation of Traditional Cultural Places

DOE LPO will consult with Tribes on the appropriate identification, recordation, and evaluation of TCPs. According to the updated NRB guidelines (NPS 2024), the integrity of a TCP must be evaluated according to the views of those who hold the place to be significant. How a place conveys its integrity through its character-defining features must be clearly articulated and described; it is insufficient to simply state that a place retains integrity in the opinion of the community.

### Process for Determining NRHP Eligibility

The determinations of eligibility of resources identified within the Direct APE will serve as the basis for assessing effects on historic properties. DOE LPO will be responsible for consultation with the Kansas and Missouri SHPOs on the agency's eligibility determinations. Eligibility determinations will be based on the draft cultural resource identification reports.

DOE LPO will submit the draft cultural resource identification reports to the appropriate SHPO and the Consulting Parties within thirty (30) calendar days of receipt of an acceptable draft report. The SHPO and Consulting Parties will have forty-five (45) calendar days from receipt of report for review and comment. Absent comments from the relevant SHPO(s) within this time frame, DOE LPO may assume, and formally document for the record, that the SHPOs have elected not to comment and concur with DOE LPO's determinations of eligibility. Prior to the conclusion of the 45-day review period, DOE LPO, or their designated representative, will contact The Osage Nation by phone to inquire about The Osage Nation's intent to comment. If at that point The Osage Nation confirms their intent to comment, they will effort to do so within the remaining duration of the 45-day review period, or no more than seven (7) calendar days from such confirmation. If comments from The Osage Nation are received within this time frame, then all comments will be responded to within the 90-day period within which the draft reports will be revised to Final copies. Absent comments from



The Osage Nation within this time frame, DOE LPO may assume, and formally document for the record, that The Osage Nation has elected not to comment.

If DOE LPO, the appropriate SHPO, and the Consulting Parties cannot agree on the eligibility of a potential historic property within thirty (30) days of DOE LPO receiving comments from the Consulting Parties on the draft cultural resources identification report, the dispute will be resolved by DOE LPO requesting a formal determination of eligibility from the Secretary of the Interior, as per the process identified in 36 CFR 800.4(c)(2). The Secretary then may obtain a determination of eligibility from the Keeper of the National Register, following the process identified in 36 CFR 63.2(d) as referenced in 36 CFR 800.4(c)(2). In this event, the process detailed in 36 CFR Part 63, the National Park Service regulations on Eligibility for Inclusion in the National Register of Historic Places, will be followed. The Keeper's determination will be final. DOE LPO cannot proceed with a final determination of effect until the eligibility of a property has been resolved.

#### **No Further Management of Ineligible Resources**

Once a cultural resource is determined not eligible for listing in the NRHP by DOE LPO in consultation with the Consulting Parties, and with concurrence from the applicable SHPO, no further management of the resource is required. Archaeological isolated finds (e.g., isolated surface artifacts or isolated subsurface occurrences of cultural material) lacking contextual association with chronologically diagnostic artifacts, intact features or strata, or significant features of a cultural landscape or TCP will be considered ineligible.



## ASSESSING EFFECTS ON HISTORIC PROPERTIES

Consistent with 36 CFR § 800.5(a)(3), DOE LPO will use a phased process in applying the criteria of adverse effect in accordance with the phased identification and evaluation efforts outlined in Sections 2.0 and 3.0 of this document. Effects are assessed for those resources listed in or determined to be eligible for listing in the NRHP (i.e., historic properties) within the APE by applying the criteria of adverse effect (36 CFR § 800.5(a)(1)). As mentioned in Section 3.3, DOE LPO will submit the draft cultural resource identification reports with correspondence summarizing the agency's preliminary determinations of eligibility, preliminary finding of effect for historic properties included in each report, and preliminary recommendations for resolving adverse effects to the appropriate SHPO and the Consulting Parties for a forty-five (45)-day review and comment period. During the 45-day review period, DOE LPO will consult with the appropriate SHPO and the Consulting Parties regarding the determinations of eligibility, effects assessment, and resolution of any adverse effects. The treatment of adverse effects on historic properties will be considered in the preferred order of 1) avoidance, 2) minimization, and 3) mitigation.

### Process for Assessing Effects

Assessment of effects on historic properties will follow the procedures provided in the Section 106 regulations, as follows:

- If there are no historic properties identified, or if they are present but will not be affected by the Undertaking, DOE LPO will document a finding of "No Historic Properties Affected" consistent with 36 CFR § 800.4(d)(1).
- If an historic property is affected by the Undertaking, but the effect does not alter, directly or indirectly, any of those characteristics that qualify the property for inclusion in the NRHP, then DOE LPO will document a finding of "No Adverse Effect" consistent with 36 CFR § 800.5(b).
- If an historic property is affected by the Undertaking, and the effect alters, directly or indirectly, any of the characteristics that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association, then DOE LPO will document a finding of "Adverse Effect" consistent with 36 CFR § 800.5(a)(1).

Visual effects have the potential to diminish the aspects of setting, feeling, and association of historic properties. However, visibility of the Project may not necessarily affect an historic property's integrity or character-defining features to an extent that would constitute an adverse effect. To supplement the qualitative assessment of the settings/views of aboveground historic properties subject to visual effects from the Project, a visual contrast rating analysis may be completed following recent guidance such as that developed by Sullivan et al. (2014), Pay et al. (2020), and Meyer et al. (2022).

The Consulting Parties will have forty-five (45) calendar days from the receipt of the finding documentation to review the documentation and fulfil DOE LPO requests for comments. To resolve adverse effects pursuant to 36 CFR § 800.6, DOE LPO will consult with the Consulting Parties to determine if adverse effects to historic properties can be avoided, minimized, or mitigated, as follows:

- If the property(s) can be avoided such that the Undertaking will have no effect upon them as defined in 36 CFR § 800.16(i), DOE LPO will provide documentation of a finding of no effect to the property, as set forth in 36 CFR § 800.11(d), to the Consulting Parties.
- If effects to the property(s) can be minimized such that the Undertaking's effects on the property(s) do not meet the criteria of adverse effect (36 CFR § 800.5(a)(1)), DOE LPO will provide documentation of a finding of no adverse effect, as set forth in 36 CFR § 800.11(e), to the Consulting Parties.
- If adverse effects on historic properties are found that cannot be avoided or minimized by following the procedures for incorporating avoidance or minimization measures outlined in Section 5.0 below, the procedures for resolution of adverse effects outlined in Section 6.0 below, and pursuant to 36 CFR § 800.6, will be followed.



- If the relevant SHPO does not respond in the forty-five (45) calendar day period, DOE LPO will assume it has no objection to the report and concurs with the agency's determinations of eligibility and recommended finding of effect.
  - Prior to the conclusion of the 45-day review period, DOE LPO, or their designated representative, will contact The Osage Nation by phone to inquire The Osage Nation's intent to comment. If at that point The Osage Nation confirms their intent to comment, they will effort to do so within the remaining duration of the 45-day review period, or no more than seven (7) calendar days from such confirmation. If comments from The Osage Nation are received within this time frame, then all comments will be responded to within the 90-day period within which the draft reports will be revised to Final copies. Absent comments from The Osage Nation within this time frame, DOE LPO may assume, and formally document for the record, that The Osage Nation has elected not to comment.

After the conclusion of the 45-day review period and consultation, DOE LPO will revise the preliminary finding of effect correspondence in consideration of comments received through consultation. This final finding of effect will reflect the application of avoidance and minimization measures developed through consultation and/or integration of Grain Belt Express LLC's environmental protection measures into the Project design. Environmental protection measures are avoidance and minimization measures, not mitigation measures for resolving adverse effects (see definition in PA Attachment 2).

- If DOE LPO and the Consulting Parties do not agree on the agency's finding of effect, the dispute will be resolved per Stipulation 10 of the PA, following the process outlined in 36 CFR § 800.5(c)(2).

### Resources with Undetermined Eligibility

If the identification effort identifies potential historic properties whose eligibility for nomination to the NRHP cannot be determined (e.g., in the case of an incomplete site boundary delineation due to survey area restrictions), DOE LPO will consult with the appropriate SHPO and the Consulting Parties to determine if the property(s) can be avoided, or if additional investigations to determine the eligibility of the resource are necessary, as follows:

- If the property(s) can be feasibly avoided such that the Undertaking will have no effect upon them as defined in 36 CFR § 800.16(i), DOE LPO will provide documentation of a finding of no effect for the property, as set forth in 36 CFR § 800.11(d), to the Consulting Parties. If the relevant SHPO does not respond in the forty-five (45) calendar day period, DOE LPO will assume it has no objection to the report and concurs with the agency's finding of effect.
  - Prior to the conclusion of the 45-day review period, DOE LPO, or their designated representative, will contact The Osage Nation by phone to inquire about The Osage Nation's intent to comment. If at that point The Osage Nation confirms their intent to comment, they will effort to do so within the remaining duration of the 45-day review period, or no more than seven (7) calendar days from such confirmation. If comments from The Osage Nation are received within this time frame, then all comments will be responded to within the 90-day period within which the draft reports will be revised to Final copies. Absent comments from The Osage Nation within this time frame, DOE LPO may assume, and formally document for the record, that The Osage Nation has elected not to comment.
- If the property(s) cannot be feasibly avoided, Grain Belt Express LLC and/or its contractors will undertake additional investigations to evaluate the property's eligibility for the NRHP. After the additional investigation is completed, a draft evaluation report will be prepared and provided to the Consulting Parties for a 45-day review and comment period. If DOE LPO, the appropriate SHPO, and the Consulting Parties cannot agree on the eligibility of a potential historic property within thirty (30) calendar days of receiving comments from the appropriate SHPO and the Consulting Parties on the draft evaluation report, the dispute will be resolved as per the process outlined in Section 3.3 above, following 36 CFR 800.4(c)(2) and 36 CFR 63.2(d).



- DOE LPO will distribute the final reports to the appropriate SHPO and the Consulting Parties and will notify the Consulting Parties of the agency's eligibility determinations and findings of effects.

### Additional Evaluation of Eligibility

For potential historic properties whose NRHP eligibility is undetermined, and which cannot be avoided, Grain Belt Express LLC will retain Qualified Personnel, as defined in Stipulation 8 of the PA, to conduct additional investigations to determine if the potential property is eligible for listing in the NRHP. The research design for these additional investigations will be approved by the appropriate SHPO as well as The Osage Nation THPO if the resource is of indigenous origin and/or occurs within a defined Osage Nation AOI. The fieldwork will meet the standards of the KS SHPO (in Kansas), the MO SHPO (in Missouri), as well as The Osage Nation THPO if the resource is of indigenous origin and/or occurs within a defined Osage Nation AOI.

Evaluation investigations will be documented in reports that meet the standards of the KS SHPO (in Kansas), the MO SHPO (in Missouri), and The Osage Nation THPO if the resource is of indigenous origin and/or occurs within a defined Osage Nation AOI. Grain Belt Express LLC will submit the draft report(s) to DOE LPO, and once deemed sufficient to proceed with consultation, DOE LPO will distribute the reports to the appropriate SHPO and the Consulting Parties for a forty-five (45) calendar day review and comment. DOE LPO will ensure that comments provided by the SHPO(s) and the Consulting Parties are addressed as appropriate and incorporated into a final report. DOE LPO will consult with the Consulting Parties on the resulting determination of eligibility and assessment of effect, as follows:

- For potential historic properties that are found to be not eligible for listing in the NRHP, DOE LPO will document the determination of eligibility in the final investigation report and submit the report to the appropriate SHPO and the Consulting Parties.
- For potential historic properties that are found to be eligible for listing in the NRHP, DOE LPO will consult with Grain Belt Express LLC and the Consulting Parties to avoid the historic property or to minimize adverse effects to the property, as follows:
  - If the property(s) can be avoided such that the Undertaking will have no effect upon them as defined in 36 CFR § 800.16(i), DOE LPO will provide documentation of a finding of no effect to that property, as set forth in 36 CFR § 800.11(d), to the appropriate SHPO and the Consulting Parties.
  - If effects to the property(s) can be minimized such that the Undertaking's effects on the property(s) do not meet the criteria of adverse effect (36 CFR § 800.5(a)(1)), DOE LPO will provide documentation of a finding of no adverse effect, as set forth in 36 CFR § 800.11(d), to the appropriate SHPO and the Consulting Parties.
  - If adverse effects to the property(s) are found that cannot be avoided or minimized, the procedures for resolution of adverse effects outlined in this PIAP below, and pursuant to 36 CFR § 800.6, will be followed.
- If DOE LPO, the appropriate SHPO, and the Consulting Parties cannot agree on the eligibility of a potential historic property within thirty (30) calendar days of receiving comments on the draft cultural resources evaluation report, the dispute will be resolved by seeking a determination of eligibility from the Secretary of the Interior, as per the process identified in 36 CFR 800.4(c)(2), and, if necessary, may be elevated to obtaining a determination of eligibility from the Keeper of the National Register, following the process identified in 36 CFR 63.2(d) as referenced in 36 CFR 800.4(c)(2).

### Process for Assessing Indirect and Cumulative Effects

DOE LPO has coordinated with the Consulting Parties on the process for assessing indirect and cumulative effects on historic properties identified within the APE. As outlined in PA Attachment 3, the related non-Federal actions inform the delineation of the indirect effects area within the APE under Section 106. Other past, present, and reasonably foreseeable future actions (RFFAs) that are not related to the Undertaking inform the assessment of cumulative effects when applying adverse effects criteria to historic properties within the APE.



## Indirect Effects

The subset of the APE referred to as the Indirect APE is comprised of the locations of related non-Federal actions, specifically the Network Upgrades and the Kansas AC Collector System. The Indirect APE includes the area within a 0.5-mile radius of the known centerline of the Kansas AC Collector System and the known Network Upgrades locations.

Because the non-Federal actions are outside of DOE LPO's scope of Federal involvement, a lesser level of effort to identify historic properties and assess effects will be applied for the Indirect APE, in accordance with 36 CFR 800.4(b)(1). For the Indirect APE, the identification of historic properties will include a search of the SHPO's archival records for previously recorded cultural resources and historic properties, as well as any records or information that Tribes and other consulting parties are willing to share. If historic properties are present within the Indirect APE, DOE LPO will assess whether there is potential for adverse effects on historic properties.

As the lead Federal agency for the Section 106 review of the Undertaking, DOE LPO is responsible for resolving adverse effects caused by the Undertaking. However, there are limitations to the agency's abilities to address indirect adverse effects since DOE LPO is not involved with the related non-Federal actions. DOE LPO cannot exert influence or authority over activities that are not subject to its approvals or funding, and DOE LPO has no authority to impose conditions on activities that are outside of its jurisdiction but are included in the Indirect APE. DOE LPO will consider creative solutions for resolving indirect adverse effects, should they occur, which may include DOE LPO outreach to project proponent teams responsible for the related non-Federal actions to raise awareness of their opportunity to avoid, minimize, or mitigate the potential adverse effects of their projects on historic properties.

## Cumulative Effects

Adverse cumulative effects may result from the incremental impact of the Undertaking when considered together with other past, present, or reasonably foreseeable future actions (RFFAs). As part of the cumulative adverse effects assessment, DOE LPO will review existing built infrastructure, as well as available information about identified RFFAs that may cause additive effects on historic properties identified within the APE. Therefore, the cumulative adverse effects assessment will be conducted for historic properties that have been identified within the APE when other past, present, and RFFAs overlap with the location of the historic property, including areas of intervisibility. As such, the approach for cumulative adverse effects assessment under Section 106 does not necessitate additional field surveys beyond those already being conducted in the Direct-Nonphysical APE.

Because cumulative effects may include compiled effects that are individually not adverse, DOE LPO will consider, as appropriate, resolution measures to avoid, minimize, or mitigate any cumulative adverse effects resulting from the Undertaking's contribution to the adverse effect. DOE LPO cannot exert influence or authority over activities that are not subject to its approvals or funding, and DOE LPO has no authority to impose conditions on activities that are outside of the agency's jurisdiction but are included in the cumulative effects assessment. DOE LPO will consider creative solutions for resolving cumulative adverse effects, which may include DOE LPO outreach to project teams responsible for the cumulative actions to raise awareness of their opportunity to avoid or minimize adverse effects of their projects.



## PROCESS FOR INCORPORATING AVOIDANCE AND MINIMIZATION MEASURES

### Background

This PIAP is being developed in conjunction with the PA, prior to the issuance of the DOE LPO Record of Decision (ROD) under the National Environmental Policy Act (NEPA). As part of compliance with NEPA, the DOE LPO is preparing an Environmental Impact Statement (EIS) for the Project that identifies a range of alternatives, comparatively examines the relative effects of the alternatives on known historic properties and identifies Grain Belt Express LLC committed environmental measures that would reduce adverse effects to historic properties. DOE LPO does not have a regulatory responsibility to conduct Section 106 reviews nor does DOE LPO have the authority to develop or enforce mitigation measures for future actions that are not reasonably foreseeable or are not part of the Undertaking.

### Avoidance Measures

Avoidance involves the removal of all Project activities from posing an adverse effect to an historic property. For example, avoidance of an archaeological resource would relocate all ground disturbances from the limits of the archaeological site. Should the Project be modified prior to construction such that the potential for adverse effects to historic properties are avoided or minimized (for example, by relocation of an element of the Undertaking such that an historic property is no longer present within the APE), such modifications will be taken under consideration in the assessment of effects on these properties. Whenever feasible, avoidance of adverse effects to historic properties is the preferred treatment. Avoidance measures for cultural resources may include (but are not limited to) realignment of the transmission line, fencing/staking of the limits of disturbance during construction, monitoring of construction near site areas, or placing transmission structures, access routes, and ancillary facilities outside of site boundaries while accommodating an appropriately-sized avoidance buffer. DOE LPO will consider avoidance measures for any properties of traditional religious and cultural importance in consultation with the affected Tribes who ascribe traditional religious and cultural importance to the properties.

### Design Changes to Avoid Archaeological Sites and Native American Areas of Avoidance

Preliminary cultural resources eligibility and effects assessments will be made during the investigations to provide recommendations for avoidance measures for resources that are likely to be significant. Grain Belt Express LLC will microsite the proposed transmission line to avoid areas of cultural resource, Native American, or biological resource concern, or to comply with private property owner requests. Identification of cultural resources within the APE for all reroutes, and any inaccessible tracts, will be completed as part of the secondary survey effort. The results of those surveys will be provided to DOE LPO, the SHPOs, and the Consulting Parties in reports as described above in Section 2.0. These reports will demonstrate the avoidance of previously identified cultural resources, and will include inventory findings, eligibility recommendations, initial recommendations of effects, and preliminary recommendations for avoidance, minimization, and mitigation measures for any newly identified cultural resources.

Additional design changes after completion of the secondary survey are possible due to ongoing efforts to avoid additional areas of cultural resource, Native American, or biological resource concern or to comply with private property owner requests. Future design changes will be surveyed and reported using the same methods and procedures as those described above and in Section 2.0.

### Minimization and Environmental Protection Measures

Minimization measures are intended to help reduce the intensity of development impacts on cultural resources to the level of no adverse effect. Minimization and mitigation can be integrated into the Undertaking through new technologies or methods, reduction in total land space required for Undertaking activities, or altering Undertaking element locations to reduce or avoid adverse effects that would compromise the integrity of historic properties with tribal monitor and/or tribal



representative consultation. Minimization measures could also include altering the Undertaking design to reduce visual impacts such as utilizing transmission structure heights under 200 feet where feasible to minimize the need for aircraft obstruction lighting, reducing reflectivity of transmission structures using processes such as acid bathing the galvanized finish of the transmission structure angle members, and reducing reflectivity of conductors via the use of non-specular conductors that have been treated to reduce light reflectance. Other minimization measures that could be incorporated in treatments for affected historic properties may include vegetation screening, restoring impacted sites, landscapes, or buildings, implementing specific preservation plans and maintenance programs that reduce impacts over time, compensating for impacts, for example by rehabilitating some buildings in exchange for demolishing others, replacing lost plant gathering areas by providing traditional plant gatherers with access to other similar areas. DOE LPO and Grain Belt Express LLC will consult with the SHPOs and the Consulting Parties to develop specific minimization and mitigation measures that can be applied to address the specific needs of sites, districts, and TCPs. Additionally, the environmental protection measures being analyzed in the EIS will be applied and incorporated into the Historic Properties Treatment Plan (HPTP) (see Section 6.0 below).



## RESOLUTION OF ADVERSE EFFECTS

### Developing the Historic Properties Treatment Plan

Following issuance of the final cultural resources reports, Grain Belt Express LLC will consult with DOE LPO, the SHPO(s), and the Consulting Parties, and will prepare Historic Properties Treatment Plan(s) (HPTPs) to detail the measures for avoidance, minimization, and/or mitigation of adverse effects on historic properties caused by the Undertaking. DOE LPO will provide the HPTP(s) for review and comment to the Consulting Parties for a thirty (30) calendar day review period, during which DOE LPO will schedule a meeting of the Consulting Parties to discuss the content of the HPTP(s).

- The HPTP(s) will address all historic properties within the Undertaking APE for which there has been a finding of adverse effect.
- The HPTP(s) will describe the measures to avoid, minimize, and mitigate the adverse effect(s) on specific historic properties.
- The HPTP(s) will describe how these measures will be carried out and the projected schedule for the implementation of any proposed measures.
- Should planned mitigation involve archaeological data recovery, the HPTP(s) will outline the specific research questions to be addressed by the data recovery and the archaeological methodologies to be implemented. If archaeological data recovery is planned for resource(s) of Indigenous origin, Tribal Monitors will be invited to engage with the data recovery operations.
- The HPTP(s) will outline the report(s) that Grain Belt Express LLC will prepare to document the results from implementation of the HPTP(s).
- If appropriate, the HPTP(s) will include a Monitoring Plan as an appendix, outlining the appropriate monitoring measures and protocols for implementation during construction as a component of avoidance, minimization, and/or mitigation.
  - The Monitoring Plan will define monitoring objectives and the methods needed to obtain those objectives, the methods for implementing cultural monitoring, and the procedures necessary for communicating inadvertent discoveries and securing identified resources during construction.
  - Grain Belt Express LLC will invite affiliated consulting Tribes to have Tribal Monitors present in designated monitoring locations during construction. The Monitoring Plan will describe the processes and protocols for Tribal Monitor(s) participation during construction.

### Relationship between PIAP and HPTP

In accordance with Stipulation 4 of the PA, following a potential agency determination that historic properties cannot be protected from adverse effects, the HPTP(s) will be developed. As noted above, the PIAP provides direction for what the HPTP(s) will include and general methods and procedures for site evaluation and data recovery investigations, along with protocols for reporting and monitoring. The HPTP(s) will specifically address the assessment of effects and how adverse effects to historic properties will be resolved within the specific Undertaking component, reflective of consultation with the Consulting Parties. The HPTP(s) will specify which historic properties will be treated with implementation of avoidance, minimization, and mitigation measures, and which must be evaluated and possibly treated in other manners to resolve adverse effects.



---

## Curation

Curation will be conducted by Grain Belt Express LLC with oversight by DOE LPO in compliance with relevant standards of 36 CFR Part 79. Archaeological materials will be documented and not collected as part of the field identification survey effort, and therefore no need for permanent curation of archaeological materials for the survey effort is anticipated.

Material specimens will not be collected during reconnaissance field investigations or shovel testing activities. Material specimens may be recovered during formal eligibility evaluation of an archaeological site resource (i.e., Phase II formal archaeological testing/excavations of eligible or potentially eligible sites using unit testing and/or mechanical excavation) or data recovery operations are implemented on eligible archaeological sites. In this event, Grain Belt Express LLC will ensure that artifacts and associated records (collections) resulting from archaeological investigations or studies pursuant to the PA are maintained in accordance with 36 CFR Part 79.

Grain Belt Express LLC will be responsible for consulting with landowners regarding the permanent disposition of collections resulting from evaluation efforts and/or data recovery operations pursuant to the PA. Grain Belt Express LLC will be responsible for negotiating the return of collections to non-federal landowners should they elect not to donate the collections, including any costs required to return the collections.

Unless otherwise covered by a landowner or other entity/facility, Grain Belt Express LLC will be responsible for reasonable costs required to prepare and manage collections and associated records donated to a curation facility agreed upon by the KS SHPO or MO SHPO for permanent curation, or to an affiliated consulting Tribe. Collections to be deposited with a curation facility will be prepared in accordance with the standards of that facility.

Unless otherwise covered by a landowner or other entity/facility, Grain Belt Express LLC will be responsible for reasonable costs required to curate collections and associated records in accordance with 36 CFR Part 79 and the curation agreement in effect with the facility accepting the collections. Grain Belt Express LLC will be responsible for the onetime accession fee assessed by the approved curation facility meeting the standards of 36 CFR Part 79.



