AGENDA FOR THE
DOUGLAS COUNTY BOARD OF SUPERVISORS
Thursday, May 19, 2016, 6:00 p.m., Board Room, Second Floor, Government Center
1316 North 14th Street, Superior, Wisconsin

(County Board to maintain a two-hour meeting limit *or* take action to continue meeting beyond that time.)

Meeting called to order by Chairman Mark Liebaert.

Pledge of Allegiance to be recited.

Roll call taken by County Clerk Susan Sandvick.

Approval of the April 14, 2016, and April 19, 2016, meeting minutes.

CLAIMS

Summons and Complaint by Atterbuy, Kammer & Haag, S.C. on behalf of Tia Paradis v. Dan Nichols, Rich Davidson, Douglas County.

CORRESPONDENCE

1. DNR, notice of air pollution permit application by Specialty Minerals, Inc. (Receive and place on file.)

2. Department of the Army, Statement of Findings & Finding of No Significant Impact, dredged material placement, St. Louis River Area of Concern. (Refer to Land Conservation Committee.)

3. FEMA, determination as to whether property is located within identified Special Flood Hazard Area. (Refer to Zoning Committee.)

4. TransCanada, notice of pipeline internal inspection program April 25 through May 6, 2016. (Receive and place on file.)

5. Department of Agriculture, Trade and Consumer Protection, notice and maps of Gypsy Moth spraying in Douglas County, May through July. (Receive and place on file.)

6. DOT, notice of Great Lakes Basin Transportation, Inc. – Railroad Proposal in Wisconsin. (Refer to Land and Development Committee.)

7. DNR, notice of proposed state purchase of easement over 7007 acres of land for Forest Legacy Program in Town of Solon Springs. (Refer to Land and Development Committee.)

8. Dennis Archer, letter regarding condition of County Road C from State 35 west to W. (Refer to Transportation and Infrastructure Committee.)

9. DOT, notice of recording of designated freeway map, USH 2/USH 53 and County E/Moccasin Mike Road, and potential future right-of-way requirements for freeway improvements. (Refer to Transportation and Infrastructure Committee and Land and Development Committee.)

PRESENTATION

Recognition of Jason Church, Wisconsin Veteran

Lake Superior Watershed-Based Plan Overview – Christine Ostern

RESOLUTIONS

#27-16: Resolution by the Land and Development Committee approving land sale. (Exhibit A-5-16)

#28-16: Resolution by the Forest, Parks and Recreation Committee recommending approval of Long Lake County Day-Use Park entry into County Forest Special Use. (Exhibit B-5-16)

#29-16: Resolution by the Administration Committee recommending approval of 2016 capital projects.

#30-16: Resolution by Supervisors on the Land Conservation Committee recommending approval of A Watershed Approach to Wetland Management in the Lake Superior Basin Plan. (Exhibit C-5-16)

COUNTY ADMINISTRATOR REPORT

COUNTY BOARD CHAIR REPORT

APPOINTMENTS: 2016-2018 committee appointments to be provided prior to meeting.

COMMITTEE REPORTS

YOUTH REPRESENTATIVE REPORT

APPROVAL OF BILLS AND CLAIMS (on iPad paperless drive)

FUTURE AGENDA ITEMS

ADJOURNMENT: Next regularly scheduled meeting – June 16, 2016.

Submitted by,

Susan T. Sandvick
Douglas County Clerk

NOTE: Attachments to agenda available in County Clerk's *Office* for viewing or copying, or on county's website www.douglascountywi.org Action may be taken on items on the agenda. The County of Douglas complies with the Americans with Disabilities Act of 1990. **If** you are in need of an accommodation to participate in the public meeting process, please contact the Douglas County Clerk's *Office* at (715) 395-1341 by 4:00 p.m. on the day prior to the scheduled meeting. Douglas County will attempt to accommodate any request depending on the amount of notice we receive. TDD (715) 395-7521.

Posted: Courthouse, Government Center, www.douglascountywi.org

Pamela A. Tafelski 05-12-16

AO 440 (Rev. 06/12) Summons in a Civil Action

UNITED STATES DISTRICT COURT

for the

Western District of Wisconsin

RECEIVED
APR 19 2016
SUSAN Y. SANDVICK
CIRCUIT CLERK

Tia Paradis

Plaintiff(s)

v.

Dan Nichols, Rich Davidson, Douglas County

Defendant(s)

Civil Action No. 16-CV-225

MAY

SUMMONS IN A CIVIL ACTION

To: *(Defendant's name and address)* Douglas County
c/o Ms. Susan Sandvick
Douglas County Clerk
Courthouse Building
1313 Belknap Street, Room 101
Superior, WI 54880

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it) — or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) — you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address are:

Atterbury, Kammer & Haag, S.C.
8500 Greenway Blvd. Suite 103
Middleton, WI 53562; and
Gingras, Cates & Luebke
8150 Excelsior Dr.
Madison, WI 53717

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

CLERK OF COURT

Date: 4/12/2016

s/ J. Titak

Signature of Clerk or Deputy Clerk

UNITED STATES DISTRICT COURT ★ WESTERN DISTRICT OF WISCONSIN ★

4/16/16

NOTICE TO COUNSEL:

To enable judges and magistrate judges of the court to evaluate possible disqualification or recusal, counsel for a private (non-governmental) business, company, or corporation shall submit at the time of initial pleading this statement of corporate affiliations and financial interest.

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

_____

Case No. _____

v.

_____

DISCLOSURE OF CORPORATE AFFILIATIONS
AND FINANCIAL INTEREST

I, the undersigned counsel of record for _____, make the following disclosure:

1. Is said party a subsidiary or affiliate of a publicly owned corporation?

   ☐ YES ☐ NO

   If the answer is YES, list below and identify the parent corporation or affiliate and the relationship between it and the named party:

   _____

2. Is there a publicly owned corporation, not a party to this case, that has a financial interest in the outcome?

   ☐ YES ☐ NO

   If the answer is YES, list the identity of such corporation and the nature of the financial interest to the named party:

   _____

_____ _____
Signature of Counsel Date

UNITED STATES DISTRICT COURT

for the

_____	)	
Plaintiff	)	
v.	)	Civil Action No.
_____	)	
Defendant	)	

NOTICE, CONSENT, AND REFERENCE OF A CIVIL ACTION TO A MAGISTRATE JUDGE

Notice of a magistrate judge's availability. A United States magistrate judge of this court is available to conduct all proceedings in this civil action (including a jury or nonjury trial) and to order the entry of a final judgment. The judgment may then be appealed directly to the United States court of appeals like any other judgment of this court. A magistrate judge may exercise this authority only if all parties voluntarily consent.

You may consent to have your case referred to a magistrate judge, or you may withhold your consent without adverse substantive consequences. The name of any party withholding consent will not be revealed to any judge who may otherwise be involved with your case.

Consent to a magistrate judge's authority. The following parties consent to have a United States magistrate judge conduct all proceedings in this case including trial, the entry of final judgment, and all post-trial proceedings.

Parties' printed names	*Signatures of parties or attorneys*	*Dates*

Reference Order

IT IS ORDERED: This case is referred to a United States magistrate judge to conduct all proceedings and order the entry of a final judgment in accordance with 28 U.S.C. § 636(c) and Fed. R. Civ. P. 73.

Date: _____

_____
District Judge's signature

_____
Printed name and title

Note: Return this form to the clerk of court only if you are consenting to the exercise of jurisdiction by a United States magistrate judge. Do not return this form to a judge.

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

HONORABLE BARBARA B. CRABB
ORDER GOVERNING FILING OF DISPOSITIVE MOTIONS
PRIOR TO PRELIMINARY PRETRIAL CONFERENCE

If, prior to the preliminary pretrial conference in a civil case, any party files a dispositive motion, the following schedule shall apply. The moving party is to file and serve its brief together with the motion; the opposing party has 21 days to respond and the moving party has 10 days to reply.

BY THE COURT:

BARBARA B. CRABB
DISTRICT JUDGE

Reprinted: 9/1/07

Roll Call		
District Number	Yes	No
1. Pomush		
2. White		
3. Finn		
4. Clark		
5. Baker		
6. Paine		
7.Glazman		
8. Robinson		
9. Jaques		
10. Quam		
11. Finendale		
12. Lear		
13. Allen		
14. Ryan		
15. Hendrickson		
16. Luostari		
17. Liebaert		
18. Corbin		
19. Mock		
20. Conley		
21. Bergman		

Roll:
Ayes _____
Noes _____
Absent _____
Abstain _____

Passed _____
Lost _____
Refer _____
Amend _____
Other _____

Rev. 04/19/16

RESOLUTION #27-16
RESOLUTION BY THE LAND AND DEVELOPMENT COMMITTEE

Subject: Land Sale

WHEREAS, the following parcel of land was previously advertised on the dates indicated below, in accordance with Section 76.59, Wisconsin Statutes, and the highest bid received was as follows:

$ 2,600.00 Parcel 3-15: (May 1, 8, 15, 2015, and April 1, 8, 15, 2016) Lots 1-28, Block 11, and Lots 1-28 Blocks 6 and 14 inclusive, Riverside Addition to South Superior, City of Superior (402 Central Avenue, 6201 and 6301 Poplar Avenue) (08-808-06503-00, 08-808-06641-00, 08-808-06724-00), from Jeremy Engelking. Intended use: Adjacent landowner.

NOW, THEREFORE, BE IT RESOLVED that the Douglas County Board of Supervisors, in regular meeting assembled, authorizes the County Clerk to execute quit claim deed on the above named property.

Dated this 19th day of May, 2016.

(Committee Action: Unanimous)
(Fiscal Note: Increase "Profit and Loss on Land Sales Account" by $2,600.00)

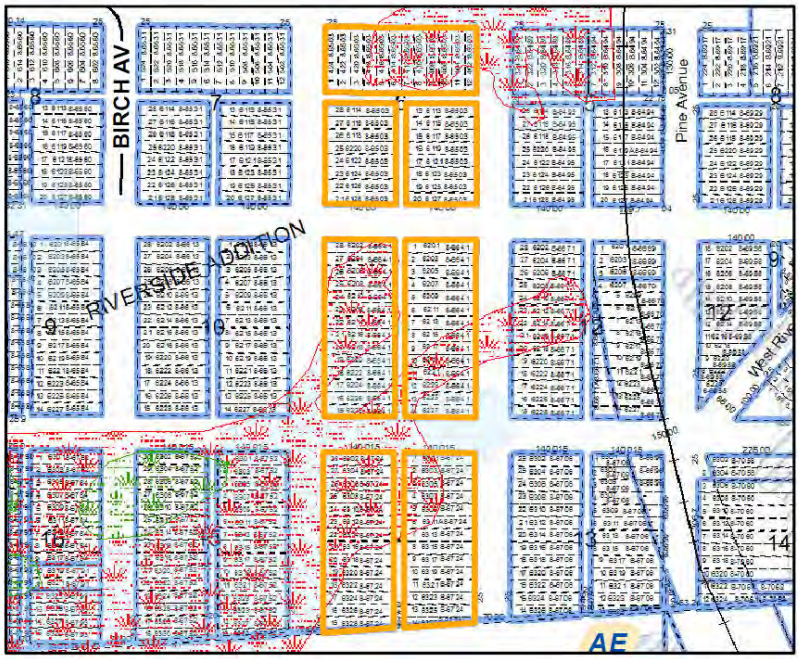
EXHIBIT A-5-16

RESOLUTION #27-16
MAP - LAND SALE

Presented by Land & Development Committee

DOUGLAS COUNTY BOARD OF SUPERVISORS
May 19, 2016

RESOLUTION #27-16



PARCEL #3-15
JEREMY ENGELKING
APPROXIMATELY 6.67 ACRES

Roll Call		
District Number	Yes	No
1. Pomush		
2. White		
3. Finn		
4. Clark		
5. Baker		
6. Paine		
7.Glazman		
8. Robinson		
9. Jaques		
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16. Luostari		
17. Liebaert		
18. Corbin		
19. Mock		
20. Conley		
21. Bergman		

Roll:
Ayes _____
Noes _____
Absent _____
Abstain _____

Passed _____
Lost _____
Refer _____
Amend _____
Other _____

Rev. 04/19/16

RESOLUTION #28-16
RESOLUTION BY THE FOREST, PARKS AND RECREATION COMMITTEE

Subject: Long Lake County Day-Use Park Entry into County Forest Special Use

WHEREAS, the Douglas County Forest, Parks and Recreation Committee recommends applying the following described Douglas County owned land for special use entry under the Wisconsin County Forest Law:

Town of Solon Springs, Douglas County, Wisconsin: Part of SESE, Section 31, T45N – R11W (SO0260070800), and

WHEREAS, said land contains a total acreage of approximately 3.50 acres and is further described in Exhibit B-5-16, and

WHEREAS, said land contains a day-use park area managed by Douglas County known as Long Lake County Park that offers picnicking, shore fishing, and beach activities on the shore of Long Lake.

NOW, THEREFORE, BE IT RESOLVED that the Douglas County Board of Supervisors accepts the recommendation of the Forest, Parks and Recreation Committee and approves applying the lands herein described for special use entry under the Wisconsin County Forest Law for purposes of recreational day-use park use and that the Forest, Parks and Recreation Committee is directed to forward said application for entry to the WDNR for approval.

Dated this 19th day of May, 2016.

(Committee Action: Unanimous)
(Fiscal Note: Within budget)

EXHIBIT B-5-16

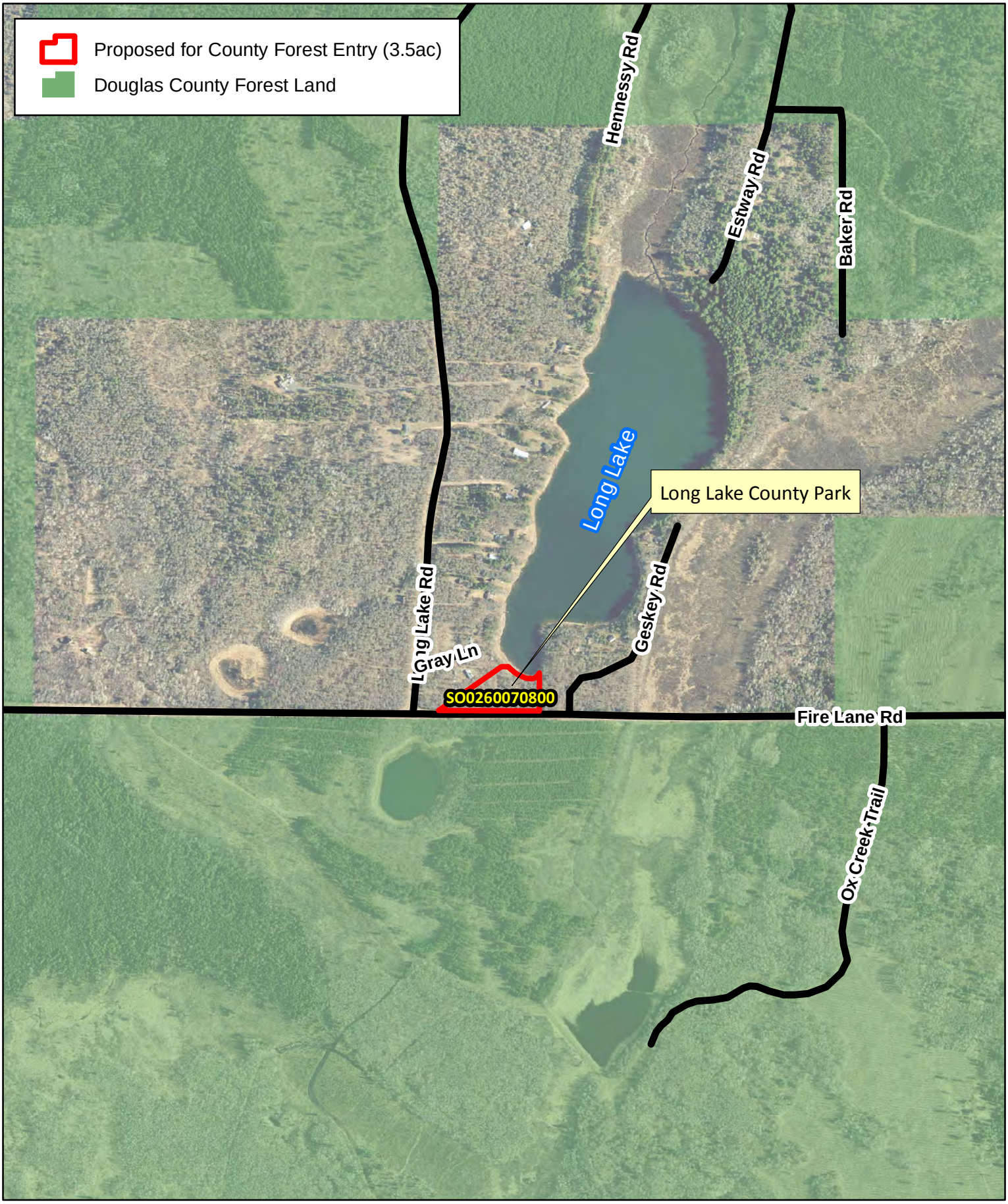
RESOLUTION #28-16
MAP
Long Lake County Day-Use Park Entry into County Forest Special Use

Presented by Forest, Parks & Recreation Committee

DOUGLAS COUNTY BOARD OF SUPERVISORS
May 19, 2016

PARCEL PROPOSED FOR COUNTY FOREST SPECIAL USE ENTRY

Part of SESE, Section 31, T45N - R11W, Town of Solon Springs, Douglas County, Wisconsin



Roll Call		
District Number	Yes	No
1. Pomush		
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Roll:
Ayes _____
Noes _____
Absent _____
Abstain _____

Passed _____
Lost _____
Refer _____
Amend _____
Other _____

Rev. 04/19/16

RESOLUTION #29-16
RESOLUTION BY THE ADMINISTRATION COMMITTEE

Subject: 2016 Capital Projects

RESOLVED that the Douglas County Board of Supervisors accepts the recommendation of the Administration Committee and approves the following 2016 capital projects and their respective sources of funding:

Capital Improvement Project Allocation
(Total:$1,020,000)

Project	Department	Cost
Parkland Radio Equipment Shelter, Antennas and Lines [1]	Emergency Management	$150,000
Plotter	Emergency Management	$10,000
Forensic Mapping Equipment	Sheriff	$41,075
Pictometry	Zoning	$118,335
Lidar Processing	Zoning	$31,000
Replacement of County-wide Voting Equipment [2]	County Clerk	$20,000
1 Dump/Plow Trucks [3]	Highway	$205,000
Track Excavator	Highway	$125,000
Upper St. Croix Forest Land Acquisition [4]	Forestry	$120,000
Network Computer Server Replacement [5]	Forestry	$29,590
Park Creek Pond Spillway Improvement Project-Engineering & Design	Forestry	$50,000
County Forest Road Gravel Resurfacing	Forestry	$70,000
Stateline Flowage Dam Repair Engineering & Construction [6]	Forestry	$50,000
Total		**$1,020,000**

[1] Fund most of request now and wait for Verizon decision and timeline to fund balance.
[2] Total cost is estimated at $200,000. Allocate $20,000 per year for 10 years. An additional $4,880 from discretionary carry-over, for a total of $24,880 in 2016.
[3] Fund only one of the three trucks requested. Funding for the purchase of 3 trucks is contained in department's 2016 operating budget.
[4] Funding most of request which will increase land purchase reserve fund to approximately $220,000.
[5] Funding partial request through this process with the remainder to come from office addition project due to accepted bid for office project under budget.
[6] Fund engineering and wait for discussions with SEH.

Roll Call		
District Number	Yes	No
1. Pomush		
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Roll:
Ayes _____
Noes _____
Absent _____
Abstain _____

Passed _____
Lost _____
Refer _____
Amend _____
Other _____

Rev. 04/19/16

Courthouse/Government Center Maintenance Fund Allocation
(Total: $306,000)

Project	Department	Cost
Courthouse Atrium Repair Study	Buildings & Grounds	$10,000
Replace Fire Alarm Panel, Pull Stations & Detectors	Buildings & Grounds	$85,000
Replace Heat Pump Energy Management System	Buildings & Grounds	$97,000
OSHA Required Roof Top Barriers & Fall Protection	Buildings & Grounds	$15,000
Replace Uninterruptable Power Supply in Communication Center	Communication Center	$20,000
Replacement of Elevator Controller in Jail	Jail	$57,000
Reserve		$22,000
Total		**$306,000**

Discretionary Allocation
(Total $408,000)

Project	Department	Cost
Merit/Reward System		$134,750
Courthouse/Government Center Parking and Access Study	Administration	$40,000
Replace Uninterruptable Power Supply in Communication Center	Communication Center	$30,000
Replace Uninterruptable Power Supply in Information Services	Information Services	$50,000
Replace Uninterruptable Power Supply in Jail	Jail	$50,000
Upgrade Storage Capacity	Information Services	$14,000
Upgrade Firewall & Reporting System	Information Services	$20,000
Fingerprint Machine	Jail	$15,210
SCBA Tanks	Jail	$4,040
Night Vision/Thermal Equipment	Sheriff	$20,000
Remonumentation	Zoning	$30,000
Total		**$ 408,000**

Dated this 19th day of May, 2016.

(Committee Action: Unanimous)
(Fiscal Note: Increase Capital Projects by $798,410; Highway Capital Assets by $330,000; Forestry Capital Assets by $319,590; Courthouse/Government Center Maintenance Fund by $286,000; Timber Sales Revenue Reserve by $306,000; Election Reserve by $4,880; Decrease 2015 Capital Assets by $4,880 and undesignated fund balance by $1,495,065; and Sales Tax Reserve $544,935.23 {amount over the fund balance limit of $1,000,000})
(Administrative Note: Two-thirds vote of Board-elect required)

Roll Call		
District Number	Yes	No
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2. White		
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17. Liebaert		
18. Corbin		
19. Mock		
20. Conley		
21. Bergman		

Roll:
Ayes _____
Noes _____
Absent _____
Abstain _____

Passed _____
Lost _____
Refer _____
Amend _____
Other _____

Rev. 04/19/16

RESOLUTION #30-16
RESOLUTION BY SUPERVISORS ON THE LAND CONSERVATION COMMITTEE

Subject: Watershed Approach to Wetland Management in the Lake Superior Basin

RESOLVED, that the Douglas County Board of Supervisors accepts the recommendation of Supervisors on the Land Conservation Committee and approves A Watershed Approach to Wetland Management in the Lake Superior Basin, a watershed-based plan to guide decisions about wetland management in the Lake Superior Basin portion of Douglas County, as set forth in Exhibit C-5-16.

BE IT FURTHER RESOLVED that the Douglas County Land and Water Resource Management Plan 2010 – 2020 be amended to include recommendations from the Watershed Approach to Wetland Management in the Lake Superior Basin as goals and the entire Watershed Approach document be included as a reference.

Dated this 19th day of May, 2016.

(Committee Action: Unanimous)
(Fiscal Note: No anticipated cost to Douglas County)

EXHIBIT C-5-16

RESOLUTION #30-16
A Watershed Approach to Wetland Management in the Lake Superior Basin Plan

Presented by Supervisors on the Land Conservation Committee

DOUGLAS COUNTY BOARD OF SUPERVISORS
May 19, 2016

A Watershed Approach to Wetland Management in the Lake Superior Basin

Headwaters of the Middle River *Douglas County, WI.*

Land and Water Conservation Department

Douglas County, Wisconsin

May 2016

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Acknowledgements

Watershed Planning Committee Members	**Affiliation**
Mary Lou Bergman	Douglas County Board of Supervisors
David Conley	Douglas County Board of Supervisors
Dan Corbin	Douglas County Board of Supervisors
Sue Hendrickson	Douglas County Board of Supervisors
Tom Johnson	Town of Lakeside
Greg Kessler	Wisconsin Department of Natural Resources
Jason Laumann	Northwest Regional Planning Commission
Steve LaValley	Wisconsin Department of Natural Resources
Mark Liebaert	Douglas County Board of Supervisors
Darienne McNamara	City of Superior SAMP
Diane Nelson	City of Superior Environmental Services
Nick Pristash	Douglas County Fish & Game League
Steve Rannenberg	Douglas County Planning & Zoning Department
Tom Rendulich	Village of Oliver
Rachael Shetka	Enbridge Energy
Alf Sivertson	Mitigation banker
Terry White	Douglas County Board of Supervisors
David Zentner	Izaak Walton League

Technical Advisory Committee	**Affiliation**
Jane Anklam	Douglas County Extension
Tom Bernthal	Wisconsin Department of Natural Resources
Mike Gardner	Northflow LLC
Steve LaValley	Wisconsin Department of Natural Resources
Nick Miller	The Nature Conservancy
Mary Munn	MLM Consulting
Erin O'Brien	Wisconsin Wetlands Association
Sue O'Halloran	Watershed Planning Consultant
Andy Robertson	St. Mary's University of Minnesota
Bill Sande	US Army Corps of Engineers
Kevin Stark	St. Mary's University of Minnesota

Douglas County Land Conservation Committee	
Chair	Mark Liebaert
Vice Chair	Sue Hendrickson
Member	Rae Ann Anderson
Member	Larry Luostari
Citizen Member	Amy Colby

Douglas County Board of Supervisors	
Chair	Mark Liebaert
Vice Chair	Jim Paine
County Clerk	Susan Sandvick
County Administrator	Andy Lisak

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Figure 1. Situation map developed by Douglas County Watershed Planning Committee

Figure 2. Landscape criteria and prioritization process developed by Douglas County Watershed Planning Committee

Figure 3. Study area defined as the Lake Superior Basin portion (DC LSB) is outlined in dark purple.

Figure 4. Ecological Landscape Units within the DC LSB

Figure 5**.** Land Type Associations (LTAs) within DC LSB.

Figure 6. Hydrologic Units (i.e., watersheds & sub-watersheds) and major rivers and streams in the study area.

Figure 7. The red clay plain (orange shading) within the study area (outlined in purple). This is defined by the boundaries of the Douglas Lake-Modified Till Plain, a Wisconsin Land Type Association (LTA) (WI DNR 1999).

Figure 8. Land cover classes in the Douglas County Western Great Lakes Coastal Change Analysis Program (C-Cap) 2010 Land Cover

Figure 9. Land cover / land use in the Lake Superior Basin of Douglas County as of 2008-10.

(Open / Impervious Lands analysis layer created by Community GIS Services Inc.).

Figure 10. Cover page of the Lake Superior Basin, Douglas County, WI. Map Book

Figure 11. Wetlands with moderate or high function for surface water detention.

Figure 12. Wetlands with moderate or high function for stream-flow maintenance (SM.

Figure 13. Wetlands with moderate or high function for shoreline stabilization.

Figure 14. Wetlands with moderate or high function for sediment retention.

Figure 15. Wetlands with moderate or high function in nutrient transformation

Figure 16. Wetlands with moderate or high function for carbon sequestration.

Figure 17. Wetlands with moderate or high function for amphibian habitat.

Figure 18. Wetlands with moderate or high function for fish habitat.

Figure 19. Wetlands with moderate or high function for other wildlife habitat.

Figure 20. Wetlands with moderate or high function for shorebird habitat.

Figure 21. Wetlands with moderate or high function for migratory bird habitat.

Figure 22. Wetlands with moderate or high function for waterfowl and water bird habitat.

Figure 23. Wetlands that function as woodcock habitat.

Figure 24. General distribution of PRWs (i.e., potential reestablishment sites) (red polygons) in the DC LSB. The yellow line indicates the clay plain boundary for the purposes of this assessment; the clay plain is to the north of this line. Different methods were employed to define PRWs in the clay plain vs outside of the clay plain.

Figure 25. Interpreted PRW pour points (red) in the DC LSB

List of Figures (Continued)

Figure 26. PRW representative catchments (green polygons) created to represent catchments of viable or possibly viable PRW polygons in the clay plain portion of the DC LSB. These were created from a 10-meter Digital Elevation Model (DEM).

Figure 27. General distribution of ditches (yellow lines) in the DC LSB. Note: some of these "ditches" are likely relatively shallow and include some semi-natural drainage paths that have been enhanced in order to reduce surface ponding.

Figure 28. Ground view of shallow, parallel agricultural ditches (indicated by white arrows) draining to nearby roadside ditch

Figure 29. Ground view of roadside ditch conveying water during spring snow melt in April 2014. The shallow agricultural ditches (shown in Figure 8) are seen in the upper left of this photo; they drain into this roadside ditch.

Figure 30. General distribution of potential restorable stream reaches (PRSRs) (dark red) identified in the Douglas County, Lake Superior Basin.

Figure 31. Ground–level view of a grazed riparian zone along an intermittent stream. Notice some hummocks created by livestock hooves (process referred to as "pugging"). Shown here during spring snow melt (April 2014).

Figure 32. Aerial view of the same grazed riparian area of an unnamed perennial stream identified as a PRSR (maroon line) in April 2013. The above photo was taken from the road facing the south (upstream in this north flowing stream). Notice the drainage ways (yellow lines) coming into the stream from the left side of the photo.

Figure 33. Ground-level view of a grazed stream riparian zone. Notice the small stream banks affected by livestock. Photo taken in July, 2014.

Figure 34. Aerial view of a grazed stream riparian zone during April, 2013. This segment was identified as a PRSR (maroon line). In this case, the stream is identified as an unnamed perennial stream in the WDNR Hydro data. The photo in Fig. X was taken from the road facing north (towards the top of this figure).

