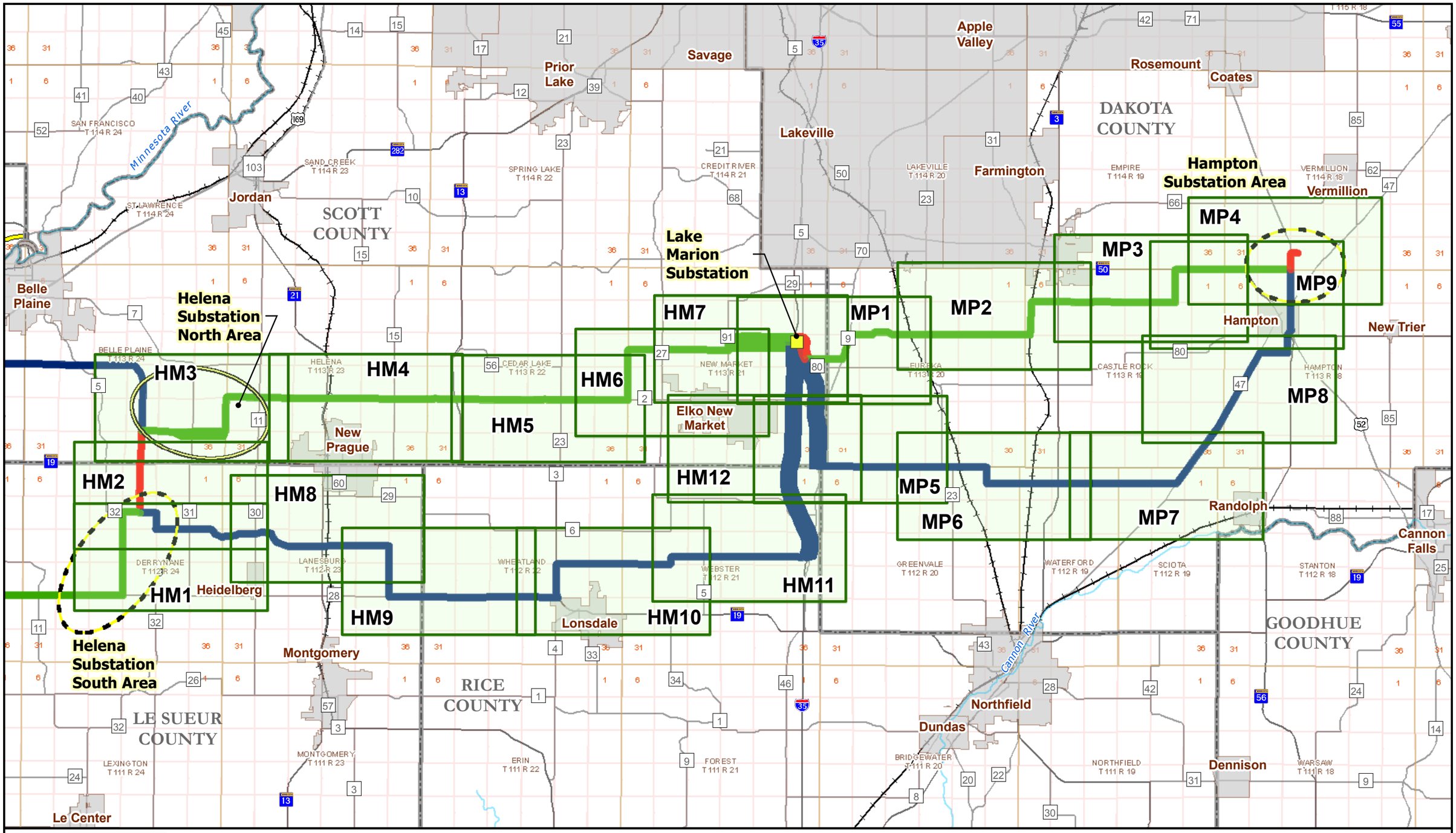


CapX2020

Delivering electricity you can rely on

0 2.5 5 Miles

N

Preferred Substation Area

Alternate Substation Area

Project Substations

City

Routes

Preferred

Alternate

Both Preferred & Alternate

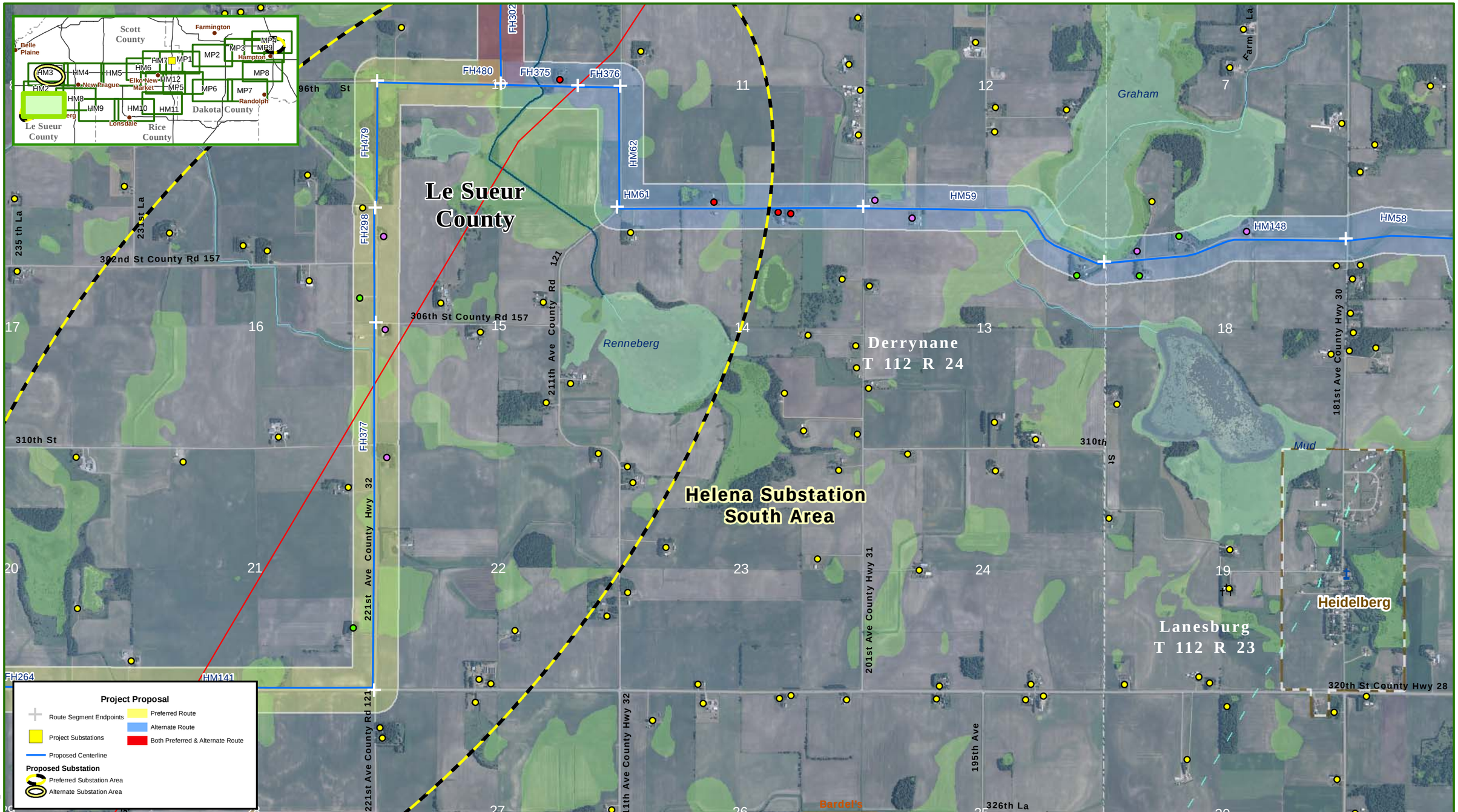
Detailed Map Extent

Appendix B.6 - Detailed Route Maps Index
Helena Substation Area to Hampton Substation Area

Route Permit
Brookings County - Hampton
345 kV Transmission Line

Map Document: (\\mspe-gis-file\GISProj\GRE\64620\map_docs\mxd\Route_Permit\appendix\detail\indexes\map_11x17_L_index_area_HM_MP_121508.mxd) 12/22/2008

This page left intentionally blank



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

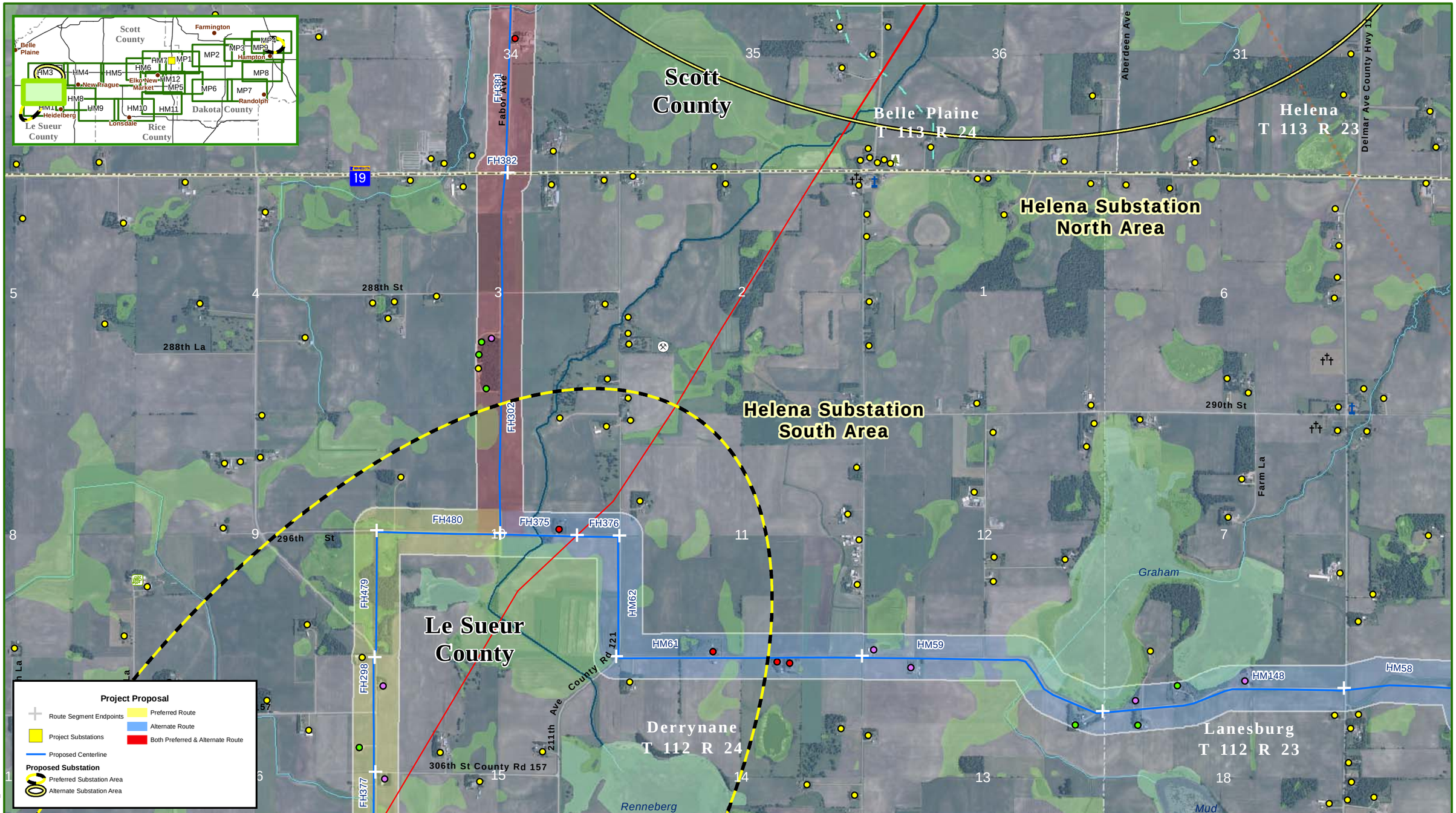
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM1
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detail\map_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations
Transmission Lines
69 kV - Existing
115 kV - Existing
230 kV - Existing
345 kV - Existing
69 kV - Proposed
115 kV - Proposed
230 kV - Proposed

Cemetery
Churches
Parks and Recreation
Aggregate locations
FCC Telecom Tower
Certified Organic Farm
Scenic Byway
Planned MN DOT Upgrades
Existing Pipeline

Railroad Prairie
Center Pivot Irrigation
MCES Planned Interceptor
Trails
Existing State & Regional Trail
Regional Planned & Proposed Trail
Snowmobile Trail
MCBS Biodiversity Significance
Moderate Significance
High Significance
Outstanding Significance

Homes (from Proposed Centerline)
75 - 150 ft
150 - 300 ft
300 - 500 ft
over 500 ft