---

## ISSUANCE OF NOTICE TO PROCEED TO BEGIN CONSTRUCTION

DOE LPO, in consultation with the Consulting Parties, has determined that a phased process for compliance with Section 106 of the NHPA is appropriate for the Undertaking, such that completion of the identification of historic properties, assessment of effects on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects will be carried out in phases as part of planning for and prior to any Notice to Proceed (NTP) to begin construction and specific Undertaking implementation. This PIAP provides sufficient flexibility to permit NTPs for segments of the Undertaking on a phased basis.

Issuance of the NTP for construction for any Undertaking segment depends on achieving Section 106 compliance pursuant to the terms of the PA. Compliance with Section 106 would be considered complete in areas where survey is complete and there is either (1) a finding of No Historic Properties Affected; (2) a finding of No Adverse Effect; (3) a finding of Adverse Effect and an approved HPTP and construction exclusion zone(s) to be implemented; or (4) resolution of any adverse effects has been completed. For any Undertaking segments within which cultural resources affiliated with The Osage Nation have been identified, appropriate documentation of consultation with The Osage Nation, including resolution of any adverse effects through mutual agreement on avoidance, minimization, and/or mitigation measures, must be included in the documentation for the NTP.

The NTP will include documentation of compliance with Section 106 and the terms of the PA. Documentation will be determined by DOE LPO's needs and requirements (and those of USACE, where applicable) but may take the form of a letter from the agency official charged with reviewing the NTP request.

Once pre-construction measures have been completed for a particular segment of the Undertaking, DOE LPO will issue a construction clearance, indicating that construction can commence for that segment. In some cases, it may be appropriate to issue segment-specific construction clearances when pre-construction Section 106 resolution measures have been completed for one segment and not another.

For areas not yet surveyed (such as Undertaking changes necessary to accommodate avoidance of historic properties or where access could not be obtained in advance) and/or where adverse effects are not yet resolved, construction exclusion areas will be designated. Construction outside of these exclusion areas may be authorized to proceed with an NTP. These exclusion areas will remain in place until surveys are complete and a finding of No Historic Properties Affected or No Adverse Effect has been agreed upon by the Consulting Parties, or until resolution of any adverse effects has been completed.

## MANAGEMENT OF HISTORIC PROPERTIES DURING CONSTRUCTION

Grain Belt Express LLC has prepared a *Plan for the Inadvertent Discovery of Cultural Resources or Human Remains* (IDP) in conjunction with the PIAP to address the inadvertent discovery of human remains and/or cultural resources during any Undertaking-related construction activities.

### Resolution of Inadvertent Discoveries of Human Remains and/or Cultural Resources

In the event an inadvertent discovery of human remains and/or cultural resources occurs during construction, the protocols outlined in the IDP will be implemented.

The resolution of an inadvertent discovery of human remains would require coordination with local law enforcement agencies and, if the remains are determined to be of historic and/or Indigenous origin, involve the specific steps outlined in the IDP for the appropriate treatment of the human remains.

The resolution of an inadvertent discovery of a cultural resource during construction would involve the following:

- In the event an inadvertent discovery is made, the area will be cordoned off at least a 100-foot radius surrounding the discovery until such time as the eligibility is definitively determined. At that point, the area would be released to continue work.
- If DOE LPO, the appropriate SHPO(s), and the Consulting Parties agree that the cultural resource is not eligible for the NRHP, then the suspension of work will end.
- If DOE LPO, the appropriate SHPO(s), and the Consulting Parties agree that the cultural resource is eligible for the NRHP, then the suspension of work will continue and DOE LPO, in consultation with Grain Belt Express LLC, the appropriate SHPO(s), and the Consulting Parties, as appropriate, will determine actions to avoid, minimize, or mitigate adverse effects to the historic property and will ensure that the appropriate actions are carried out.
- If DOE LPO, the appropriate SHPO, and the Consulting Parties cannot agree on the eligibility of the cultural resource, the dispute will be resolved per the process identified in 36 CFR 800.4(c)(2), in which a formal determination of eligibility will be sought by the agency official from the Keeper of the National Register of Historic Places.
- If DOE LPO, the Applicant, the appropriate SHPO(s), and the Consulting Parties cannot agree on an appropriate course of action to address an inadvertent encounter or effects situation, then DOE LPO will initiate the dispute resolution process outlined in Stipulation 10 of the PA.

### Monitoring during Construction

As identified in PA Stipulation 4, Grain Belt Express LLC will prepare a Monitoring Plan in conjunction with the HPTP. The Monitoring Plan will include the process and protocols for Archaeological Monitors' and/or Tribal Monitors' participation. Grain Belt Express LLC will invite the consulting Tribes to have Tribal Monitors participate in mitigation, treatment, data recovery (if necessary), and monitoring efforts in the Tribe's identified high-priority areas such as The Osage Nation AOIs (see the section below) or in other areas with cultural resources affiliated with The Osage Nation. The following protocols will provide the foundation for the Monitoring Plan.

Monitoring by up to one professional archaeologist and one Tribal monitor per work area will occur during ground-disturbing activities in areas determined appropriate for monitoring, and will be detailed in the HPTP and Monitoring Plan, or requested by The Osage Nation or other consulting Tribes. The archaeological monitors will be SOI-qualified archaeologists who are familiar with the types of historical and prehistoric resources that could be present in the Project area and/or with bio-archaeological training or experience. The archaeological monitors will coordinate regularly with the managing principal archaeologist. The principal archaeological monitor will be approved by DOE LPO prior to



construction. A monitor can prevent major damage to a site by being on location and stopping ground disturbance as soon as human remains or a cultural resource is identified. Duties might involve:

- Requesting excavation work to stop so that new discoveries can be evaluated,
- Sharing information so that others will understand the cultural importance of the features involved,
- Ensuring excavation or disturbance of the site is halted and the appropriate laws are followed when human remains are discovered,
- Helping to ensure that Native American human remains and any associated funerary objects are treated with culturally appropriate dignity, as is intended by State and Federal laws.

In addition to the areas identified in the HPTP, a Tribal monitor may be required at culturally sensitive locations as specified by DOE LPO following consultation with The Osage Nation and/or other consulting Tribes. The Monitoring Plan will identify the specific portions of the Undertaking where Tribal monitors will be required and will specify the tribal affiliation of the required Tribal monitor for each area. The scheduling and coordination of tribal monitors will be the responsibility of Grain Belt Express LLC. Grain Belt Express LLC will provide an advance construction schedule to consulting Tribes that have expressed intent to engage in construction-phase monitoring. Professional archaeologists and Tribes engaging in the construction-phase monitoring must meet the timing requirements of the Undertaking's construction schedule. Adjustments to the timing of construction activities will not occur with exception of scenarios where there is an inadvertent discovery, equipment malfunction, or reportable safety incident.

Tribal monitors, as designated by their Tribes, may act as a liaison between the Tribe's THPO and the project's personnel when inadvertent discoveries are made during construction. The Tribe's THPO can ensure that cultural features are treated appropriately from the Native American point of view. This can help others involved in the Undertaking to coordinate mitigation measures.

Compliance with and effectiveness of cultural resources monitoring will be documented by Grain Belt Express LLC in a monthly status report to be submitted to DOE LPO and The Osage Nation for the duration of construction. If monitoring areas require modification, all work in the immediate vicinity will be diverted to a buffer distance determined by the archaeological monitor in consultation and concurrence with The Osage Nation for Osage affiliated or potentially Osage affiliated cultural resources until authorization to resume work has been granted by DOE LPO. Grain Belt Express LLC will notify DOE LPO of any damage to cultural resources within the monitoring area. If such damage occurs, Grain Belt Express LLC will consult with DOE LPO and The Osage Nation for Osage affiliated or potentially Osage affiliated cultural resources to mitigate damages and to increase effectiveness of the monitoring areas.

### Monitoring within Native American Areas of Interest

Monitoring within the AOI of The Osage Nation will follow the protocols identified within PA Attachment 5, *Field Survey Protocols Confirmed with The Osage Nation*. Monitoring within the AOI of other Tribes, as needed/requested, will follow the protocols of those of other Tribes, as needed/requested.

---

## REVIEW AND UPDATE PROCEDURES

### Review and Adoption of the PIAP

DOE LPO will review, finalize, and adopt this PIAP as laid out in PA Stipulation 3. Any disputes that may arise between DOE LPO and another Consulting Party over the content of the PIAP will be resolved in accordance with Stipulation 10 of the PA.

### Amendment Procedures

DOE LPO will follow PA Stipulation 12.c to amend components of this PIAP:

DOE LPO will consult with the Consulting Parties for no more than forty-five (45) calendar days to reach consensus on the proposed changes to the Attachment. If the Consulting Parties agree to revise the Attachment consistent with the proposal, DOE LPO will render a decision consistent with that agreement and will notify the Consulting Parties of the decision. If the Consulting Parties cannot agree to revise the Attachment, then LPO will consider the concerns expressed by the Consulting Parties, render a decision, and notify the Consulting Parties of that decision. If any Signatory or Invited Signatory to the PA objects to the decision rendered by LPO, the dispute will be resolved following the process outlined in Stipulation 10 of the PA. The modified Attachment will be appended to the PA replacing the previous Attachment and become effective upon distribution by LPO to the Consulting Parties and will not require an amendment to the PA requiring recirculation to obtain the signatures of the Signatories and Invited Signatories to the PA.



---

## LITERATURE CITED

- Meyer, Mark E., James F. Palmer, and Ksienya A. Taylor. 2022. Visual Impacts Assessment Methodology and Guidelines. National Park Service, Lakewood, Colorado.
- National Park Service (NPS). 1983. Secretary's Standards and Guidelines for Evaluation. Available via <https://www.nps.gov/articles/series.htm?id=62144687-B082-538A-A0174FFF26496394> (last accessed 11/14/2023).
- NPS. 1995. How to Apply the National Register Criteria for Evaluation (NRB 15). Available via [https://www.nps.gov/subjects/nationalregister/upload/NRB-15\\_web508.pdf](https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf) (last accessed 11/14/2023).
- NPS. 2024. Identifying, Evaluating, and Documenting Traditional Cultural Places (formerly NRB 38). Available via <https://parkplanning.nps.gov/document.cfm?parkID=442&projectID=107663&documentID=141175> (last accessed 3/27/2025).
- Pay, Nicholas B., Bryan Hockett, and Tanner Whetstone. 2020. Defining a Visual Area of Potential Effects to Historic Properties on BLM Lands in Nevada. Available via <https://www.blm.gov/policy/nv-im-2021-006> (last accessed 6/5/2024).
- Sullivan, Robert G., Jennifer M. Abplanalp, Sherry Lahti, Kevin J. Beckman, Brian L. Cantwell, and Pamela Richmond. 2014. Electric Transmission Visibility and Visual Contrast Threshold Distances in Western Landscapes. Available via <https://blmwyomingvisual.anl.gov/assess-simulate/research-reports/> (last accessed 6/5/2024).

**ATTACHMENT 5**

**PROGRAMMATIC AGREEMENT  
AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

Proposed Work Plan,  
Phase I Archaeological Field Reconnaissance Surveys,  
Outside of Osage Nation Areas of Interest

FIELD SURVEY PROTOCOLS CONFIRMED WITH THE OSAGE NATION





# Grain Belt Express Transmission Project Proposed Work Plan, Phase I Archaeological Field Reconnaissance Surveys Outside of Osage Nation Areas of Interest

**May 2023**

Document Prepared For  
Invenergy Transmission LLC

Document Prepared By  
AECOM



**Grain Belt Express**  
*An INVENERGY TRANSMISSION Project*

**GRAIN BELT EXPRESS TRANSMISSION PROJECT  
PROPOSED WORK PLAN FOR PHASE I-LEVEL ARCHAEOLOGICAL  
FIELD RECONNAISSANCE SURVEYS OUTSIDE OF OSAGE NATION  
AREAS OF INTEREST**

Document Prepared for

**Invenergy Transmission LLC**  
One South Wacker Drive, Suite 1800  
Chicago, Illinois 60606  
(312) 224-1400

Document Prepared by

**AECOM**  
100 N. Broadway, 20<sup>th</sup>  
Floor St. Louis, MO  
63102  
[www.aecom.com](http://www.aecom.com)

May 2023



TABLE OF CONTENTS

1 PROPOSED WORK PLAN .....1

1.1 Grain Belt Express Project Overview .....1

2 PROTOCOLS FOR PHASE I ARCHAEOLOGICAL SURVEYS OUTSIDE OF OSAGE NATION AREAS OF INTEREST .....2

2.1 Visual Reconnaissance and Osage Nation Properties Identification .....2

2.2 Sampling Strategies .....2

2.3 Shovel Testing Protocols.....3

2.4 Archaeological Site Delineation Protocols .....4

# 1 PROPOSED WORK PLAN

## 1.1 Grain Belt Express Project Overview

Grain Belt Express LLC, a subsidiary of Invenergy Transmission LLC and referred to herein as “Invenergy,” is proposing to construct and operate a high-voltage direct current (HVDC) transmission line and associated facilities and interconnections that extend from Ford County, Kansas, to Monroe and Callaway Counties, Missouri (the “Project”). The Project’s main HVDC electric transmission line component (Main Line) would be routed within a corridor that measures 1,320 feet wide in Kansas and 1,000 feet wide in Missouri and crosses 23 counties in these two states. In Kansas, Invenergy plans to construct and operate approximately 384 miles of 600-kilovolt (kV) HVDC transmission line and the Ford County interconnection facilities. The Ford County interconnection facilities, which are part of the Project, will be composed of the following:

- An approximately 2,500 megawatt (MW) HVDC converter station,
- A high-voltage alternating current (AC) switchyard adjacent to the HVDC converter station, and
- An approximately 1,086-foot-long 345-kV AC transmission line from the planned AC switchyard to the existing Saddle Substation that ITC Great Plains owns adjacent to the switchyard.

In Missouri, Invenergy plans to construct and operate approximately 158 miles of 600-kV HVDC transmission line and the Missouri interconnection facilities. The Missouri interconnection facilities, which are part of the Project, will comprise the following:

- An approximately 2,500-MW HVDC converter station in Monroe County,
- An AC switchyard adjacent to the HVDC converter station, and
- An approximately 36-mile-long 345-kV AC transmission line constructed between the AC switchyard located in Monroe County and the non-Invenergy-owned existing McCredie Substation and the non-Invenergy-owned proposed Burns Substation in Callaway County. This AC transmission connection, which is referred to as the “Tiger Connector,” would carry up to 2,500 MW of capacity.

Invenergy has applied for a loan guarantee for the Project pursuant to the U.S. Department of Energy’s (DOE) Renewable Energy Project and Efficient Energy Projects Solicitation (Solicitation Number: DE-SOL-0007154) under Title XVII, Innovative Energy Loan Guarantee Program. The primary goal of the Program is to finance projects and facilities in the U.S. that employ innovative and renewable or efficient energy technologies that avoid, reduce, or sequester anthropogenic emission of greenhouse gases. The DOE’s Loan Programs Office (LPO), as the lead federal agency for this undertaking, has the responsibility to comply with the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] Parts 1500-1508), DOE’s NEPA implementing regulations (10 CFR Part 1021), Section 106 of the National Historic Preservation Act (NHPA), and Title XVII of the Energy Policy Act of 2005. This proposed work plan has been developed in support of the cultural resources coordination necessary under Section 106 of the NHPA, as implemented by the DOE LPO for this undertaking.



## 2 PROTOCOLS FOR PHASE I ARCHAEOLOGICAL SURVEYS OUTSIDE OF OSAGE NATION AREAS OF INTEREST

The following protocols were developed by Invenergy in consultation with DOE LPO, AECOM, and the Osage Nation to thoughtfully and effectively consider the potential for impacts to undocumented subsurface archaeological and cultural resources from the Project outside of the Osage Nation Areas of Interest (AOI). These protocols will be applied to the approximately 55 percent of the Project's physical Area of Potential Effects (APE) located outside of the Osage Nation AOI and represent a significant increase in the intensity and thoroughness of the field studies required under State Historic Preservation Office (SHPO) guidelines for Missouri and Kansas.

Invenergy proposes to apply the following protocols for visual reconnaissance, properties identification, shovel testing, and archaeological site delineation.

### 2.1 Visual Reconnaissance and Osage Nation Properties Identification

- Invenergy will conduct a full visual reconnaissance of the physical APE for visual markers of archaeological and cultural features and resources.
- The Osage Nation guidance regarding the visual identification of traditional properties provided during the January 10, 2023, training session between the Osage Nation Tribal Historic Preservation Office, Invenergy, DOE LPO, and AECOM will be universally applied during all archaeological field reconnaissance studies.

### 2.2 Sampling Strategies

- To account for the potential to impact subsurface archaeological deposits, Invenergy will conduct shovel testing at a 15-meter interval in all areas of the physical APE where surface visibility conditions do not allow for pedestrian surface survey and visual reconnaissance per the relevant SHPO guidelines. Ground surface visibility (GSV) levels within plowed (or disced) agricultural fields that do not exceed 40 percent will necessitate hand-excavated shovel tests.
- In areas where GSV conditions do allow for visual reconnaissance per the relevant SHPO guidelines, Invenergy will apply the SHPO standards for pedestrian surface survey and will supplement these techniques through shovel testing in all areas of proposed ground disturbance. The supplementary shovel testing strategy will consider both the horizontal and vertical extent of the physical APE specific to the different elements of the proposed construction activities:
  - For elements of the physical APE designated for ground-disturbing excavations (defined as subsurface and/or sub-plowzone) during construction, including the proposed transmission structure locations and convertor stations that will require mechanical subsurface excavation, Invenergy will conduct shovel testing at a 15-meter interval. This modification to the Kansas and Missouri SHPO guidelines is proposed in consideration of Osage Nation concerns regarding the potential for subsurface and sub-plowzone mechanical excavation work to impact archaeological deposits that do not have a surface expression within agricultural fields.
  - For elements of the physical APE designated for surface/near-surface (upper plowzone) disturbances that will not involve any excavation work (mechanical or otherwise), particularly routes of access between transmission structure locations, Invenergy will apply an integrated approach to address the potential for impacts to archaeological resources. This approach will involve controlled pedestrian inspection in areas of sufficient GSV for the presence of surface expressions of archaeological deposits, in addition to the hand excavation of shovel tests on landforms and locations that display an increased sensitivity for the presence of archaeological resources. Markers for this increased sensitivity will include (but are not limited to) distance to permanent water sources, natural elevations (heights-of-land), documented presence of nearby resources,

and presence of sub-plowzone soil horizons on the ground surface. The shovel test excavations outlined under this approach will be conducted at a systematic 15-meter interval, and digital mapping of all excavated tests will be provided to the Osage Nation.

Invenergy believes that the approach outlined above for the elements of the physical APE located outside of Osage Nation AOI is the most effective and efficient methodology to implement during the field studies. This approach is based on a better understanding of the dimensions of the physical APE, the vertical profile of which is manifestly different depending on the extent of proposed ground disturbance associated with the construction of the Project. For those locations that require subsurface mechanical excavations, including the planned convertor stations and the individual transmission structures, the extent of associated ground disturbance will extend well below the existing ground surface and therefore has an increased potential for impacting cultural resources, specifically intact archaeological deposits. In these elements of the physical APE, the hand excavation of shovel tests is appropriate and required to assess for the presence of cultural resources.

With regard to the Project elements that will not involve any subsurface excavations, the proposed activities associated with construction will primarily involve aboveground vehicular traffic to access the transmission structure locations. The potential of the Project to impact cultural resources is therefore limited to the ground surface and upper limits of the plowzone, as disturbances are not likely to extend below the actively utilized plowzone soil horizons and will be similar in scale/size to the regular agricultural traffic across these landforms. This more limited vertical profile of the physical APE suggests an alternate approach is warranted, involving the integration of controlled pedestrian inspection with targeted, focused shovel testing in a systematic manner on landforms that demonstrate an increased potential for the presence of cultural resources.

In the development and consideration of the methodologies outlined above, Invenergy does not intend for the field surveys to be conducted in isolation from the investigations and results from the survey work in Osage Nation AOI, particularly as that survey work will also extend across similar landforms. The results of the fieldwork conducted within Osage Nation AOI will be integrated with the non-AOI field surveys to inform the approaches outlined above and, if warranted, revisit the proposed methodology for field studies outside of Osage Nation AOI. This holistic approach, encompassing both systematic and thoughtful field methodologies, is intended to provide an appropriate and efficient level of field effort to foster the identification of cultural resources within the specific horizontal and vertical dimensions of the physical APE, considering both the Osage Nation guidelines and concerns as well as those of the Kansas and Missouri SHPOs.

## 2.3 Shovel Testing Protocols

- Individual shovel tests will measure between 30 centimeters (cm) and 40 cm in diameter and will be excavated stratigraphically and in 10 cm levels within soil horizons, to a depth of at least 20 cm into sterile subsoil (wherever possible). Excavated soils will be screened through ¼-inch wire mesh, and hand-troweled in high-density clay soils or wet conditions.
- In the event any locations proposed for deep ground disturbances (such as the transmission structure locations) are proposed in settings with the potential for alluvial/colluvial soil horizons, the field team will hand-excavate bucket augers to provide preliminary documentation of the soil stratigraphy and assess for the potential presence of deeply-buried cultural deposits within the vertical footprint of the Project's deep ground disturbances. Should this examination identify the potential for deeply buried deposits, Invenergy will consult with the Osage Nation on an appropriate strategy for additional testing, if warranted.
- Invenergy will map the location of all excavated shovel tests and will note the relevant characteristics of all tests in the field on shovel-test logs. This will include soil stratigraphy data, such as depths (below ground surface), Munsell colors, soil textures, evidence of disturbances, rock content, etc. All observed cultural materials and features will be clearly documented, photographed, and recorded spatially through mobile GPS technology and hand-drawn sketch maps.



## 2.4 Archaeological Site Delineation Protocols

- In the event materials of Indigenous origin are encountered during the field survey, all artifacts will be documented, mapped, and left in place. All observed cultural materials will be documented in the field through recordation on hand-drawn site sketch maps and mobile GPS units, photographed, characterized on field ID forms, and tallied by artifact type. The documentary evidence will be provided to precontact and historic analysts for formal documentation in the Phase I reporting and state-inventory site forms. The full analytical methodologies applied to precontact and historic-period artifact assemblages will be provided in full as part of the Phase I reports for each state.
- The extent of surface and/or subsurface archaeological sites will be delineated through both mapping of observed surface artifacts and shovel-test excavations, restricted to the proposed limits of disturbance (LOD). In instances where a precontact and/or Tribal site location is encountered that may extend outside the proposed LOD, Invenergy will consult with the Osage Nation on the need for further testing outside of the proposed LOD. If necessary, Invenergy will seek landowner approval for site delineation testing outside the Project LOD where appropriate. In the event this type of resource can be avoided, Invenergy will consider the site unassessed for NRHP eligibility and treat it as a potentially eligible resource that Invenergy will voluntarily avoid.
- Delineation shovel testing of archaeological sites will be conducted at 5-meter intervals in a cruciform pattern proceeding outward to the site boundary, with site limits defined by either the Project LOD or two consecutive negative shovel tests.
- Site boundaries and salient characteristics will be mapped with mobile global positioning system (GPS) equipment and hand-drawn on sketch maps.
- The input and opinions of the Osage Nation Tribal Monitor(s) will be incorporated into the testing and delineation of Indigenous sites.
- Should any evidence for human remains be encountered during the field reconnaissance survey, Invenergy will immediately cease all excavation work in the vicinity of the location (apart from securing the findspot from further disturbances) and consult with appropriate parties to address discovery of human remains, including the Osage Nation.
- Should Invenergy visually identify any possible Osage Nation aboveground properties, such as the cairns discussed in the January 2023 training session, within or near the Project LOD, all shovel-test excavation work in the vicinity of the location will cease, and Invenergy will consult with the Osage Nation.