Figure 35. Map of the percent wetland loss in watersheds (HUC 12) in the Lake Superior Basin of Douglas County, WI.

Figure 36. Open land cover (percentage) in each subwatershed (HUC 14) in Lake Superior watersheds, Douglas County, WI.

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Table 1. Calculation of wetland loss for HUC 12 watersheds, Lake Superior Basin, Douglas County, WI.

Table 2. List of Lake Superior Basin HUC 12 watersheds (Douglas County) with greater than 15% wetland loss, number of subwatersheds with more than 30% open land and total number of subwatersheds within each watershed.

Executive Summary

The watershed-based plan for wetland management developed for the Lake Superior Basin of Douglas County utilizes the best available scientific information to identify watersheds that indicate high vulnerability to increased surface water runoff due to large storm events, recommends actions to reduce this risk, and is consistent with community land use goals. This plan presents an opportunity to work with landowners, both public and private, to implement land management practices that will maintain a strong agricultural community, improve watershed health, reduce the risks associated with flooding and encourage economic growth and development. A primary goal of this plan is to enable Douglas County stakeholders to provide input into the location of future wetland mitigation sites that will improve watershed health within the Lake Superior basin and improve the overall resiliency of Douglas County communities to climate change. Through this process watersheds demonstrating the highest risk of increased runoff have been identified and would be the focus of future funding for wetland mitigation projects including restoration, preservation, enhancement, riparian buffers and land conservation management activities

The Douglas County Lake Superior Watershed Planning committee met over an 18 month period to learn about watershed processes, wetland functions, wetland mitigation regulations and other land use issues. A technical advisory committee provided input on the development of the wetland functional analysis for the Lake Superior basin. The final recommendations of this group are compiled in wetland management recommendations for the location of future projects that meet watershed needs and are consistent with community land use goals.

Based on the criteria and prioritization process developed by the Watershed Planning Committee, the watersheds (HUC12) with the largest amount of wetland loss and subwatersheds (HUC14) with greater than 30-40% open land cover have been listed as the highest priority for wetland restoration and preservation. Additional site-level criteria well be used to evaluate parcel suitability and recommendations will be finalized and approved by appropriate entities. Sites meeting the identified criteria will be eligible for wetland restoration and protection projects as funding becomes available. Public and private lands that meet the criteria for either restoration or preservation will be compiled and utilized to develop a request for landowner participation. A listing of landowners who may be interested in developing wetland projects on their land will be developed.

For wetland restoration, site-level criteria will include, at a minimum, all identified potentially restorable wetland areas that:

- are located on or adjacent to transitional agricultural land
- have identified pour points and catchments that intersect highways and roads
- have a direct hydrologic connection to streams and rivers
- are adjacent to current wetlands with significant surface water detention function
- are adjacent to public land currently managed for conservation and/or preservation of unique habitats

For wetland preservation, site-level criteria will include, at a minimum:

- Current wetlands with moderate to high function for storm water detention (SWD), especially in the headwaters and floodplain areas in all Lake Superior Basin watersheds of Douglas County.

- Current wetlands adjacent to public land currently managed for conservation and/or preservation of unique habitats

Additional priorities for restoration include watersheds within which priority subwatersheds are located within. Additional preservation priorities include headwater and floodplain wetlands.
Several key land conservation and management strategies have been identified that should be implemented to address the watershed goal of reduction in surface water runoff. They include:

- Managing timber harvests to maintain a minimum of 40% forest cover in watersheds (HUC 14)
- Implementation of wetland preservation and restoration projects in priority subwatersheds and the watersheds within which they are located.
- Implementation of stream and riparian/floodplain restoration and protection projects in priority locations identified as potentially restorable stream reaches.

Farmland preservation has community and economic significance for Douglas County and conservation of existing farmland is an important consideration when evaluating potential wetland restoration sites. Historic information shows a pattern of smaller wetlands on the landscape that provided surface water retention at multiple locations in the drainage network. This supports the concept of smaller restoration sites that could potentially be located adjacent to current active agricultural areas rather than converting the farmland itself. Wetland restoration projects in the region have demonstrated that transitional agricultural areas have a high restoration potential when surface water drainage patterns are re-established. This should be an alternative approach to the current practice of developing large wetland mitigation banks on farmland that results in a cumulative loss of agricultural land.

In order to address the watershed issue of increased surface water runoff the land management strategies recommended in this watershed-based plan have been approved by the Land and Water Conservation Committee as a goal to be added to the 2010-2020 Land and Water Resource Management Plan. In addition, recommendations from this plan will be coordinated with other Douglas County plans that include Comprehensive Land Use, Farmland Preservation, Hazard Mitigation and Forestry Planning. These strategies should be based on the currently available land cover/land use data and should be updated every five years.

A Watershed-Based Plan for Wetland Restoration and Conservation in the Lake Superior Basin of Douglas County, Wisconsin

Project Background

Development of watershed approach for wetland management

A watershed-based planning approach is a process for the identification of priority wetland preservation, restoration and enhancement opportunities that restore and maintain ecosystem functions and improve watershed health. This approach is described in the *Watershed Approach Handbook* (The Nature Conservancy and Environmental Law Institute 2014) and is defined as "an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs and how locations and types of compensatory mitigation projects address those needs."(ELI/TNC 2014). This watershed-based plan was developed for the Lake Superior basin within Douglas County, WI. and provides a framework for land and water management activities in the Lake Superior Basin (LSB) of Douglas County that addresses an identified priority watershed issue. This planning process incorporated input from stakeholders, natural resource managers and regulators in order to identify areas within the Lake Superior basin where wetland restoration and preservation projects could be established to address watershed needs and meet community goals. This plan was developed to meet federal and state regulatory requirements for wetland mitigation; provide local input into the location of future wetland restoration and mitigation projects in the county; and provide direction for those planning projects that impact wetlands in the county.

Land use changes and loss of wetlands in LSB watersheds impacts Lake Superior freshwater resources by reducing water storage capacity and increasing the volume and velocity of runoff. This contributes to flashy stream flow conditions that erode and further incise stream channels, undercut banks and create turbidity and sedimentation problems. Severe storm events in May and June, 2012 resulted in flooding and significant damage to infrastructure in Douglas County and the City of Superior. Projected increases in the frequency of large storm events due to climate change are likely to add to the existing problems of erosion, sedimentation in coastal wetlands, flooding and flood-related infrastructure damage (Wisconsin's Initiative on Climate Change Impacts, 2011). Strategic wetland protection and restoration can help to regulate stream flows, reduce floods and flood damages, and remove sediments and pollutants from stormwater runoff.

In addition to these watershed runoff issues, Douglas County citizens had expressed concern regarding the lack of input into the siting of wetland mitigation projects in the county. Douglas County recently completed their Comprehensive Land Use Plan (2010-2020) which describes future land use plans for each of the municipalities in the county. While the county has been a focus area for wetland mitigation projects there has been a lack of communication with local governments that is needed to maintain consistency with local land use plans. This watershed-based plan was developed to address both the environmental issues and community concerns described.

Based on the best available information, this plan identifies watersheds that indicate high vulnerability to increased surface water runoff due to large storm events, recommends actions to reduce this risk, and maintains consistency with community land use goals. However, *while recommended actions are*

targeted at vulnerable watersheds they should be considered to be beneficial in *all* Lake Superior watersheds regardless of their ability to aid in 'slowing the flow' of surface water on the landscape. This plan presents an opportunity to work with landowners, both public and private, to implement land management practices that will maintain a strong agricultural community, improve watershed health, reduce the risks associated with flooding and improve the overall resiliency of Douglas County communities to climate change.

As this plan was developing over the past two years, the State of Wisconsin In-Lieu Fee (ILF) Program was initiated as a new option for mitigating impacts of wetland loss (WDNR 2014). As part of the state ILF Program Instrument, a Compensation Planning Framework (CPF) was developed for each major watershed. The Douglas County portion of the Lake Superior Basin contains two major watersheds, or hydrologic unit codes (HUC): the St. Louis River and the Beartrap-Nemadji (HUC 8). Information compiled for the CPF identifies trends in permitted wetland loss from 2008-2012 in these watersheds. This document also identifies goals and objectives for the ILF program in these Service Areas and Recommendations include the restoration and enhancement of specific wetland types including floodplain forests, wooded swamps, shrub-carr and alder thicket swamps, sedge meadows, ephemeral wetlands, Great Lakes Ridge and Swale Wetlands, interdunal wetlands and open and coniferous bogs. This information further supports the need for a watershed approach to wetland planning in Douglas County.

Community engagement

Lake Superior Basin stakeholders participated in planning meetings over an 18-month period in order to identify watershed needs, discuss community issues regarding land use and develop a process for input into the siting of future wetland projects (Wilkens 2013). An engagement strategy called "concept mapping" was incorporated in the initial phase of this process and was developed from stakeholder interviews conducted prior to the first watershed planning meeting. The original situation map was edited by the stakeholders to assure that the final version represented their concerns regarding wetland mitigation in Douglas County (Fig.1).

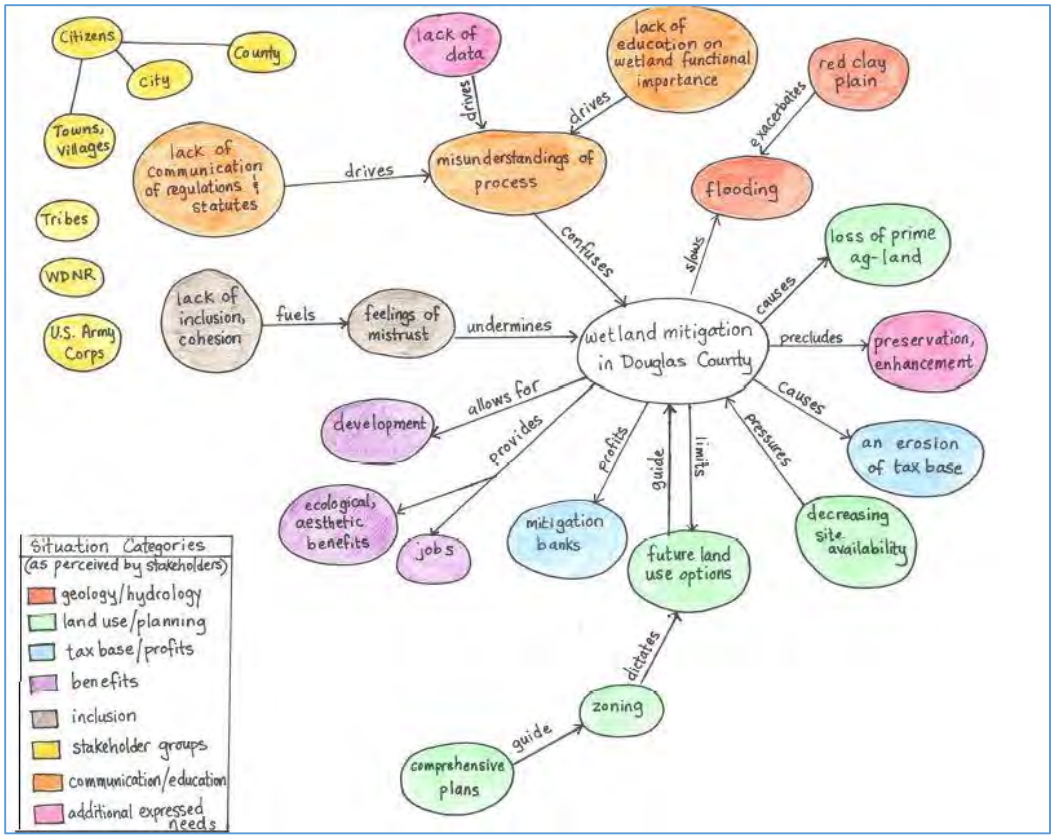


Figure 1. Situation map developed by Douglas County stakeholders.

This planning committee met eight times over an 18 month period to learn about watershed processes, wetland functions, wetland mitigation regulations and other land use issues. In addition, a technical advisory committee was convened that included wetland and soil scientists, landscape spatial analysts and natural resource regulators to provide input on the development of the wetland functional analysis for the Lake Superior basin. The final recommendations of this group are compiled in the landscape prioritization for watershed-based planning (Fig.2) that describe land cover characteristics and priorities for the location of future projects that meet watershed needs and are consistent with community land use goals.

Prioritization process

The initial step was the ranking of major watersheds (HUC 12) based on historic wetland loss, or the loss of wetland acreage through conversion to other land uses. The watersheds with a higher amount of wetland acreage loss (relative to the other Lake Superior watersheds) received the highest ranking. The next step in the prioritization process included analysis of the landscape-level information at the sub-watershed (or HUC 14) scale. Subwatersheds showing land use changes resulting in greater than 40% acreage of open land were identified as a high priority. The" open land" category includes impervious surfaces, 16yr. age class forest stands and agricultural land.

Figure 2. Landscape criteria and prioritization process developed by Douglas County Watershed Planning Committee

Surface water detention was one of thirteen wetland functions assessed through the geospatial analysis. Within subwatersheds (HUC 14), wetlands having a moderate or high function for surface water detention were identified as high priority for wetland preservation. The potentially restorable wetlands were identified as high priority for wetland restoration. Agricultural land is rated as a low priority for wetland mitigation projects to reflect the community value of farmland preservation that is described in the town future land use plans. *Transitional agricultural areas have been identified as areas that are either marginal for production, not actively farmed and/or returning to native vegetation. Transitional agricultural areas are a high priority for wetland restoration*. Discussions with agricultural producers, who represent one of the largest private landowner groups in the county, has demonstrated an interest in wetland projects using small wetlands on both transitional and working farmland in order to both restore lost wetland functions and provide land conservation practices to reduce soil erosion and protect water quality. Small wetland restoration projects developed across a specific area to form a wetland complex would restore a more historically accurate landscape and has been identified as important by both resource managers and agricultural landowners.

The watershed-based approach developed through this project emerged from a pilot project on one watershed in the Lake Superior Basin of Douglas County, the Middle River. The criteria and prioritization process developed for the Middle River watershed was recommended for submission to the Land Conservation committee where it was approved for application on the other Lake Superior Basin watersheds. This was the first step in the process of integrating the assessment results into local plans and policies. A digital Map Book was created for the Middle River using Adobe Pro software watershed and

was expanded to include the Lake Superior Basin in Douglas County. The Map Book depicts land cover and information from the wetland functional assessment for surface water detention.

The information in the next sections are primarily excerpted from the final report submitted to Douglas County, *A Watershed Framework for the Assessment of Wetland Services in Douglas County, Wisconsin* developed by Geospatial Services of St. Mary's University of Minnesota (Stark and Robertson 2014). They describe the Lake Superior Basin landscape, wetland functional assessment, potentially restorable wetlands, synthetic flow network and potentially restorable stream reaches

Lake Superior Basin Description

Study Area

The study area for this project is the Lake Superior Basin portion of Douglas County (DC LSB) (Fig. 3). The Lake Superior Basin (LSB) of northern Douglas County contains geologically young red clay deposits left during the last glacial period that are highly erodible and prone to extensive mass wasting along stream banks, tributaries, and intermittent drainages (Verry and Kolka 2003). The study area covers 765.4 mi^2 of Douglas county, or just over half of the county's total area.

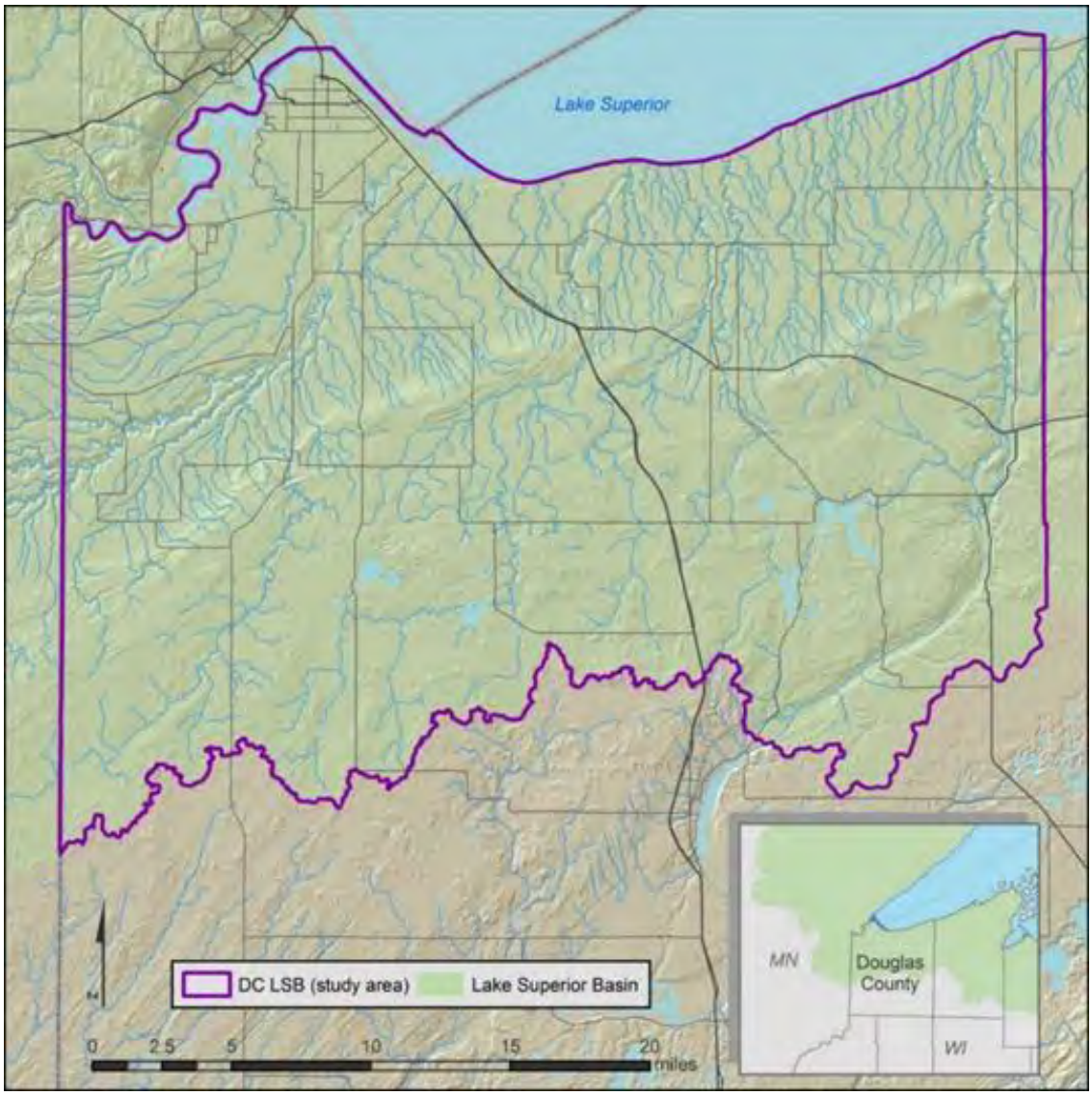


Figure 3. Study area defined as the Lake Superior Basin portion of Douglas County, Wisconsin, approximately the northern half of the county. The study area (DC LSB) is outlined in dark purple.

Ecological Landscapes & Land Type Associations

The study area is comprised of three ecological landscape units, the Superior Coastal Plain, the Northwest Sands and the Northwest Lowlands (Fig. 4).

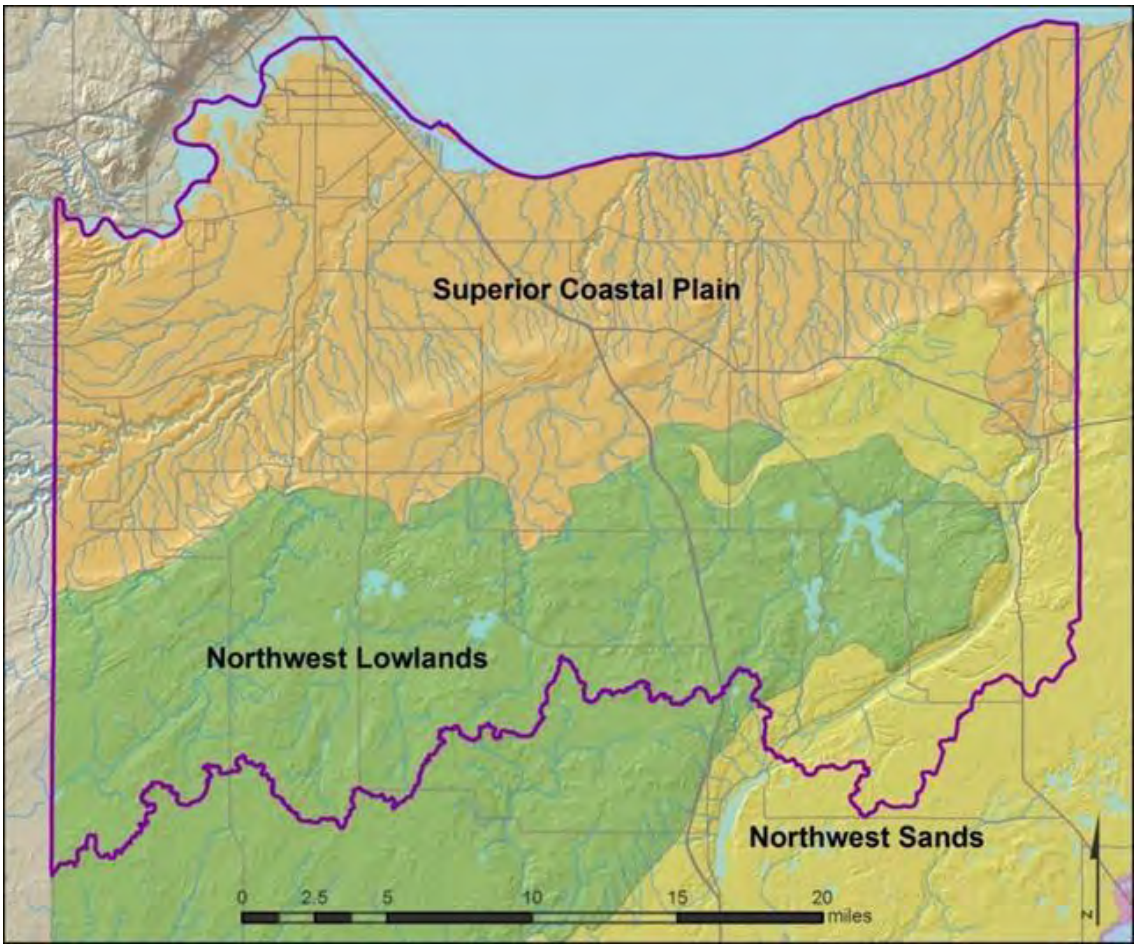


Figure 4. Ecological Landscape Units within the Lake Superior Basin, Douglas County.

Ecological Landscape Units are described by the Wisconsin DNR as regions within Wisconsin with similar ecology and management opportunities (WDNR 2013). Within each of these Ecological Landscape Units are several Wisconsin Land Type Associations (LTAs)(WDNR 1999) (Fig. 5). These LTAs provide a more detailed description of the land cover, geology and landforms for each unit. LTAs are recommended for forest, area-wide, or watershed-level planning and analysis scales (map scale ranges of 1:250,000 to 1:60,000). These ecological units contain similar patterns in their: 1) potential natural plant communities; 2) soils; 3) hydrologic function; 4) landform and topography; 5) lithology; 6) climate; and 7) natural processes (e.g., nutrient cycling, productivity, successional patterns, and natural disturbance regimes such as flooding, wind, or fire). LTAs within the DC LSB are depicted in Fig. 5. The following pages describe each of the Ecological Units and the LTAs within contained within them.

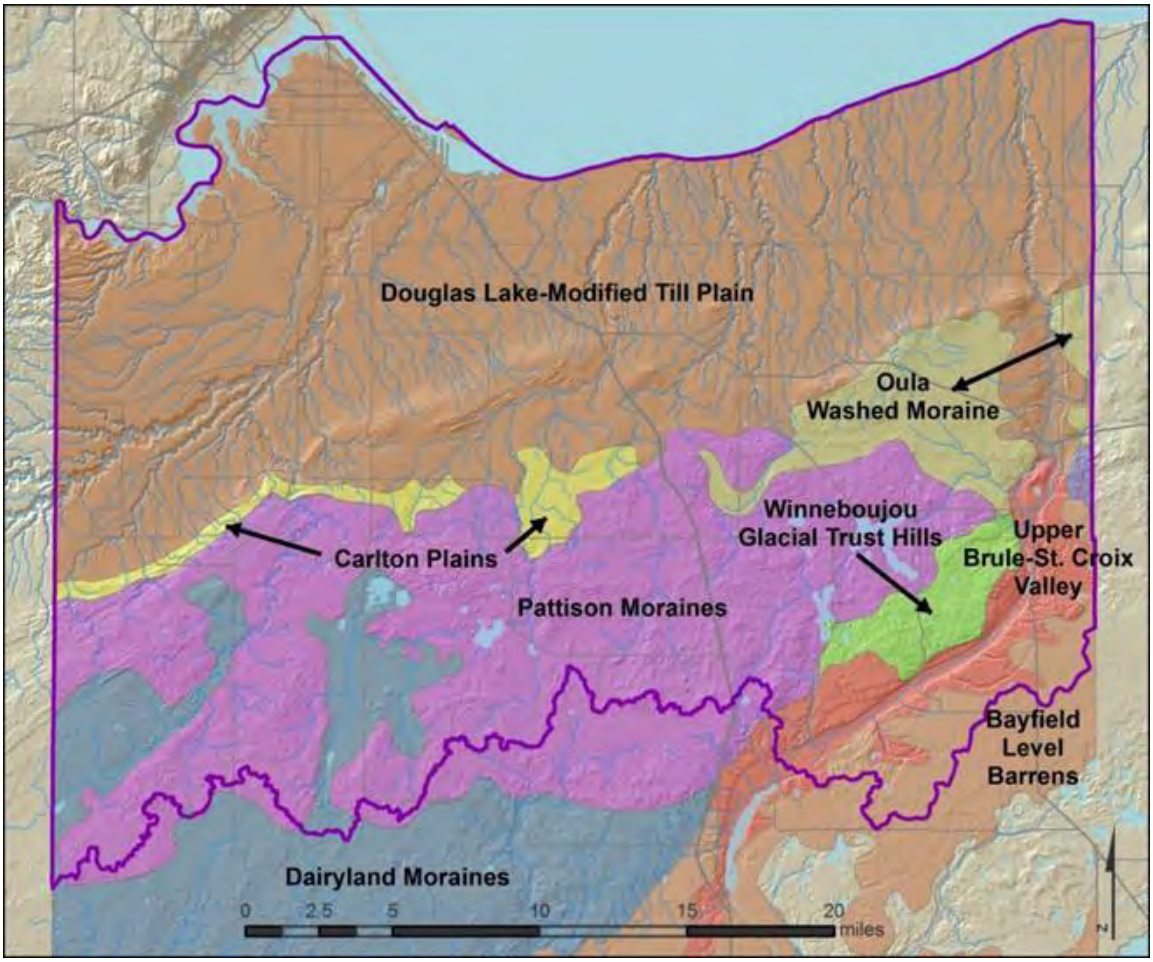


Figure 5. Land Type Associations (LTAs) within the Lake Superior Basin, Douglas County.

Superior Coastal Plain

Approximately the northern half of the study area falls within the Superior Coastal Plain. This ecological landscape is generally rolling to flat topography with clay soils; primarily agriculture and mixed hardwood and spruce-fir forest with high gradient streams (Merryfield 2000). The following information on the Ecological Unit descriptions (climate, bedrock, geology & landforms, soils, hydrology, and current land cover) is taken directly from WI DNR (2014).

Climate: Typical of northern Wisconsin, though conditions are somewhat moderated by the proximity to Lake Superior; mean growing season of 122 days, mean annual temperature is 40.2 deg. F, mean annual precipitation is 32 inches, and mean annual snowfall is 87.4 inches. Cool summers, deep snows (including lake effect snows), high humidity, fog, mist, wave spray, currents, ice, and strong winds (e.g., along exposed coastlines, where blow-down events are frequent) affect parts of the Ecological Landscape, especially near Lake Superior. Some areas near Lake Superior support grass-based agriculture (18.5% of the Ecological Landscape). Areas away from Lake Superior have a shorter growing season and forests become more important than agriculture.

Bedrock: Late Precambrian sandstones are exposed and form cliffs and ledges along the northern edge of the Bayfield Peninsula and on the shores of the Apostle Islands. Igneous rocks (e.g., basalts) form the underpinnings of several waterfalls (e.g., Big Manitou Falls on the Black River in Douglas County).

Geology & Landforms: The Bayfield Peninsula is hilly, as are some of the Apostle Islands. Both are covered by glacial tills. The level plains on either side of the Bayfield Peninsula slope gently toward Lake Superior. They are dissected by many deeply incised streams and several large rivers that generally flow from south to north toward Lake Superior (e.g., Middle River). Sand spits, often enclosing lagoons and wetlands, are well-developed in the Apostle Islands archipelago and at river mouths; some of the larger spits are several miles long.

Soils: Important soils include deep, poorly-drained reddish lacustrine clays on either side of the Bayfield Peninsula. The clay deposits include lenses of sand or coarse-textured till; these areas are especially erosion-prone when they are cut by streams. The tills covering the Bayfield Peninsula and Apostle Islands are variable in composition, but include clays, silts, loams and sands. Organic soils are limited in extent, occurring mostly in association with the peatlands on the margins of the coastal lagoons and to a lesser extent in basins underlain by impermeable tills.

