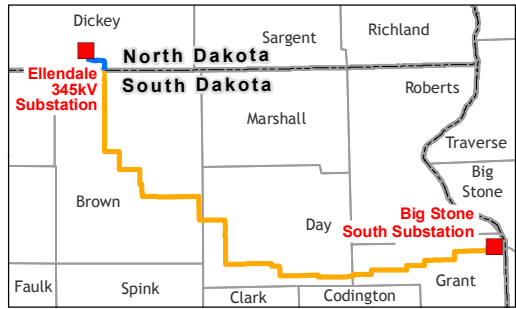
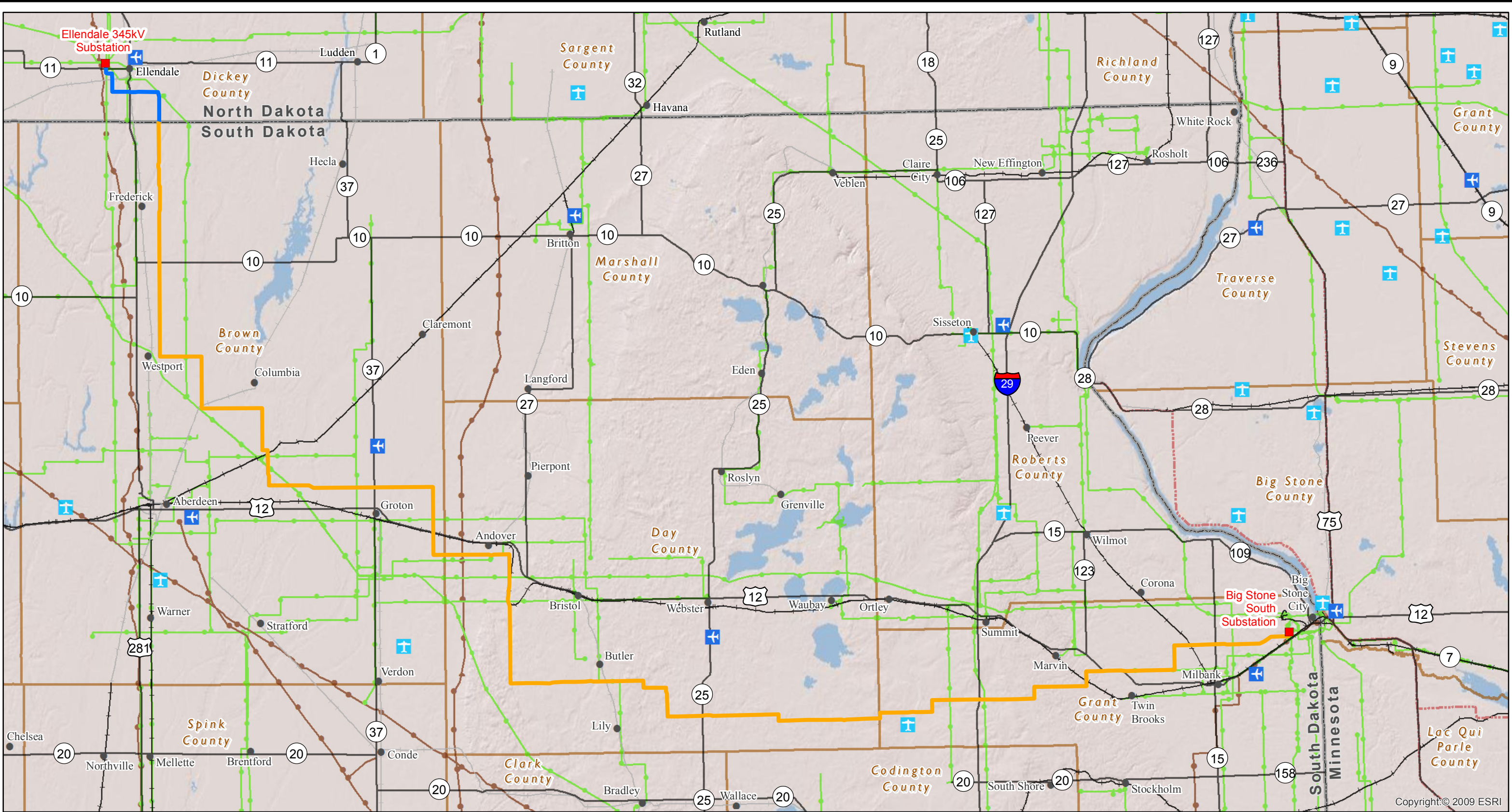




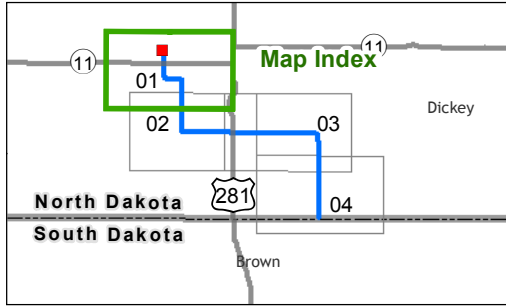
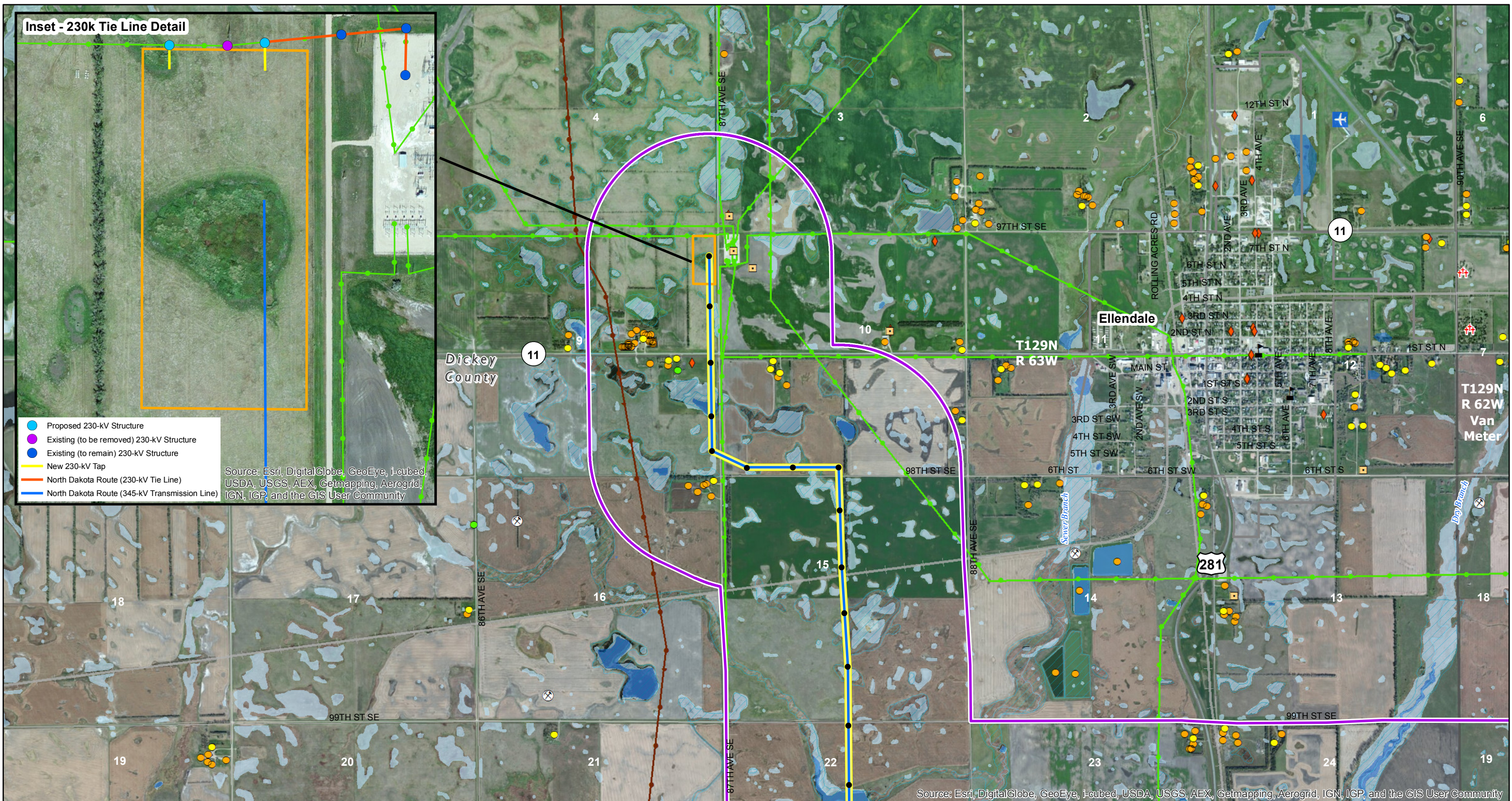
- | | | | |
|-----------------------|----------------------------|--------------------|-----------------|
| North Dakota Facility | Private-use Airport | Scenic Byway | City |
| South Dakota Facility | Public-use Airport | Highway | County Boundary |
| Project End Point | Electric Transmission Line | Railroad | State Boundary |
| | Oil or Gas Pipeline | Abandoned Railroad | |