MN State Wild and Scenic River
Scenic
Recreational
Hydrography and Wetlands
NWI Wetland
PWI Water
MN Trout Streams
Impaired Waters

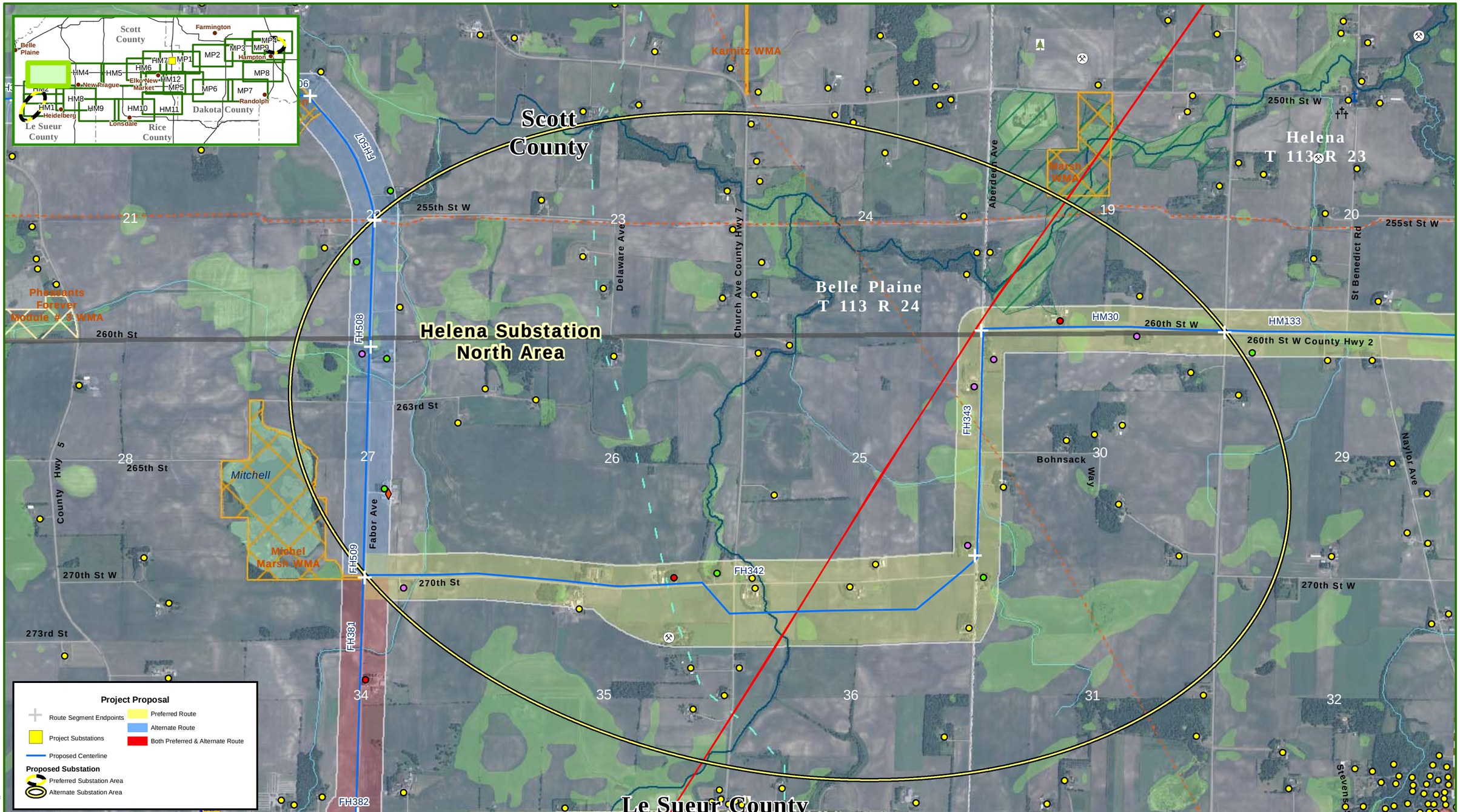
USFWS Easement
MN SNA
Metro Park
Metro Significant
USFWS WPA
USFWS NWR
MN WMA
State Funded
Federally Funded

Appendix B.6 - Sheet HM2
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

Data Source: Please refer to Section 12

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

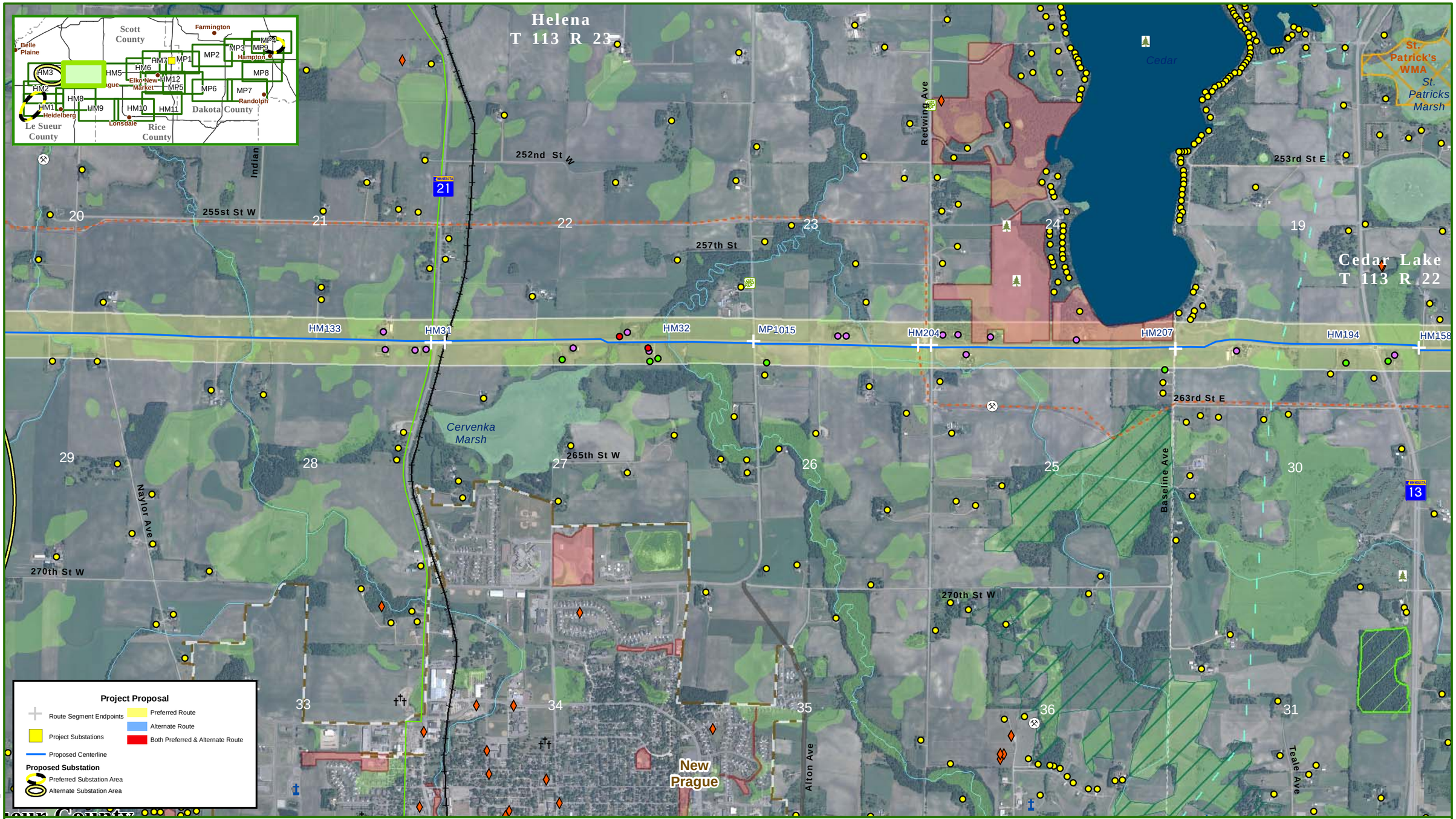
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM3
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detail\map_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

