Fredrikson & BYRON, P.A.

June 9, 2011

VIA HAND DELIVERY

RECEIVED
JUN 09 2011
PUBLIC SERVICE COMMISSION

Mr. Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**RE: Minnkota Power Cooperative, Inc.
345 kV Transmission Line – Center to Grand Forks – Siting Application
Case No. PU-09-670**

Dear Mr. Nitschke:

On February 18, 2011, Minnkota Power Cooperative, Inc. ("Minnkota"), filed an Application for a Certificate of Corridor Compatibility ("Application") with the North Dakota Public Service Commission ("Commission") for its Center to Grand Forks 345 kV Transmission Line Project ("Project"). Since filing the Application, the Project Corridor has been modified slightly in two locations: (1) in Painted Woods Township, Burleigh County, North Dakota; and (2) near State Highway 3 in Wells County, North Dakota. The Project Corridor modifications were approved by the affected landowners, and no new landowners are affected by the modifications.

Therefore, enclosed please find an original and six (6) copies of the following documents:

1. A map depicting the Project Corridor as filed and the modified Project Corridor in Painted Woods Township (please note that this modification supersedes the Painted Woods Township modification submitted to the Commission on March 18, 2011);
2. A map depicting the Project Corridor as filed and the modified Project Corridor near State Highway 3 in Wells County;
3. An updated Corridor Description, incorporating the two Project Corridor modifications (pages 4-1 to 4-2 of the Application);
4. Updated Application Figures, reflecting the two Project Corridor modifications (Figures 1 through 12 in the Application); and
5. An Affidavit of Service.

Also enclosed is a CD containing the above-referenced documents in PDF format.

By copy of this letter, the auditors for each county in which any part of the proposed Project Corridor will be located are being served with a copy of the above-referenced documents.

Attorneys & Advisors
main 701.221.4020
fax 701.221.4040
www.fredlaw.com

Fredrikson & Byron, P.A.
200 North Th
Bismarck, No
58501-3879

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56 PU-09-670 Filed: 6/9/2011 Pages: 70
Project corridor modification maps
Minnkota Power Cooperative, Inc.
Mollie M. Smith, Fredrikson and Byron

Should you have any questions, please do not hesitate to contact me.

Sincerely,

MMS/ms

MOLLIE M. SMITH

Enclosures

cc: Mr. Leslie Korgel, McLean Co. Auditor (*w/ encl. – via Federal Express*)
Mr. Kevin Glatt, Burleigh Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Shirley A. Murray, Sheridan Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Janell Rudell, Wells Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Mary Ripplinger, Eddy Co. Auditor (*w/ encl. – via Federal Express*)
Mr. Roger Schlotman, Foster Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Cynthia Anton, Griggs Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Linda Leadbetter, Steele Co. Auditor (*w/ encl. – via Federal Express*)
Mr. W.J. Davidson, Nelson Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Debbie Nelson, Grand Forks Co. Auditor (*w/ encl. – via Federal Express*)
Ms. Barbara Fleming, Oliver Co. Auditor (*w/ encl. – via Federal Express*)
Mr. Gerad Paul (*w/o encl. – via e-mail*)
Mr. Mike Hennes (*w/o encl. – via e-mail*)
Mr. John Graves (*w/o encl. – via e-mail*)
Mr. Wally Lang (*w/o encl. – via e-mail*)
Mr. Brian Hunker (*w/o encl. – via e-mail*)

4939796_1.DOC

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Case No. PU-09-670

Minnkota Power Coop, Inc.
345 kV Transmission Line – Center to Grand Forks
Siting Application

AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)
) SS
COUNTY HENNEPIN)

Brian Hunker, being first duly sworn, does depose and state that on June 9, 2011, he served the following document:

1. **A map depicting the Project Corridor as filed and the modified Project Corridor in Painted Woods Township, Burleigh County;**
2. **A map depicting the Project Corridor as filed and the modified Project Corridor near State Highway 3 in Wells County;**
3. **An updated Corridor Description, incorporating the two Project Corridor modifications (pages 4-1 to 4-2 of the Application); and**
4. **Updated Application Figures, reflecting the two Project Corridor modifications (Figures I through 12 in the Application).**

by placing a true and correct copy of said document in envelopes addressed as follows:

Leslie Korgel
McLean Co. Auditor
712 5th Ave.
P.O. Box 1108
Washburn, ND 58577

Kevin Glatt
Burleigh Co. Auditor
221 N. 5th St.
P.O. Box 5518
Bismarck, ND 58501

Shirley A. Murray
Sheridan Co. Auditor
215 2nd St. E., Floor 2
P.O. Box 439
McClusky, ND 58463

Janell Rudell
Wells Co. Auditor
700 Railway St. N.
P.O. Box 37
Fessenden, ND 58438-0037

Mary Ripplinger
Eddy Co. Auditor
524 Central Ave.
Rockford, ND 58356

Roger Schlotman
Foster Co. Auditor
1000 5th St. N.
P.O. Box 104
Carrington, ND 58421

Cynthia Anton
Griggs Co. Auditor
808 Rollin Ave. SW
P.O. Box 511
Cooperstown, ND 58425

Linda Leadbetter
Steele Co. Auditor
Steele Co. Courthouse
201 Washington Ave. W.
Finley, ND 58230

W.J. Davidson
Nelson Co. Auditor
210 B Ave. W., Suite 201
Lakota, ND 58344-7410

Debbie Nelson
Grand Forks Co. Auditor
151 S. 4th St., Suite 101
Grand Forks, ND 58201

Barbara Fleming
Oliver County Auditor
115 West Main
Center, ND 58530

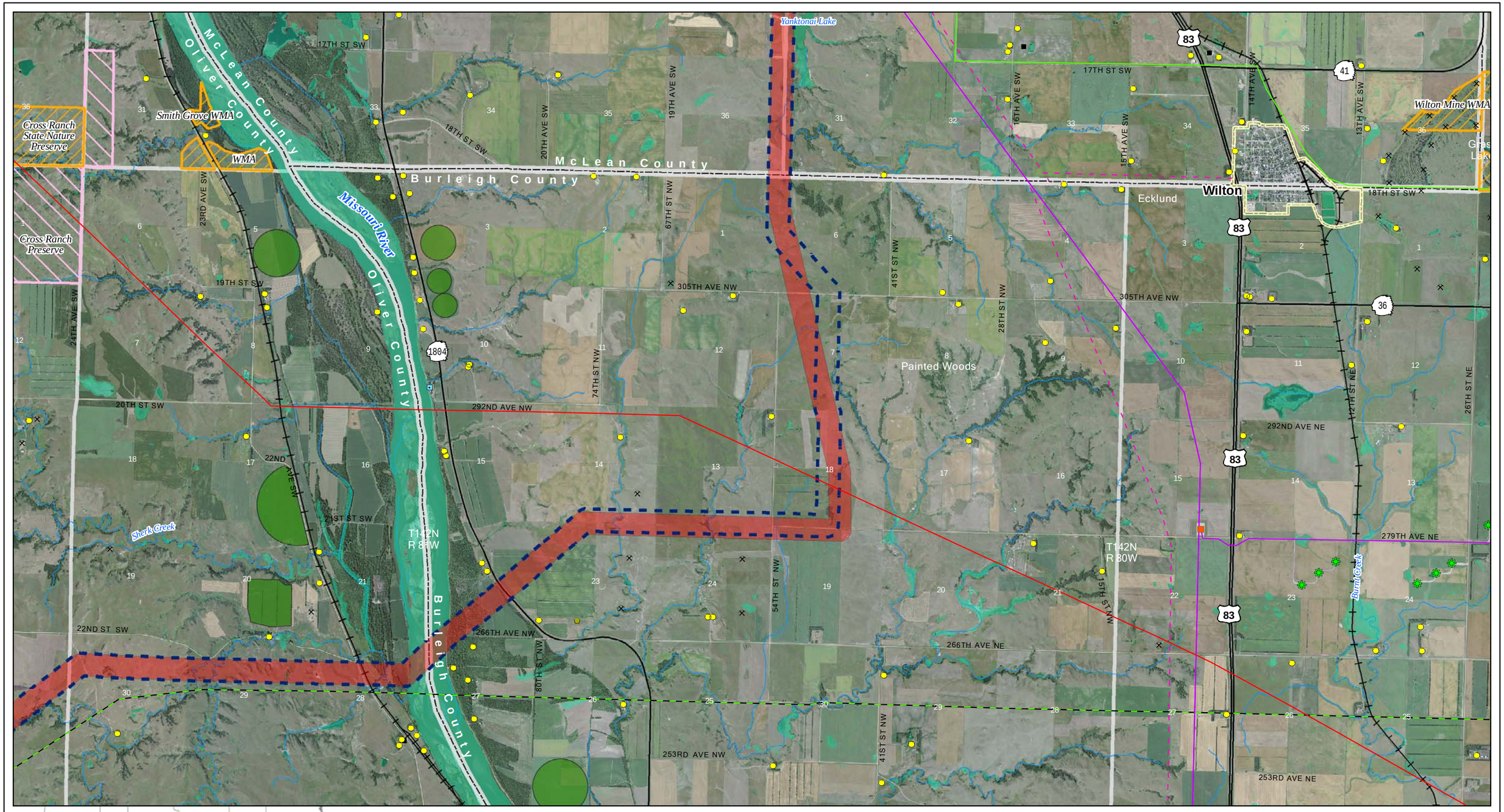
and depositing the same, with postage prepaid, with Federal Express at Minneapolis, Minnesota.

Subscribed and sworn to before me this 9th day of June, 2011.

JUANITA R. NAMANNY
NOTARY PUBLIC-MINNESOTA
My Commission Expires Jan. 31, 2015

Notary Public

4940049_1.DOC



Map Vicinity

Project Corridor (filed Feb 18, 2011)
Project Corridor (updated June 9, 2011)
Laydown Area

Existing Transmission Lines
400-kV DC
345-kV AC
250-kV DC
230-kV AC
115-kV or less AC
Gas or Oil Pipeline

Substation
Home
School
Business
Recreation
Gravel Pit or Mine
Dump or Landfill

Wind Turbine
State Park, Recreation Area or WMA
USFWS WPA or WDA
USFWS NWR
USBOR Land
TNC Preserve

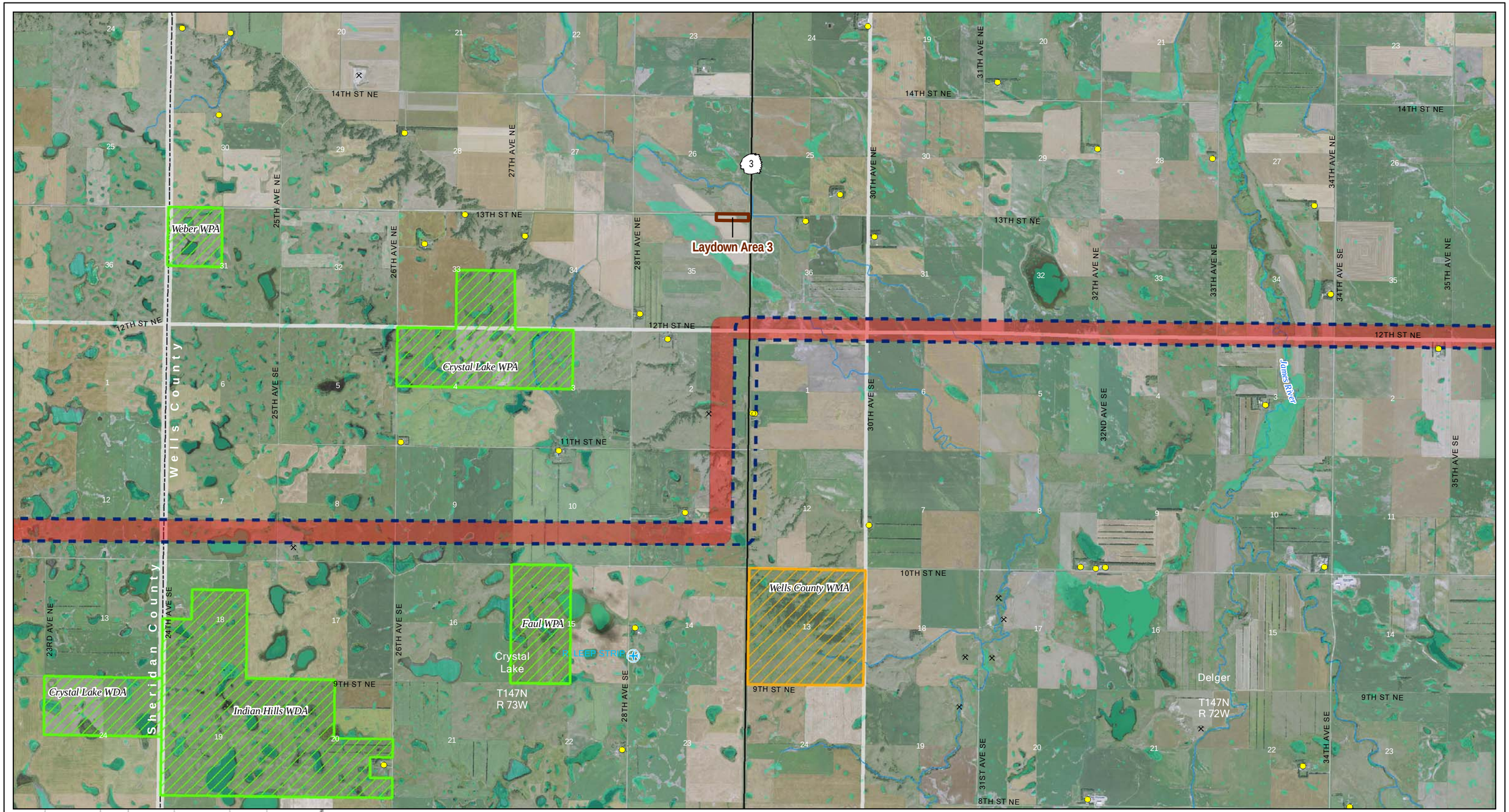
Irrigated Land
Incorporated Area
Public Airport
Private Airport
USGS River, Stream or Canal
NWI Wetland

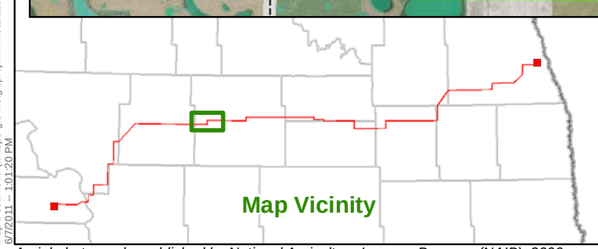
Modified Project Corridor in Painted Woods Township
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 0.5 1 Miles
Scale 1:50,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\fsprje-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\Appl\ChangeMaps\CGFCCCC_11x17L_SupplementalReferenceMap1.mxd)
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Project Corridor (filed Feb 18, 2011)

Project Corridor (updated June 9, 2011)

Laydown Area

Existing Transmission Lines

- 400-kV DC
- 345-kV AC
- 250-kV DC
- 230-kV AC
- 115-kV or less AC
- Gas or Oil Pipeline

- Substation
- Home
- School
- Business
- Recreation
- Gravel Pit or Mine
- Dump or Landfill

- Wind Turbine
- State Park, Recreation Area or WMA
- USFWS WPA or WDA
- USFWS NWR
- USBOR Land
- TNC Preserve

- Irrigated Land
- Incorporated Area
- Public Airport
- Private Airport
- USGS River, Stream or Canal
- NWI Wetland

Modified Project Corridor in Wells County
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 0.5 1 Miles

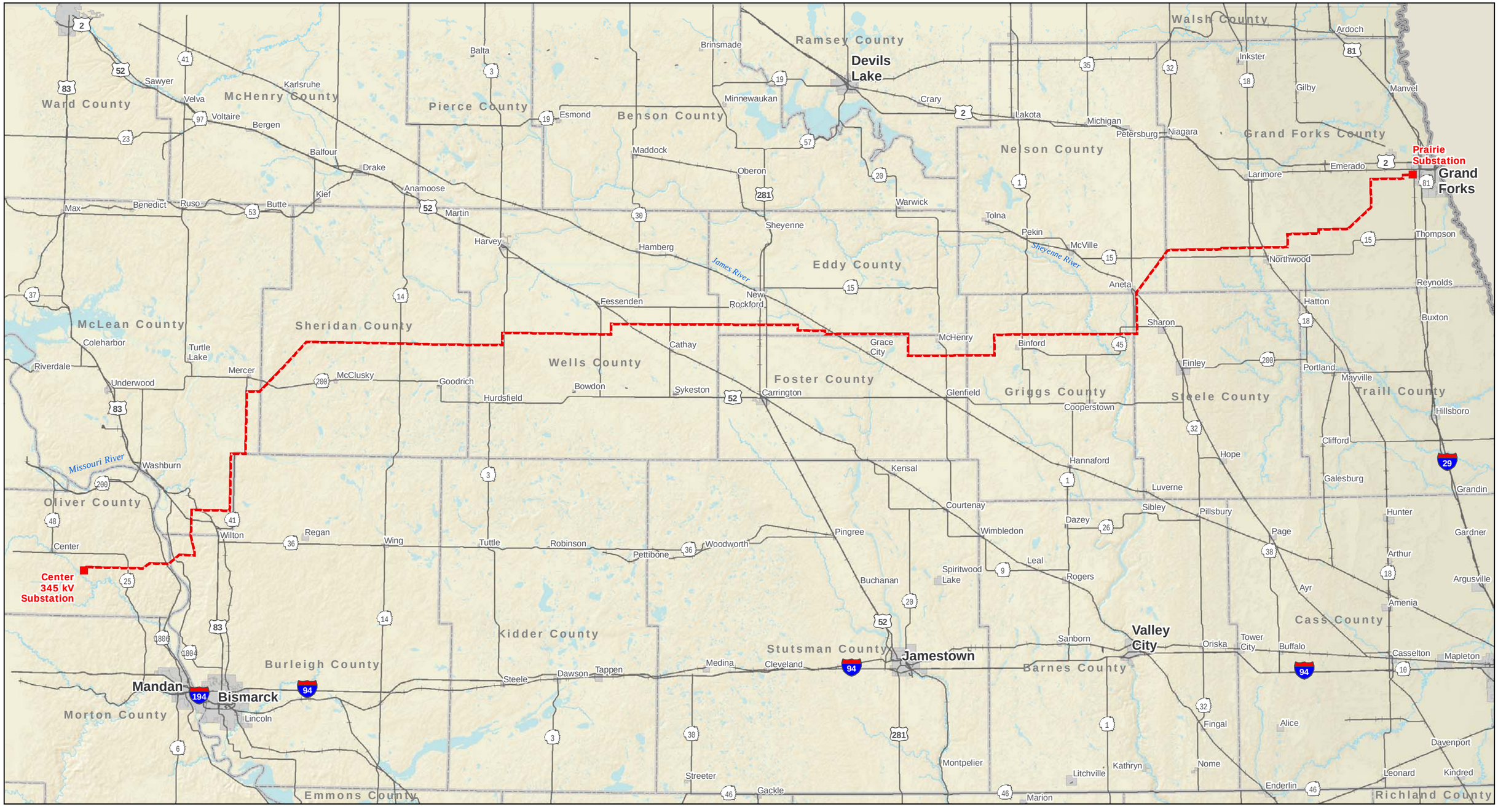
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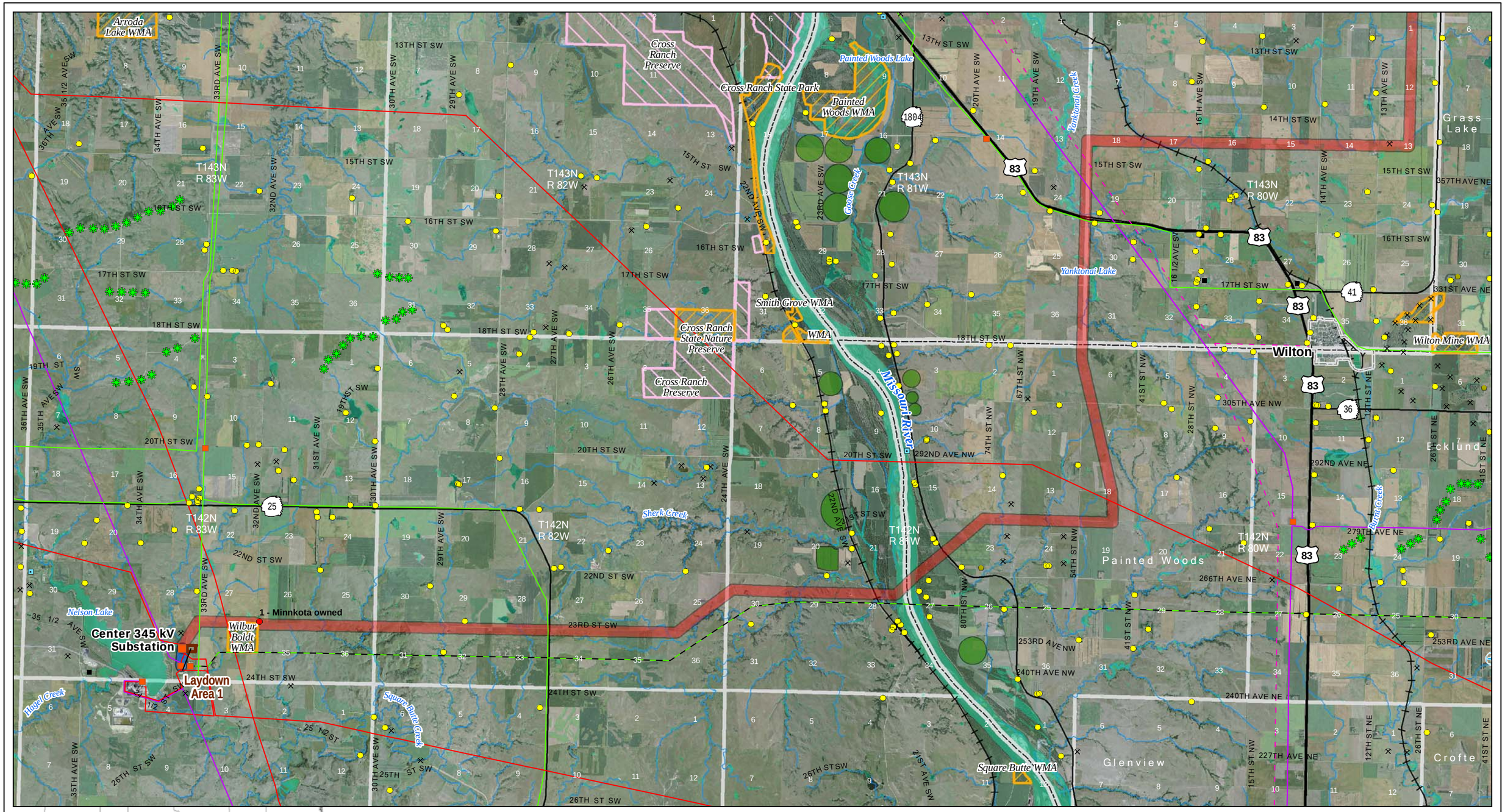
Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

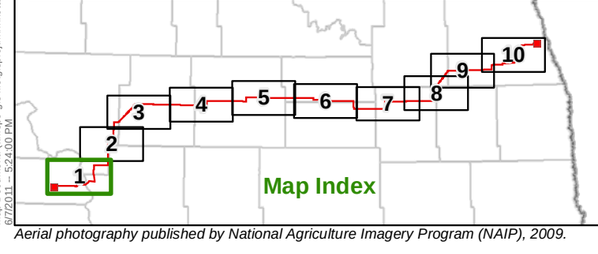
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6/2/2011 - 10:20 PM

Figures – Updated June 9, 2011

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Ward County
McHenry County
Pierce County
Ramsey County
Devils Lake
Benson County
Nelson County
Walsh County
Grand Forks County
Prairie Substation
Grand Forks
McLean County
Sheridan County
Wells County
Eddy County
Foster County
Griggs County
Steele County
Traill County
Oliver County
Kidder County
Stutsman County
Jamestown
Valley City
Barnes County
Cass County
Burleigh County
Morton County
Mandan
Bismarck
Emmons County
Richland County
Center 345 kV Substation
Missouri River
James River
Sheyenne River
Map Vicinity
Project Corridor
(updated June 9, 2011)
Project Substation
Figure 1
Project Vicinity
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.
0 5 10 Miles
Scale 1:850,000
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Project Corridor (updated June 9, 2011)
230-kV Tie Line Corridor
Substation
Laydown Area

Existing Transmission Lines
400-kV DC
345-kV AC
250-kV DC
230-kV AC
115-kV or less AC
Gas or Oil Pipeline

Home within Corridor
Home
School
Business
Recreation
Gravel Pit or Mine
Dump or Landfill

Wind Turbine
State Park, Recreation Area or WMA
USFWS WPA or WDA
USFWS NWR
USBOR Land
TNC Preserve

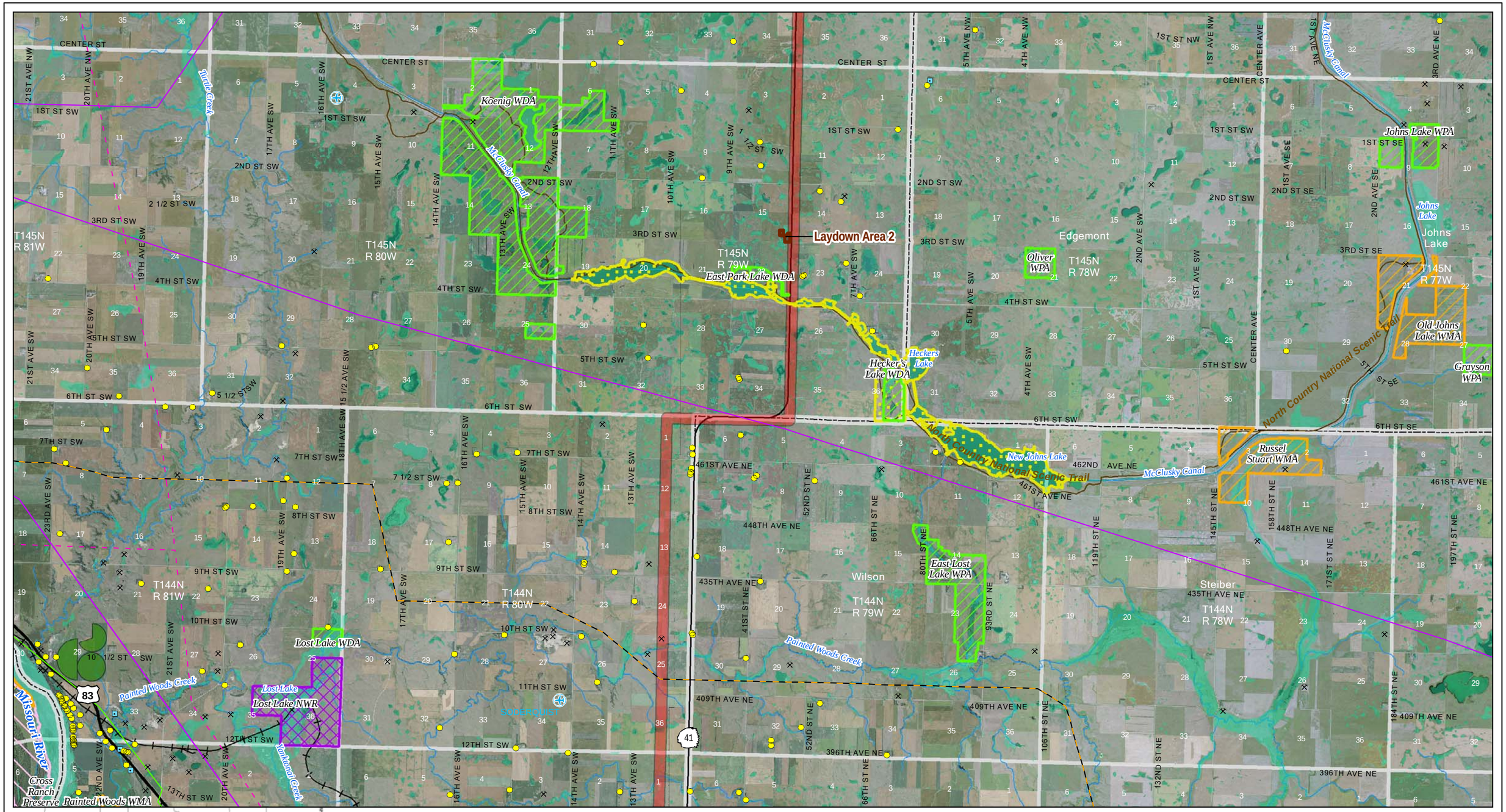
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Incorporated Area
Public Airport
Private Airport
USGS River, Stream or Canal
NWI Wetland