Figure 1
Project Overview
Big Stone South to Ellendale
345 kV Transmission Line Project

0 10 Miles
BSS+E
 Big Stone South to Ellendale
 Scale 1:500,000

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Path: \\nspe-gis-1\GIS\Projects\large\MDU_OTP\186675\map_docs\Permits\ND-PSC\RoutePermitApplication\Figure02_Pg1_Route and Corridor_11x17_ND.mxd



- | | | | | |
|--------------------------------------|---------------------|---------------------|----------------------------|-----------------------------|
| North Dakota Route | Dwelling - occupied | Recreation | Road | River or Stream |
| North Dakota Facility ROW | Dwelling - vacant | Communication Tower | Highway | Waterbody |
| North Dakota Corridor | Ag/Other Structure | Private-use Airport | Railroad | NWI Wetland |
| Facility Structure | Gravel/Mining | Public-use Airport | Abandoned Railroad | Wetland (Desktop Digitized) |
| Ellendale 345 kV Substation Boundary | Cemetery | | Electric Transmission Line | |
| | Church | | Oil or Gas Pipeline | |
| | School | | | |
| | Utilities | | | |

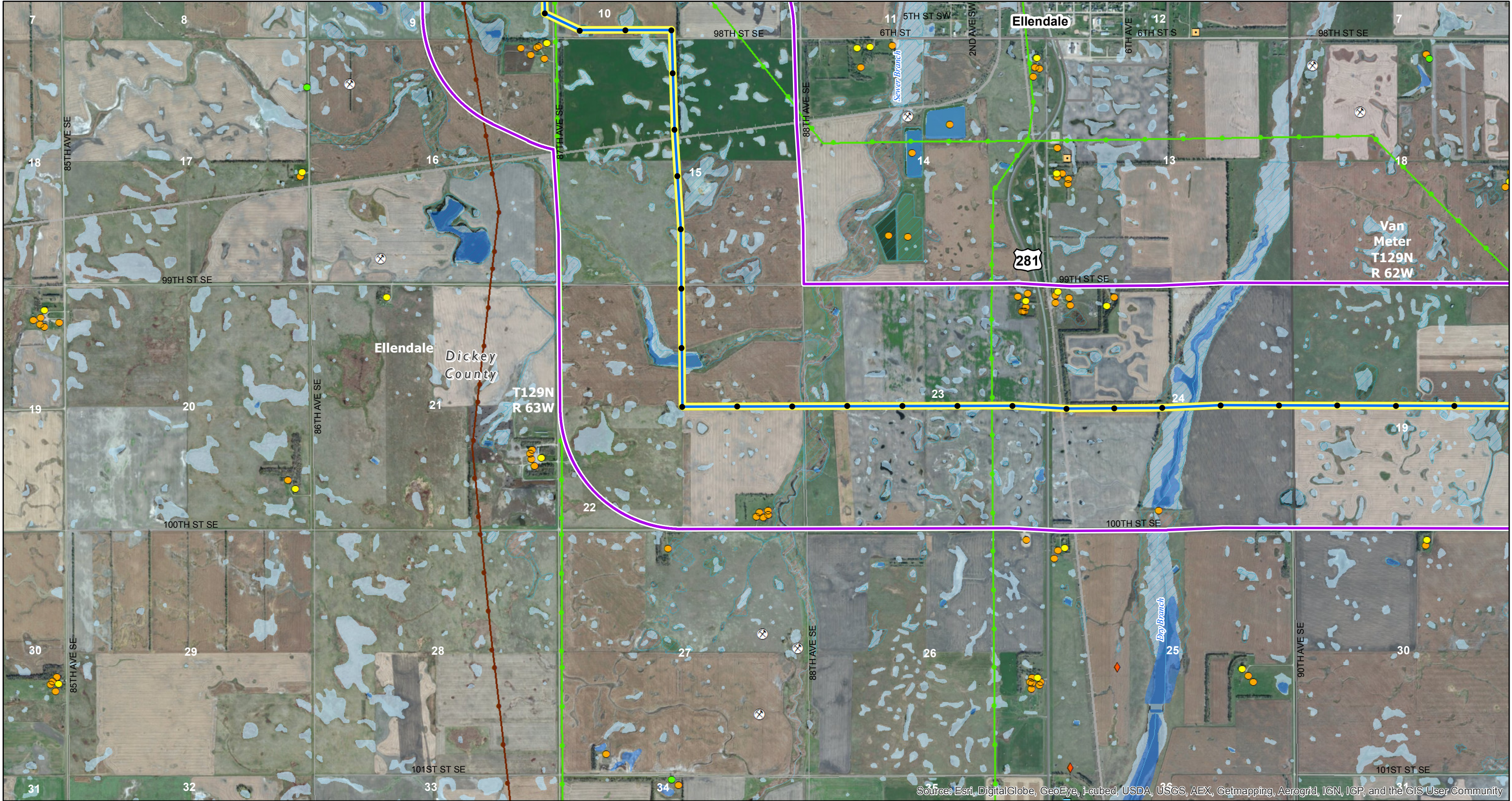
Figure 2: Page 1 of 4
Route and Corridor
Big Stone South to Ellendale
345 kV Transmission Line Project

0 2,000 4,000 Feet

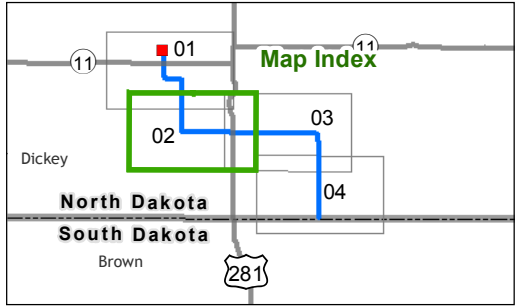
BSS
Big Stone South to Ellendale

Scale 1:24,000

Date: 10/7/2013
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Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



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|--|---|---|---|---|
| <ul style="list-style-type: none">North Dakota RouteNorth Dakota Facility ROWNorth Dakota CorridorFacility StructureEllendale 345 kV Substation Boundary | <ul style="list-style-type: none">Dwelling - occupiedDwelling - vacantAg/Other StructureGravel/MiningCemeteryChurchSchoolUtilities | <ul style="list-style-type: none">RecreationCommunication TowerPrivate-use AirportPublic-use Airport | <ul style="list-style-type: none">RoadHighwayRailroadAbandoned RailroadElectric Transmission LineOil or Gas Pipeline | <ul style="list-style-type: none">River or StreamWaterbodyNWI WetlandWetland (Desktop Digitized) |
|--|---|---|---|---|

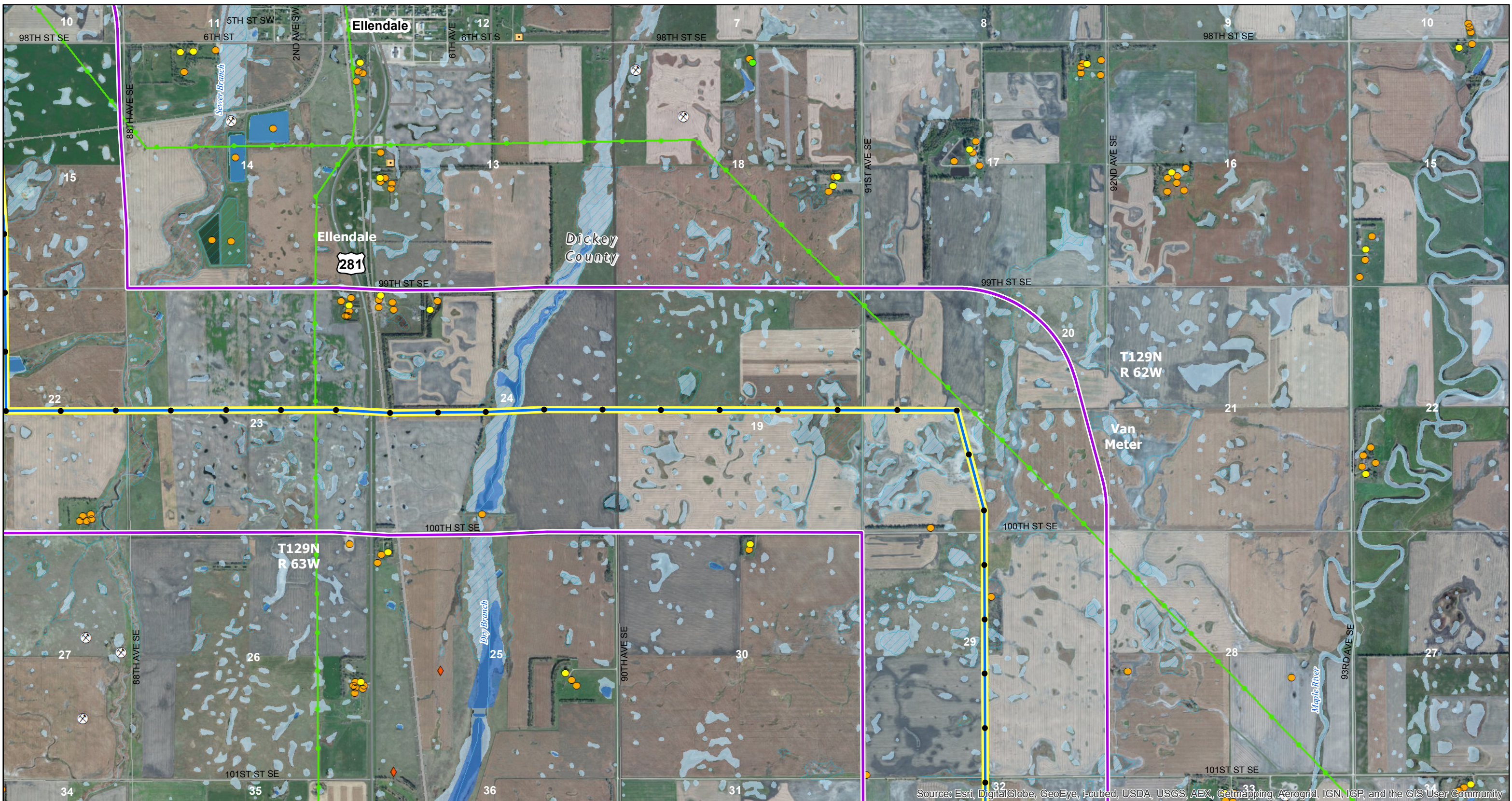
Figure 2: Page 2 of 4
Route and Corridor
Big Stone South to Ellendale
345 kV Transmission Line Project