Hydrology: Lake Superior has had an enormous influence on the climate, landforms, soils, vegetation, and economy of the Superior Coastal Plain. Freshwater estuaries are present along the coast. Inland lakes are rare, but lagoons, some of them quite large, occur behind the coastal sandpits. Important rivers in this unit within DC LSB include the St. Louis, Nemadji, Amnicon, and the Bois Brule. Coldwater streams originate in the aquifers at the northern edge of the Northwest Sands in Bayfield County and flow north across the Superior Coastal Plain before emptying into Lake Superior. Many of the streams flowing across the clay plain suffered severe damage to their banks and beds during the era of heavy logging in the late 19th and early 20th centuries. Some of them have not yet recovered and their slumping banks continue to dump sediments into the main channels, and ultimately, into Lake Superior. Water (and soil) management can be challenging in this Ecological Landscape (WI DNR 2014).

Current Land Cover: Aspen-dominated boreal forests are abundant on the clay plains to the west and east of the Bayfield Peninsula. In some areas white spruce, balsam fir, and white pine (these were the dominant canopy trees prior to the Cutover) are now common understory species, or are even colonizing abandoned pastures. Older stands of boreal conifers still occur in a few places, such as the City of Superior Municipal Forest. Forest fragmentation is significant on the clay plain owing to the interspersion of forests with fields and pastures. Northern hardwood and hemlock-hardwood forests occur on the Apostle Islands and include old-growth remnants. Dry forests of pine and oak are scarce in this Ecological Landscape but they do occur on some of the sandspits associated with coastal estuaries. The largest coastal wetlands cover thousands of acres, and these are composed of complex vegetation mosaics that include coniferous and deciduous forests, shrublands, wet meadows and marsh. Large wetlands in the interior of the Superior Coastal Plain include the Bibon Swamp, a huge wetland of almost 10,000 acres along the White River on the southern edge of the Ecological Landscape, and Sultz Swamp, a peatland perched high on the northern Bayfield Peninsula. An extensive complex of wetlands of variable structure occurs on poorly drained red clays in and around the City of Superior.

Relevant LTAs: LTAs within the Superior Coastal Plain in the DC LSB are the Douglas Lake-Modified Till Plain and the Carlton Plains.

Significant Ecological Places

- Conservation Opportunity Areas (COAs): Pokegama-Nemadji Wetlands, Brule Boreal Forest, Bibon Swamp
- State Natural Areas (SNAs): Brule River Boreal Forest, Bibon Swamp, Nemadji River Floodplain Forest, Pokegama Carnegie Wetlands, Big Manitou Falls and Gorge, Dwight's Point and Pokegama Wetlands, and Bear Beach.
- Important Bird Areas (IBAs): Bibon Swamp, Wisconsin PointLand Legacy Places: Bois Brule River, Middle River Contact, Nemadji River and Wetlands, St. Lousi Estuary and Pokegama Wetlands, Wisconsin Point, Manitou-Black River Falls

Northwest Sands Ecological Landscape

A fairly small portion of the study area in the southeast corner falls within this ecological landscape unit. *The following information on the Ecological Unit descriptions (climate, bedrock, geology & landforms, soils, hydrology, and current land cover) is taken directly from WI DNR (2014).*

Climate: Mean annual temperature (41.30 F) is similar to other northern Ecological Landscapes. Annual precipitation averages 31.4 inches and annual snowfall about 61 inches, also similar to other northern Ecological Landscapes. The growing season is short and averages 121 days. Although there is adequate rainfall to support agricultural row crops such as corn, the sandy soil and short growing season limit row crop agriculture, especially in the northern part of the Ecological Landscape.

Bedrock: Underlying bedrock at the southern edge of the Northwest Sands is Cambrian quartzose and glauconitic sandstone and silt-stone. In the northern portion, the bedrock is Precambrian basalt, lithic conglomerate, shale, and feldspathic to quartzose sandstone. Bedrock is covered with 100 to 600 feet of glacial drift (sand, gravel, and silt), with the thickest deposits in the northern half. No terrestrial bedrock exposures are known from this Ecological Landscape.

Geology & Landforms: This Ecological Landscape is the most extensive and continuous xeric glacial outwash system in northern Wisconsin. It has two major geomorphic components. One is a large outwash plain pitted with depressions, or "kettle lakes." The other component is a former spillway of Glacial Lake Duluth (which preceded Lake Superior) and its associated terraces. The spillway is now a river valley occupied by the St. Croix and Bois Brule Rivers. The hills in the northeast are formed primarily of sand, deposited as ice-contact fans at the outlet of subglacial tunnels. Lacustrine deposits (especially fine materials of low permeability such as clays) from Glacial Lake Grantsburg underlie Crex Meadows and Fish Lake Wildlife Areas, and are responsible for impeding drainage, leading to the formation of the large wetlands there.

Soils: Upland soils are typically sands or loamy sands over deeper-lying strata of sand, or sand mixed with gravel. These soils drain rapidly, leading to xeric, droughty conditions within the Ecological Landscape. Wetlands in low-lying depressions have organic soils of peat or muck.

Hydrology: This Ecological Landscape has significant concentrations of glacial kettle lakes, most of them seepage lakes, a well-developed pattern of drainage lakes, and several large wetland complexes. The lakes cover roughly 4.8% of the area of the Northwest Sands, the third highest percentage among ecological landscapes in Wisconsin. The headwaters of the St. Croix and Bois Brule rivers are here. Major rivers include the St. Croix, Namekagon, Yellow, and Totagatic. Springs and seepages are common along the Upper Bois Brule but local elsewhere.

Current Land cover: Land cover is a mix of dry forest, barrens, grassland, and agriculture, with wetlands occupying significant parts of the bed of extinct Glacial Lake Grantsburg, kettle depressions, and some river valleys. Within the forested portion, pine, aspen-birch, and oak are roughly equally dominant. The maple-basswood, spruce-fir, and bottomland hardwood forest types occupy small percentages of the Ecological Landscape's forests. The open lands include a large proportion of grassland and shrubland. Emergent/wet meadow and open water are significant in the southern part of the Northwest Sands. There is very little row-crop agriculture.

Relevant LTAs: LTAs within the Northwest Sands ecological unit in the DC LSB are the Bayfield Level Barrens, Bayfield Rolling Outwash Barrens, Oula Washed Moraine, and the Upper Brule-St. Croix Valley.

Northwest Lowlands Ecological Landscape

Located in the southern portion of the study area, this ecological landscape unit covers nearly half of the study area. The following information on the Ecological Unit descriptions (climate, bedrock, geology & landforms, soils, hydrology, and current land cover) is taken directly from WI DNR (2014).

Climate: Typical of northern Wisconsin; the mean growing season is 122 days, mean annual temperature is 41.8 deg. F, mean annual precipitation is 30.6, and mean annual snowfall is 49 inches. The cool temperatures and short growing season are not adequate to support agricultural row crops; less than three percent of the land here is used for agricultural purposes and most of this is in the southern "hook" in Burnett County. The climate is favorable for forests, which cover almost 70% of the Ecological Landscape. The cool temperatures and short growing season, along with numerous and large acid peatlands, result in almost boreal-like conditions in parts of the Northwest Lowlands.

Bedrock: Bedrock outcroppings are rare except in association with the basalt ridge that follows the Douglas County fault line and forms part of the northern boundary of the Northwest Lowlands. Waterfalls, cliffs, bedrock glades, and rock-walled gorges are associated with this bedrock feature. Local, relatively small, exposures of sandstones and conglomerates occur in some of these gorges.

Geology & Landforms: The major landforms are ground and end moraines, with drumlins present in the southwestern portion. Topography is gently undulating. In the northern part of the Ecological Landscape many stream valleys run northeast-southwest in roughly parallel courses. This is caused by bedrock ridges that were created by harder strata of lava alternating with weaker sedimentary rocks; these were later tilted upward due to rifting and continental collision. This bedrock feature influences the surface topography of the Northwest Lowlands, especially where glacial deposits are thin.

Soils: Soils are predominantly loams, with significant acreages of peat deposits in the poorly drained lowlands. Major river valleys have soils formed in sandy to loamy-skeletal alluvium or in non-acid muck. Alluvial soils range from well drained to very poorly drained, and have areas subject to periodic flooding.

Hydrology: This Ecological Landscape occupies a major drainage divide, and contains the headwaters of many streams that flow north toward Lake Superior or south toward the St. Croix River system. Important rivers include the St. Croix, Black, Tamarack, Spruce, and Amnicon. Lakes are uncommon except in the heavily agricultural southernmost part of the Ecological Landscape in Burnett County. Impoundments, all fairly small, have been created by constructing dams on the Tamarack and Black rivers, and several creeks. The St. Croix River is fed by springs, spring ponds, and seepages.

Current Land Cover: The present-day forests remain extensive and relatively unbroken, occupying about 68% of the landscape. Forests consist mainly of aspen, paper birch, sugar maple, basswood, spruce and fir. Minor amounts of white pine, red pine and red oak are also present. Older successional stages are currently rare, as almost all of this land is managed as "working forests". The large undisturbed peatland complexes consist of mosaics of black spruce-tamarack swamp, muskeg, open bog, poor fen, shrub swamp, and occasionally, white cedar swamp. The St. Croix River corridor includes forested bluffs and terraces, which support communities unlike those found in most other parts of the Ecological Landscape. These include mesic maple-basswood forest, dry-mesic forests of oak or oak mixed with pine, black ash-dominated hardwood swamps, and numerous forested seeps. Less extensive areas of marsh and sedge meadow also occur along the St. Croix. In most of this Ecological Landscape minor amounts of land are devoted to agricultural and residential uses, and most of these land uses are concentrated along State Highway 35. The major exception to this pattern is the area that wraps around the south end of the Northwest Sands which is a mix of agricultural lands and scattered oak or oak-pine woodlots.

Relevant LTAs: LTAs within the Northwest Lowlands ecological unit in the DC LSB are the Pattison Moraines, Dairyland Moraines, and the Winneboujou Glacial Trust Hills.

- Significant Ecological Places (from Merryfield et al. 2000)
- Conservation Opportunity Areas (COAs): Northwest Lowlands Bogs
- State Natural Areas (SNAs): Belden Swamp, Erickson Creek Forest and Wetlands, Black Lake Bog
- Important Bird Areas (IBAs): none identified
- Land Legacy Places: Manitou-Black River Falls

Watersheds & Rivers

Watersheds are defined by the USGS's National Hydrography Dataset (NHD) using a hierarchy of nested drainage areas defined. These drainage areas are represented by codes and referred to as Hydrologic Unit Codes or HUCs. The larger the number of digits in a HUC the smaller the area or more nested it is in the hierarchy of drainage areas. There are just two eight-digit HUCs that overlap the DC LSB, the St. Louis River 8-digit HUC which is the drainage area of the Pokegama and St. Louis Rivers near the city of Superior and the *Bear Trap-Nemadji Rivers 8 digit HUC.* This later HUC encompasses the remainder of the DC LSB. These HUCs are broken down further into 10-digit, 12-digit, down to16-digit HUCs**.** Figure 6 displays 10-digit and 12- digit HUC boundaries in the DC LSB along with the primary rivers, such as the Nemadji, Amnicon, Middle, and Bois Brule Rivers and some creeks such as Balsam, Bardon, Bluff, Dutchman, and Smith creeks.

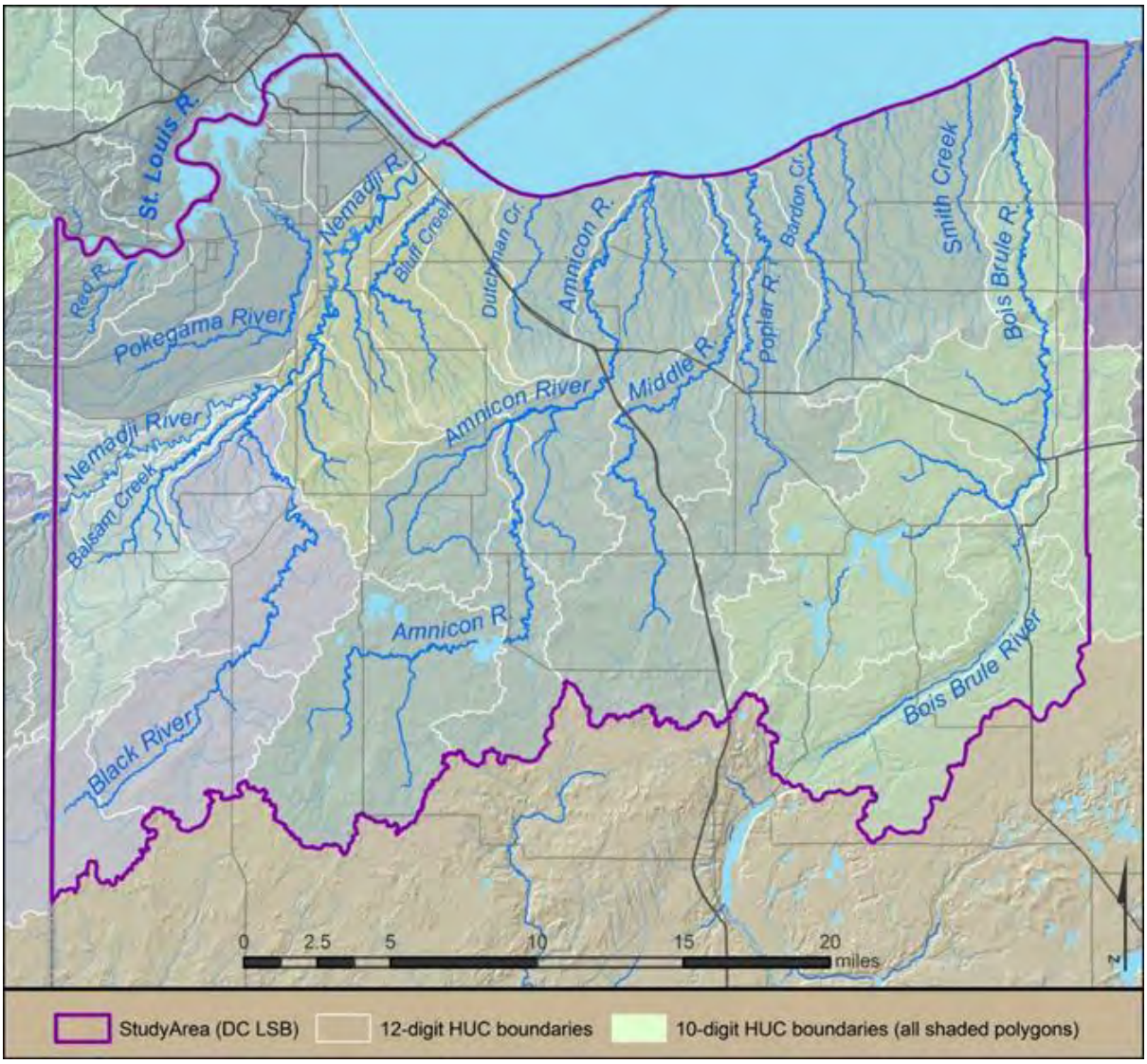


Figure 6. Hydrologic Units (i.e., watersheds & sub-watersheds) and major rivers and streams in the study area.

Red Clay Plain

An important feature in this study area and much of the Lake Superior Basin of Wisconsin is the lake clay plain (sometimes referred to as the red clay plain) consisting of "red clay" soils resulting from glacial till and glacial lake deposits. For this study, the technical committee agreed to define the clay plain using an ecological classification in Wisconsin's Land Type Association GIS data. The Douglas Lake-Modified Till Plain land type association (LTA) is used to define the boundary of the clay pain, shown as a darker shaded area in the northern half of the study area (Figure 7). Red clay wetlands, those that are composed of a mixture of wet and dry red clay soils, are common here and this area is treated differently than the rest of the study area in terms of identifying potential wetland re-establishment sites and for determining some wetland functions because of the clay-dominant soils and the way they are treated in digital soils data (SURGO/NRCS).

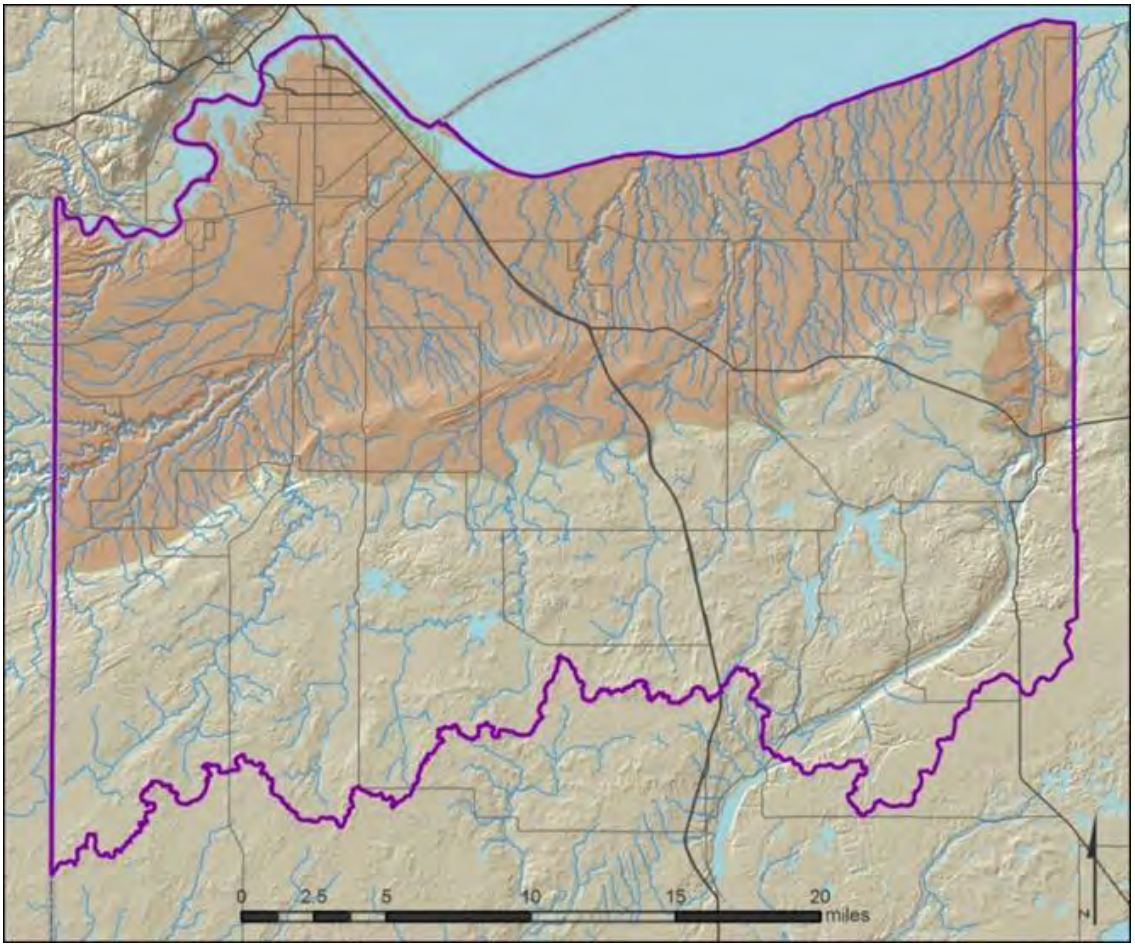


Figure 7. The red clay plain (orange shading) within the study area (outlined in purple). This is defined by the boundaries of the Douglas Lake-Modified Till Plain, a Wisconsin Land Type Association (LTA) (WI DNR 1999).

Land Cover / Land Use

Pre-settlement Land Cover

Forest vegetation dominated the landscape in the study area prior to European settlement. The exact extent of former wetlands is not known, however two datasets provide some general indication of former wetland extent: Finley's vegetation maps for each Ecological Landscape Unit in the study area (WDNR 2014) and the Wisconsin Economic Inventory (Bordner) Survey maps (Wisconsin Land Economic Inventory 1933).

Current Land Cover / Land Use

Multiple GIS data sources are available to define contemporary land cover/land use in Douglas County. Two of the highest resolution and most contemporary datasets include the Western Great Lakes Coastal Change Analysis Program (CCAP) (Fig. 8) data from 2010 and Community GIS Inc.'s Open/Impervious Land Analysis data (circa 2008-2010) (Fig. 9).

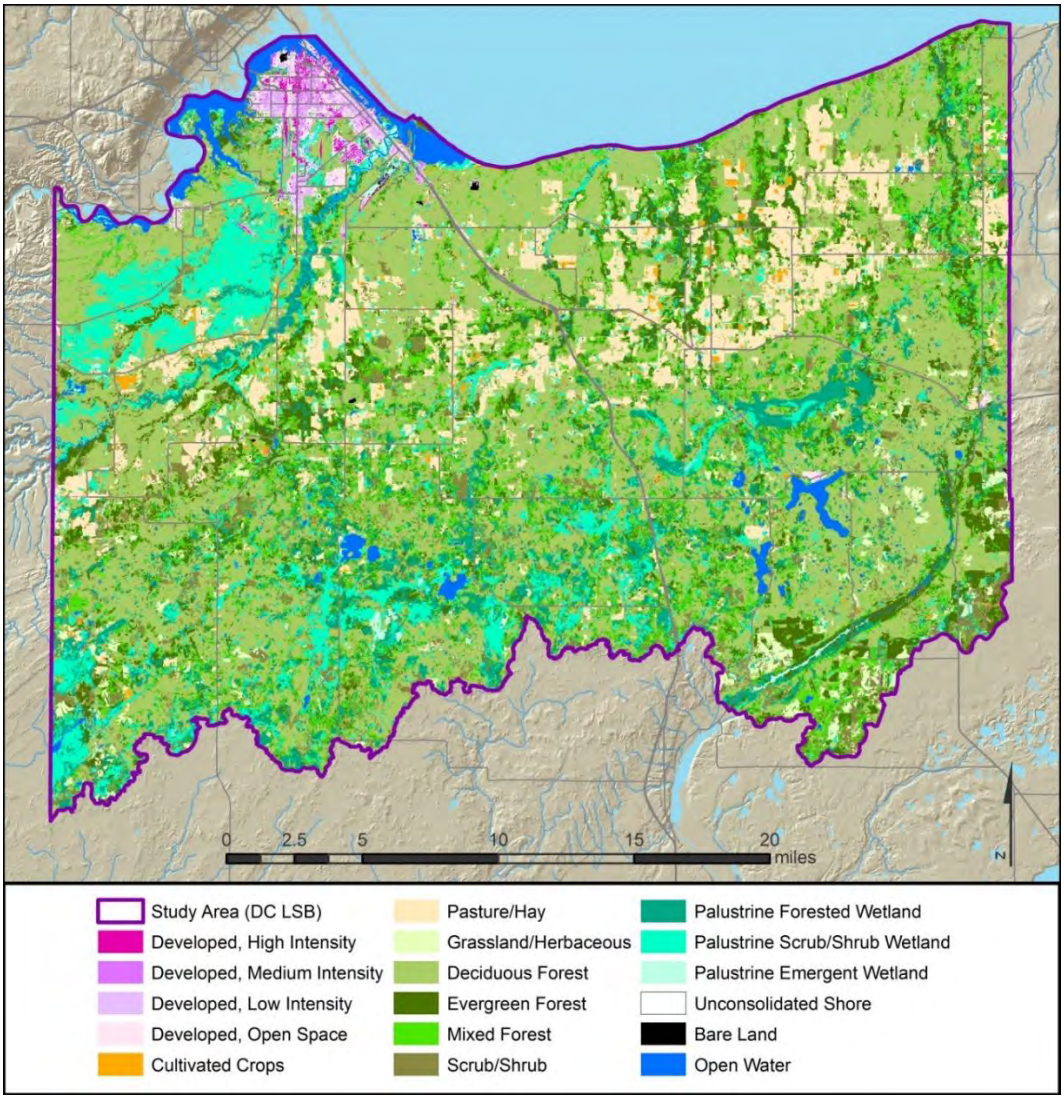


Figure 8. Land cover classes in the Douglas County Western Great Lakes Coastal Change Analysis Program (C-Cap) 2010 Land Cover

The Open/Impervious GIS dataset was one of several land cover datasets used to measure the proportion of open land and impervious surface within Douglas County. Open land describes land cover with limited or no forest cover and includes the following categories: 0-15 yr. age forest stands, agricultural areas, residential development, and impervious surfaces (Fig. 9) provides a brief description of each of the land cover/use categories. The transitional agriculture category was identified as areas where agricultural land is no longer being farmed and is 'transitioning' back to its former land cover.

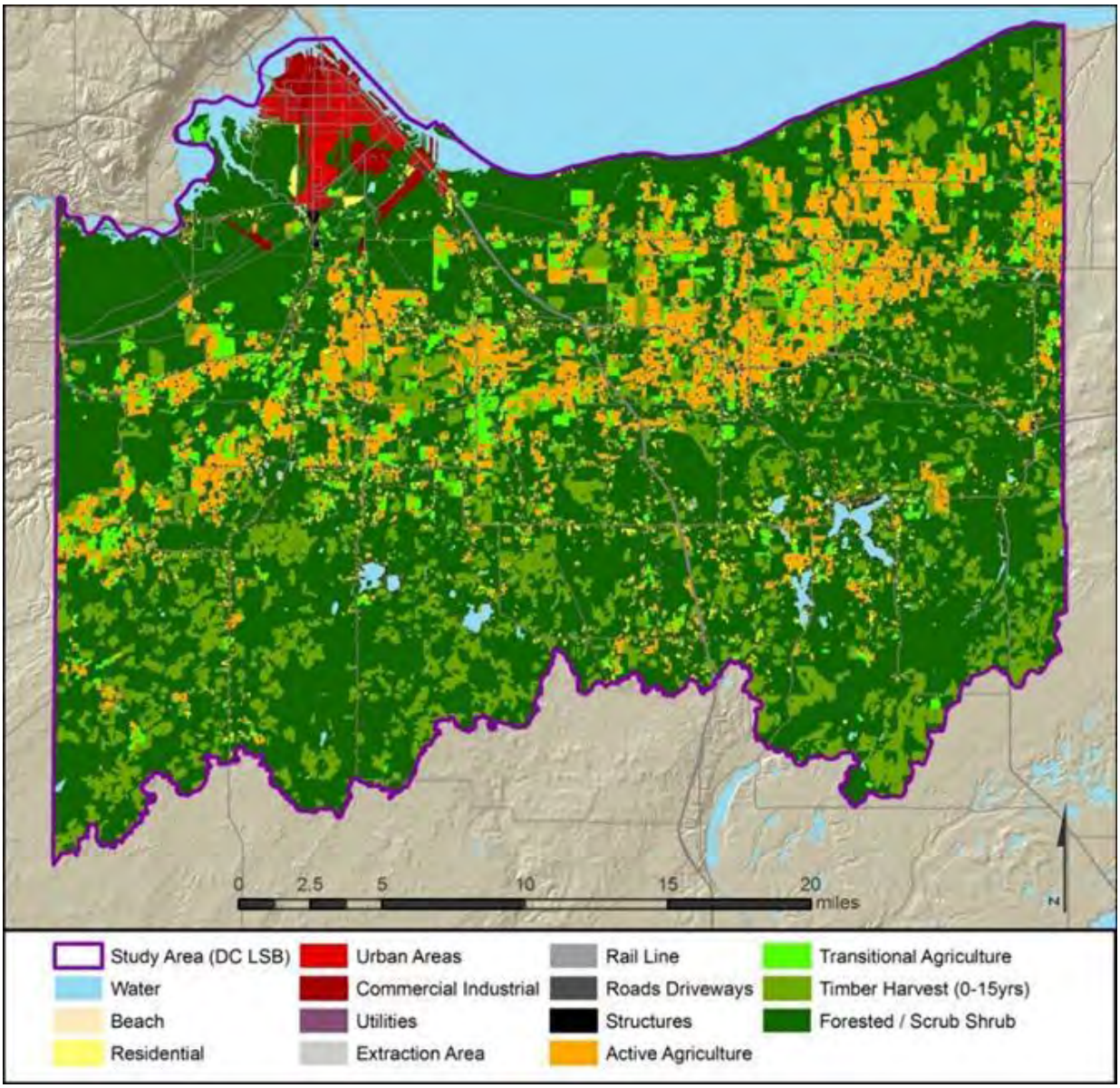


Figure 9. Land cover / land use in the Lake Superior Basin of Douglas County as of 2008-10. (Open / Impervious Lands analysis layer created by Community GIS Services Inc.).

Current and historic wetlands

Wetland functional assessment

A geospatial analysis of current wetland functions and identification of potentially restorable wetlands was completed by St. Mary's University of Minnesota (SMUMN) Geospatial Services (Stark and Robertson 2014). This included remotely-sensed information such as digital elevation models (DEMs), aerial photography, and other GIS datasets to predict the functions of current wetlands in the LSB. Locations of potential wetland restoration areas were developed through photointerpretation and geospatial data modeling. The full report of the methods and results of this analysis was submitted by SMUMN to Douglas County. This assessment also relied on best professional judgment of local and regional wetlands and soils experts. While there was some limited field investigation to confirm broad-scale wetland mapping information, the data are not intended to provide site-level specificity. However, the data can be used to better understand the present-day distribution of wetlands, identify which wetlands are predicted to be significant for performing certain ecological functions, and provide an initial assessment of locations to be considered for the wetland restoration.