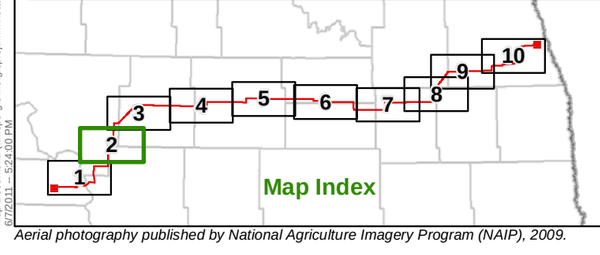
Figure 2: Page 1 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mspe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_02_11x17L_10p_CorridorSitingCriteria.mxd)
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Project Corridor (updated June 9, 2011)
230-kV Tie Line Corridor
Substation
Laydown Area

Existing Transmission Lines
400-kV DC
345-kV AC
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230-kV AC
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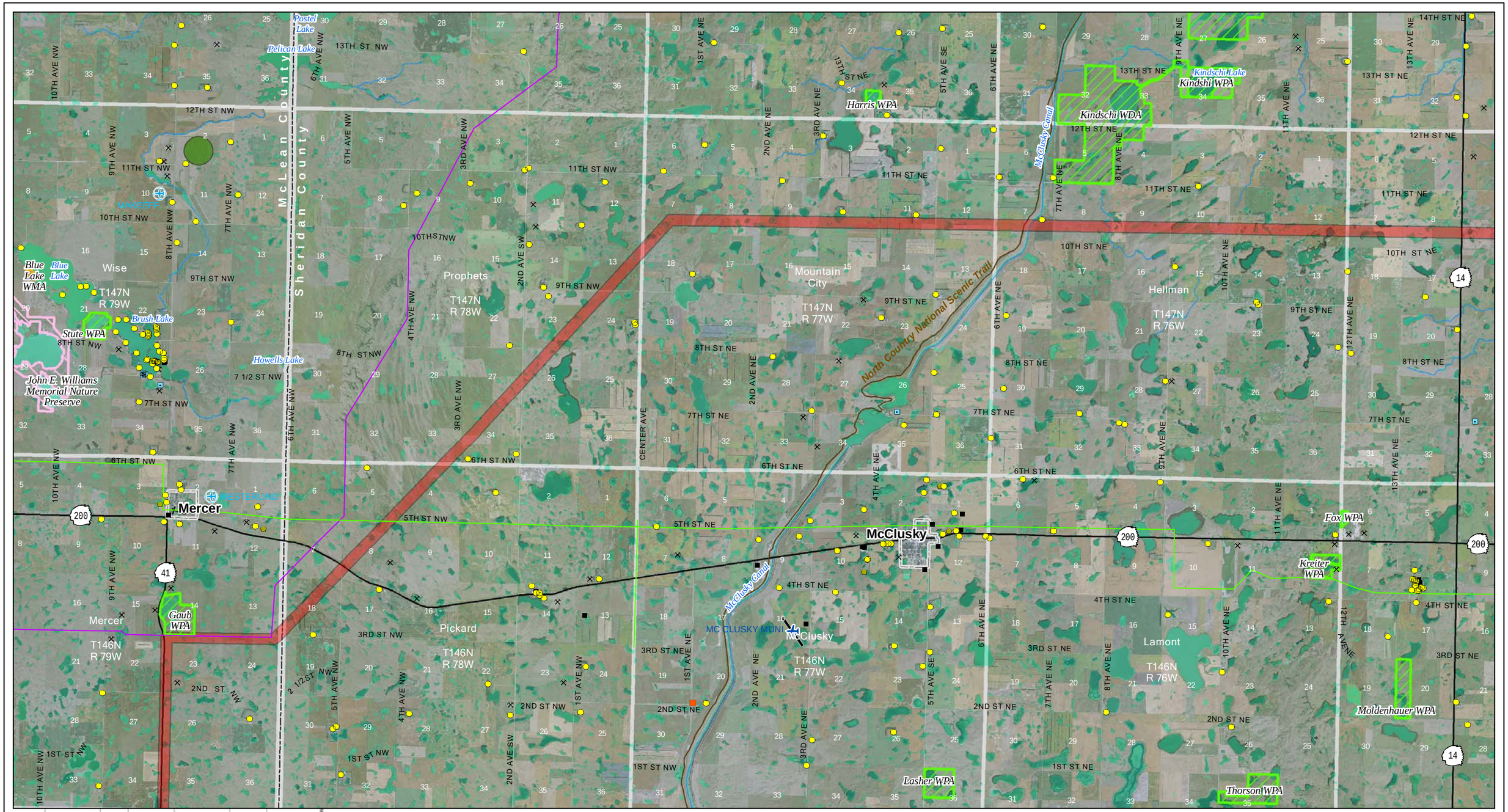
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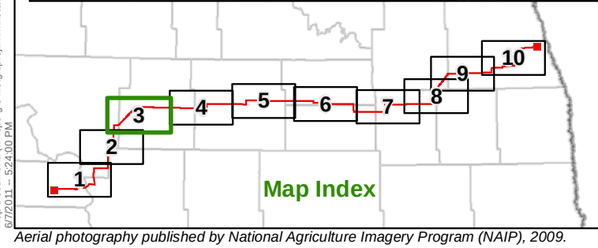
Figure 2: Page 2 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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USFWS NWR
USBOR Land
TNC Preserve

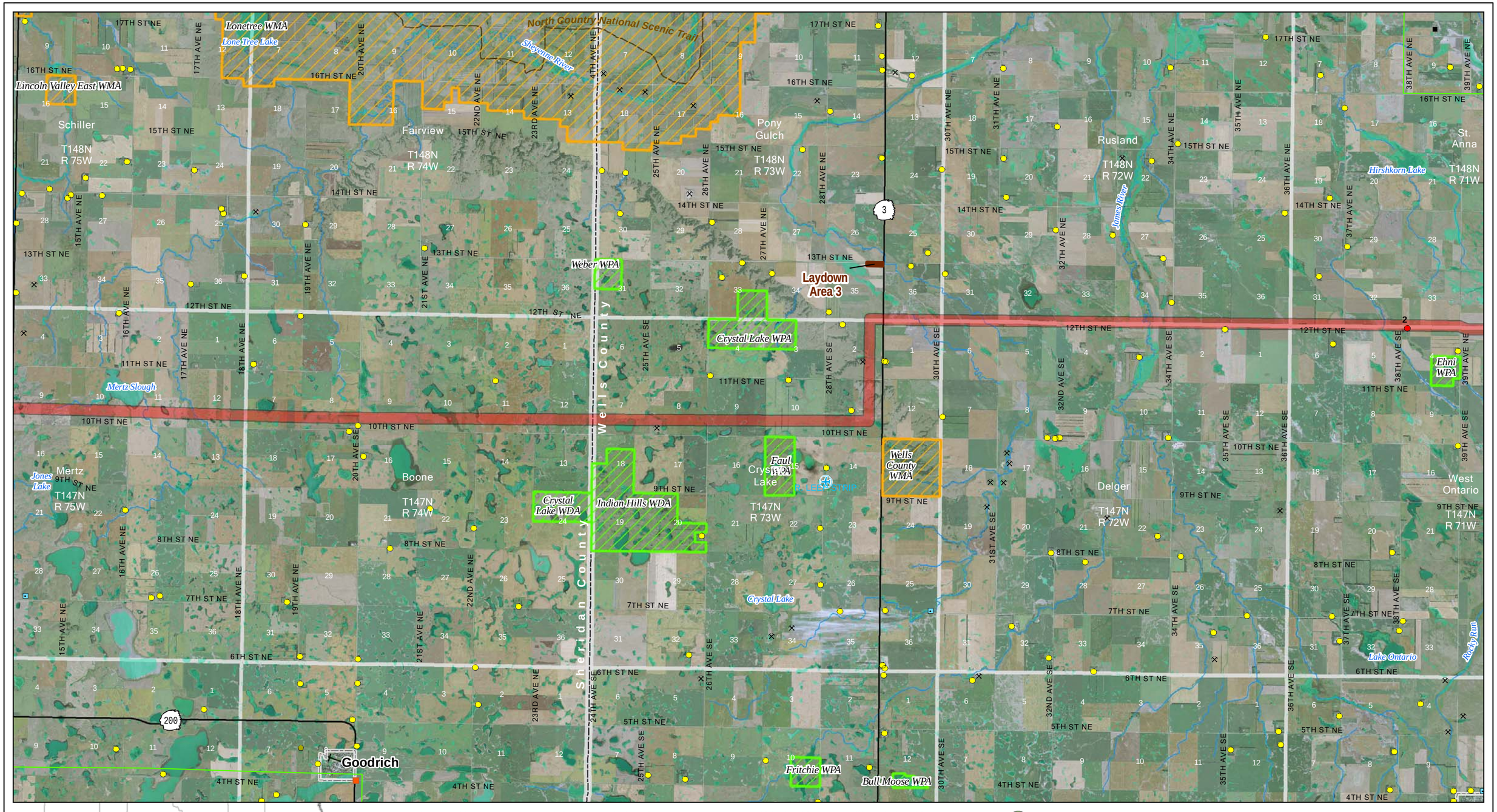
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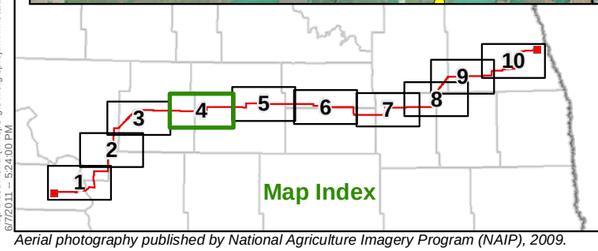
Figure 2: Page 3 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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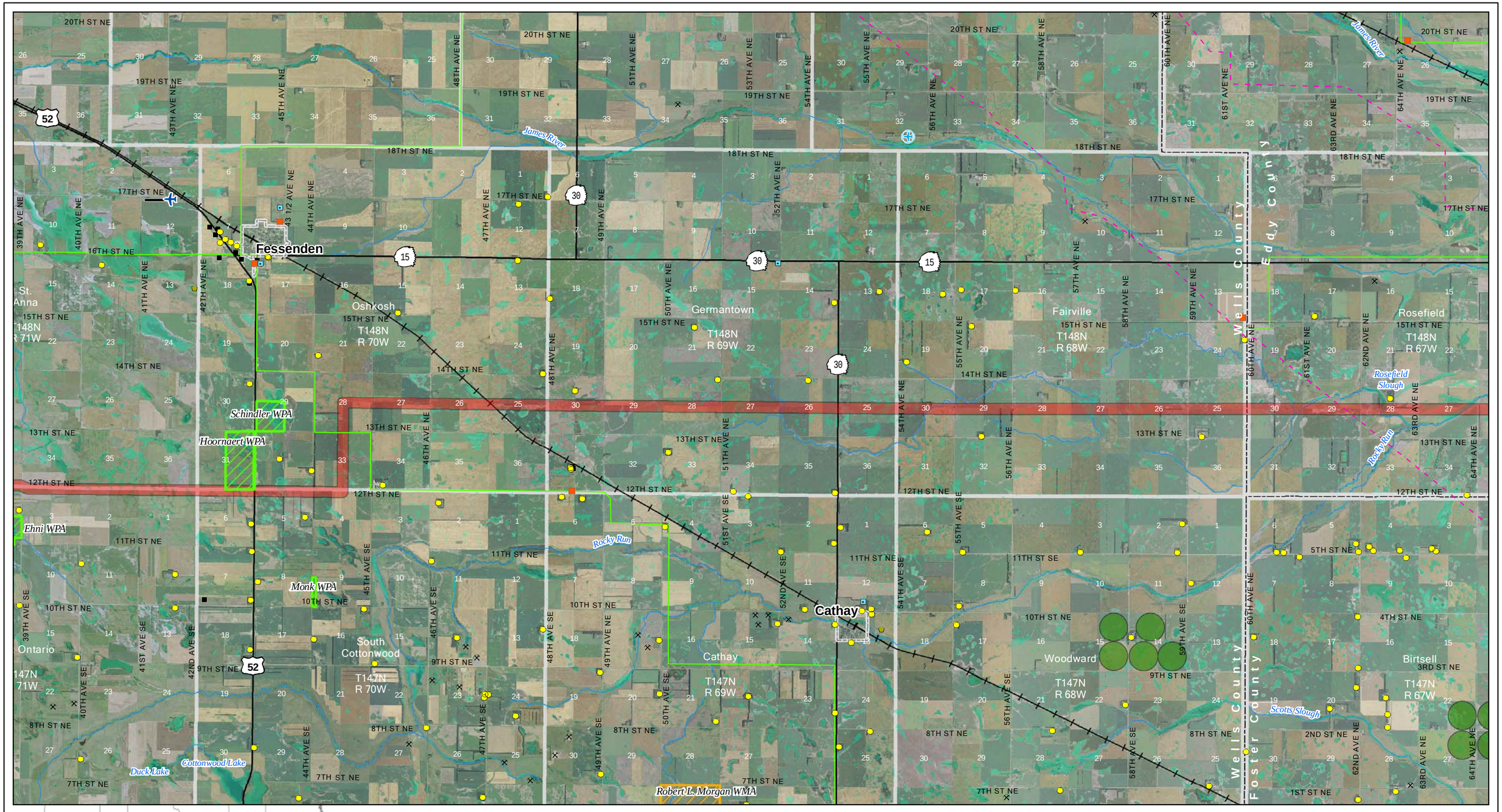
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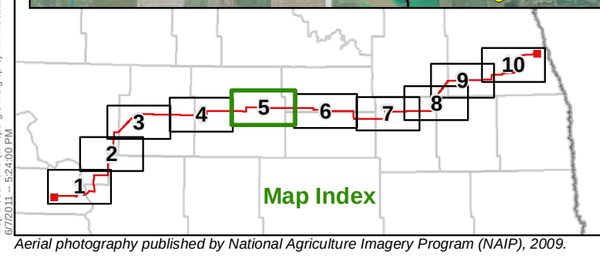
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Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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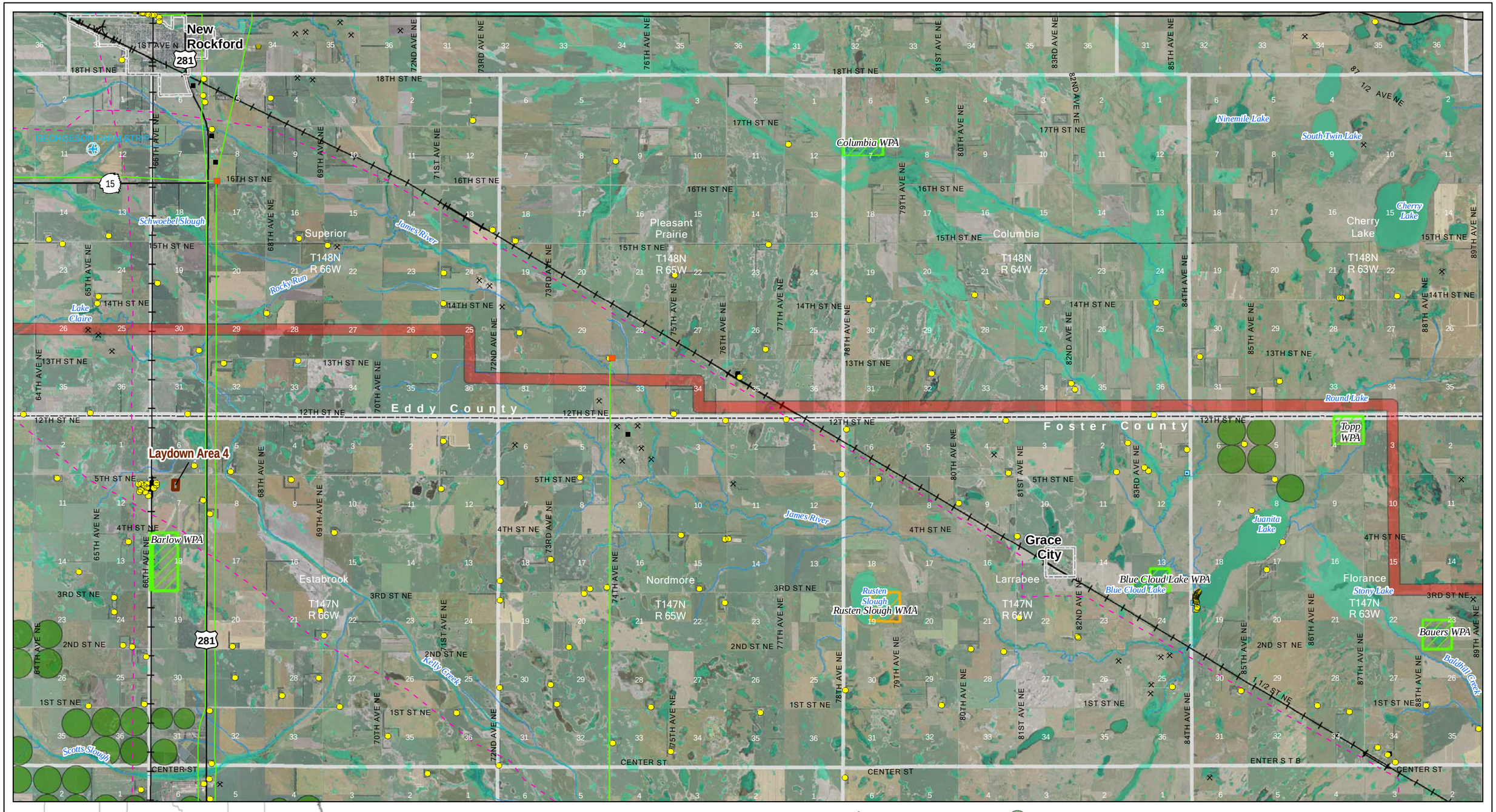
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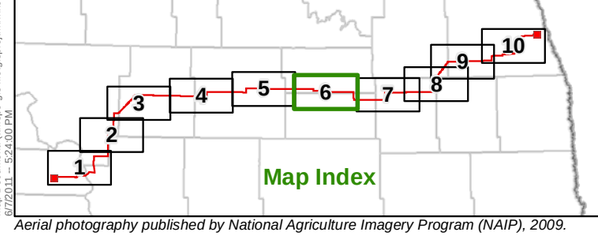
Figure 2: Page 5 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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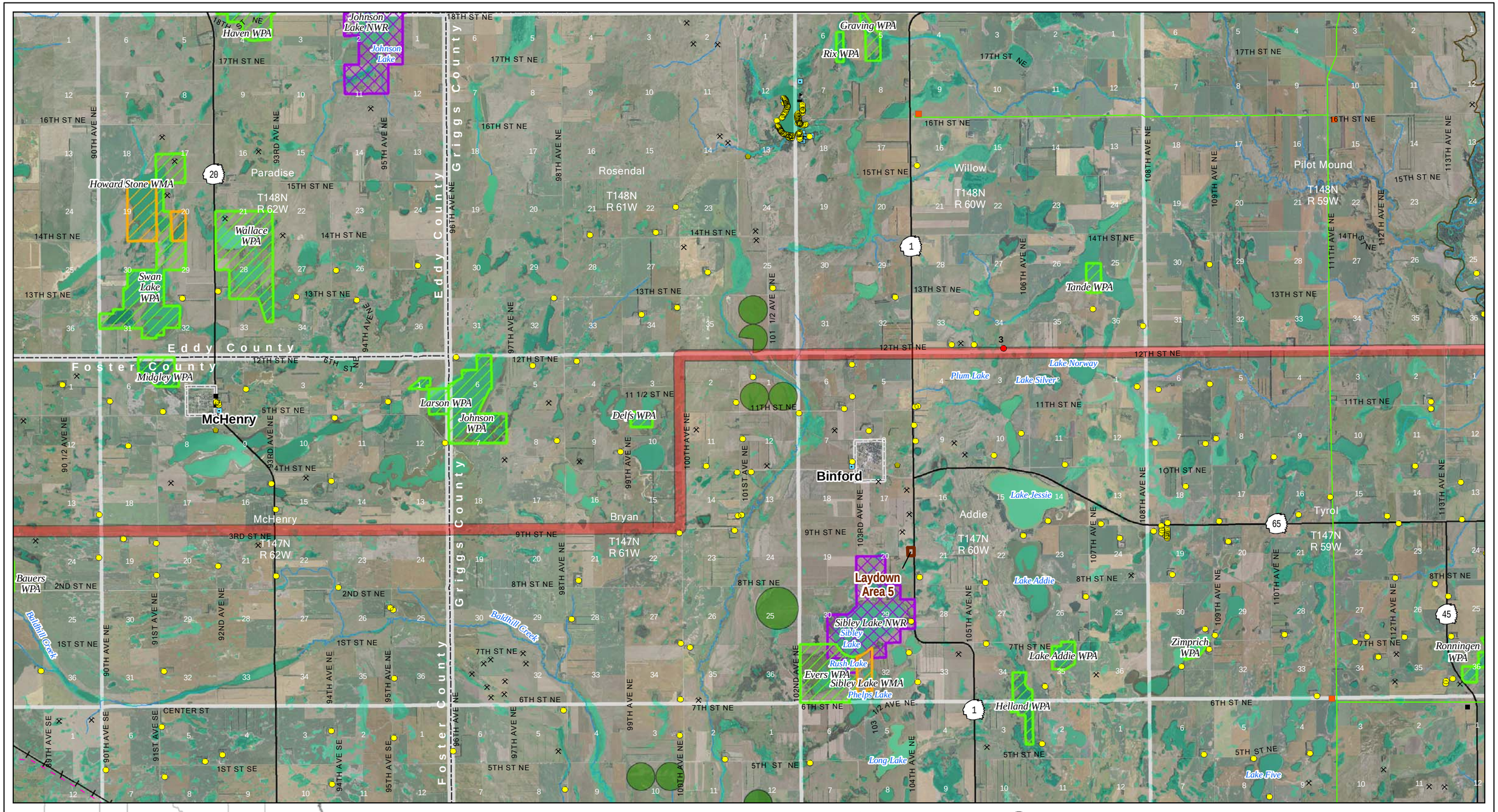
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Incorporated Area
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Private Airport
USGS River, Stream or Canal
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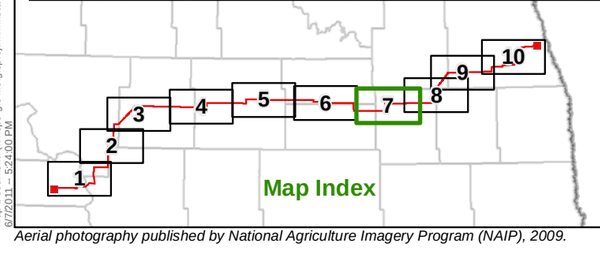
Figure 2: Page 6 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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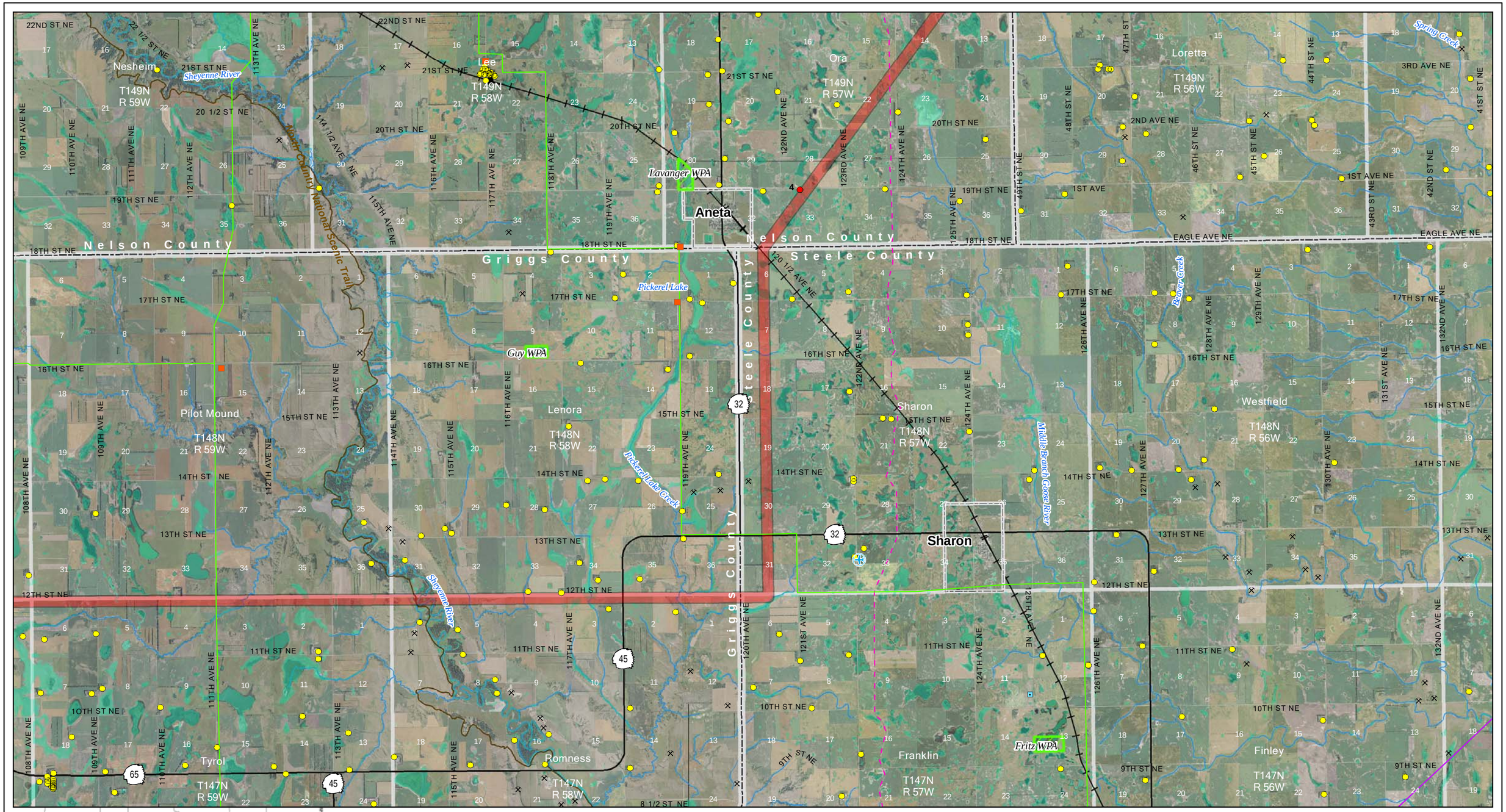
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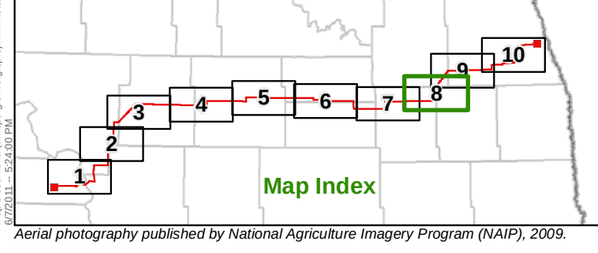
Figure 2: Page 7 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

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0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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USFWS WPA or WDA
USFWS NWR
USBOR Land
TNC Preserve

