Appendix E. Resource Maps

Hubbard Substation

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

GAP Land Cover
- Forested Area
- Barren
- Water/Wetlands
- Cropland
- Grassland
- Urban
- Shrub Land
- Transportation

0 0.25 0.5 Miles

Straight River Substation
Hubbard Substation
A
B
Blueberry Substation
C
Red Eye Substation

Map E1-A

Land Use

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Updated: 7/29/2015

N

Straight River Substation

Straight River Township

Green Valley Township

Becker County

Hubbard County

Lowe WMA

T 139N R 36W

T 139N R 35W

Hubbard County

Wadena County

T 138N R 36W

T 138N R 35W

Runeberg Township

Blueberry Township

Kettle River

Spirit Lake

City of Menahga

Western Blueberry Substation Site Alternative

Blueberry Route Alternative

Blueberry Substation

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

GAP Land Cover
- Forested Area
- Barren
- Water/Wetlands
- Cropland
- Grassland
- Urban
- Shrub Land
- Transportation

0 0.25 0.5 Miles

Straight River Substation
Hubbard Substation
A
B
Blueberry Substation
C
Red Eye Substation

Map E1-B

Land Use

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Updated: 7/29/2015

N

Blueberry Route Alternative

Blueberry Substation

City of Menahga

T 138N R 35W

Blueberry Township

U.S. Route 71 Route Alternative

Pipeline South Route Alternative

East of 109th Avenue Route Alternative

119th Avenue Route Alternative

T 137N R 35W

Red Eye Township

Red Eye WMA

Red Eye Substation

Wood Eye WMA

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

GAP Land Cover
- Forested Area
- Barren
- Water/Wetlands
- Cropland
- Grassland
- Urban
- Shrub Land
- Transportation

0 0.25 0.5 Miles

Straight River Substation
Hubbard Substation
A
B
C
Blueberry Substation
Red Eye Substation

Map E1-C

Land Use

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Updated: 7/29/2015

N

Gravel Pit
Blueberry Route Alternative
Blueberry Substation
Spirit Lake
City of Menahga
T 138N R 35W
Blueberry Township
U.S. Route 71 Route Alternative
Pipeline South Route Alternative
Gravel Pit
Gravel Pit
119th Avenue Route Alternative
East of 109th Avenue Route Alternative
Gravel Pit
T 137N R 35W
Red Eye Township
Red Eye WMA
Gravel Pit
Red Eye Substation
Gravel Pit
Wood Eye WMA

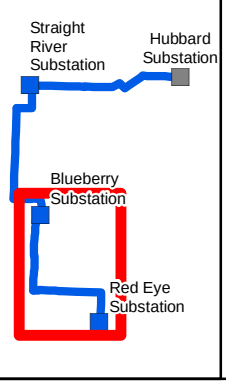
Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

- Mining | Gravel Pits

0 0.25 0.5 Miles



Map E2

Mining | Gravel Pits

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Updated: 7/29/2015

N

Fair Havens Golf Course
Moran Lake
Long Lake (s) Access Trailer Launch Plank
Hinds Lake Access Trailer Launch Earth
Lord Lake
Hinds Lake
Straight River Township
Fishhook River
Hubbard Township
Hubbard Substation
Hubbard County
Wadena County
Twin Lakes
South Twin Lake Access Trailer Launch Slab
Blueberry Lake Access Trailer Launch Slab
Bill Lake
Blueberry Lake
Stocking Creek
Blueberry Township
Shell River Township
Stocking Lake
T 139N R 35W
T 139N R 34W
T 138N R 35W
T 138N R 34W

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

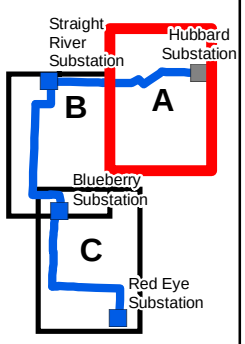
Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Recreational Areas
- Bike Trail
- Snowmobile Trail
- State Trail
- Recreation Area

0 0.25 0.5 Miles



Map E3-A

Recreational Areas

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Topographic Map from ESRI basemap service. Updated: 7/29/2015

N

Straight River Substation

Straight River Township

Green Valley Township

Becker County

Hubbard County

Lowe WMA

T 139N R 36W

T 139N R 35W

Hubbard County

Wadena County

Blueberry River

Blueberry Pines Golf Club

T 138N R 36W

Wolf Pack Trails

Runeberg Township

Becker County

Wadena County

Blueberry Township

T 138N R 35W

Kettle River

City of Menahga

Spirit Lake Access Trailer Launch Slab

Spirit Lake

Menahga Campground

Western Blueberry Substation Site Alternative

Blueberry Route Alternative

Blueberry Substation

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Recreational Areas
- Bike Trail
- Snowmobile Trail
- State Trail
- Recreation Area

0 0.25 0.5 Miles

Straight River Substation
Hubbard Substation
A
B
Blueberry Substation
C
Red Eye Substation