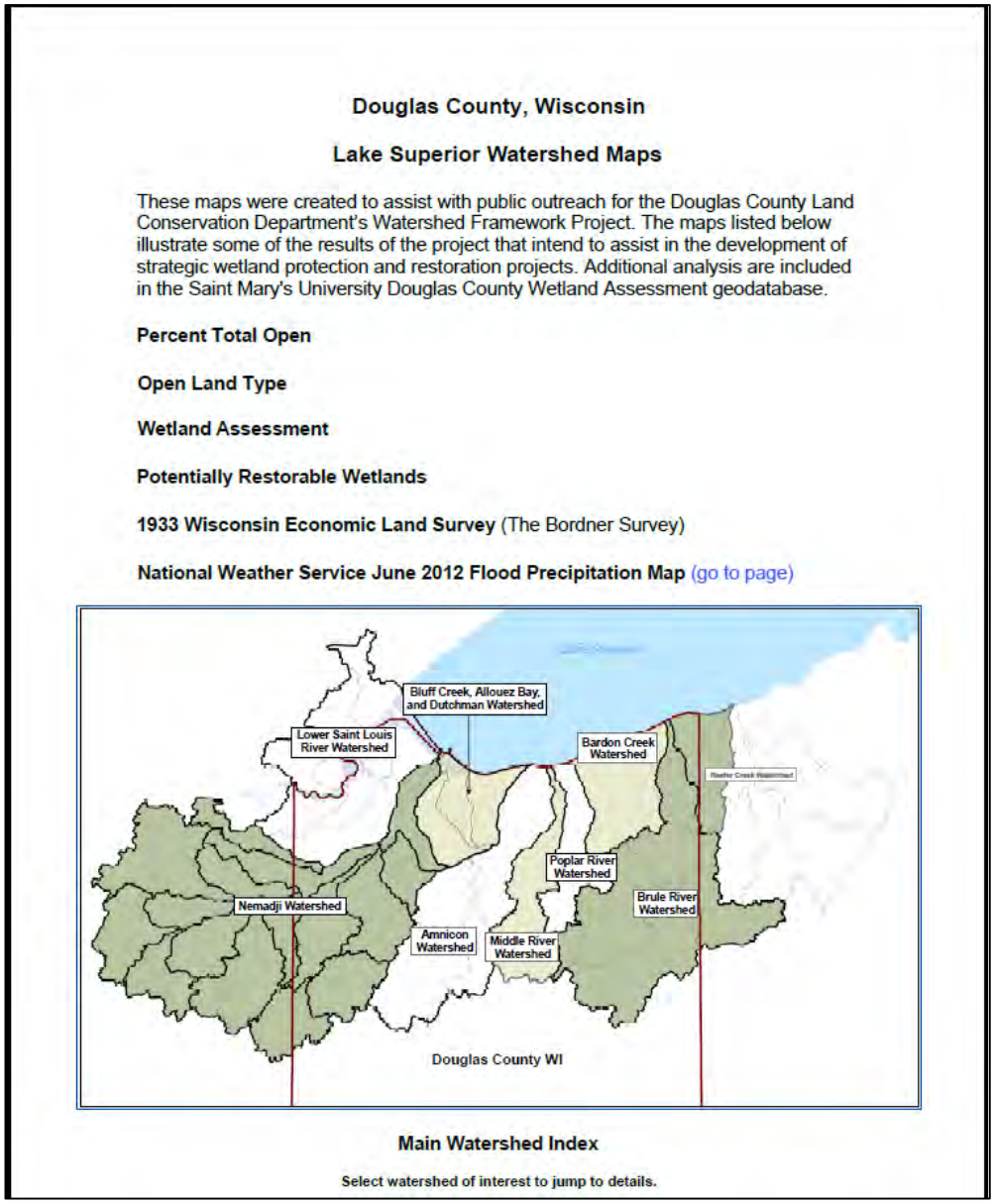
The project utilized GIS data from the Wisconsin Wetland Inventory and National Wetlands Inventory, and enhanced the data by adding landscape and hydrologic wetland descriptors that are based on a classification system called Landscape Position, Landform, Water Flow Path and Water Body (LLWW) (Tiner 2011). With this enhanced wetland data, predicted wetland functions were applied based upon wetland characteristics contained within the geospatial database along with spatial relationships of the wetlands to each other and their surroundings. For a select group of ecological wetland functions, wetlands predicted to be significant for a given function were ranked as high or moderate using the best professional judgment of several wetland experts. A final GIS wetland dataset contains coded wetland characteristics for each wetland area (polygon) along with a ranking for each of the ecological functions examined in the project.

Wetlands perform a number of functions and are important in maintaining the overall health of the watersheds in which they are located. These functions can be categorized as physical and biological functions. An example of physical functions include providing areas for rainwater to pool during storm events (surface water detention) or areas where nutrients such as phosphorus can be removed by plants before entering streams and lakes (nutrient transformation). Examples of biological functions include amphibian, waterfowl and woodcock habitat. The analysis completed for the current wetlands in the Lake Superior Basin of Douglas County provides the best available information on wetlands that rank as medium or high for specific functions. Please note that since most wetlands perform more than one function, they have been ranked separately for each of the functions as having a medium or high score.

A description of wetland functions evaluated for the Lake Superior Basin of Douglas County with maps showing the location of the significant (moderate or high) functioning wetlands for each function can be seen on the following pages (Figs. 11- 23). All current wetland functional data and potentially restorable wetland areas have been compiled on the Douglas County website and can be viewed at: www.douglascountywi.org. These on-line maps are high resolution and provide detailed information for each wetland. This degree of detail is difficult to view on the large scale maps in this document. A Watershed Map Book was developed utilizing Adobe Acrobat software to enable viewing of all land cover/land use and wetland information compiled for this project without the need for GIS software. The

Watershed Map Book contains several maps for each watershed (HUC 12) that includes the following information: aerial photo, land cover types, percentage of open land types, surface water detention wetlands, potentially restorable wetlands and historic wetland information from the 1933 Wisconsin Economic Land (Bordner) Survey (Fig. 10). This Map Book contains the high resolution information in a different viewing format and digital copies can be obtained by contacting the Douglas County Land Conservation Department.

Figure 10. Cover page of the Lake Superior Basin, Douglas County, WI. Map Book



Douglas County, Wisconsin

Lake Superior Watershed Maps

These maps were created to assist with public outreach for the Douglas County Land Conservation Department's Watershed Framework Project. The maps listed below illustrate some of the results of the project that intend to assist in the development of strategic wetland protection and restoration projects. Additional analysis are included in the Saint Mary's University Douglas County Wetland Assessment geodatabase.

Percent Total Open

Open Land Type

Wetland Assessment

Potentially Restorable Wetlands

1933 Wisconsin Economic Land Survey (The Bordner Survey)

National Weather Service June 2012 Flood Precipitation Map (go to page)

Main Watershed Index

Select watershed of interest to jump to details.

Physical/Chemical Functions

Surface Water Detention (SWD): Wetlands trap and store surface water. Surface water can take the form of precipitation or, in colder climates, spring snow melt. The wetlands then release the water slowly over time through surface or underground hydrologic networks. From the human perspective, this process equates to lower peak flood levels. In fact, wetlands in a watershed can diminish and even desynchronize peaks flows. Generally, depressional wetlands that capture and store precipitation and runoff are significant for performing the function of surface water detention. They provide ground water recharge points and include wetlands found along stream and river floodplains, in lake basins, fringes, and islands.

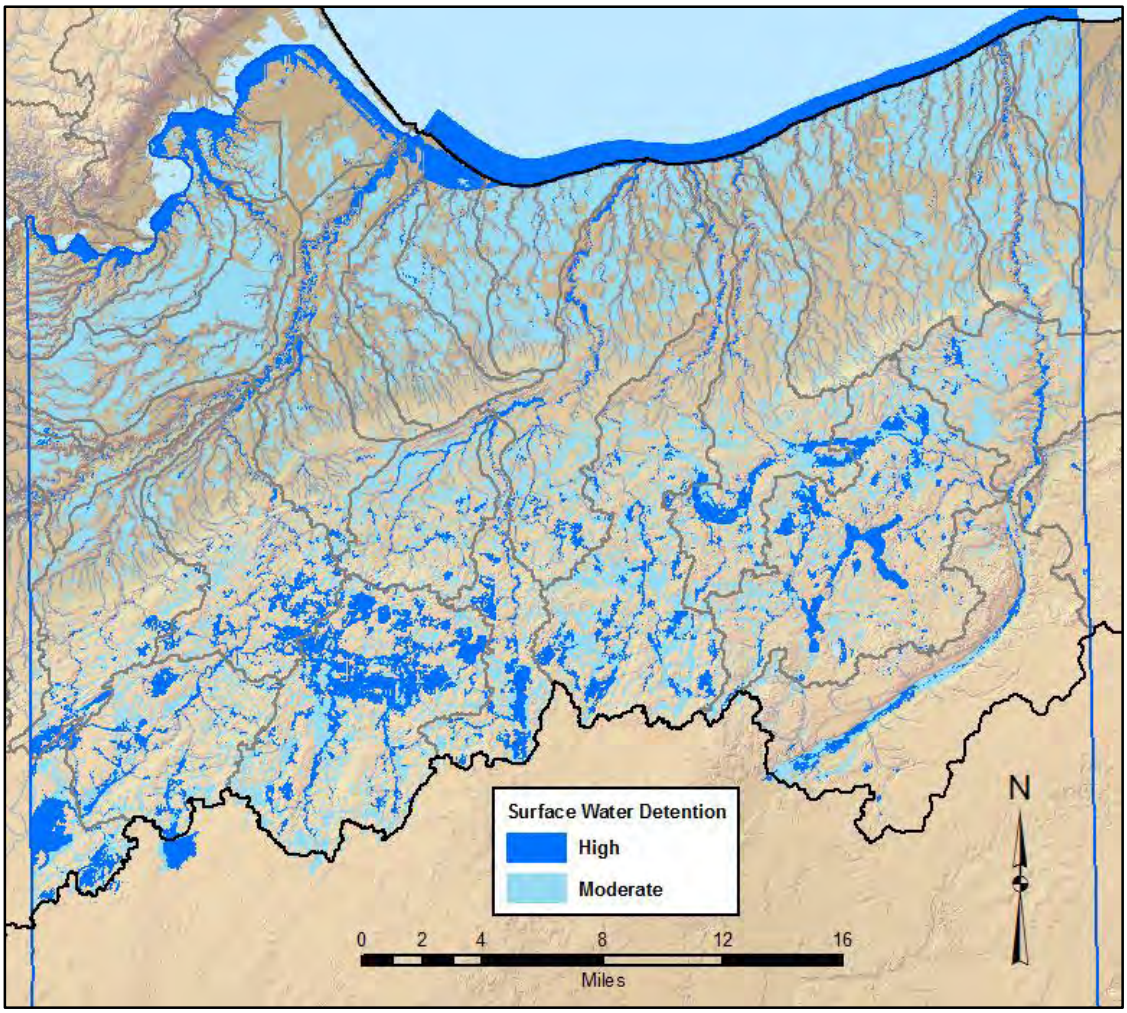


Figure 11. Wetlands with moderate or high function for surface water detention.

The primary wetland function associated with reducing water runoff is ***surface water detention*** (SWD)**.** Note that wetlands that demonstrate medium to high function for surface water detention are primarily found in the headwater and floodplain areas of many Lake Superior basin watersheds**.** These wetlands represent the highest priority for preservation in order to maintain the functions and services currently provided in Lake Superior Basin watersheds.

Stream-flow Maintenance (SM): Surface water maintenance is the ability of a watershed to keep water traveling through the drainage system. Wetlands that help maintain stream flow are those that contribute water to the interconnected conduits within a watershed. Wetlands providing highest surface water maintenance are headwater wetlands. Most other wetland types that provide surface water maintenance are through flow and outflow types, although in some cases isolated and inflow wetlands also provide this function to a moderate degree.

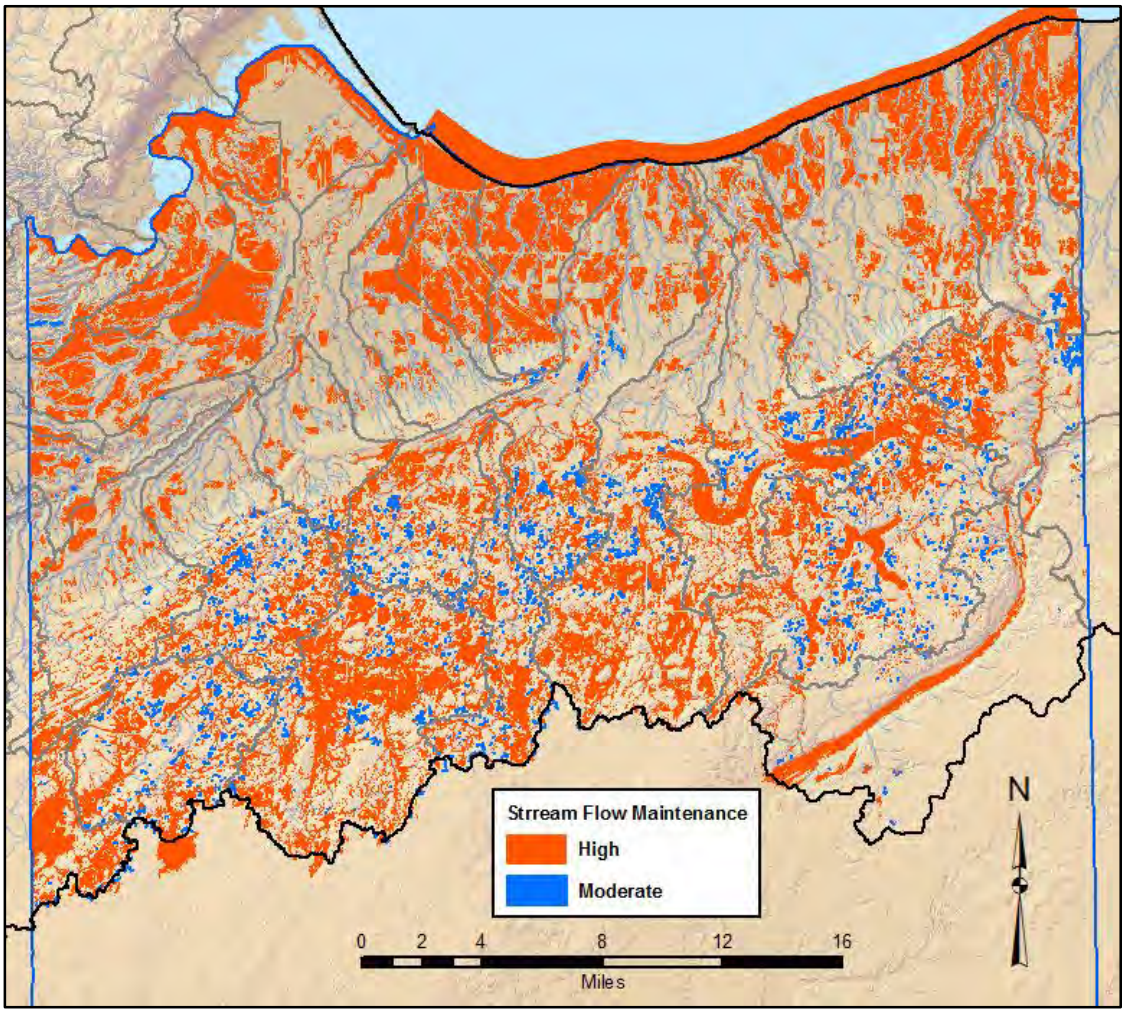


Figure 12. Wetlands with moderate or high function for stream-flow maintenance (SM)

Shoreline Stabilization (SS): Natural shoreline stabilization structures and vegetation prevent erosion or remediate erosion that has already occurred by binding soils. Vegetation and mixed vegetation along lake, river, stream, and pond shorelines prevent soil from being washed or blown away.

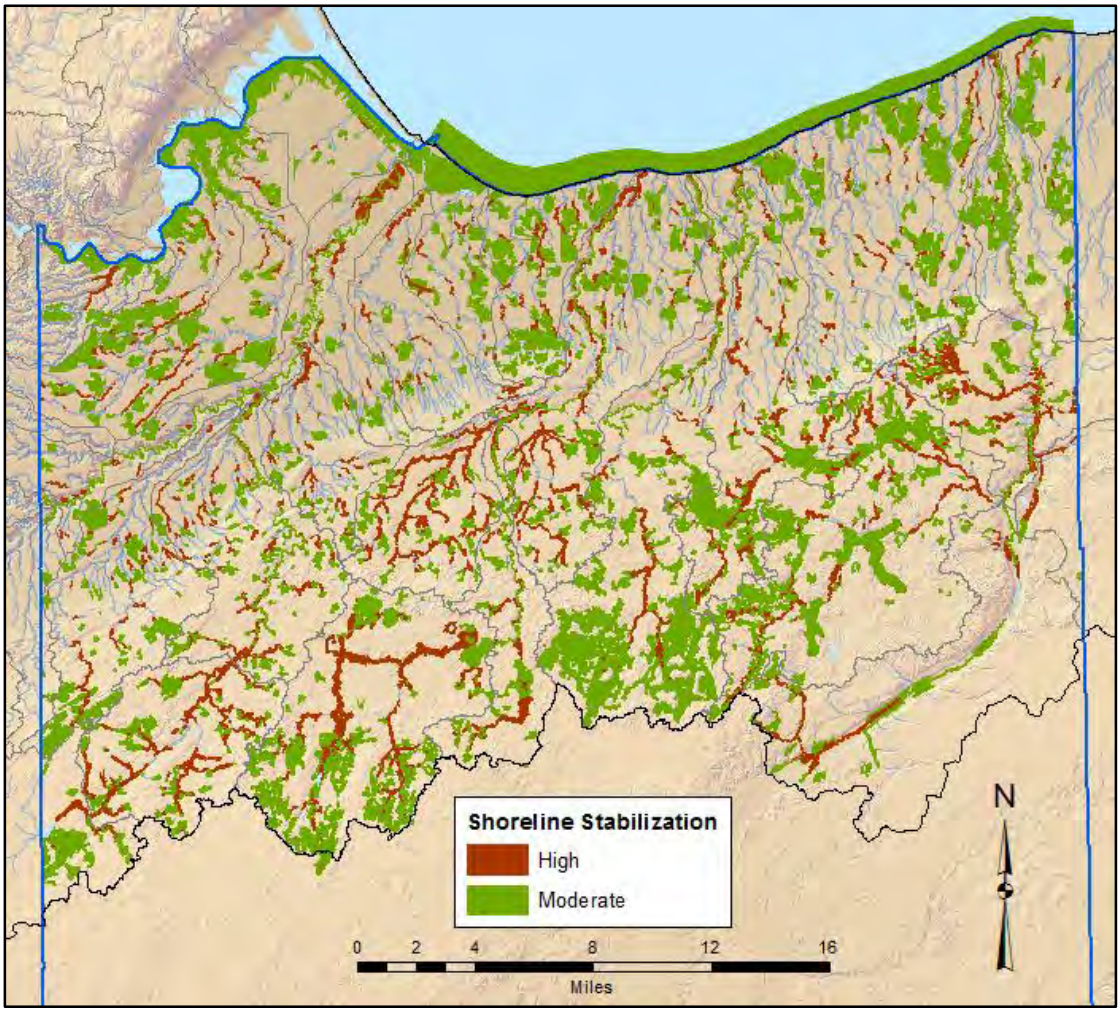


Figure 13. Wetlands with moderate or high function for shoreline stabilization.

Sediment & Other Particulate Retention (SR): Wetlands that physically trap particles that affect water quality have sediment retention properties. In contrast to nutrient transformation which involves chemical processes, SR is a physical process where the suspended particles are filtered by the soil and plant roots. The removal of suspended particles helps to improve water clarity and help maintain cooler temperatures on cold water streams. Due to the physical nature of sediment retention LLWW is the primary system used to make SR determinations with the NWI vegetation classes and water regime also factoring into the process.

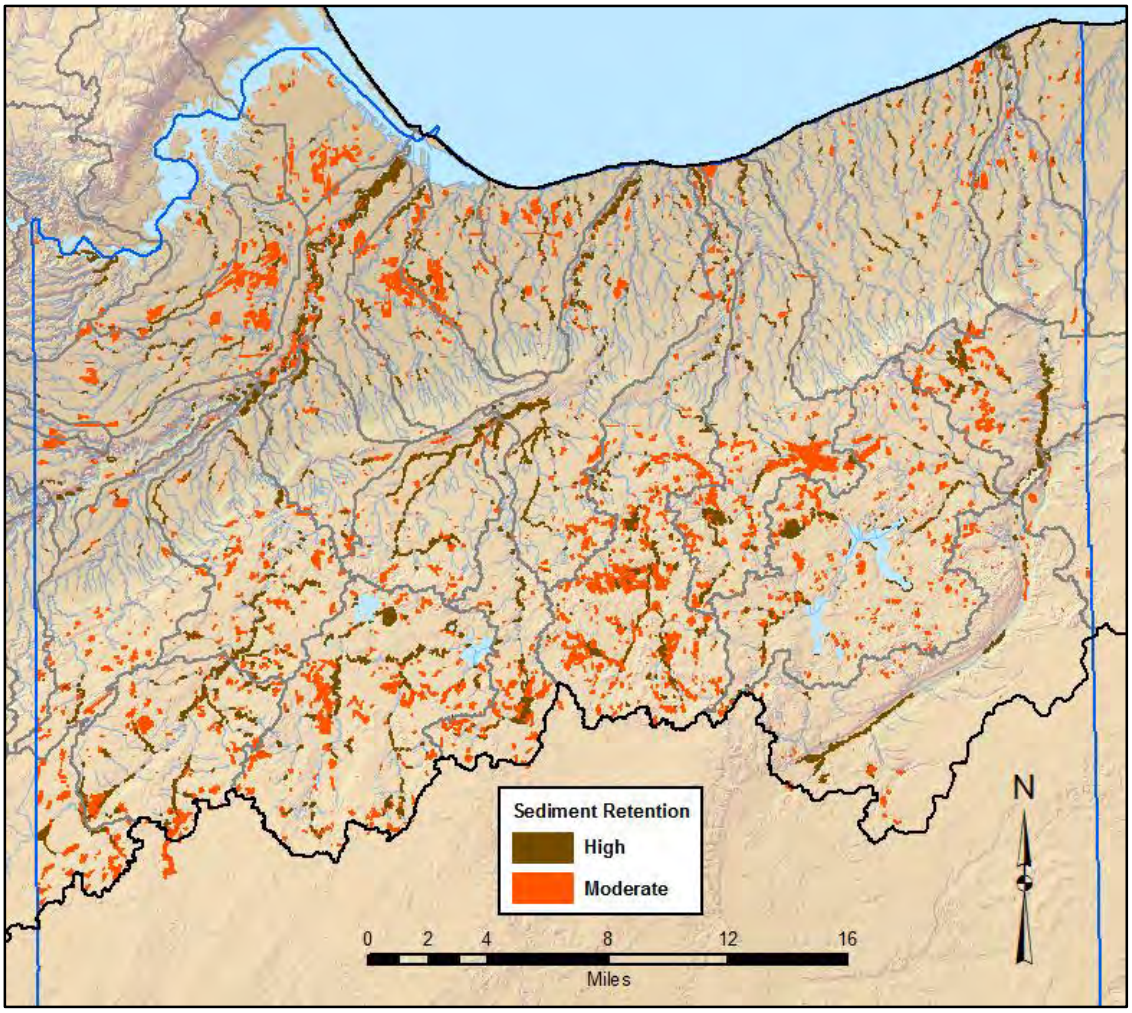


Figure 14. Wetlands with moderate or high function for sediment retention.

Nutrient Transformation (NT): Nutrient transformation refers to the natural chemical processes that remove or recycle compounds in the environment. In the case of wetlands, nitrates and phosphorous from agricultural runoff are the primary nutrients of concern. Wetlands performing this function are sinks for excess nutrients. The nutrients are prevented from moving further through the watershed through either storage or by wetland vegetation using the nutrients for their own life cycle.

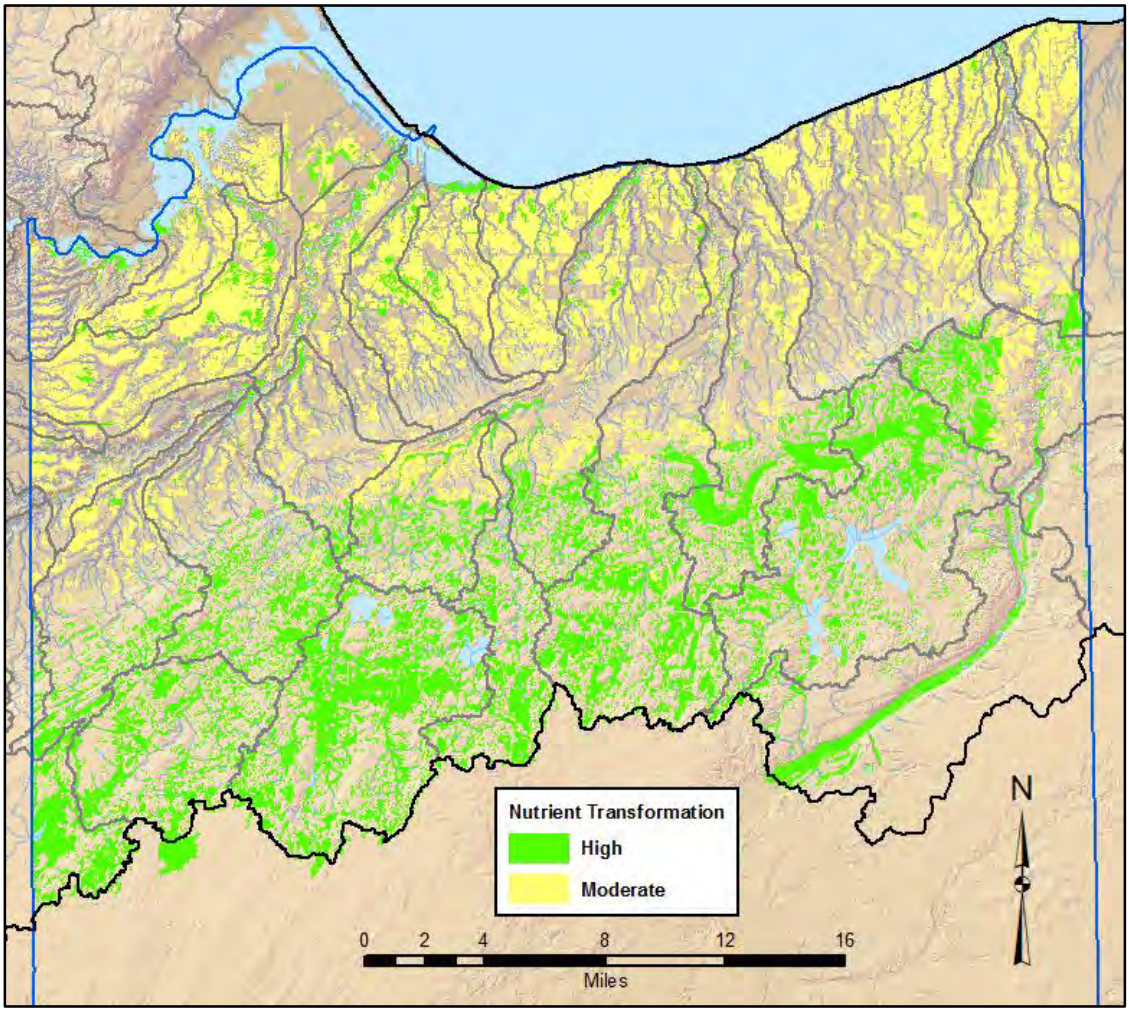


Figure 15. Wetlands with moderate or high function in nutrient transformation.

Carbon Sequestration (CAR): Carbon sequestration occurs when wetlands act as carbon sinks through chemical and biological processes such as photosynthesis. Typically, wetlands performing carbon sequestration are vegetated to some degree. Therefore, NWI classifications become the major source of information in making determinations regarding carbon sequestration. Soil and water regime information are also important in determining whether a wetland functions at a high or moderate level for this function.