**ATTACHMENT 6**

**PROGRAMMATIC AGREEMENT  
AMONG**

**U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE;  
KANSAS STATE HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**INADVERTENT DISCOVERY PLAN**





# **Grain Belt Express Transmission Project Phase 1, Plan for the Inadvertent Discovery of Cultural Resources or Human Remains During Construction**

**Preliminary Draft prepared December 2023**

**Draft v.1 prepared July 2024**

**Draft v.2 prepared October 2024**

**Draft v.3 prepared January 2025**

**Final Draft v.4 prepared April 2025**

**Final June 2025**

**Document Prepared For  
Invenergy Transmission LLC**

**Document Prepared By  
AECOM**



**Grain Belt Express**

**An INVENERGY TRANSMISSION Project**

# **GRAIN BELT EXPRESS TRANSMISSION PROJECT PLAN FOR THE INADVERTENT DISCOVERY OF CULTURAL RESOURCES OR HUMAN REMAINS DURING CONSTRUCTION**

Document Prepared for

**Invenergy Transmission LLC**  
One South Wacker Drive, Suite 1800  
Chicago, Illinois 60606  
(312) 224-1400

Document Prepared by

**AECOM**  
100 N. Broadway, 20<sup>th</sup>  
Floor St. Louis, MO  
63102  
[www.aecom.com](http://www.aecom.com)

**Preliminary Draft January 2024**

**Draft v.1 July 2024**

**Draft v.2 October 2024**

**Draft v.3 January 2025**

**Final Draft v.4 April 2025**

**Final June 2025**



## TABLE OF CONTENTS

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Laws and Regulations .....</b>	<b>2</b>
<b>3</b>	<b>Training and Orientation .....</b>	<b>4</b>
<b>4</b>	<b>Inadvertent Discovery of Cultural Resources and/or Human Remains .....</b>	<b>5</b>
	4.1 Protocols in the Event of a Potential Inadvertent Discovery .....	5
	4.2 Investigative and Consultation Procedures for the Inadvertent Discovery of Cultural Resources .....	6
	4.3 Investigative and Consultation Procedures for the Inadvertent Discovery of Evidence for Human Remains.....	7
<b>5</b>	<b>Plan Summary .....</b>	<b>9</b>
<b>6</b>	<b>Inadvertent Discovery Plan Contact Information.....</b>	<b>10</b>
	6.1 Grain Belt Express Project Personnel Contacts .....	10
	6.2 Federal Agency Contacts .....	10
	6.3 State Historic Preservation Office Contacts .....	10
	6.4 Tribal Contacts.....	11
	6.5 Local Law Enforcement Contacts.....	12

## ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
ARPA	Archaeological Resources Protection Act
DOE	U.S. Department of Energy
EI	Environmental Inspector
GBX	Grain Belt Express LLC
IDP	Inadvertent Discovery Plan
LPO	Loan Programs Office
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PIAP	Phased Identification and Assessment Plan
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
UBS	Kansas Unmarked Burial Sites Preservation Act of 1989
U.S.	United States



## 1 INTRODUCTION

Grain Belt Express LLC (GBX or Applicant), a subsidiary of Invenergy Transmission LLC, has applied to the U.S. Department of Energy (DOE) Loan Programs Office (LPO) for a loan guarantee for Phase 1 of its proposed Grain Belt Express Transmission Project (Phase 1 is referred to herein as the “Project”) under Title XVII, Innovative Energy Loan Guarantee Program, authorized by the Energy Policy Act of 2005. DOE LPO’s decision on Invenergy’s loan guarantee application is subject to the National Environmental Policy Act of 1969 (NEPA) and other federal laws and regulations, including the National Historic Preservation Act of 1966 (NHPA). Under Section 106 of the NHPA, consultation with potential stakeholders is required, including federal agencies, State Historic Preservation Offices (SHPOs), the Advisory Council on Historic Preservation (ACHP), Native American Tribes and Tribal Historic Preservation Offices (THPOs), local governments, interested parties, and the public, in consideration of the undertaking’s potential to affect historic properties.

As part of the Section 106 compliance effort, the Applicant has prepared this Plan for the Inadvertent Discovery of Cultural Resources or Human Remains During Construction (Inadvertent Discovery Plan, or IDP) to identify procedures to be implemented in the event that previously unreported and unanticipated cultural materials or human remains are found during construction of the Project in the 23 counties in Kansas and Missouri which contain elements of the Project (see Table 1, below). This plan applies to the Applicant’s employees, contractor(s) and subcontractor(s) during construction and describes the specific measures to be implemented to protect the resource, should one be identified. This document serves as the primary guidance tool for the Applicant and its contractors for the Project so they can:

- comply with applicable federal and state laws and regulations during construction of the Project;
- describe to regulatory and review agencies the procedure the Project or its representatives will follow to prepare for and manage inadvertent discoveries; and,
- provide direction and guidance to Project personnel as to the proper procedure to be followed should an inadvertent discovery occur.

**Table 1. Counties which contain elements of the Project**

State	Counties, From West-East
Kansas	Ford, Hodgeman, Edwards, Pawnee, Barton, Russell, Osborne, Mitchell, Cloud, Washington, Marshall, Nemaha, Brown, Doniphan
Missouri	Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Monroe, Audrain, Callaway

## 2 LAWS AND REGULATIONS

GBX and its contractor(s) will adhere to the following laws, regulations, and guidance related to cultural and archaeological resources:

- **American Antiquities Act of 1906.** Provides for permits to authorize scholarly use of properties, for misdemeanor-level penalties to control unauthorized use, and for presidential designation of outstanding properties as national monuments for long-term preservation.
- **National Historic Preservation Act (NHPA) of 1966:**
  - Section 106 directs all federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the National Register of Historic Places (NRHP).
  - Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 110(c) requires that each federal agency designate a Preservation Officer to coordinate activities under the Act.
- **American Indian Religious Freedom Act of 1978.** Establishes the policy of the United States to protect and preserve for the American Indian, Eskimo, Aleut, and Native Hawaiian the inherent right of freedom to believe, express, and exercise their traditional religions. Federal agencies are directed to evaluate their policies and procedures to determine if changes are needed to ensure that such rights and freedoms are not disrupted by agency practices.
- **Executive Order 13007:** Indian Sacred Sites. Establishes access to and ceremonial use of Indian sacred sites by Indian religious practitioners on federal lands. The federal agencies shall avoid adversely affecting the physical integrity of such sacred sites and maintain confidentiality of said sites.
- **Advisory Council on Historic Preservation's Policy Statement Regarding Burial Sites, Human Remains, and Funerary Objects** (March 1, 2023). Establishes a set of standards and guidelines that federal and state agencies, contractors, and other relevant entities should, at a minimum, seek to implement to provide burial sites, human remains, and funerary objects the consideration and protection they deserve.

Under Section 106 of the NHPA, consultation with the appropriate SHPO(s) is a critical component of the cultural resources coordination process. As the Project is located within both Kansas and Missouri, coordination with the Kansas SHPO and Missouri SHPO is required, as well as consideration of the regulating laws and guidelines in each state. These regulations include:

- **Kansas Antiquities Commission Act, Kansas Statutes Annotated 74-5401 through 74-5408**, which governs potential disturbances to archaeological resources on state, county, and municipal lands in Kansas.
- **Kansas Unmarked Burials Site Preservation Act (UBS), Kansas Statutes Annotated 75-2741 through 75-2754**, which protects unmarked burials in Kansas and human remains and associated objects that come from them.
- **Unmarked Human Burial Sites Act, Missouri Revised Statutes, 194.400–410**, which prohibits disturbance to human burials and outlines the notification procedures in the event human burials are inadvertently encountered.
- **Missouri Revised Statutes Chapter 214**, which is associated with potential disturbances to cemeteries, funerary and other associated objects.
- **Missouri Revised Statutes 253.420**, deals with the treatment and avoidance of shipwrecks.



Both the Kansas SHPO and Missouri SHPO have codified the guidelines and procedures for conducting cultural resources investigations in each state. These guidance documents include:

- The *Kansas SHPO's Guide to Archaeological Survey, Assessment and Reporting*, which outlines the survey and analytical methodologies for archaeological field reconnaissance surveys and site testing in Kansas.
- *Guidelines for Phase I Archaeological Surveys and Reports* for the Area of Potential Effects (APE) in Missouri, as published by the Missouri SHPO, describes the procedures requested by the Missouri SHPO for survey work and investigations.
- *Standards for Professional Architectural and Historic Surveys*, also published by the Missouri SHPO and available for review online, outlines the guidance for conducting architectural investigations in Missouri.

In addition to the federal and state-specific legislation outlined listed above, multiple Tribal Nations, as sovereign entities, have published guidelines and protocols for conducting cultural resources investigations within their areas of historic interests. For the Project, any cultural resources studies conducted within areas defined by participating Tribal entities, including The Osage Nation<sup>1</sup>, will adhere to the requirements stipulated in their guidance documents (if available). This would include the Osage Nation Tribal Historic Preservation Office (THPO) 2023 *Archaeological Survey Standards*, as ongoing consultation has integrated these standards into the archaeological methodologies for the Project's cultural resources investigations.

---

<sup>1</sup> The Osage Nation THPO 2023 *Archaeological Survey Standards* guidelines are integrated into the Project's archaeological investigations and serve as the primary guidance document for work within Osage Nation Areas of Interest.

### 3 TRAINING AND ORIENTATION

Prior to the start of construction, the Project will provide training in the implementation of this IDP to Project construction leads and Environmental Inspectors (EI) as part of the pre-construction program. This training will include instruction on the procedures and protocols to be implemented in the event that cultural materials and/or evidence of human remains or burials are inadvertently discovered during Project construction-related activities, including measures for maintaining confidentiality of inadvertent discoveries. Portions of this plan will be included in on-boarding documentation used when new contractors/workers are introduced to the Project. The EIs will be responsible for advising Project construction-contractor personnel on the procedures to follow in the event that an inadvertent discovery is made.

An inadvertent discovery of a cultural resource could consist of, but is not limited to:

- Archaeological evidence of precontact activity, including features such as storage pits, postmolds, hearths, occupational surfaces, middens (an accumulation of shell, burned rocks, or other food related materials), and anthropogenic soil horizons;
- bones or small pieces of bone;
- an area of charcoal or very dark stained soil with artifacts;
- artifact concentrations of precontact materials, such as projectile points, the debris from the manufacture of stone tools (often referred to as flakes/debitage), ceramic sherds, fire-cracked rock;
- cultural features associated with historic-era occupations and activity, such as trails, roads, canals, railroads, wells, cisterns, foundations, and trash pits at least 50 years in age; and
- historic artifact concentrations such as glass bottles, tin cans (e.g., hole-in-top cans), tableware, dishware, architectural debris (e.g., bricks, mortar, window glass), hardware (e.g., square nails), and farm implements at least 50 years in age.

Evidence of human remains and/or a burial site could consist of, but is not limited to:

- any human remains such as articulated or disarticulated bones, teeth, hair, preserved soft tissue;
- burial pit or grave shaft outlines in the soil;
- headstones or footstones;
- coffin wood fragments and coffin hardware;
- burial mounds or burial cairns; and
- funerary objects.

Archaeological discoveries may be classified as simple or complex. Simple archaeological discoveries consist of isolated artifacts or isolated features with few artifacts or diagnostic characteristics. Complex discoveries are those that entail a significant number of artifacts or features, or sensitive or unique finds such as house pits, middens, or human remains.

It is important to note that although general descriptions of potential cultural resources are provided here, the predominant guideline will be whether the feature, artifact, or non-human bone in question can provide information that adds to the regional prehistory or history through further investigation; it is not possible to anticipate every situation that may arise. Therefore, the appropriate project personnel (potentially including Tribal monitors and consulting archaeologists) will determine if the resources discovered merit further investigation and thereby should be defined as an inadvertent discovery of a cultural resource.



## 4 INADVERTENT DISCOVERY OF CULTURAL RESOURCES AND/OR HUMAN REMAINS

### 4.1 Protocols in the Event of a Potential Inadvertent Discovery

In the event that potential cultural resources are identified during Project-related ground disturbing activities, the following procedures will be followed:

1. If any Project personnel believe they have made an inadvertent discovery of archaeological resource and/or human remains, all work at the location will cease immediately.
2. The contractor will stop all ground-disturbing activities in the area of the discovery and establish a set-back buffer zone to protect the integrity of the find. No ground-disturbing activities will occur in the buffered area of the find until approved by the Lead EI.
  - a. For potential cultural resources, a 100-foot set-back buffer will be established from the observed limits of the cultural resource or the outer perimeter of a group of potential resources.
  - b. For potential human remains a 300-foot set-back buffer will be established from the observed limits of the human remains or the outer perimeter of several potential human remains.
  - c. The suspension of work and implementation of protective measures (such as protective coverings with a tarp) are required to be upheld until such time that the appropriate personnel are able to assess the discovery and complete the procedures detailed in Sections 4.2 and/or 4.3.
3. The personnel who discovered the potential cultural material or potential human remains will immediately contact the EI assigned to the corresponding Project location, who will then contact the consulting archaeologist, GBX's Environmental Manager(s), and the Lead EI. If the inadvertent discovery is potentially associated with a resource of Indigenous origin or association, the Tribal Monitor for the corresponding Project location will also be contacted concurrent with the consulting archaeologist. Contact with the EI, lead EI, consulting archaeologist, and GBX's Environmental Manager(s) will be made within twenty four (24) hours of the initial discovery. For work in remote locations with limited access to outside communication, it may take longer than two (2) hours to make initial notification.
4. GBX's Environmental Manager(s) will coordinate with the Archaeological Consultant to conduct a preliminary assessment of the find within twenty-four (24) hours of the initial discovery, which may include reviewing photographs of cultural materials or features.
  - a. No photographs will be taken of Non-native human remains without express permission of local law enforcement and SHPO. If the remains cannot be clearly identified as Native or Non-native, then photography is prohibited.
  - b. Photography of Native human remains is prohibited.
5. GBX's Environmental Manager(s) will notify the DOE LPO, the affected SHPO, The Osage Nation, any Tribes that have requested notification in the event of inadvertent discoveries during construction, and the U.S. Army Corps of Engineers (USACE) if located within USACE jurisdictional permit areas for wetland and waterbody crossings, within forty-eight (48) hours of the discovery regarding the preliminary evaluation of the find.
6. The consulting archaeologist (and, if of potential Indigenous origin, the Tribal Monitor) will describe and document the location of the potential cultural resource and/or human remains. The data will be analyzed to determine if the potential resource/remains is in primary depositional context, is an isolated find, and if it is an archaeological resource. Based on this analysis, the consulting archaeologist will then follow one of these next procedures:

- a. If the inadvertent discovery is determined to not involve a cultural resource or human remains, ground disturbance may continue in the location of the potential discovery.
- b. If the inadvertent discovery does involve a cultural resource or human remains, the depositional context, location, and all other pertinent information will be documented. Ground disturbance will not resume at the location until all appropriate consultations have occurred as described in Sections 4.2 and 4.3 below.
- c. If DOE LPO or Project personnel discover previously unidentified historic properties and/or other unanticipated effects on historic properties not addressed here, the agency will follow the procedures at 36 CFR Part 800.13(b).

## **4.2 Investigative and Consultation Procedures for the Inadvertent Discovery of Cultural Resources**

1. The EI and consulting archaeologist will flag or fence off the resource (including the area within 100 feet of the find or the outer perimeter of a group of finds). Any observed cultural materials and/or features will be covered with a tarp or other material (not soil or rock) for temporary protection from being photographed or further impacted. The EI and consulting archaeologist will determine if a travel lane can be accommodated and maintained without affecting the integrity of the site. Access will be restricted or prohibited, as necessary, to ensure that no additional disturbance to the site occurs.
2. GBX's Environmental Manager(s) will direct the Archaeological Consultant to begin an assessment of the significance of the find and the potential effect of construction on the site.
3. The Archaeological Consultant will assess and document the find within forty-eight (48) hours of the initial discovery. The Archaeological Consultant will communicate the documentation and assessment to GBX. GBX will notify DOE LPO, the appropriate SHPO, The Osage Nation, and USACE (if applicable) to consult and render a decision regarding the find.
  - a. DOE LPO will follow the process outlined in the Programmatic Agreement (PA) and Phased Identification and Assessment Plan (PIAP) for determinations of eligibility for listing in the NRHP and would review and approve all reports and treatment plans prior to any notices to proceed.
4. If it is determined that the cultural resource is of Indigenous origin, GBX's Environmental Manager(s) will notify The Osage Nation and other appropriate Tribe(s) within seventy-two (72) hours of the initial discovery.
  - a. If the Archaeological Consultant recommends the find is not significant, and the DOE LPO, SHPO, The Osage Nation, other consulting Tribes (if applicable), and USACE (if applicable) agree with that assessment, the Archaeological Consultant will notify GBX's Environmental Manager(s) that construction may proceed in the vicinity of the find without additional action. The Archaeological Consultant will prepare a brief letter report/memoranda on the find for submittal to the DOE LPO, SHPO, The Osage Nation, and USACE (if applicable) within seven (7) calendar days of the initial encounter.
  - b. If the Archaeological Consultant recommends that the find may be significant, and the DOE LPO, SHPO, The Osage Nation, other consulting Tribes (if applicable), and USACE (if applicable) concur, then the following additional steps will be implemented:
    - i. GBX's Environmental Manager(s) will notify other parties of the find as directed by the DOE LPO, SHPO, The Osage Nation, and USACE (if applicable).
    - ii. If the find is determined to be significant and continuing construction may damage more of the site, GBX's Environmental Manager(s) will request recommendations from the DOE LPO, SHPO, The Osage Nation, and USACE (if applicable), and other parties recommended by DOE LPO, SHPO, The Osage Nation, and USACE regarding measures for site treatment. If the resource may be of interest to any of the Tribes, the



measures will be developed and conducted in consultation with the claimant Tribe(s). These measures may include:

1. formal archaeological evaluation of the site, consulting with the claimant Tribe(s), if appropriate;
  2. site visits by the DOE LPO, SHPO, The Osage Nation, other claimant Tribes, and USACE (if applicable);
  3. preparation of a mitigation plan by the Project for approval by the DOE LPO, SHPO, The Osage Nation, other claimant Tribes, and USACE (if applicable);
  4. implementation of the mitigation plan; and,
  5. approval to resume construction following completion of the fieldwork component of the mitigation plan.
5. If, upon further analysis by the Archaeological Consultant, the find is recommended to lack significance, GBX's Environmental Manager(s) will consult with the DOE LPO, SHPO, The Osage Nation, other consulting Tribes (as applicable), and USACE (if applicable), and other parties (if applicable), and will request approval to resume construction subject to any further mitigation required by the DOE LPO, SHPO, The Osage Nation, other consulting Tribes (if applicable), and USACE (if applicable).
  6. GBX's Environmental Manager(s) will notify the EI and consulting archaeologist who will grant clearance to the contractor to start work.

#### **4.3 Investigative and Consultation Procedures for the Inadvertent Discovery of Evidence for Human Remains**

1. Any human remains, burial sites, or burial-related materials that are discovered during construction will, at all times, be treated with dignity and respect according to the following principles:
  - a. Any evidence for the presence of human remains will be considered and treated as privileged and confidential information and will only be shared or distributed via any medium with "need to know" personnel listed in Section 6.0 below.
  - b. Photography, collection, and recovery of any Non-native human remains without express permission of local law enforcement and SHPO is prohibited.
  - c. Photography of any Native human remains is prohibited.
  - d. Collection and recovery of Native human remains without express permission of the claimant Tribe or in the absence of a claimant Tribe, The Osage Nation is prohibited.
  - e. The preferred treatment for human remains and associated burial objects is *in situ* preservation.
  - f. Human remains and associated burial objects should always be treated respectfully.
  - g. Human remains and associated burial objects may have cultural, religious, and/or scientific values, which should be considered in their treatment. Their treatment should be considered on a case-by-case basis with all potential treatments (avoidance, disinterment, study, curation, and/or reburial) recognized as options.
  - h. Consultation with specific descendants and/or the appropriate, culturally affiliated groups regarding the treatment of human remains and associated burial objects will be undertaken to achieve consensus regarding the repatriation or disposition of the remains and any associated funerary objects.
2. Should human remains unexpectedly be discovered during construction of the undertaking, such person or persons discovering the human remains shall make every effort to refrain from disturbing or removing the human remains and shall protect the exposed portions of the human remains from inclement weather and vandalism.

3. If an unmarked human burial or skeletal remains are discovered during construction activities, GBX's Environmental Manager(s) will direct the EI, Archaeological Consultant, and Tribal Monitor assigned to that section of the project to flag or fence off the site (including a buffered area measuring no less than 300 feet from the outer perimeter of the discovery), and will notify the appropriate local law enforcement agency personnel, including the sheriff's office and the Medical Examiner or County Coroner (as applicable).
4. GBX's Environmental Manager(s) will notify DOE LPO, the appropriate SHPO, The Osage Nation, and USACE (if applicable), and other appropriate parties of the find within forty-eight (48) hours of the initial discovery.
  - a. DOE LPO must be notified promptly of any potential inadvertent discovery with any evidence for the presence of human remains.
  - b. DOE LPO will follow the process outlined in the Programmatic Agreement (PA) and Phased Identification and Assessment Plan (PIAP) for determinations of eligibility for listing in the NRHP and would review and approve all reports and treatment plans prior to any notices to proceed.
5. In both Missouri and Kansas, the local law enforcement officer or coroner will assume jurisdiction over inadvertently discovered human remains, unless the remains are determined to not be associated with a legal investigation, in which case the appropriate Kansas or Missouri legislation concerning treatment of human remains will be followed (see Section 2.0).
  - a. If the responding law enforcement agency determines that the site of the inadvertently discovered human remains is a crime scene, the agency will manage the site, and Project activities in the vicinity of the crime scene will not resume until the investigation is complete and authorization to resume construction is received from law enforcement.
  - b. If it is determined that the remains are subject to a criminal investigation by local, state, or federal authorities, the appropriate law enforcement agency would endeavor to determine the identity or next of kin of the deceased.
  - c. If the remains are not subject to a criminal investigation by local, state, or federal authorities, the appropriate Kansas or Missouri legislation concerning the treatment of human remains shall be used as guidance.<sup>2</sup> Notwithstanding such guidance, all applicable state and federal laws and regulations governing the treatment and disposition of human remains shall be followed.
6. If it is determined that the remains are Native remains and not subject to a criminal investigation, GBX's Environmental Manager(s) will notify DOE LPO of that determination, and DOE LPO will notify the appropriate Tribe(s) within forty-eight (48) hours of such determination.

The measures to protect the remains and any associated artifacts will stay in effect until they have been fully evaluated, appropriate treatment (if applicable) has been completed, and the Project has received written notice from the DOE LPO and SHPO (and if applicable other consulting parties, such as USACE and/or a Tribal Historic Preservation Office) to proceed with construction at the inadvertent discovery site.

---

<sup>2</sup> Under Kansas state law (UBS, Statute 75-2749, articles b and d), "If the coroner determines that the human skeletal remains are not of evidentiary or forensic interest then the coroner shall notify the state historical society. The state historical society shall assume jurisdiction over the human skeletal remains, and any goods interred with such remains." Under Missouri state law (Statute 194.406), either the local law enforcement officer or the state historic preservation office will assume jurisdiction over any inadvertently discovered human remains.



## 5 PLAN SUMMARY

The protocols and methodologies outlined in this plan represent the Project's intent to address the inadvertent discovery of cultural resources and/or human remains during ground-disturbing activities associated with construction and installation of the Project. As with any cultural resources investigations, the context of specific properties requires a need for thoughtful consideration and diligent management by the Project proponent and stakeholders. Effective communication is the foundation for that management, and GBX is committed to working with all appropriate parties to adequately address and, where possible, minimize the potential for effects to historic properties. Should the inadvertent discovery of cultural resources or human remains warrant additional consideration beyond the scope of the protocols and guidance detailed within this plan, GBX will communicate directly with DOE LPO, appropriate SHPO, and The Osage Nation (and other consulting parties, as appropriate) and maintain dialogue to achieve concurrence on effective solutions for the management of cultural resources on this undertaking.