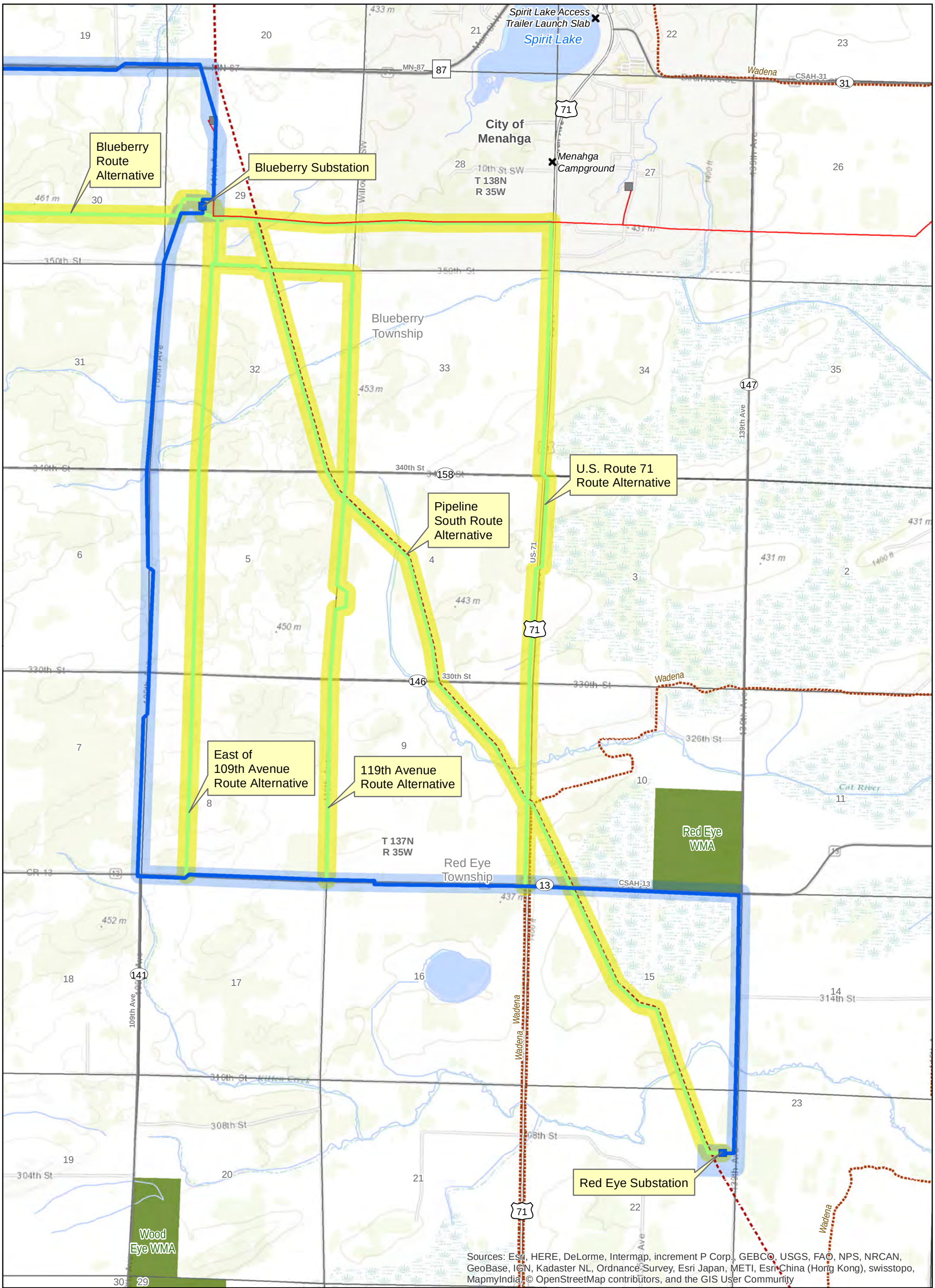
Map E3-B

Recreational Areas

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Topographic Map from ESRI basemap service. Updated: 7/29/2015

N



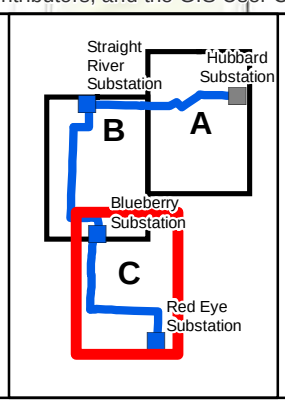
Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Recreational Areas
- Bike Trail
- Snowmobile Trail
- State Trail
- Recreation Area