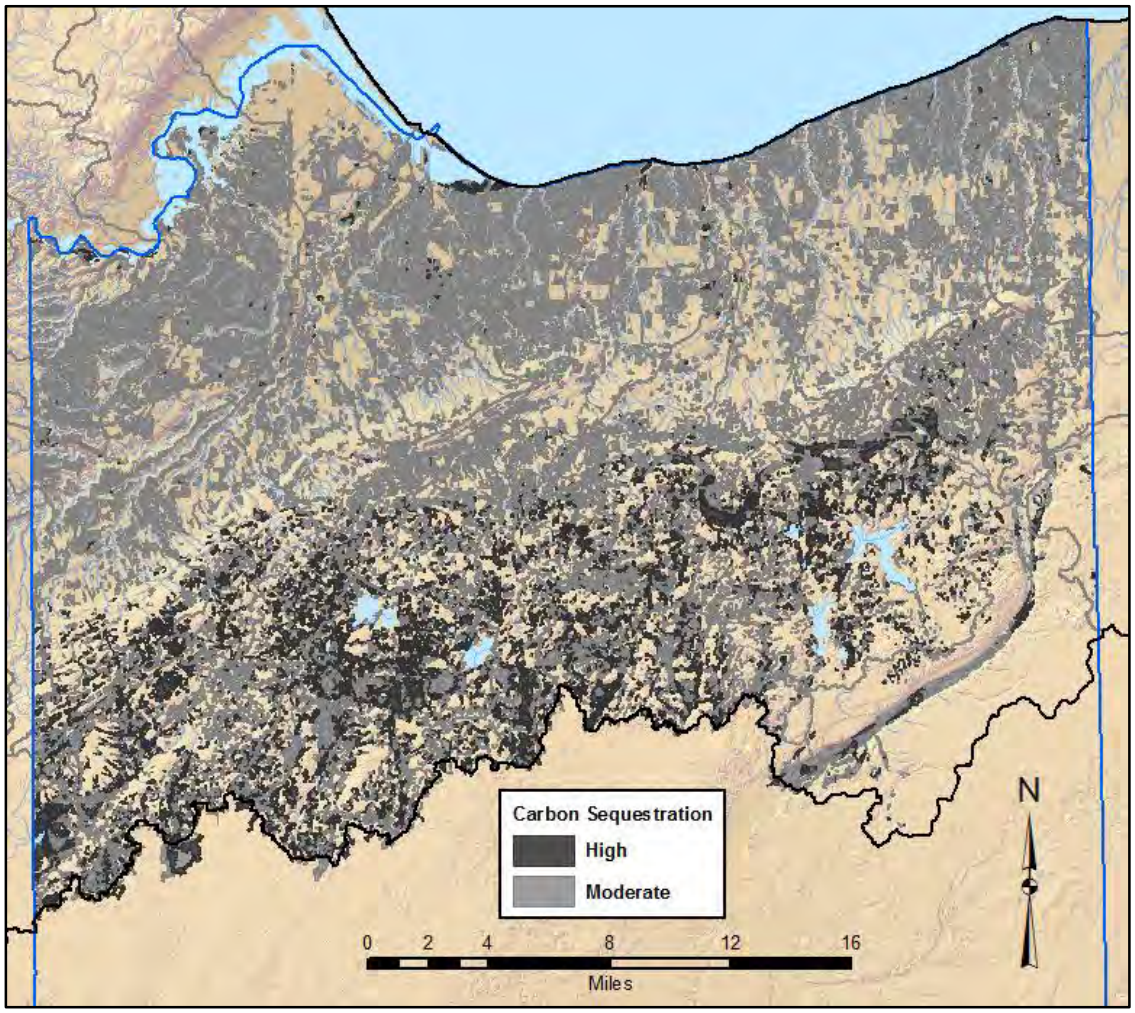


Figure 16. Wetlands with moderate or high function for carbon sequestration

Habitat Functions

Amphibian Habitat (AMH): Amphibians such as frogs, toads, and salamanders are commonly found in floating vegetation and wild rice. Some amphibian species require a variety of habitats for their life cycle, while others tend to stay in much wetter areas throughout their lives. Typically seasonally flooded to permanently flooded wetlands provide amphibian habitat. Shallower water habitats tend to be best for amphibians.

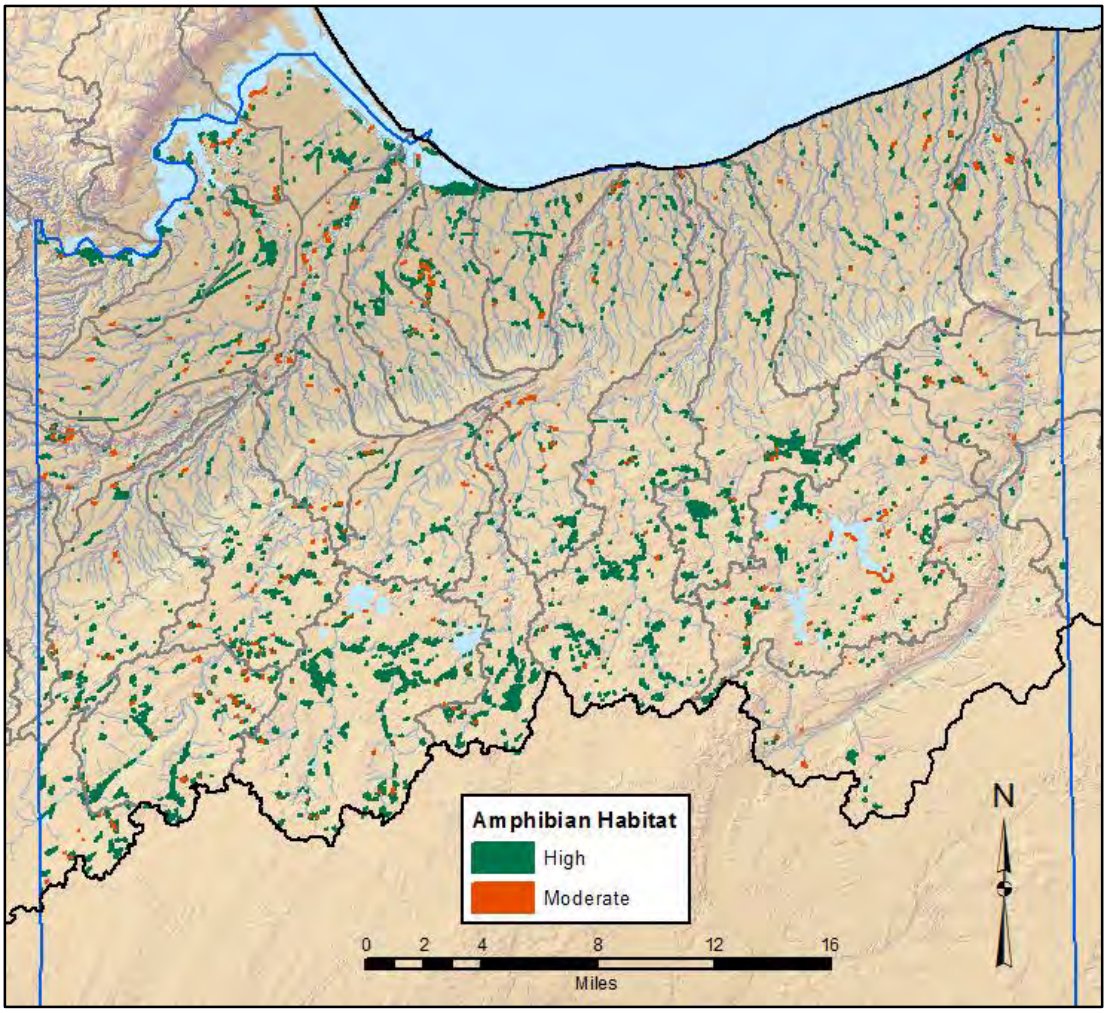


Figure 17. Wetlands with moderate or high function for amphibian habitat

Fish (FIS): Wetlands performing the function of fish habitat provide areas vital for various parts of their life cycle. Many organisms on which fish feed need wetlands to survive. Wetlands also provide spawning and nursery areas. Wetland plants provide cover essential to small and young fish avoiding predators. The shade provided by wetland trees and shrubs helps to maintain cooler water temperatures for cold water species.

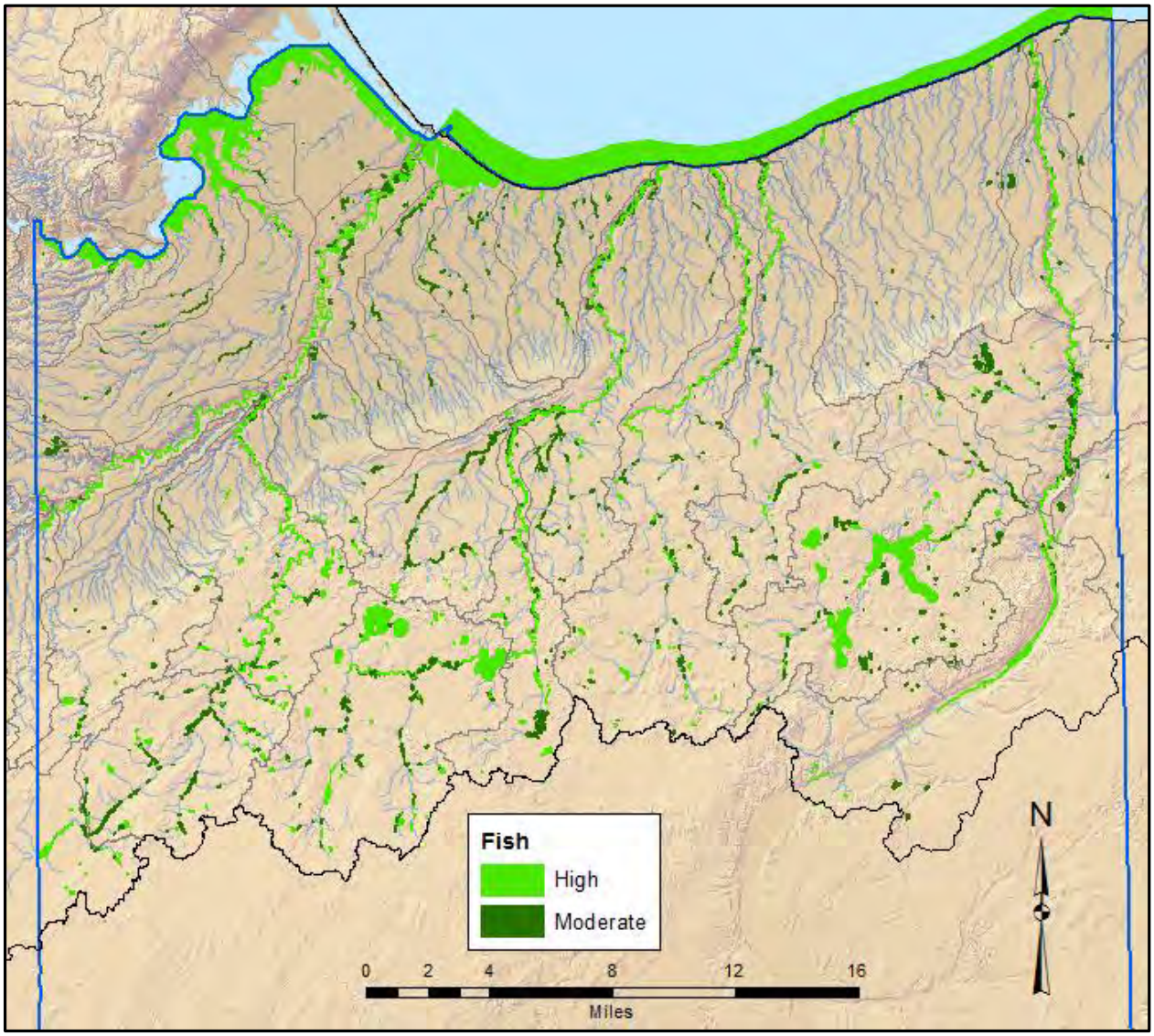


Figure 18. Wetlands with moderate or high function for fish habitat.

Other Wildlife (OWH): General wildlife in this case includes mammals, reptiles, and songbirds. All vegetated wetlands, and only vegetated wetlands, perform this function to some degree. The size and whether there are multiple vegetation types in a complex determine the level at which a wetland complex is functioning for GHW. It needs to be emphasized that this function is dependent on wetland complexes that may be made up of many different interconnected wetlands types. In other words it is the size of the entire wetland complex that determines its level of function and not the size of the individual wetlands making up the complex.

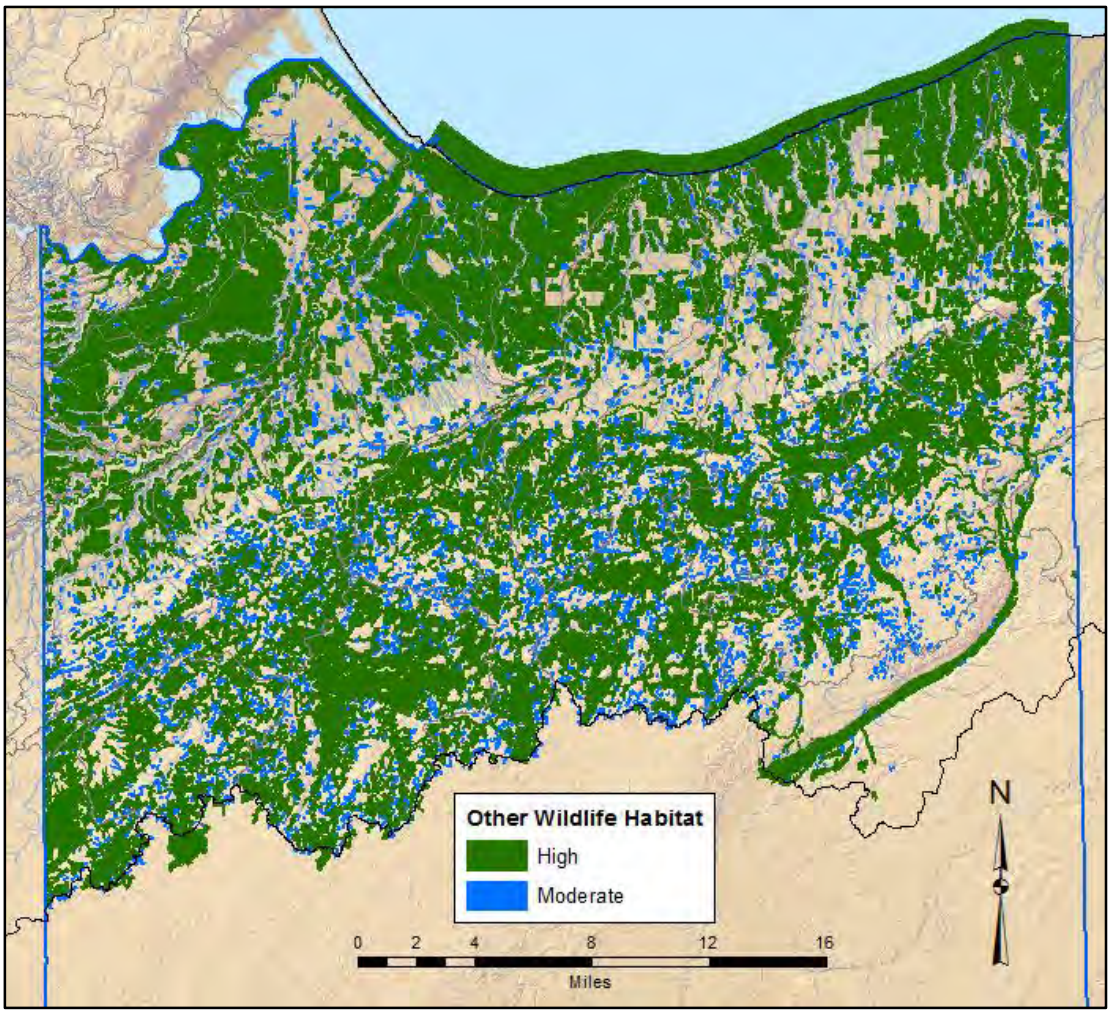


Figure 19. Wetlands with moderate or high function for other wildlife habitat.

Shorebird Habitat (SHB): Birds including: herons, cranes, egrets, and sandpipers are shorebirds, and are commonly referred to as wading birds. They require shallow open water areas of lakes or ponds, sometimes mixed with emergent vegetation for feeding on invertebrates, fish, and amphibians. Nesting occurs on sandy beaches and bars and mudflats.

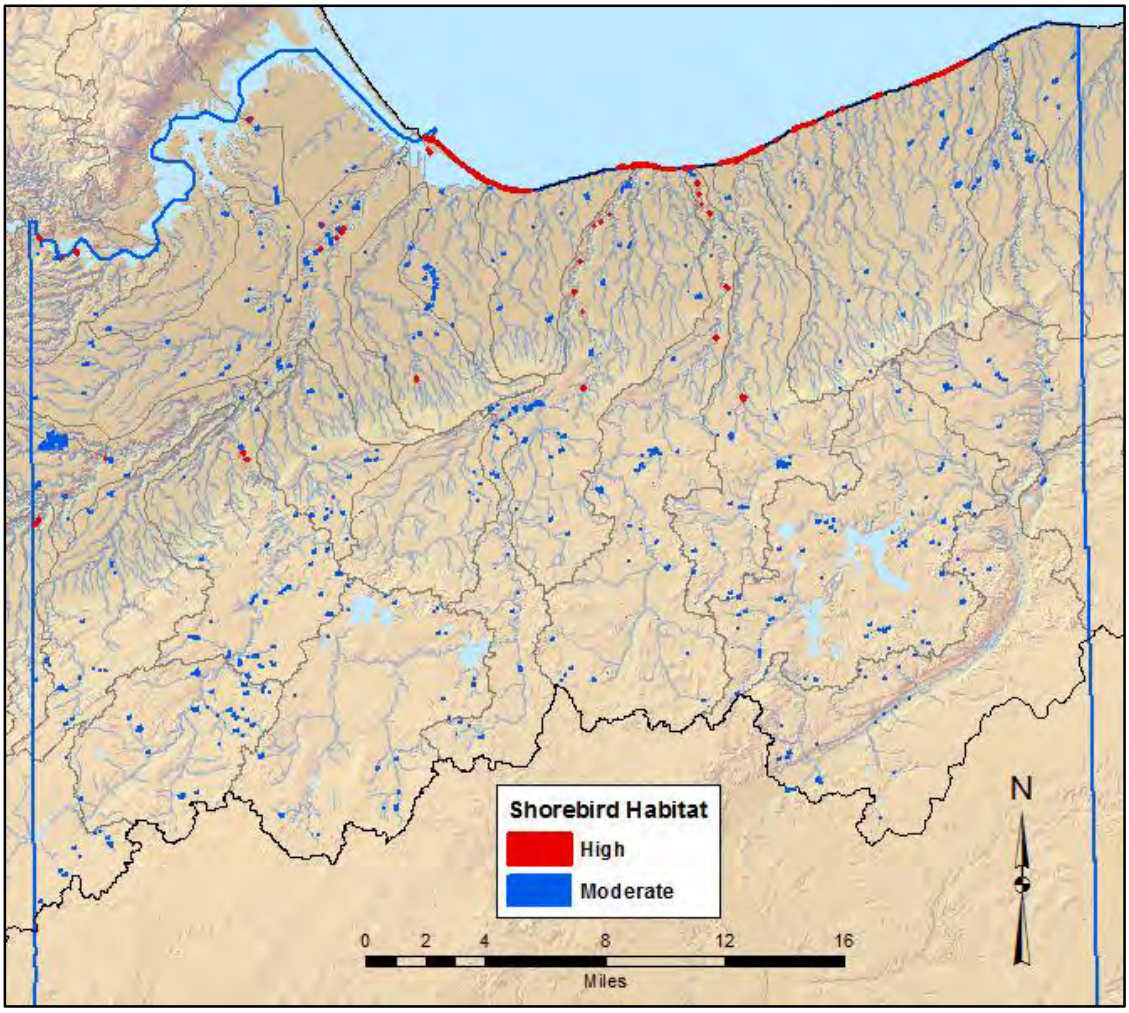


Figure 20. Wetlands with moderate or high function for shorebird habitat.

Migratory Bird Habitat (MBIRD)

This function is intended to identify wetlands that are predicted to act as significant stop-over locations for migratory birds during migration. Migratory birds are considered non-game birds that fly between summer breeding grounds and non-breeding wintering areas. During their migration, they must stop to feed and rest. Some areas are considered especially important as stop-over locations based on the availability of food, water, and shelter they provide to various migratory birds.

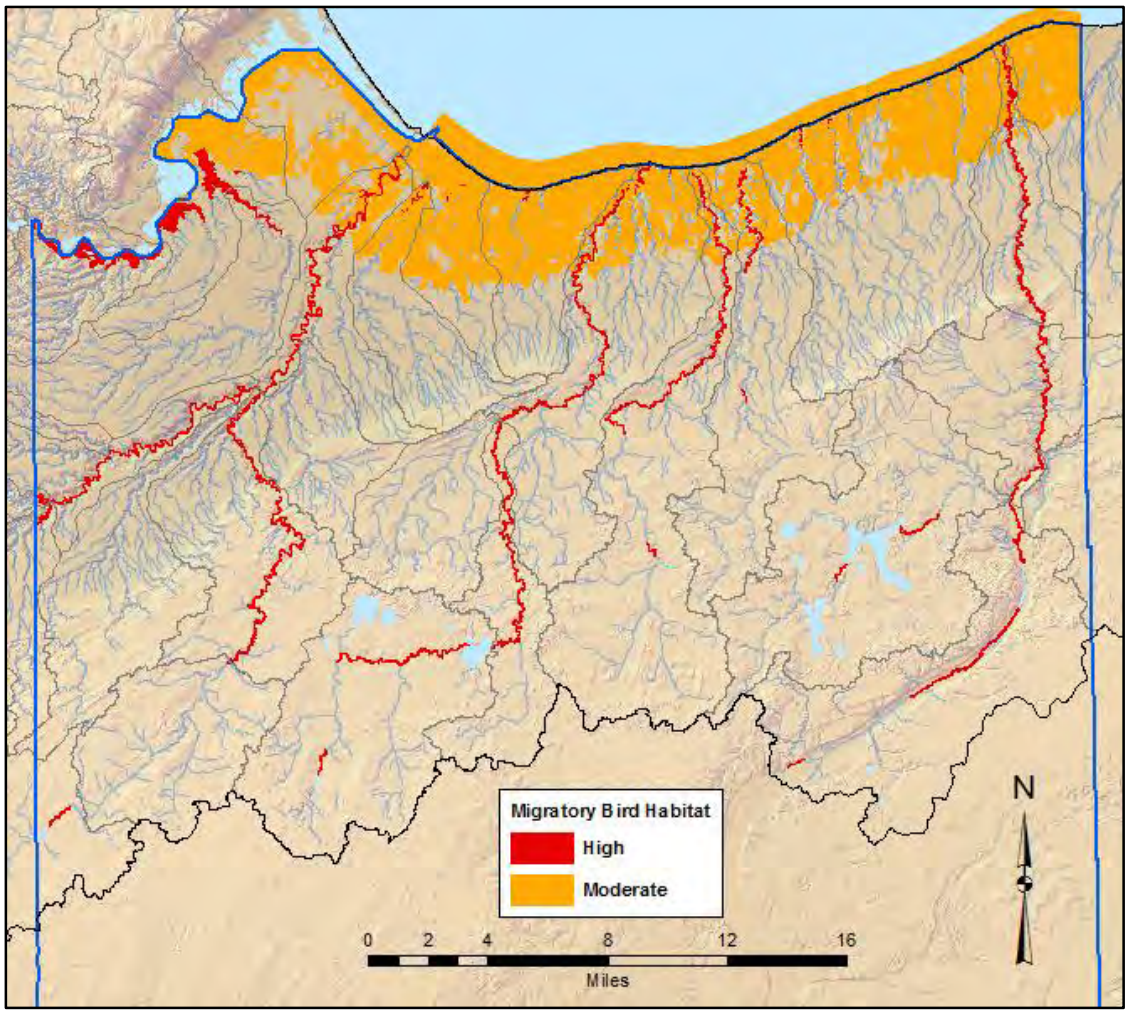


Figure 21. Wetlands with moderate or high function for migratory bird habitat.

Waterfowl & Waterbird Habitat (WBIRD)

Ducks, geese and swans are most commonly thought of as waterfowl, but a number of other types of birds, such as loons, coots and grebes also rely on similar habitats for survival. Their highly functioning habitat is typically associated in some way with open water. Depending on the species, habitats can range from large open littoral areas, to forested ponds and streams.

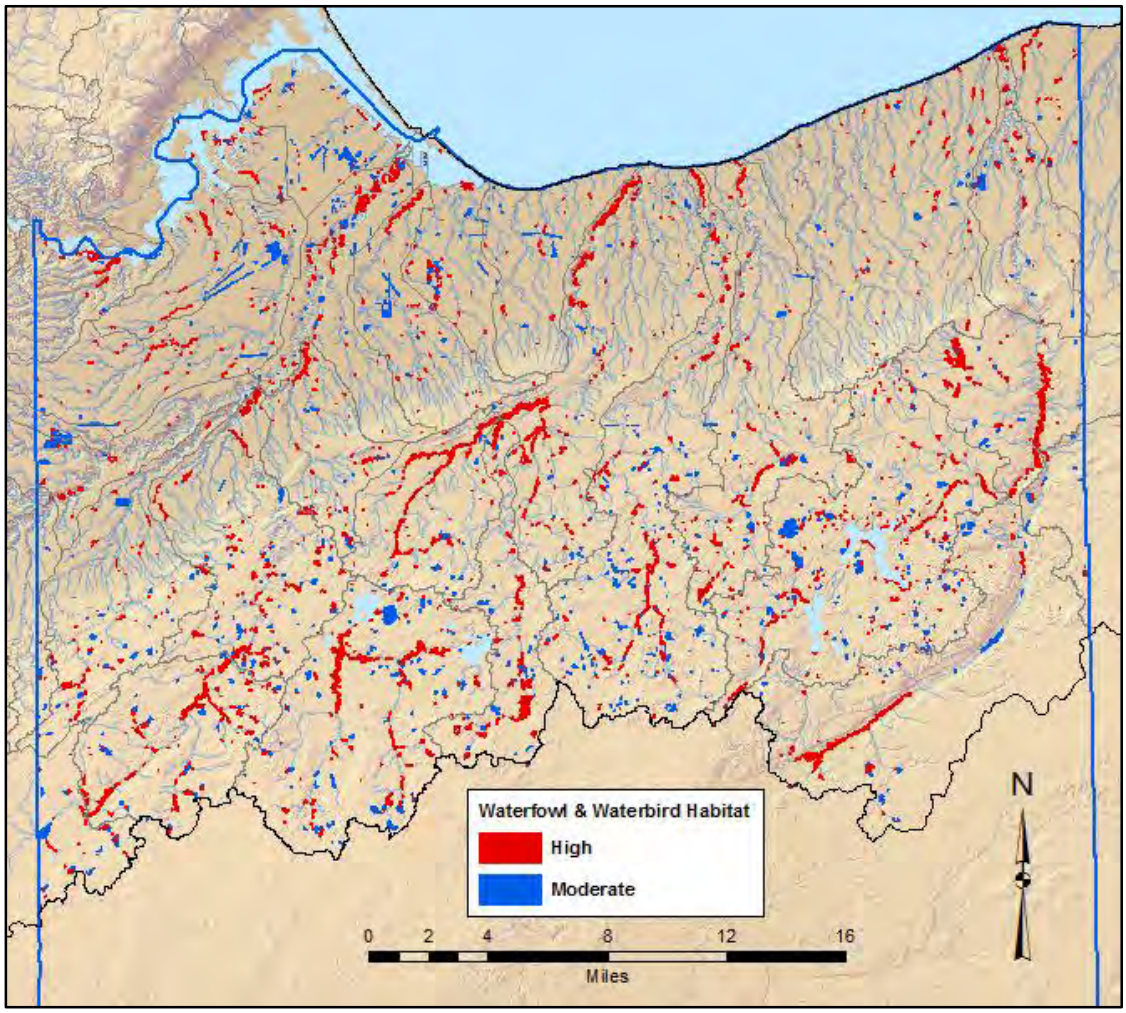


Figure 22. Wetlands with moderate or high function for waterfowl and water bird habitat.

Woodcock Habitat (WCK): Woodcock prefer a variety of habitats depending on time of day, activity, and season, but generally prefer younger forested areas for nesting and brood rearing and scrub shrub with saturated soils for feeding.

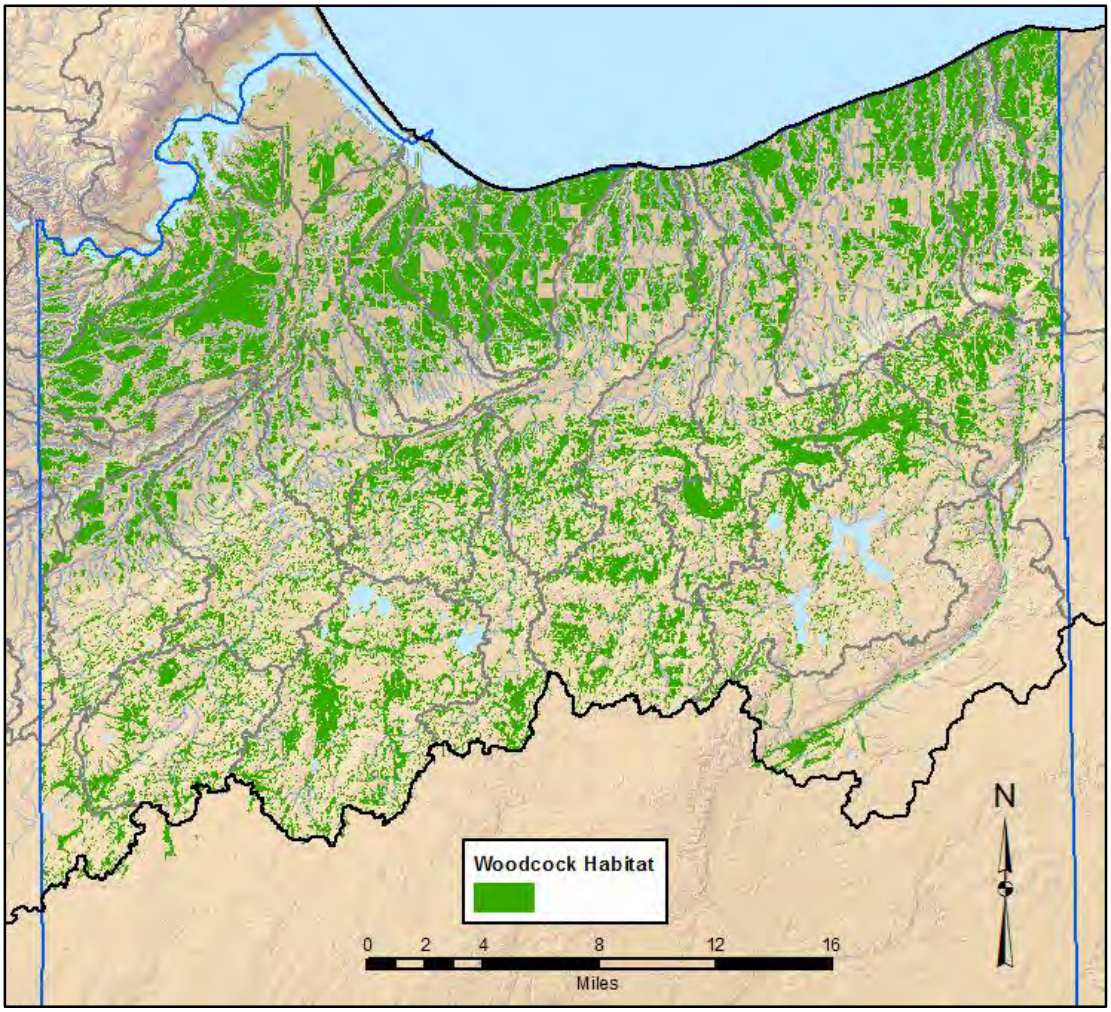


Figure 23. Wetlands that function as woodcock habitat.