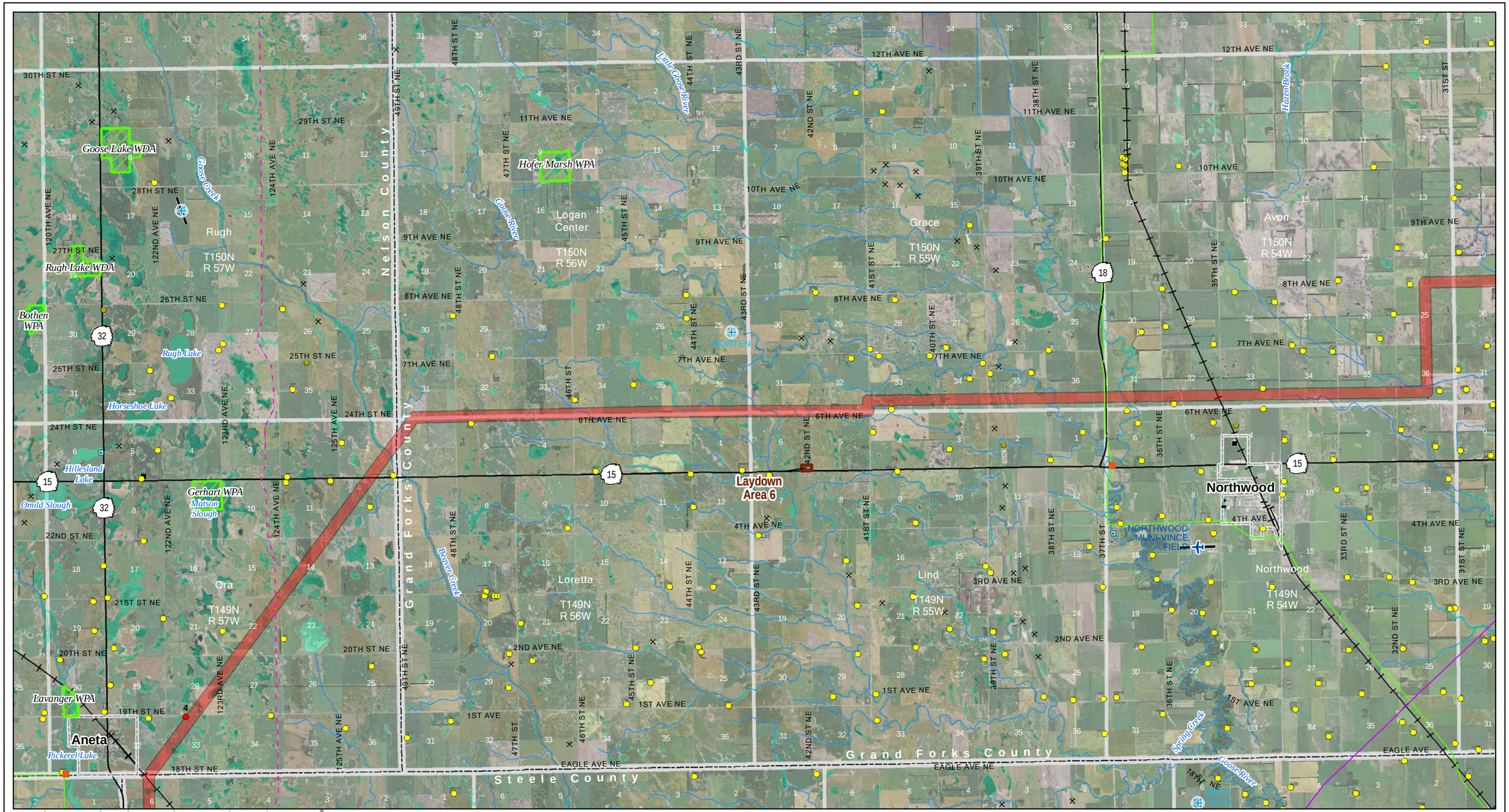
Irrigated Land
Incorporated Area
Public Airport
Private Airport
USGS River, Stream or Canal
NWI Wetland

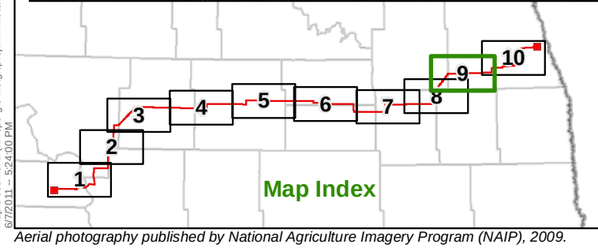
Figure 2: Page 8 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mspe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_02_11x17L_10p_CorridorSitingCriteria.mxd)
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Project Corridor (updated June 9, 2011)
230-kV Tie Line Corridor
Substation
Laydown Area

Existing Transmission Lines
400-kV DC
345-kV AC
250-kV DC
230-kV AC
115-kV or less AC
Gas or Oil Pipeline

Home within Corridor
Home
School
Business
Recreation
Gravel Pit or Mine
Dump or Landfill

Wind Turbine
State Park, Recreation Area or WMA
USFWS WPA or WDA
USFWS NWR
USBOR Land
TNC Preserve

Irrigated Land
Incorporated Area
Public Airport
Private Airport
USGS River, Stream or Canal
NWI Wetland

Figure 2: Page 9 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mpe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\Appl\CGFCCC_02_11x17L_10p_CorridorSitingCriteria.mxd)
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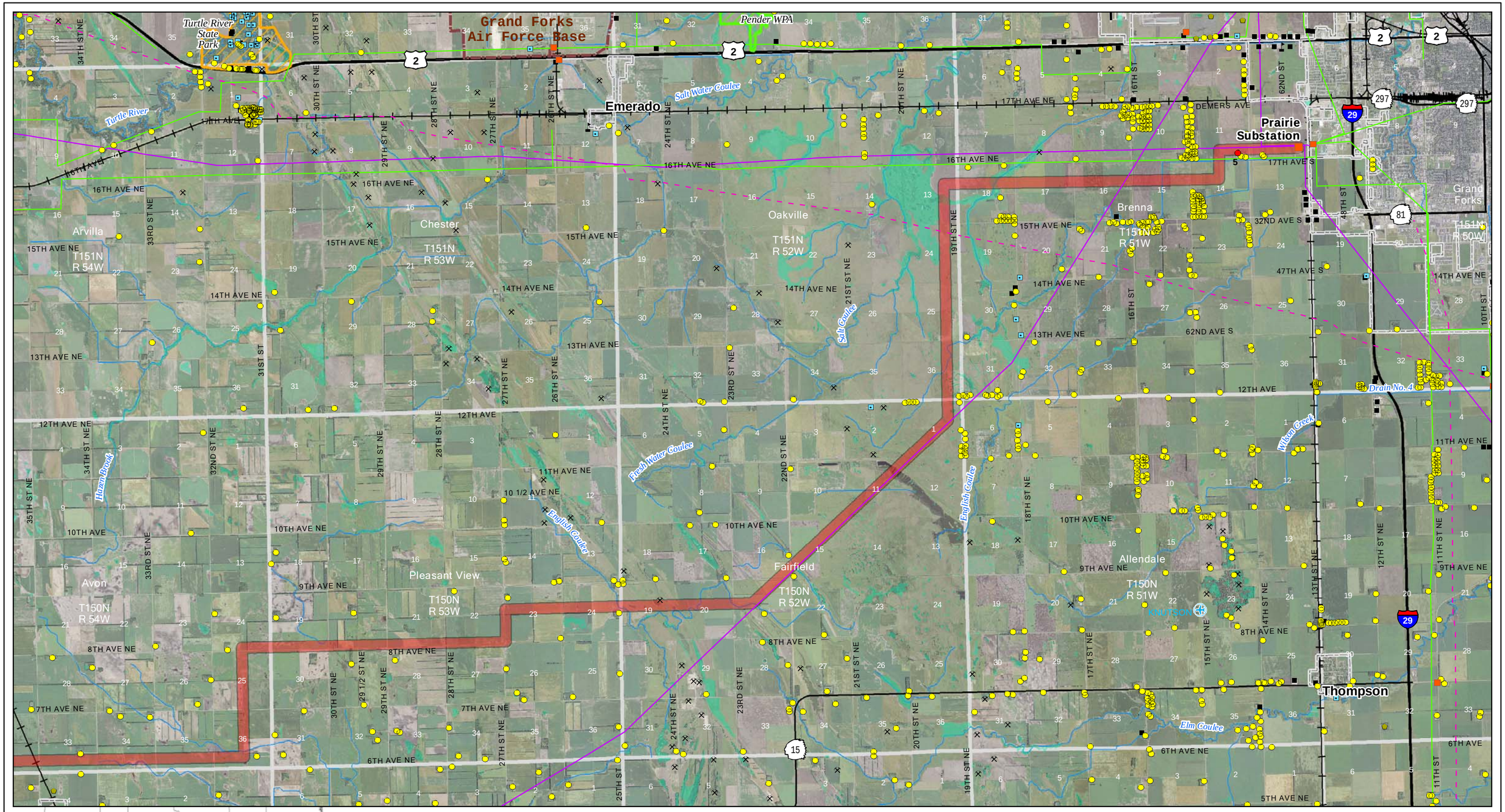
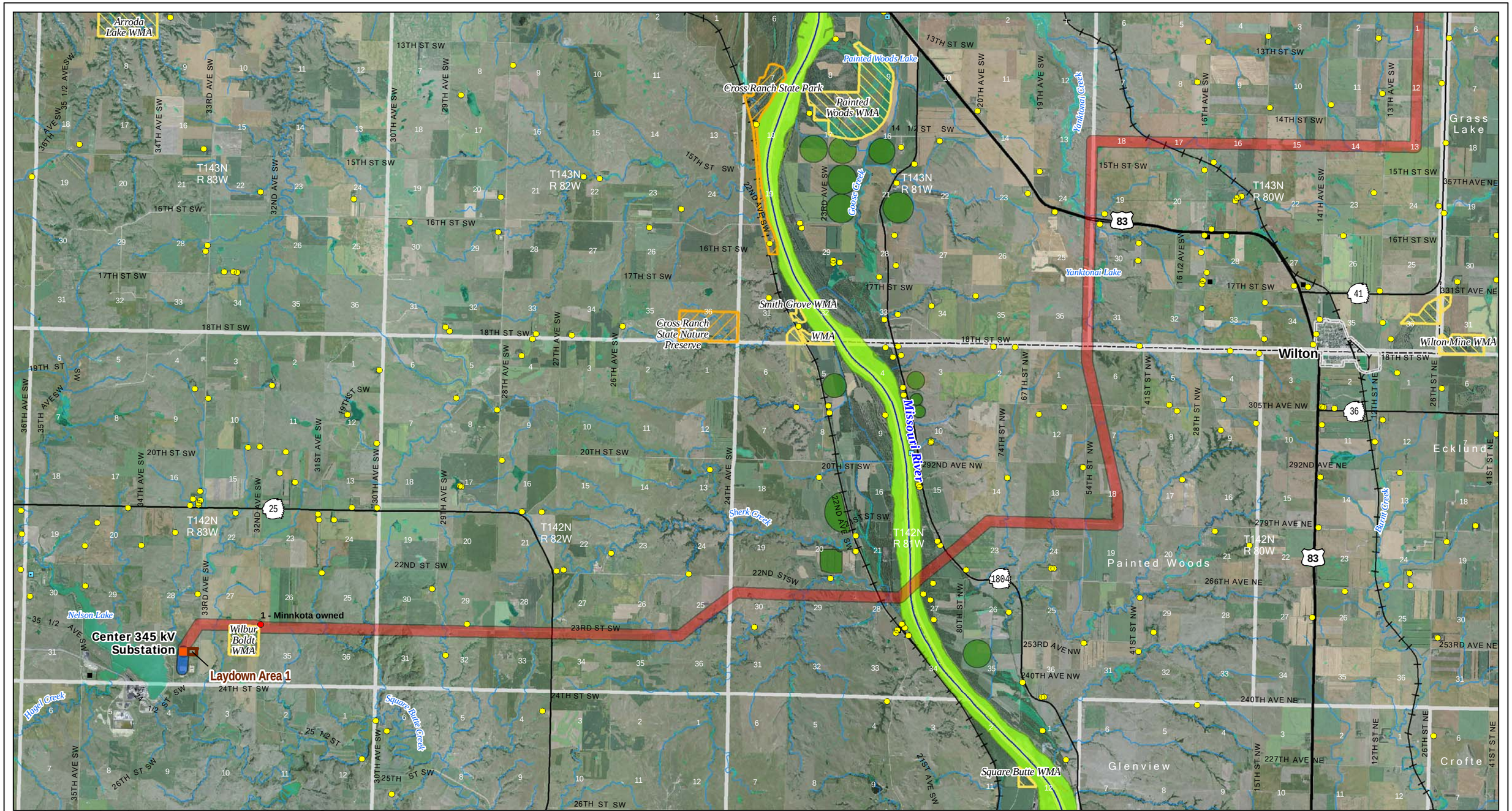
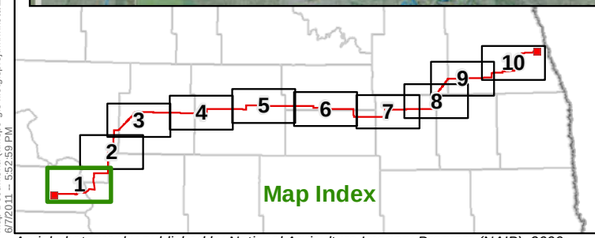


Figure 2: Page 10 of 10
Corridor Siting Criteria
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mgpe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_02_11x17L_10p_CorridorSitingCriteria.mxd)
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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

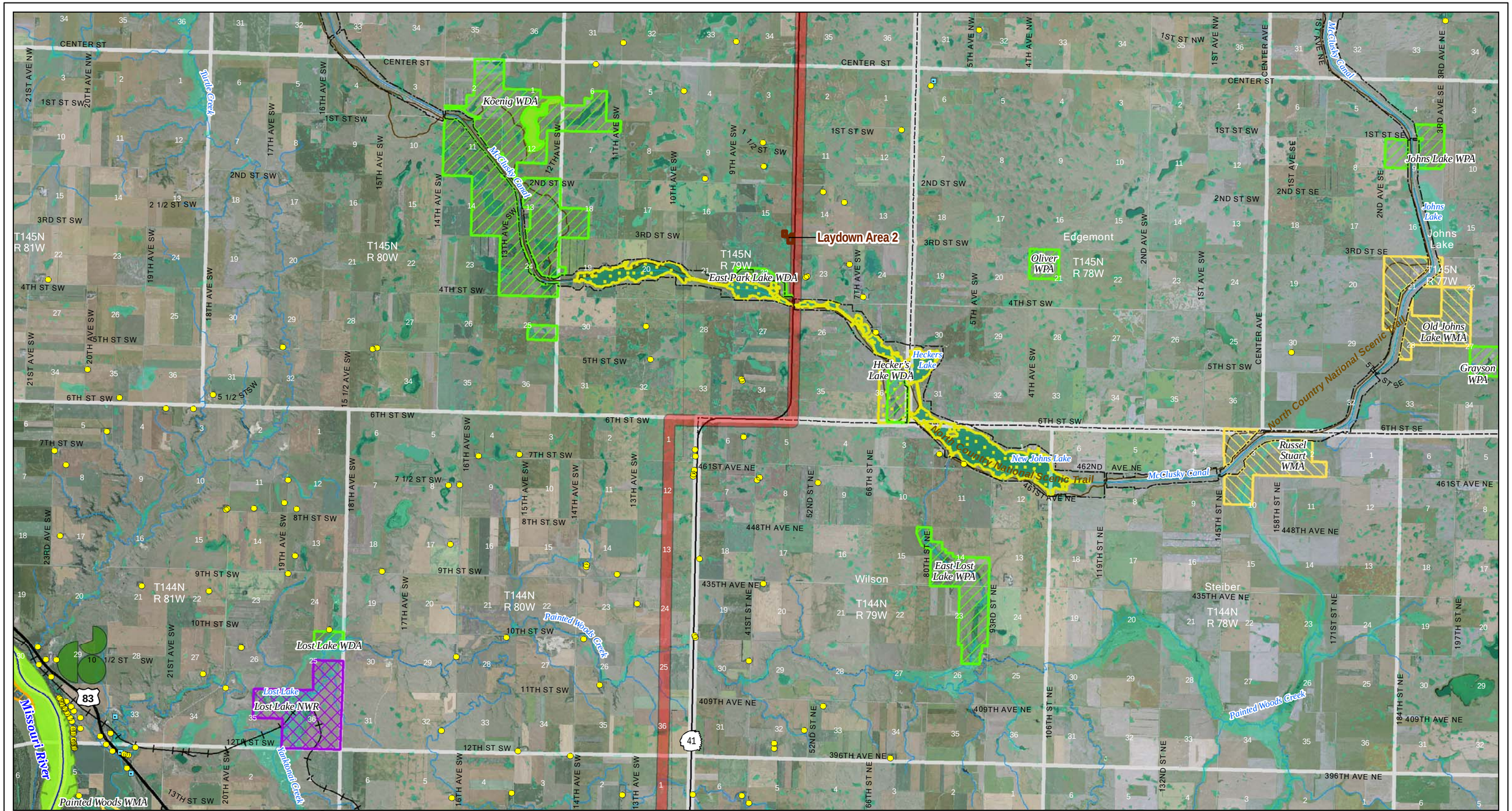
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

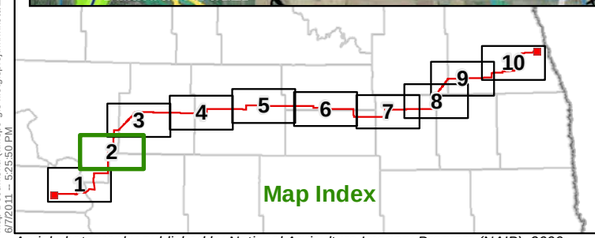
Figure 3: Page 1 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mspe-gis-file\gispn\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_03_11x17L_10p_ExclAvoid.mxd)
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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

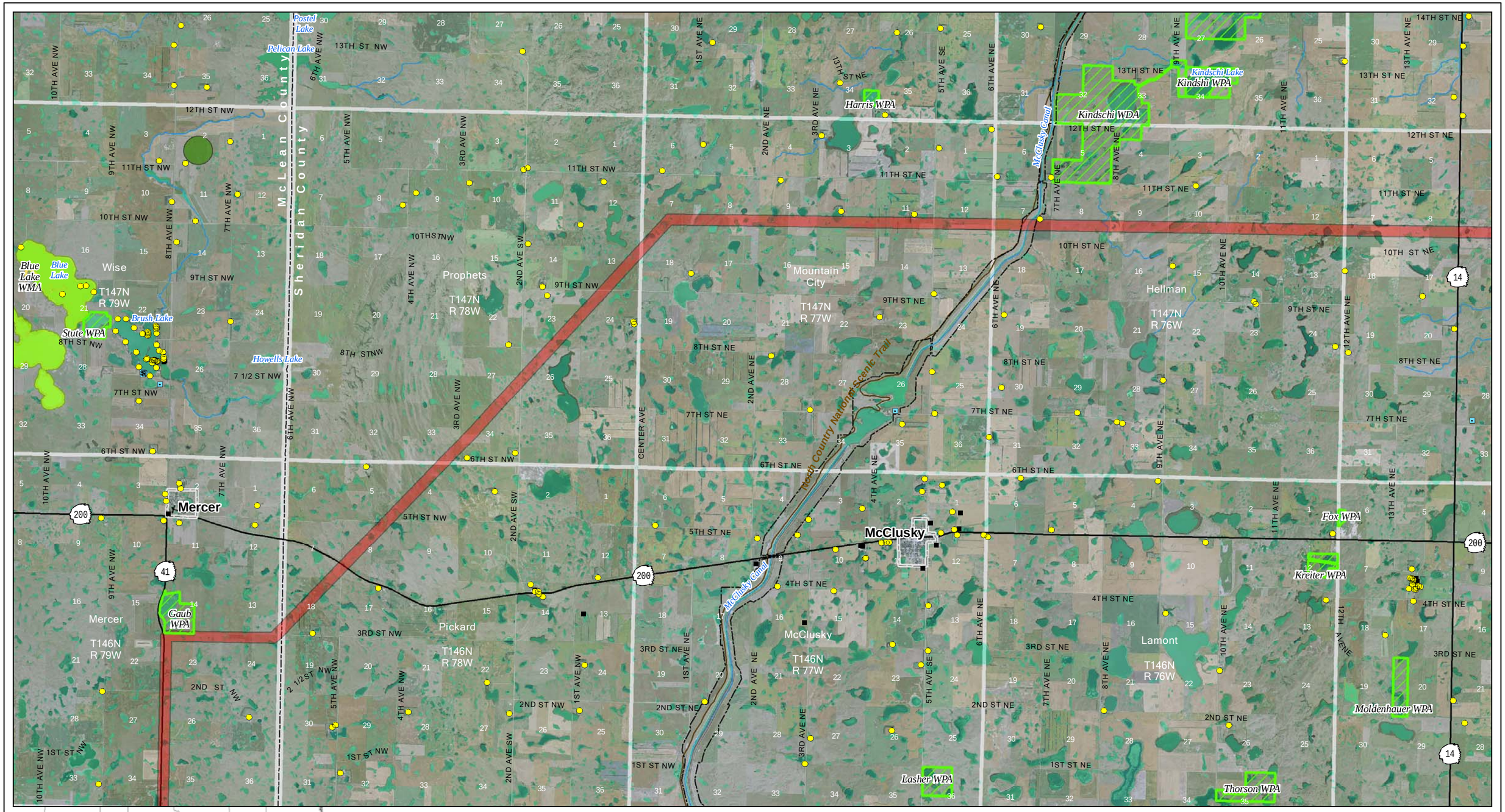
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

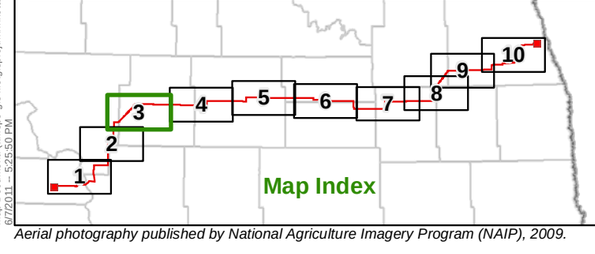
Figure 3: Page 2 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

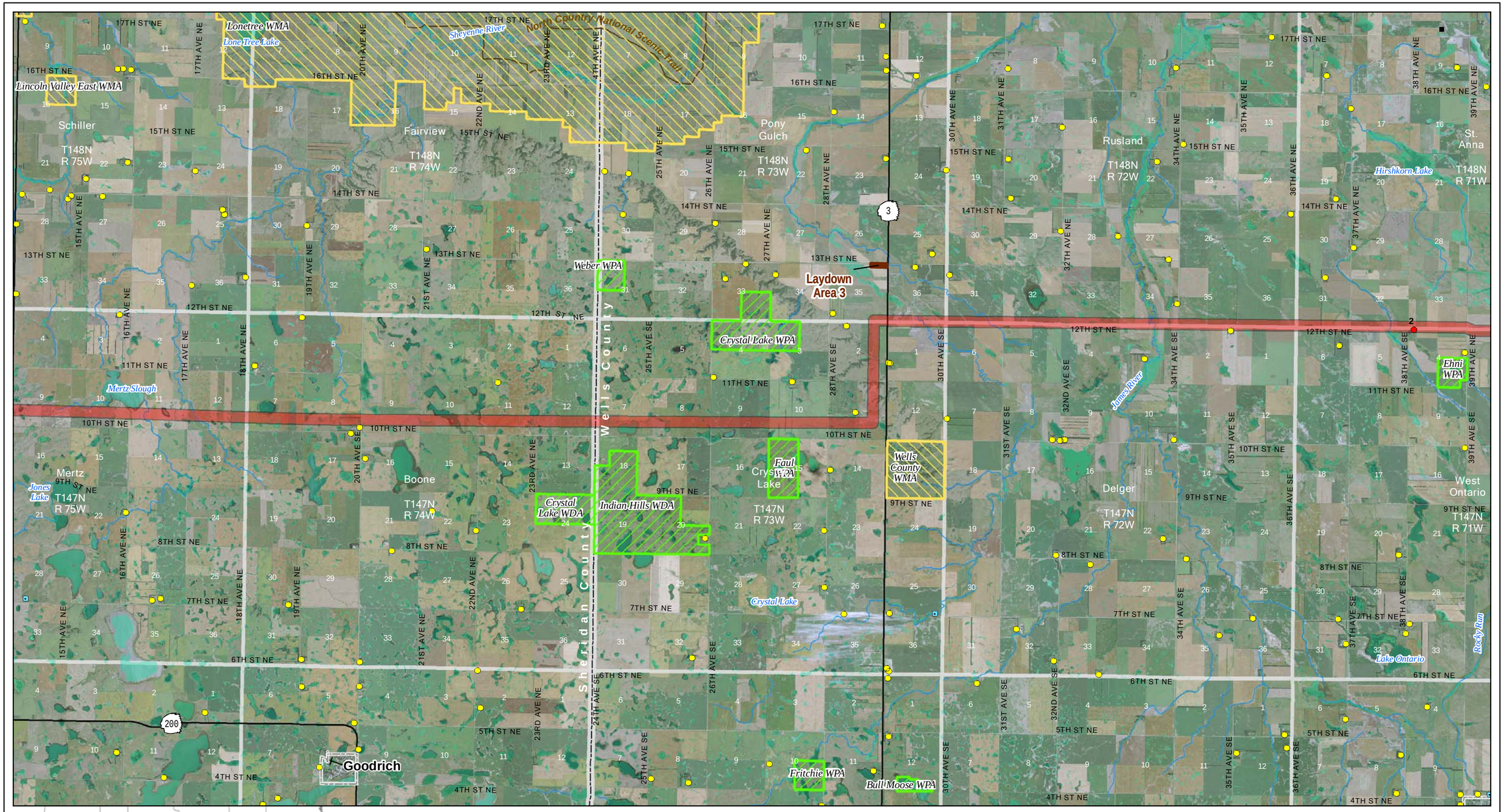
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

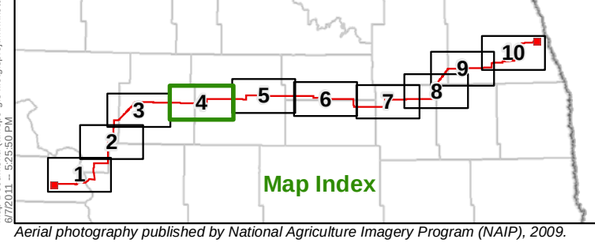
Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Figure 3: Page 3 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Map Document: (\\Mspe-gis-file\gispnp\Minnkota\110900\map_docs\PSC\Corridor\App\CGF\CCC_03_11x17L_10p_ExclAvoid.mxd)
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Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

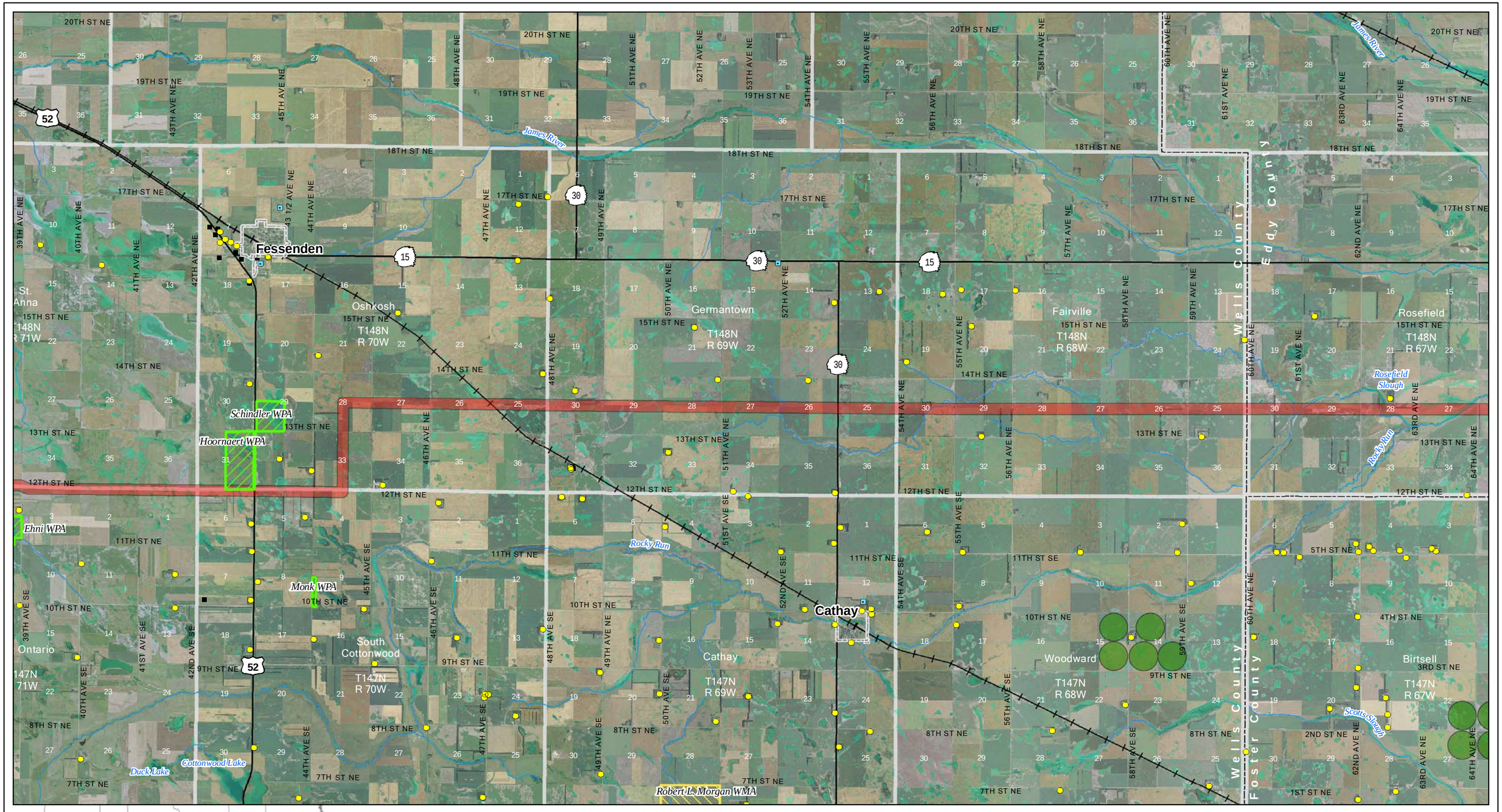
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