0 0.25 0.5 Miles



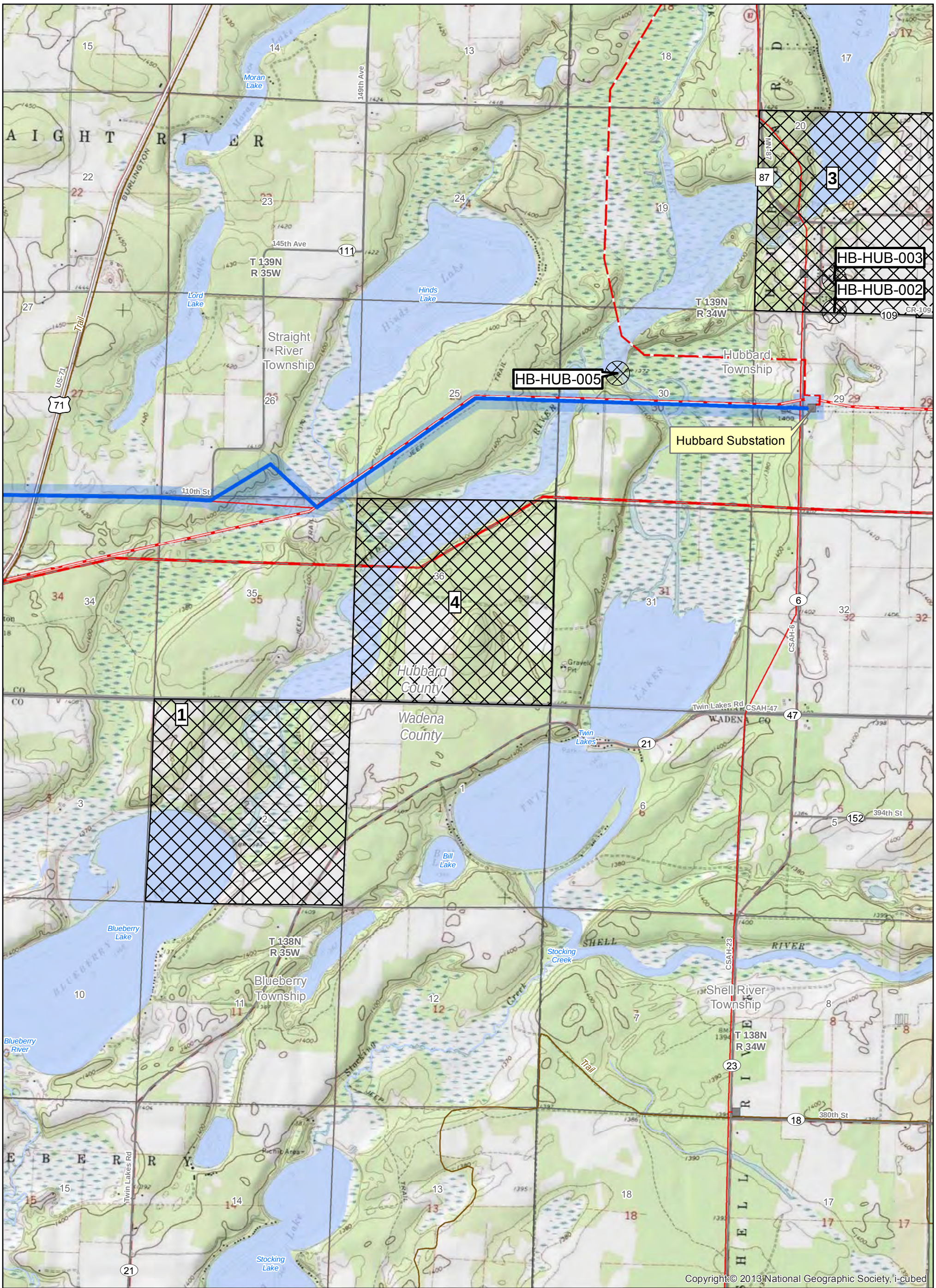
Map E3-C

Recreational Areas

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topographic Map
from ESRI basemap service.
Updated: 7/29/2015

N

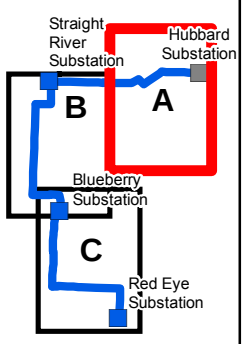


Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation
- Number of Archaeological Sites Per Section
- Previously Identified Architectural/Historic Site

0 0.25 0.5 Miles



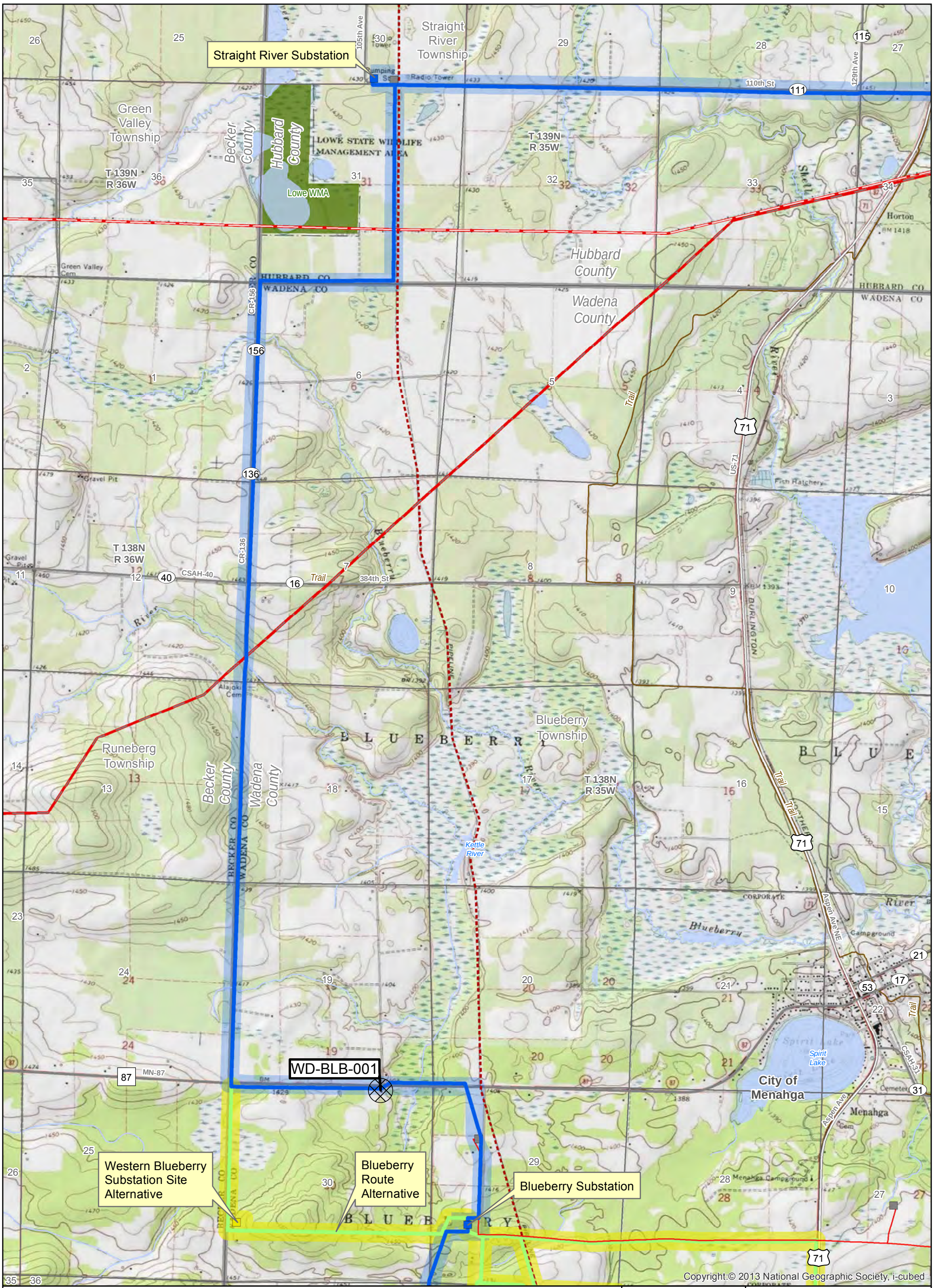
Map E4-A

Archaeological and Historic Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topo from ESRI basemap service.
Updated: 7/29/2015

N

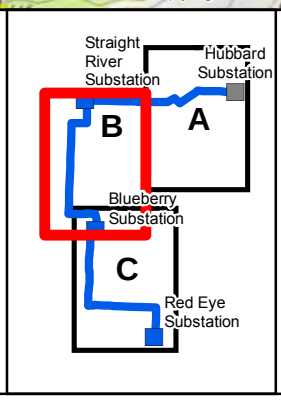


Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation
- Number of Archaeological Sites Per Section
- Previously Identified Architectural/Historic Site