0 2,000 4,000 Feet

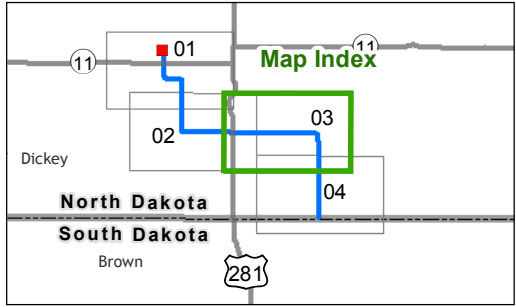
BSS
Big Stone South to Ellendale

Scale 1:24,000

Path: \\nspe-gis-1\GIS\Proj\large\MDU_OTP\186875\map_docs\Permits\ND-PSC\RoutePermit\Map\Figure02_Pg2-3_Route and Corridor_11x17_ND.mxd Date: 10/17/2013



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



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| <ul style="list-style-type: none">North Dakota RouteNorth Dakota Facility ROWNorth Dakota CorridorFacility StructureEllendale 345 kV Substation Boundary | <ul style="list-style-type: none">Dwelling - occupiedDwelling - vacantAg/Other StructureGravel/MiningCemeteryChurchSchoolUtilities | <ul style="list-style-type: none">RecreationCommunication TowerPrivate-use AirportPublic-use Airport | <ul style="list-style-type: none">RoadHighwayRailroadAbandoned RailroadElectric Transmission LineOil or Gas Pipeline | <ul style="list-style-type: none">River or StreamWaterbodyNWI WetlandWetland (Desktop Digitized) |
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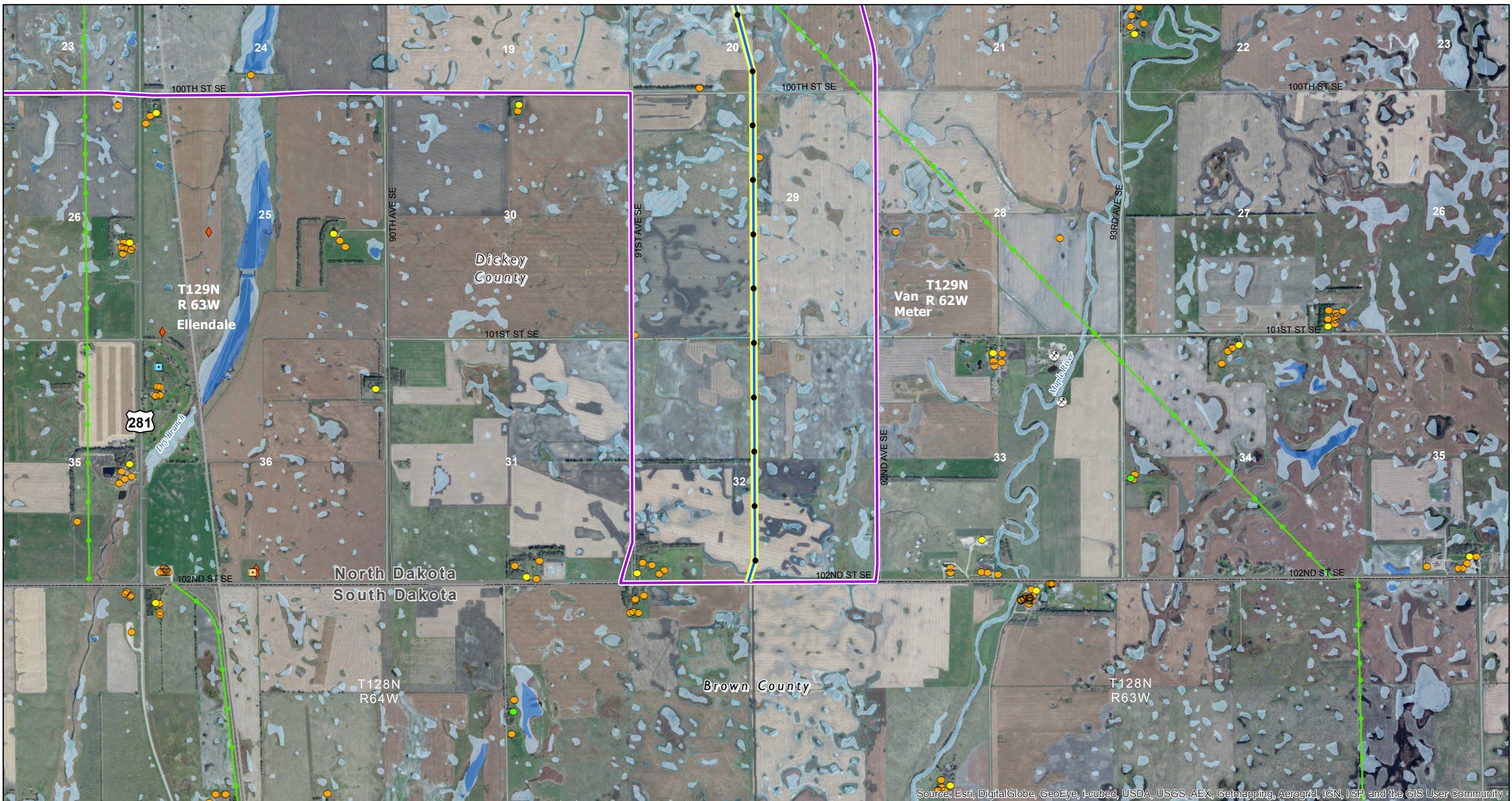
Figure 2: Page 3 of 4
Route and Corridor
Big Stone South to Ellendale
345 kV Transmission Line Project

0 2,000 4,000 Feet

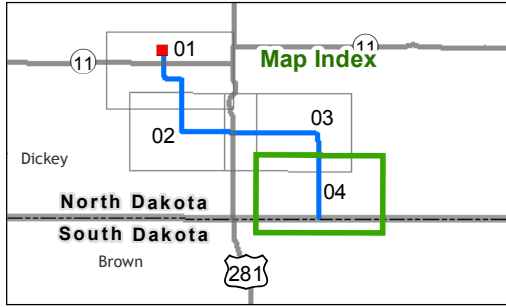
BSS-E
Big Stone South to Ellendale

Scale 1:24,000

Date: 10/7/2013
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



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|--|---|---|---|---|
| <ul style="list-style-type: none">North Dakota RouteNorth Dakota Facility ROWNorth Dakota CorridorFacility StructureEllendale 345 kV Substation Boundary | <ul style="list-style-type: none">Dwelling - occupiedDwelling - vacantAg/Other StructureGravel/MiningCemeteryChurchSchoolUtilities | <ul style="list-style-type: none">RecreationCommunication TowerPrivate-use AirportPublic-use Airport | <ul style="list-style-type: none">RoadHighwayRailroadAbandoned RailroadElectric Transmission LineOil or Gas Pipeline | <ul style="list-style-type: none">River or StreamWaterbodyNWI WetlandWetland (Desktop Digitized) |
|--|---|---|---|---|

Figure 2: Page 4 of 4
Route and Corridor
Big Stone South to Ellendale
345 kV Transmission Line Project