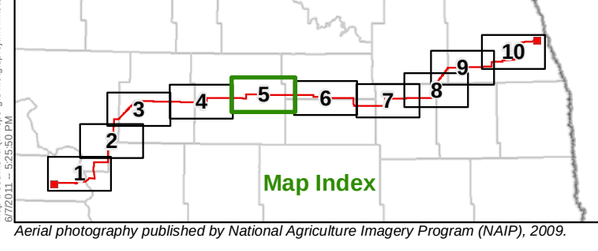
Figure 3: Page 4 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mgse-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\Appl\CGFCCC_03_11x17L_10p_ExclAvoid.mxd)
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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

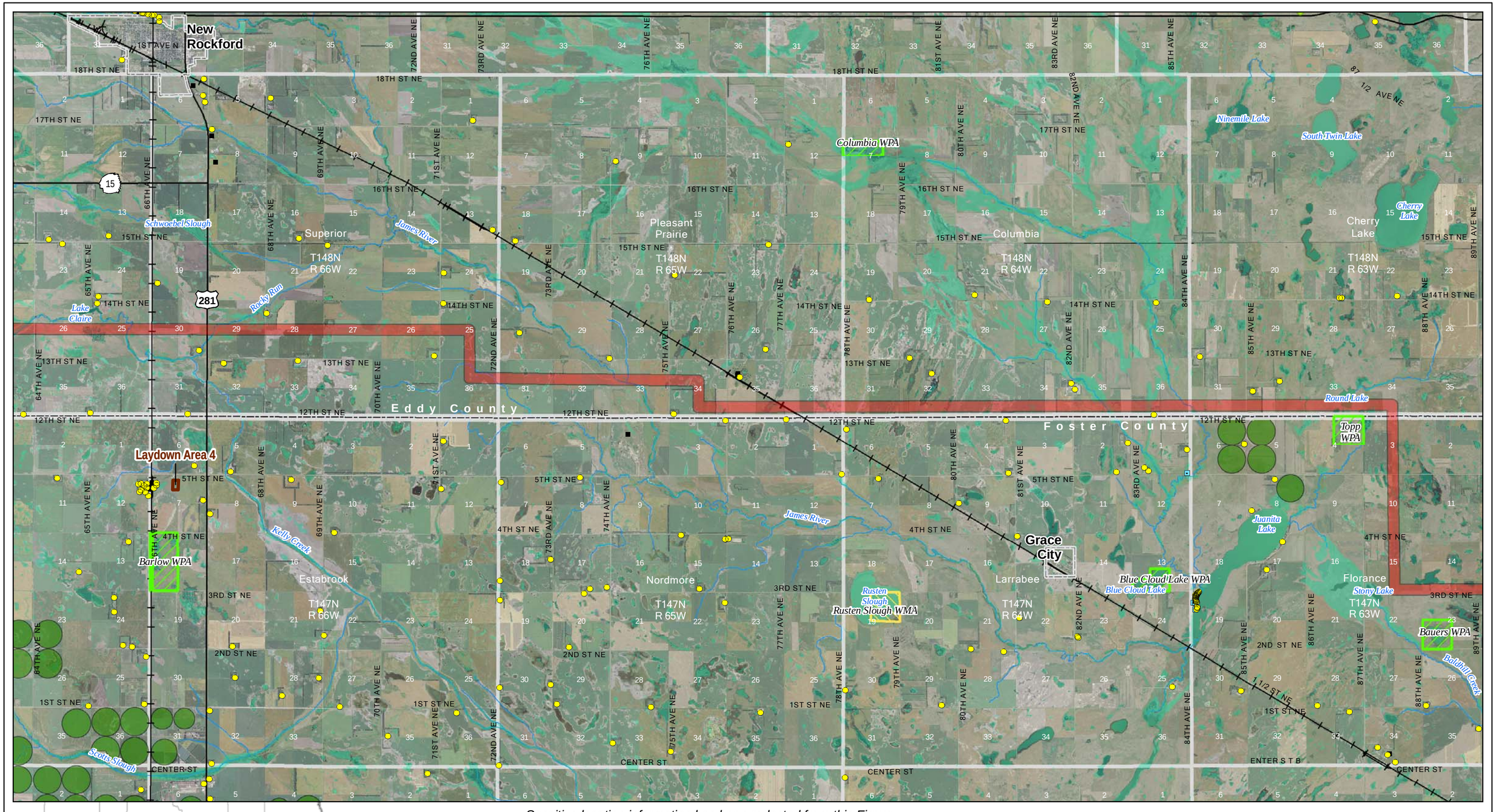
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

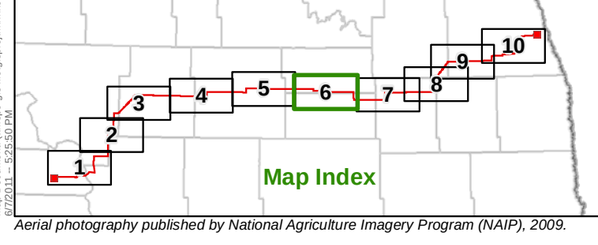
Figure 3: Page 5 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

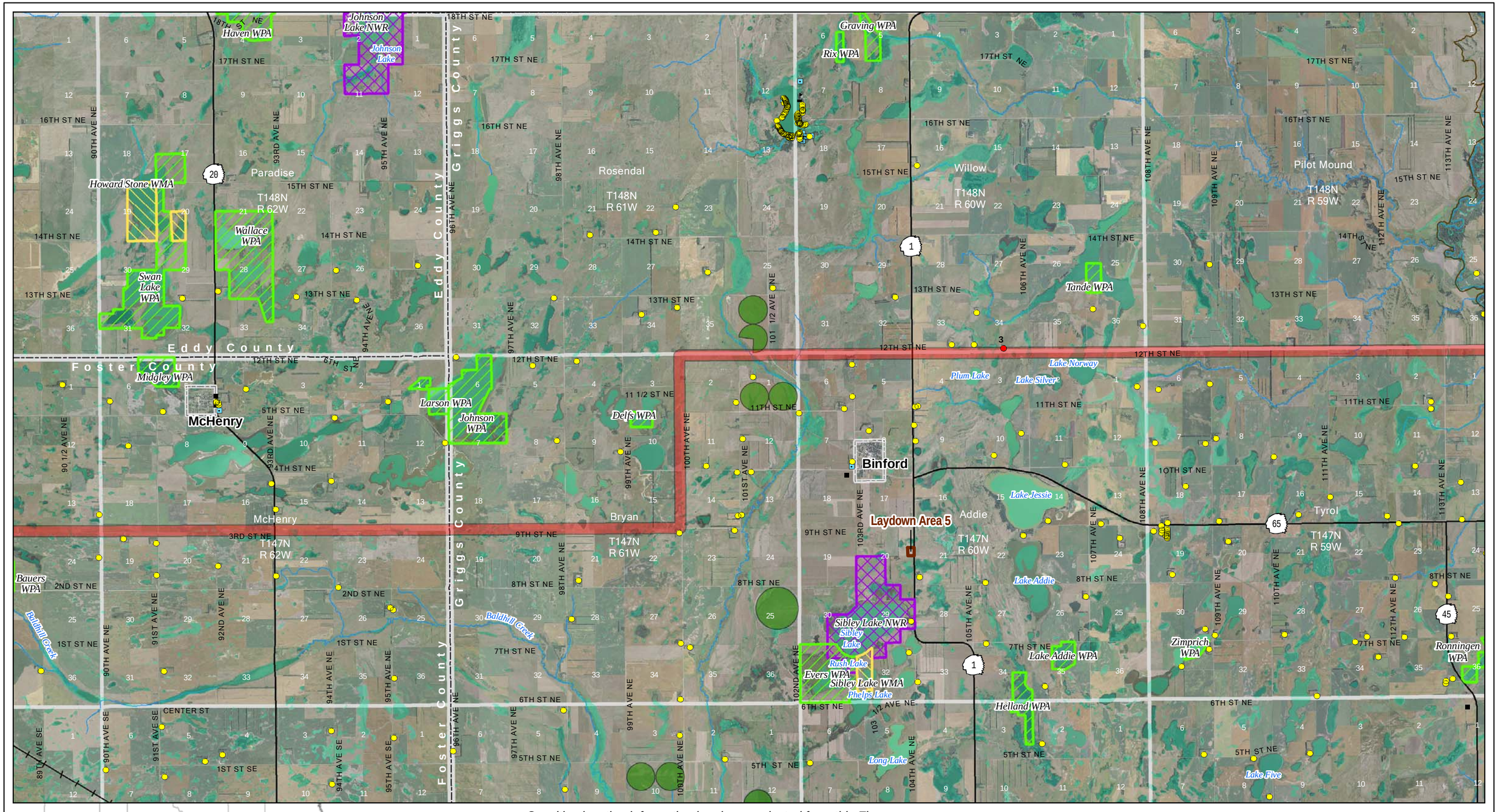
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

Figure 3: Page 6 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

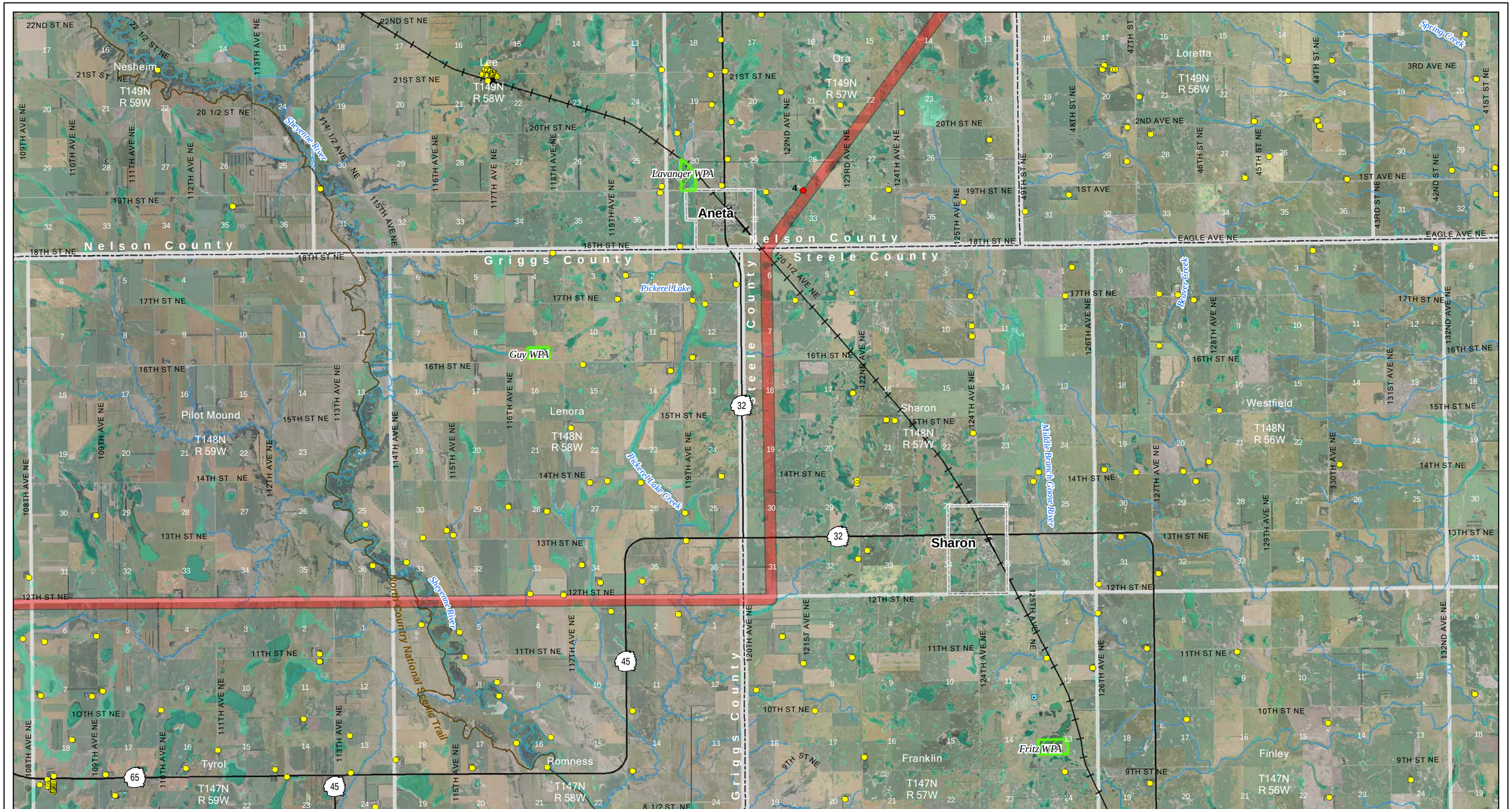
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

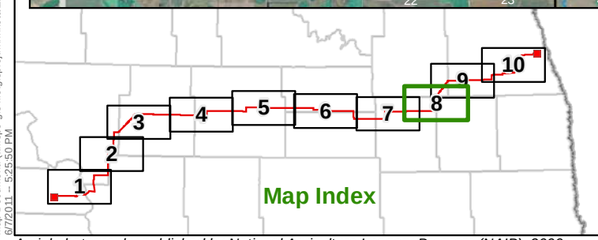
Figure 3: Page 7 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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Project Areas
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- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

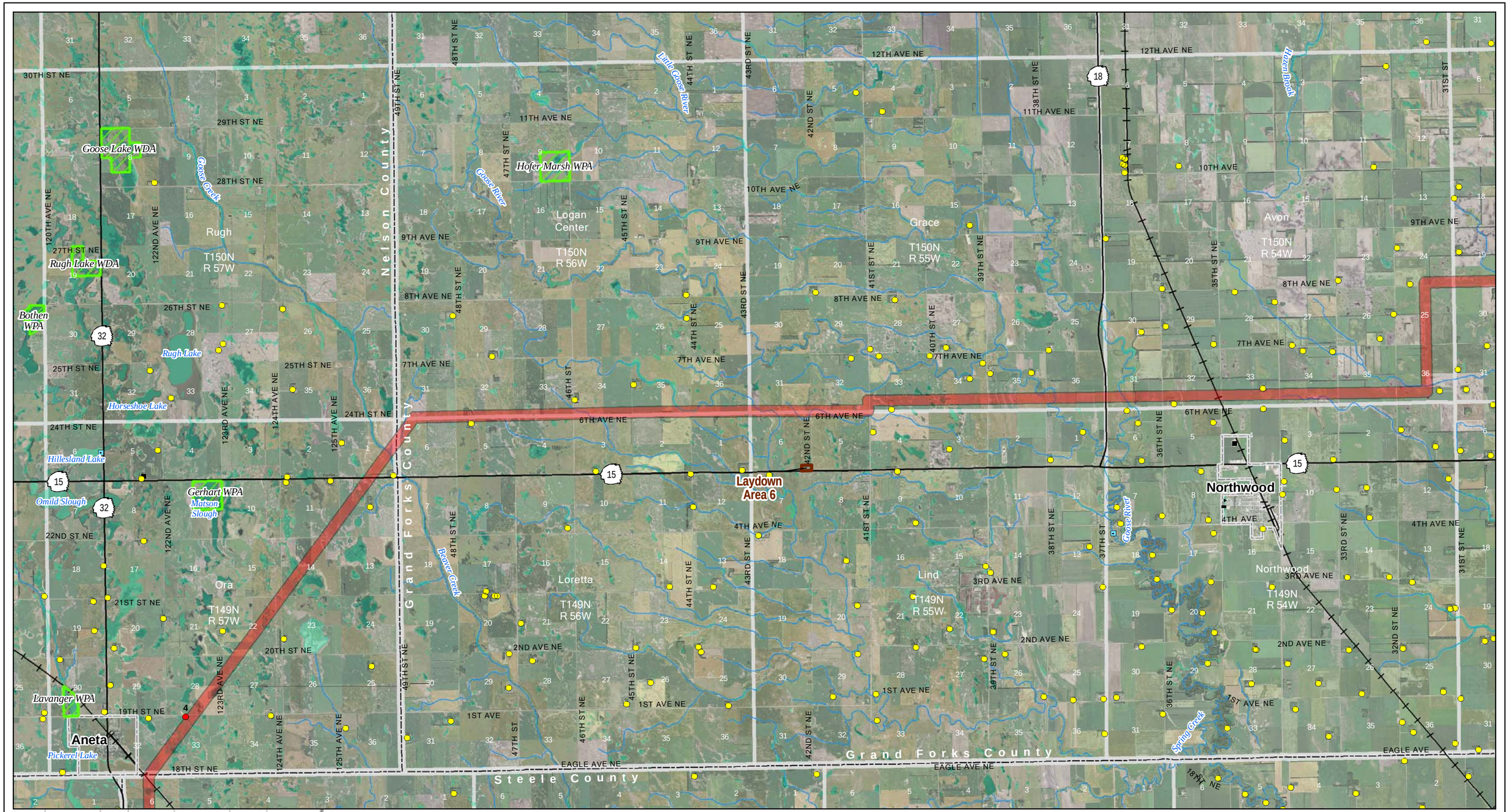
Avoidance Areas
- Home within Corridor
- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
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- North Country National Scenic Trail

Figure 3: Page 8 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

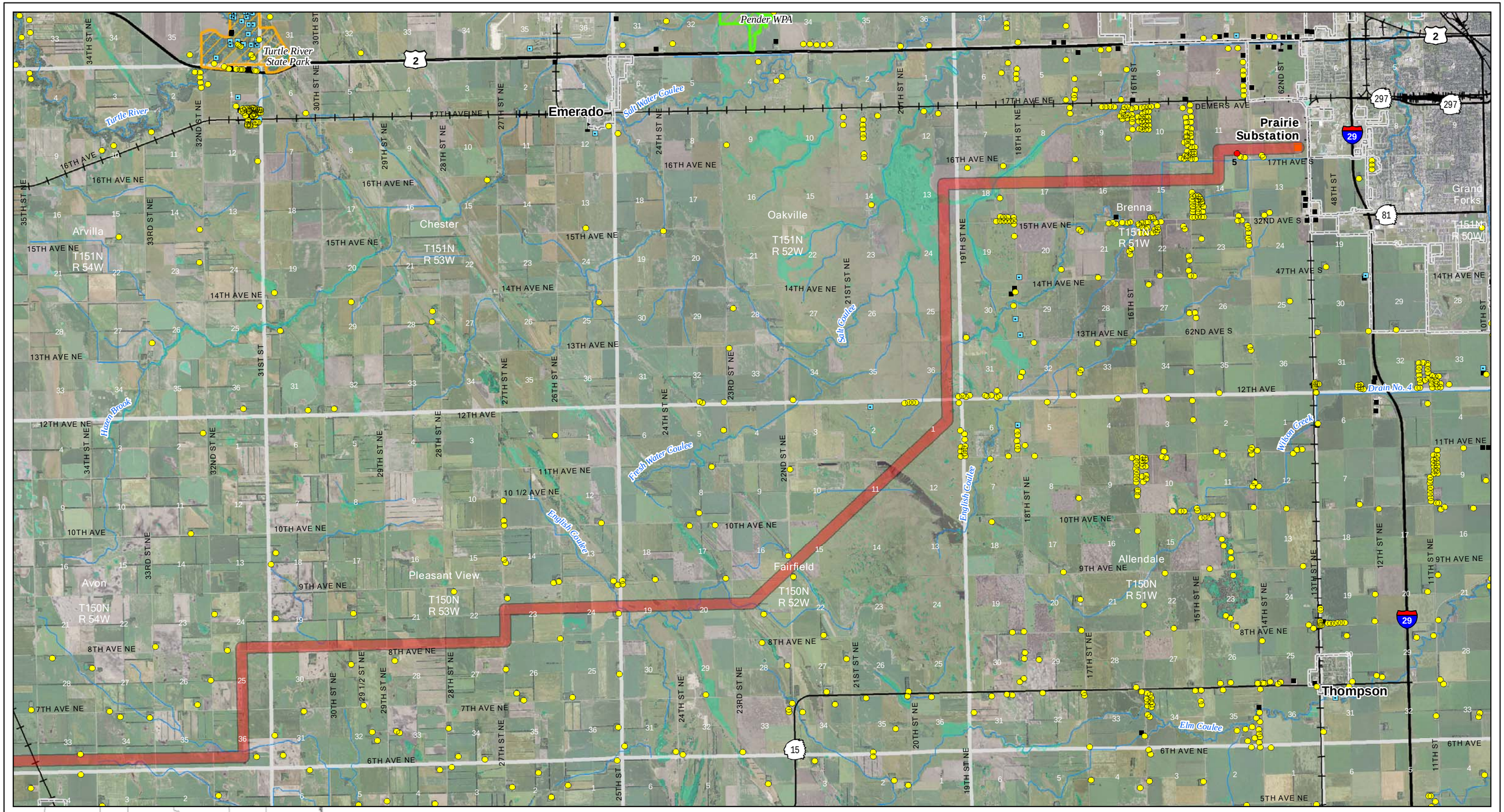
Avoidance Areas
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- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
- USBR McClusky Canal - fenceline
- North Country National Scenic Trail

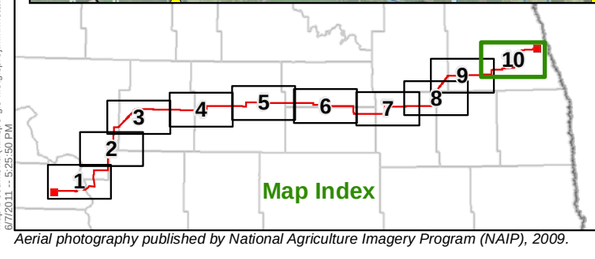
Figure 3: Page 9 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Aerial photography published by National Agriculture Imagery Program (NAIP), 2009.

Map Document: (\\Mpge gis-file\gispro\Minnkota\110900\map_docs\PSC\Corridor\Appl\CGFCCC_03_11x17L_10p_ExclAvoid.mxd)
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Sensitive location information has been redacted from this Figure.

Project Areas
- Project Corridor (updated June 9, 2011)
- 230-kV Tie Line Corridor
- Project Substation
- Laydown Area

Exclusion Areas
- State Park, Recreation Area or Nature Preserve
- Piping Plover Critical Habitat

Avoidance Areas
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- Home
- School
- Business
- Recreation
- Irrigated Land
- USFWS NWR
- USFWS WPA or WDA
- State WMA
- Chain of Lake Recreation Area
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Figure 3: Page 10 of 10
Corridor Exclusion and Avoidance Areas
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

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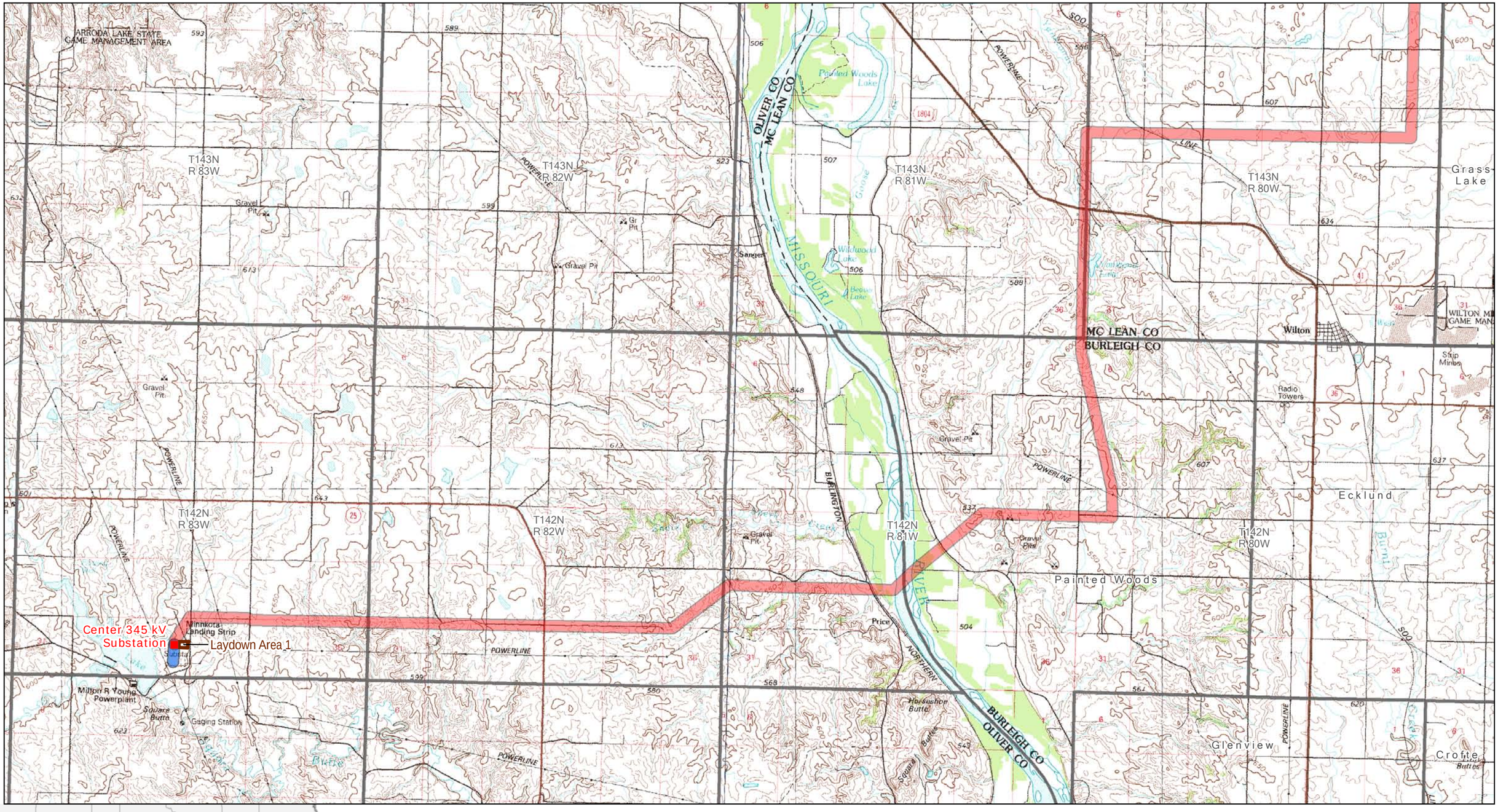


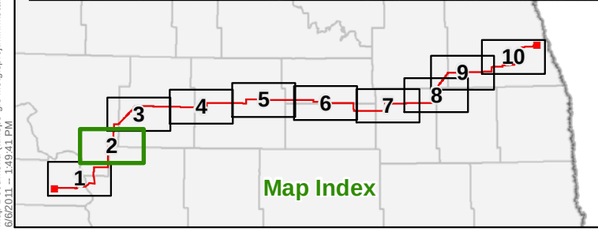
Figure 4: Page 1 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

Map Document: (M:\tpe-gis-file\gis\pro\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_04_11x17L_10p_topo.mxd)
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Laydown Area 2

T145N R 81W
T145N R 80W
T145N R 79W
T145N R 78W
T145N R 77W
T144N R 81W
T144N R 80W
T144N R 79W
T144N R 78W

Edgemont
Johns Lake
Wilson
Steiber
Merida
Gaging Station
Gravel Pit
Gravel Pits
POWERLINE
LOST LAKE NATIONAL WILDLIFE REFUGE
MC LEAN CO
BURLEIGH CO
Canal
Creek



Project Corridor (updated June 9, 2011)