Wetland restoration potential: Potentially Restorable Wetlands (PRWs)

The best opportunities for restoring wetlands in the LSB have been identified in the Potentially Restorable Wetland (PRW) information for Douglas County. GIS analysts compiled the relevant datasets and interpreted this information using their best professional judgement and technical advisory committee input to determine PRW locations and extent. PRWs are areas where a preponderance of evidence exists indicating the area was once a wetland or at minimum contained more wetland area, but may have since experienced vegetative and/or hydrologic modification. These areas are considered to have a likelihood of supporting wetland development given specific hydrologic or land management changes.

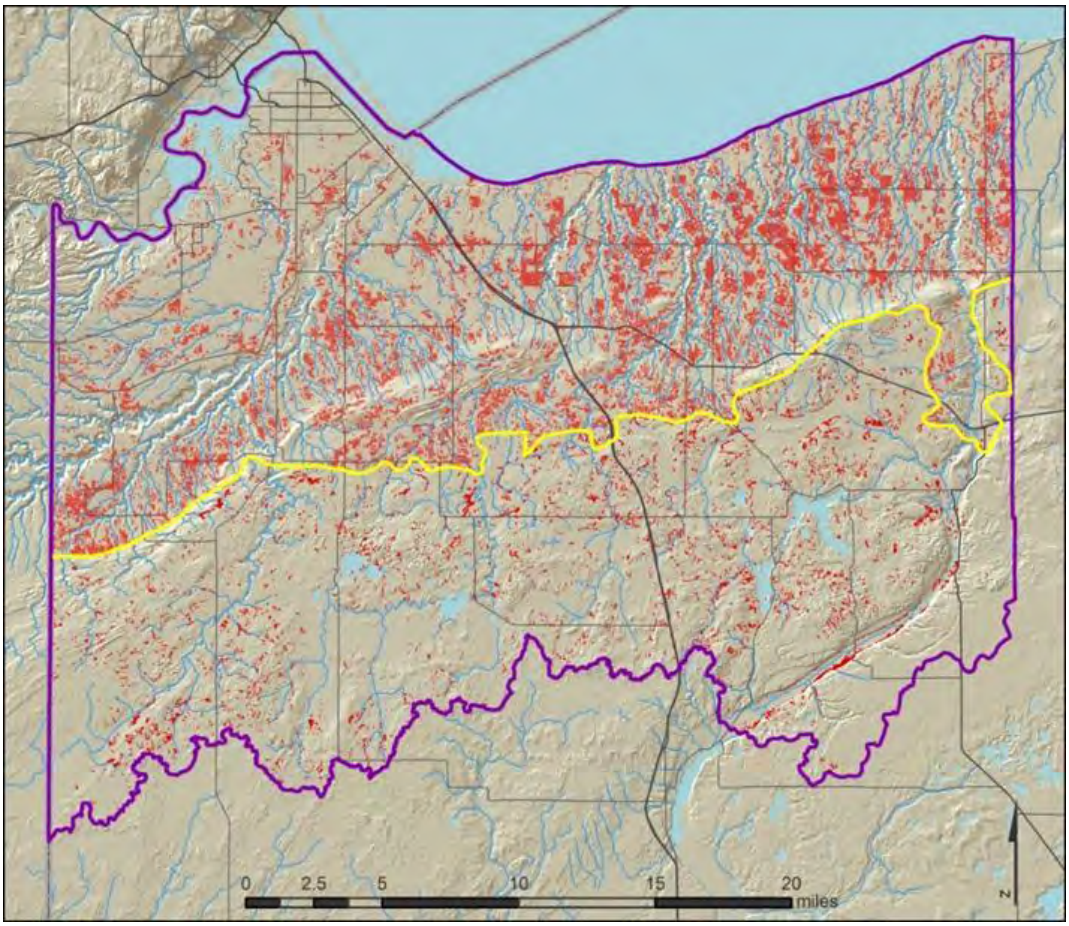


Figure 24. General distribution of PRWs (i.e., potential reestablishment sites) (red polygons) in the DC LSB. The yellow line indicates the clay plain boundary for the purposes of this assessment; the clay plain is to the north of this line. Different methods were employed to define PRWs in the clay plain vs outside of the clay plain.

Interpreted Pour Points

Pour Points (interpreted) are the locations where the PRWs are most likely to drain into the flow network (synthetic flow network) developed for this project. They were developed through the examination of the top 300 largest PRW areas (polygons) in the study area. Only areas that showed evidence of ditching or other wetland draining practices (hydrologic alteration) are shown in the map. In many cases multiple pour points were digitized (interpreted) for a PRW as the PRW often appeared to likely drain in multiple directions. Generally, they were found to be most prevalent in agricultural areas, especially in the eastern portion of the clay plain within the DC LSB. This is to be expected because this area has a higher concentration of agriculture and ditching.

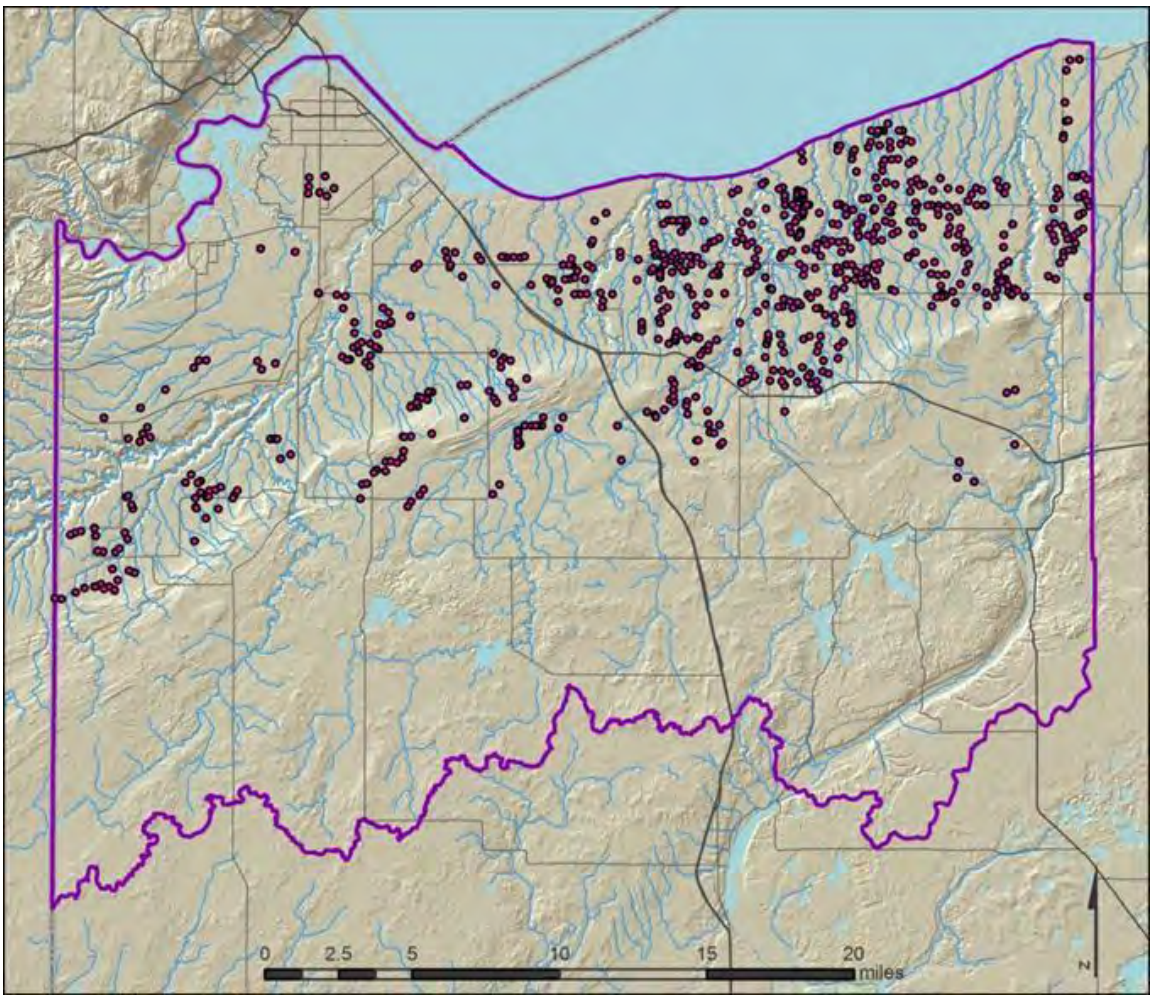


Figure 25. Interpreted PRW pour points (red) in the LSB of Douglas County.

PRW Catchments

Catchments were created from the pour points described above. ESRI's Spatial Analyst (Watershed Tool) was run to create the catchments for each of the pour points. The catchments are only as accurate as the Digital Elevation Model (DEM) from which they are based, but provide a starting point for narrowing down areas for wetland restoration opportunities. These might be incorporated as an input to a future prioritization model that would incorporate other, additional criteria that would provide some guidance on which PRWs (the polygons, the pour points, and the resultant catchments) might be of the highest priority in a watershed planning context.

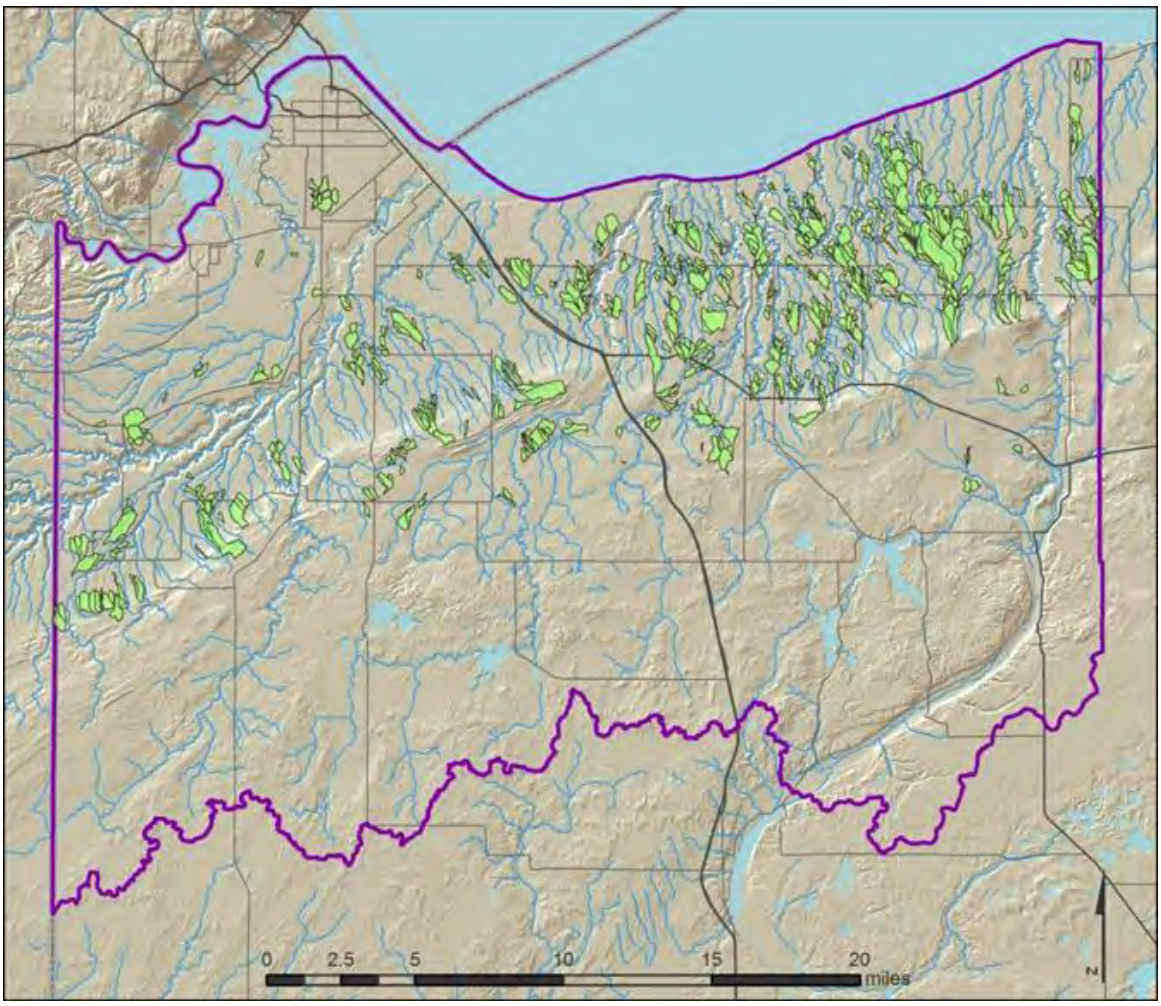


Figure 26. PRW representative catchments (green areas) created to represent catchments of viable or possibly viable PRW polygons in the clay plain portion of the DC LSB. These were created from a 10-meter Digital Elevation Model (DEM).

Ditches & Drainage Paths

The ditches and drainage paths were found to be most concentrated in the eastern portion of the clay plain portion of the study area. They often drain agricultural fields to the nearest roadside ditch or stream. An attempt was made to characterize these ditches & drainage paths in order to differentiate between channelized ditches and natural or semi-natural drainage paths. In some cases it was found that drainages might even be intermittent streams not captured in the WI DNR 24K hydro flow line data.

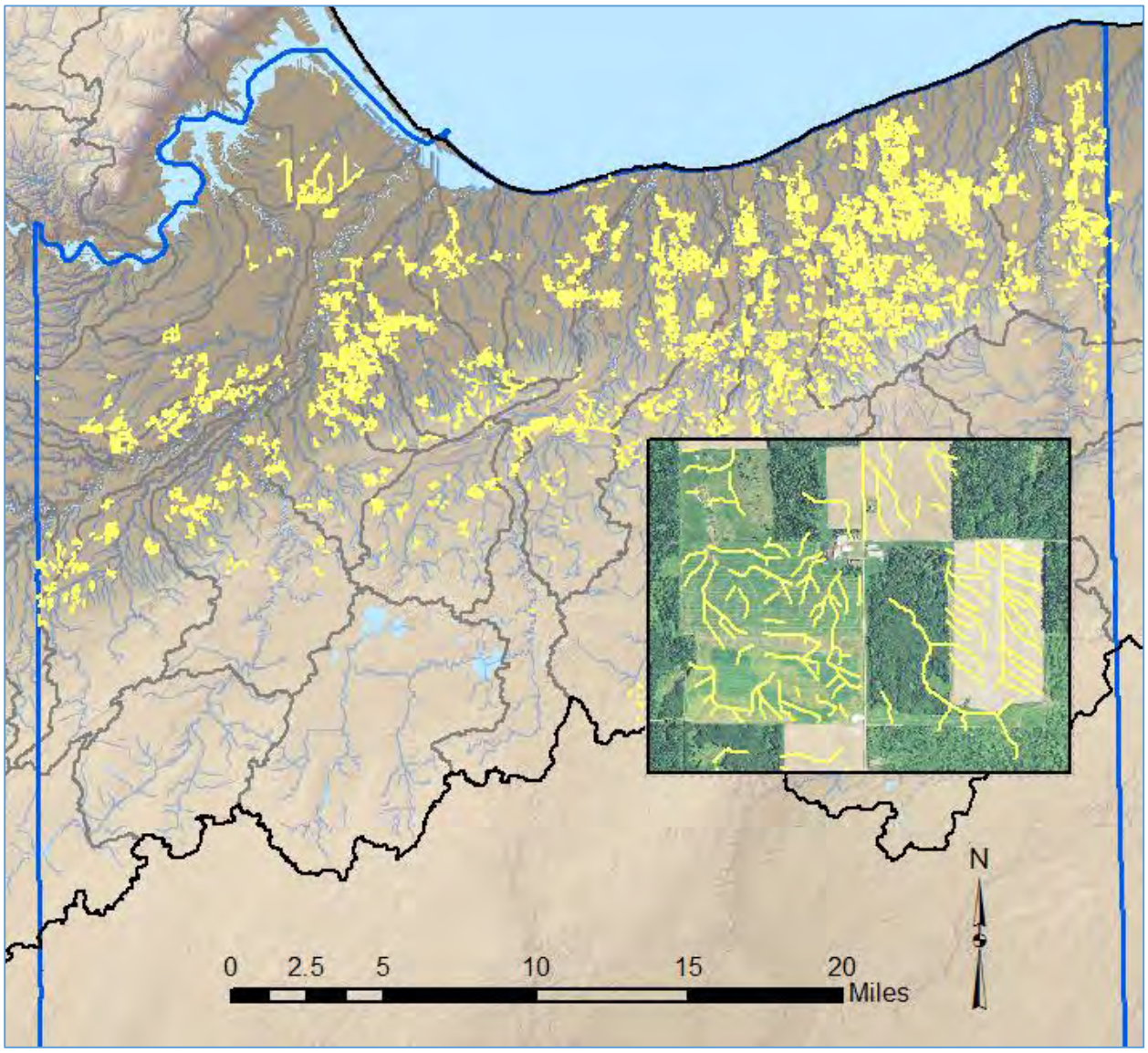


Figure 27. General distribution of ditches (yellow lines) in the DC LSB. Note: some of these "ditches" are likely relatively shallow and include some semi-natural drainage paths that have been enhanced in order to reduce surface ponding.

Some examples of ditching can be seen in the photos in Figures 28 and 29.

Figure 28. Ground view of shallow, parallel agricultural ditches (indicated by white arrows) draining to nearby roadside ditch.

Figure 29. Ground view of roadside ditch conveying water during spring snow melt in April 2014. The shallow agricultural ditches (shown in Figure 28) are seen in the upper left of this photo; they drain into this roadside ditch.

Potentially Restorable Stream Reaches (PRSRs)

Potentially restorable stream reaches (PRSRs) were generally found to be more common in the agricultural areas of the clay plain in the study area and especially more common on first order streams. The general distribution of these stream reaches are indicated in Figure 30. Additional information regarding the composition of different riparian vegetation along these segments, evidence of grazing, and other information can be queried by data users. It is important to note that this dataset identifies an initial indication of riparian health based only on aerial photo interpretation (i.e., what can be detected in the aerial photo). This is primarily woody riparian vegetation density, land use, evidence of channelization, grazing in the riparian zone, etc. This layer does not identify channel incision or other river or stream morphological characteristics important in understanding erosion susceptibility.

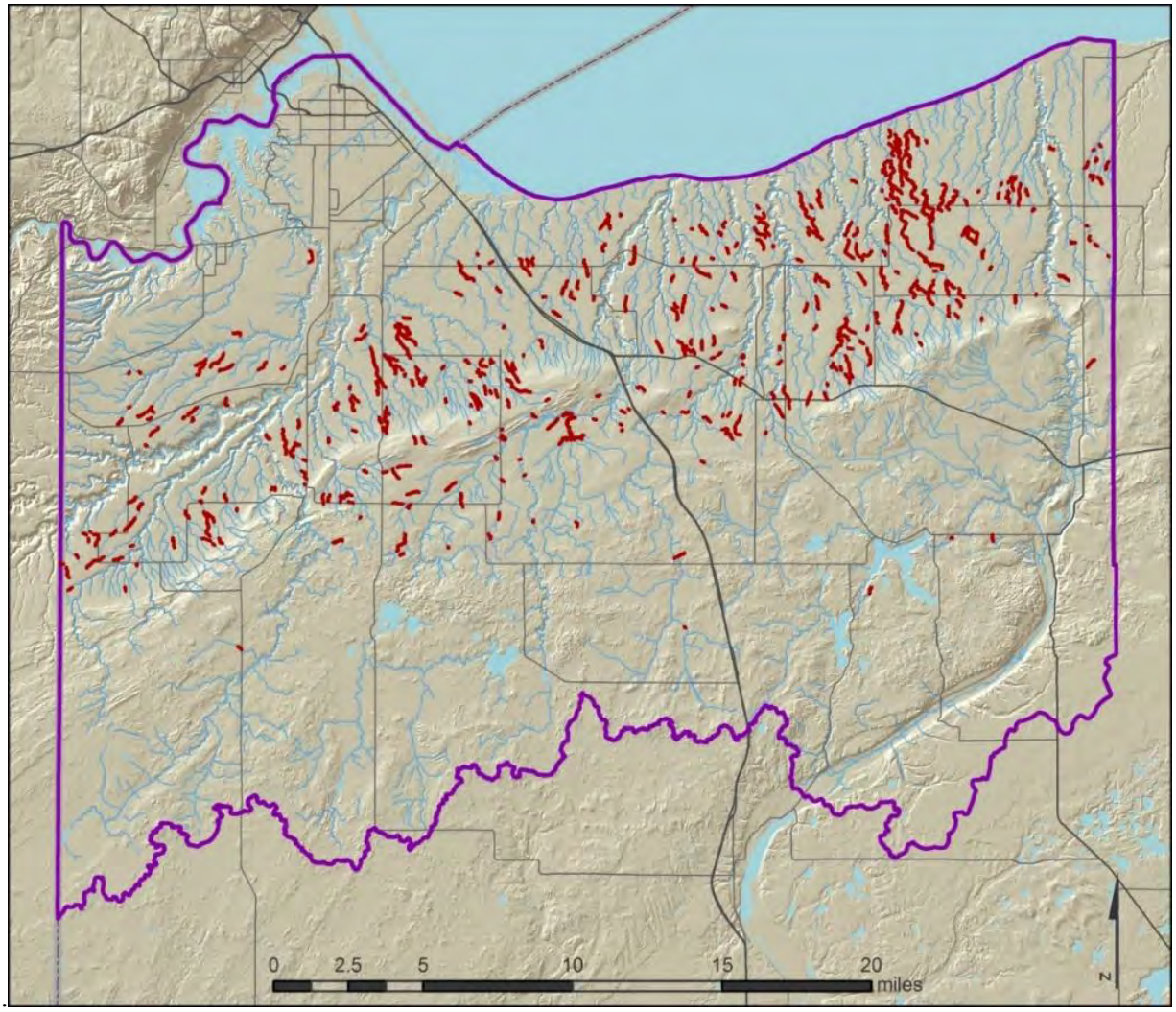


Figure 30. General distribution of potential restorable stream reaches (PRSRs) (dark red) identified in the Douglas County, Lake Superior Basin.

An example of a perennial stream reach in the study area which has evidence of livestock grazing in the riparian zone is provided in a ground view in Figure 31 and an aerial view in Figure 32. In the PRSR data this stream reach's riparian area was considered to have "no woody riparian vegetation" and the riparian zone was affected by active livestock grazing.

Figure 31. Ground–level view of a grazed riparian zone along an intermittent stream. Notice some hummocks created by livestock hooves (process referred to as "pugging"). Shown here during spring snow melt (April 2014).

Figure 32. Aerial view of the same grazed riparian area of an unnamed perennial stream identified as a PRSR (maroon line) in April 2013. The above photo was taken from the road facing the south (upstream in this north flowing stream). Notice the drainage ways (yellow lines) coming into the stream from the left side of the photo.

Another example of a grazed stream bank and riparian zone in a woodland area is shown as a ground-level view in Figure 33 and an aerial view in Figure 34.

Figure 33. Ground-level view of a grazed stream riparian zone. Notice the small stream banks affected by livestock. Photo taken in July, 2014.

Figure 34. Aerial view of a grazed stream riparian zone during April, 2013. This segment was identified as a PRSR (maroon line). In this case, the stream is identified as an unnamed perennial stream in the WI NDR Hydro data. The photo in Fig.33 was taken from the road facing north (towards the top of this figure).

Wetland loss

Estimates of wetland loss in Lake Superior watersheds were calculated utilizing the best available information that included the 2012 Wisconsin Wetland Inventory (WDNR) for current wetlands and the PRW estimates developed for Douglas County's Lake Superior Basin through the Science Collaborative Project (O'Halloran 2014). Potentially restorable wetlands (PRWs) outside the clay plain have been defined by the Wisconsin DNR and the Science Collaborative Project. Historic wetlands are defined as the current wetlands plus the PRWs and were calculated following WDNR protocols (WDNR 2014). Figure 35 shows the percentage of wetland loss in each watershed (HUC 12) and Table 1 shows the calculations used to estimate the wetland acreage and percentage of wetland loss for these watersheds.

- The estimated *historic wetland* acreage was calculated by adding the current wetland acreage to the potentially restorable wetlands. (Historic wetlands = current + PRWs).
- The estimated percent *historic* wetland acreage was estimated by dividing the acreage of historic wetlands by total watershed acreage.
- The estimated percent wetland loss by watershed was estimated as the PRW acreage for the watershed divided by the total watershed acreage.

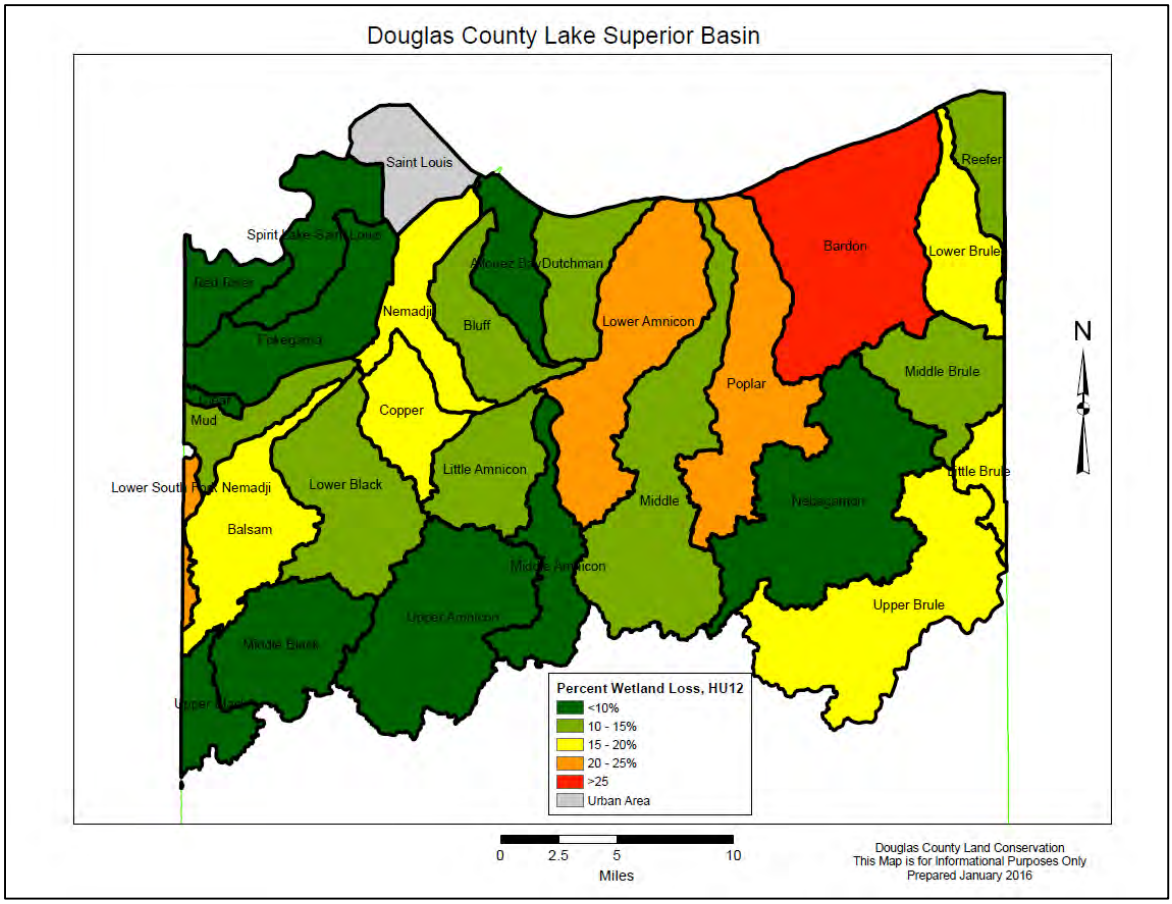


Figure 35. Map of the percent wetland loss in watersheds (HUC 12) in the Lake Superior Basin of Douglas County, WI.