## 6 INADVERTENT DISCOVERY PLAN CONTACT INFORMATION

All relevant contact information below to be completed in advance of commencing construction]

### 6.1 Grain Belt Express Project Personnel Contacts

#### Grain Belt Express, LLC Environmental Manager

Name:

Phone:

Email:

#### Grain Belt Express, LLC Lead Environmental Inspector

Name:

Phone:

Email:

#### Grain Belt Express, LLC Archaeological Consultant

Name:

Phone:

Email:

### 6.2 Federal Agency Contacts

#### Department of Energy Cultural Resources Lead

Name:

Phone:

Email:

#### United States Army Corps of Engineers- Kansas City District Cultural Resources Lead

Name:

Phone:

Email:

#### United States Army Corps of Engineers- St. Louis District Cultural Resources Lead

Name:

Phone:

Email:

### 6.3 State Historic Preservation Office Contacts

#### Kansas State Historic Preservation Office

Name: Dr. Nikki Klarmann, State Archaeologist

Phone: 785-272-8681 ext. 269

Email: [nikki.klarmann@ks.gov](mailto:nikki.klarmann@ks.gov)

Name: Shelby Beltz, SHPO Archaeologist

Phone: 785-272-8681 ext. 219

Email: [shelby.beltz@ks.gov](mailto:shelby.beltz@ks.gov)



**Missouri State Historic Preservation Office**

Name: Amy Rubingh

Phone: 573-751-4589

Email: Amy.Rubingh@dnr.mo.gov

**6.4 Tribal Contacts**

**Caddo Nation of Oklahoma**

Name:

Phone:

Email:

**Delaware Nation, Oklahoma**

Name:

Phone:

Email:

**Delaware Tribe of Indians**

Name:

Phone:

Email:

**Iowa Tribe of Kansas and Nebraska**

Name:

Phone:

Email:

**Northern Arapaho Tribe of the Wind River Reservation, Wyoming**

Name:

Phone:

Email:

**Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana**

Name:

Phone:

Email:

**Pawnee Nation of Oklahoma**

Name:

Phone:

Email:

**Ponca Tribe of Indians of Oklahoma**

Name:

Phone:

Email:

**The Osage Nation**

Name: Dr. Andrea A. Hunter, THPO

Phone: 918-287-5671

Email: ahunter@osagenation-nsn.gov

Name: Colleen Bell, Deputy THPO  
 Phone: 918-287-0041  
 Email: cbell@osagenation-nsn.gov

Name: Michaela Conway, Archaeologist  
 Phone: 918-287-5274  
 Email: kirstie.conway@osagenation-nsn.gov

Name: Sarah O'Donnell, NAGPRA Coordinator  
 Phone: 918-287-5522  
 Email: sodonnell@osagenation-nsn.gov

**Wichita and Affiliated Tribes (Wichita, Keechi, Waco, & Tawakonie), Oklahoma**

Name:  
 Phone:  
 Email:

## 6.5 Local Law Enforcement Contacts

[This section to be expanded to include all relevant counties in advance of commencing construction]

**[Placeholder] County Sheriff**

Name:  
 Phone:  
 Email:

**[Placeholder] County Coroner**

Name:  
 Phone:  
 Email:



## **ATTACHMENT 7**

**PROGRAMMATIC AGREEMENT AMONG  
U.S. DEPARTMENT OF ENERGY, LOAN PROGRAMS OFFICE; KANSAS STATE  
HISTORIC PRESERVATION OFFICE;  
MISSOURI STATE HISTORIC PRESERVATION OFFICE;  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;  
THE OSAGE NATION;  
THE U.S. ARMY CORPS OF ENGINEERS;  
AND GRAIN BELT EXPRESS LLC**

**REGARDING COMPLIANCE WITH  
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT  
FOR THE  
GRAIN BELT EXPRESS TRANSMISSION PROJECT,  
PHASE 1, KANSAS TO MISSOURI**

**ANNUAL REPORT PROGRESS TABLE TEMPLATES**

CONSULTATION PROGRESS					
Project Component	Document(s)	Report Date	Commenter	Comment Date	Comment Summary
<b>Kansas Converter Station</b>	Archaeological Survey Report and Architectural Survey Report	December 8, 2023	The Osage Nation	December 22, 2023	Cannot comment on a portion of the APE without a Programmatic Agreement; request for in-person government-to-government consultation
			Kansas SHPO	January 2, 2024	Concurrence, no objection
			Pawnee Nation of Oklahoma	January 8, 2024	No objection; notify in the event of inadvertent encounter
<b>Missouri Converter Station</b>	Archaeological Survey Report and Architectural Survey Report	December 8, 2023	Iowa Tribe of Kansas and Nebraska	December 13, 2023	No objection; notify in the event of inadvertent encounter
			The Osage Nation	December 22, 2023	Cannot comment on a portion of the APE without a Programmatic Agreement; request for in-person government-to-government consultation
			Missouri SHPO	January 5, 2024	Concurrence, no objection
			Delaware Nation, Oklahoma	January 10, 2024	No objection
<b>Kansas HVDC Main Line</b>	Archaeological Survey Report				
	Archaeological Addendum Report ##				
	Architectural Survey Report				
<b>Missouri HVDC Main Line</b>	Archaeological Survey Report				
	Archaeological Addendum Report ##				



CONSULTATION PROGRESS					
Project Component	Document(s)	Report Date	Commenter	Comment Date	Comment Summary
	Architectural Survey Report				
Missouri Tiger Connector	Archaeological Survey Report				
	Archaeological Addendum Report ##				
	Architectural Survey Report				

PROJECT COMPONENT COMPLETION STATUS						
Project Component /Report	Report Date	Consultation Date(s) <sup>1</sup>	SHPO Concurrence Date	Result <sup>2</sup>	Management Implications <sup>3</sup>	Component Section 106 Status
<b><i>Kansas Converter Station</i></b>						<b><i>Complete</i></b>
Archaeological Survey Report	December 2023	December 20, 2023	January 2, 2024	No Historic Properties Affected	None	
Architectural Survey Report	December 2023	December 20, 2023	January 2, 2024	No Historic Properties Affected	None	
<b><i>Missouri Converter Station</i></b>						<b><i>Complete</i></b>
Archaeological Survey Report	December 2023	December 20, 2023	January 5, 2024	No Historic Properties Affected	None	
Architectural Survey Report	December 2023	December 20, 2023	January 5, 2024	No Historic Properties Affected	None	
<b><i>Kansas HVDC Main Line</i></b>						<b><i>Pending</i></b>
Archaeological Report (Primary Survey)					<i>None, or Avoidance of sites ###, Evaluation of sites ###</i>	
Archaeological Addendum Report (Secondary Survey)					<i>None, or Avoidance of sites ###, Evaluation of sites ###</i>	
Archaeological Testing Report(s) (as needed)					<i>None, or Avoidance of sites ###, Minimization of sites</i>	

<sup>1</sup> If multiple meetings of the Consulting Parties occur for a given document, or if individual consultations with federally recognized Tribes occur for a given document, each date will be recorded with the specific participants noted in this column.

<sup>2</sup> The agency official may find that there are No Historic Properties Affected per 36 CFR 800.4(d)(1) or that there are Historic Properties Affected per 36 CFR 800.4(d)(2).

<sup>3</sup> If historic properties are affected, consultation will proceed to assess and resolve adverse effects per 36 CFR 800.5 and 36 CFR 800.6. Through consultation, the agency official, the affected SHPO, the ACHP (if participating), the Applicant, and the consulting federally recognized Tribes and consulting parties will determine appropriate measures for avoidance, minimization, or mitigation to reduce adverse effects on historic properties. If NRHP evaluation and/or mitigation are required, the agency official will consult regarding the research design and implementation.



PROJECT COMPONENT COMPLETION STATUS						
Project Component /Report	Report Date	Consultation Date(s) <sup>1</sup>	SHPO Concurrence Date	Result <sup>2</sup>	Management Implications <sup>3</sup>	Component Section 106 Status
					###, or Mitigation of sites ###	
Architectural Survey Report					None, or Avoidance, Minimization, or Mitigation	
Historic Property Treatment Plan(s) (as needed)						
<b>Missouri HVDC Main Line</b>						<b>Pending</b>
Archaeological Report (Primary Survey)						
Archaeological Addendum Report (Secondary Survey)						
Archaeological Testing Report(s) (as needed)						
Architectural Survey Report						
Historic Property Treatment Plan(s) (as needed)						
<b>Missouri Tiger Connector</b>						<b>Pending</b>
Archaeological Report (Primary Survey)						

<b>PROJECT COMPONENT COMPLETION STATUS</b>						
<b>Project Component /Report</b>	<b>Report Date</b>	<b>Consultation Date(s)<sup>1</sup></b>	<b>SHPO Concurrence Date</b>	<b>Result<sup>2</sup></b>	<b>Management Implications<sup>3</sup></b>	<b>Component Section 106 Status</b>
Archaeological Addendum Report (Secondary Survey)						
Archaeological Testing Report(s) (as needed)						
Architectural Survey Report						
Historic Property Treatment Plan(s) (as needed)						



# **Grain Belt Express Transmission Line Environmental Impact Statement**

## **Appendix 3.6-1: Cultural Resources Present in the Analysis Areas**

**Table 1. State-Inventoried Archaeological Sites in the Archaeological Analysis Area**

<b>Site ID</b>	<b>Location</b>	<b>Site Type/Function/Cultural Affiliation</b>	<b>National Register of Historic Places Status</b>
14DP0118	Doniphan County, Kansas	Precontact - Isolated Findspot; Historic - Agrarian	Unknown
14RU0004	Russell County, Kansas	Precontact - Village Site	Unknown
14WH0340	Washington County, Kansas	Precontact - Unknown Function	Unknown
23CY0127	Callaway County, Missouri	Precontact - Habitation Site	Unknown
23CW1041	Caldwell County, Missouri	Historic - 19th/20th Century Dump Site	Unknown
23CW0060	Caldwell County, Missouri	Historic - Late 19th Century Farmstead	Not Evaluated
23CW0058	Caldwell County, Missouri	Historic - 20th Century Farmstead	Not Evaluated
23CW0061	Caldwell County, Missouri	Historic - Indeterminate Scatter	Not Evaluated
23CA1171	Carroll County, Missouri	Precontact - Unknown Function	Not Eligible
23CA1172	Carroll County, Missouri	Precontact - Unknown Function	Unknown
23CA0104	Carroll County, Missouri	Precontact - Unknown Function	Unknown
23CH0073	Chariton County, Missouri	Precontact - Habitation; Historic-Artifact Scatter	Unknown
23CH1349	Chariton County, Missouri	Precontact - Lithic Scatter; Historic - 19th-20th Century Habitation	Unknown
23MN1182	Monroe County, Missouri	Precontact - Habitation	Not Evaluated
23MN1183	Monroe County, Missouri	Precontact - Habitation	Not Evaluated
23CY0127	Callaway County, Missouri	Precontact - Habitation Site	Unknown

Source: Kansas Historical Society 2023a; Missouri State Historic Preservation Office 2023



**Table 2. Archaeological Resources Identified Within the Archaeological Analysis Area of the HVDC Converter Station Sites**

<b>Resource ID</b>	<b>County</b>	<b>Resource Type</b>	<b>Resource Address/ Description</b>	<b>National Register of Historic Places Status</b>
Field ID MO-024-001	Monroe County, MO	Archaeological Site	Historic-era Artifact Scatter	Recommended Not Eligible
Field ID MO-024-002	Monroe County, MO	Archaeological Site	Historic-era Artifact Scatter	Recommended Not Eligible
Field ID MO-024-003	Monroe County, MO	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible
Field ID FO-001-001	Ford County, KS	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible
Field ID FO-001-002	Ford County, KS	Archaeological Site	Historic Surface and Plowzone Artifact Scatter, Late Nineteenth- Twentieth Century Occupation	Recommended Not Eligible
Field ID FO-001-003	Ford County, KS	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible
Field ID FO-001-004	Ford County, KS	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible
Field ID FO-001-005	Ford County, KS	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible
Field ID FO-001-006	Ford County, KS	Archaeological Site	Precontact Isolated Findspot	Recommended Not Eligible

Source: AECOM 2023a, 2023b

**Table 3. State-Inventoried Historic Aboveground Resources in the Historic Built Environment Analysis Area**

<b>Resource ID</b>	<b>Resource Name</b>	<b>Address</b>	<b>Resource Type/ Date</b>	<b>National Register of Historic Places Status</b>
057-1370	Israel Farm	Garrett Road, Bellefont, Ford County, Kansas	Farmstead, circa 1920	Not Assessed
047-0000-0008	Little Coon Creek Masonry Arch Bridge	00 40th Avenue, Offerle, Edwards County, Kansas	Stone Arch Bridge, circa 1935, possible CCC construction	Potentially Eligible
047-0000-00003	St. Peter and St. Paul Church	00 70th Road, Kinsley, Edwards County, Kansas	Church, circa 1892	Not Assessed
047-0000-00004	St. Peter and St. Paul School	00 G Road, Kinsley, Edwards County, Kansas	Religious School, Construction Date Unknown	Not Assessed
091-1774	Farmstead	18385 US 169, Olathe, Russell County, Kansas	Farmstead, circa 1920	Unknown
123-0000-00228	Brown's Creek Tributary Masonry Arch Bridge	00 Road B, Beloit, Mitchell County, Kansas	Stone Arch Bridge, circa 1936	Listed
123-0000-00217	Cather Farm	2312 K-14 Hwy, Beloit, Mitchell County, Kansas	Farmstead, circa 1900	Listed
123-253	Black Barn	2409 340 RD, Beloit, Mitchell County, Kansas	Farmstead, circa 1900	Not Assessed
029-107	Wolf Creek Bridge	00 K-28 Highway, Concordia, Cloud County, Kansas	Concrete Bridge, circa 1960	Not Assessed (Scheduled for Demolition)
029-109	POW Camp Concordia – Stone Guard Tower	1501 Union Road, Concordia, Cloud County, Kansas	WWII POW Camp Stone Tower, circa 1943	Not Assessed
029-1120-0017	POW Camp Concordia	1555 Union Road, Concordia, Cloud County, Kansas	WWII POW Camp	Not Eligible
029-45	POW Camp Concordia – Building T-9	1541 UTE Street, Concordia, Cloud County, Kansas	WWII POW Camp Warehouse, circa 1942	State Listed
201-86	Stone Culvert	Between 4th and 5th Roads, Sheridan Township, Washington County, Kansas	Stone Culvert, circa 1920	Not Assessed (Likely Demolished)
117-0000-00019	Life Schoolhouse	1299 19th Terrace Beattie, Marshall County, Kansas	One-Room Schoolhouse, circa 1860	Not Eligible
013-215	Tyler Bridge	00 Bobcat Road, Brown County, Kansas	Truss Bridge, circa 1905	Demolished
013-247	Coral Berry Road Concrete Bridge	00 Coral Berry Road Fairview, Brown County, Kansas	Concrete Bridge, circa 1930	Not Assessed



<b>Resource ID</b>	<b>Resource Name</b>	<b>Address</b>	<b>Resource Type/ Date</b>	<b>National Register of Historic Places Status</b>
013-252	Tributary to Wolf River Concrete Bridge	00 Kingfisher Road, Hiawatha, Brown County, Kansas	Concrete Bridge, circa 1900	Not Assessed
043-578	Denton RWD #3 Water Tower	00 Ashland Street, Denton, Doniphan County, Kansas	Water Tower, circa 1966	Not Assessed
043-0000-00199	St. Benedict's Church	684 St. Benedict's Road, Bendena, Doniphan County, Kansas	Church, circa 1903	Listed
043-0000-00200	St. Benedict's Rectory	684 St. Benedict's Road, Bendena, Doniphan County, Kansas	Church Rectory, circa 1903	Not Assessed

Source: Kansas Historical Society 2023b

CCC: Civilian Conservation Corps; POW: Prisoner of War; RWD: Rural Water District; WWII: World War II

**Table 4. Historic Aboveground Resources Identified Within the Historic Built Environment Analysis Area of the HVDC Converter Station Sites**

<b>Resource ID</b>	<b>Resource Type</b>	<b>Resource Address/ Description</b>	<b>National Register of Historic Places Status</b>
Field ID MN-AS-001-001	Agricultural Complex	Farmstead, circa 1900-1920, at 16019 State Highway M	Recommended Not Eligible
Field ID MN-AS-001-002	Agricultural Complex	Farmhouse and Garage, circa 1965, at County Road 921 S	Recommended Not Eligible
Field ID MN-AS-001-003	Agricultural Complex	Farmstead, circa 1900, at State Highway M, East of County Road 921	Recommended Not Eligible
Field ID MN-AS-001-004	Agricultural Complex	Farmstead, circa 1900-1950s, at 16667 State Highway M	Recommended Not Eligible
Field ID MN-AS-001-005	Agricultural Complex	Farmstead, circa 1900-1960s, at County Road 916 of State Highway M	Recommended Not Eligible
Field ID MN-AS-001-006	Agricultural Complex	Farmstead, circa 1900 and 1950s, at County Road 959 S of State Highway M	Recommended Not Eligible
Field ID MN-AS-001-007	Agricultural Complex	Farmstead, circa 1940s-1970s, at County Road 959 N of Audrain Road 156	Recommended Not Eligible
Field ID MN-AS-001-008	Agricultural Complex	Farmstead, circa 1945-1970s, at 16946 Audrain Road 156	Recommended Not Eligible
Field ID MN-AS-001-009	Agricultural Complex	Farmstead, circa 1949-1970s, North of Audrain Road 156	Recommended Not Eligible
Field ID 01	Agricultural Complex	Farmstead, circa 1900-1960s, at 11747 117 Road	Recommended Not Eligible
Field ID 02	Agricultural Complex	Farmstead, circa 1950-1978, at 11712 117 Road	Recommended Not Eligible
Field ID 03	Agricultural Complex	Auxiliary Farm Equipment, circa 1970s, on East Side of 117 Road	Recommended Not Eligible
Field ID 04	Agricultural Complex	Farmstead, circa 1910s-1920s and 1970s, at 119 Road and Saddle Road	Recommended Not Eligible
Field ID 05	Agricultural Complex	Farmstead, circa 1900-1940, South Side of Saddle Road	Recommended Not Eligible

Source: AECOM 2023c, 2023d



**Table 5. National Historic Sites and National Historic Trail Properties within the Historic Built Environment and Native American Traditional Values Analysis Areas**

<b>Resource Name</b>	<b>Type</b>	<b>Location Relative to Project</b>
Fort Larned NHS	Frontier Military Fort, circa 1859-1878	1.2 miles from the planned Project ROW and Pawnee County, Kansas
Santa Fe NHT	Historic Trail, circa 1821-1880	Within the planned Project ROW in Ford County, Kansas; visible from the planned Project ROW in Pawnee County, Kansas
Oregon NHT	Historic Trail, circa 1810	Within the planned Project ROW in Marshall County, Kansas
California NHT	Historic Trail, circa 1841	Within the planned Project ROW in Marshall County, Kansas; visible from the planned Project ROW in Brown County, Kansas
Pony Express NHT	Historic Trail, circa 1860	Within the planned Project ROW in Nemaha County, Kansas; visible from the planned Project ROW in Doniphan County, Kansas
Lewis and Clark NHT	Historic Trail, circa 1803-1806	Within the planned Project ROW at the Kansas/Missouri border

Source: National Park Service 2023

NHS: National Historic Site; NHT: National Historic Trail

## REFERENCES

AECOM. 2023a. *Grain Belt Express Transmission Line, Phase I Archaeological Survey, Proposed Converter Station, Ford County, Kansas.*

AECOM. 2023b. *Grain Belt Express Transmission Line, Phase I Archaeological Survey, Proposed Converter Station, Monroe County, Missouri.*

AECOM. 2023c. *Grain Belt Express Transmission Line, Architectural Reconnaissance Survey, Proposed Converter Station, Ford County, Kansas.*

AECOM. 2023d. *Grain Belt Express Transmission Line, Architectural Reconnaissance Survey. Proposed Converter Station, Monroe County, Missouri.*

Kansas Historical Society. 2023a. *Archaeological Inventory.* Accessed March 13, 2023. Confidential.

Kansas Historical Society. 2023b. *Kansas Historic Resources Inventory.* Accessed March 13, 2023. <https://khri.kansasgis.org/>.

Missouri State Historic Preservation Office. 2023. *Archaeology Viewer.* Accessed March 16, 2023. Confidential.

National Park Service. 2023 *National Trails System.* Accessed March 15, 2023. <https://www.nps.gov/subjects/nationaltrailssystem/national-historic-trails.htm>.

# **Grain Belt Express Transmission Line Environmental Impact Statement**

## **Appendix 3.6-2: Tribal Consultation**



## 1. TRIBAL CONSULTATION

Consideration of Native American tribal thoughts and concerns represents a critical component of the affected environment for cultural resources. Under Section 106 of the National Historic Preservation Act (NHPA), consultation with potential tribal nations is fundamental to identifying and, where necessary, minimizing the potential for impacts on tribal properties, including Traditional Cultural Properties. Preliminary outreach to tribal entities who have interest in the region crossed by Project activities was initiated by Department of Energy's (DOE) Loan Program Office (LPO) in late 2022, through invitation to participate on the Project with the 34 tribal entities. Those tribal entities include the following:

- Absentee-Shawnee Tribe of Indians of Oklahoma
- Apache Tribe of Oklahoma
- Caddo Nation of Oklahoma
- Cheyenne and Arapaho Tribes, Oklahoma
- Comanche Nation, Oklahoma
- Delaware Nation, Oklahoma
- Delaware Tribe of Indians
- Eastern Shawnee Tribe of Oklahoma
- Fort Sill Apache Tribe of Oklahoma
- Ho-Chunk Nation of Wisconsin
- Iowa Tribe of Kansas and Nebraska
- Iowa Tribe of Oklahoma
- Kaw Nation, Oklahoma
- Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
- Kickapoo Tribe of Oklahoma
- Kiowa Indian Tribe of Oklahoma
- Miami Tribe of Oklahoma
- Northern Arapaho Tribe of the Wind River Reservation, Wyoming
- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
- Oglala Sioux Tribe
- Omaha Tribe of Nebraska
- Otoe-Missouria Tribe of Indians, Oklahoma
- Pawnee Nation of Oklahoma
- Ponca Tribe of Indians of Oklahoma
- Ponca Tribe of Nebraska
- Prairie Band Potawatomi Nation
- Sac & Fox Nation of Missouri in Kansas and Nebraska
- Sac & Fox Nation, Oklahoma
- Sac & Fox Tribe of the Mississippi in Iowa

- Seneca-Cayuga Nation
- Shawnee Tribe
- The Osage Nation
- Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
- Wyandotte Nation

## 2. STATUS OF TRIBAL CONSULTATION

To date, DOE LPO has received response from eight tribes, requesting participation in the Project.

- Delaware Nation, Oklahoma
- Iowa Tribe of Kansas and Nebraska
- Northern Arapaho Tribe of the Wind River Reservation, Wyoming
- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
- Pawnee Nation of Oklahoma
- Ponca Tribe of Indians of Oklahoma
- Osage Nation
- Wichita and Affiliated Tribes (Wichita, Keechi, Waco, & Tawakonie), Oklahoma

Records of the Project prior to its acquisition by Invenenergy Transmission LLC indicate that there was limited correspondence with Native American tribes during the Project's route selection process. The Applicant under Invenenergy Transmission LLC ownership began engaging with tribes in June 2021. The Applicant conferred with U.S. Army Corps of Engineers archaeological staff, the Kansas and Missouri State Historic Preservation Offices (SHPO), and National Parks Service (NPS) to identify tribes with potential interest in the Project area. The Applicant invited twenty-two tribes to engage on the Project and hosted an August 2021 introduction meeting that three tribes attended (Wichita and Affiliated Tribes, Iowa Tribe of Kansas and Nebraska, and The Osage Nation). Pawnee Nation could not attend the meeting but requested Project information. During this meeting, and in follow-up correspondence, the Applicant requested that the Tribes review project information and design and provide input regarding tribal interests, including Tribal Historic Preservation Office records and areas of interest in the vicinity of the Project corridor. In response to this request, the Osage Nation provided several Areas of Interest (AOIs) and Areas of Avoidance (AOAs), and Pawnee Nation provided AOIs. No specific AOIs or AOAs were received from other Tribes.

The Applicant invited all tribes to take part in cultural resources field surveys. Representatives from two tribes (Iowa Tribe of Kansas and Nebraska and the Kiowa Indian Tribe of Oklahoma) assisted in the 2021 archaeological field survey. The Applicant extended an invitation to tribes when re-initiating field survey in 2022; however, none of the tribes had availability and/or expressed interest.

On December 28, 2022, DOE LPO issued consultation letters to 34 federally recognized Tribes notifying them of the Project and providing the opportunity to participate in the NEPA process and NHPA Section 106 consultation process, as well as engage DOE LPO in formal government-to-government consultation. The following eight federally recognized Tribes accepted DOE LPO's invitation to consult: Delaware Nation, Oklahoma; Iowa Tribe of Kansas and Nebraska; Northern Arapaho Tribe of the Wind River Reservation, Wyoming; Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana; Pawnee Nation of Oklahoma; Ponca Tribe of Indians of Oklahoma; The Osage Nation; and Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma.



In February 2024, the Applicant initiated outreach to the eight tribes that are consulting on the Project, for the purpose of seeking information about areas of interest (AOIs) and areas of avoidance (AOAs) within the proposed Tiger Connector corridor and associated property parcels. Four tribes responded to the request. The Iowa Tribe of Kansas and Nebraska noted that any known resources of interest to the tribe in that geography would be included in the Missouri SHPO records. The Northern Cheyenne Tribe and Pawnee Nation both indicated that the Tiger Connector is outside of their cultural landscape. The Osage Nation identified an AOI. No additional AOAs were identified for the Tiger Connector.