230 kV Tie Line Corridor

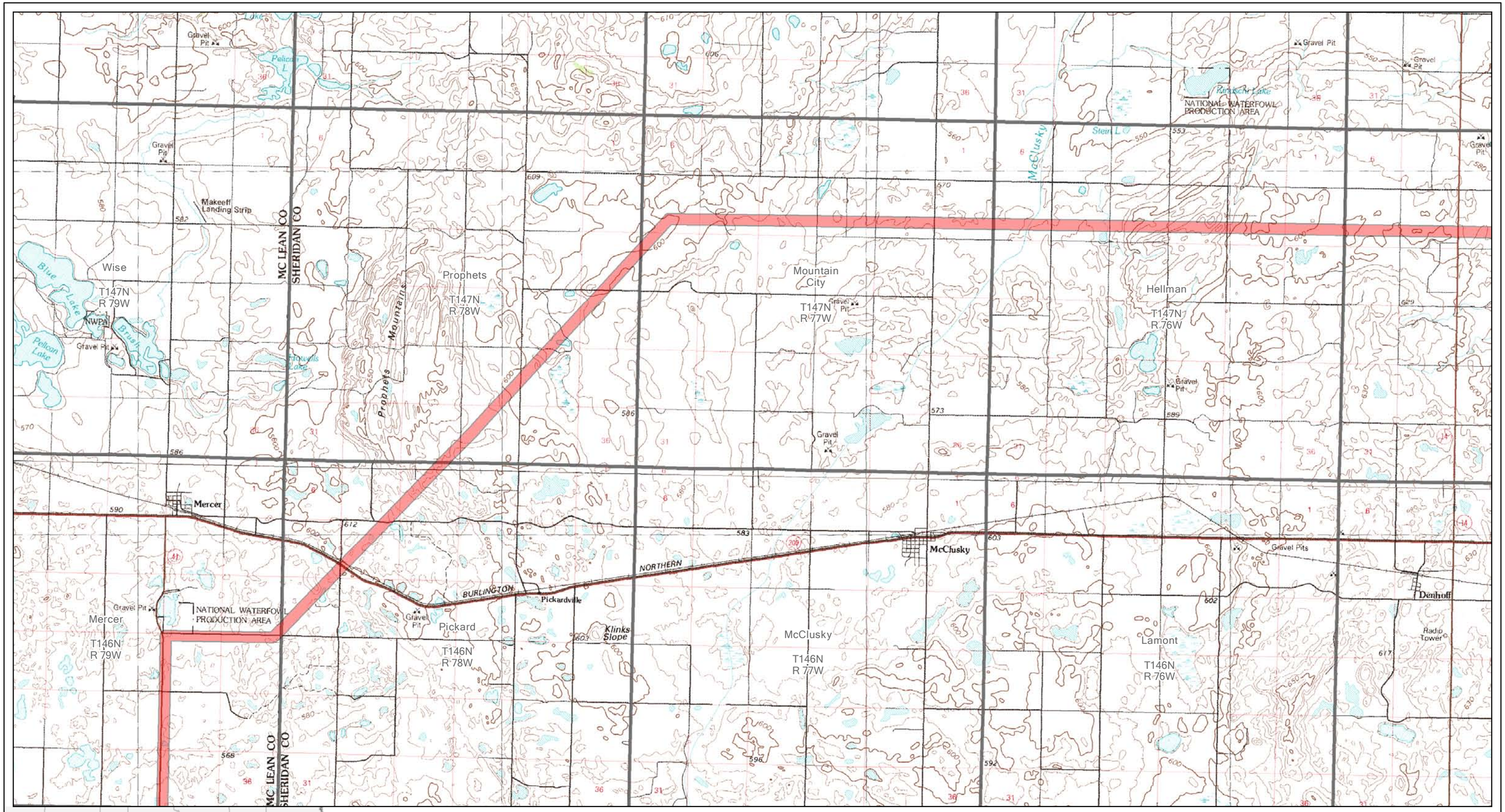
Project Substation

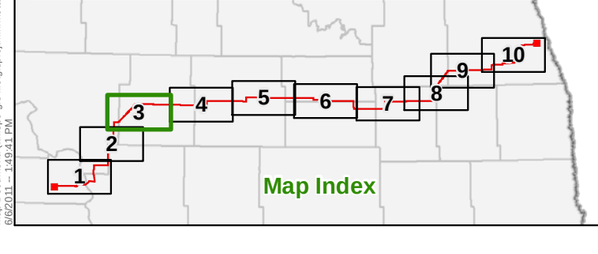
Laydown Area

Figure 4: Page 2 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Map Document: (\\Mspe-gis-file\gispro)\Minnkota\110900\map_docs\PSC\CorridorApp\CGFCCC_04_11x17L_10p_topo.mxd
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Project Corridor
(updated June 9, 2011)

230 kV Tie Line
Corridor

Project Substation

Laydown Area

Figure 4: Page 3 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles

Scale 1:100,000

Map Document: (\\Mcpe gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_04_11x17L_10p_topo.mxd)
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Laydown Area 3

Schiller
T148N
R 75W

Fairview
T148N
R 74W

Pony
Gulch
T148N
R 73W

Rusland
T148N
R 72W

St.
Anna
T148N
R 71W

Mertz
T147N
R 75W

Boone
T147N
R 74W

Crystal
Lake
T147N
R 73W

Delger
T147N
R 72W

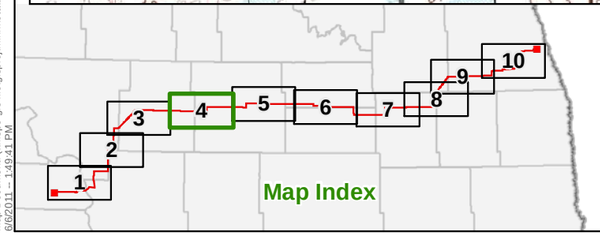
West
Ontario
T147N
R 71W

Lone Tree Lake
Pony Gulch River
James River
Hirschhorn Lake
Merry Slough
Crystal Lake
Lake Ontario

NATIONAL WATERFOWL PRODUCTION AREA
WELLS COUNTY LIFE MANAGEMENT AREA
SHERIDAN CO
WELLS CO

Gravel Pit
Sandpit
Pit
Frueh Landing Field
Goodrich
Sewage Disposal

BURLINGTON NORTHERN



Project Corridor
(updated June 9, 2011)

230 kV Tie Line
Corridor

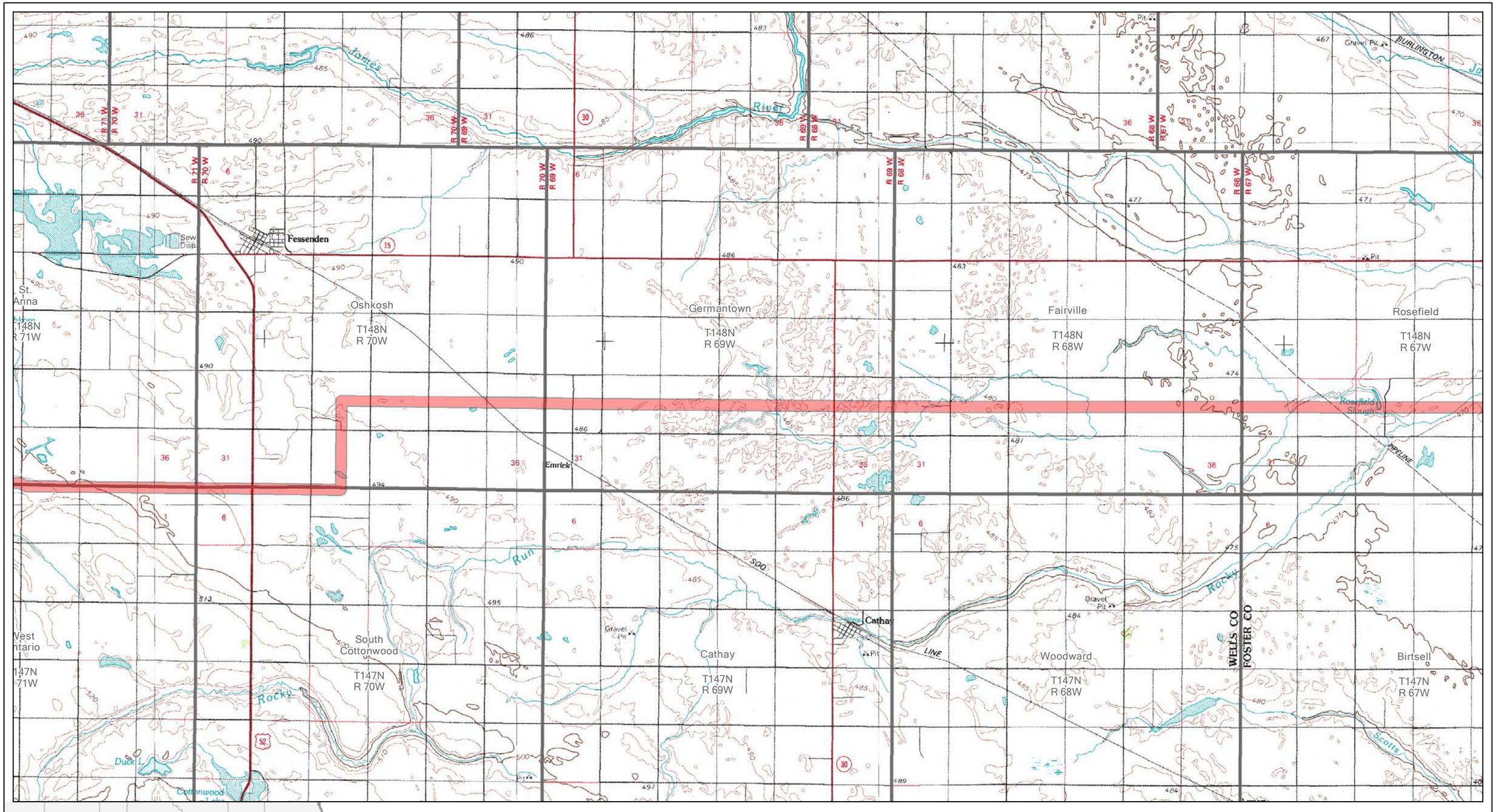
Project Substation

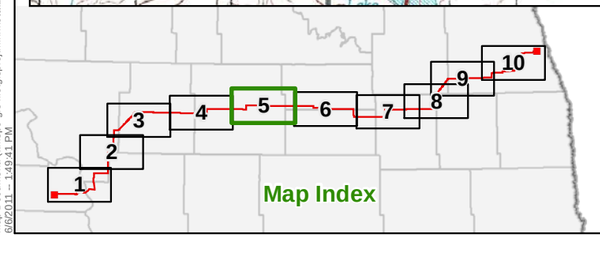
Laydown Area

Figure 4: Page 4 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

Map Document: (\\Mspe-gis-file\gispro)\Minnkota\110900\map_docs\PSC\CorridorApp\CGFCCC_04_11x17L_10p_topo.mxd)
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Project Corridor (updated June 9, 2011)

230 kV Tie Line Corridor

Project Substation

Laydown Area

Figure 4: Page 5 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles

Scale 1:100,000

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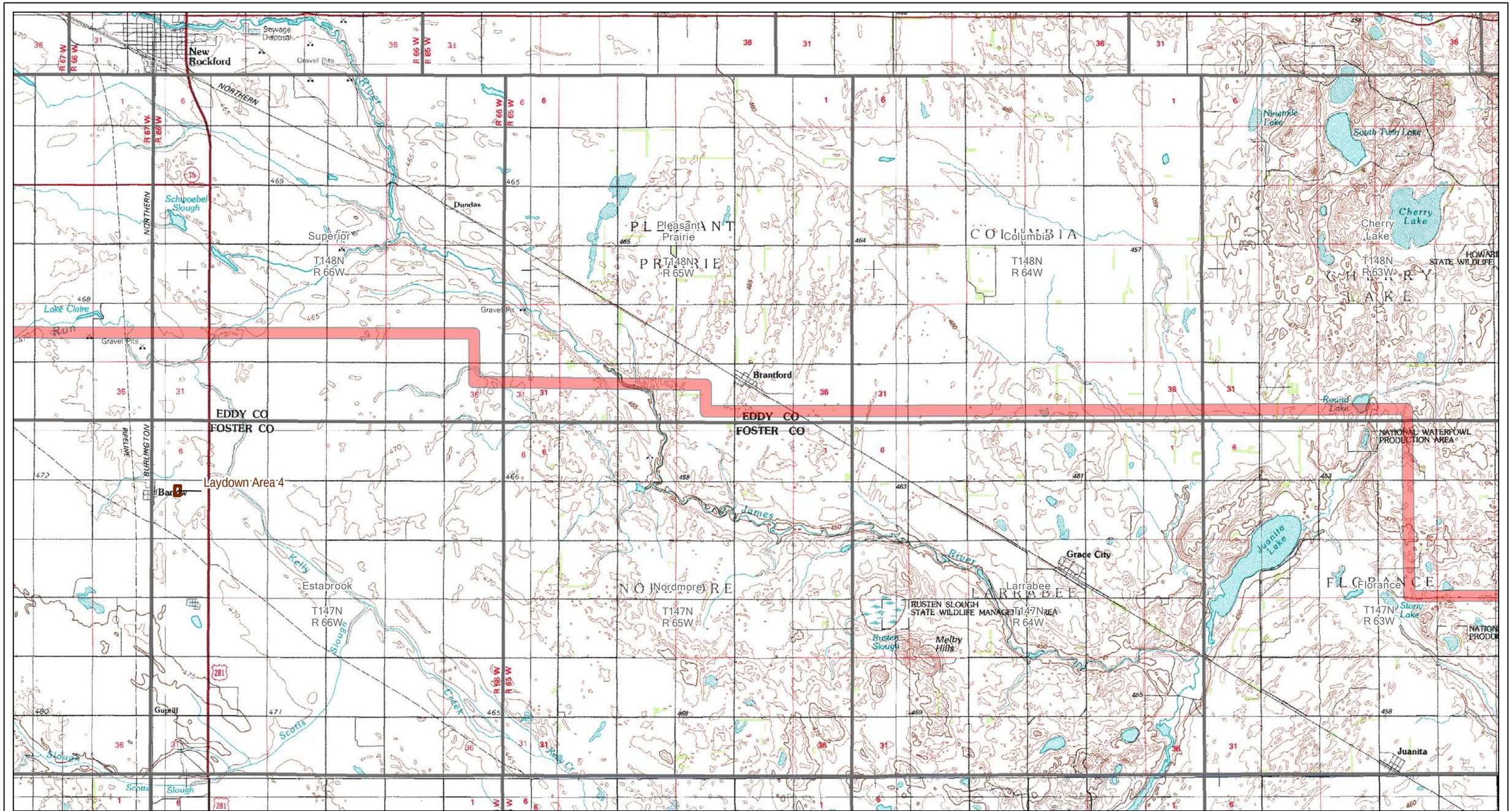
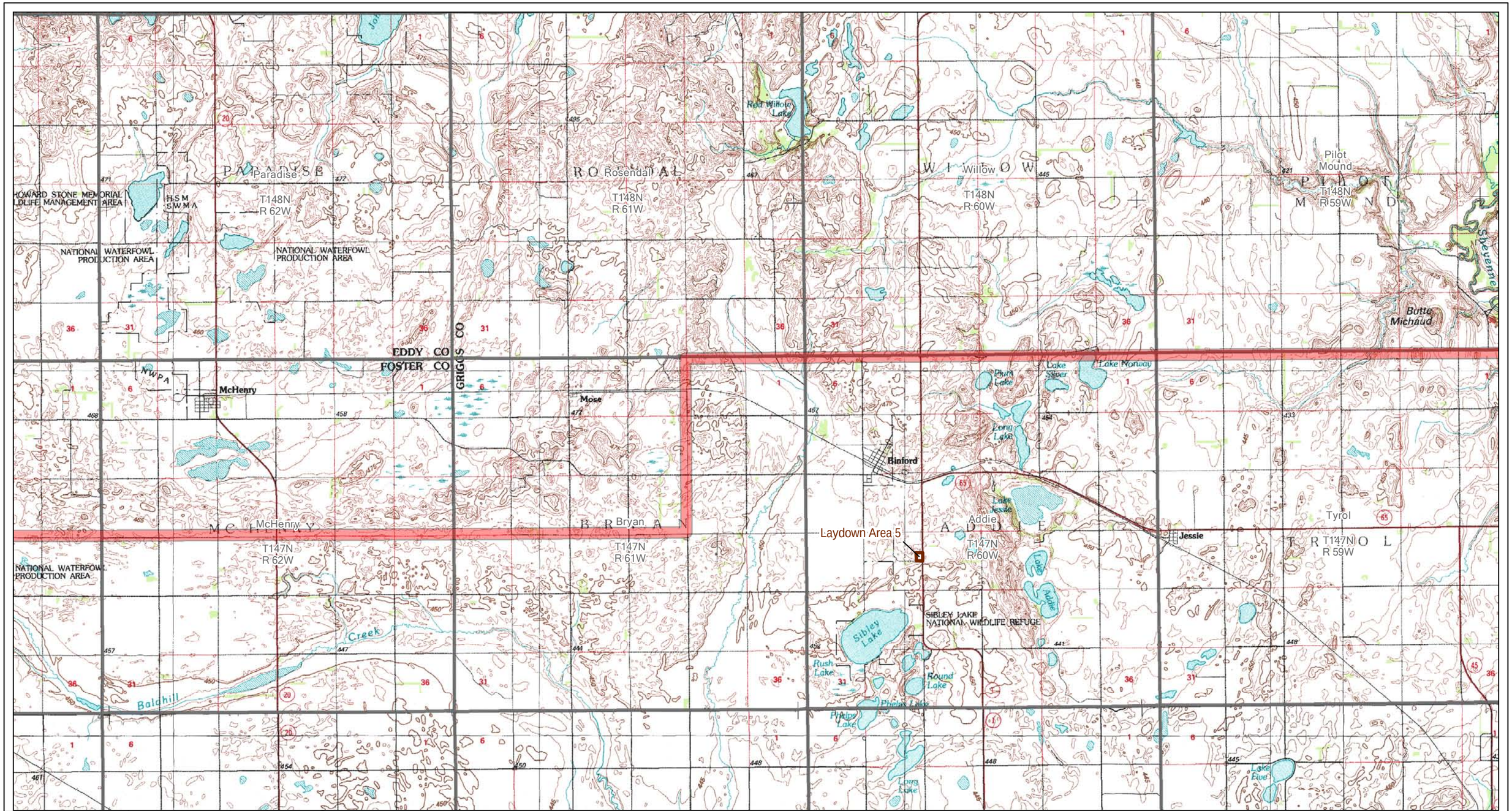
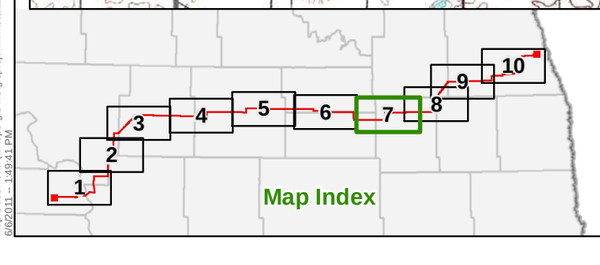


Figure 4: Page 6 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

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Project Corridor
(updated June 9, 2011)

230 kV Tie Line
Corridor

Project Substation

Laydown Area

Figure 4: Page 7 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles

Scale 1:100,000

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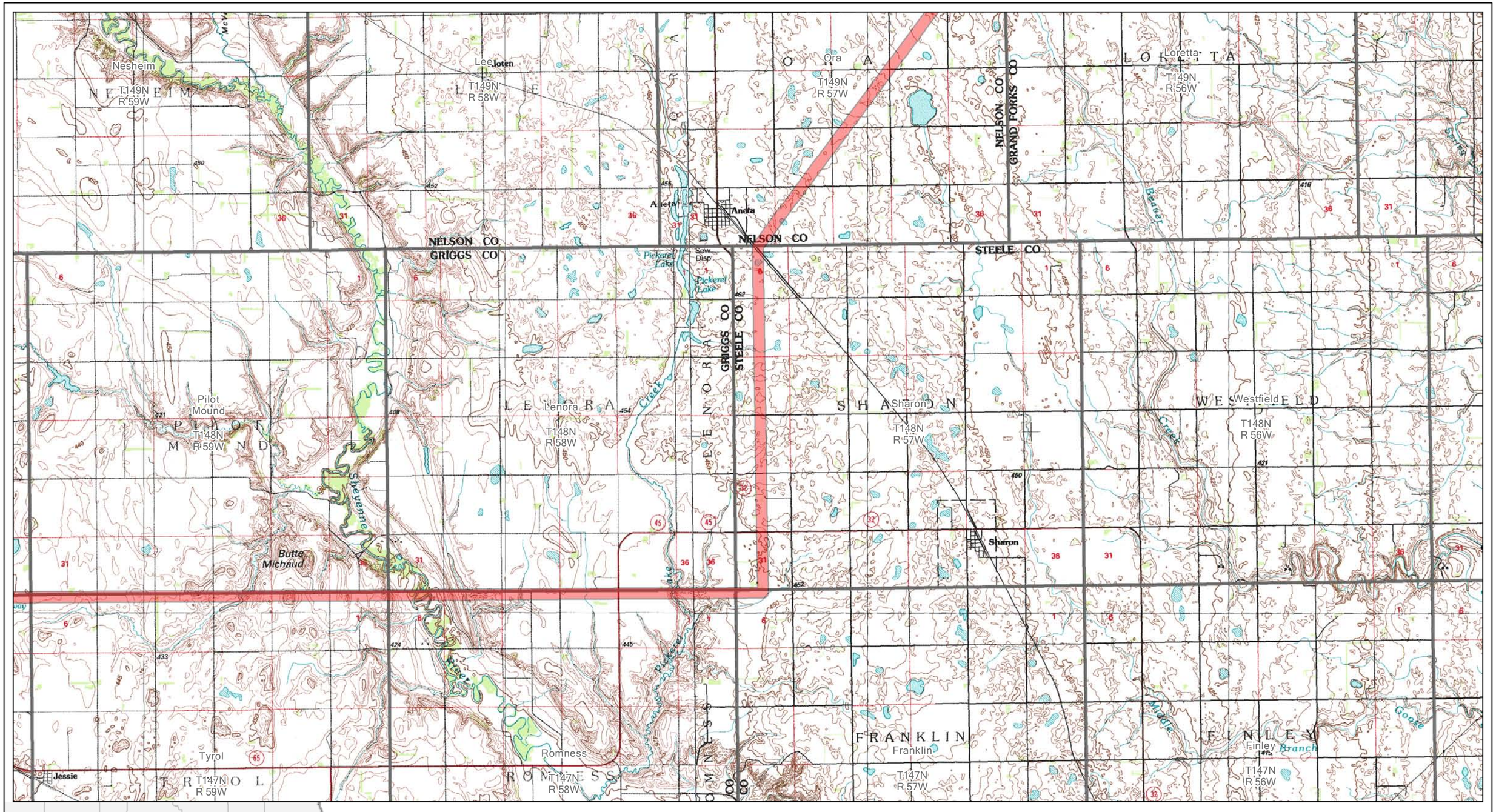
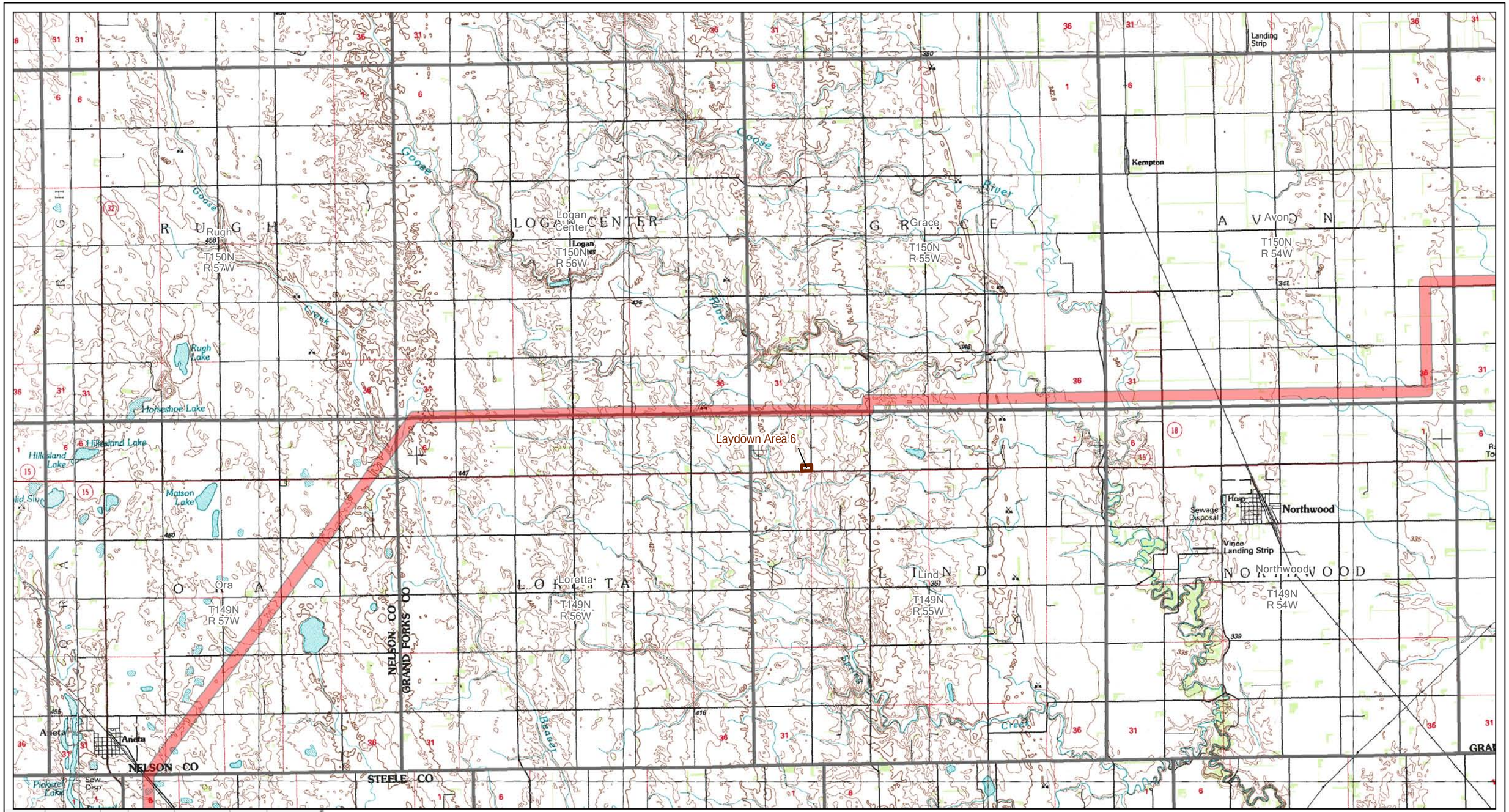
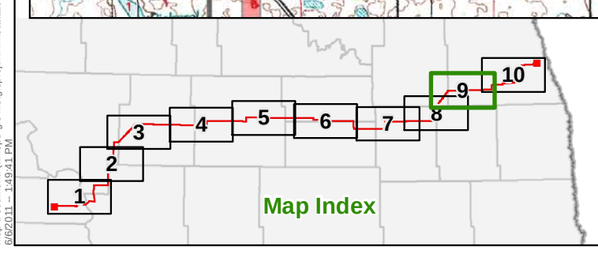


Figure 4: Page 8 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

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Project Corridor (updated June 9, 2011)

230 kV Tie Line Corridor

Project Substation

Laydown Area

Figure 4: Page 9 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles

Scale 1:100,000

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Prairie Substation

ARVILLA
Arvilla
T151N R 54W

CHESTER
Chester
T151N R 53W

OAKVILLE
Oakville
T151N R 52W

BRENNA
Brenna
T151N R 51W

GRAND FORKS
T151N R 50W

PLEASANT VIEW
Pleasant View
T150N R 53W

FAIRFIELD
Fairfield
T150N R 52W

ALLENDALE
Allendale
T150N R 51W

AVON
Avon
T150N R 54W

Project Corridor (updated June 9, 2011)

230 kV Tie Line Corridor

Project Substation

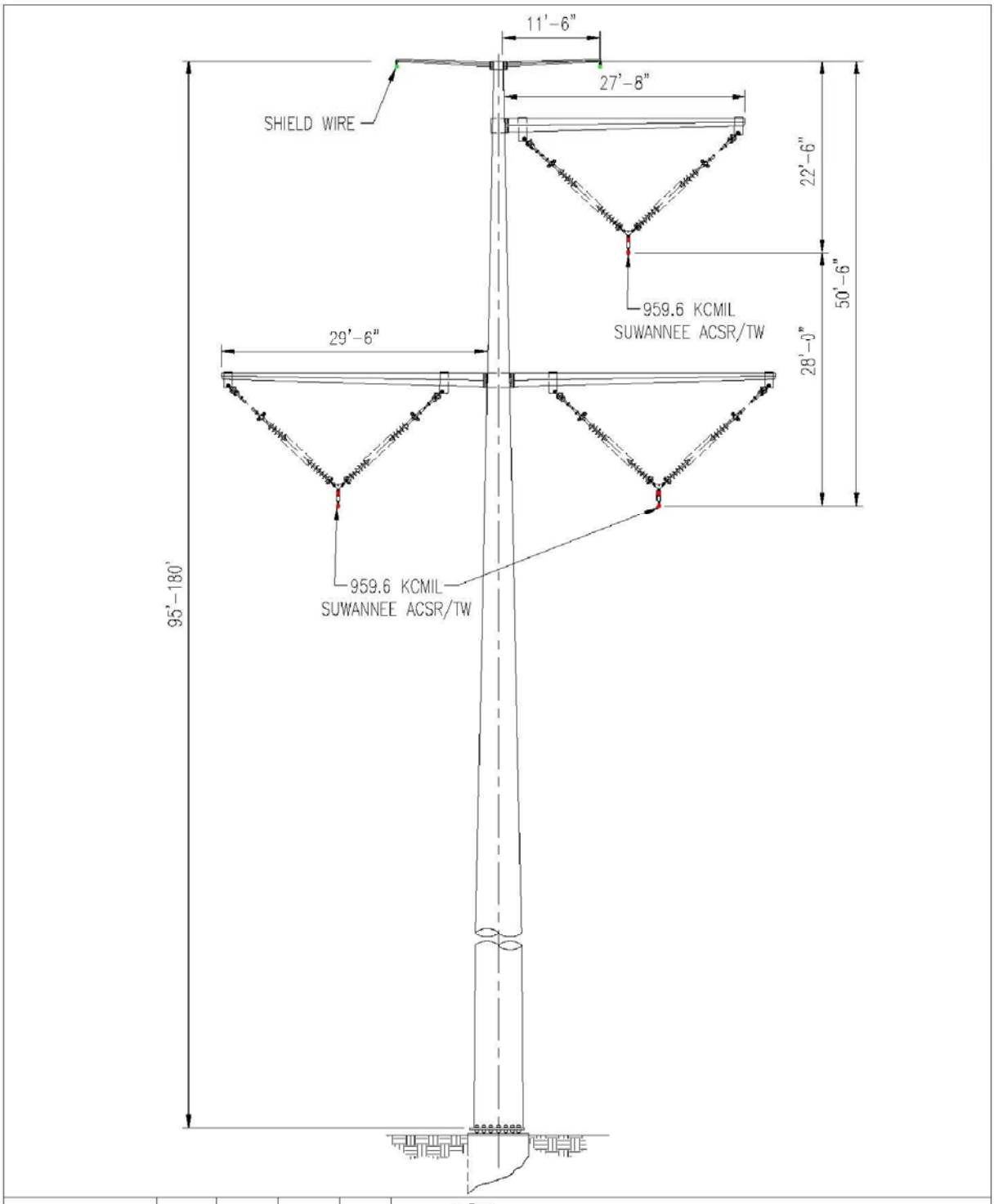
Laydown Area

Map Index

Figure 4: Page 10 of 10
USGS 1:100,000 Topographic Map
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 1 2 Miles
Scale 1:100,000

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CADD A1-R4 © STANLEY CONSULTANTS

REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.