0 2,000 4,000 Feet
Scale 1:24,000

BSS
Big Stone South to Ellendale

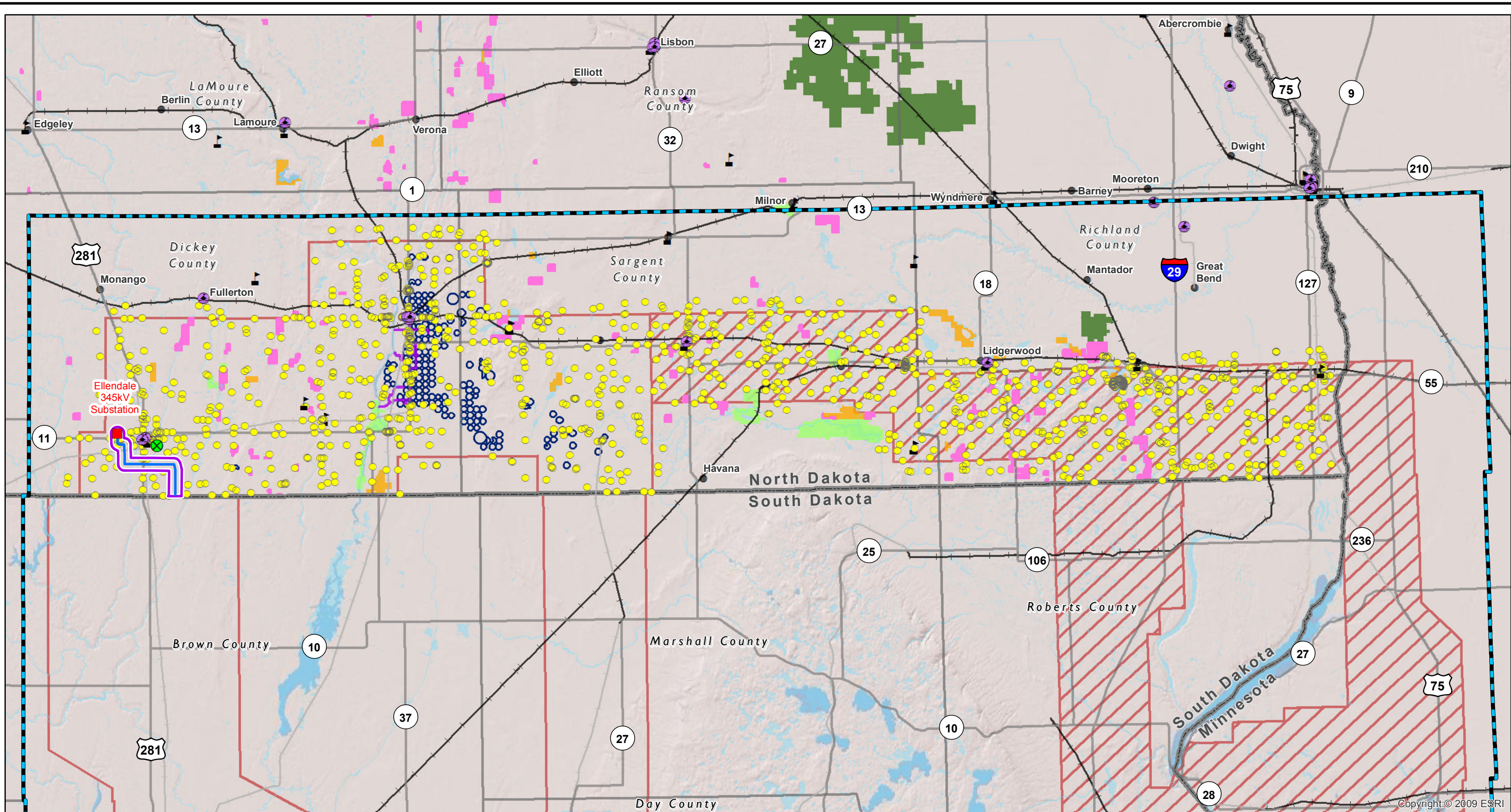
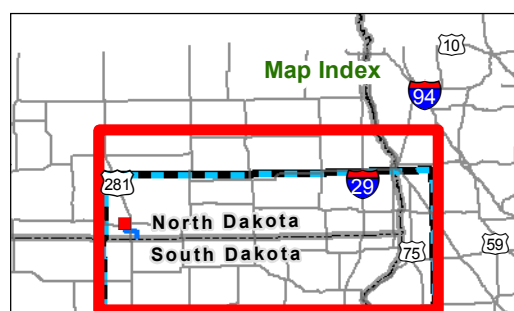
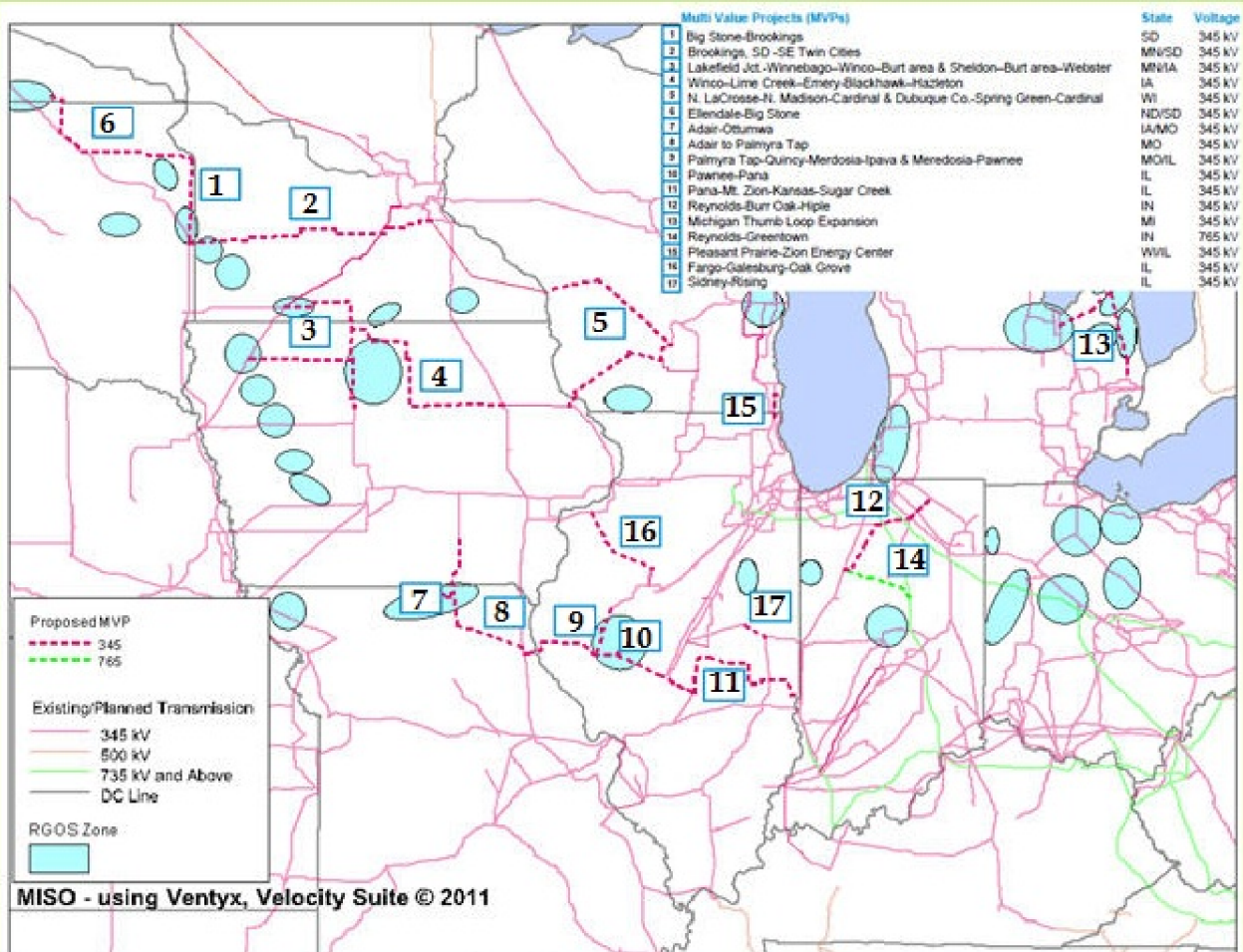


Figure 3
Study Area and Study Corridors
with Exclusion and Avoidance Areas
Big Stone South to Ellendale
345 kV Transmission Line Project