0 0.25 0.5 Miles



Map E4-B

Archaeological and Historic Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topo from ESRI basemap service.
Updated: 7/29/2015

N

WD-BLB-001
Blueberry Route Alternative
Blueberry Substation
City of Menahga
T 138N R 35W
Blueberry Township
U.S. Route 71 Route Alternative
Pipeline South Route Alternative
East of 109th Avenue Route Alternative
119th Avenue Route Alternative
T 137N R 35W
Red Eye Township
Red Eye WMA
Wood Eye WMA
Red Eye Substation
1

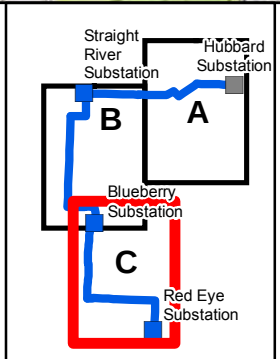
Copyright:© 2013 National Geographic Society, i-cubed

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation
- Number of Archaeological Sites Per Section
- Previously Identified Architectural/Historic Site

0 0.25 0.5 Miles



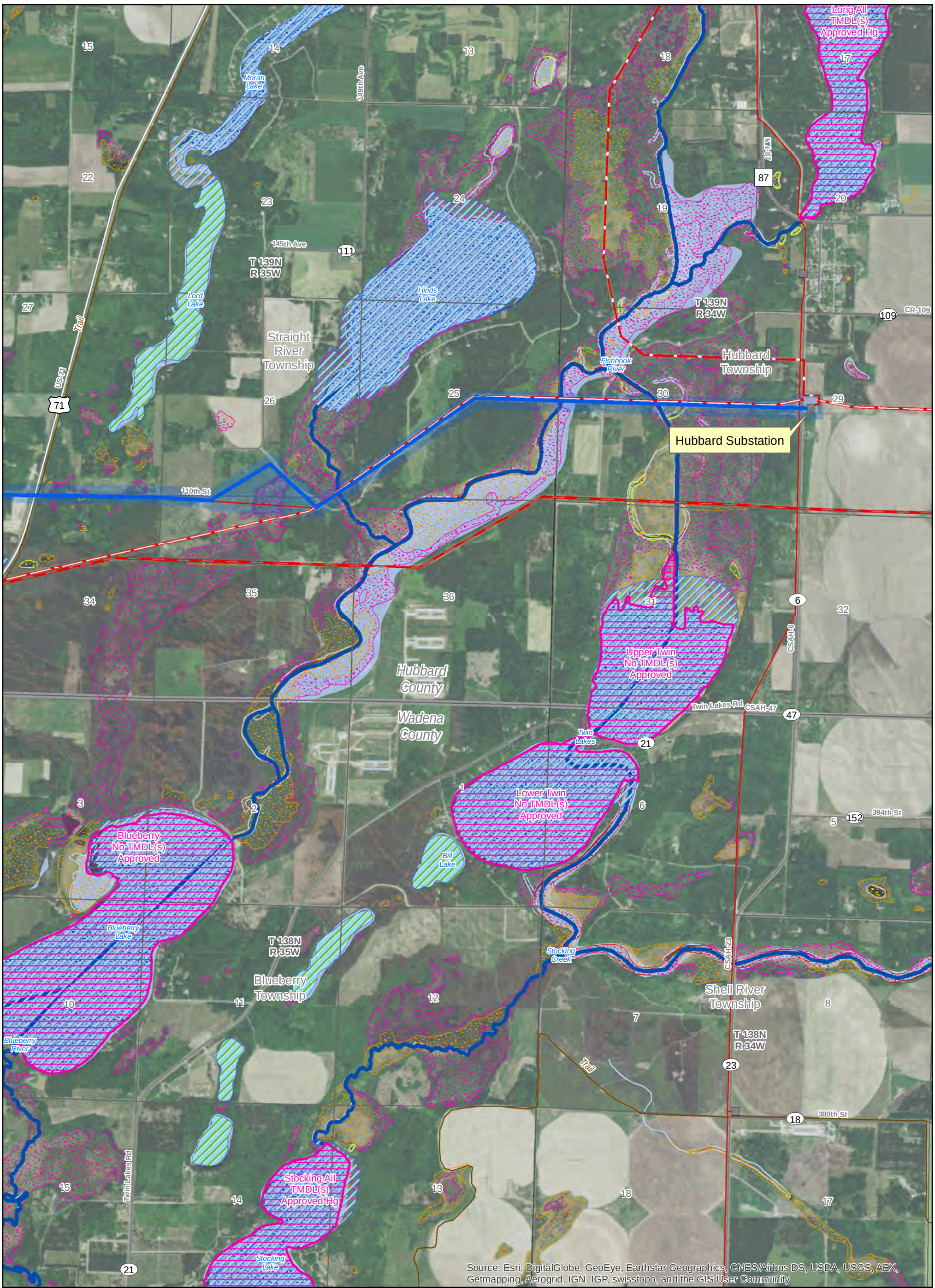
Map E4-C

Archaeological and Historic Resources

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Topo from ESRI basemap service. Updated: 7/29/2015

N



Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

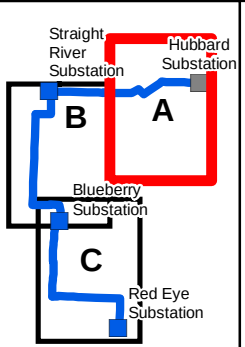
Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Hydrologic Features
- PWI Lake
- PWI Wetland
- PWI River

NWI Wetlands
- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Impaired Waters
- Impaired Streams
- Wetlands
- Impaired Lakes