8000 South Chester Street, Suite 500
Centennial, Colorado 80112
www.stanleyconsultants.com

DESIGNED T. STREICH
DRAWN B. CAMPBELL
CHECKED
APPROVED
APPROVED
DATE

MINNKOTA POWER COOPERATIVE, INC.
GRAND FORKS, N.D.

CGF TRANSMISSION LINE
345kV, SINGLE CIRCUIT,
TANGENT (PRELIMINARY)

SCALE: NTS

NO. 21906 TAN2_A

REV. A

Map Document: (\\Mspe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\CorridorApp\CGFCCC_05_8x11_345kVStructure.mxd)
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Figure 5
345 kV Structure
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

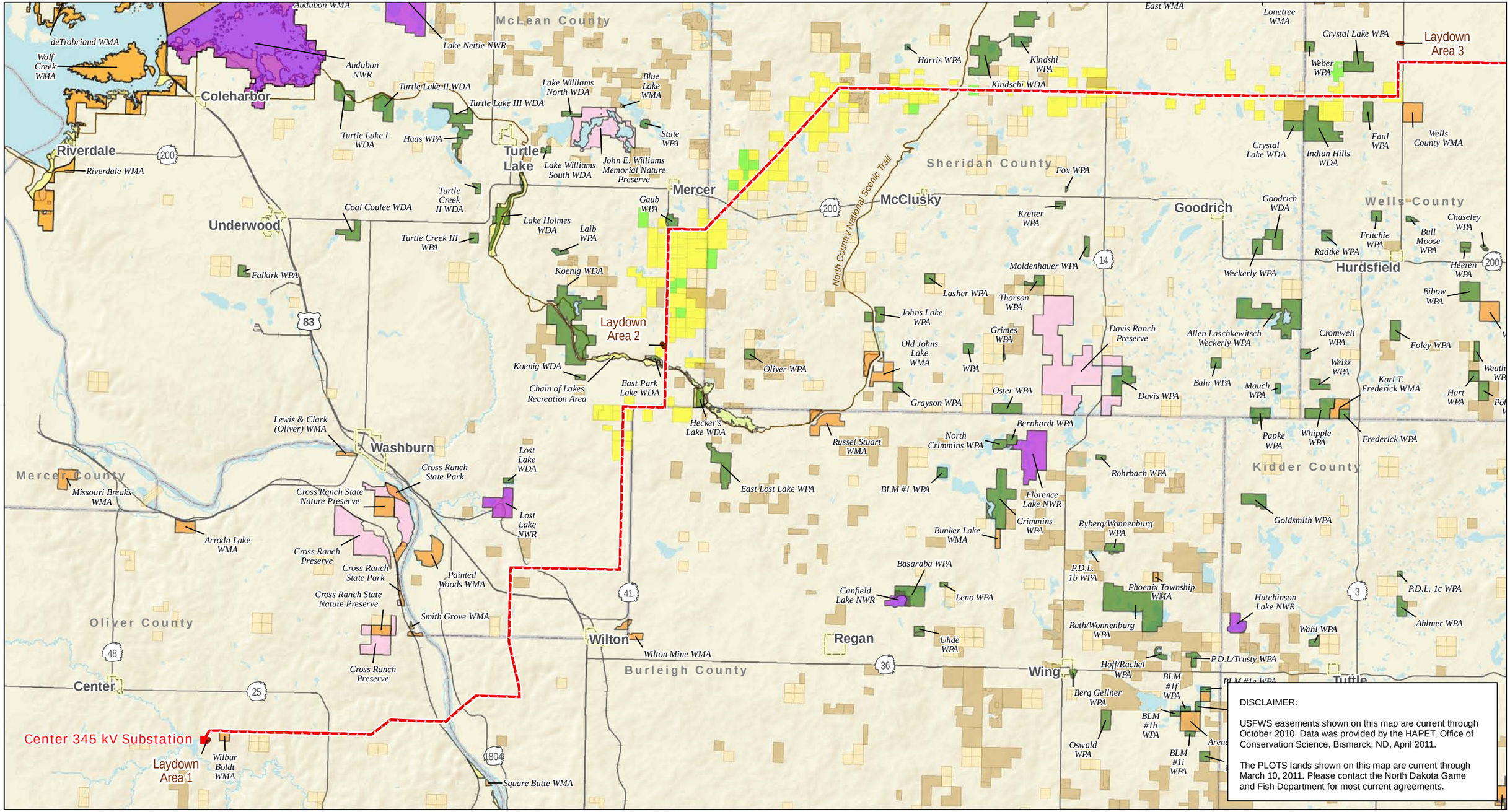
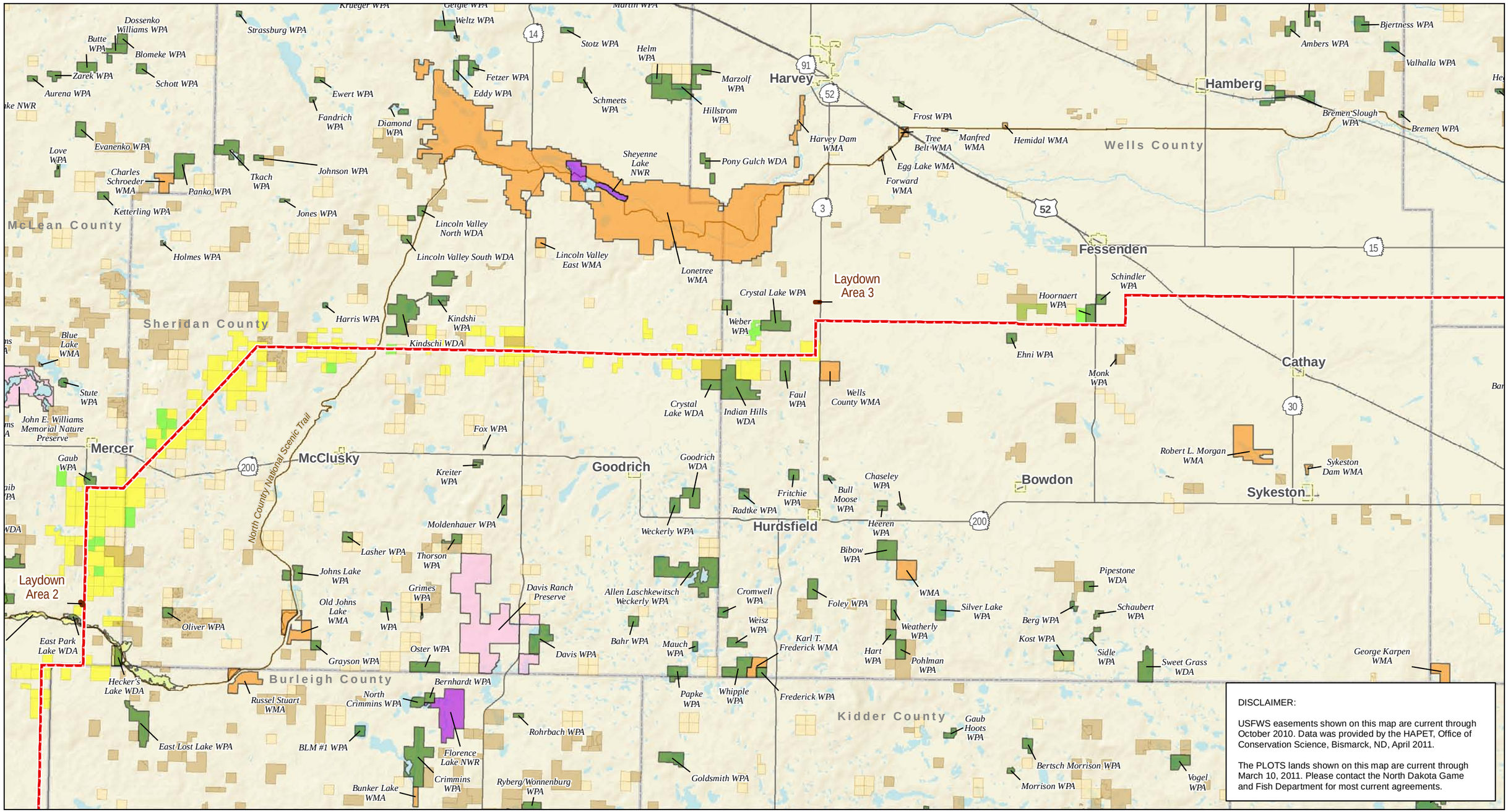


Figure 6: Page 1 of 4
Managed Resource Lands
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

Map Document: (\\Mspe-gis-file\gispro\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_06_11x17L_4pg_ResourceLands.mxd)
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Data Sources: NCTA, NDGF, TNC, USACE, USFWS.



DISCLAIMER:

USFWS easements shown on this map are current through October 2010. Data was provided by the HAPET, Office of Conservation Science, Bismarck, ND, April 2011.

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- Project Corridor (updated June 9, 2011)
- Project Substation
- Laydown Area
- North Country National Scenic Trail
- USFWS National Wildlife Refuge
- USFWS Waterfowl Production Area or Wildlife Development Area
- State Park, Recreation Area or Wildlife Management Area
- Bureau of Reclamation or Army Corps of Engineers Land
- The Nature Conservancy Preserve
- State Surface Tract
- PLOTS Land
- USFWS Wetland Easement
- USFWS Grassland Easement

Figure 6: Page 2 of 4
Managed Resource Lands
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

Data Sources: NCTA, NDGF, TNC, USACE, USFWS.

Map Document: (\\Mcpe gis-file\gispro)\Minnkota\110900\map_docs\PSC\Corridor\Appl\CGFCCC_06_11x17L_4pg_ResourceLands.mxd)
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Bjertness WPA
Valhalla WPA
Hegland WPA
Myhre WPA
Munster WPA
Bremen Slough WPA
Bremen WPA
Warsing Dam WMA
Sheyenne WPA
Sheyenne WMA
Nash WPA
Goose Lake WPA
Wood WPA
Anderson WPA
Alfred & Jean Meeg WMA
Warwick Springs WMA
Langley WPA
Larson WPA
BLM WPA
Ziebart WPA
Lake Washington WMA
Lake Coe WPA
Haley WPA
Columbia WPA
Howard Stone WMA
Swan Lake WPA
Wallace WPA
Topp WPA
Midgley WPA
Blue Cloud Lake WPA
Bauers WPA
Rusten Slough WMA
Haven WPA
Johnson Lake NWR
Quam WPA
Hanson WPA
Tuftland Lake WPA
Basswood Lake WPA
Rix WPA
Graving WPA
Tande WPA
Delfs WPA
Larson WPA
Johnson WPA
Boostrom WPA
Pekin
McVille
North Country National Scenic Trail
Nelson County
Goose Lake WDA
Rugh Lake WDA
Bothen WPA
Hofer Marsh WPA
Gerhart WPA
Lavanger WPA
Aneta
Guy WPA
Steele County
Sharon
Fritz WPA
Finley
Sibley Lake NWR
Lake Addie WPA
Zimprich WPA
Ronningen WPA
Helland WPA
Sibley Lake WMA
Evers WPA
Binford
Laydown Area 4
Laydown Area 5
Barlow WPA
Grace City
McHenry
New Rockford
Eddy County
Wells County
Foster County
Glenfield
Carrington
Cooperstown
Griggs County
Stutsman County
Kensal
Hannaford
Sykeston Dam WMA
Zink WPA
Okert WPA
George Karpen WMA
Hawk's Nest WDA
North Barnes Lake WPA
Barnes Lake WPA
Mt. Moriah WPA
Leobolt WPA
Florhaug WPA
Arrowwood NWR
Bower WPA
Campbell WPA
Larson WPA
Walum WPA
Wogsland WPA
Dronen WPA

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Map Index

Project Corridor (updated June 9, 2011)
Project Substation
Laydown Area
North Country National Scenic Trail
USFWS National Wildlife Refuge
USFWS Waterfowl Production Area or Wildlife Development Area
State Park, Recreation Area or Wildlife Management Area
Bureau of Reclamation or Army Corps of Engineers Land
The Nature Conservancy Preserve
State Surface Tract
PLOTS Land
USFWS Wetland Easement
USFWS Grassland Easement

Figure 6: Page 3 of 4
Managed Resource Lands
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

Data Sources: NCTA, NDGF, TNC, USACE, USFWS.

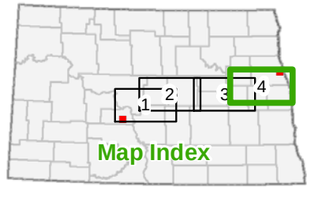
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Goldhammer WPA
Black Swan WMA
Lambs Lake NWR
Sateran WPA
Menge WPA
Lambs Lake WPA
Little Goose NWR
Little Goose WPA
Tennison WPA
Larimore
Turtle River State Park
Emerado
Pender WPA
Kellys Slough NWR
Prairie Substation
Grand Forks
Hjelseth WPA
Morken WPA
McVille WMA
Bundy WPA
Boostrom WPA
Goose Lake WDA
Rugh Lake WDA
Hofer Marsh WPA
Bothen WPA
Pekin
McVille
Thompson
North County National Scenic Trail
Northwood
Laydown Area 6
Gerhart WPA
Quam WPA
Hanson WPA
Nelson County
Grand Forks County
Tuftland Lake WPA
Lavanger WPA
Aneta
Reynolds
Basswood Lake WPA
Rix WPA
Graving WPA
Guy WPA
Hatton
Golden Lake WMA
Buxton
Tande WPA
Sharon
Shaw WPA
Wigen WPA
Erickson WPA
Thykeson WPA
Binford
Fritz WPA
Laydown Area 5
Sibley Lake NWR
Lake Addie WPA
Zimprich WPA
Ronningen WPA
Evers WPA
Sibley Lake WMA
Helland WPA
Steele County
Finley
Trail County
Portland
Mayville
Cooperstown
Griggs County
Shaw WPA
Elken WPA
NORTH DAKOTA
MINNESOTA

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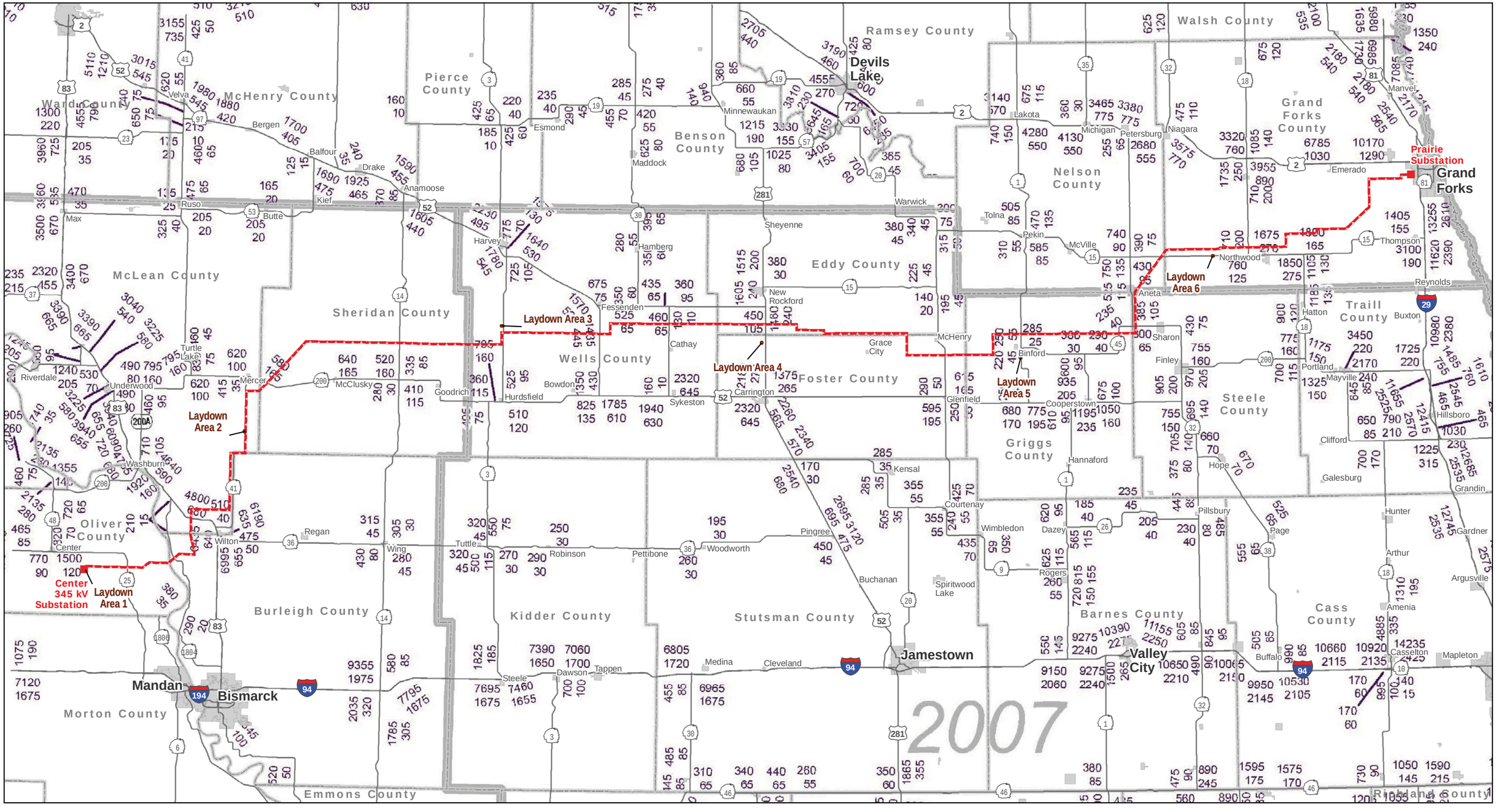
- Project Corridor (updated June 9, 2011)
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- PLOTS Land
- USFWS Wetland Easement
- USFWS Grassland Easement

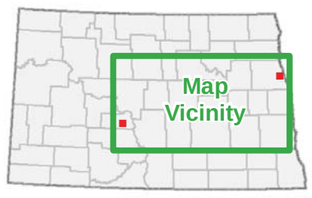
Figure 6: Page 4 of 4
Managed Resource Lands
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

Data Sources: NCTA, NDGF, TNC, USACE, USFWS.

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Project Corridor
(updated June 9, 2011)

Project Substation

Laydown Area

AADT (Average Annual Daily Traffic) - 2500

COMMERCIAL TRUCK TRAFFIC - 150

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

TRAFFIC COUNT CYCLES



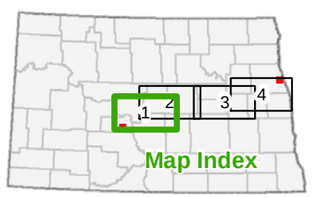
Figure 7
Average Annual Daily Traffic
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 5 10 Miles
Scale 1:850,000

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Base Map Source: NDDOT, 2009.

Coleharbor
Riverdale
Turtle Lake
Mercer
McClusky
Goodrich
Wells County
Laydown Area 3
McLean County
Sheridan County
Underwood
83
Hurdsfield
Laydown Area 2
14
Washburn
3
Mercer County
200
48
41
Burleigh County
Kidder County
Oliver County
Wilton
Regan
36
Wing
Tuttle
Center
180th
25
Center 345 kV Substation
Laydown Area 1



Project Corridor (updated June 9, 2011)
Project Substation
Laydown Area

SSURGO Prime Farmland
Prime Farmland
Prime Farmland if Drained
Farmland of Statewide Importance
Not Prime Farmland

Figure 8: Page 1 of 4
Prime Farmland and Soil Distribution (SSURGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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McLean County

Sheridan County

Wells County

Burleigh County

Kidder County

Stutsman County

Harvey

Hamberg

Fessenden

Cathay

Mercer

McClusky

Goodrich

Bowdon

Sykeston

Hurdsfield

Laydown Area 3

Laydown Area 2

52

14

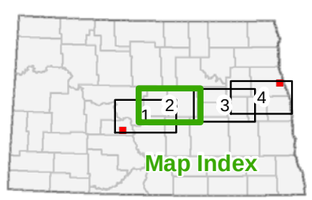
3

15

41

200

30



Project Corridor (updated June 9, 2011)

Project Substation

Laydown Area

SSURGO Prime Farmland

Prime Farmland

Prime Farmland if Drained

Farmland of Statewide Importance

Not Prime Farmland

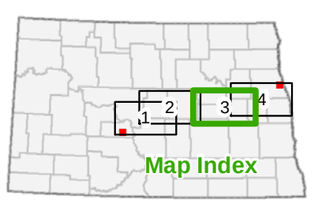
Figure 8: Page 2 of 4
Prime Farmland and Soil Distribution (SSURGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

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Pekin
McVille
Nelson County
Eddy County
New Rockford
Aneta
Sharon
Wells County
Laydown Area 4
McHenry
Grace City
Binford
Laydown Area 5
Finley
Foster County
Grigg's County
Glenfield
Carrington
Cooperstown
Steele County
Hannaford
Kensal
Stutsman County
Luverne



Project Corridor
(updated June 9, 2011)
Project Substation
Laydown Area

SSURGO Prime Farmland
Prime Farmland
Prime Farmland if Drained
Farmland of Statewide Importance
Not Prime Farmland

Figure 8: Page 3 of 4
Prime Farmland and Soil Distribution (SSURGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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Larimore
Emerado
Prairie Substation
Grand Forks
Nelson County
Grand Forks County
Pekin
McVille
Thompson
Northwood
Laydown Area 6
Reynolds
Aneta
Hatton
Sharon
Buxton
Binford
Laydown Area 5
Griggs County
Finley
Steele County
Traill County
Portland
Mayville
Cooperstown
Hillsboro
MINNESOTA
NORTH DAKOTA
2
32
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1
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81
45
65
200

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1
2
3
4

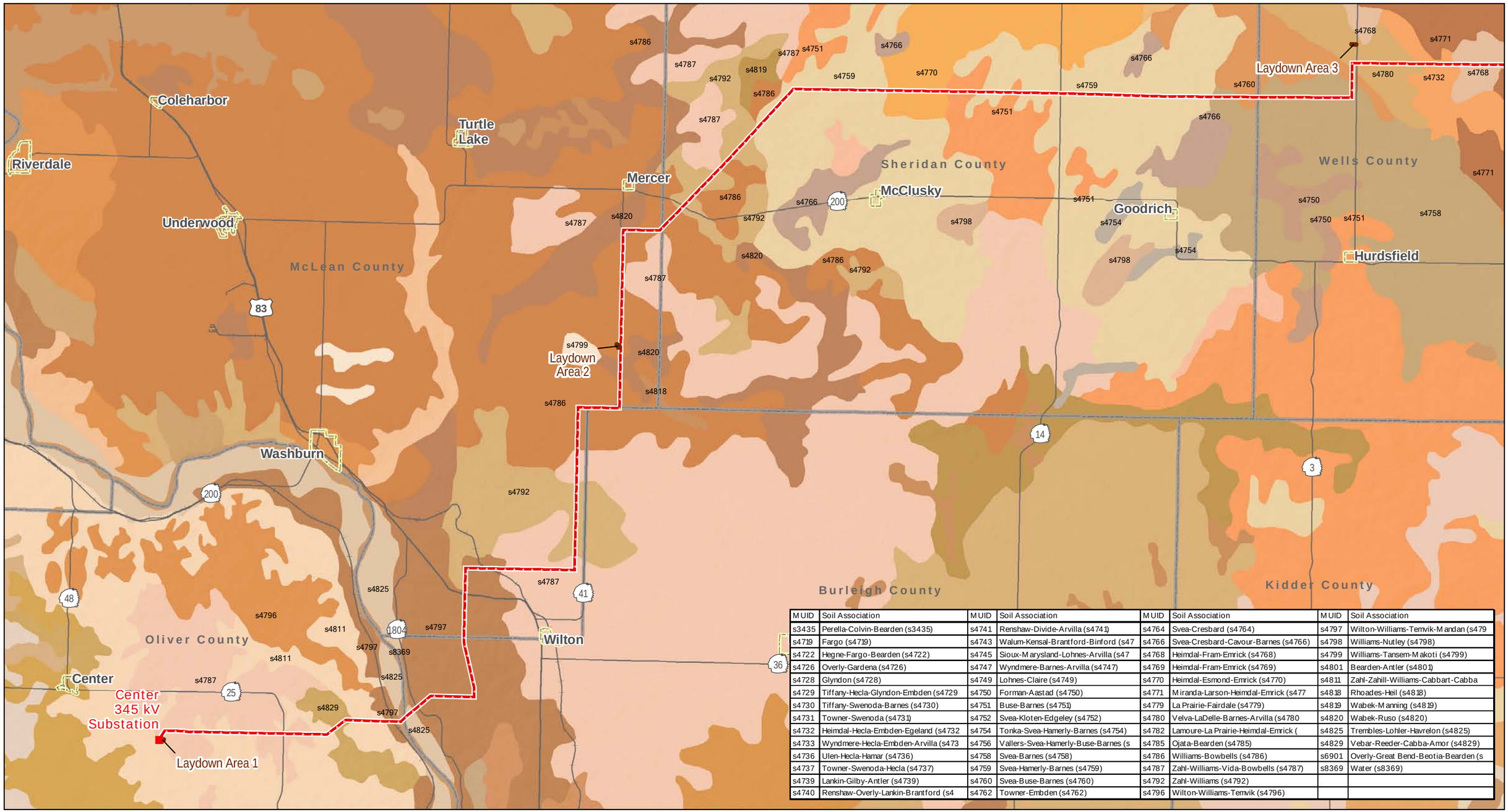
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Project Substation
Laydown Area

SSURGO Prime Farmland
Prime Farmland
Prime Farmland if Drained
Farmland of Statewide Importance
Not Prime Farmland