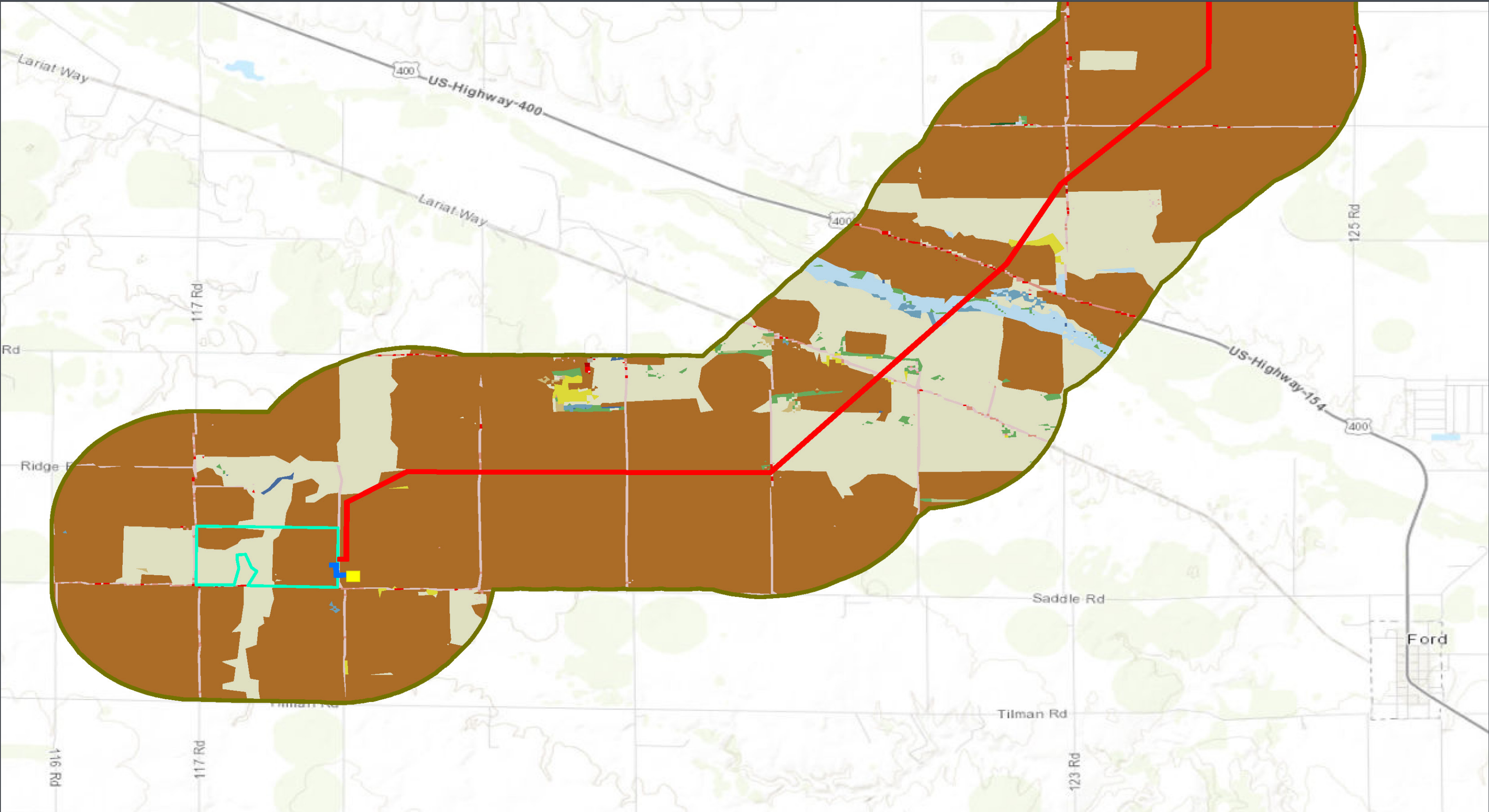
In March 2024, the Applicant initiated outreach to the eight tribes that are consulting on the Project, for the purpose of sharing locations of contemplated laydown and material yards in Kansas and Missouri and to identify if any of the contemplated yards intersect tribal AOIs and AOAs. Four tribes (Iowa Tribe of Kansas and Nebraska, Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Pawnee Nation, and The Osage Nation) responded to the request. The Pawnee Nation and The Osage Nation identified AOIs that intersect with contemplated yards and requested that the Applicant conduct archaeological surveys if continuing to consider those yards. None of the tribes identified AOAs that intersect the contemplated yards. The Applicant invited all tribes to take part in cultural resources field surveys.

In April 2024, the Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation expressed interest in taking part in the Project's archaeological field survey in Kansas and the Applicant continues to follow up with that tribe to coordinate logistics and schedule before the tribal members engage in survey. The Osage Nation is monitoring archaeological surveys within its identified AOI (approximately 45 percent of the Project). The Osage Nation monitoring activities have been ongoing since October 2023. At the request of The Osage Nation, the Applicant, together with DOE LPO, developed archaeological survey methods for areas outside of Osage Nation AOIs that are memorialized in a work plan that was reviewed and approved by The Osage Nation.

# **Grain Belt Express Transmission Line Environmental Impact Statement**

## **Appendix 3.10: National Land Cover Database Maps**





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 1 of 81



 Proposed Grain Belt Express Phase 1 Converter Station

 Existing Saddle Substation

 Proposed Grain Belt Express Phase 1 Ford County Interconnect ROW

 Proposed Grain Belt Express Phase 1 HVDC Line ROW

 Land Use Analysis Area

**National Land Cover Dataset**

 Barren Land

 Cultivated Crops

 Deciduous Forest

 Developed, High Intensity

 Developed, Medium Intensity

 Developed, Low Intensity

 Developed, Open Space

 Emergent Herbaceous Wetlands

 Evergreen Forest

 Grassland/Herbaceous

 Mixed Forest

 Open Water

 Pasture/Hay

 Shrub/Scrub

 Woody Wetlands



Ford County, Kansas

GCS North American 1983  
37.6699°N 99.8375°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

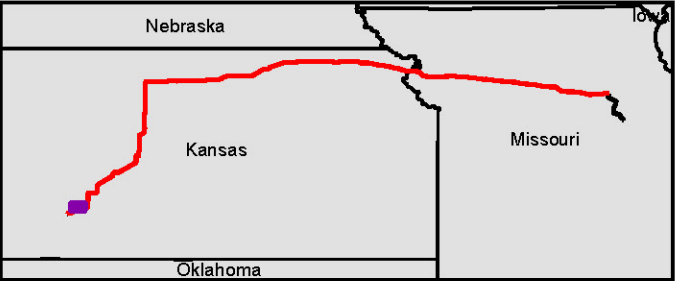
N

Kansas and Missouri



GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 2 of 81

- |   |                             |                              |                |
|---|-----------------------------|------------------------------|----------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Deciduous Forest            | Developed, Open Space        | Mixed Forest   |
| Land Use Analysis Area                            | Developed, High Intensity   | Emergent Herbaceous Wetlands | Open Water     |
| National Land Cover Dataset                       | Developed, Medium Intensity | Evergreen Forest             | Pasture/Hay    |
| Cultivated Crops                                  | Developed, Low Intensity    | Grassland/Herbaceous         | Shrub/Scrub    |
|   |                             |                              | Woody Wetlands |



Ford County, Kansas  
GCS North American 1983  
37.747°N 99.7449°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

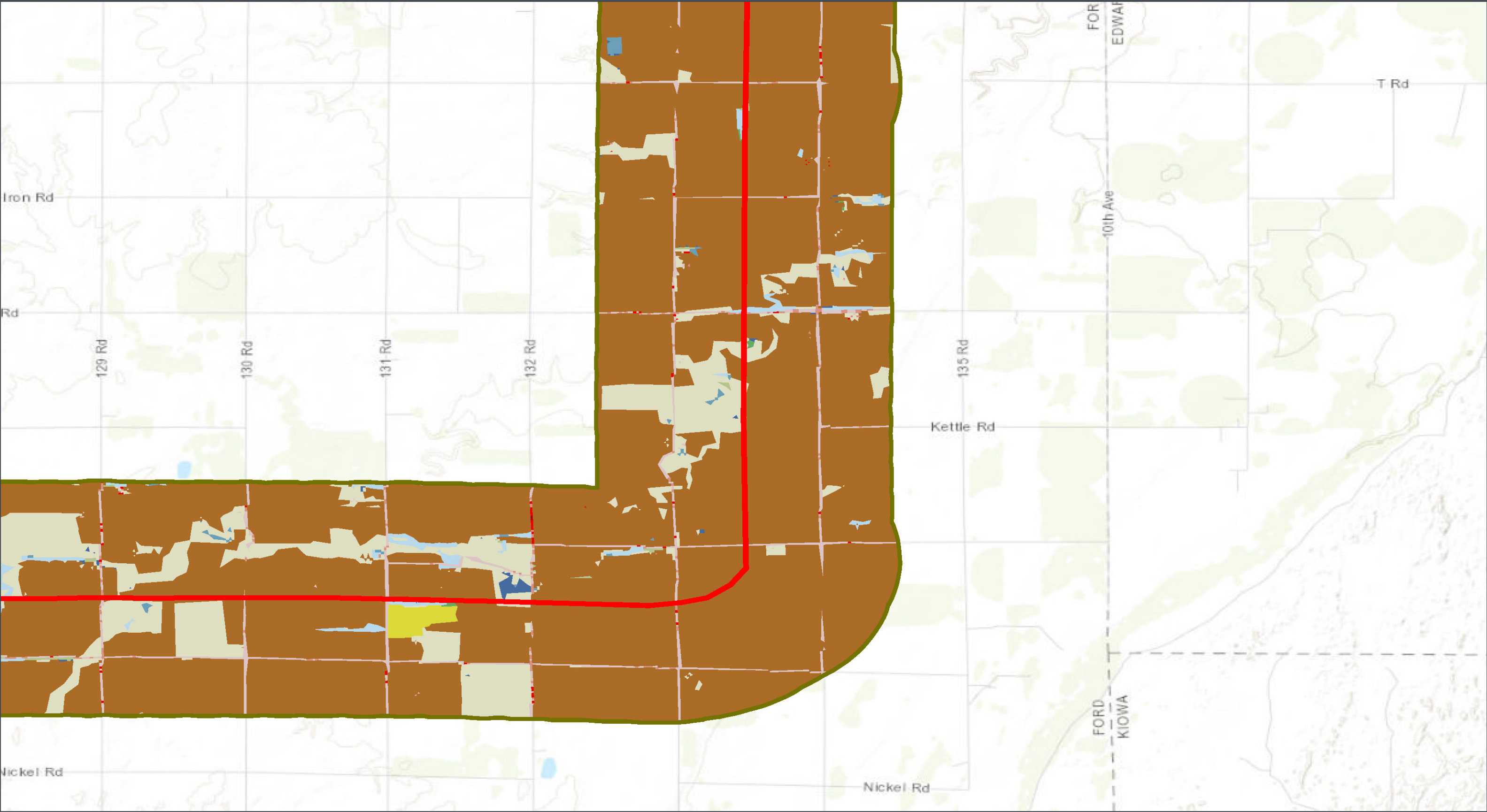
1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

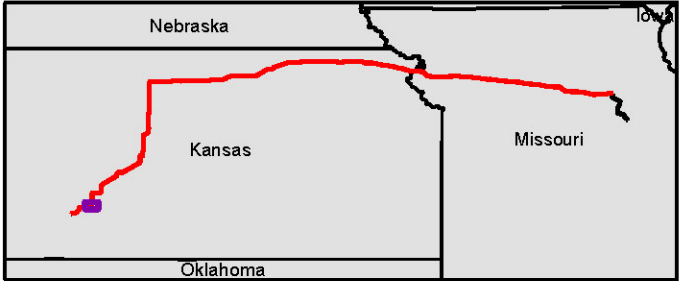
Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 3 of 81

- |   |                             |                              |                      |
|---|-----------------------------|------------------------------|----------------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Deciduous Forest            | Developed, Low Intensity     | Grassland/Herbaceous |
| Land Use Analysis Area                            | Developed, High Intensity   | Developed, Open Space        | Mixed Forest         |
| National Land Cover Dataset                       | Developed, Medium Intensity | Emergent Herbaceous Wetlands | Open Water           |
| Cultivated Crops                                  |                             | Pasture/Hay                  | Woody Wetlands       |



Ford County, Kansas  
GCS North American 1983  
37.7661°N 99.6059°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 58102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

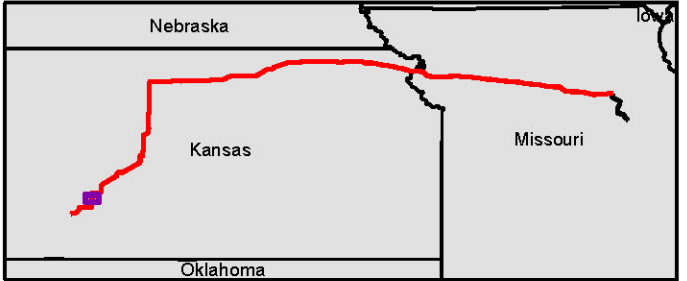
N

Kansas and Missouri



GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 4 of 61

- |   |                             |                              |                |
|---|-----------------------------|------------------------------|----------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Cultivated Crops            | Developed, Open Space        | Mixed Forest   |
| Land Use Analysis Area                            | Developed, High Intensity   | Emergent Herbaceous Wetlands | Open Water     |
| <b>National Land Cover Dataset</b>                | Developed, Medium Intensity | Evergreen Forest             | Pasture/Hay    |
| Barren Land                                       | Developed, Low Intensity    | Grassland/Herbaceous         | Shrub/Scrub    |
|   |                             |                              | Woody Wetlands |



Ford and Hodgeman Counties, Kansas

GCS North American 1983  
37.8665°N 99.5994°W

Base Map: Esri ArcGIS Online, accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

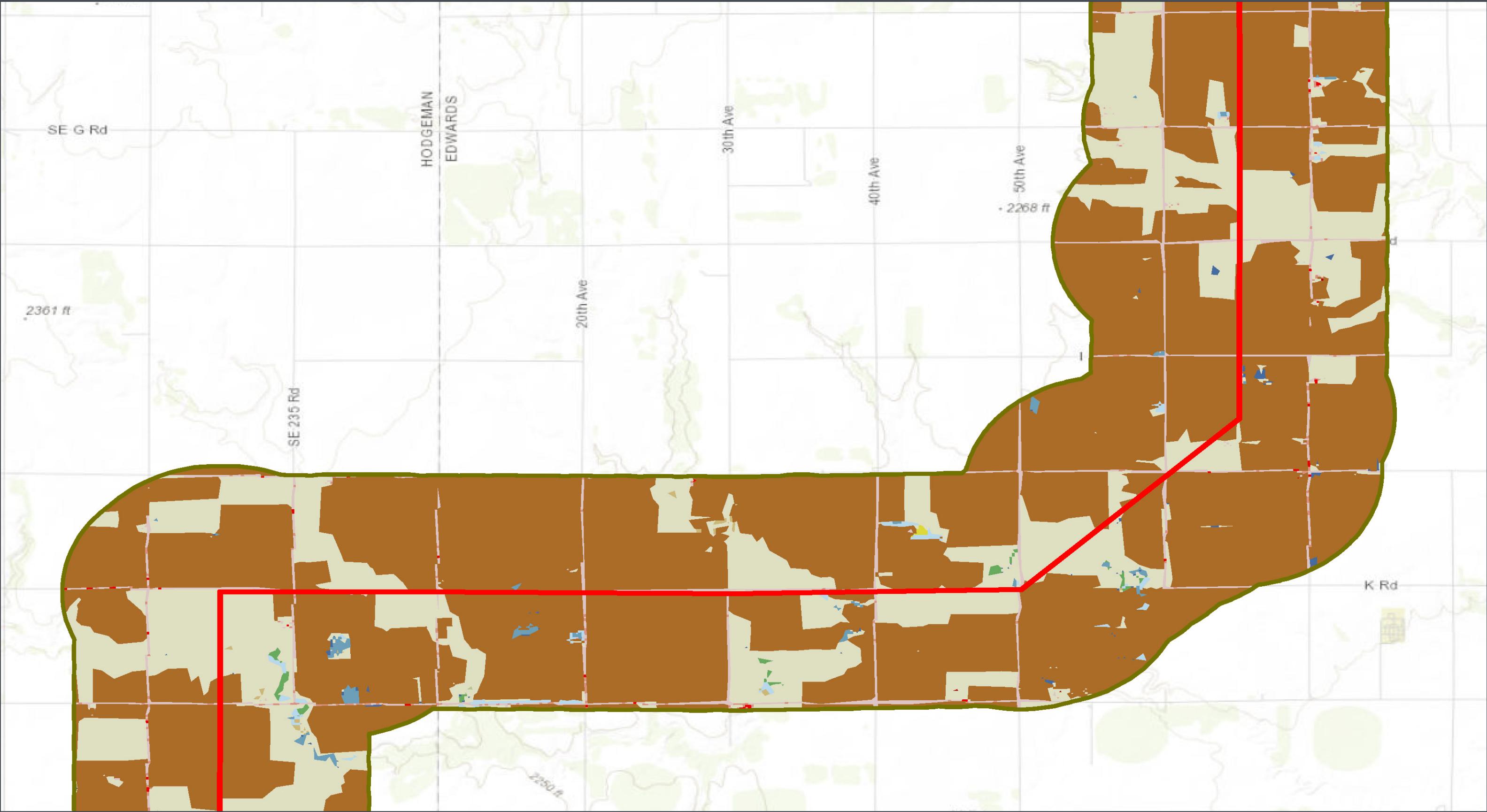
1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

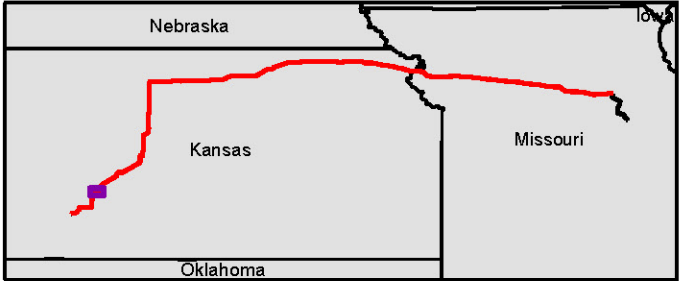
Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 5 of 61

- |   |                             |                              |                |
|---|-----------------------------|------------------------------|----------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Deciduous Forest            | Developed, Open Space        | Open Water     |
| Land Use Analysis Area                            | Developed, High Intensity   | Emergent Herbaceous Wetlands | Pasture/Hay    |
| Cultivated Crops                                  | Developed, Medium Intensity | Grassland/Herbaceous         | Shrub/Scrub    |
|   | Developed, Low Intensity    | Mixed Forest                 | Woody Wetlands |



Hodgeman and Edwards  
Counties, Kansas

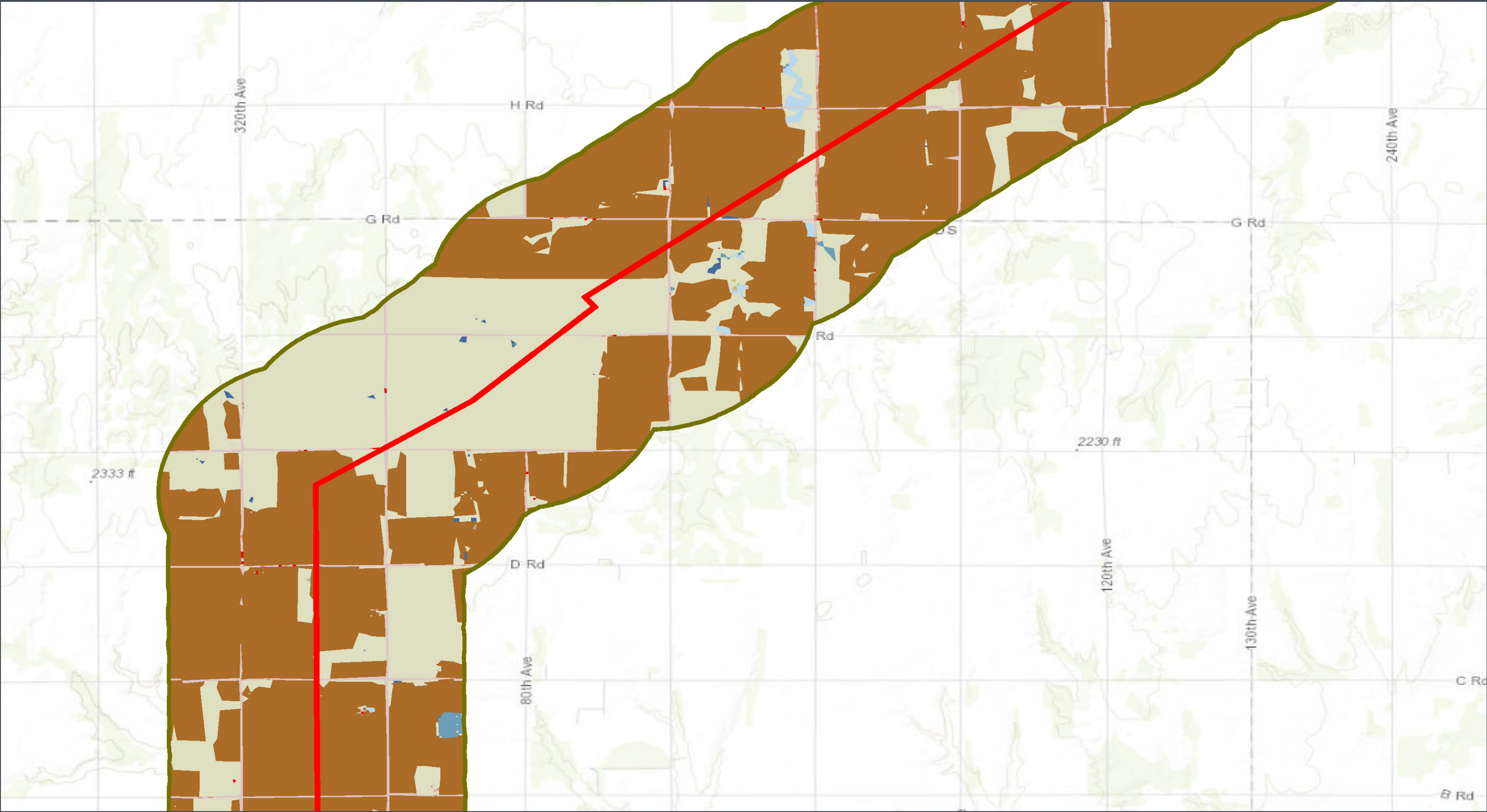
GCS North American 1983  
37.9651°N 99.5312°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N



GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 6 of 61

Proposed Grain Belt Express Phase 1 HVDC Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Barren Land	Developed, Low Intensity	Grassland/Herbaceous
Cultivated Crops	Developed, Open Space	Open Water
Developed, Medium Intensity	Emergent Herbaceous Wetlands	Shrub/Scrub
		Woody Wetlands

Edwards and Pawnee Counties, Kansas

GCS North American 1983  
38.0644°N 99.4145°W

Base Map: Esri ArcGIS Online, accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

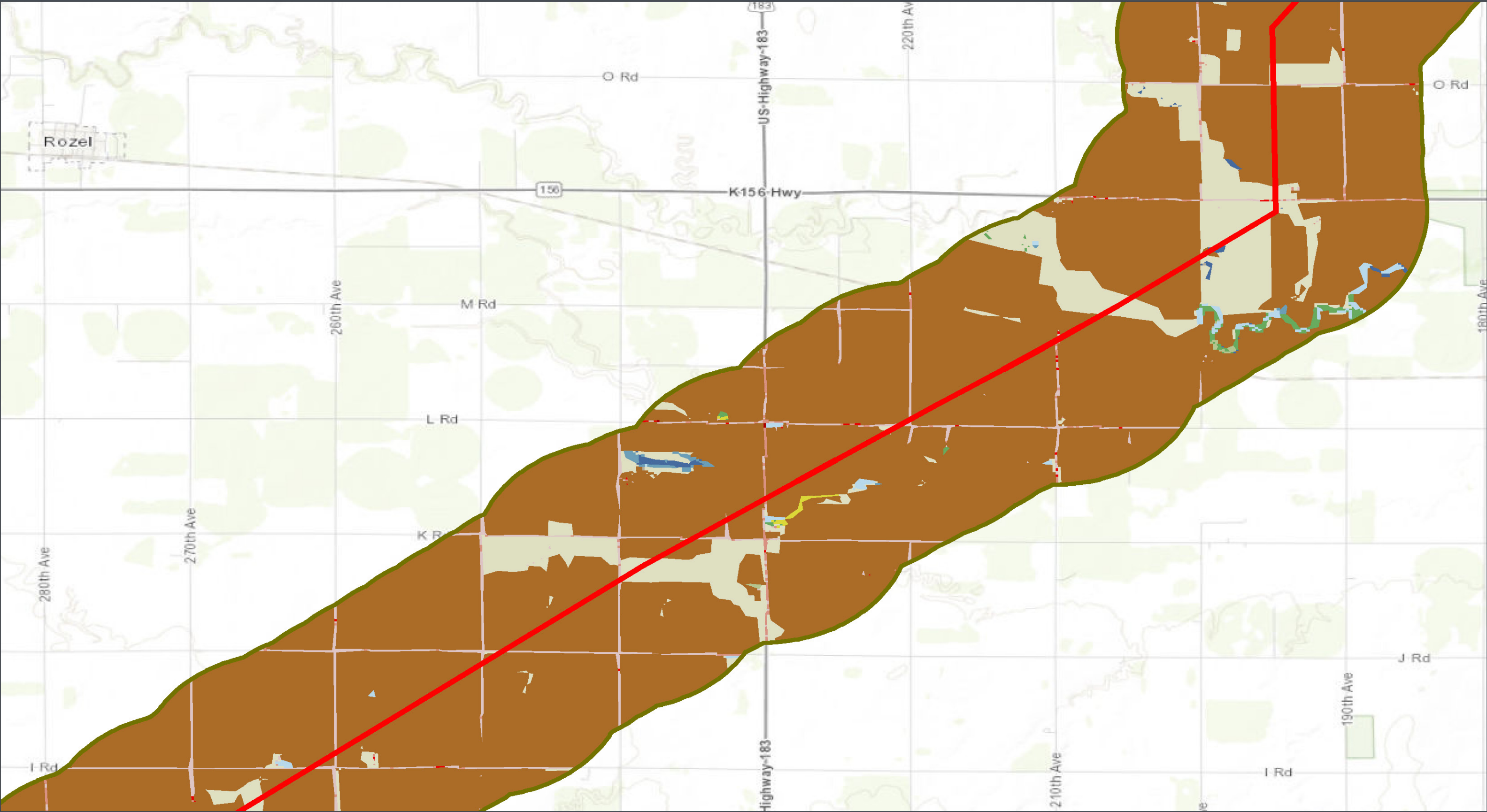
1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 7 of 81