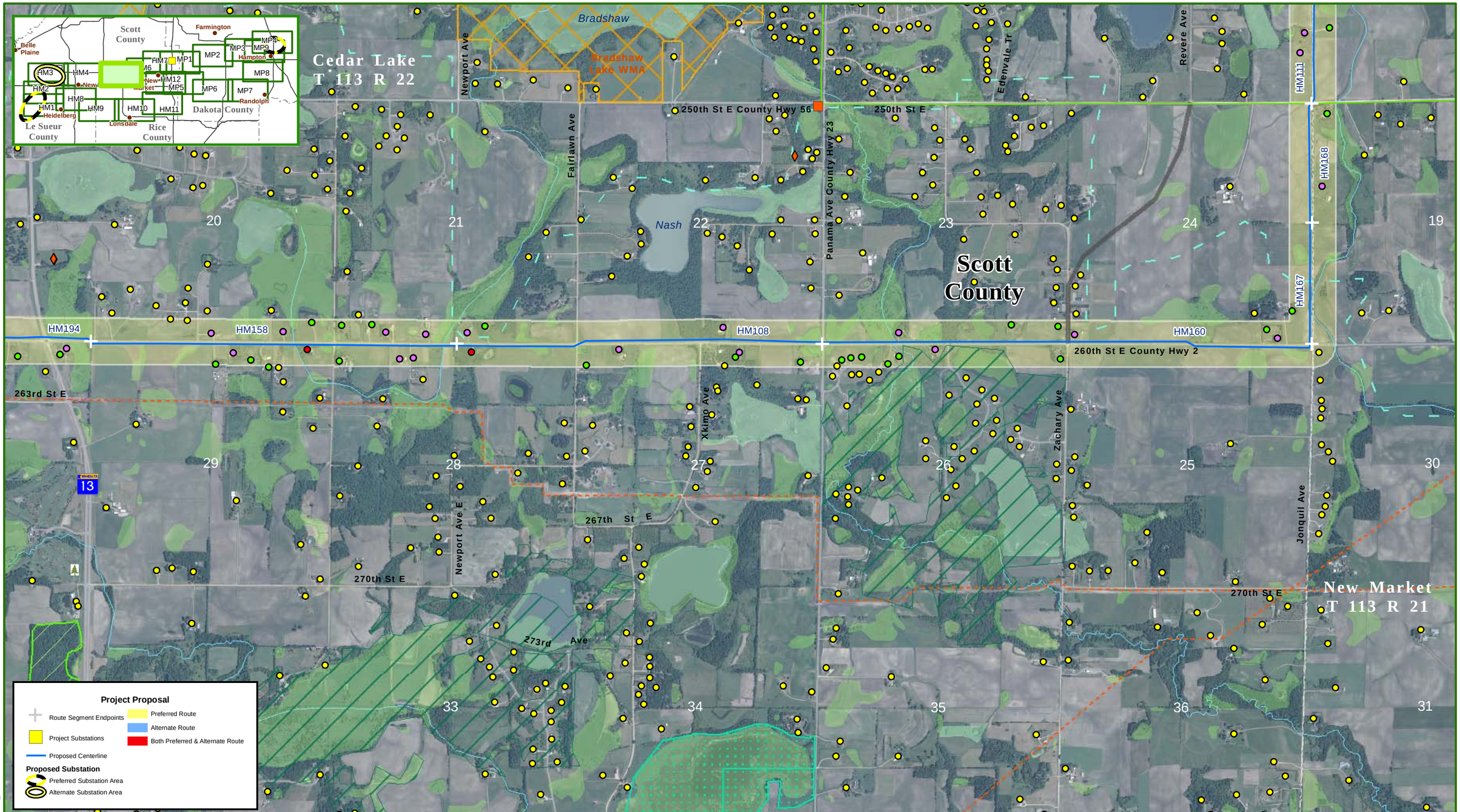
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM4
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