0 0.25 0.5 Miles



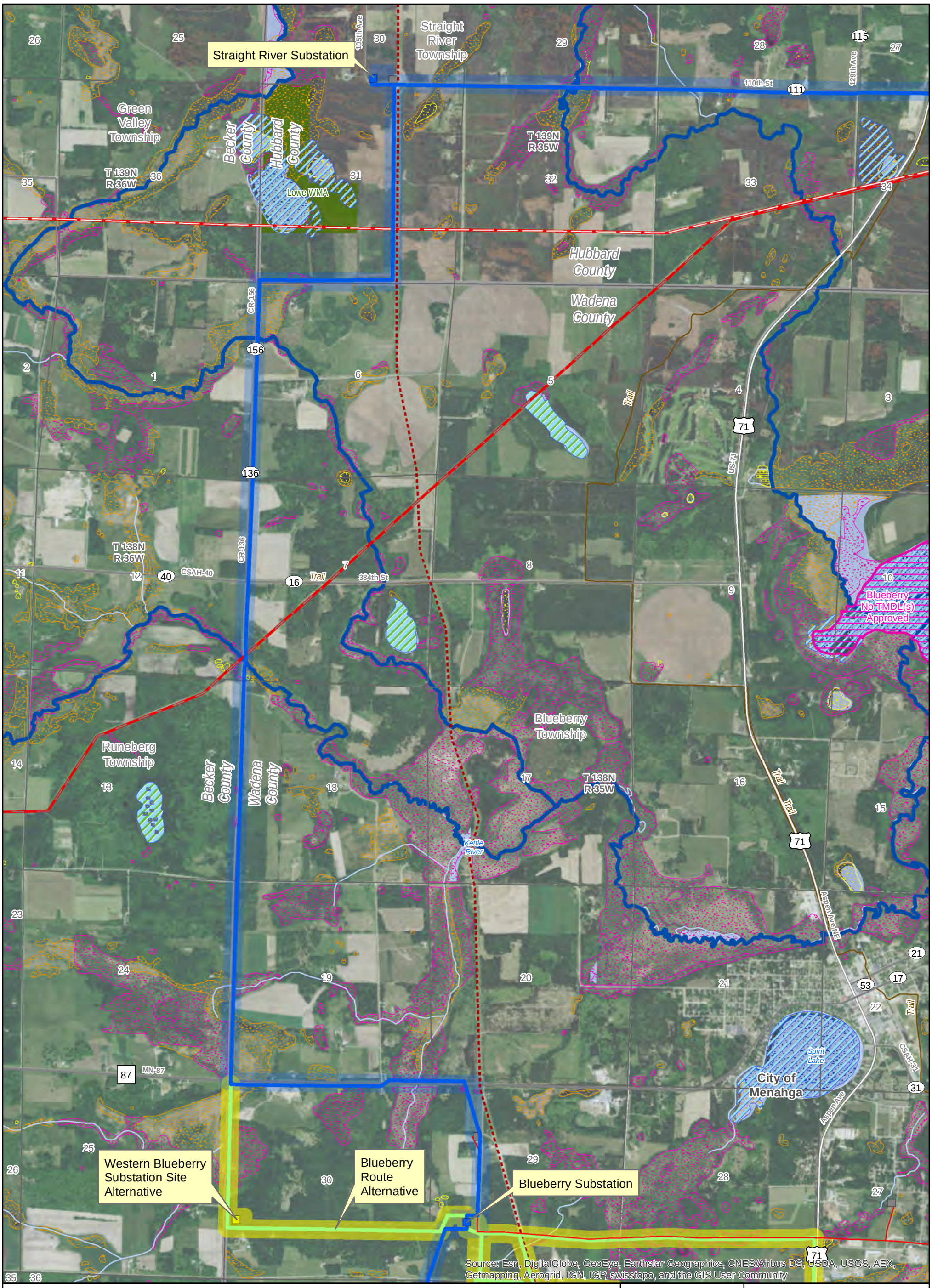
Map E5-A

Water Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Aerial from ESRI basemap service
Updated: 7/29/2015

N



Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

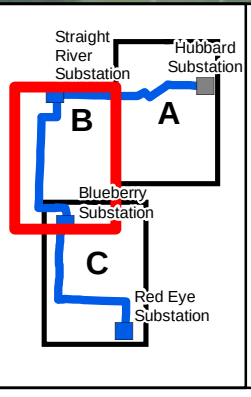
Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Hydrologic Features
- PWI Lake
- PWI Wetland
- PWI River

NWI Wetlands
- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Impaired Waters
- Impaired Streams
- Wetlands
- Impaired Lakes