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

National Land Cover Dataset

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Mixed Forest

Open Water

Pasture/Hay

Woody Wetlands

Nebraska

Kansas

Missouri

Oklahoma

Pawnee County, Kansas

GCS North American 1983  
38.1625°N 99.317°W

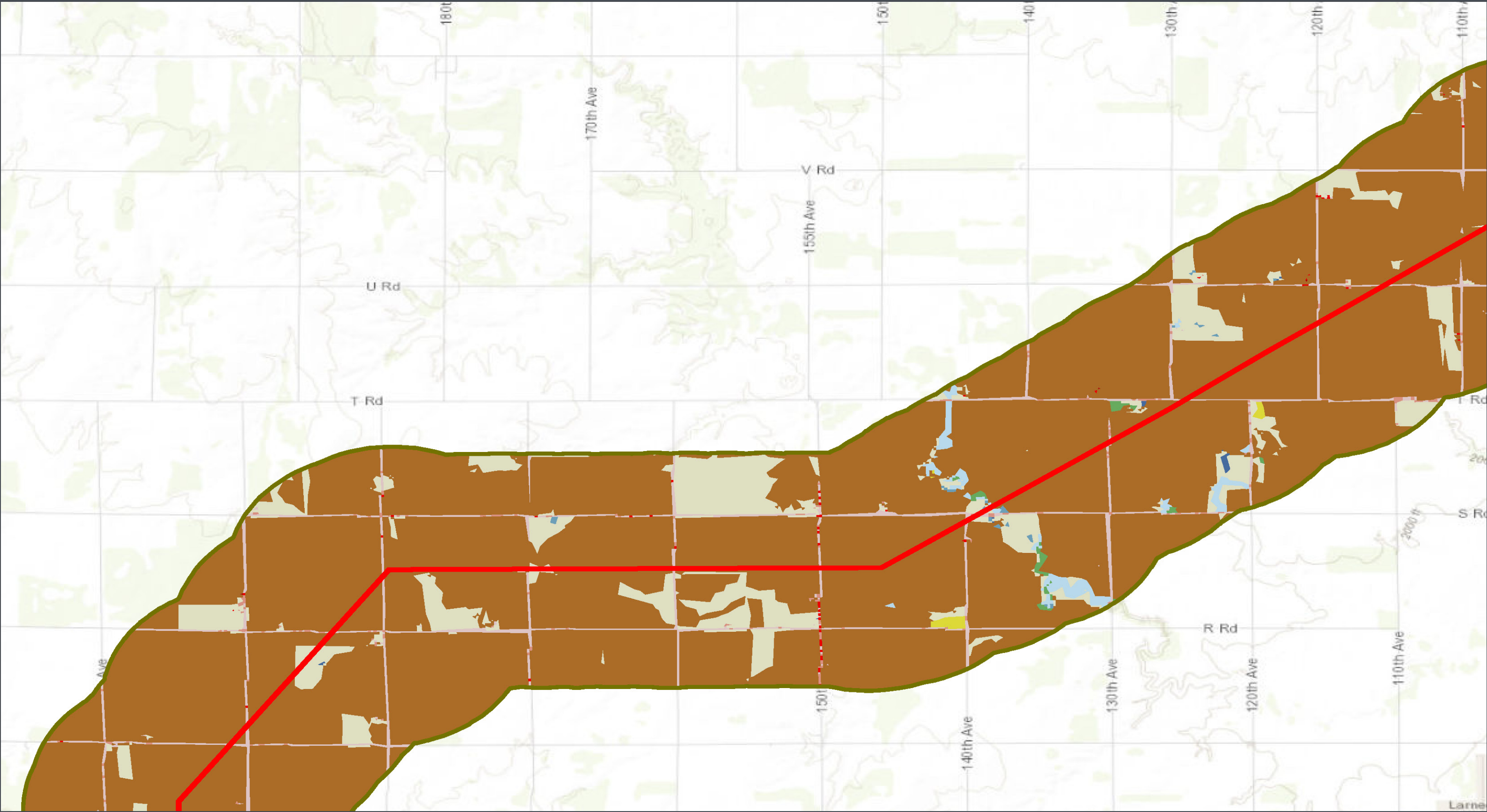
Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

N



GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 8 of 81

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Open Water

Pasture/Hay

Woody Wetlands

Nebraska

Kansas

Missouri

Oklahoma

Pawnee County, Kansas

GCS North American 1983  
38.2605°N 99.1786°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

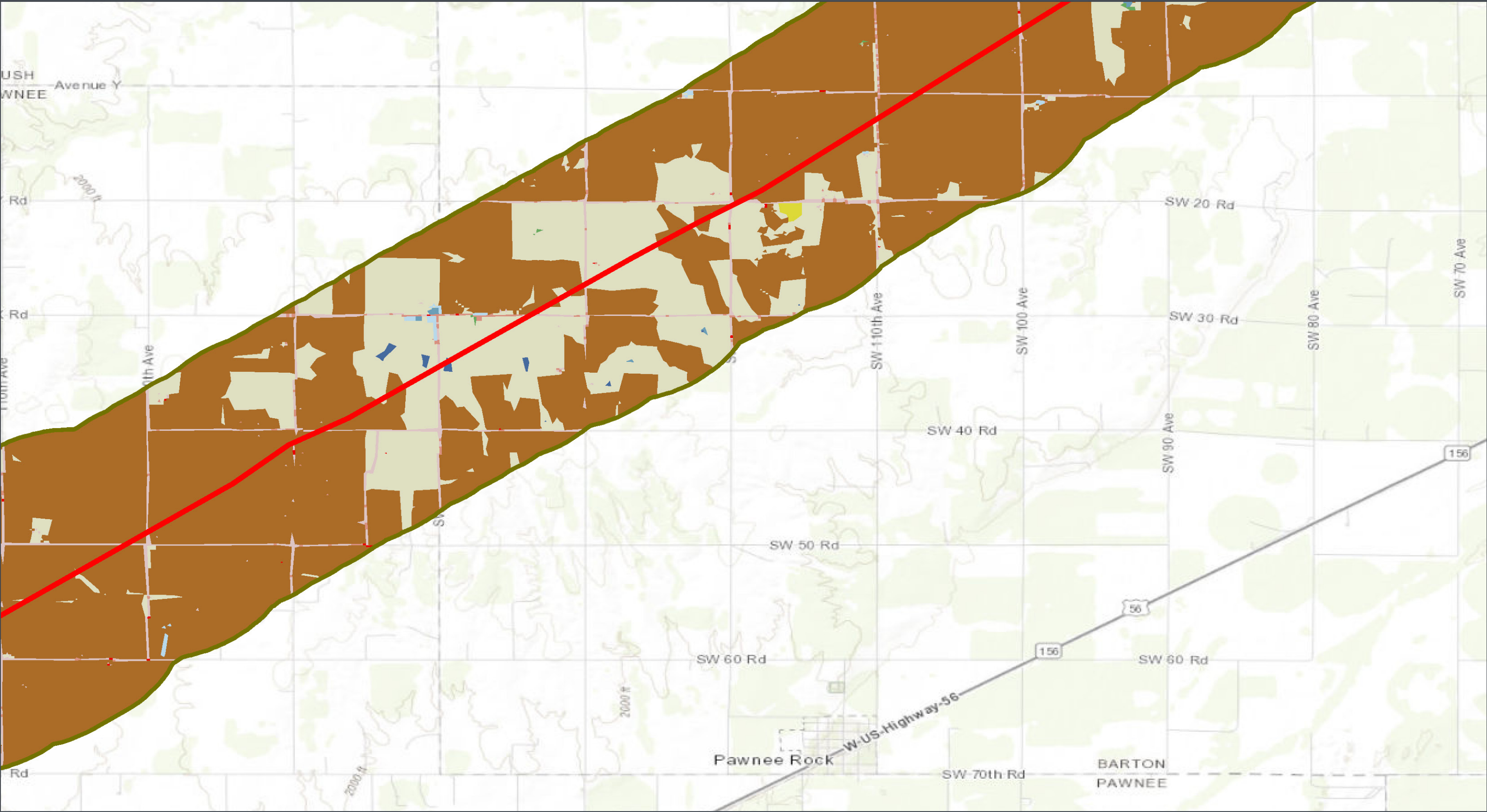
0 0.5 1 Kilometers

N

Kansas and Missouri

Grain Belt Express  
An Inveney Project





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 9 of 81

Proposed Grain Belt Express Phase 1 HVDC Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Cultivated Crops

Deciduous Forest

Developed, Medium Intensity

Developed, Low Intensity

Developed, Open Space

Emergent Herbaceous Wetlands

Grassland/Herbaceous

Mixed Forest

Open Water

Pasture/Hay

Woody Wetlands

Pawnee and Barton Counties, Kansas

GCS North American 1983  
38.3078°N 98.9938°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

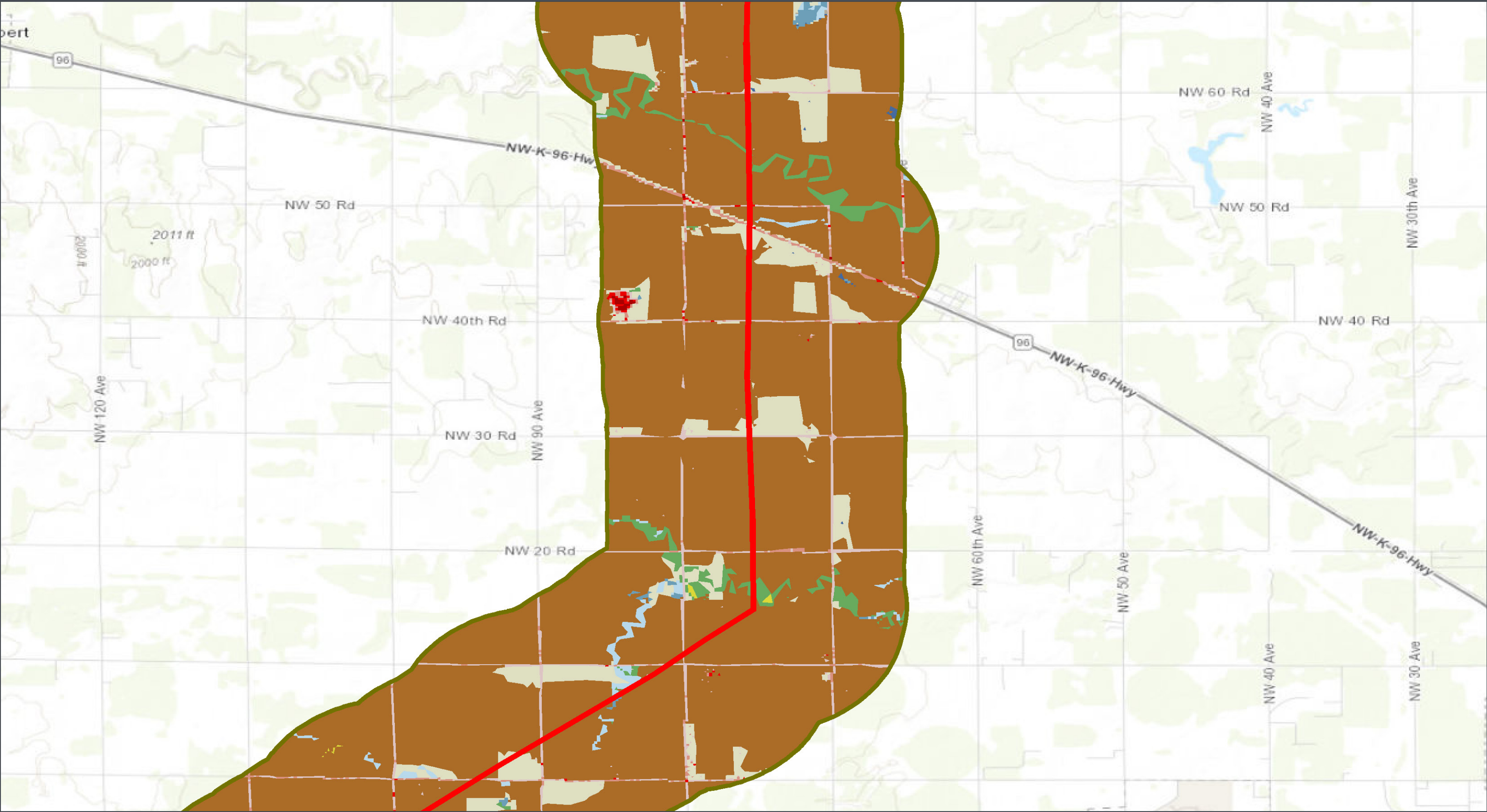
0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Grain Belt Express  
An Inveney Project





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 10 of 61

**Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW**

**Land Use Analysis Area**

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Open Water

Pasture/Hay

Woody Wetlands

Barton County, Kansas

GCS North American 1983  
38.409°N 98.9148°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Kansas and Missouri

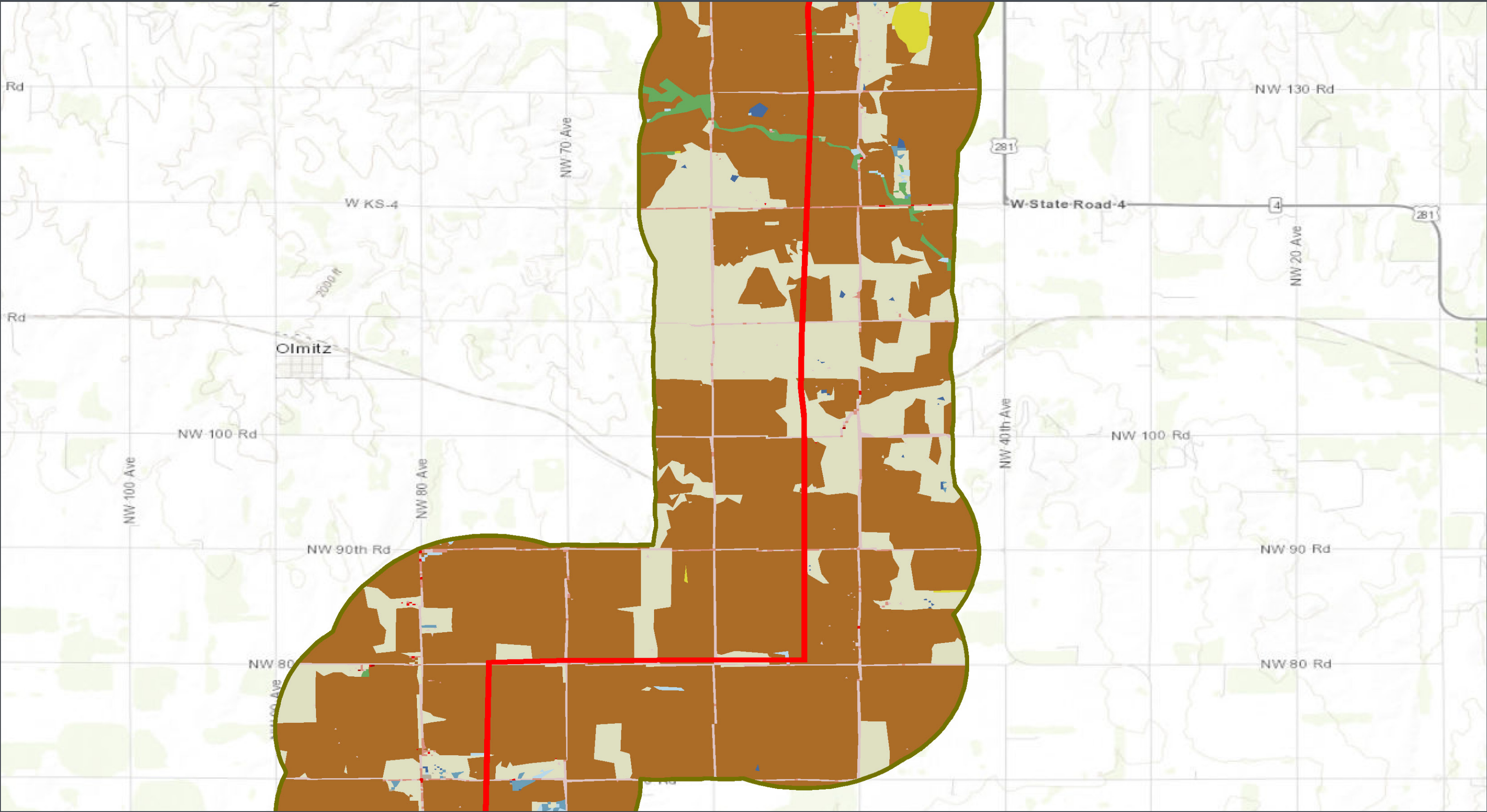
Nebraska

Kansas

Missouri

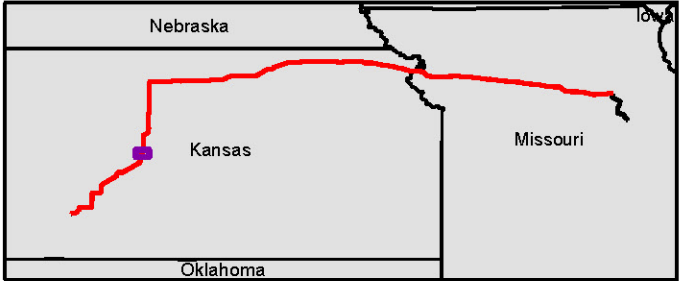
Oklahoma





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 11 of 61

- |   |                             |                              |                      |
|---|-----------------------------|------------------------------|----------------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Cultivated Crops            | Developed, Low Intensity     | Grassland/Herbaceous |
| Land Use Analysis Area                            | Deciduous Forest            | Developed, Open Space        | Mixed Forest         |
| <b>National Land Cover Dataset</b>                | Developed, High Intensity   | Emergent Herbaceous Wetlands | Open Water           |
| Barren Land                                       | Developed, Medium Intensity | Pasture/Hay                  | Woody Wetlands       |



Barton County, Kansas  
GCS North American 1983  
38.5105°N 98.8817°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

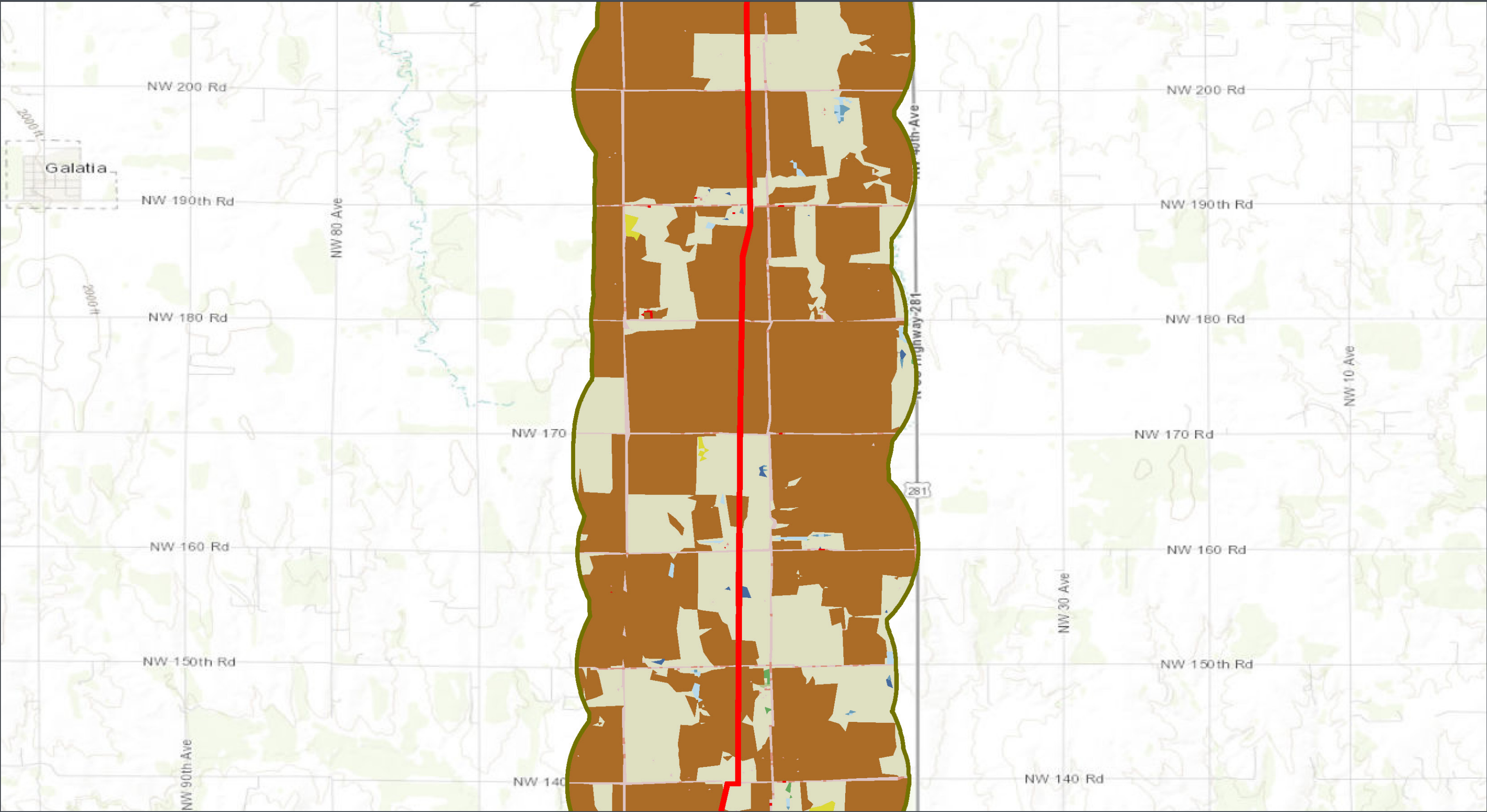
1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 12 of 61

- |   |                             |                              |                |
|---|-----------------------------|------------------------------|----------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Cultivated Crops            | Developed, Open Space        | Open Water     |
| Land Use Analysis Area                            | Deciduous Forest            | Emergent Herbaceous Wetlands | Pasture/Hay    |
| <b>National Land Cover Dataset</b>                | Developed, Medium Intensity | Grassland/Herbaceous         | Woody Wetlands |
| Barren Land                                       | Developed, Low Intensity    | Mixed Forest                 |                |



Barton County, Kansas  
GCS North American 1983  
38.6122°N 98.8707°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