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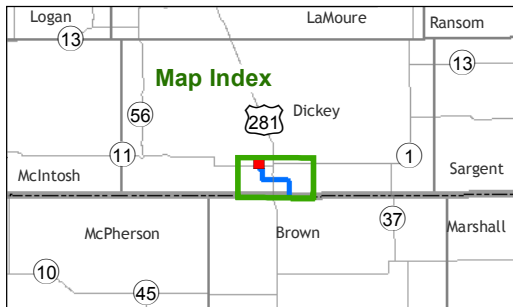
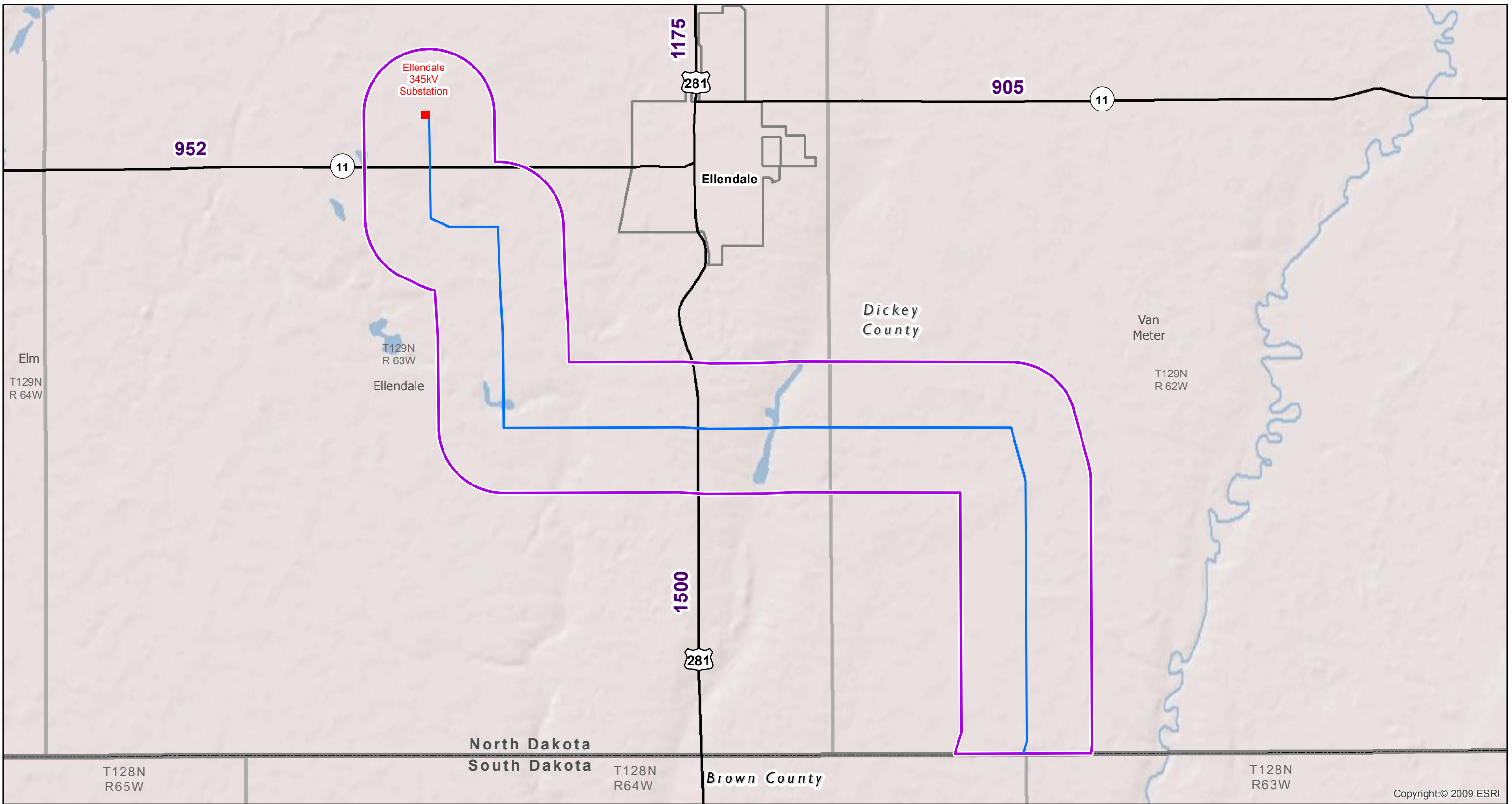


- | | |
|---|-------|
| 1. Big Stone – Brookings | SD |
| 2. Brookings, SD-SE Twin Cities | MN/SD |
| 3. Lakefield Jct.-Winnebago – Winco – Burt Area and Sheldon – Burt Area – Webster | MN/IA |
| 4. Winco – Lime Creek – Emery-Blackhawk – Hazleton | IA |
| 5. N. LaCrosse – N. Madison – Cardinal and Dubuque Co. – Spring Green – Cardinal | WI |
| 6. Ellendale – Big Stone | ND/SD |
| 7. Adair – Ottumwa | IA/MO |
| 8. West Adair to Palmyra Tap | MO |
| 9. Palmyra-Quincy-Merdosia – Ipava and Meredosia – Pawnee | MO/IL |
| 10. New Pawnee – Pana | IL |
| 11. Pana-Mt Zion – Kansas – Sugar Creek | IL |
| 12. New Reynolds – Burr Oak – Hiple | IN |
| 13. Michigan Thumb Loop Expansion | MI |
| 14. New Reynolds – Greentown | IN |
| 15. Pleasant Prairie – Zion Energy Center | WI/IL |
| 16. Fargo – Oak Grove | IL |
| 17. Sidney-Rising | IL |

Figure 4
MISO MVP Project Map
Big Stone South to Ellendale
345 kV Transmission Line Project

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Data Source: NDDOT 2012

- North Dakota Route
- North Dakota Corridor
- Project End Point
- Highway

AADT (Average Annual Daily Traffic) - **1175**

THE TRAFFIC FIGURES ARE THE TOTAL AT THE CLOSEST HIGHWAY INTERSECTION OR TOWN

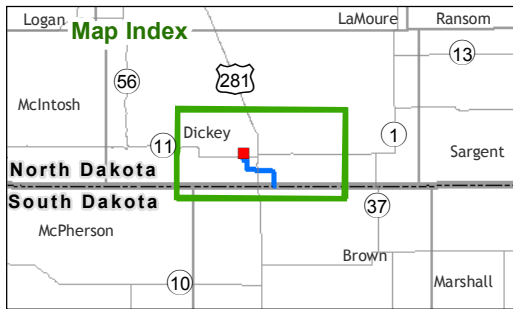
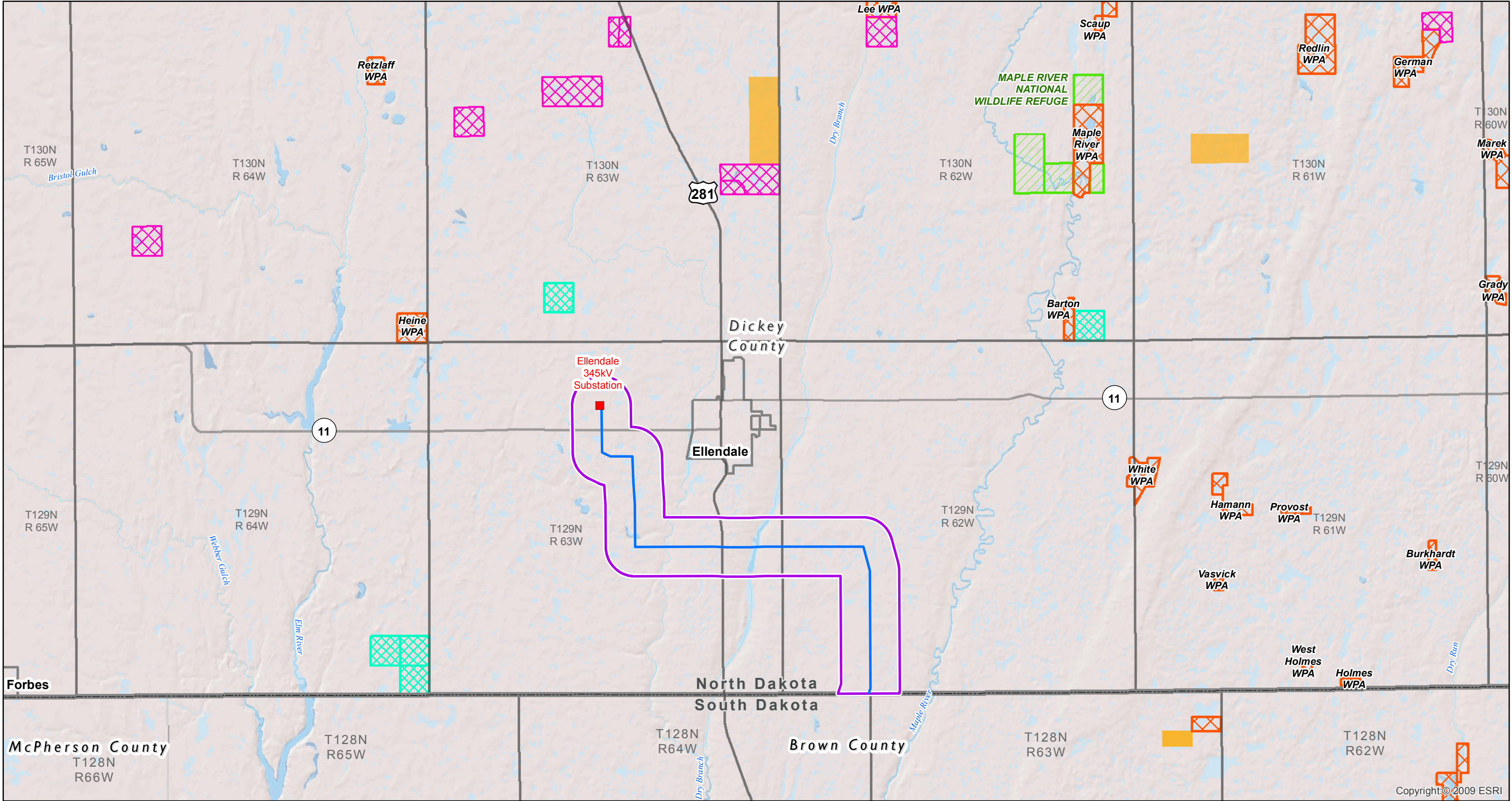
Figure 5
Average Annual Daily Traffic
Big Stone South to Ellendale
345 kV Transmission Line Project

0 0.5 1 Miles

BSS+E
Big Stone South to Ellendale

Scale 1:45,000

Path: \\nspe-gis-file\GIS\Proj\LargeMDU_OTP\186675\map_docs\Permits\ND-PSC\Route\PermitApplication\Archive\maps archive current\zoom\Figure07_ManagedResourceLands_Maps_11X17_ND.mxd Date: 10/8/2013



Data Source : NDGF, USFWS, NDSLD.