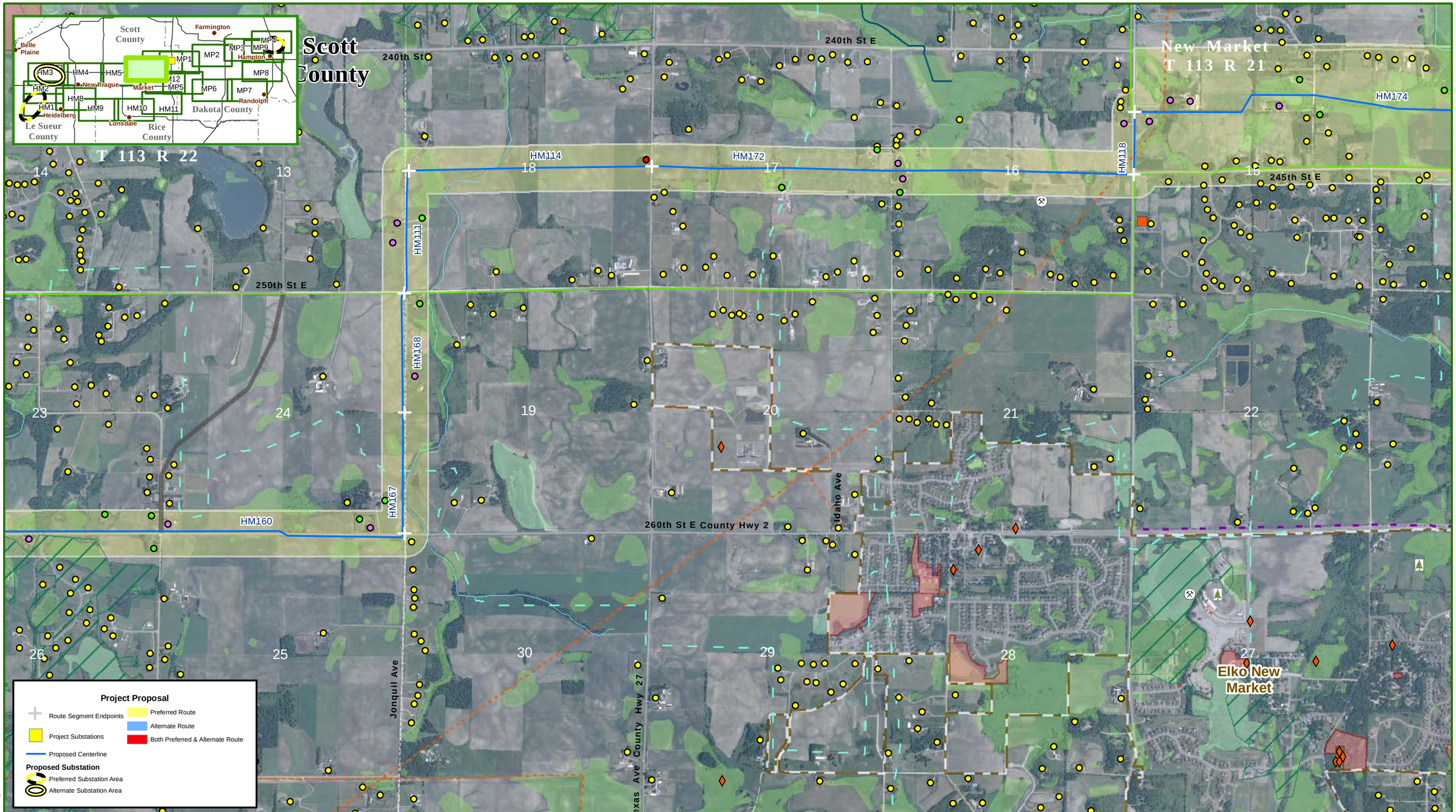
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM5
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations
Transmission Lines
69 kV - Existing
115 kV - Existing
230 kV - Existing
345 kV - Existing
69 kV - Proposed
115 kV - Proposed
230 kV - Proposed

Cemetery
Churches
Parks and Recreation
Aggregate locations
FCC Telecom Tower
Certified Organic Farm
Scenic Byway
Planned MN DOT Upgrades
Existing Pipeline

Railroad Prairie
Center Pivot Irrigation
MCES Planned Interceptor
Trails
Existing State & Regional Trail
Regional Planned & Proposed Trail
Snowmobile Trail
MCBS Biodiversity Significance
Moderate Significance
High Significance
Outstanding Significance

Homes (from Proposed Centerline)
75 - 150 ft
150 - 300 ft
300 - 500 ft
over 500 ft

MN State Wild and Scenic River
Scenic
Recreational
Hydrography and Wetlands
NWI Wetland
PWI Water
MN Trout Streams
Impaired Waters

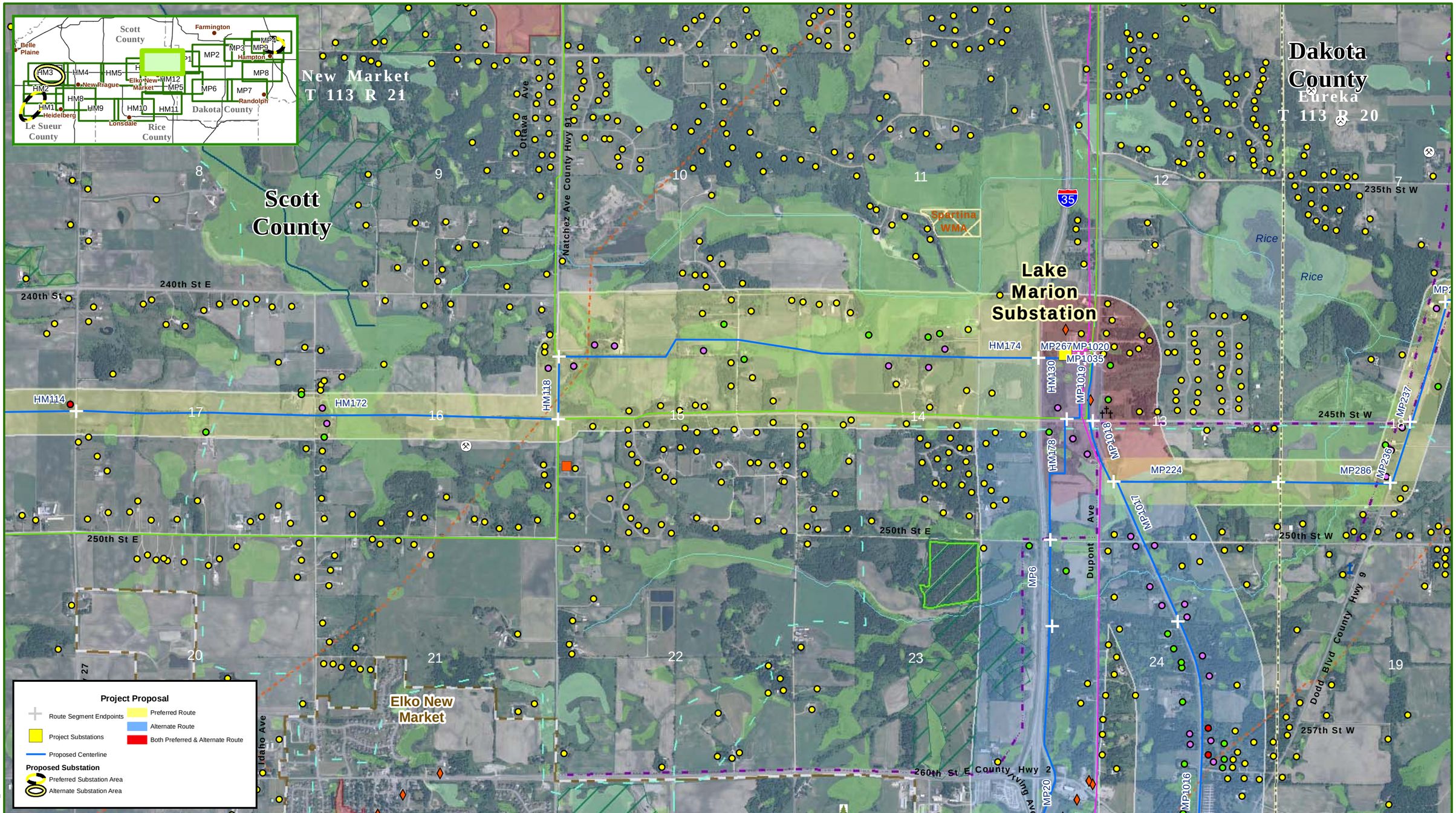
USFWS Easement
MN SNA
Metro Park
Metro Significant
USFWS WPA
USFWS NWR
MN WMA
State Funded
Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM6
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