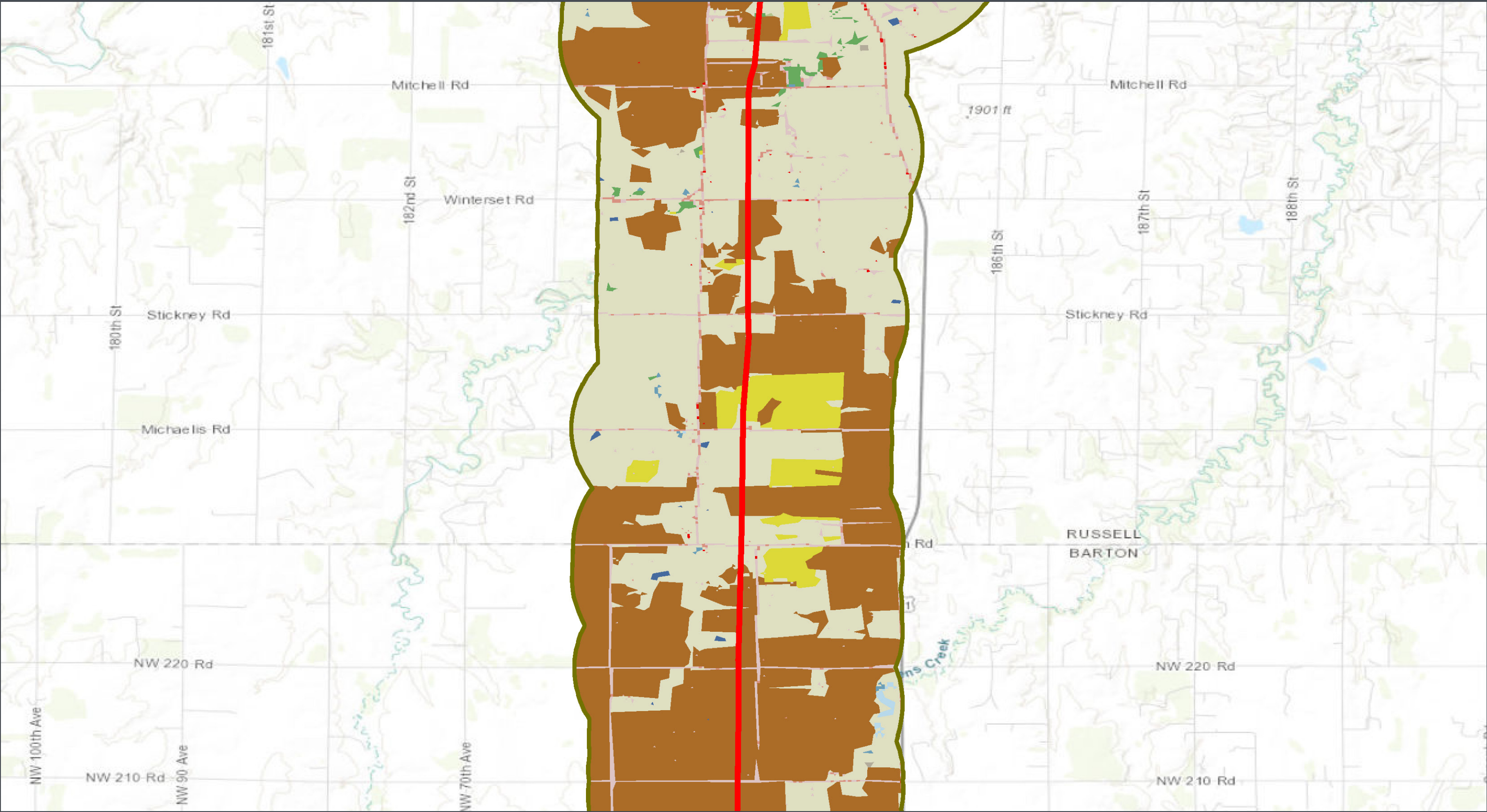
1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 13 of 61

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

National Land Cover Dataset

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Mixed Forest

Open Water

Pasture/Hay

Woody Wetlands

Nebraska

Kansas

Missouri

Oklahoma

Barton and Russell Counties,  
Kansas

GCS North American 1983  
38.7142°N 98.8695°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 58102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

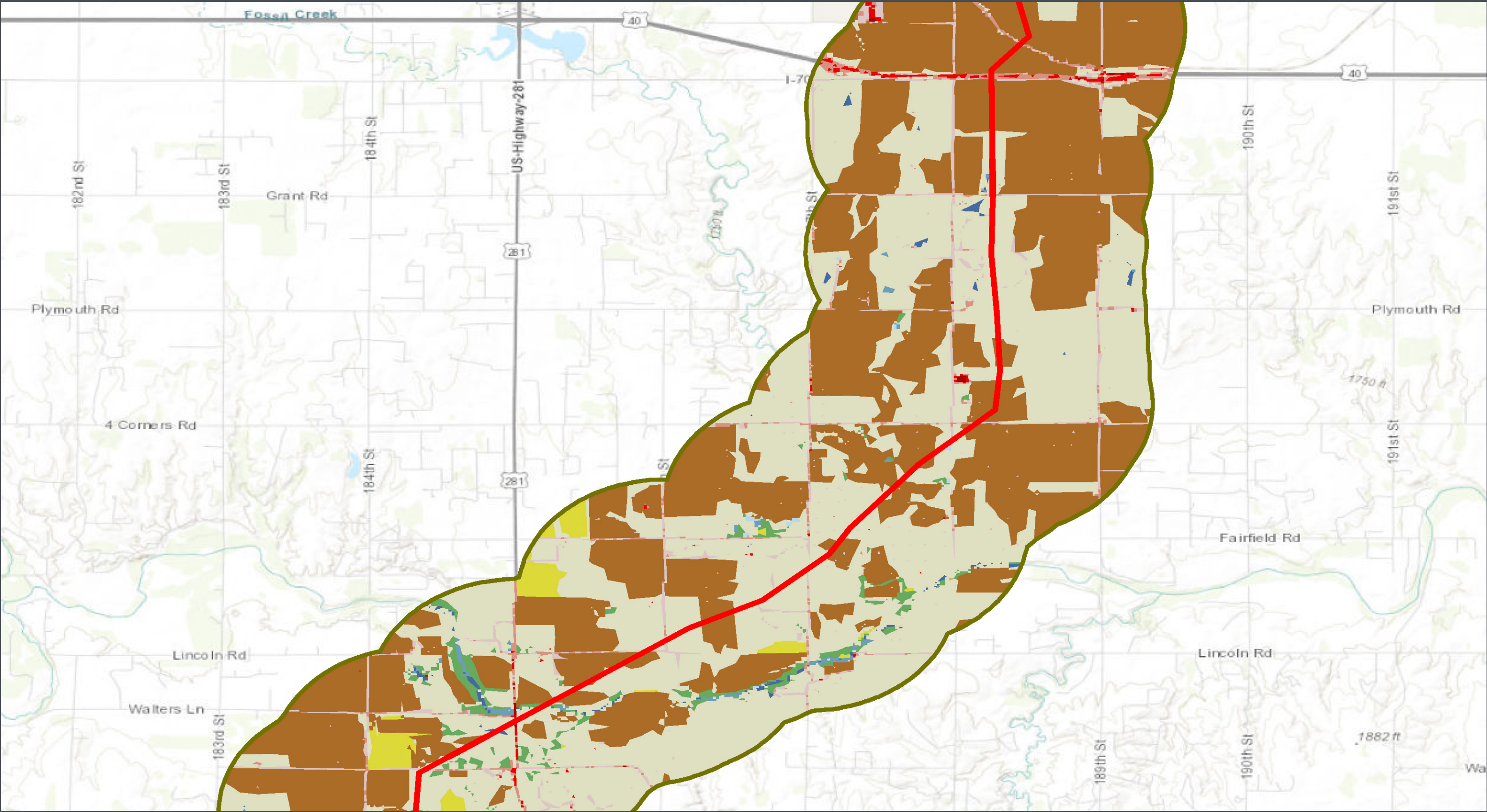
0 0.5 1 Kilometers

N

Grain Belt Express

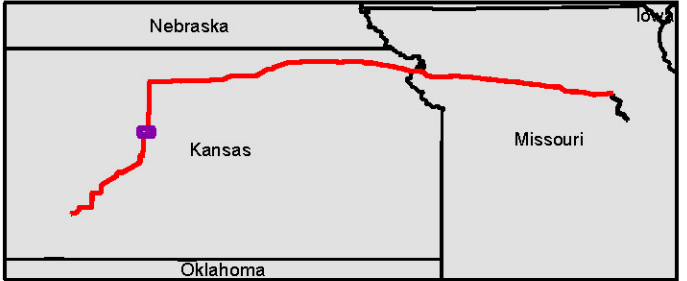
An Inveney Project





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 14 of 61

- |   |                             |                              |                |
|---|-----------------------------|------------------------------|----------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Cultivated Crops            | Developed, Low Intensity     | Mixed Forest   |
| Land Use Analysis Area                            | Deciduous Forest            | Developed, Open Space        | Open Water     |
| <b>National Land Cover Dataset</b>                | Developed, High Intensity   | Emergent Herbaceous Wetlands | Pasture/Hay    |
| Barren Land                                       | Developed, Medium Intensity | Grassland/Herbaceous         | Shrub/Scrub    |
|   |                             |                              | Woody Wetlands |



Russell County, Kansas

GCS North American 1983  
38.8151°N 98.8261°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

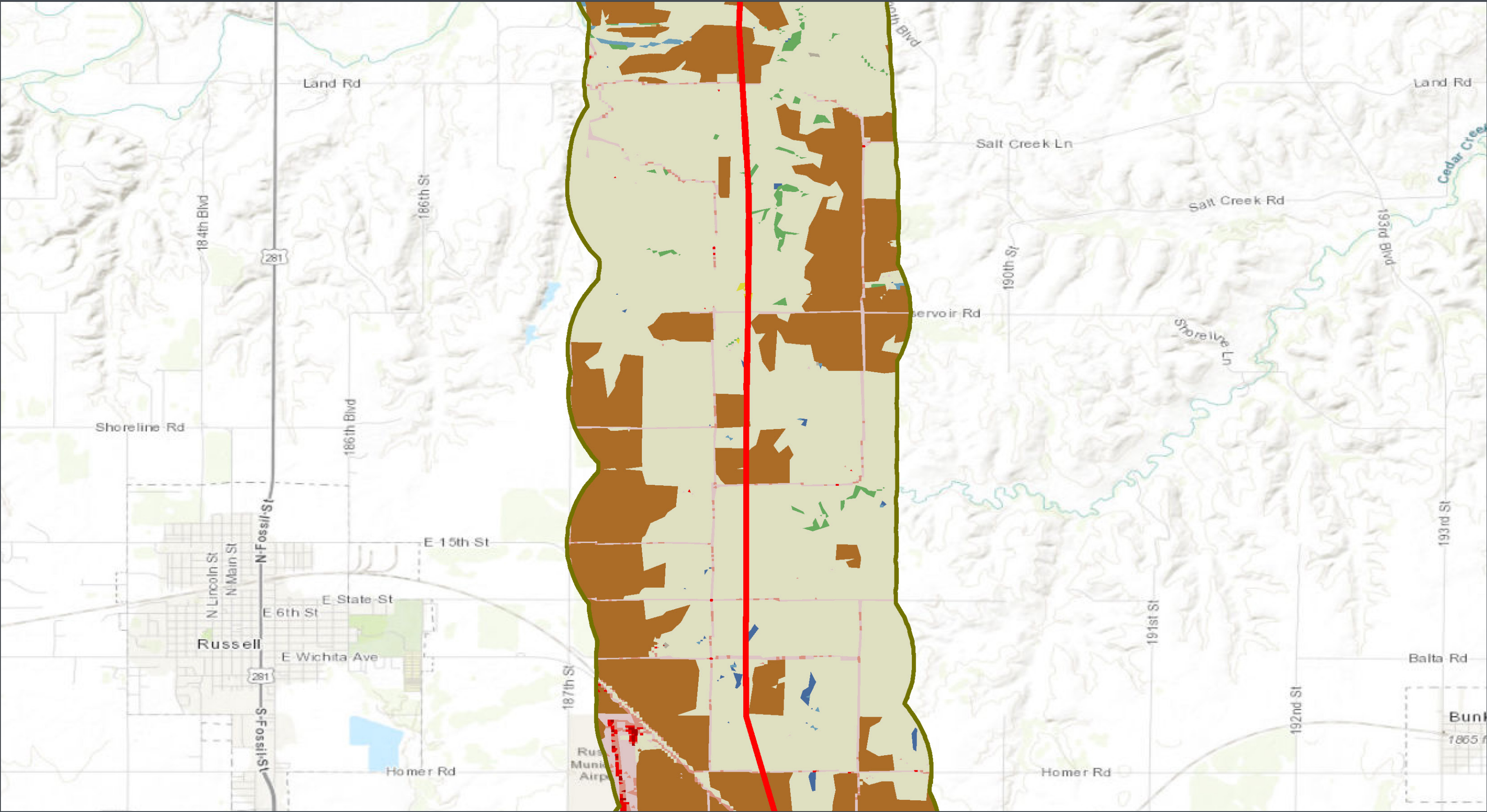
0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 15 of 61

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Open Water

Pasture/Hay

Shrub/Scrub

Woody Wetlands

Russell County, Kansas

GCS North American 1983  
38.9173°N 98.795°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Kansas and Missouri

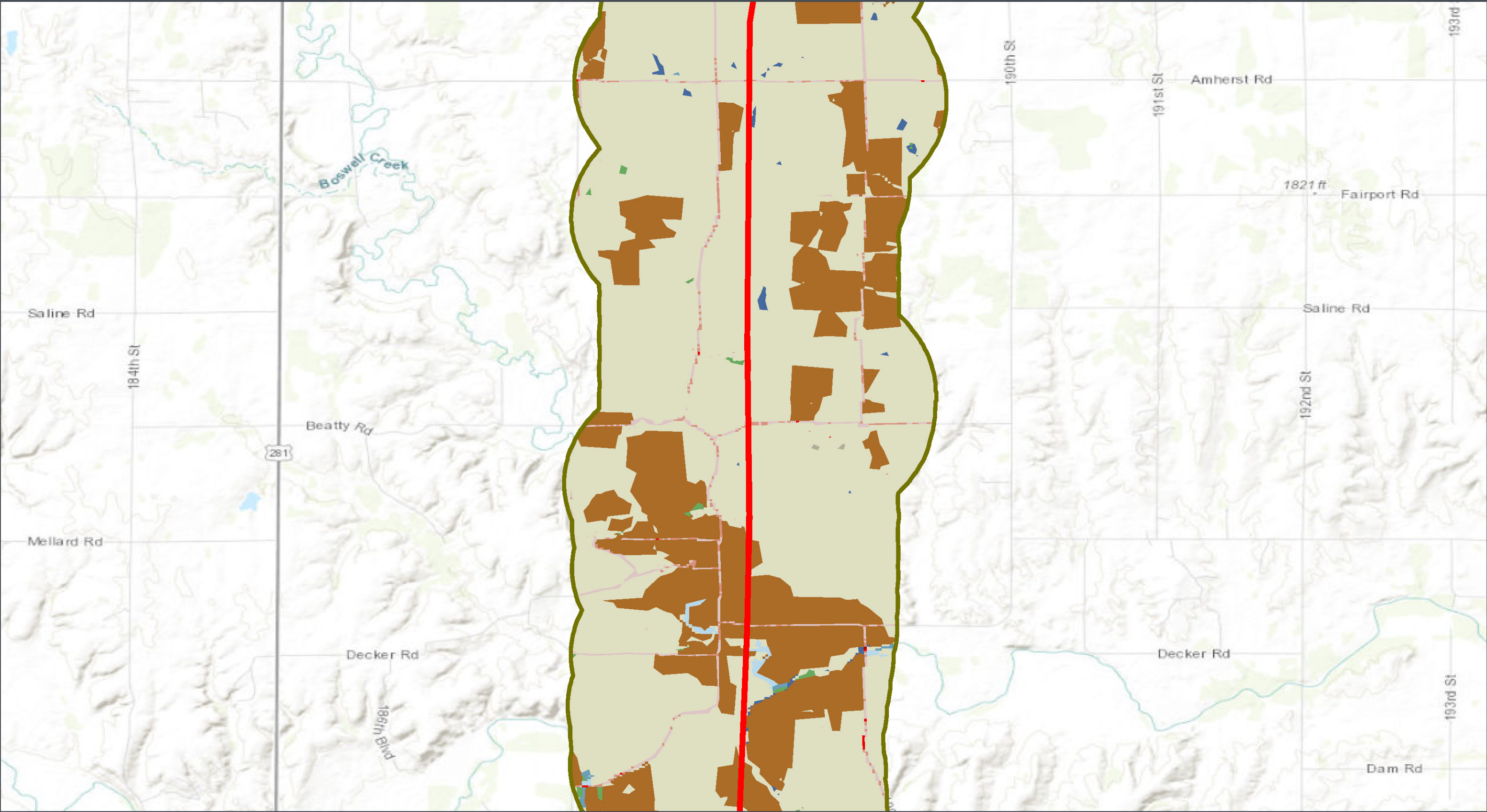
Nebraska

Kansas

Missouri

Oklahoma





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 16 of 61

Proposed Grain Belt Express Phase 1 HVDC Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High Intensity

Developed, Medium Intensity

Developed, Low Intensity

Developed, Open Space

Emergent Herbaceous Wetlands

Grassland/Herbaceous

Open Water

Woody Wetlands

Russell County, Kansas

GCS North American 1983  
39.0187°N 98.795°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

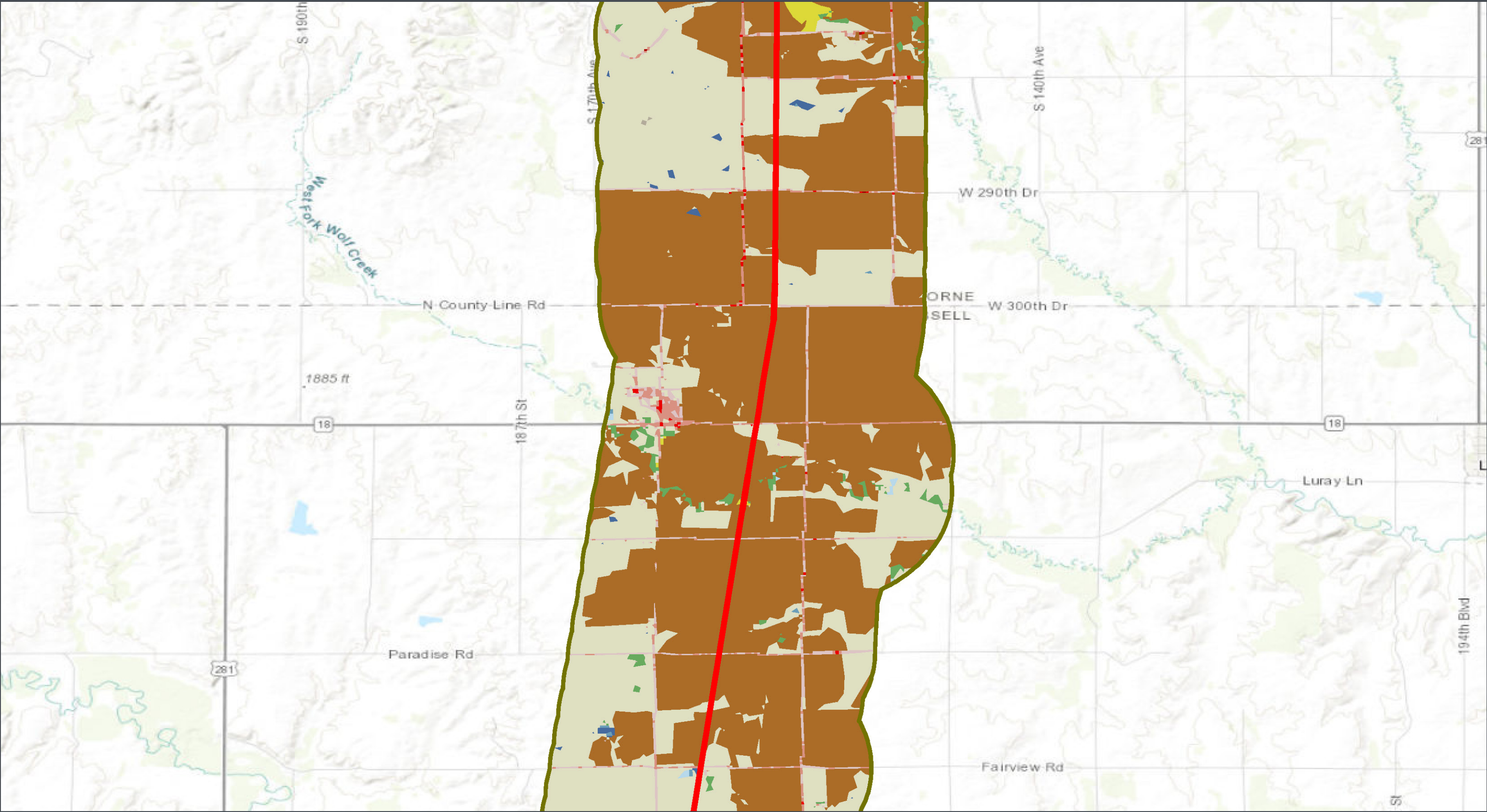
0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

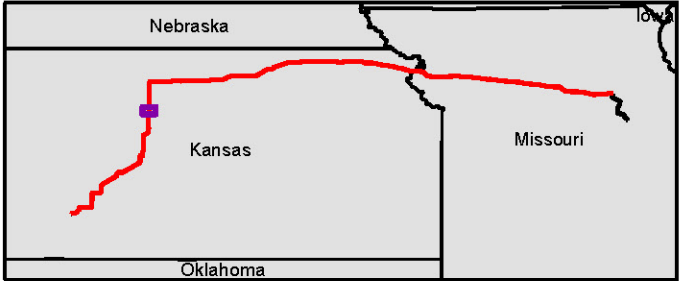
Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 17 of 61

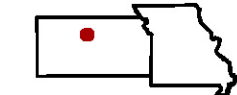
- |   |                             |                              |                      |
|---|-----------------------------|------------------------------|----------------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Cultivated Crops            | Developed, Low Intensity     | Grassland/Herbaceous |
| Land Use Analysis Area                            | Deciduous Forest            | Developed, Open Space        | Open Water           |
| <b>National Land Cover Dataset</b>                | Developed, High Intensity   | Emergent Herbaceous Wetlands | Pasture/Hay          |
| Barren Land                                       | Developed, Medium Intensity | Woody Wetlands               |                      |



Russell and Osborne Counties,  
Kansas

GCS North American 1983  
39.1204°N 98.7877°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

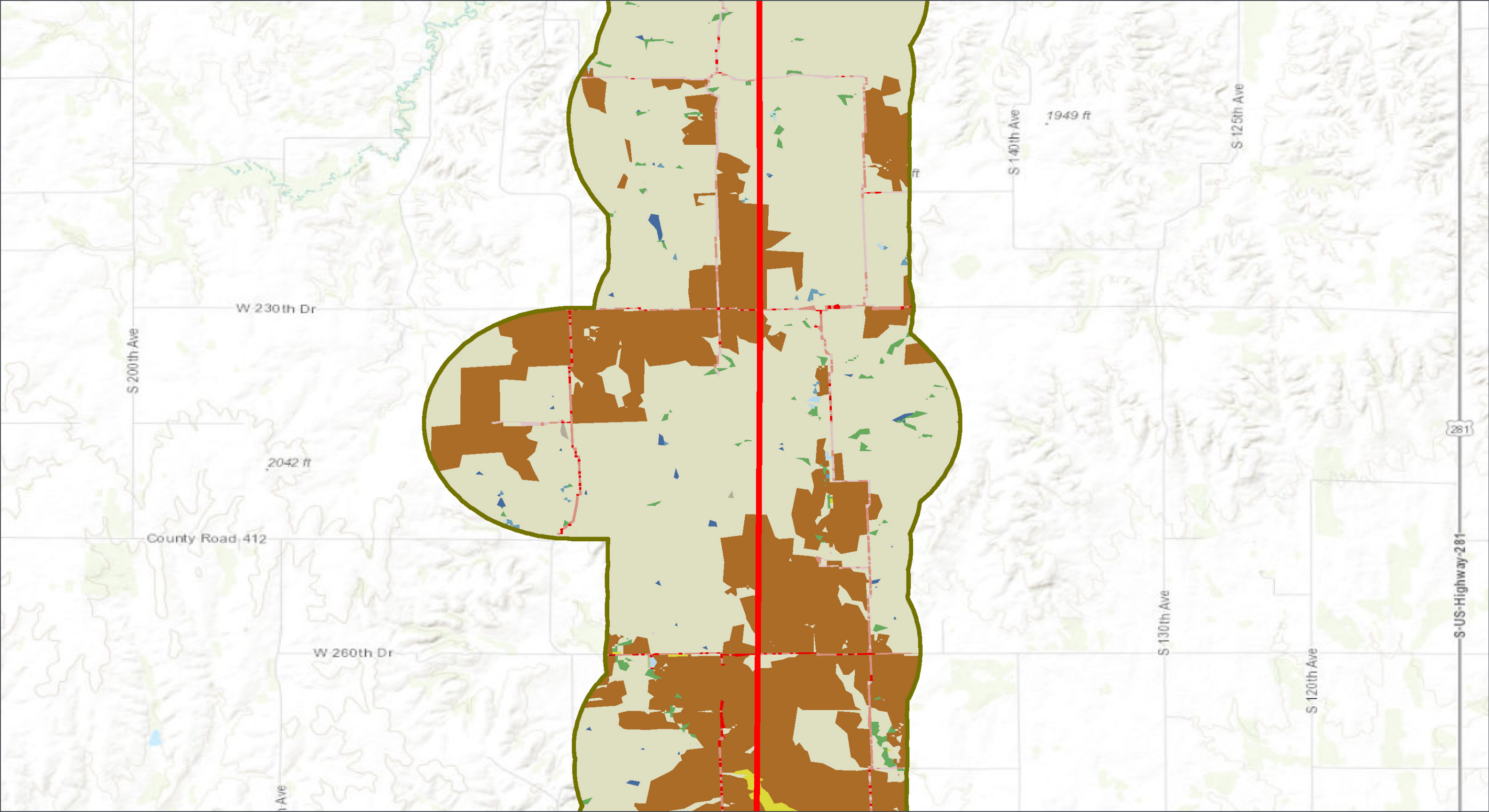


Kansas and Missouri

1:50,000







GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 18 of 61

Proposed Grain Belt Express Phase 1 HVDC Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High Intensity