0 0.25 0.5 Miles



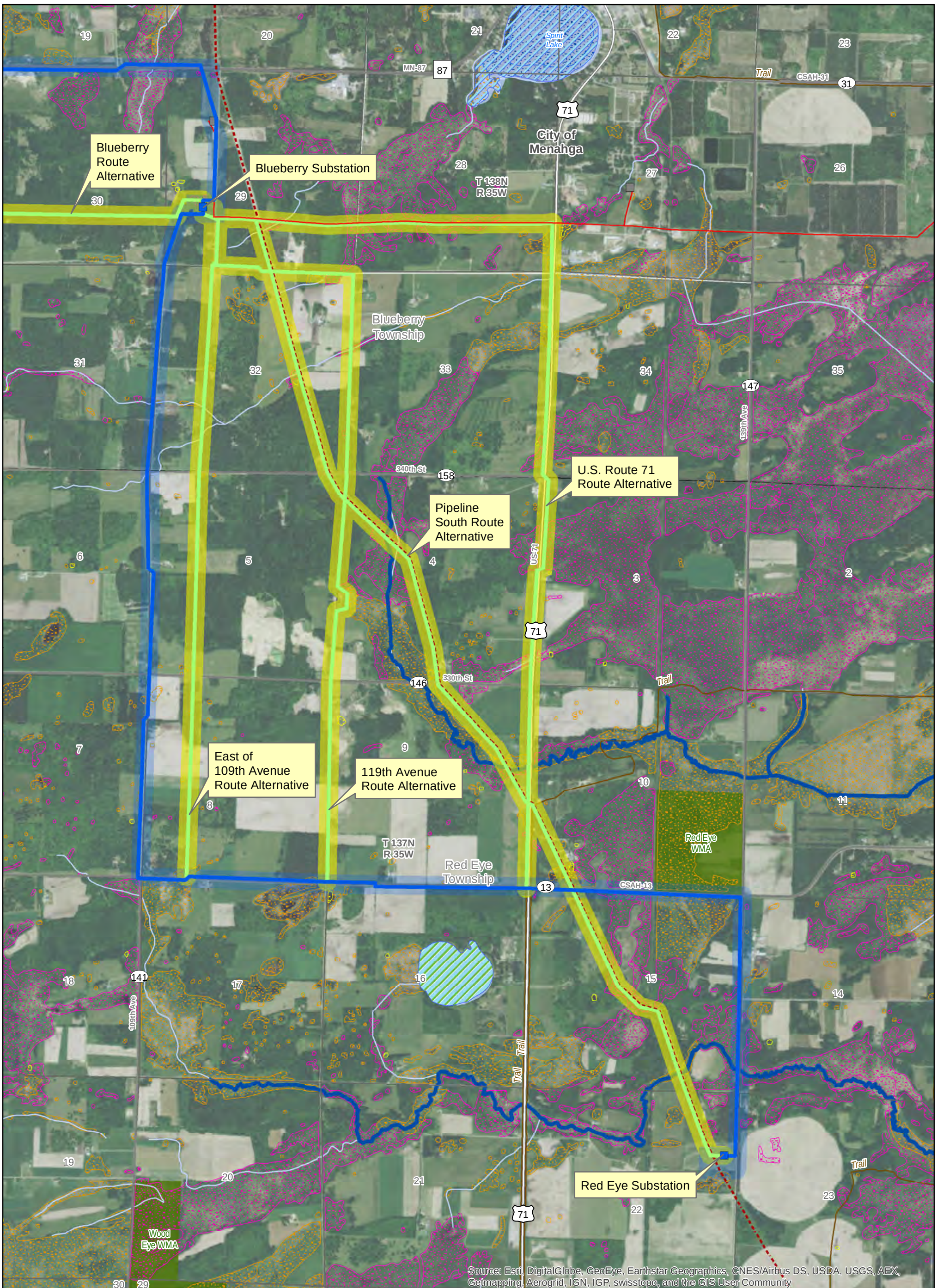
Map E5-B

Water Resources

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy.
Aerial from ESRI basemap service
Updated: 7/29/2015

N



Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

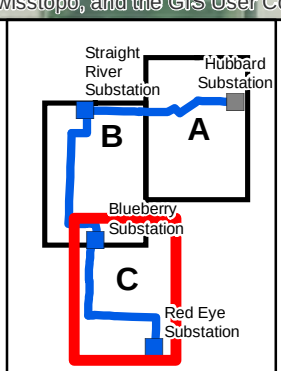
Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Hydrologic Features
- PWI Lake
- PWI Wetland
- PWI River

NWI Wetlands
- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Impaired Waters
- Impaired Streams
- Wetlands
- Impaired Lakes

0 0.25 0.5 Miles



Map E5-C

Water Resources

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy.
Aerial from ESRI basemap service
Updated: 7/29/2015

N

Straight River Substation

Hubbard Substation

Western Blueberry Substation Site Alternative

Blueberry Substation

Blueberry Route Alternative

U.S. Route 71 Route Alternative

East of 109th Avenue Route Alternative

Pipeline South Route Alternative

119th Avenue Route Alternative

Red Eye Substation

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

FEMA
- 100 yearflood hazard zones

0 0.25 0.5 Miles

Straight River Substation
Hubbard Substation
Blueberry Substation
Red Eye Substation