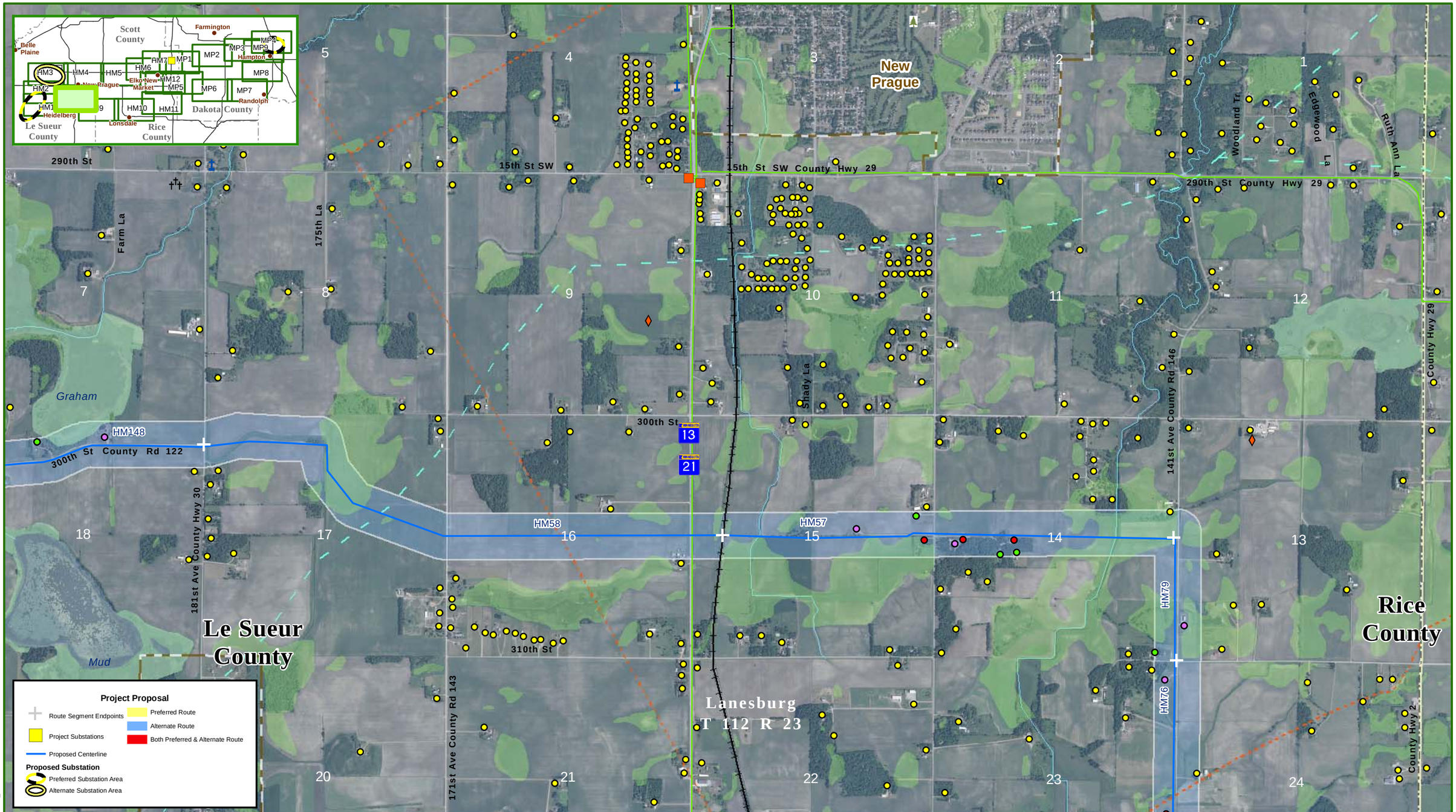
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM7
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