- | | | |
|-----------------------|---------------------------|--------------------------------|
| North Dakota Route | PLOT Lands | State Lands (WMA/Parks) |
| North Dakota Corridor | Waterfowl Production Area | National Wildlife Refuge (NWR) |
| Project End Point | State Trust Lands | |

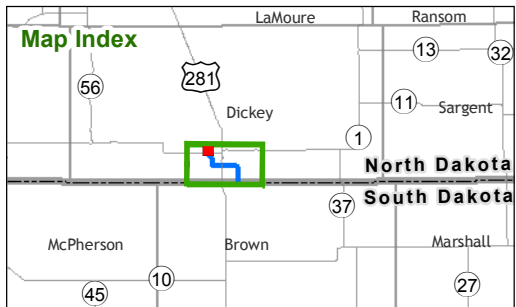
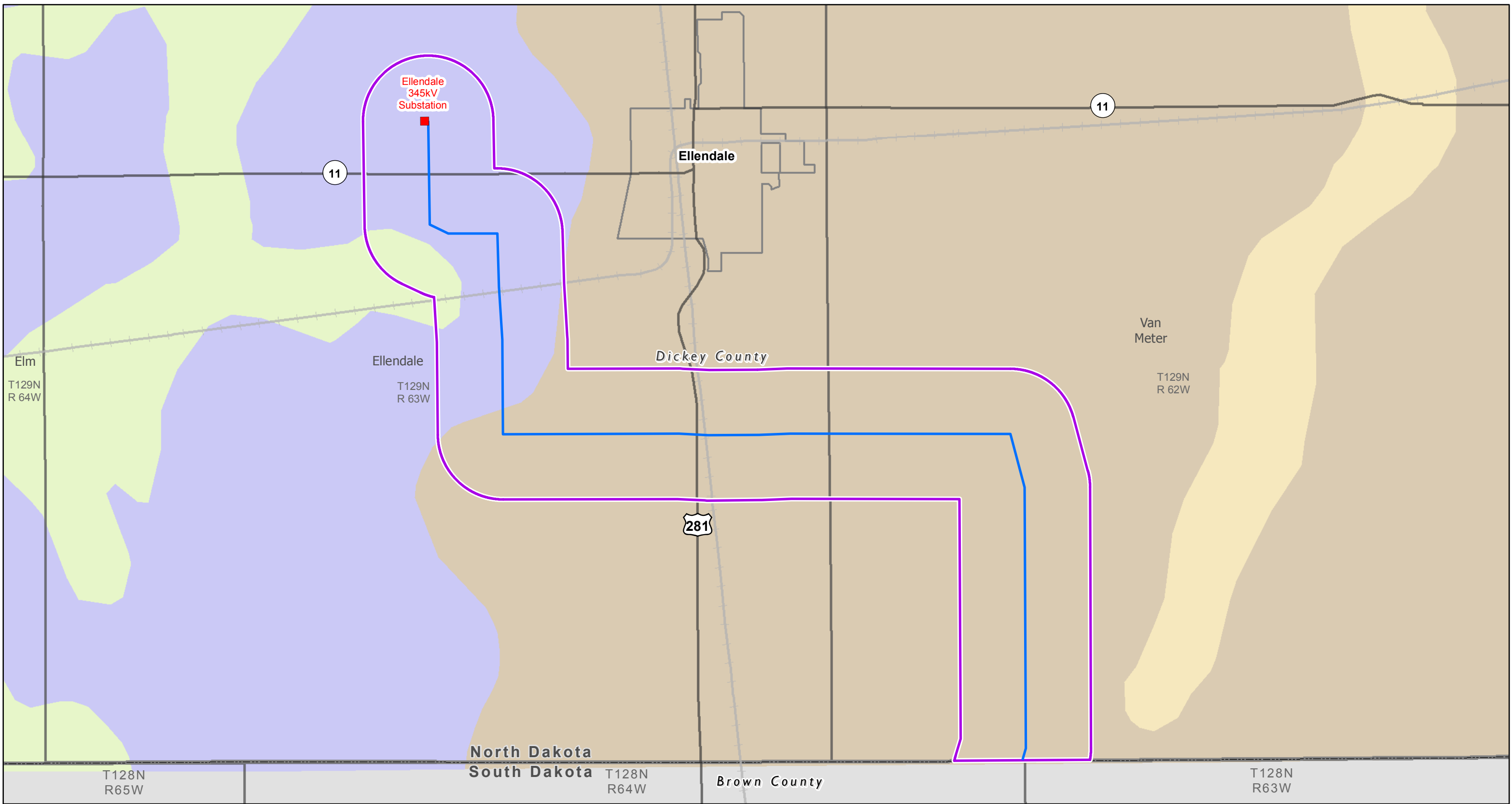
Figure 7
Managed Resource Lands
Big Stone South to Ellendale
345 kV Transmission Line Project

BSS+E
Big Stone South to Ellendale

Scale 1:100,000

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Path: \\mspe-gis-file\GISProj\LargeMDU_OTP\186675\map_docs\Permits\ND-PSC\RoutePermit\Application\Figure08_Soils_STATSGO_11X17_ND.mxd Date: 10/7/2013



Data Source: USDA, NRCS.

- North Dakota Route
 - North Dakota Corridor
 - Project End Point
 - Railroad
 - Abandoned Railroad
 - Highway
- STATSGO Soil Association**
- BARNES-SVEA-TONKA (ND045)
 - CAVOUR-SVEA-BARNES (ND052)
 - LA PRAIRIE-FAIRDALE-GARDENA (ND066)
 - SWENODA-BARNES-TIFFANY (ND014)

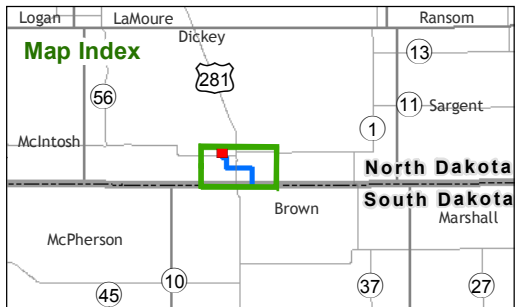
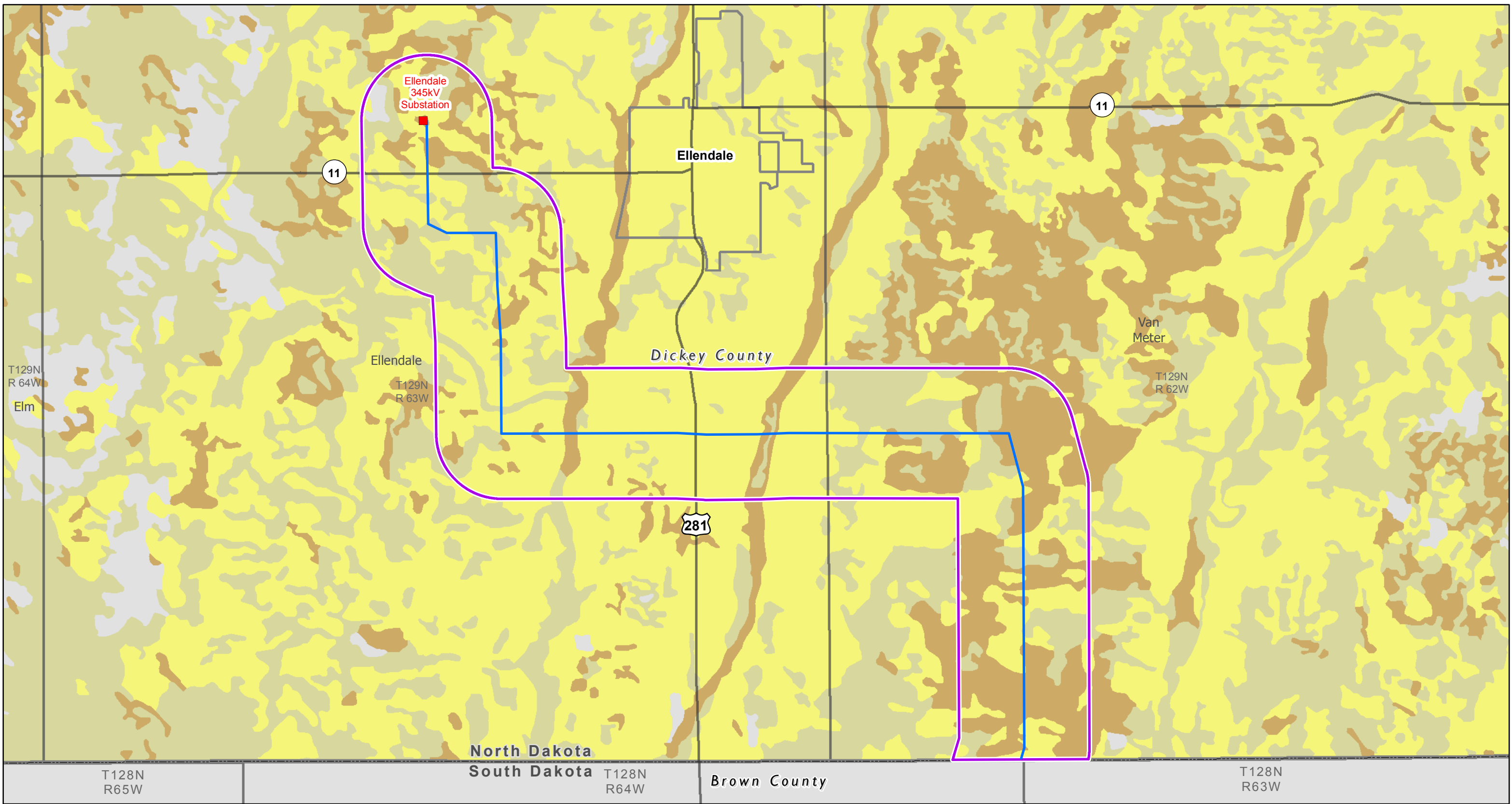
Figure 8
State Soils Association (STATSGO)
Big Stone South to Ellendale
345 kV Transmission Line Project