Table 1. Calculation of wetland loss for HU 12 watersheds, Lake Superior Basin, Douglas County WI.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	HU12 Area [a]	Current Wetland [b]	DNR PRWs [c]	Clay Plain PRWs [d]	Sum PRWs	Historic Wetlands	Percent Historic Wetlands	Watershed Percent Wetland Loss
HU 12 Watershed	Acres	Acres	Acres	Acres	Acres	Current Wetlands + Sum PRWs	Hist. WL Area / Wtrshd Area	PRWs / Hist. WL
Bardon Frontal L. Superior	38598.4	14013.7	85.6	4968.3	5053.9	19067.6	49.4	26.5
Lower South Fork Nemadji	2111.3	485.2	32.6	119.9	152.4	637.6	30.2	23.9
Poplar -Frontal L. Sup.	26402.3	9477.4	886.5	1653.7	2540.1	12017.5	45.5	21.1
Lower Amnicon	29860.6	10498.9	422.0	2334.3	2756.3	13255.2	44.4	20.8
Copper Creek	10751.5	2898.5	105.9	550.0	655.9	3554.3	33.1	18.5
Upper Brule	35071.8	3675.1	830.9		830.9	4506.0	12.8	18.4
Little Brule	4705.6	317.9	46.8	18.0	64.8	382.6	8.1	16.9
Nemadji	13167.3	4244.5	101.2	747.8	849.0	5093.5	38.7	16.7
Balsam Creek	19685.4	5129.5	179.4	757.0	936.3	6065.8	30.8	15.4
Lower Brule	12794.6	5010.0	67.7	842.7	910.5	5920.4	46.3	15.4
Little Amnicon	13926.2	5271.1	433.7	462.0	895.8	6166.9	44.3	14.5
Middle R	35024.2	5461.7	1081.6	872.2	1953.8	15125.9	43.2	12.9
Middle Brule	14721.4	5669.8	508.9	271.1	780.0	6449.8	43.8	12.1
Dutchman Frontal L. Sup	12312.9	7933.5	17.0	1057.0	1074.0	9007.5	73.2	11.9
Bluff Creek	12486.2	5000.2	11.0	650.1	661.1	5661.3	45.3	11.7
Lower Black	23142.1	7535.3	345.0	574.1	919.2	8454.5	36.5	10.9
Mud Creek	7771.2	1875.1	36.2	189.6	225.8	2100.9	27.0	10.7
Nebagamon Creek	36339.9	10489.5	1139.0		1139.0	11628.5	32.0	9.8
Allouez Bay-Frontal L. Sup	8280.0	4888.6	6.7	448.4	455.0	5343.6	64.5	8.5
Middle Black	18385.5	7186.1	549.1		549.1	7735.1	42.1	7.1
Middle Amnicon	12487.7	5461.7	226.9	115.9	342.8	5804.5	46.5	5.9
Pokegama River	19077.1	11172.8	10.8	662.1	672.9	11845.6	62.1	5.7
St. Louis River (Urban)	8668.7	1962.0	4.4	98.1	102.5	2064.5	23.8	5.0
Spirit Lake-St. Louis	10544.6	6349.2	14.4	255.1	269.5	6618.7	62.8	4.1
Upper Amnicon	30239.6	14974.0	549.5		549.5	15523.5	51.3	3.5
Clear Creek	1112.2	459.3	0.4	15.1	15.4	474.7	42.7	3.3
Red River-St. Louis	6136.7	1607.6	20.1	28.1	48.1	1655.8	27.0	2.9
Upper Black	6959.2	4594.6	91.1		91.1	4685.7	67.3	1.9

a: HUC 12 Area: Watershed layer from the National Hydrograghy Dataset, areas were recalculated to remove waterbodies. For example, Aloueze Bay was included as part of the area of its watershed

b: Current Wetlands: Wisconsin DNR 2012 Wetland Inventory

c: DNR PRWs: Potentially Restorable Wetland 2012 version 2: The DNR defines a PRW as polygon that is the result of a hydric soil map unit (85% or higher for hydric percent) higher, minus areas already mapped as wetlands and areas mapped as incompatible land uses.

d: Clay Plain PRWs: These PRWs were determined by the 2014 Science Collaborative study by St. Mary's University in the clay plain area of the Lake Superior Basin of Douglas County. Areas considered to represent a potential opportunity for wetland reestablishment meet a set of soil criteria (wetland indications) and topgraphic criteria (CTI values) and are within compatible land use. The process for identifying these polygons is specific to the clay plain area of the DC LSB.

Open land cover

Open land is identified as agricultural, young forest (0-15 yrs. old) and impervious surfaces. Estimates of the percentage of open land cover in Lake Superior watersheds (2009) can be seen in Figure 36. The percentage of open land is depicted as less than 20% (dark green), 20-30% (light green), 30-40% (yellow) 40-50% (orange) and greater than 50% open land (red). The map shown in Figure 36 represents the land cover information seen in Figure 9 as a percentage of the total subwatershed acreage. For example, the subwatersheds shown as yellow have 30-40% of their land cover as open land This data is utilized at the subwatershed (HUC 14) scale to prioritize areas for wetland restoration and preservation projects within the watersheds that have experienced the greatest amount of wetland loss

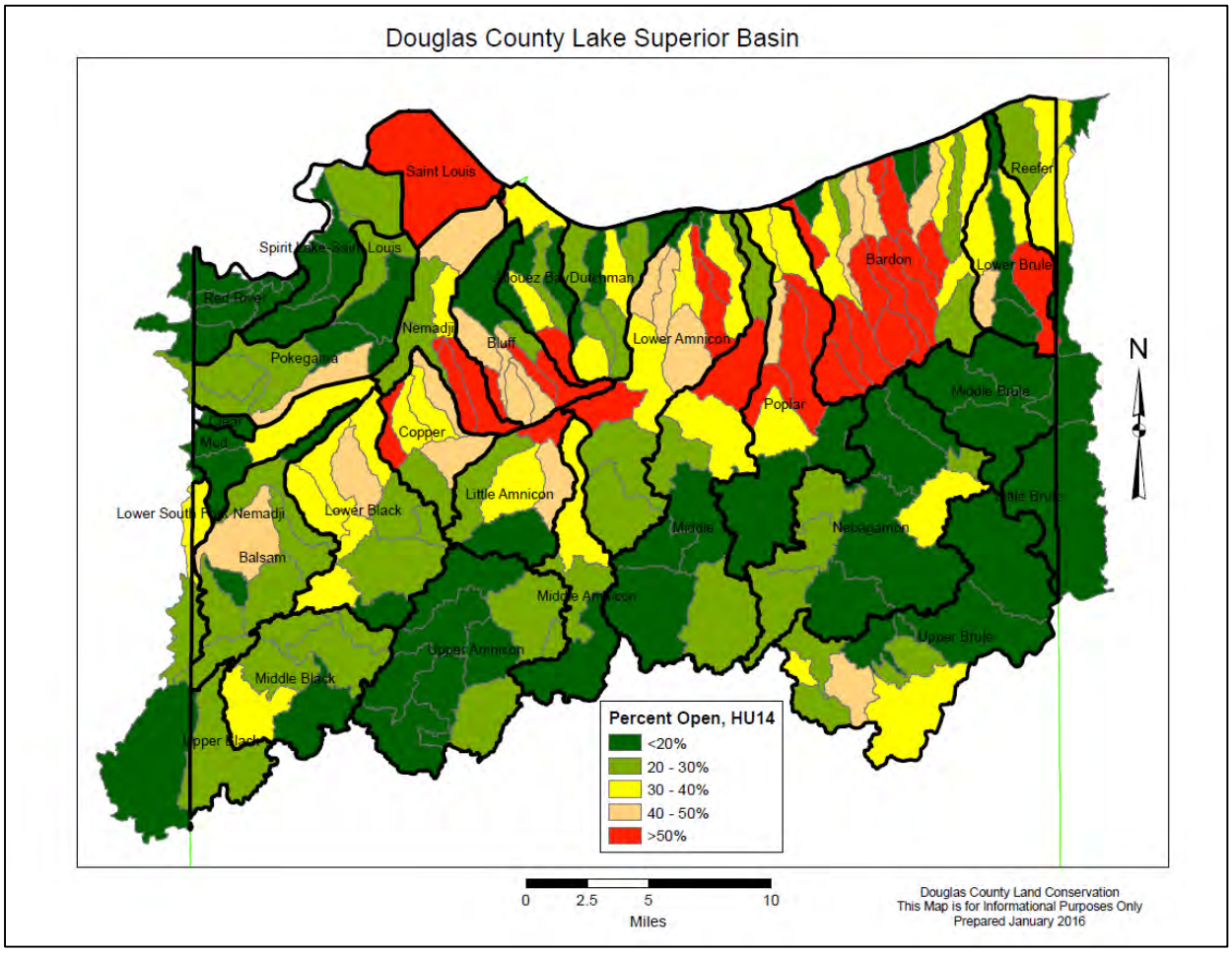


Figure 36. Open land cover (percentage) in each subwatershed (HUC 14) in Lake Superior watersheds, Douglas County, WI.

Restoration and preservation priorities

A primary goal of this watershed-based plan is to enable Douglas County stakeholders to provide input into the location of future wetland mitigation sites that will improve watershed health within the Lake Superior basin. The prioritization process developed by the Douglas County Watershed Planning Committee, which uses the results of the wetland functional assessment and current data on landscape surface water hydrology, provides the best approach for identifying locations for future wetland preservation and restoration projects in the Lake Superior Basin of Douglas County. Following is a summary of the key information utilized to identify and prioritize watersheds based on the landscape prioritization criteria developed through this project (Fig. 2).

Within the HUC 12 watersheds in the Lake Superior Basin, the subwatersheds (HUC 14) listed as Tier 1 and Tier 2 represent the areas with the highest need for restoration and preservation of wetland functions (Fig. 34). Subwatershed criteria for wetland preservation and restoration criteria includes the following:

- Watersheds (HUC 12) estimated to have **15%** or more wetland loss (Fig. 35)
- Tier 1 priority subwatersheds (HUC 14) with **40%** or greater open land cover (Fig. 36)
- Tier 2 priority subwatersheds (HUC 14) with **30%** or greater open land cover (Fig. 36)

Watershed (HUC 12)	Wetland Loss (%)	Tier 1 Number sub watersheds (HUC 14) > 40% open land	Tier 2 Number sub watersheds (HUC 14) 30-40% open land	Total number of subwatersheds
Bardon-Pearson Creeks	**26.5**	**15**	**4**	**25**
Poplar River	**21.1**	**4**	**3**	**9**
Lower Amnicon River	**20.8**	**6**	**3**	**14**
Copper Creek	18.5	3	2	6
Upper Brule River	18.4	1	2	10
Lower Nemadji River	16.7	3	1	6
Balsam Creek	15.4	1	0	8
Lower Brule River	15.4	2	2	7

Table 2. List of Lake Superior Basin HUC 12 watersheds with greater than 15% wetland loss, number of subwatersheds with more than 30% open land and total number of subwatersheds within each watershed.

Based on the information developed through the wetland assessment, there are *three watersheds* that have experienced 20% or more wetland loss and have at least one subwatershed with more than 40% open land cover: Bardon-Pearson Creeks, Poplar River and the Lower Amnicon River. Within the Bardon-Pearson

Creek watershed there are fifteen subwatersheds that are at least 40% open land and are listed under Tier 1 (Table 2). The land cover map (Fig. 8) shows that agricultural land represents a large component of the open lands, with forest harvest the next most prevalent. Similar patterns can be seen in the Poplar and Lower Amnicon River watersheds. Balsam Creek, Copper Creek, the Lower Nemadji River, the Lower and Upper Brule watersheds are estimated to have lost 15-20% of their former wetland area and have at least one subwatershed with greater than 40% open land cover. While the Little Brule River watershed was estimated to have greater than 15% wetland loss it did not have any subwatersheds with more than 30% open land cover. The Tier 2 watersheds are estimated to have greater than 15% wetland loss and 30-40% open land cover (Table 2, Fig. 36)

Balsam Creek, Copper Creek, the Lower Nemadji and the Lower South Fork Nemadji River are watersheds (HUC 12) within the Nemadji River Sub-basin (the Lower South Fork of the Nemadji River was not included in this prioritization since only a small portion of the watershed is located in Wisconsin). Watershed-wide planning efforts are currently being coordinated between the two states in order to strategically address the issue of surface water runoff from the headwaters to Superior Bay, where excess sediment is dredged annually from shipping channels. A Nemadji River Basin Project completed by NRCS in1998 developed a sediment budget that estimated the annual sediment contribution from this watershed to be 127,000 tons of sediment per year (NRCS, U.S. Forest Service, 1998). Updated models are being currently developed and will be utilized in future planning efforts.

Recommendations for implementing a watershed approach to wetland management

The subwatersheds listed in Table 2 represent the greatest need for wetland restoration and preservation based on the prioritization criteria identified. However, the entire HUC 12 watersheds in which they are located should also be considered a high priority for wetland restoration and preservation. Since wetland restoration and preservation are dependent on the availability of public land and/or willing landowners the inclusion of the larger watershed area would provide additional opportunities for locating wetland projects that would provide the greatest benefits within these watersheds. In addition, the historic information on wetland loss suggests that all Lake Superior Basin watersheds would benefit from the preservation and restoration of surface water detention wetlands to improve watershed health.

Farmland preservation has community and economic significance for Douglas County and conservation of existing farmland is an important consideration when evaluating potential wetland restoration sites. Historic information shows a pattern of smaller wetlands on the landscape that provided surface water retention at multiple locations in the drainage network. This supports the concept of smaller restoration sites that could potentially be located adjacent to current active agricultural areas rather than converting the farmland itself. Wetland restoration projects in the region have demonstrated that transitional agricultural areas have a high restoration potential when surface water drainage patterns are re-established. This should be an alternative approach to the current practice of developing large wetland mitigation banks on farmland that results in a cumulative loss of agricultural land.

Public and private lands that meet the criteria for either restoration or preservation, as described by the subwatershed criteria on pg. 43, will be compiled and utilized to develop a request for landowner participation. A listing of landowners who may be interested in developing wetland projects on their land will be developed, additional site-level criteria will be used to evaluate parcel suitability and

recommendations will be finalized and approved by the appropriate entities. Sites meeting the criteria will be eligible for wetland restoration and protection projects as funding becomes available. Project site location criteria will include, at a minimum, an evaluation of the following landscape/land use characteristics:

For wetland restoration, site-level criteria will include, at a minimum, all identified potentially restorable wetland areas that:

- are located on or adjacent to transitional agricultural land
- have identified pour points and catchments that intersect highways and roads
- have a direct hydrologic connection to streams and rivers
- are adjacent to current wetlands with significant surface water detention function
- are adjacent to public land currently managed for conservation and/or preservation of unique habitats

For wetland preservation, site-level criteria will include, at a minimum:

- current wetlands with moderate to high function for storm water detention (SWD), especially in the headwaters and floodplain areas in all Lake Superior Basin watersheds of Douglas County.
- current wetlands adjacent to public land currently managed for conservation and/or preservation of unique habitats

Through this prioritization process subwatersheds at the highest risk of increased runoff have been identified and would be the focus of future funding for wetland mitigation projects including restoration, preservation, enhancement, riparian buffers and land conservation management within the Lake Superior Basin clay plain region. This improved data provide more accurate estimates of wetland acreage loss. However, more detailed hydrologic information is needed for site-level determination of locations for future wetland projects.

Several key land conservation and management strategies have been identified that should be implemented to address the watershed goal of reduction in surface water runoff. They include:

- managing timber harvests to maintain a minimum of 40% forest cover in watersheds (HUC 14)
- Implementation of wetland preservation and restoration projects in priority subwatersheds and the watersheds within which they are located.
- Implementation of stream and riparian/floodplain restoration and protection projects in priority locations identified as potentially restorable stream reaches.

This plan presents an opportunity to work with landowners, both public and private, to implement land management practices that will maintain a strong agricultural community, improve watershed health, reduce the risks associated with flooding and other large precipitation events, and improve the overall resiliency of Douglas County communities to climate change. In order to address the watershed issue of increased surface water runoff the land management strategies recommended in this watershed-based plan have been approved by the Land and Water Conservation Committee as a goal to be added to the 2010-2020 Land and Water Resource Management Plan. In addition, recommendations from this plan will be coordinated with other Douglas County plans that include Comprehensive Land Use, Farmland Preservation, Hazard Mitigation and Forestry Planning. These strategies should be based on the currently available land cover/land use data and should be updated every five years.

Since wetland restoration and preservation are dependent on the availability of public land and/or willing landowners the inclusion of the larger watershed area would provide additional opportunities for locating wetland projects that would provide the greatest benefits within these watersheds. In addition, the historic information on wetland loss suggests that all Lake Superior Basin watersheds would benefit from the preservation and restoration of surface water detention wetlands to improve watershed health.

Farmland preservation has community and economic significance for Douglas County and conservation of existing farmland is an important consideration when evaluating potential wetland restoration sites. Historic information shows a pattern of smaller wetlands on the landscape that provided surface water retention at multiple locations in the drainage network. This supports the concept of smaller restoration sites that could potentially be located adjacent to current active agricultural areas rather than converting the farmland itself. Wetland restoration projects in the region have demonstrated that transitional agricultural areas have a high restoration potential when surface water drainage patterns are re-established. This should be an alternative approach to the current practice of developing large wetland mitigation banks on farmland that results in a cumulative loss of agricultural land.

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CORRESPONDENCE #1 - #9

(as listed on Agenda)

DOUGLAS COUNTY BOARD OF SUPERVISORS
May 19, 2016

MAY

1

FOR INFORMATION ONLY

Public Notice of an Air Pollution Permit Application Review

Facility Description.

Specialty Minerals Inc, located at 1 Water St., Superior, Douglas County, Wisconsin, FID 816116730, submitted to the Department of Natural Resources (DNR) a permit application, including plans and specifications for modification and operation to increase NO_x, SO_2, and other emission limits based on higher output flows, and make permit changes based on the as-built operation and operation of a Precipitated Calcium Carbonate (PCC) Plant facility.

Air pollution construction permit no. 15-DCF-014. Air Pollution operation permit no. 816116730-P01

Application Review.

DNR has made a preliminary determination that the application meets state and federal air pollution control requirements and that the permit should be approved. You can review the permit application, the DNR's analysis and draft permit prepared by the DNR at the Department of Natural Resources Bureau of Air Management Headquarters, Seventh Floor, 101 South Webster Street, Madison, Wisconsin, 53703; Northern Region Air Program, Cumberland Area Office, 1341 2nd Avenue, PO Box 397, Cumberland, WI 54829, tel. (715) 822-2749 or contact Don Faith Iii at (608) 267-3135 or by e-mail at don.faithiii@wisconsin.gov. This information is also available for downloading from the Internet at http://dnr.wi.gov/topic/AirPermits/Search.html.

The permit application is being reviewed under the Prevention of Significant Deterioration (PSD) Program [ch. NR 405, Wis. Adm. Code] for particulate matter (PM); nitrogen oxides (NOx); carbon monoxide (CO); volatile organic compounds (VOC); and sulfur dioxide (SO_2). The proposed project and the existing facility will not consume any additional increment. The following is the table of increment consumed originally (reflecting a slight decline in annual NO_x increment consumed).

SO_2 - 3 hr; 192.2 $\mu g/m^3$ out of 512.0 $\mu g/m^3$ (37.5%)	SO_2 - 24 hr; 57.3 $\mu g/m^3$ out of 91.0 $\mu g/m^3$ (63.0%)
SO_2 - annual; 7.73 $\mu g/m^3$ out of 20.0 $\mu g/m^3$ (38.7%)	NO_x - annual; 6.23 $\mu g/m^3$ out of 24.0 $\mu g/m^3$ (24.9%)

The PSD review with its additional impacts analysis (and the prior Environmental Analysis) is considered an equivalent action analysis.

The department has made the determination under ch. NR 150, Wis. Adm. Code, that this type of proposal normally does not have the potential to cause significant adverse environmental or secondary effects.

This is a preliminary determination and does not constitute a final approval from the Air Management Program or any other DNR sections which may also require a review of the project.

Public Comments.

Interested persons wishing to submit written comments on the application or DNR's review of it or wishing to request a public hearing should do so within 30 days of publication of this notice. Posting and Public Comment Deadline dates can also be found on "Air permit public notices" web page located at http://dnr.wi.gov/cias/am/amexternal/public_notices.aspx. Comments or request for hearing should be sent to:

Wisconsin Department of Natural Resources, Bureau of Air Management, 101 S. Webster Street, Box 7921, Madison, WI 53707-7921. Attn.: Don C. Faith III.

If a hearing is requested, the requester shall indicate their interest in the permit and the reasons why a hearing is warranted. Information on the public commenting and hearing process is available at http://dnr.wi.gov/topic/AirPermits/Process.html.

All comments received by the DNR prior to the close of the comment period, will be considered prior to making a final decision regarding the proposed project. After the close of the public comment period, a final decision will be made on whether to issue or deny the air pollution control permit.

Reasonable accommodation, including the provision of informational material in an alternative format, will be provided for qualified individuals with disabilities upon request.

For Part-70 sources, the revised draft operation permit will not be issued until the United States Environmental Protection Agency (US EPA) has an opportunity for review. After all comments received during the public comment period have been considered, a proposed revised draft operation permit will be drafted and sent to the US EPA for review. DNR will post the start date of the US EPA review on the Internet at http://dnr.wi.gov/air/permits /permitsearch.html. Any person may petition the US EPA under 40 CFR Part 70.8(d) within 60 days after the expiration of US EPA's 45-day review period to make an objection to the operation permit revision. DNR will post the deadline for this petition on the Internet at the above address. Unless the US EPA objects in writing to the issuance of the operation permit revision as proposed within US EPA's 45-day review period, DNR will issue the final operation permit as proposed.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By Kristin Hart

Kristin Hart
Chief, Permits and Stationary Source
Modeling Section

FOR
INFORMATION ONLY

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
477 MICHIGAN AVE.
DETROIT, MICHIGAN 48226-2550

MAY

(2)

STATEMENT OF FINDINGS & FINDING OF NO SIGNIFICANT IMPACT

Dredged Material Placement
21st Avenue West Aquatic Habitat Restoration Site
St Louis River Area of Concern
Duluth, Minnesota

Proposed Action: In accordance with the National Environmental Policy Act of 1969, the Detroit District, U.S. Army Corps of Engineers (USACE), has assessed the environmental impacts of placing dredged material from the federal navigation project into the 21st Avenue West Site, Duluth, Minnesota. After the dredged material is placed into the site, the State of Minnesota will manage the site to implement their habitat restoration project. The State's habitat restoration project is a separate action under the Remedial Action Plan (RAP) for the St. Louis River Area of Concern. This USACE in-water dredged material placement would be conducted under our Operations and Maintenance authority for the harbor.

Alternatives: Dredged material placement alternatives considered include no Federal action (continued placement at existing sites), open-water placement in Lake Superior, in-water placement into the 21st Avenue West Aquatic Habitat Restoration Site, and placement at upland sites. The No Federal action alternative was rejected because existing sites do not have sufficient remaining capacity to support longer term maintenance dredging needs of the Federal project at Duluth-Superior Harbor. Open lake placement was not pursued because of greater costs due to the transportation distance for the dredged material to the proposed open water sites in Lake Superior. Upland placement was not pursued because of the additional costs for real estate, site preparation, and loading and transporting the material by truck. The Preferred Alternative of in-water dredged material placement at the 21st Avenue West site was selected because it is the lowest cost, environmentally acceptable, engineeringly feasible dredged material placement alternative.

Environmental Review: An Environmental Assessment (EA) and a Clean Water Act Section 404(b)(1) evaluation of the environmental effects of the discharge of fill material into waters of the U.S. were completed in February 2015 for the proposed dredged material placement at the 21st Avenue West site.[1] The 2015 EA and 404(b)(1) evaluation were provided for a 30-day public/agency review on February 25, 2015. Comments on the EA were received from the U.S. Environmental Protection Agency, the Wisconsin Department of Natural Resources, the Minnesota Department of Transportation, and the Duluth Seaway Port Authority. Comment topics included alternative selection, effects of Western Lake Superior Sanitary District effluent discharge on ecosystem restoration, effects of the project on listed water body impairments and

1 The February 2015 EA also covered environmental effects of dredged material placement at the 40th Avenue West and Grassy Point sites, which are to be further addressed at a future date. The EA is posted under Environmental Reference Documents at http://www.lre.usace.army.mil/missions/environmentalservices.aspx.

aquatic life use standards, work restrictions related to sensitive aquatic life stages, turbidity control and mercury in suspended sediments, effects on the special flood hazard area in Wisconsin, sediment stability and potential downstream deposition, avoidance of creek and stormwater outlets, avoidance of commercial maritime slips and docks (including inactive sites), bottomland ownership, and continued habitat improvement even after RAP delisting goals are met. The comments have been addressed and response letters are posted at the USACE Detroit District website[2].

Subsequent to the public review of the USACE EA, the Minnesota Pollution Control Agency (MPCA) prepared a State Environmental Assessment Worksheet (EAW) for their 21st Avenue West Aquatic Habitat Restoration Project. The MPCA concluded with a Finding of Fact (dated December 28, 2015) that the State's Aquatic Habitat Restoration Project, which includes dredged material placement at the 21st Avenue site, does not have the potential for significant adverse environmental effects and, therefore, a State Environmental Impact Statement is not needed.

Determinations: Environmental review of the proposed dredged material placement at 21st Avenue West site indicates that it would not result in significant adverse environmental effects. Nor would it be expected to result in any significant cumulative or long-term adverse environmental effects. Sediment, elutriate, biological, and bioaccumulation testing indicate that in-water placement of dredged materials from the Federal navigation channels will not cause an adverse impact on biota or water quality. Adverse impacts would be minor and temporary, consisting primarily of noise and air emissions from equipment and transportation operations, and minor, short term turbidity during placement activities. The placed material would provide benefits of shallower water areas with cleaner substrate that the State of Minnesota plans to use as a base for their habitat restoration project.

The 21st Avenue West area is a navigable water of the United States and therefore subject to navigational servitude under Section 10 of the Rivers and Harbors Act of 1899. The proposed dredged material placement activities would not impact navigation as the placement areas are outside the Federal navigation channel and away from privately owned docks and mooring areas. Navigational right-of-way would be maintained within the Federal channel segment that passes through the area and disruptions to traffic in the Federal channel are not anticipated during dredged material placement activities as the dredging contractor would be required to comply with U.S. Coast Guard regulations applicable to marine work. Placement of dredged material directly into the former Federal navigation channel (abandoned 21st Avenue West channel) is acceptable because the channel has been de-authorized by Congress and is no longer maintained or used for commercial navigation.

The USACE determined under Section 106 of the NHPA that no historic properties would be affected by the proposed dredged material placement. This determination is based on the

2 http://www.lrc.usace.army.mil/missions/environmentalservices.aspx (lower right under Environmental Reference Documents)

results of an archeological survey and the condition that no material would be placed within 100 feet of identified archeological and cultural resources. The Minnesota State Historic Preservation Office concurred with this determination provided identified sites are avoided as stated (correspondence of September 14, 2015).

The U.S. Fish and Wildlife Service did not object to the USACE "no effect" determinations for Canada lynx, gray wolf, Northern long-eared bat, and piping plover, and concurred with the "not likely to adversely affect" determination for the rufa red knot (correspondence of November 18, 2015).

The proposed dredged material placement is within the coastal zone, as defined by the Minnesota Lake Superior Coastal Program, but would have no adverse effects on the coastal zone or the waters of Lake Superior. Therefore, the proposed dredged material placement would be "consistent to the maximum extent practicable" (as defined in 16 USC 1456, Coastal Zone Management Act, approved 1978) with the Minnesota Coastal Program. The placement complies with the Federal Executive Order 11988 (Floodplain Management) because it would not encourage floodplain development or induce flooding.

The State of Minnesota provided Section 401 water quality certification (WQC), pursuant to the Clean Water Act, on December 30, 2015. In accordance with the Section 401 WQC, the USACE will coordinate with the State each year regarding proposed dredged material placement activities and proposed best management practices for protection of water quality.

The proposed dredged material placement at the 21st Avenue West site in Duluth has been reviewed pursuant to the following Acts and Executive Orders: Section 10 of the Rivers and Harbors Act of 1899; Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act of 1958; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Clean Air Act of 1970; Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 1971; Coastal Zone Management Act of 1972; Endangered Species Act of 1973; Clean Water Act of 1977; Executive Order 11988, Floodplain Management, May 1977; and Executive Order 11990, Wetland Protection, May 1977. Based on the findings of the EA, Section 404(b)(1) evaluation, and results of the 30-day public review and comment period, the proposed dredged material placement has been found to be in compliance with these acts and executive orders.

Finding and Conclusion: The findings of the February 2015 USACE EA and Section 404(b)(1) evaluation, and review of the comments received, along with subsequent State level reviews and comments, indicate that the proposed in-water placement of federal navigation channel dredge material into the 21st Avenue West Aquatic Habitat Restoration Site does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, an Environmental Impact Statement will not be prepared.