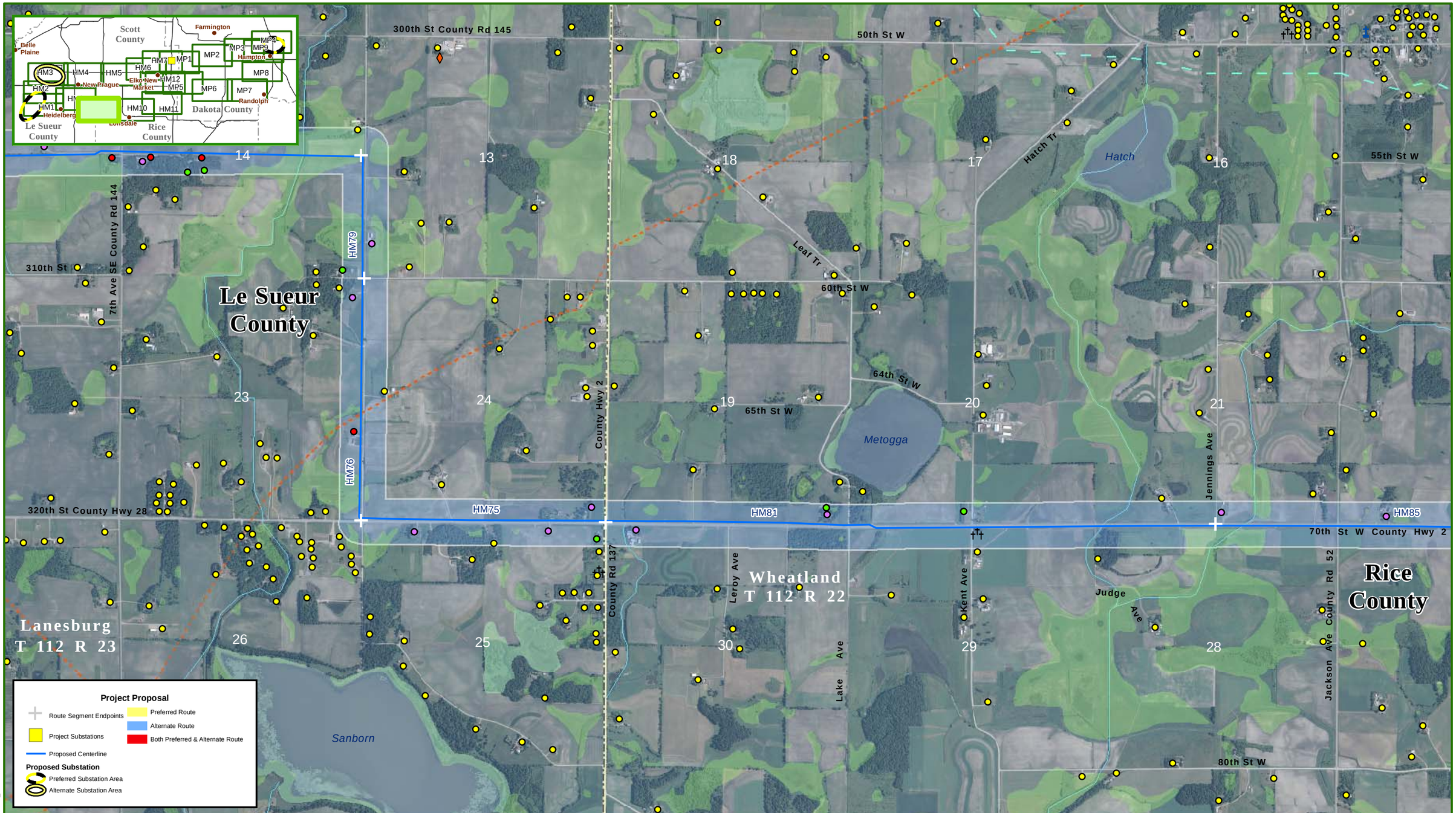
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM8
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detail\map_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

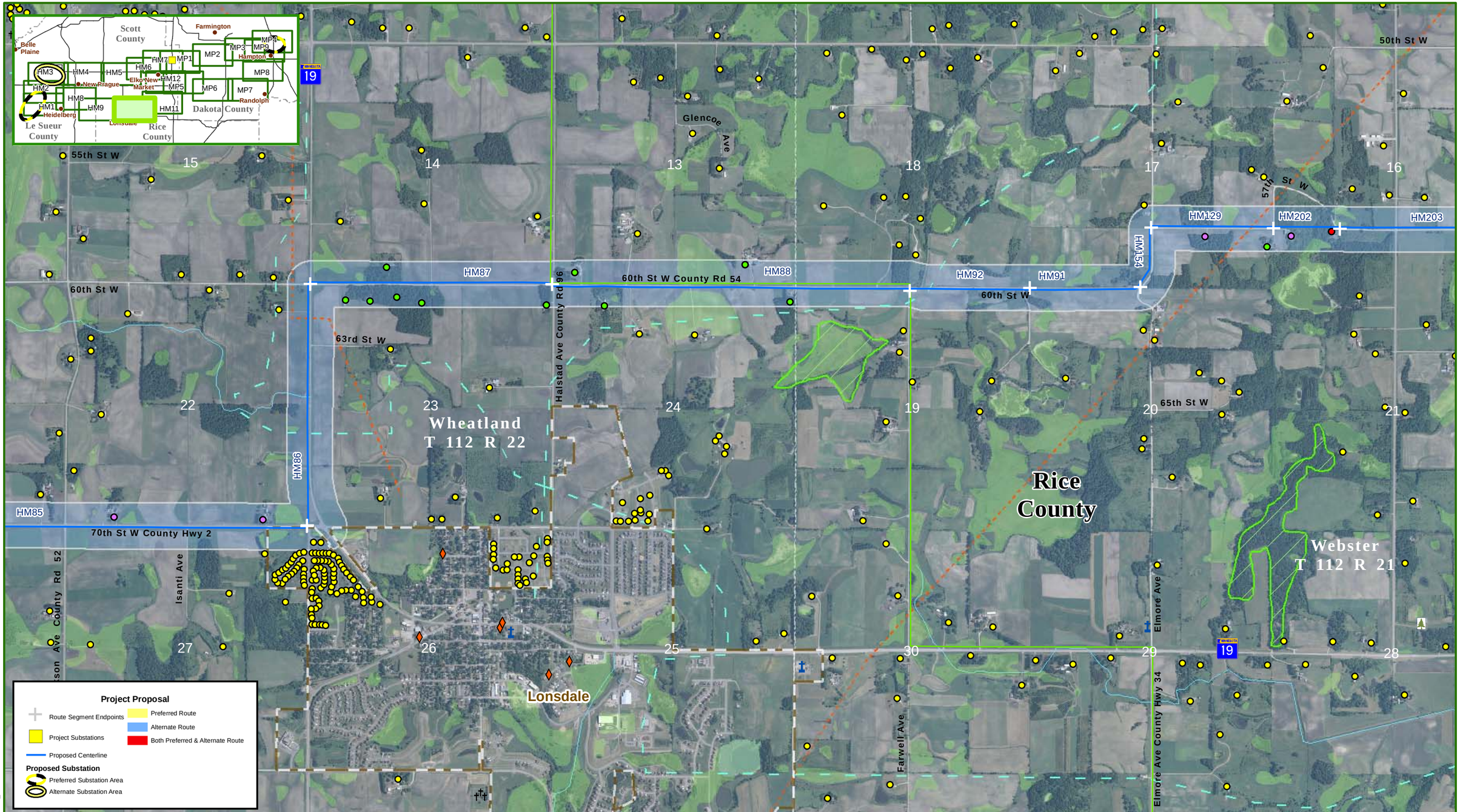
MN WMA
- State Funded
- Federally Funded

Appendix B.6 - Sheet HM9
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

Data Source: Please refer to Section 12

mxd\Route_Permit\appendix\detailmap_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations

Transmission Lines
- 69 kV - Existing
- 115 kV - Existing
- 230 kV - Existing
- 345 kV - Existing
- 69 kV - Proposed
- 115 kV - Proposed
- 230 kV - Proposed