0 0.5 1 Miles

BSS+E
Big Stone South to Ellendale

Scale 1:45,000

Path: \\inspe-gis-file\GIS\Proj\Large\MDU_OTP\186675\map_docs\Permits\ND-PSC\RoutePermit\Application\Figure09_Soils_SSURGO_PrimeFarmland_11x17_ND.mxd Date: 10/7/2013



Data Source: USDA, NRCS.

- North Dakota Route
- North Dakota Corridor
- Project End Point
- SSURGO Prime Farmland
 - All areas are prime farmland
 - Prime farmland if drained
 - Not prime farmland
 - No Data

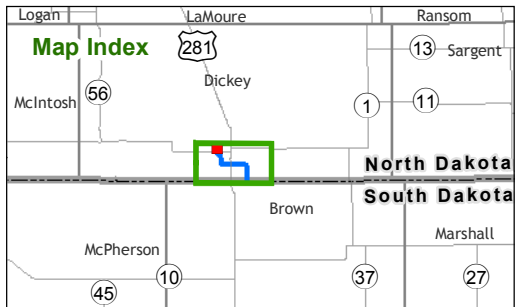
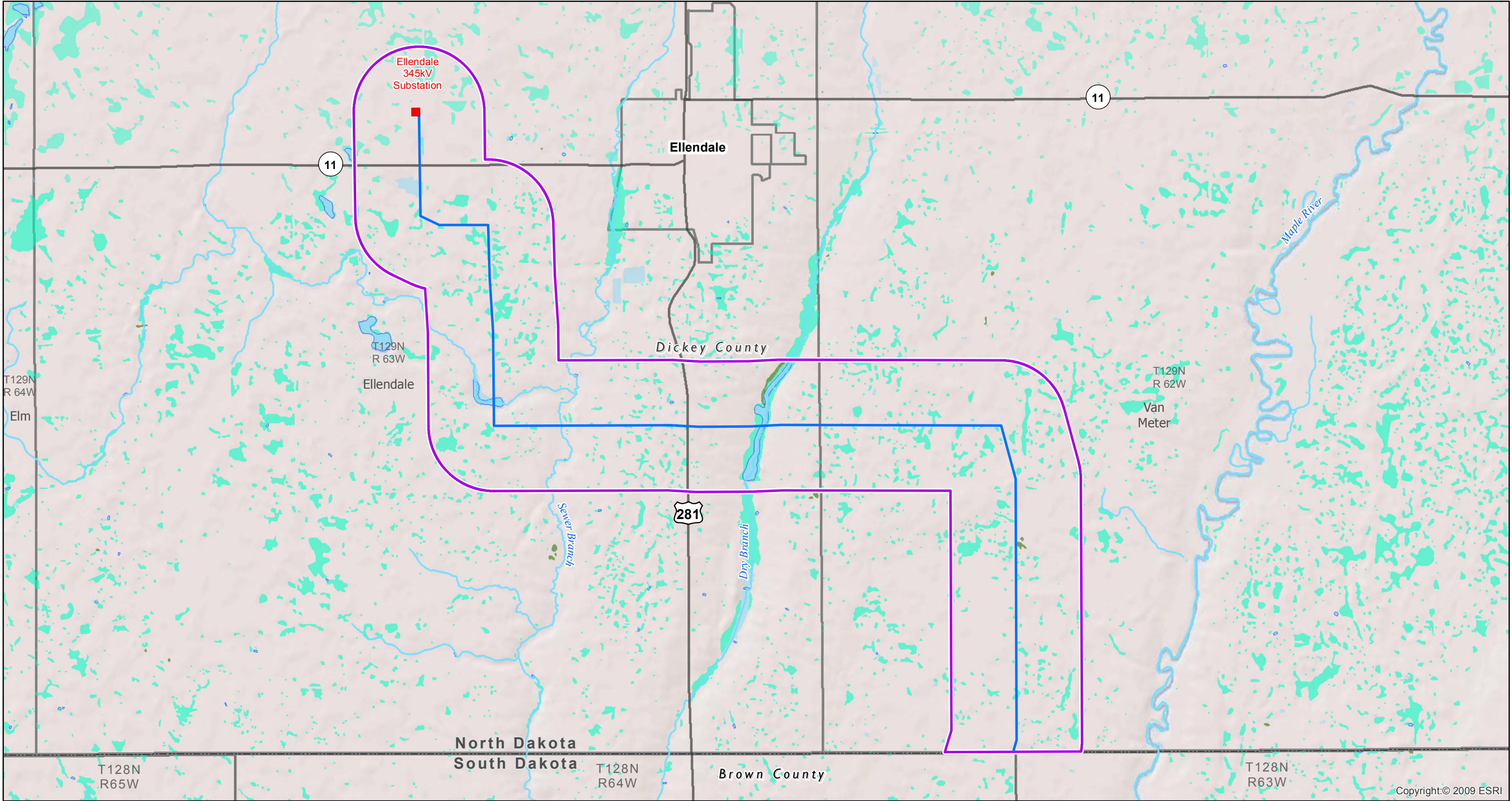
Figure 9
Prime Farmland and Soil Distribution (SSURGO)
Big Stone South to Ellendale
345 kV Transmission Line Project

0 0.5 1 Miles

BSS+E
Big Stone South to Ellendale

Scale 1:45,000

Path: \\inspe-01s-file\GIS\Profil\large\MDU_OTP\188675\map_docs\Permits\ND-PSC\RoutePermit\Application\Figure10_Water_11X17_ND.mxd Date: 10/7/2013



Data Source: USGS, NDSWC, USFWS.

- | | | |
|-----------------------|-----------------------------------|-------------|
| North Dakota Route | NWI Wetlands | Streams |
| North Dakota Corridor | Freshwater Pond; Lake; Riverine | Waterbodies |
| Project End Point | Freshwater Emergent Wetland | |
| | Freshwater Forested/Shrub Wetland | |

Figure 10
Surface Waters and Wetlands
Big Stone South to Ellendale
345 kV Transmission Line Project