Developed, Medium Intensity

Developed, Low Intensity

Developed, Open Space

Emergent Herbaceous Wetlands

Grassland/Herbaceous

Mixed Forest

Open Water

Pasture/Hay

Woody Wetlands

Nebraska

Kansas

Missouri

Oklahoma

Osborne County, Kansas

GCS North American 1983  
39.2225°N 98.785°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

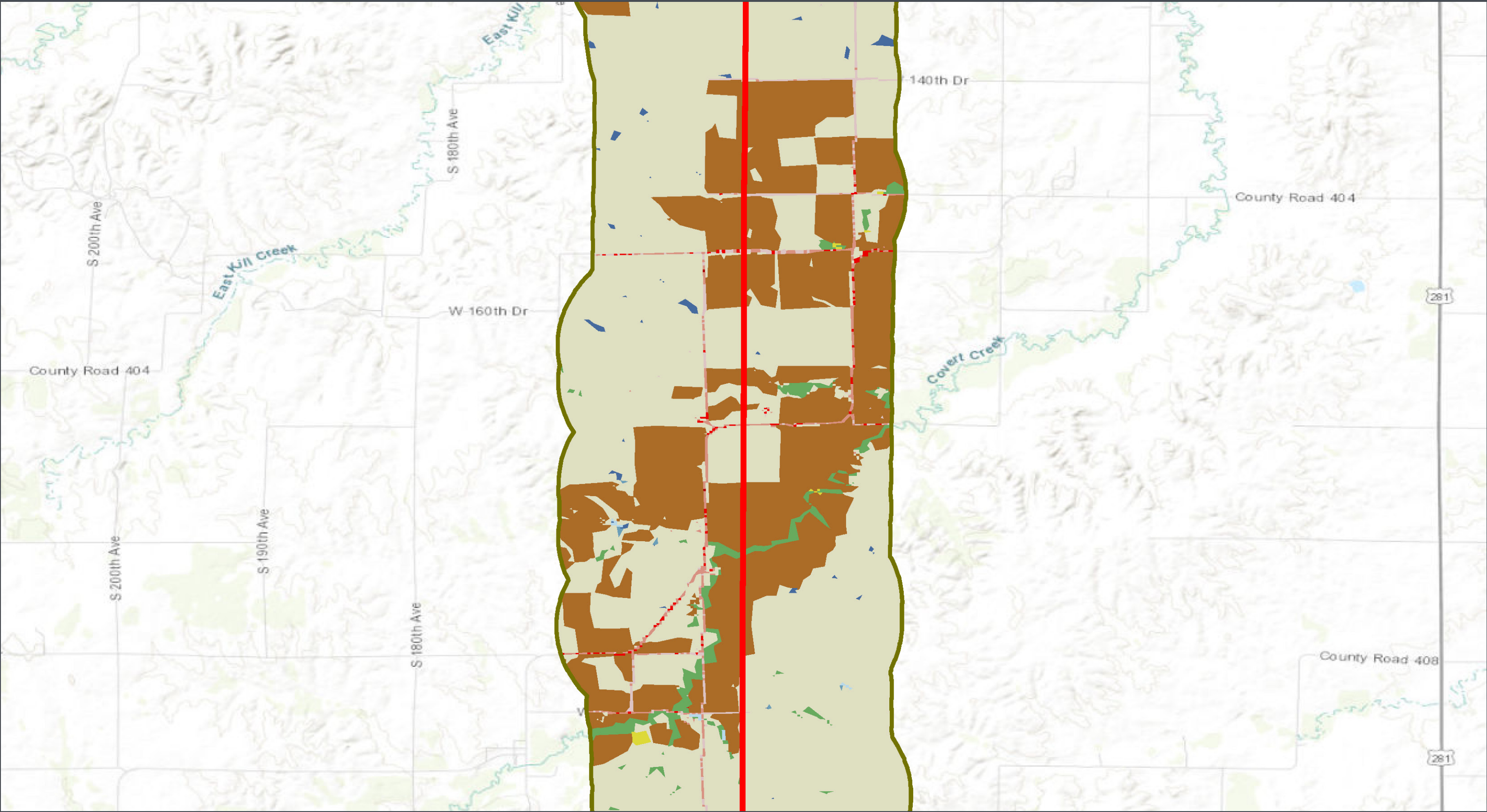
0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

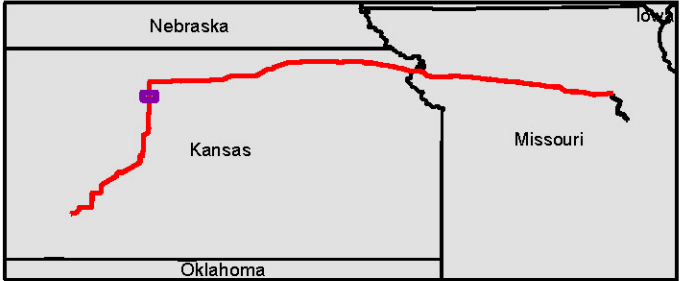
Kansas and Missouri





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 19 of 61

- |   |                             |                              |                      |
|---|-----------------------------|------------------------------|----------------------|
| Proposed Grain Belt Express Phase 1 HVDC Line ROW | Deciduous Forest            | Developed, Low Intensity     | Grassland/Herbaceous |
| Land Use Analysis Area                            | Developed, High Intensity   | Developed, Open Space        | Open Water           |
| Cultivated Crops                                  | Developed, Medium Intensity | Emergent Herbaceous Wetlands | Pasture/Hay          |
|   |                             |                              | Woody Wetlands       |



Osborne County, Kansas  
GCS North American 1983  
39.3244°N 98.783°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

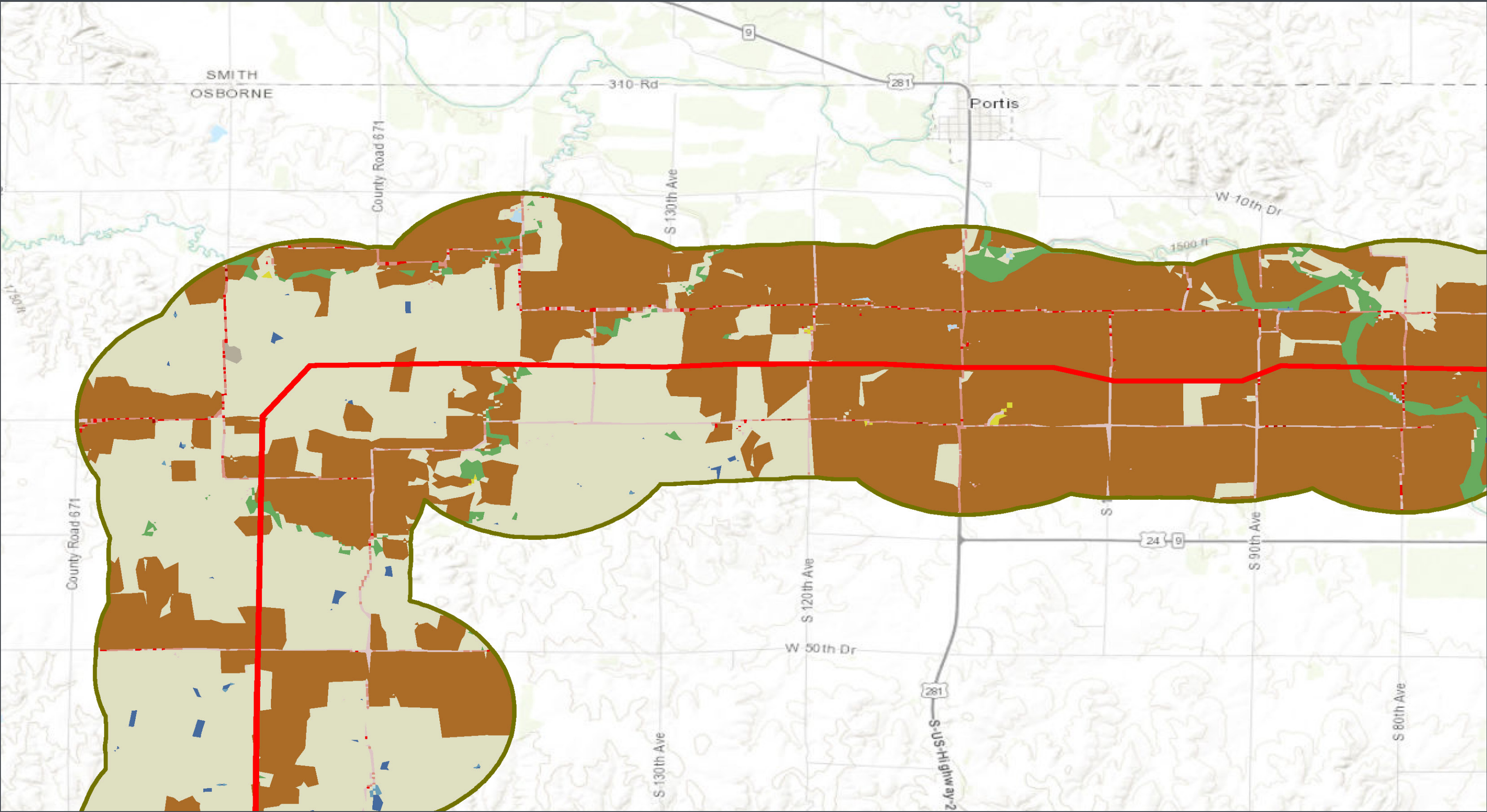
0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N









GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 21 of 61

**Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW**

**Land Use Analysis Area**

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Open Water

Pasture/Hay

Woody Wetlands

Osborne County, Kansas

GCS North American 1983  
39.5269°N 98.7205°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 58102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Kansas and Missouri

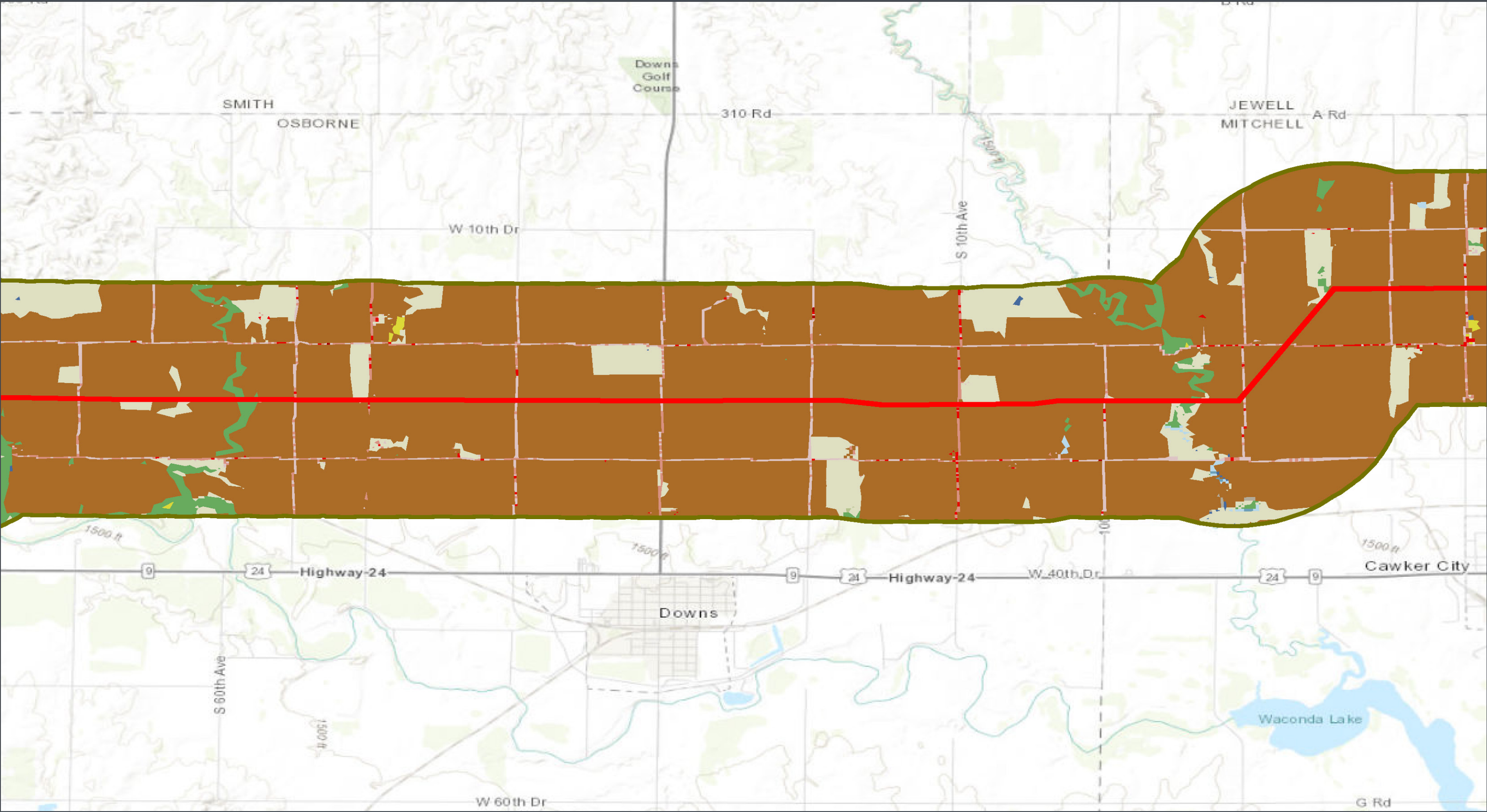
Nebraska

Kansas

Missouri

Oklahoma





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 22 of 61

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Barren Land

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Grassland/Herbaceous

Mixed Forest

Open Water

Pasture/Hay

Woody Wetlands

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Nebraska

Kansas

Missouri

Oklahoma

Osborne and Mitchell Counties,  
Kansas

GCS North American 1983  
39.5305°N 98.5337°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

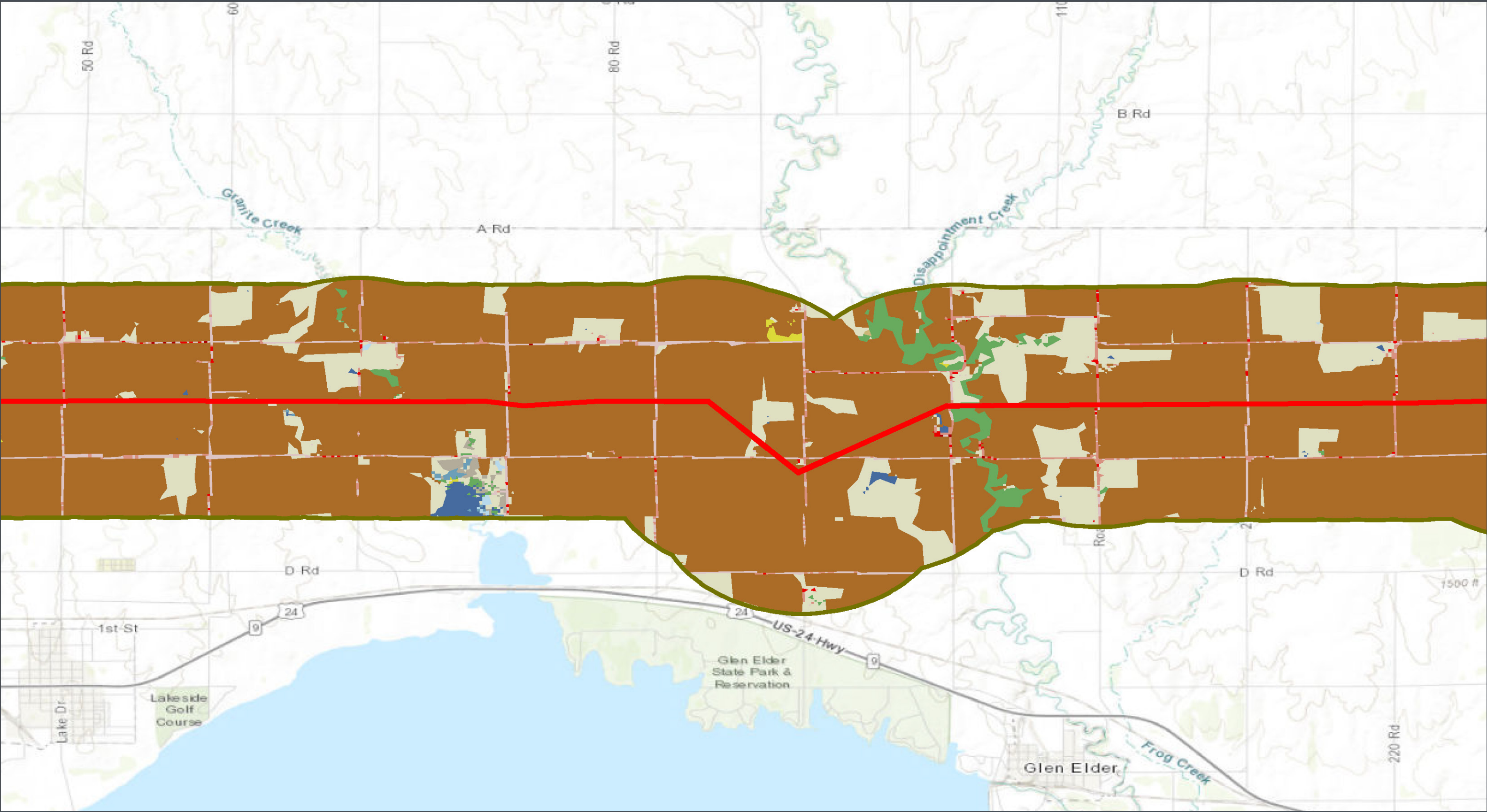
0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Grain Belt Express  
An Inveney Project





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT  
**National Land Cover  
Database**  
Map 23 of 61

**Legend**

Proposed Grain Belt Express Phase 1 HVDC Line ROW	Cultivated Crops	Developed, Low Intensity	Mixed Forest
Land Use Analysis Area	Deciduous Forest	Developed, Open Space	Open Water
<b>National Land Cover Dataset</b>	Developed, High Intensity	Emergent Herbaceous Wetlands	Pasture/Hay
Barren Land	Developed, Medium Intensity	Grassland/Herbaceous	Shrub/Scrub
			Woody Wetlands

Mitchell County, Kansas  
GCS North American 1983  
39.5448°N 98.3467°W

Base Map: Esri ArcGIS Online, accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx.

1:50,000

0 0.25 0.5 Miles  
0 0.5 1 Kilometers

N

Kansas and Missouri

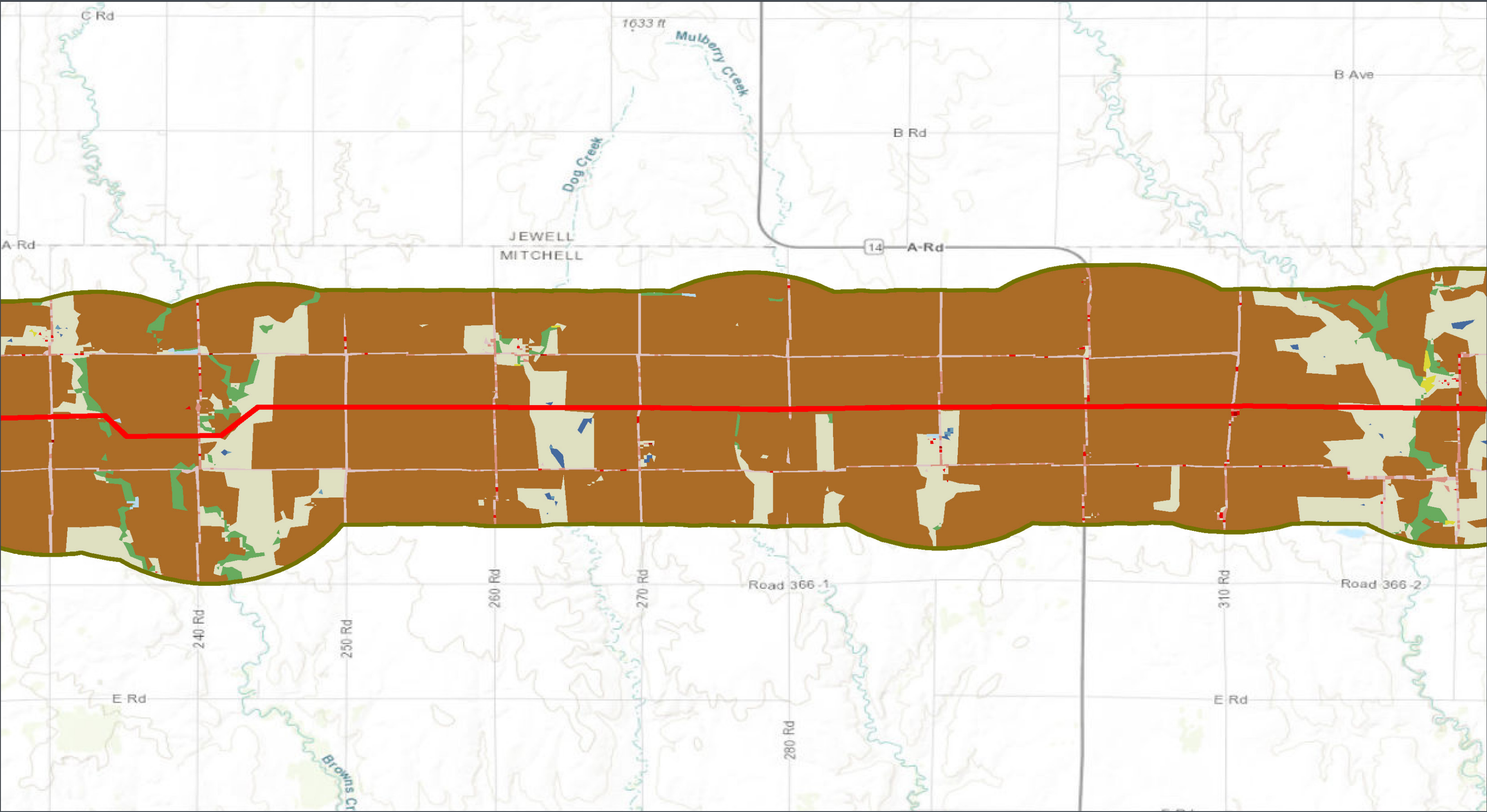
Nebraska

Kansas

Missouri

Oklahoma





GRAIN BELT EXPRESS  
TRANSMISSION LINE PROJECT

**National Land Cover  
Database**

Map 24 of 61

Proposed Grain Belt  
Express Phase 1 HVDC  
Line ROW

Land Use Analysis Area

**National Land Cover Dataset**

Cultivated Crops

Deciduous Forest

Developed, High  
Intensity

Developed, Medium  
Intensity

Developed, Low  
Intensity

Developed, Open  
Space

Emergent Herbaceous  
Wetlands

Grassland/Herbaceous

Open Water

Pasture/Hay

Shrub/Scrub

Woody Wetlands

Mitchell County, Kansas

GCS North American 1983  
39.547°N 98.1591°W

Base Map: Esri ArcGIS Online,  
accessed November 2024  
Updated: 11/26/2024  
Project No. 56102  
Layout: GBX\_LandUse\_NLCD  
Aprx:

1:50,000

0 0.25 0.5 Miles

0 0.5 1 Kilometers

N

Kansas and Missouri

Nebraska

Kansas

Missouri

Oklahoma