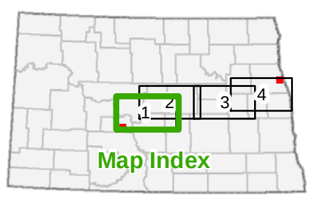
Figure 8: Page 4 of 4
Prime Farmland and Soil Distribution (SSURGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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s3435	Perella-Colvin-Bearden (s3435)	s4741	Renshaw-Divide-Arvilla (s4741)	s4764	Svea-Cresbard (s4764)	s4797	Wilton-Williams-Temvik-Mandan (s479
s4719	Fargo (s4719)	s4743	Walum-Kensal-Brantford-Binford (s47	s4766	Svea-Cresbard-Cavour-Barnes (s4766)	s4798	Williams-Nutley (s4798)
s4722	Hegne-Fargo-Bearden (s4722)	s4745	Sioux-Marysland-Lohnes-Arvilla (s47	s4768	Heimdal-Fram-Emrick (s4768)	s4799	Williams-Tansem-Makoti (s4799)
s4726	Overly-Gardena (s4726)	s4747	Wyndmere-Barnes-Arvilla (s4747)	s4769	Heimdal-Fram-Emrick (s4769)	s4801	Bearden-Antler (s4801)
s4728	Glyndon (s4728)	s4749	Lohnes-Claire (s4749)	s4770	Heimdal-Esmond-Emrick (s4770)	s4811	Zahl-Zahill-Williams-Cabbart-Cabba
s4729	Tiffany-Hecla-Glyndon-Embden (s4729	s4750	Forman-Aastad (s4750)	s4771	Miranda-Larson-Heimdal-Emrick (s477	s4818	Rhoades-Heil (s4818)
s4730	Tiffany-Swenoda-Barnes (s4730)	s4751	Buse-Barnes (s4751)	s4779	La Prairie-Fairdale (s4779)	s4819	Wabek-Manning (s4819)
s4731	Towner-Swenoda (s4731)	s4752	Svea-Kloten-Edgeley (s4752)	s4780	Velva-LaDelle-Barnes-Arvilla (s4780	s4820	Wabek-Ruso (s4820)
s4732	Heimdal-Hecla-Embden-Egeland (s4732	s4754	Tonka-Svea-Hamerly-Barnes (s4754)	s4782	Lamoure-La Prairie-Heimdal-Emrick (	s4825	Trembles-Lohler-Havrelon (s4825)
s4733	Wyndmere-Hecla-Embden-Arvilla (s473	s4756	Vallers-Svea-Hamerly-Buse-Barnes (s	s4785	Ojata-Bearden (s4785)	s4829	Vebar-Reeder-Cabba-Amor (s4829)
s4736	Ulen-Hecla-Hamar (s4736)	s4758	Svea-Barnes (s4758)	s4786	Williams-Bowbells (s4786)	s6901	Overly-Great Bend-Beotia-Bearden (s
s4737	Towner-Swenoda-Hecla (s4737)	s4759	Svea-Hamerly-Barnes (s4759)	s4787	Zahl-Williams-Vida-Bowbells (s4787)	s8369	Water (s8369)
s4739	Lankin-Gilby-Antler (s4739)	s4760	Svea-Buse-Barnes (s4760)	s4792	Zahl-Williams (s4792)		
s4740	Renshaw-Overly-Lankin-Brantford (s4	s4762	Towner-Embden (s4762)	s4796	Wilton-Williams-Temvik (s4796)		



Project Corridor
(updated June 9, 2011)

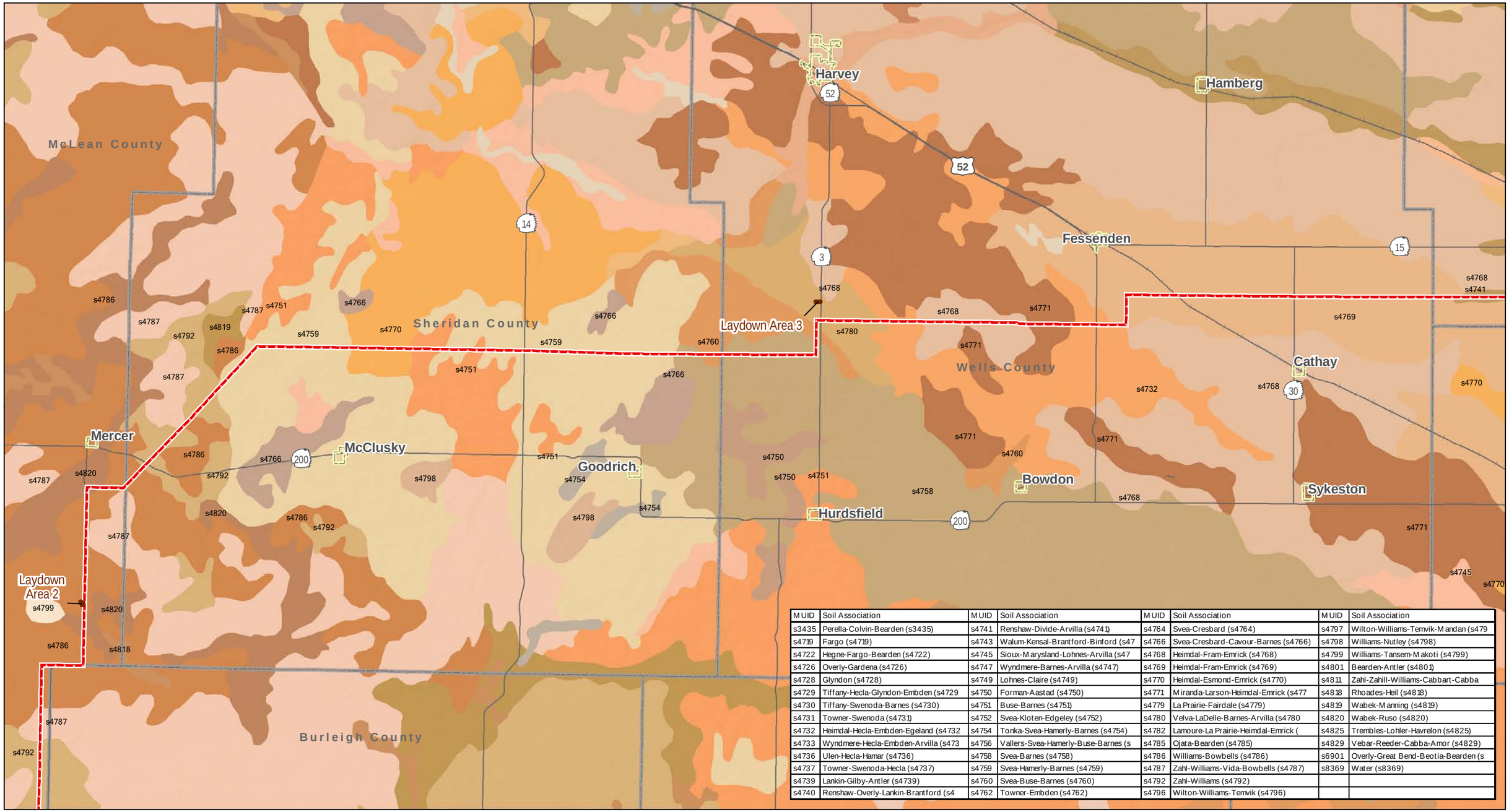
Project Substation

Laydown Area

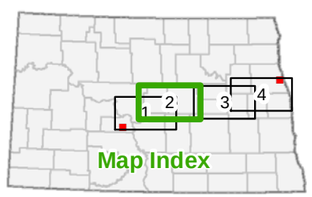
Figure 9: Page 1 of 4
State Soils Association (STATSGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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MUID	Soil Association	MUID	Soil Association	MUID	Soil Association	MUID	Soil Association
s3435	Perella-Colvin-Bearden (s3435)	s4741	Renshaw-Divide-Arvilla (s4741)	s4764	Svea-Cresbard (s4764)	s4797	Wilton-Williams-Temvik-Mandan (s479
s4719	Fargo (s4719)	s4743	Walum-Kensal-Brantford-Binford (s47	s4766	Svea-Cresbard-Cavour-Barnes (s4766)	s4798	Williams-Nutley (s4798)
s4722	Hegne-Fargo-Bearden (s4722)	s4745	Sioux-Marysland-Lohnes-Arvilla (s47	s4768	Heimdal-Fram-Emrick (s4768)	s4799	Williams-Tansem-Makoti (s4799)
s4726	Overly-Gardena (s4726)	s4747	Wyndmere-Barnes-Arvilla (s4747)	s4769	Heimdal-Fram-Emrick (s4769)	s4801	Bearden-Antler (s4801)
s4728	Glyndon (s4728)	s4749	Lohnes-Claire (s4749)	s4770	Heimdal-Esmond-Emrick (s4770)	s4811	Zahl-Zahill-Williams-Cabbart-Cabba
s4729	Tiffany-Hecla-Glyndon-Embden (s4729	s4750	Forman-Aastad (s4750)	s4771	Miranda-Larson-Heimdal-Emrick (s477	s4818	Rhoades-Heil (s4818)
s4730	Tiffany-Swenoda-Barnes (s4730)	s4751	Buse-Barnes (s4751)	s4779	La Prairie-Fairdale (s4779)	s4819	Wabek-Manning (s4819)
s4731	Towner-Swenoda (s4731)	s4752	Svea-Kloten-Edgeley (s4752)	s4780	Velva-LaDelle-Barnes-Arvilla (s4780	s4820	Wabek-Ruso (s4820)
s4732	Heimdal-Hecla-Embden-Egeland (s4732	s4754	Tonka-Svea-Hamerly-Barnes (s4754)	s4782	Lamoure-La Prairie-Heimdal-Emrick (	s4825	Trembles-Lohler-Havrelon (s4825)
s4733	Wyndmere-Hecla-Embden-Arvilla (s473	s4756	Vallers-Svea-Hamerly-Buse-Barnes (s	s4785	Ojata-Bearden (s4785)	s4829	Vebar-Reeder-Cabba-Amor (s4829)
s4736	Ulen-Hecla-Hamar (s4736)	s4758	Svea-Barnes (s4758)	s4786	Williams-Bowbells (s4786)	s6901	Overly-Great Bend-Beotia-Bearden (s
s4737	Towner-Swenoda-Hecla (s4737)	s4759	Svea-Hamerly-Barnes (s4759)	s4787	Zahl-Williams-Vida-Bowbells (s4787)	s8369	Water (s8369)
s4739	Lankin-Gilby-Antler (s4739)	s4760	Svea-Buse-Barnes (s4760)	s4792	Zahl-Williams (s4792)		
s4740	Renshaw-Overly-Lankin-Brantford (s4	s4762	Towner-Embden (s4762)	s4796	Wilton-Williams-Temvik (s4796)		



Project Corridor
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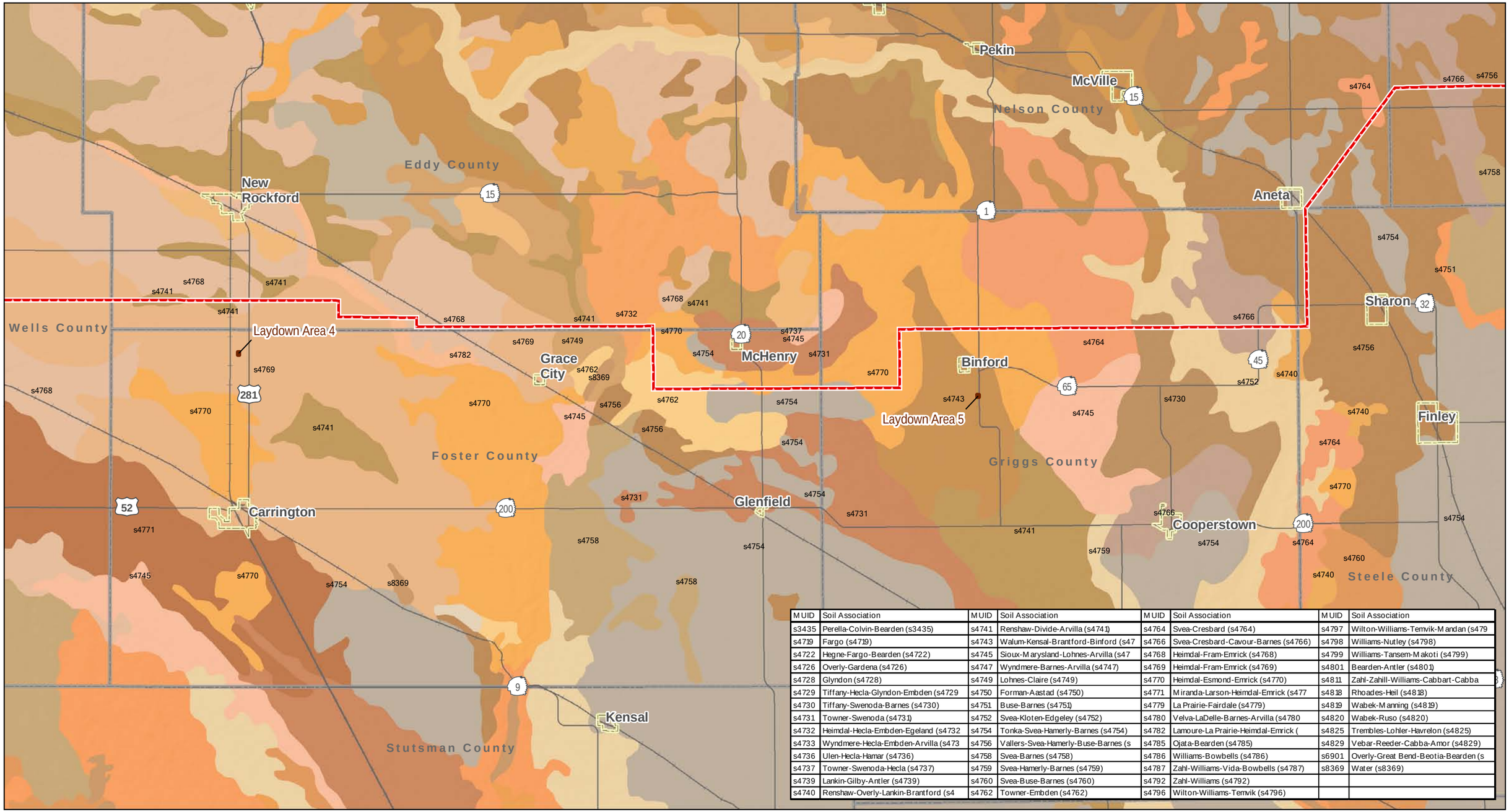
Project Substation

Laydown Area

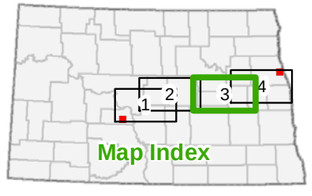
Figure 9: Page 2 of 4
State Soils Association (STATSGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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s3435	Perella-Colvin-Bearden (s3435)	s4741	Renshaw-Divide-Arvilla (s4741)	s4764	Svea-Cresbard (s4764)	s4797	Wilton-Williams-Temvik-Mandan (s479
s4719	Fargo (s4719)	s4743	Walum-Kensal-Brantford-Binford (s47	s4766	Svea-Cresbard-Cavour-Barnes (s4766)	s4798	Williams-Nutley (s4798)
s4722	Hegne-Fargo-Bearden (s4722)	s4745	Sioux-Marysland-Lohnes-Arvilla (s47	s4768	Heimdal-Fram-Emrick (s4768)	s4799	Williams-Tansem-Makoti (s4799)
s4726	Overly-Gardena (s4726)	s4747	Wyndmere-Barnes-Arvilla (s4747)	s4769	Heimdal-Fram-Emrick (s4769)	s4801	Bearden-Antler (s4801)
s4728	Glyndon (s4728)	s4749	Lohnes-Claire (s4749)	s4770	Heimdal-Esmond-Emrick (s4770)	s4811	Zahl-Zahill-Williams-Cabbart-Cabba
s4729	Tiffany-Hecla-Glyndon-Embden (s4729	s4750	Forman-Aastad (s4750)	s4771	Miranda-Larson-Heimdal-Emrick (s477	s4818	Rhoades-Heil (s4818)
s4730	Tiffany-Swenoda-Barnes (s4730)	s4751	Buse-Barnes (s4751)	s4779	La Prairie-Fairdale (s4779)	s4819	Wabek-Manning (s4819)
s4731	Towner-Swenoda (s4731)	s4752	Svea-Kloten-Edgeley (s4752)	s4780	Velva-LaDelle-Barnes-Arvilla (s4780	s4820	Wabek-Ruso (s4820)
s4732	Heimdal-Hecla-Embden-Egeland (s4732	s4754	Tonka-Svea-Hamerly-Barnes (s4754)	s4782	Lamoure-La Prairie-Heimdal-Emrick (	s4825	Trembles-Lohler-Havrelon (s4825)
s4733	Wyndmere-Hecla-Embden-Arvilla (s473	s4756	Vallers-Svea-Hamerly-Buse-Barnes (s	s4785	Ojata-Bearden (s4785)	s4829	Vebar-Reeder-Cabba-Amor (s4829)
s4736	Ulen-Hecla-Hamar (s4736)	s4758	Svea-Barnes (s4758)	s4786	Williams-Bowbells (s4786)	s6901	Overly-Great Bend-Beotia-Bearden (s
s4737	Towner-Swenoda-Hecla (s4737)	s4759	Svea-Hamerly-Barnes (s4759)	s4787	Zahl-Williams-Vida-Bowbells (s4787)	s8369	Water (s8369)
s4739	Lankin-Gilby-Antler (s4739)	s4760	Svea-Buse-Barnes (s4760)	s4792	Zahl-Williams (s4792)		
s4740	Renshaw-Overly-Lankin-Brantford (s4	s4762	Towner-Embden (s4762)	s4796	Wilton-Williams-Temvik (s4796)		



Project Corridor
(updated June 9, 2011)

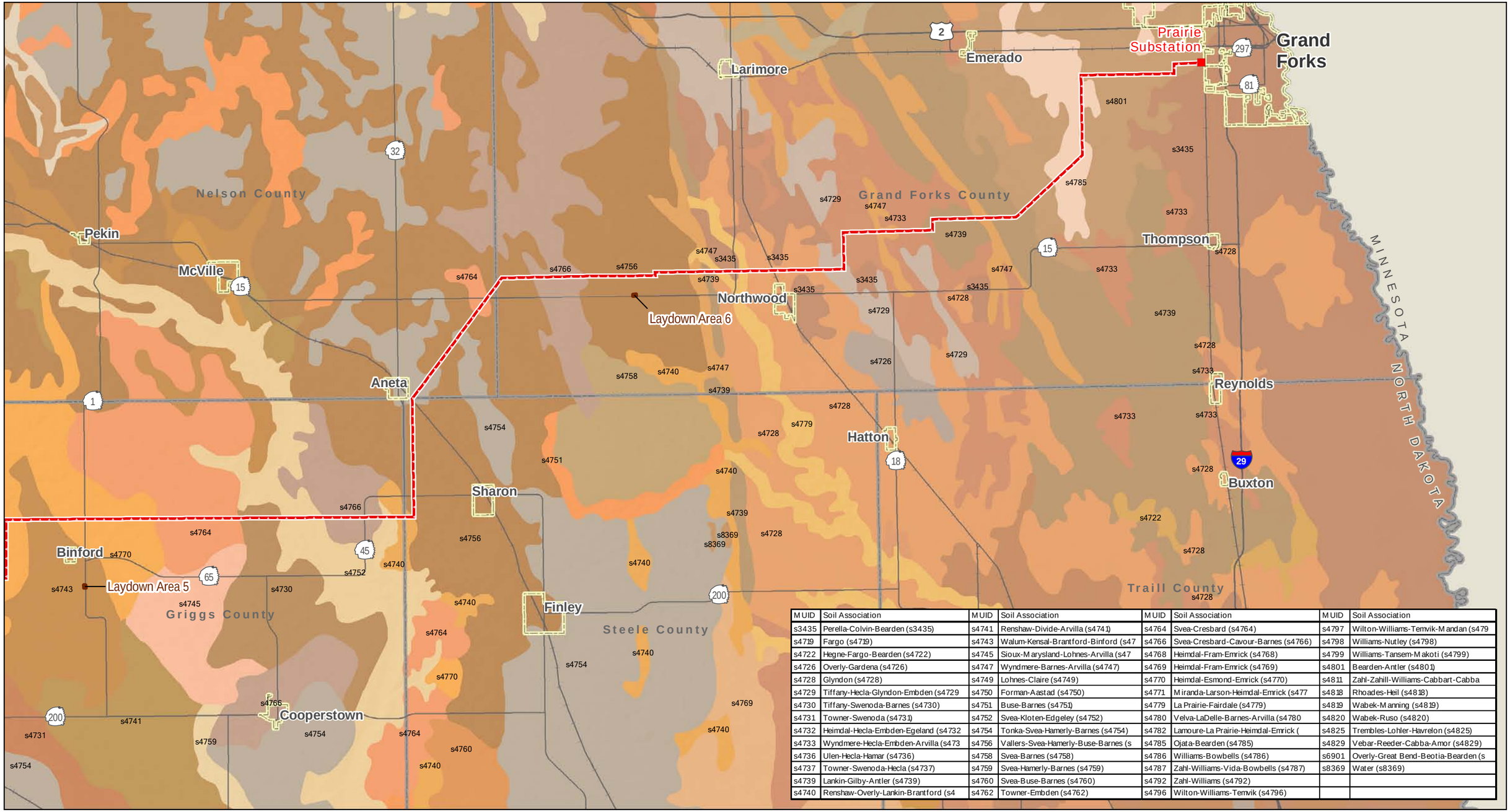
Project Substation

Laydown Area

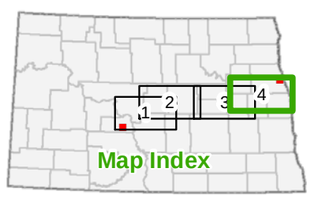
Figure 9: Page 3 of 4
State Soils Association (STATSGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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MUID	Soil Association	MUID	Soil Association	MUID	Soil Association	MUID	Soil Association
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s4719	Fargo (s4719)	s4743	Walum-Kensal-Brantford-Binford (s47	s4766	Svea-Cresbard-Cavour-Barnes (s4766)	s4798	Williams-Nutley (s4798)
s4722	Hegne-Fargo-Bearden (s4722)	s4745	Sioux-Marysland-Lohnes-Arvilla (s47	s4768	Heimdal-Fram-Emrick (s4768)	s4799	Williams-Tansem-Makoti (s4799)
s4726	Overly-Gardena (s4726)	s4747	Wyndmere-Barnes-Arvilla (s4747)	s4769	Heimdal-Fram-Emrick (s4769)	s4801	Bearden-Antler (s4801)
s4728	Glyndon (s4728)	s4749	Lohnes-Claire (s4749)	s4770	Heimdal-Esmond-Emrick (s4770)	s4811	Zahl-Zahill-Williams-Cabbart-Cabba
s4729	Tiffany-Hecla-Glyndon-Embden (s4729	s4750	Forman-Aastad (s4750)	s4771	Miranda-Larson-Heimdal-Emrick (s477	s4818	Rhoades-Heil (s4818)
s4730	Tiffany-Swenoda-Barnes (s4730)	s4751	Buse-Barnes (s4751)	s4779	La Prairie-Fairdale (s4779)	s4819	Wabek-Manning (s4819)
s4731	Towner-Swenoda (s4731)	s4752	Svea-Kloten-Edgeley (s4752)	s4780	Velva-LaDelle-Barnes-Arvilla (s4780	s4820	Wabek-Ruso (s4820)
s4732	Heimdal-Hecla-Embden-Egeland (s4732	s4754	Tonka-Svea-Hamerly-Barnes (s4754)	s4782	Lamoure-La Prairie-Heimdal-Emrick (	s4825	Trembles-Lohler-Havrelon (s4825)
s4733	Wyndmere-Hecla-Embden-Arvilla (s473	s4756	Vallers-Svea-Hamerly-Buse-Barnes (s	s4785	Ojata-Bearden (s4785)	s4829	Vebar-Reeder-Cabba-Amor (s4829)
s4736	Ulen-Hecla-Hamar (s4736)	s4758	Svea-Barnes (s4758)	s4786	Williams-Bowbells (s4786)	s6901	Overly-Great Bend-Beotia-Bearden (s
s4737	Towner-Swenoda-Hecla (s4737)	s4759	Svea-Hamerly-Barnes (s4759)	s4787	Zahl-Williams-Vida-Bowbells (s4787)	s8369	Water (s8369)
s4739	Lankin-Gilby-Antler (s4739)	s4760	Svea-Buse-Barnes (s4760)	s4792	Zahl-Williams (s4792)		
s4740	Renshaw-Overly-Lankin-Brantford (s4	s4762	Towner-Embden (s4762)	s4796	Wilton-Williams-Temvik (s4796)		



Project Corridor
(updated June 9, 2011)

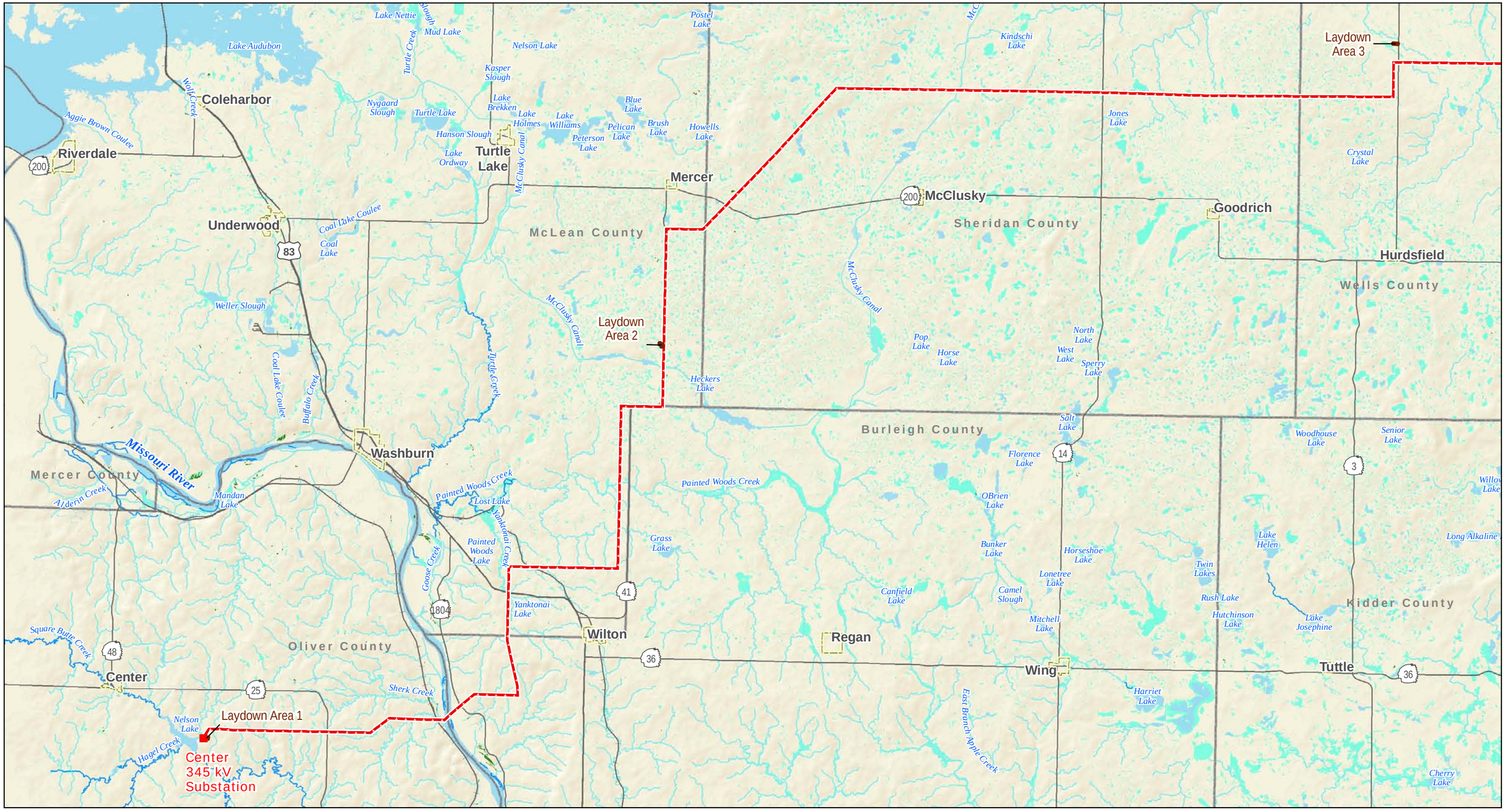
Project Substation

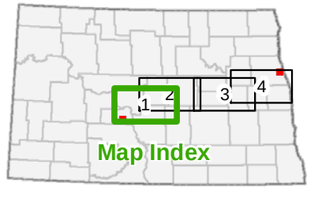
Laydown Area

Figure 9: Page 4 of 4
State Soils Association (STATSGO)
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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Project Corridor
(updated June 9, 2011)