- Cemetery
- Churches
- Parks and Recreation
- Aggregate locations
- FCC Telecom Tower
- Certified Organic Farm
- Scenic Byway
- Planned MN DOT Upgrades
- Existing Pipeline

- Railroad Prairie
- Center Pivot Irrigation
- MCES Planned Interceptor

Trails
- Existing State & Regional Trail
- Regional Planned & Proposed Trail
- Snowmobile Trail

MCBS Biodiversity Significance
- Moderate Significance
- High Significance
- Outstanding Significance

Homes (from Proposed Centerline)
- 75 - 150 ft
- 150 - 300 ft
- 300 - 500 ft
- over 500 ft

MN State Wild and Scenic River
- Scenic
- Recreational

Hydrography and Wetlands
- NWI Wetland
- PWI Water
- MN Trout Streams
- Impaired Waters

- USFWS Easement
- MN SNA
- Metro Park
- Metro Significant
- USFWS WPA
- USFWS NWR

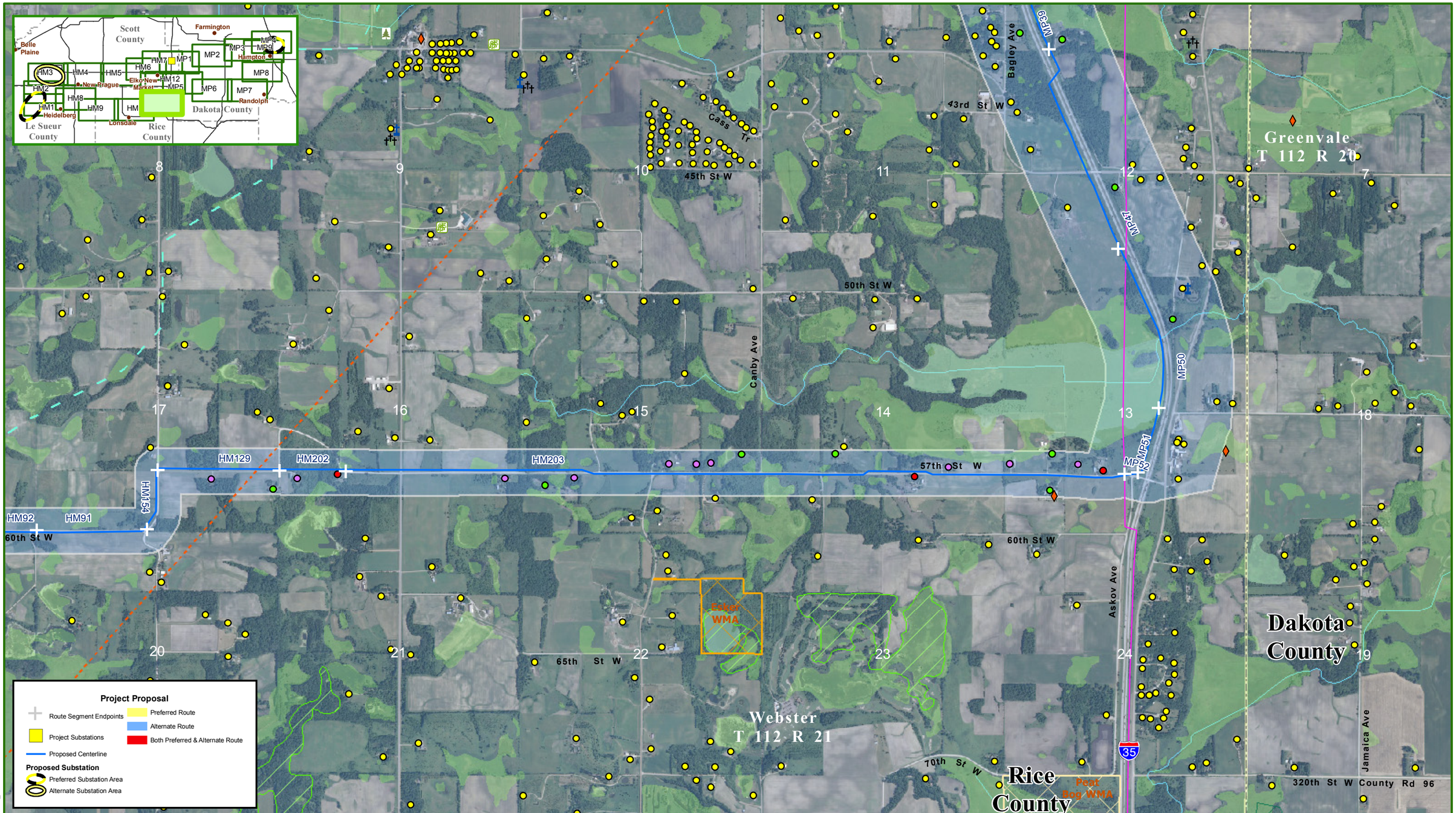
MN WMA
- State Funded
- Federally Funded

Data Source: Please refer to Section 12

Appendix B.6 - Sheet HM10
Helena Substation to
Lake Marion Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

mxd\Route_Permit\appendix\detail\map_11x17_L_detailed_routes.mxd 11/23/2008



CapX2020
Delivering electricity you can rely on

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

Existing Substations
Transmission Lines
69 kV - Existing
115 kV - Existing
230 kV - Existing
345 kV - Existing
69 kV - Proposed
115 kV - Proposed
230 kV - Proposed

Cemetery
Churches
Parks and Recreation
Aggregate locations
FCC Telecom Tower
Certified Organic Farm
Scenic Byway
Planned MN DOT Upgrades
Existing Pipeline

Railroad Prairie
Center Pivot Irrigation
MCES Planned Interceptor
Trails
Existing State & Regional Trail
Regional Planned & Proposed Trail
Snowmobile Trail
MCBS Biodiversity Significance
Moderate Significance
High Significance
Outstanding Significance

Homes (from Proposed Centerline)
75 - 150 ft
150 - 300 ft
300 - 500 ft
over 500 ft

MN State Wild and Scenic River
Scenic
Recreational
Hydrography and Wetlands
NWI Wetland
PWI Water
MN Trout Streams
Impaired Waters

USFWS Easement
MN SNA
Metro Park
Metro Significant
USFWS WPA
USFWS NWR
MN WMA
State Funded
Federally Funded

Supplement 12/31/2008

Appendix B.6 - Sheet HM11
Lake Marion Substation to
Hampton Substation
Detailed Route Maps

Route Permit
Brookings County - Hampton
345 kV Transmission Line

Data Source: Please refer to Section 12

mxd\Route_Permit\appendix\detail\map_11x17_L_detailed_routes.mxd 11/23/2008