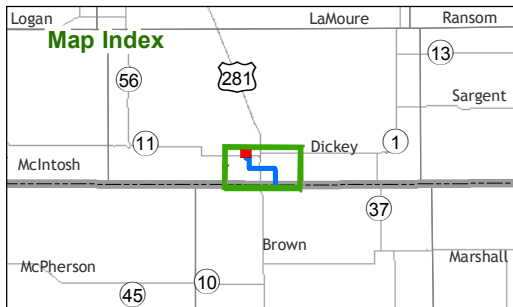
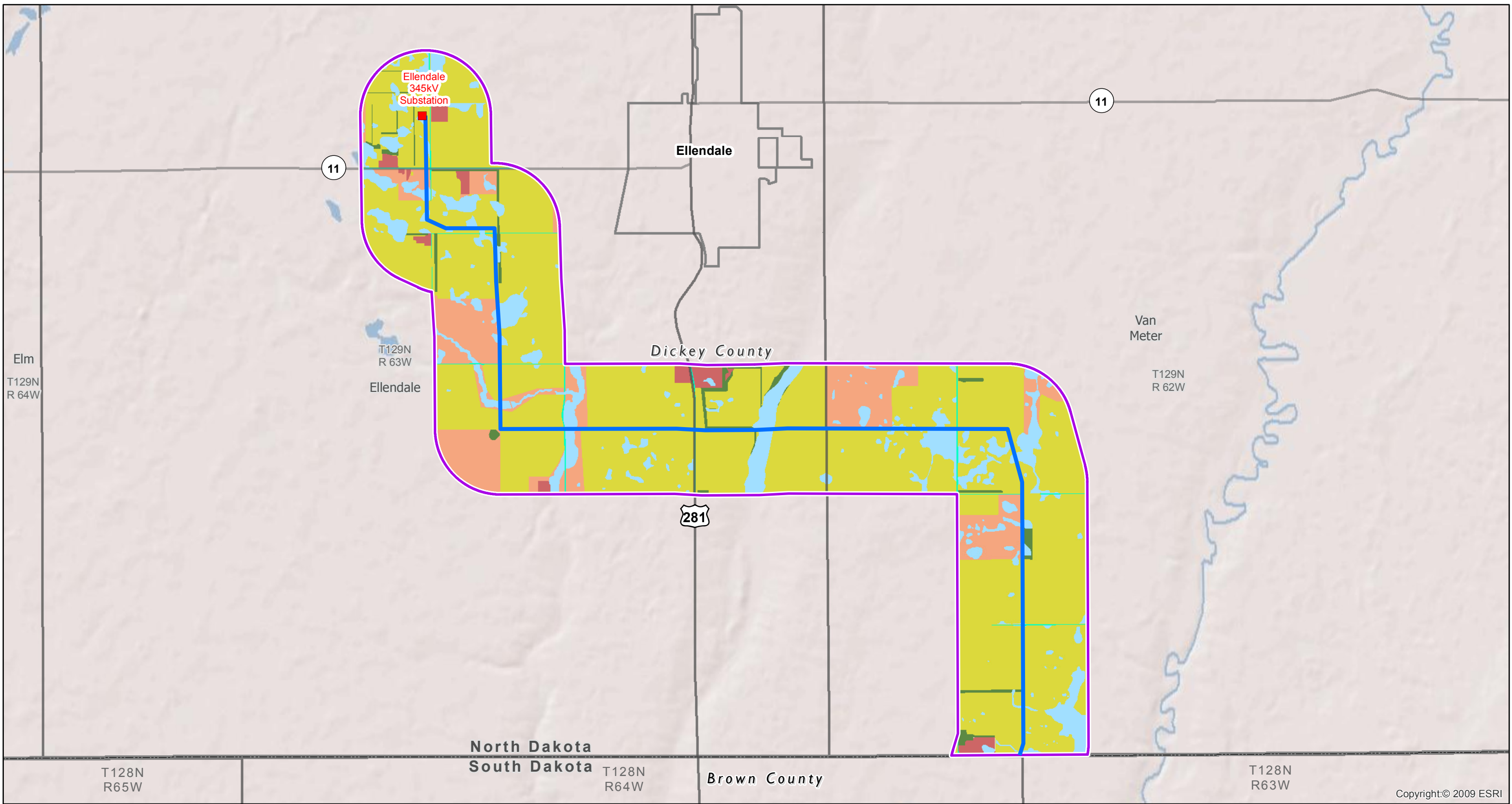
Miles
0 0.5 1

BSS+E
Big Stone South to Ellendale

Scale 1:45,000

Copyright:© 2009 ESRI

Path: \\inspe-gis\file\GIS\Pro\large\MDU_OTP\186675\map_docs\Permits\ND-PSC\RoutePermit\Application\Figure11_LandCover_Digitized_11X17_ND.mxd Date: 10/8/2013



Data Source: HDR, Land Cover digitized based on World Imagery 2010 and Field Surveys.

- North Dakota Route

North Dakota Corridor

Project End Point
- Cultivated

Developed Open Space (Road)

Developed (Buildings, farmsteads, substations)

Pasture/Hay

Trees

Wetland (Desktop Digitized)

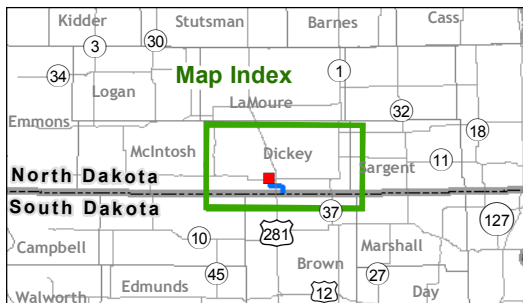
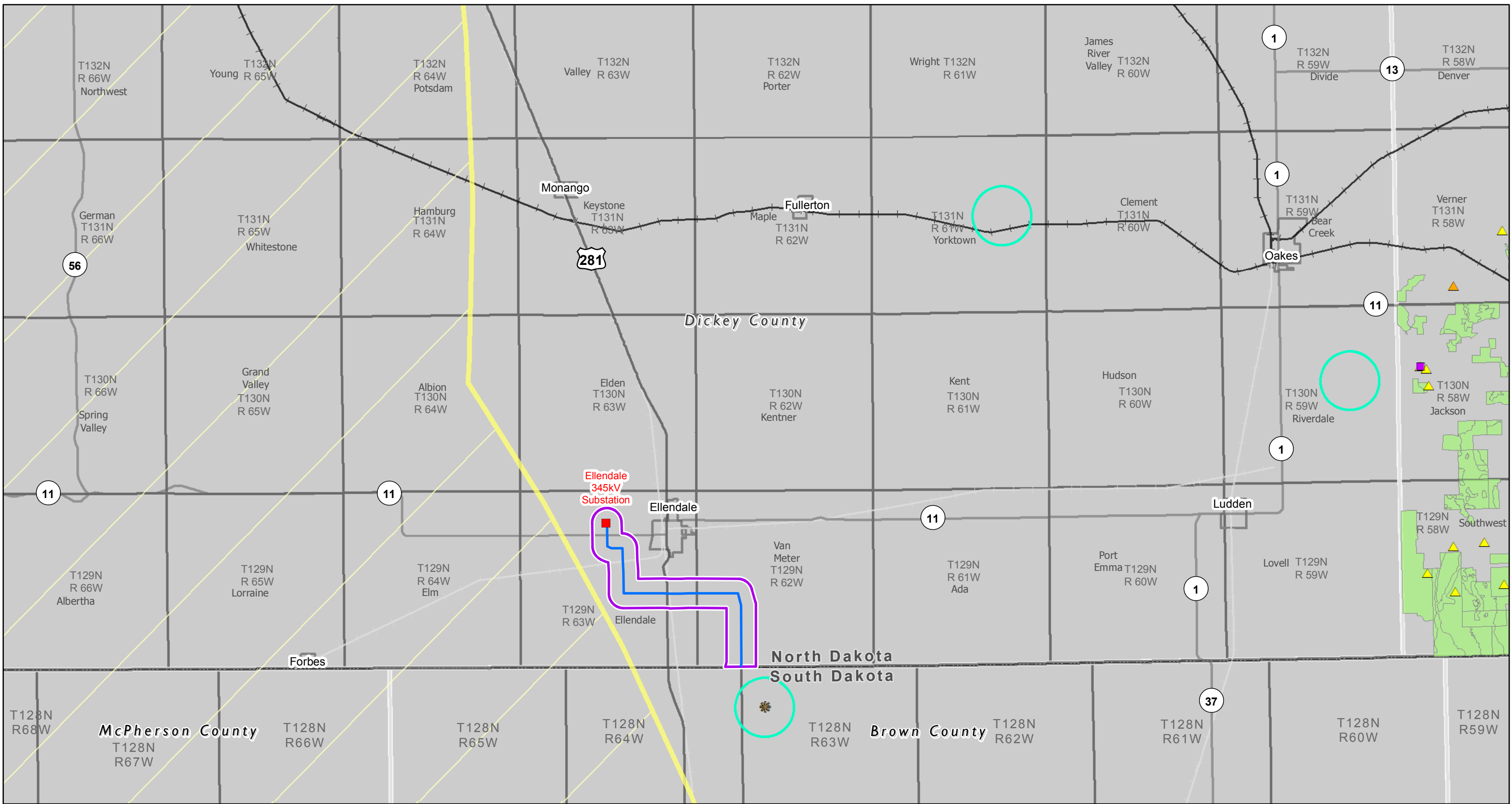
Figure11
Land Cover
Big Stone South to Ellendale
345 kV Transmission Line Project

00.51

Miles

Scale 1:45,000

Path: \\inspe-01s-file\GIS\Profile\MDO_OTP\186675\map_docs\Permits\ND-PSC\RoutePermitApplication\Figure12_SensitiveNatRes_11X17_ND.mxd Date: 10/7/2013



Data Source: NDPRD, NDGF.

Sensitive information has been redacted from this Figure.

- | | | | |
|-----------------------|---------------------------------------|--|--|
| North Dakota Route | Eagle Nest-field verified | Endangered Species (State) | Impaired or Vulnerable Terrestrial Community |
| North Dakota Corridor | Eagle Location (1 mile buffer) | Threatened Species (State) | Railroad |
| Project End Point | 95% Whooping Crane Migration Corridor | Federal candidate species (Federal) | Abandoned Railroad |
| | | Federally threatened species (Federal) | Highway |

Figure 12
Sensitive Natural Resources
Big Stone South to Ellendale
345 kV Transmission Line Project

Miles
0 2 4

Scale 1:200,000