Project Substation

Laydown Area

USGS Streams

Perennial River or Stream

Intermittent Stream, Ditch or Canal

NWI Wetlands

Lake, Pond or River

Freshwater Emergent Wetland

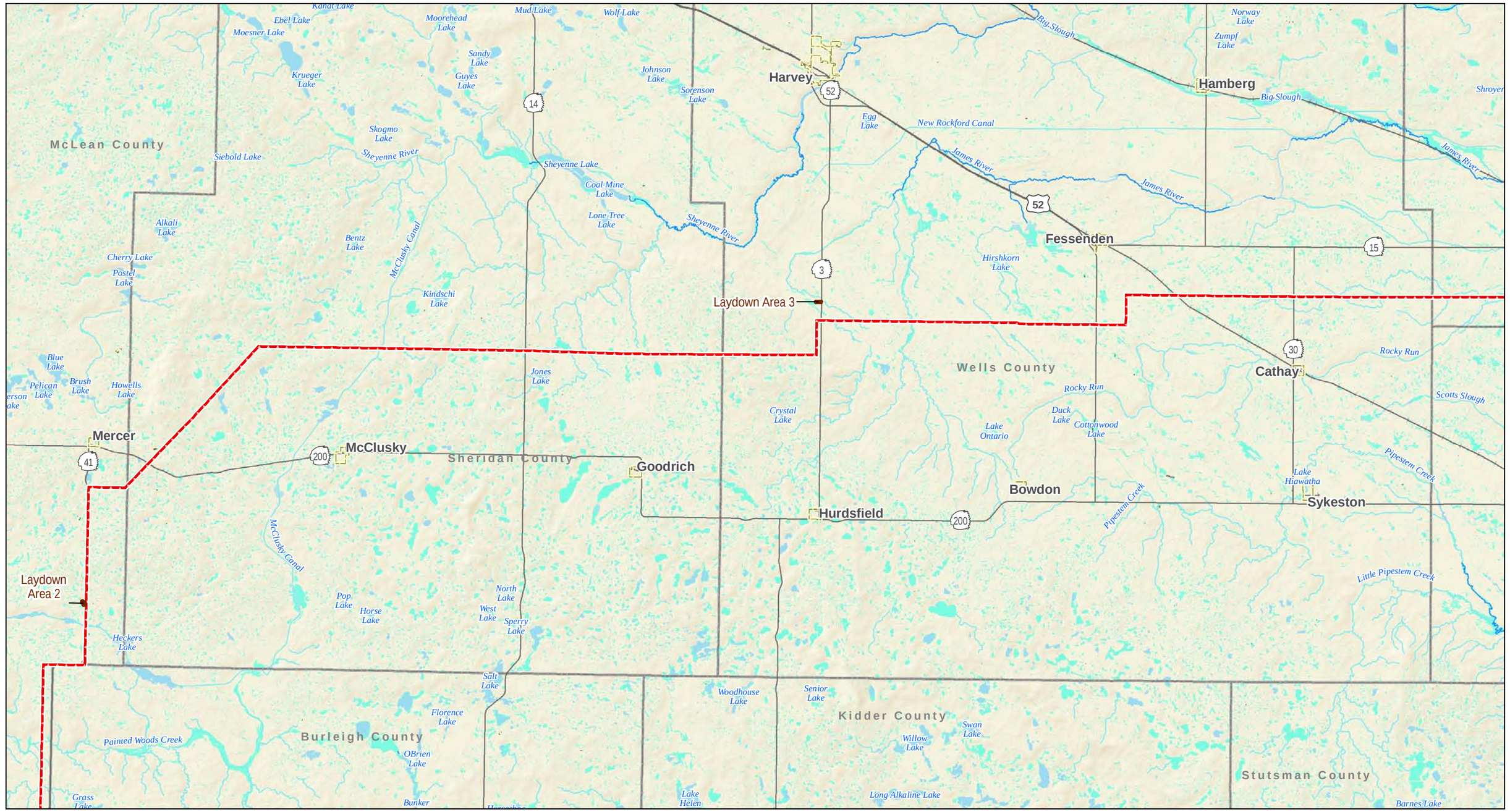
Freshwater Forested/Shrub Wetland

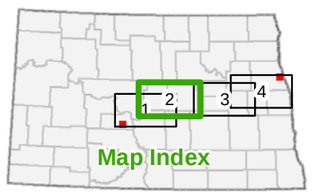
Figure 10: Page 1 of 4
National Wetlands Inventory and Surface Waters
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

Map Document: (\\Mspe-gis-file\gispro\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_10_11x17L_4pg_Water.mxd)
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Project Corridor
(updated June 9, 2011)

Project Substation

Laydown Area

USGS Streams

Perennial River or Stream

Intermittent Stream, Ditch or Canal

NWI Wetlands

Lake, Pond or River

Freshwater Emergent Wetland

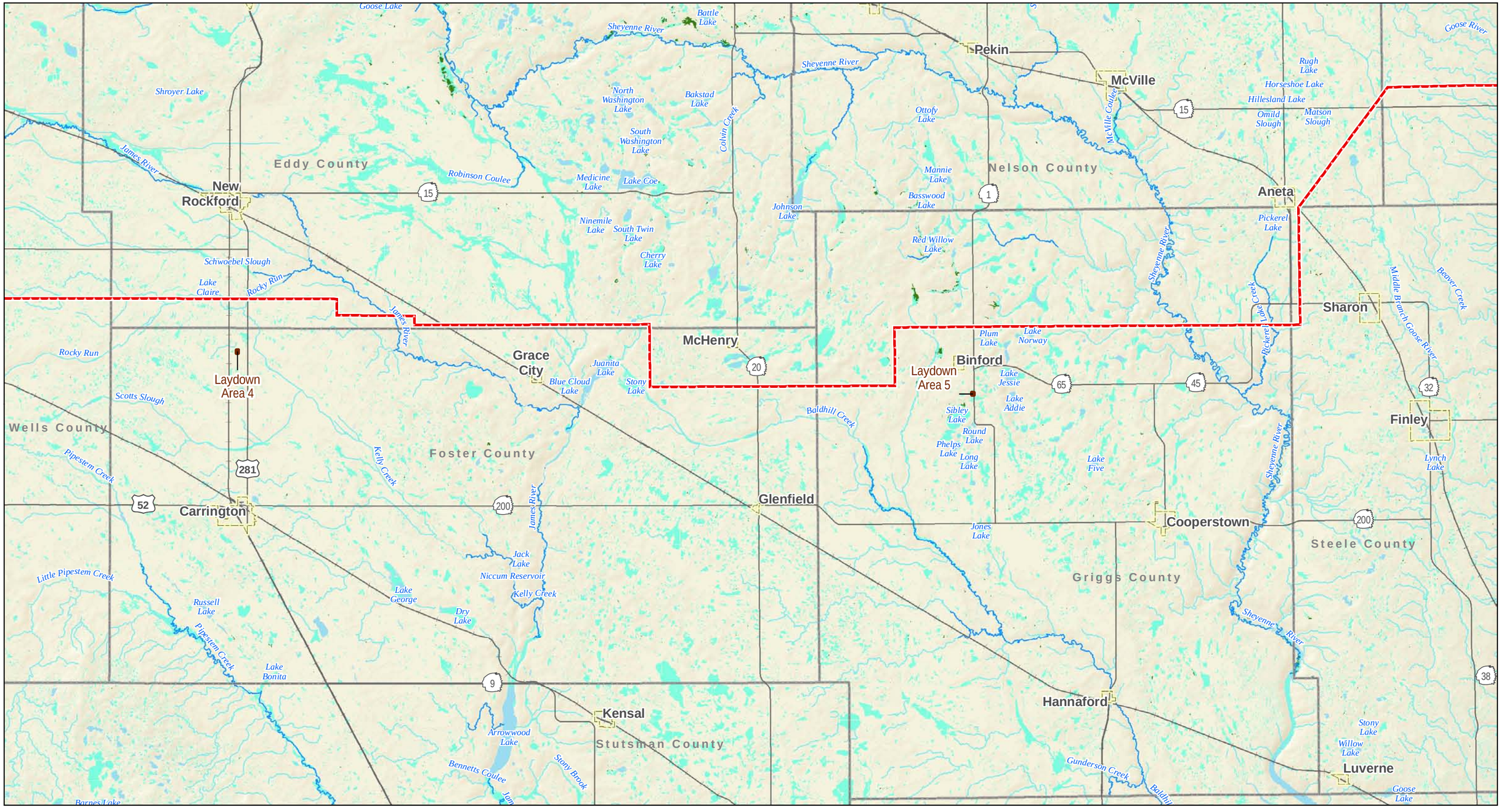
Freshwater Forested/Shrub Wetland

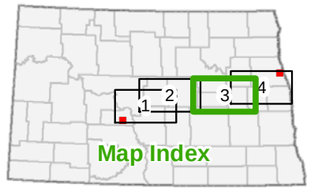
Figure 10: Page 2 of 4
National Wetlands Inventory and Surface Waters
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

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Project Corridor (updated June 9, 2011)

Project Substation

Laydown Area

USGS Streams

Perennial River or Stream

Intermittent Stream, Ditch or Canal

NWI Wetlands

Lake, Pond or River

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Figure 10: Page 3 of 4
National Wetlands Inventory and Surface Waters
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

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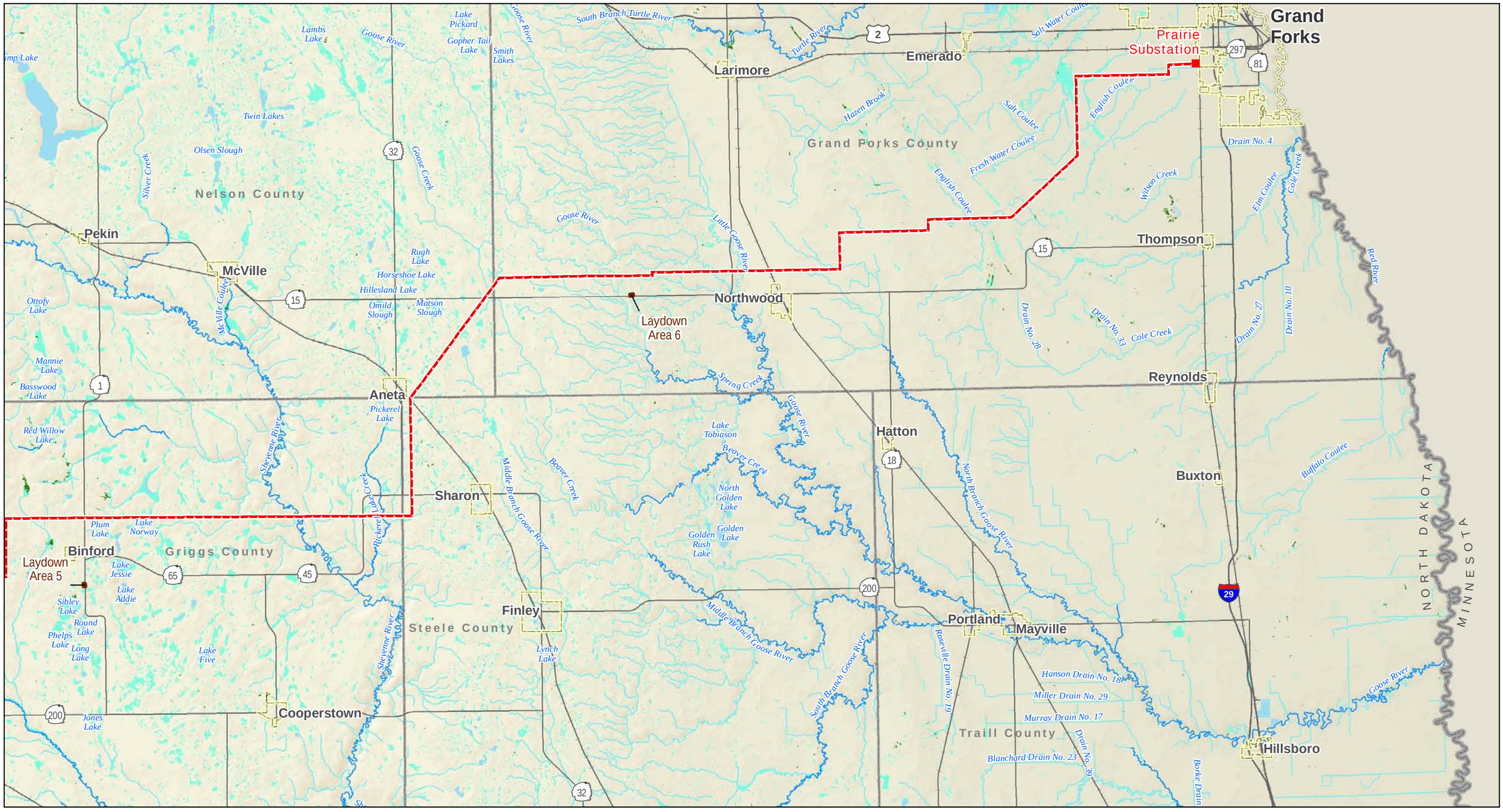


Figure 10: Page 4 of 4
National Wetlands Inventory and Surface Waters
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

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Coleharbor
Turtle Lake
Mercer
McClusky
Goodrich
Laydown Area 3
Wells County
Sheridan County
Underwood
McLean County
83
200
Hurdsfield
Laydown Area 2
14
3
Washburn
200
48
Oliver County
41
Burleigh County
Kidder County
Wilton
Regan
36
Wing
Tuttle
Robinson
36
Center
1804
25
Center 345 kV Substation
Laydown Area 1

Map Index
1
2
3
4

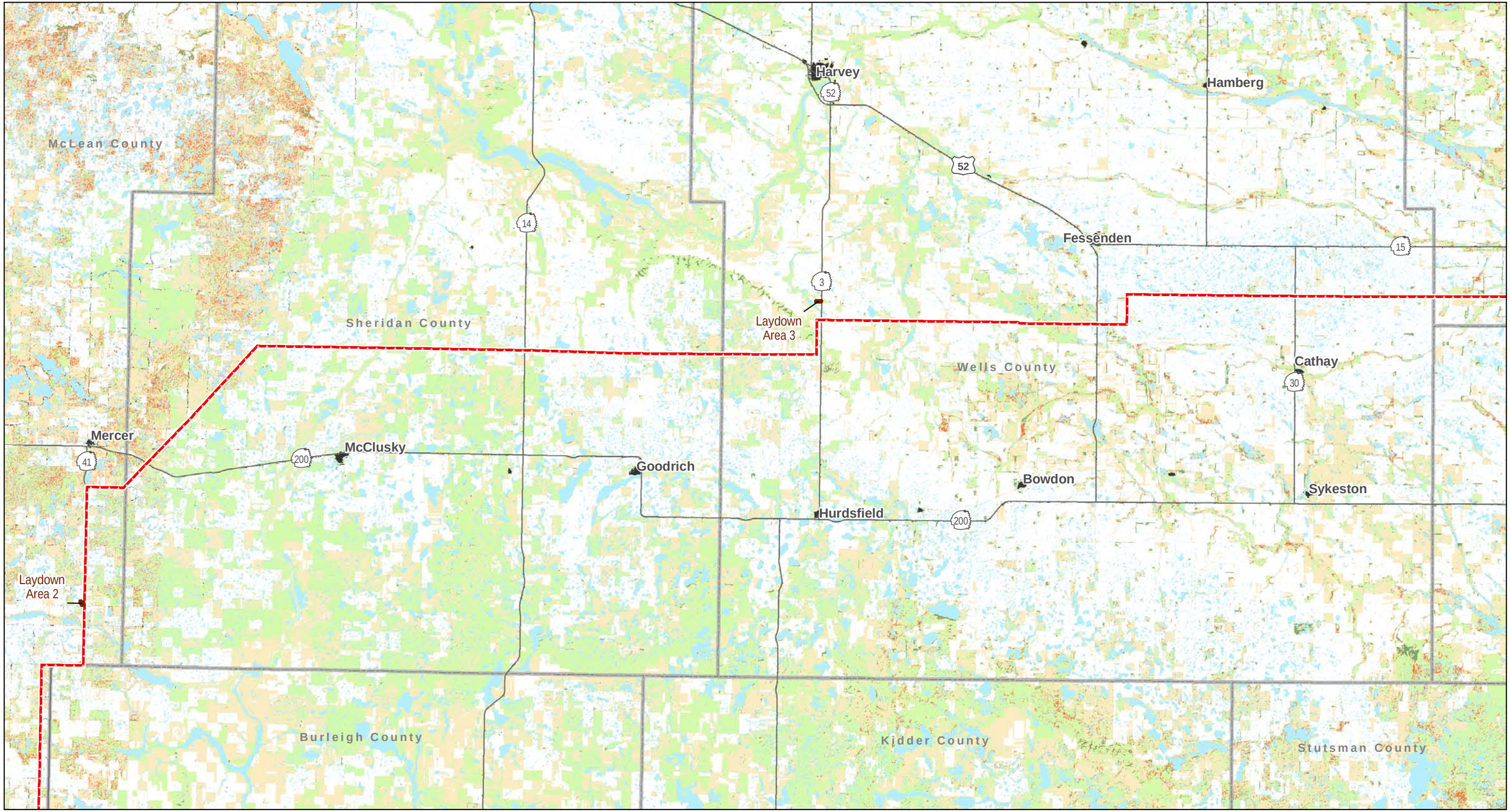
Project Corridor (updated June 9, 2011)
Project Substation
Laydown Area

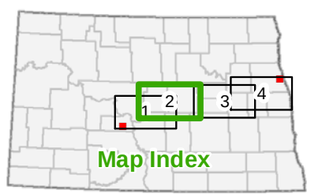
2004 GAP Land Cover
Barren/Sparse Vegetation
Cropland
Developed
Pasture
Prairie
Shrubland
Wetland
Woodland

Figure 11: Page 1 of 4
Land Cover
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

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0 2 4 Miles
Scale 1:300,000

Map Document: (\\Mspe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_11_11x17'L_4pg_LandCover.mxd)
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Project Corridor (updated June 9, 2011)

Project Substation

Laydown Area

2004 GAP Land Cover

- Barren/Sparse Vegetation
- Cropland
- Developed
- Pasture
- Prairie
- Shrubland
- Wetland
- Woodland

Figure 11: Page 2 of 4
Land Cover
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

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Pekin
McVille
Nelson County
Eddy County
New Rockford
Aneta
Sharon
Wells County
McHenry
Grace City
Laydown Area 4
Binford
Laydown Area 5
Finley
Foster County
Griggs County
Carrington
Glenfield
Cooperstown
Steele County
Hannaford
Kensal
Stutsman County
Luverne

Map Index

Project Corridor
(updated June 9, 2011)
Project Substation
Laydown Area

2004 GAP Land Cover
Barren/Sparse Vegetation
Cropland
Developed
Pasture
Prairie
Shrubland
Wetland
Woodland

Figure 11: Page 3 of 4
Land Cover
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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Larimore
Emerado
Prairie Substation
Grand Forks
Nelson County
Grand Forks County
Pekin
McVille
Thompson
Northwood
Laydown Area 6
Reynolds
Aneta
Hatton
MINNESOTA
NORTH DAKOTA
Buxton
Sharon
Binford
Laydown Area 5
Griggs County
Finley
Steele County
Traill County
Portland
Mayville
Cooperstown
Hillsboro
2
297
81
32
15
1
18
29
65
45
200

Map Index

Project Corridor (updated June 9, 2011)
Project Substation
Laydown Area

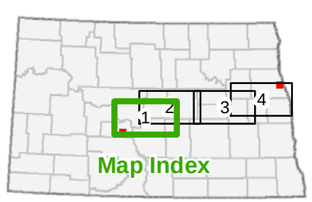
2004 GAP Land Cover
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Developed
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Prairie
Shrubland
Wetland
Woodland

Figure 11: Page 4 of 4
Land Cover
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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McLean County
Sheridan County
Wells County
Kidder County
Burleigh County
Mercer County
Oliver County
Coleharbor
Riverdale
Turtle Lake
Mercer
Underwood
McClusky
Goodrich
Hurdsfield
Laydown Area 3
Approx. 75%
Laydown Area 2
Approx. 50%
Washburn
Wilton
Regan
Wing
Tuttle
Center
Center 345 kV Substation
Laydown Area 1
83
200
1804
41
14
3
48
25
36



- Project Corridor (updated June 9, 2011)
- Project Substation
- Laydown Area
- Federally Threatened or Endangered Species
- NHI Species of Concern
- Impaired or Vulnerable Terrestrial Community
- Piping Plover Critical Habitat

Whooping Crane Sighting Corridor
- Approx. 50%
- Approx. 75%
- Approx. 85%
- Approx. 95%

Figure 12: Page 1 of 4
Sensitive Natural Resources
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

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McLean County

Sheridan County

Wells County

Burleigh County

Kidder County

Stutsman County

Harvey

Hamberg

Fessenden

Cathay

Bowdon

Sykeston

Hurdsfield

Goodrich

McClusky

Mercer

Laydown Area 3

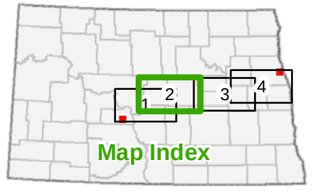
Laydown Area 2

Approx. 75%

Approx. 50%

Approx. 85%

14 91 52 52 3 15 30 200 41



Project Corridor (updated June 9, 2011)

Project Substation

Laydown Area

Federally Threatened or Endangered Species

NHI Species of Concern

Impaired or Vulnerable Terrestrial Community

Piping Plover Critical Habitat

Whooping Crane Sighting Corridor

Approx. 50%

Approx. 75%

Approx. 85%

Approx. 95%

Figure 12: Page 2 of 4
Sensitive Natural Resources
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles

Scale 1:300,000

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Pekin
McVille
Nelson County
Eddy County
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Aneta
Steele County
Sharon
Laydown Area 4
McHenry
Binford
Laydown Area 5
Finley
Grace City
Wells County
Carrington
Glenfield
Cooperstown
Approx. 95%
Foster County
Griggs County
Stutsman County
Hannaford
Kensal
Approx. 85%
Luverne

Map Index

Project Corridor (updated June 9, 2011)
Project Substation
Laydown Area

Federally Threatened or Endangered Species
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Approx. 75%
Approx. 85%
Approx. 95%

Figure 12: Page 3 of 4
Sensitive Natural Resources
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

Map Document: (\\Mspe-gis-file\gisproj\Minnkota\110900\map_docs\PSC\Corridor\App\CGFCCC_12_11x17L_4pg_SensitiveNatRes.mxd)
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Grand Forks
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Hillsboro

Map Index

Project Corridor (updated June 9, 2011)
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Figure 12: Page 4 of 4
Sensitive Natural Resources
Center to Grand Forks Project
Minnkota Power Cooperative, Inc.

0 2 4 Miles
Scale 1:300,000

Map Document: (\\Mspe-gis-file\gispro\Minnkota\110900\map_docs\PSC\Corridor\Appl\CGFCCC_12_11x17L_4pg_SensitiveNatRes.mxd)
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Revised Corridor Description
June 9, 2011

4.0 Engineering and Operational Design

The information in Section 4.0 is subject to change as Project development continues. These sections and updated engineering and operation design information will be finalized in Minnkota's application for a Route Permit.

4.1 Corridor Description

The Project Corridor is approximately 248-miles-long. The Project Corridor proceeds northeast out of the Center 345 kV Substation for about 0.5 miles to the section line, then proceeds due east along the section line for about 8 miles, before turning northeast on a cross-country path for about 1 mile. The Project Corridor then proceeds east for approximately 3 miles to the Missouri River. It crosses the Missouri River about 0.10 miles north of the existing HVDC transmission line on the west side of the river and about 0.4 miles north of the existing HVDC transmission line on the east side of the river. After crossing the Missouri River and State Highway 1804 diagonally for about 2 miles, the Project Corridor proceeds due east along 279th Ave NE for about 2.25 miles. The Project Corridor then proceeds north for about 0.5 miles before turning northwest for about 2.25 miles. The Project Corridor then proceeds north for about 3.75 miles along a section line, and then east for about 5.5 miles along a quarter-section line to within 0.5 miles west of State Highway 41.

The Project Corridor proceeds north for about 8.0 miles along State Highway 41, turns east for 2 miles along State Highway 41, and follows State Highway 41 to the north for about 9 miles; within this segment the Project Corridor spans the McClusky Canal. The Project Corridor turns east for approximately 2 miles along 3rd Street NW to the McLean/Sheridan County line. The Project Corridor proceeds diagonally, cross-country for about 10 miles to the east side of Center Ave in Sheridan County. At that point the Project Corridor proceeds east about 0.25 miles north of 10th St NE for about 28.25 miles to 0.25 miles west of State Highway 3, crossing the McClusky Canal and State Highway 14, then proceeds north for about 2 miles. The Project Corridor turns east along 12th St NE for about 15.75 miles, crossing U.S. Highway 52, then turns north for about 1.5 miles on a quarter-section line. The Project Corridor turns east along a quarter-section line for about 27 miles, crossing State Highway 30 and U.S. Highway 281. Then the Project Corridor turns south for about 1 mile to the quarter-section line, and continues east for about 4 miles along the quarter-section line to turn south for about 0.5 miles to the quarter-section line north of 12th St NE (Foster/Eddy County line) where it travels approximately 12 miles to the east.

To bypass the towns of McHenry and Binford, the Project Corridor goes south for approximately 3 miles, then east for about 12.5 miles along 3rd St NE/9th St NE, and north for about 3 miles to 12th St NE. Along 12th St NE, the Project Corridor heads east for about 20.5 miles, across the Sheyenne River and State Highway 45, to about 0.5 miles east of 120th Ave NE in Steele County where the Project Corridor travels north for about 6 miles on the quarter-section to Aneta. At Aneta, the Project Corridor goes northeast, diagonally, cross-country for about 7.5 miles to 6th Ave NE in Grand Forks County. The Project Corridor travels east along 6th Ave NE for about 7.75 miles, then north for about 0.2 miles along 41st St NE. The Project Corridor then proceeds east for about 9.5 miles and turns north for about 2 miles along the quarter-section line (about 0.5 miles west of 31st St NE). Then the Project Corridor travels east along 8th Ave NE for about 4.5 miles. At 27th St NE, the Project Corridor travels north for about 0.5 miles and then travels east for about 4 miles to the existing WAPA 230 kV transmission line. Then, the Project Corridor proceeds northeast, diagonally, cross-country for

about 4.5 miles adjacent to the WAPA line, then north for about 4 miles, approximately 0.25 miles west of 19th St NE, where it turns to go east for almost 5 miles. At 0.5 miles west of 14th St NE, the Project Corridor heads north for about 0.5 miles and then proceeds east for about 1.5 miles into the Prairie Substation

4.2 Description of Proposed Facilities

In general, a high-voltage transmission line consists of three phases, each at the end of a separate insulator string (or v-string configuration), all physically supported by structures. Each phase consists of one or more conductors. When more than one conductor is used to make up a phase, the term "bundled" conductors is used. Conductors are metal cables consisting of multiple strands of steel and aluminum wire wound together. There are also two shield wires strung above the electrical phases to prevent, to the extent possible, lighting from striking the phases. These wires are typically less than 1 inch in diameter. The shield wire can also include fiber optic cable that allows a path for substation protection and control equipment to communicate to equipment at other terminals on the transmission line. Transmission lines are constructed on a ROW, whose width is primarily dependent on structure design, span length, and the electrical safety requirements associated with the transmission line's voltage.

4.2.1 Transmission Structure and Right-of-Way Design

Transmission Structure

Single pole, self-weathering steel single circuit structures are proposed for the majority of the Project (Figure 5). The self-weathering steel oxidizes or rusts to form a dark reddish brown surface coating to protect the structure from further weathering. The steel single poles are placed on large concrete foundations, which are wider than the pole base. Table 4.2-1 outlines typical characteristics of 345 kV transmission line structures.

Table 4.2-1. Typical Characteristics of 345 kV Transmission Line Structures

345 kV Transmission Line	Details
Voltage (kV)	345 kV
ROW width (feet)	150
Approximate span length (feet)	1,000
Range of structure heights (feet)	130 - 150
Number of structures per mile	5 - 7
Minimum ground clearance beneath conductor (feet)	35 - 40
Depth of concrete footings for the poles (feet)	30 - 40
Diameter of concrete footings for the poles (feet)	7 - 10
Average area of permanent disturbance per structure (square feet)	78.5

Table 4.2-2 summarizes the structure designs and foundations for the single pole structures that will be used for the majority of the Project. Preliminary information about the Missouri River structures and structures near the Grand Forks Airport is also provided.