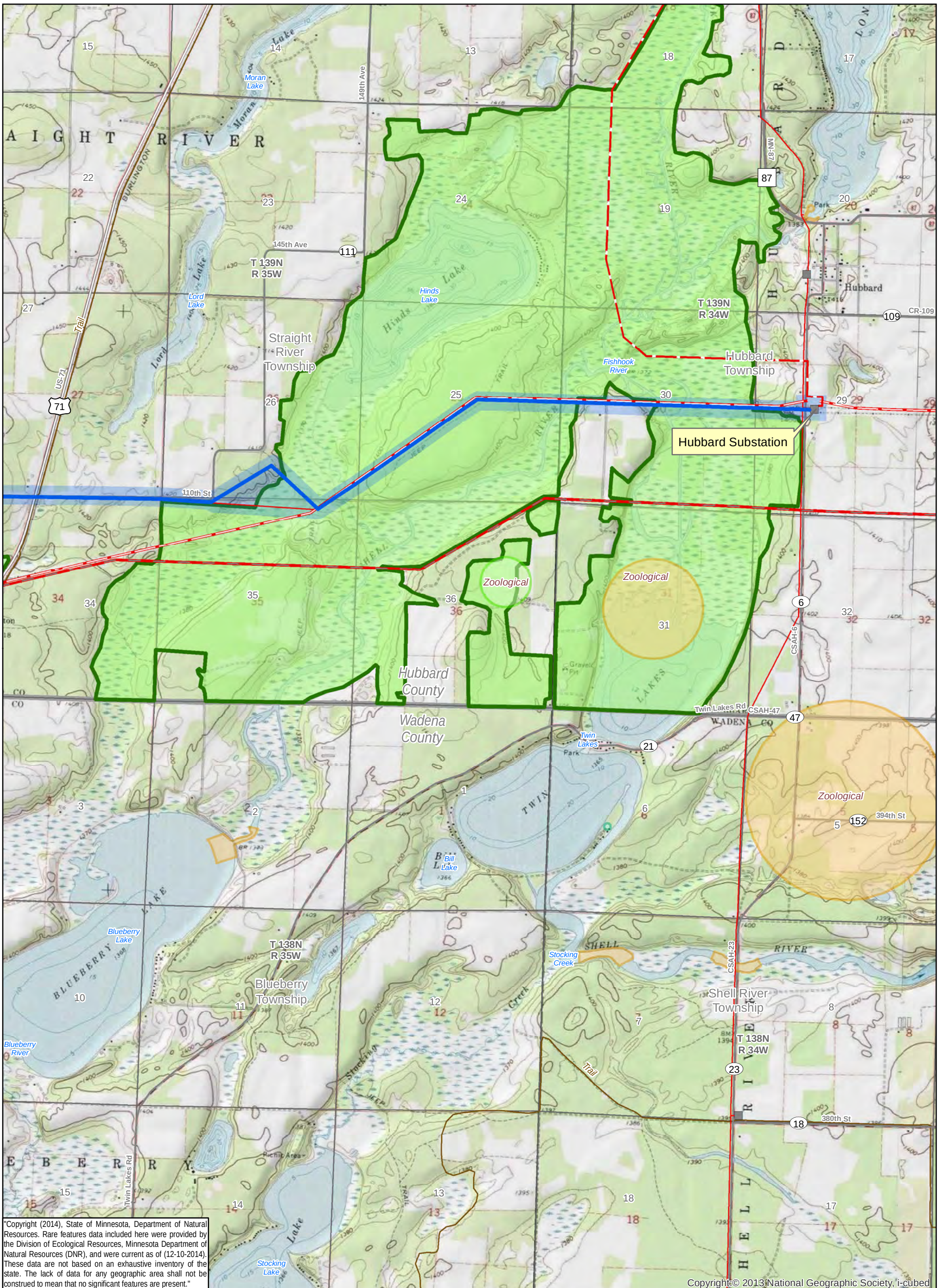
Map E6

Flood Plains

Menahga Area 115 kV Project

GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy. Flood plains from the Federal Emergency Management Agency (FEMA) Updated: 7/29/2015

N



"Copyright (2014), State of Minnesota, Department of Natural Resources. Rare features data included here were provided by the Division of Ecological Resources, Minnesota Department of Natural Resources (DNR), and were current as of (12-10-2014). These data are not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present."

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

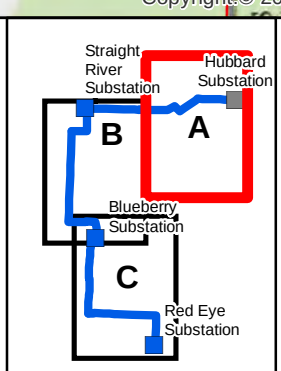
Sites of Biodiversity Significance

Biodiversity Significance
- Outstanding
- High
- Moderate
- Below

Rare Natural Feature (NHIS)

Protection Status
- Endangered
- Threatened
- Special Concern
- Watchlist
- Not listed
- Native Plant Community

0 0.25 0.5 Miles



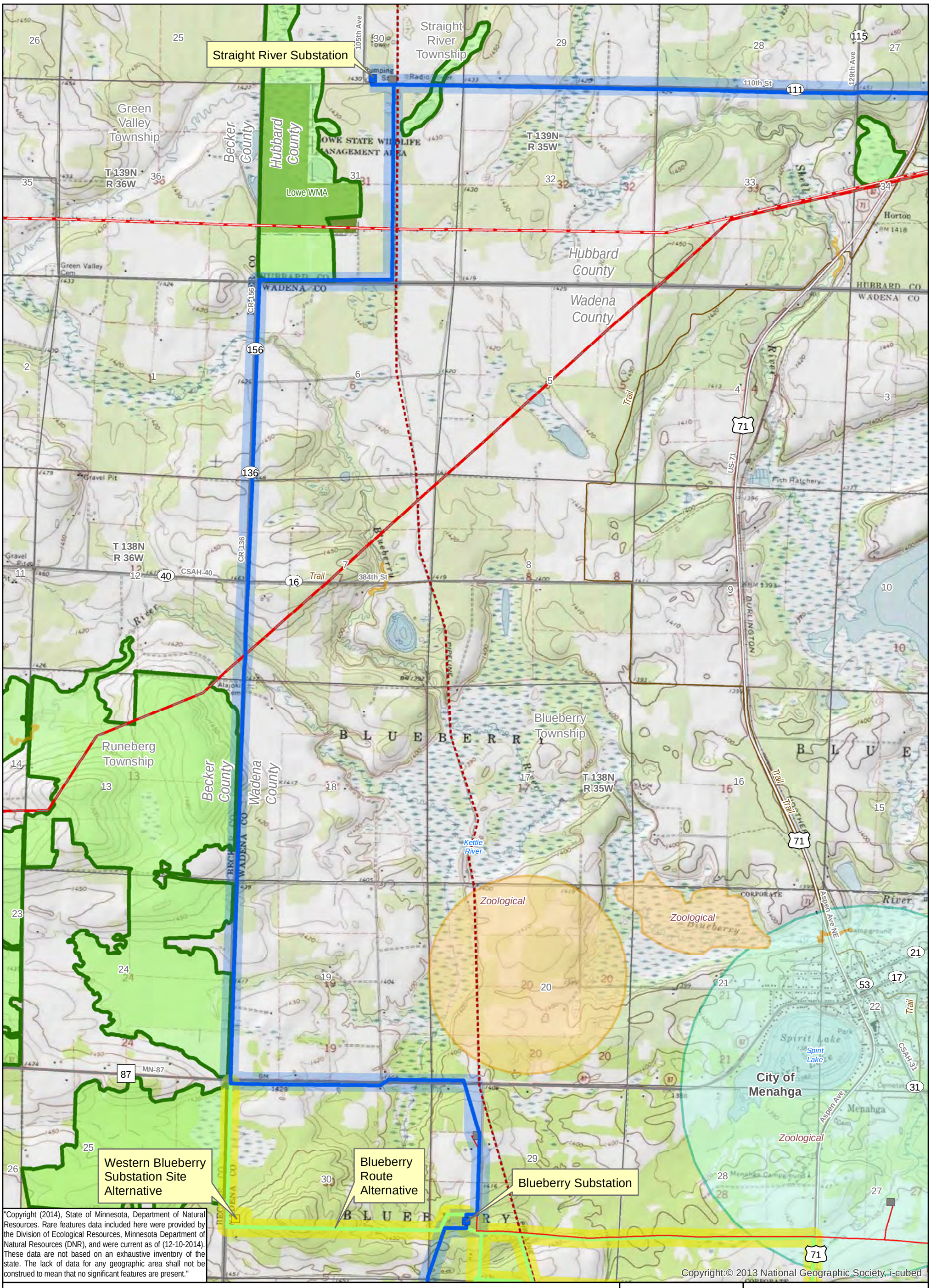
Map E7-A

Rare and Unique Natural Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topo from ESRI basemap service.
Updated: 7/29/2015

N



"Copyright (2014), State of Minnesota, Department of Natural Resources. Rare features data included here were provided by the Division of Ecological Resources, Minnesota Department of Natural Resources (DNR), and were current as of (12-10-2014). These data are not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present."

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

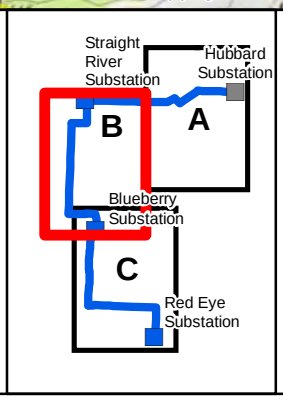
Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

Sites of Biodiversity Significance
Biodiversity Significance
- Outstanding
- High
- Moderate
- Below

Rare Natural Feature (NHIS)
Protection Status
- Endangered
- Threatened
- Special Concern
- Watchlist
- Not listed
- Native Plant Community

0 0.25 0.5 Miles



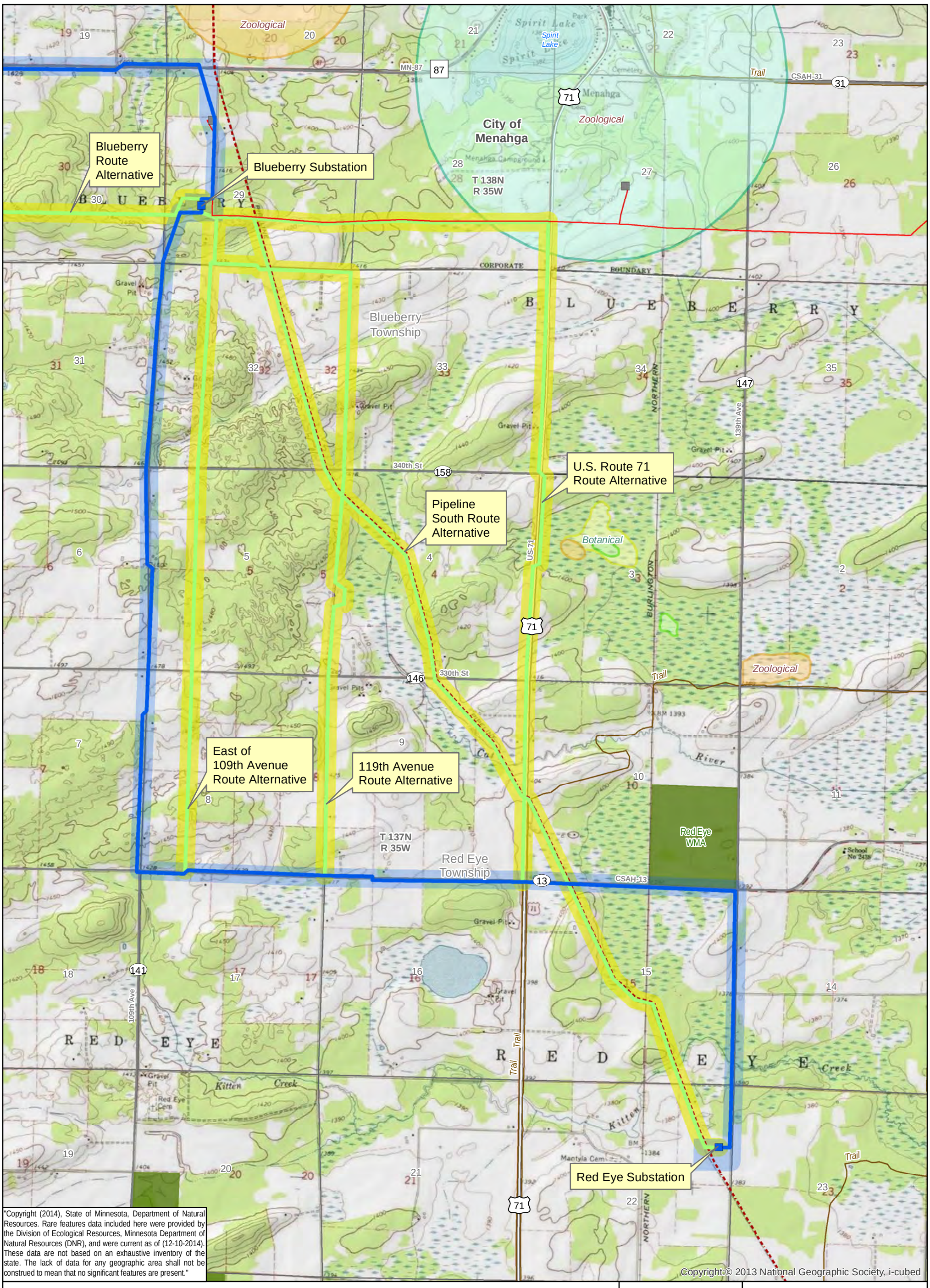
Map E7-B

Rare and Unique Natural Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topo from ESRI basemap service.
Updated: 7/29/2015

N



"Copyright (2014), State of Minnesota, Department of Natural Resources. Rare features data included here were provided by the Division of Ecological Resources, Minnesota Department of Natural Resources (DNR), and were current as of (12-10-2014). These data are not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present."

Applicants
- Proposed Alignment
- Proposed Route
- Proposed Substation

Alternatives
- Alternative Alignment
- Alternative Route
- Alternative Substation

Existing
- 34.5 kV Transmission Line
- 230 kV Transmission Line
- 250 kV Transmission Line
- Pipeline
- Substation

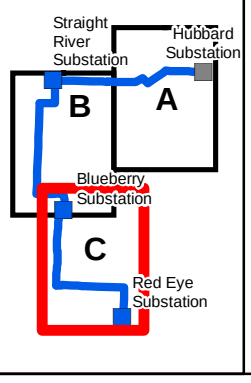
Sites of Biodiversity Significance

Biodiversity Significance
- Outstanding
- High
- Moderate
- Below

Rare Natural Feature (NHIS)

Protection Status
- Endangered
- Threatened
- Special Concern
- Watchlist
- Not listed
- Native Plant Community

0 0.25 0.5 Miles



Map E7-C

Rare and Unique Natural Resources

Menahga Area 115 kV Project

GIS Data sources include:
MNGEO, MNDNR, MNDOT,
and Great River Energy.
Topo from ESRI basemap service.
Updated: 7/29/2015

N