29 FEB 16
Date

Michael L. Sellers
Lieutenant Colonel, U.S. Army
District Engineer

Federal Emergency Management Agency

Washington, D.C. 20472

MAY 3

April 06, 2016

MR. TED SOMMER
STEIGERWALDT
856 NORTH 4TH STREET
TOMAHAWK, WI 54887

CASE NO.: 16-05-2954A
COMMUNITY: DOUGLAS COUNTY, WISCONSIN (UNINCORPORATED AREAS)
COMMUNITY NO.: 550538

DEAR MR. SOMMER:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	DOUGLAS COUNTY, WISCONSIN (Unincorporated Areas)	A portion of Section 31, Township 44 North, Range 11 West, shown as Lot B on Certified Survey Map No. 43 recorded as Document No. 497950, in Volume 1, Page 44, in the Office of the Register of Deeds, Douglas County, Wisconsin
	COMMUNITY NO.: 550538	
AFFECTED MAP PANEL	NUMBER: 55031C0831D	
	DATE: 2/2/2012	
FLOODING SOURCE: EAU CLAIRE RIVER		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY:46.247182, -91.795707 SOURCE OF LAT & LONG: LOMA LOGIC DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
B	--	--	14332 South Soo Line Drive	Structure	X (unshaded)	--	1029.4 feet	--

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

PORTIONS REMAIN IN THE SFHA
ZONE A
STATE LOCAL CONSIDERATIONS

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

ZONE A (This Additional Consideration applies to the preceding 1 Property.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

STATE AND LOCAL CONSIDERATIONS (This Additional Consideration applies to all properties in the LOMA DETERMINATION DOCUMENT (REMOVAL))

Please note that this document does not override or supersede any State or local procedural or substantive provisions which may apply to floodplain management requirements associated with amendments to State or local floodplain zoning ordinances, maps, or State or local procedures adopted under the National Flood Insurance Program.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

TransCanada
In business to deliver

700 Louisiana Street, Suite 1500
Houston, TX 77002-2761
e-mail: us_land@transcanada.com

April 11, 2016

DOUGLAS COUNTY
1313 BELKNAP STREET
SUPERIOR, WI 54880

MAY

4

RE: Great Lakes Gas Transmission Limited Partnership
2016 ILI Pigging Program
Tract No.: 47-01DO-015, 015B, 015C, 038 & 085C
Station 5 to Station 6, Cloquet, MN to Iron River, WI

Dear Landowner:

As part of our 2016 Pipeline Internal Inspection Program, which is conducted in compliance with U.S. DOT Regulation 49 CFR. Part 192, Great Lakes Gas Transmission Limited Partnership (GLGT) will be inspecting the integrity of our pipelines located across your property. This is done by sending a series of electronic inspection tools (Linalog Pigs) through our pipeline that can evaluate the integrity of the pipelines. We will also be running pipeline cleaning tools through our pipelines.

Survey stakes along with buried markers will be strategically placed on your property, usually near road crossings, and along the route of the pipelines. This is necessary as our crews will have to return to the locations to monitor the inspection tools as they run inside the pipelines. As this is a continuous operation, once started you may see our crews on different days and possibly after what is considered normal working hours.

If applicable we request that you notify your own respective tenants. In most instances you may not realize we were on your property. In the unlikely event some damage would occur, your land will be restored to its original condition and you or your tenant will be compensated accordingly.

The work scheduled to take place in your area will begin approximately April 25th through May 6th. Our surveyors will be out to stake the locations prior to this activity during the week of April 11th. If you have any questions relating to our program or special land use needs, please do not hesitate to call me at (218) 733-3350 or (218) 393-5223. We thank you in advance for your time and cooperation.

Sincerely,

TRANSCANADA CORPORATION
GREAT LAKES GAS TRANSMISSION LIMITED PARTNERSHIP

Paul W Norgren

Paul Norgren
US Land Management Representative

State of Wisconsin
Governor Scott Walker

Department of Agriculture, Trade and Consumer Protection
Ben Brancel, Secretary

Date: April 2016

To: County Clerk

MAY 5

From: Nolan Stracke, Public Information Officer
Wisconsin Gypsy Moth Slow the Spread Program (STS)

Subject: Gypsy Moth Spraying

The Wisconsin Gypsy Moth Slow the Spread Program is making plans to aerially spray for gypsy moths in your county this year. Spraying typically starts in May and lasts until late July or early August. However, it is possible spraying can start as early as April. Unfortunately, we cannot give you definite dates at this time since sprayings depend on weather conditions and gypsy moth development.

Your county includes at least one spray site. We are providing you information about our plans in case you receive calls from the public about our activities. We also will share this information with municipal officials if a municipality is in a spray area. An informational postcard will be mailed to people living in and around the spray sites in late April.

We enclosed maps of all the spray sites in your county and information on the type of product(s) we will be using. The products we use are *Bacillus thuringiensis* sub sp. *kurstaki* (Btk) and mating disruption. We have also enclosed general information about the gypsy moth and our spray operations.

Please note our toll-free number: 1-800-642-6684, and our e-mail, gypsymoth@wisconsin.gov. Feel free to refer people to call or e-mail us if they have any questions. Additionally, our toll-free line carries a recorded message about our daily spray plans once spraying begins.

Throughout the spraying season, we will send an e-mail notification about our spray plans and progress to the local media and those who are interested in receiving information. We will also send you an e-mail each spray date, informing you of our progress so you will know when we begin and finish. If you wish not to receive these e-mails, let us know.

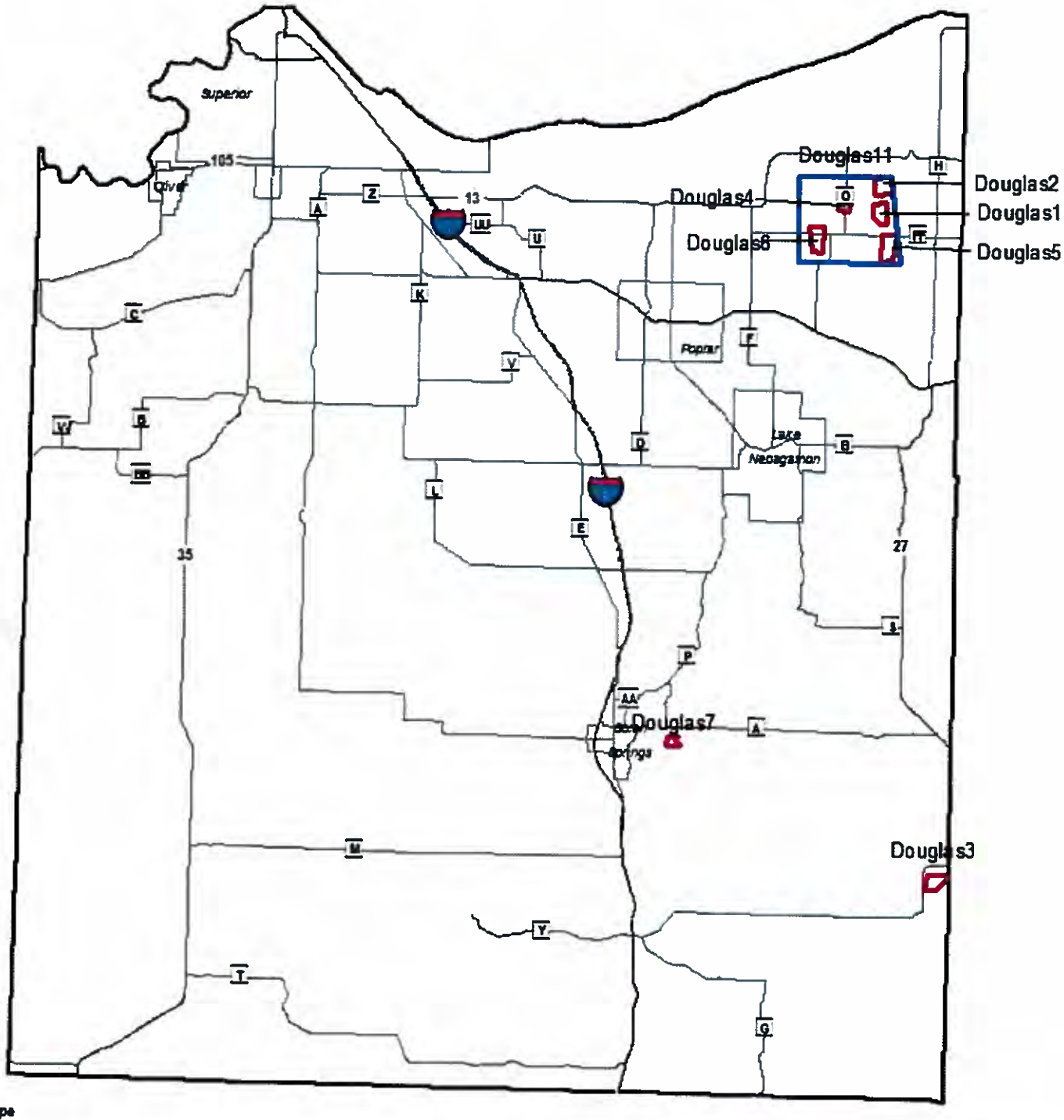
Please feel free to share this information with other officials and the public.

If you have questions, you can call Nolan Stracke at (608)-224-4591 or e-mail nolan.stracke@wisconsin.gov. You also can visit the website http://gypsymoth.wi.gov for more information.

Thank you,

Nolan Stracke

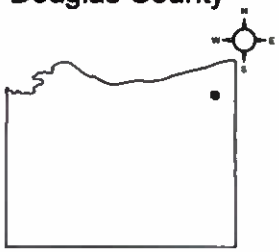
Proposed Gypsy Moth Treatment Sites Douglas County 2016



Treatment Type

- Btk
- Mating Disruption
- NPV
- *DNR Suppression BTK*

Douglas County

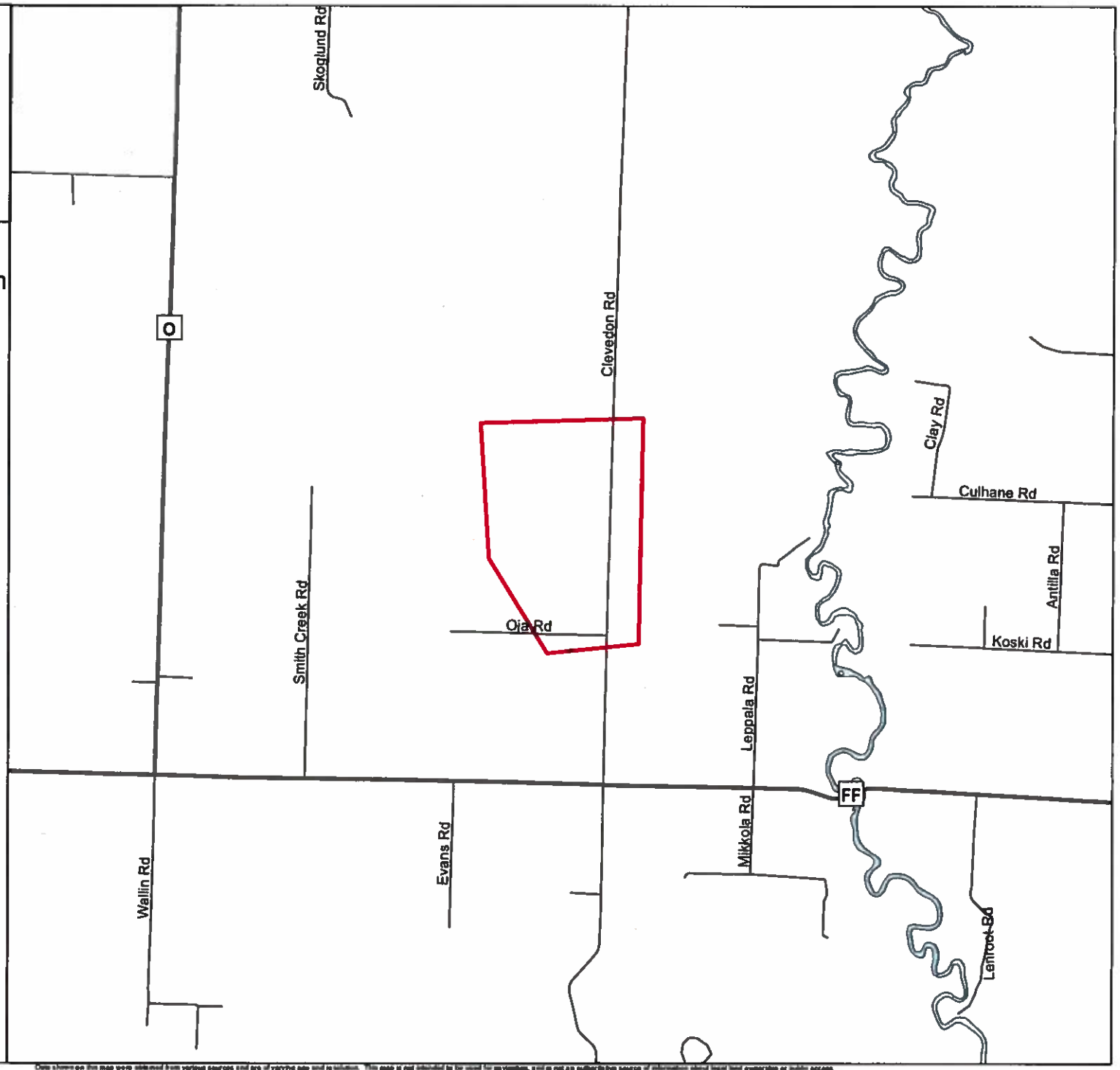


Proposed Gypsy Moth Treatment Site 2016

Douglas1

Treatment Method:
Bacillus thuringensis, kurstaki 24BIUx2

Total Acres: 234



Douglas1
County Line

0 0.325 0.65 Miles

Data shown on this map were obtained from various sources and are of varying age and resolution. This map is not intended to be used for navigation, and is not an authoritative source of information about legal land ownership or public access.
The Department of Agriculture, Trade and Consumer Protection does not guarantee the accuracy, applicability for a particular use, completeness, or legality of data provided by other sources. No warranty, expressed or implied, is made regarding the accuracy or utility of information depicted on this map.
Prepared by john.demaine@wisconsin.gov 3/04/16

Douglas County

Proposed Gypsy Moth Treatment Site 2016

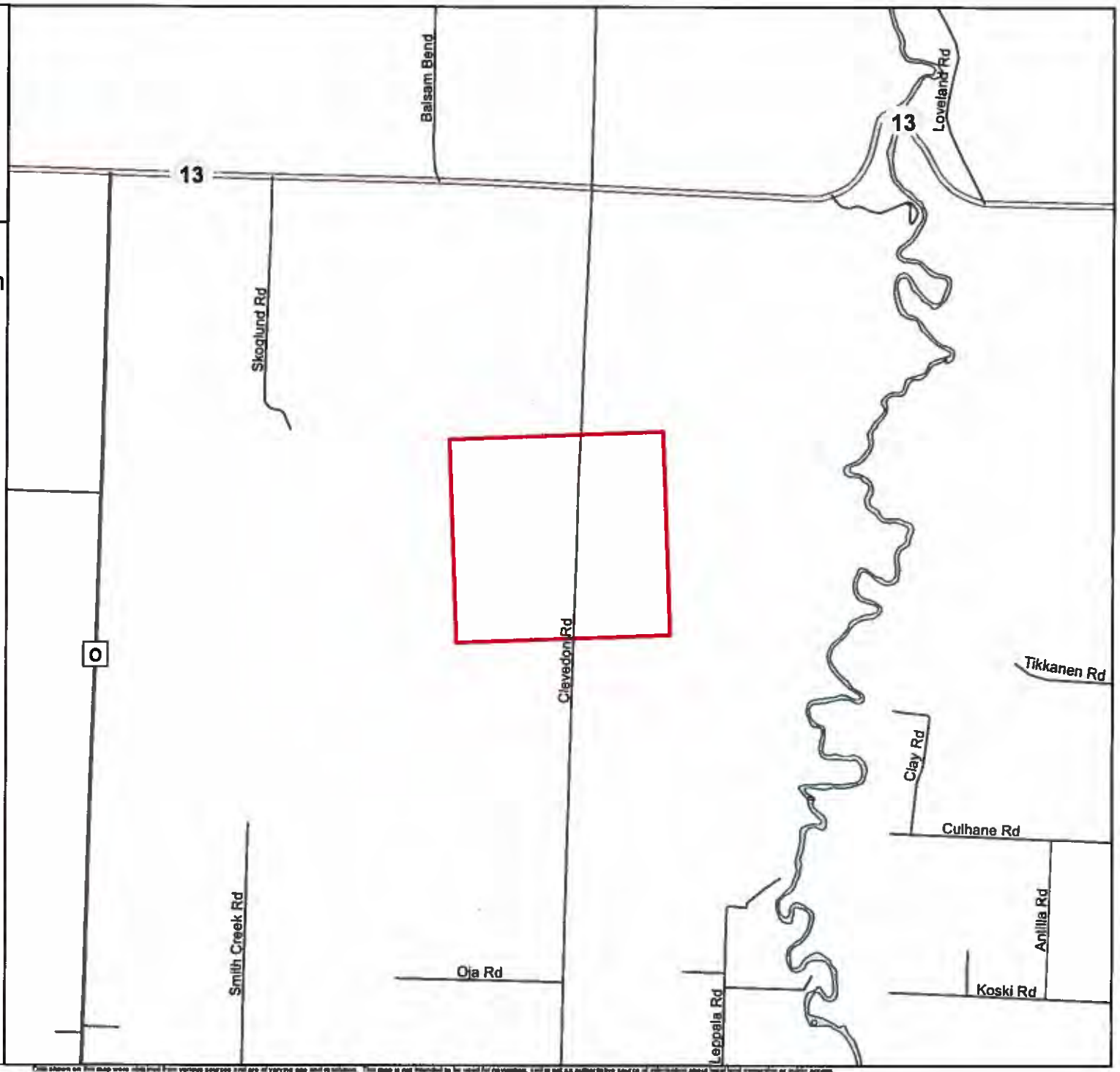
Douglas2

Treatment Method:
Bacillus thuringensis, kurstaki 24BIUx2

Total Acres: 273

Douglas2
County Line

0 0.3 0.6 Miles



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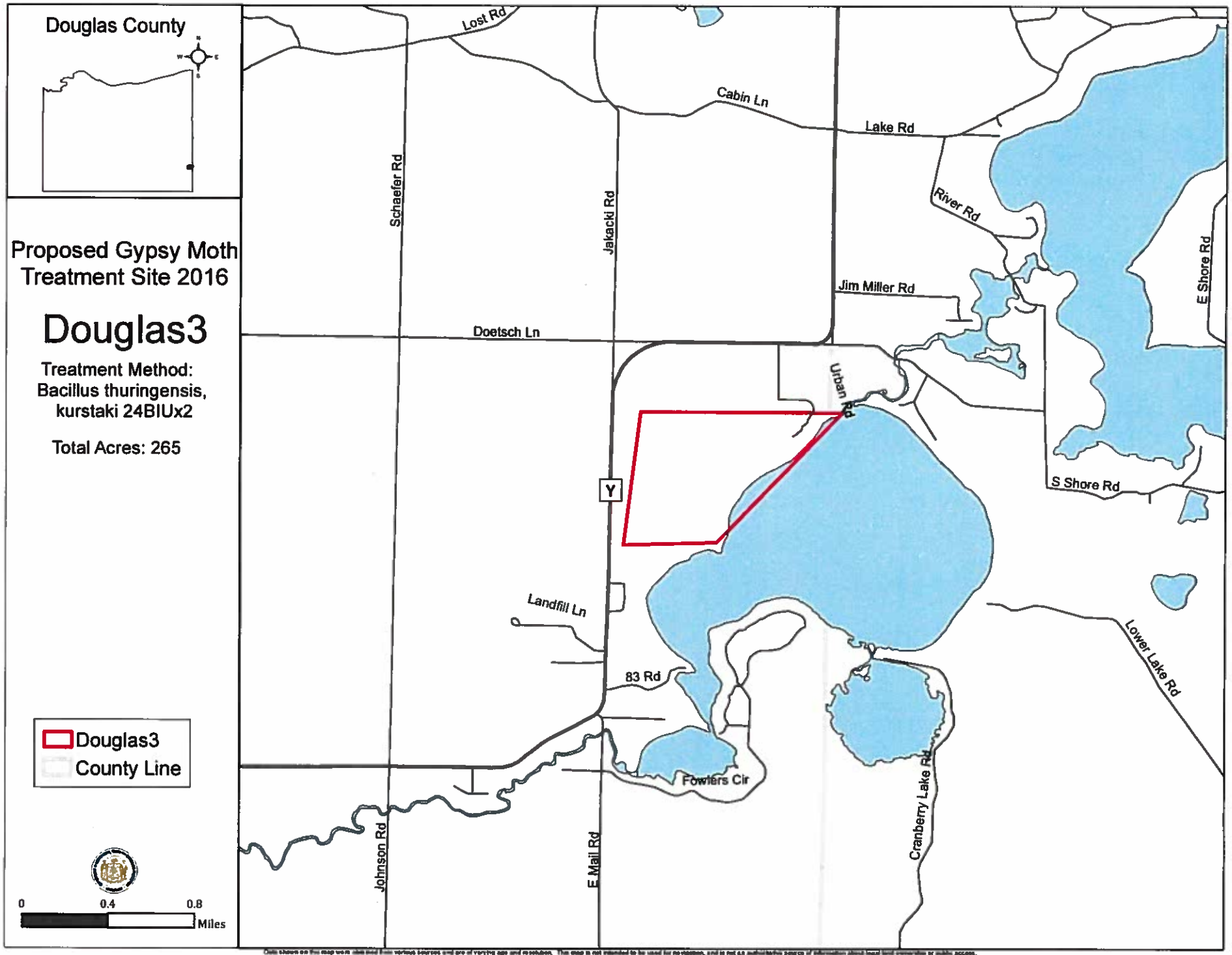
Prepared by John.domino@wisconsin.gov 3/24/16



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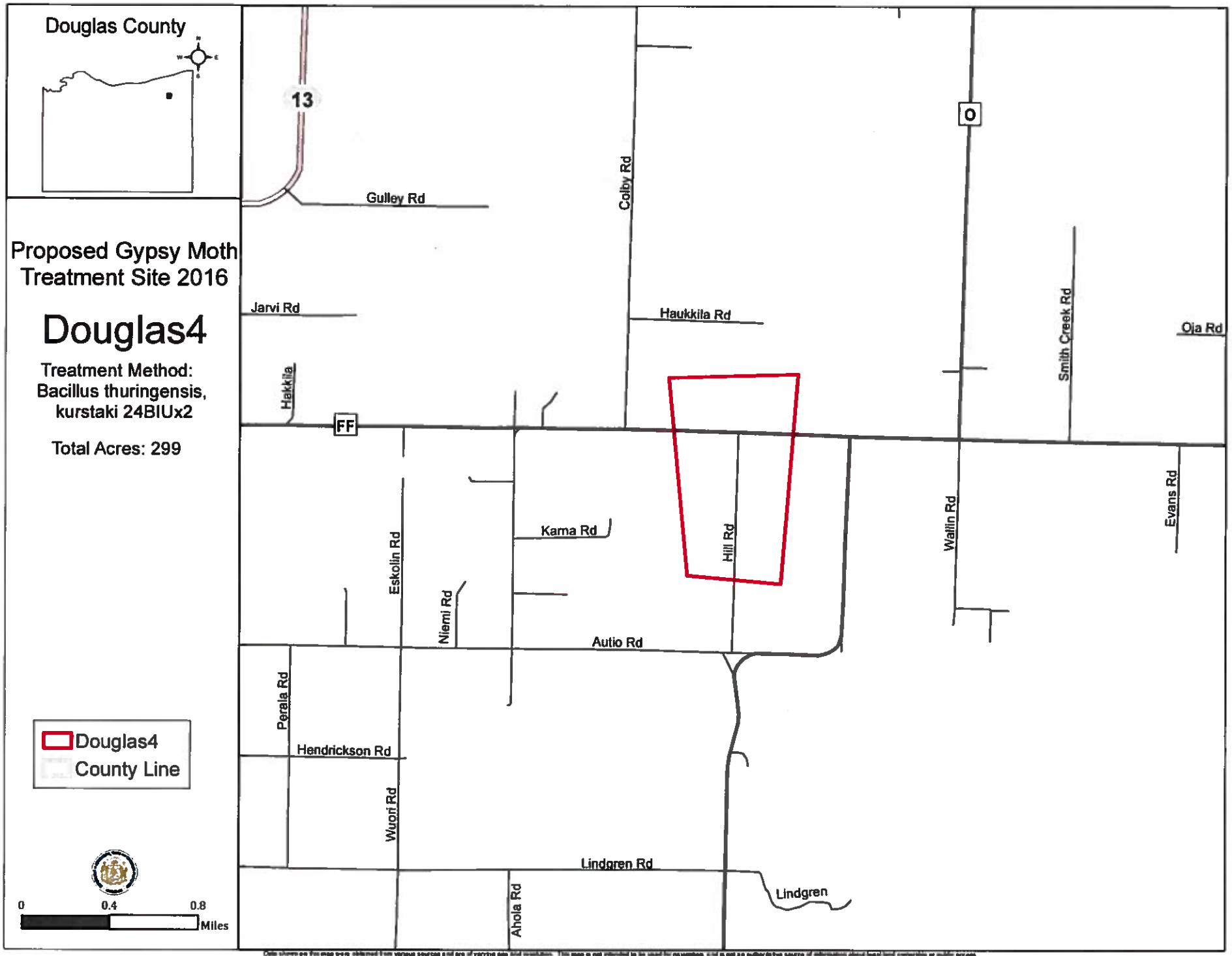
Prepared by John.damino@wisconsin.gov 3/04/16



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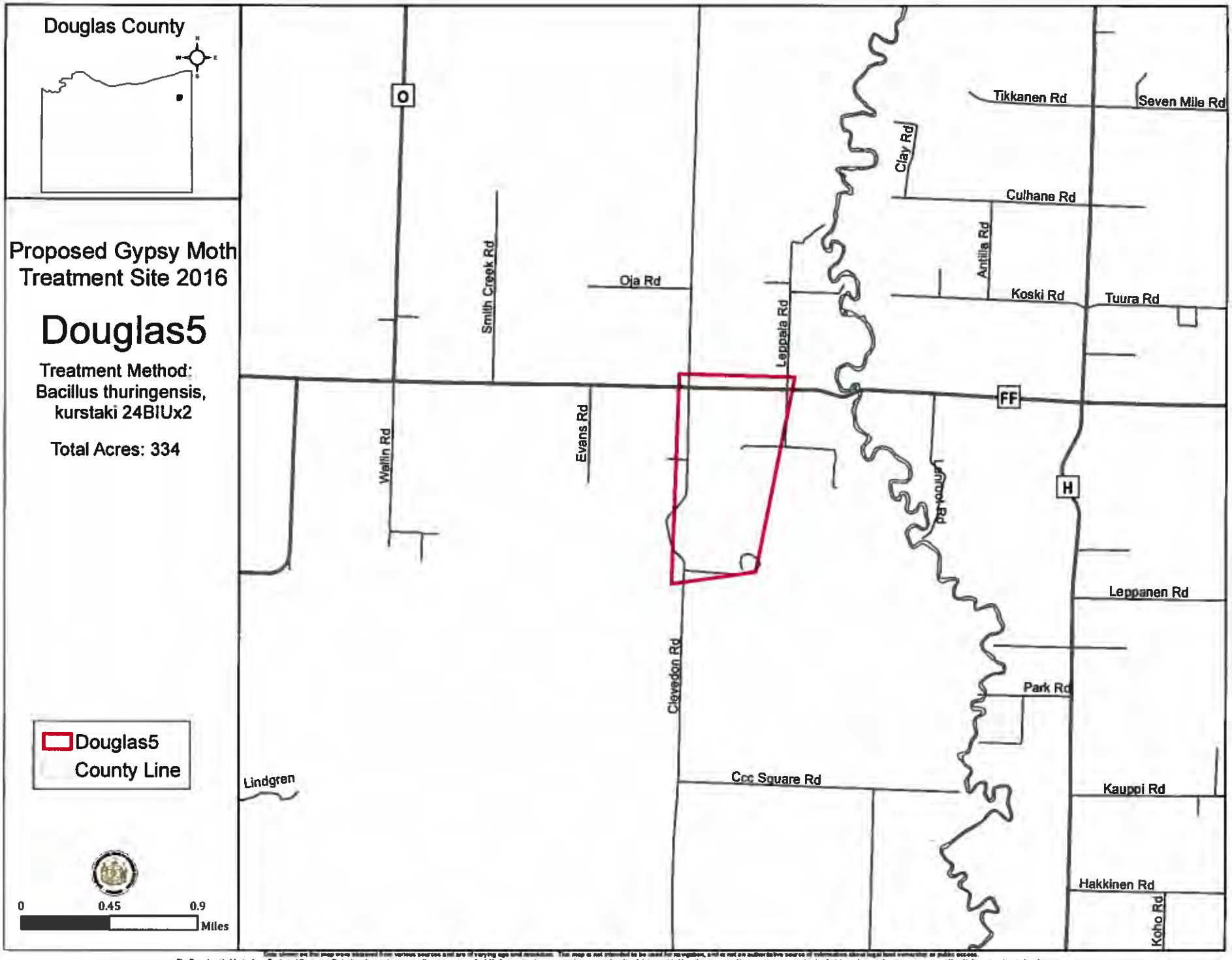

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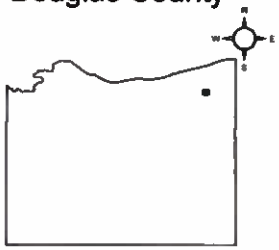
Prepared by john.demro@wisconsin.gov 3/24/16

Douglas County

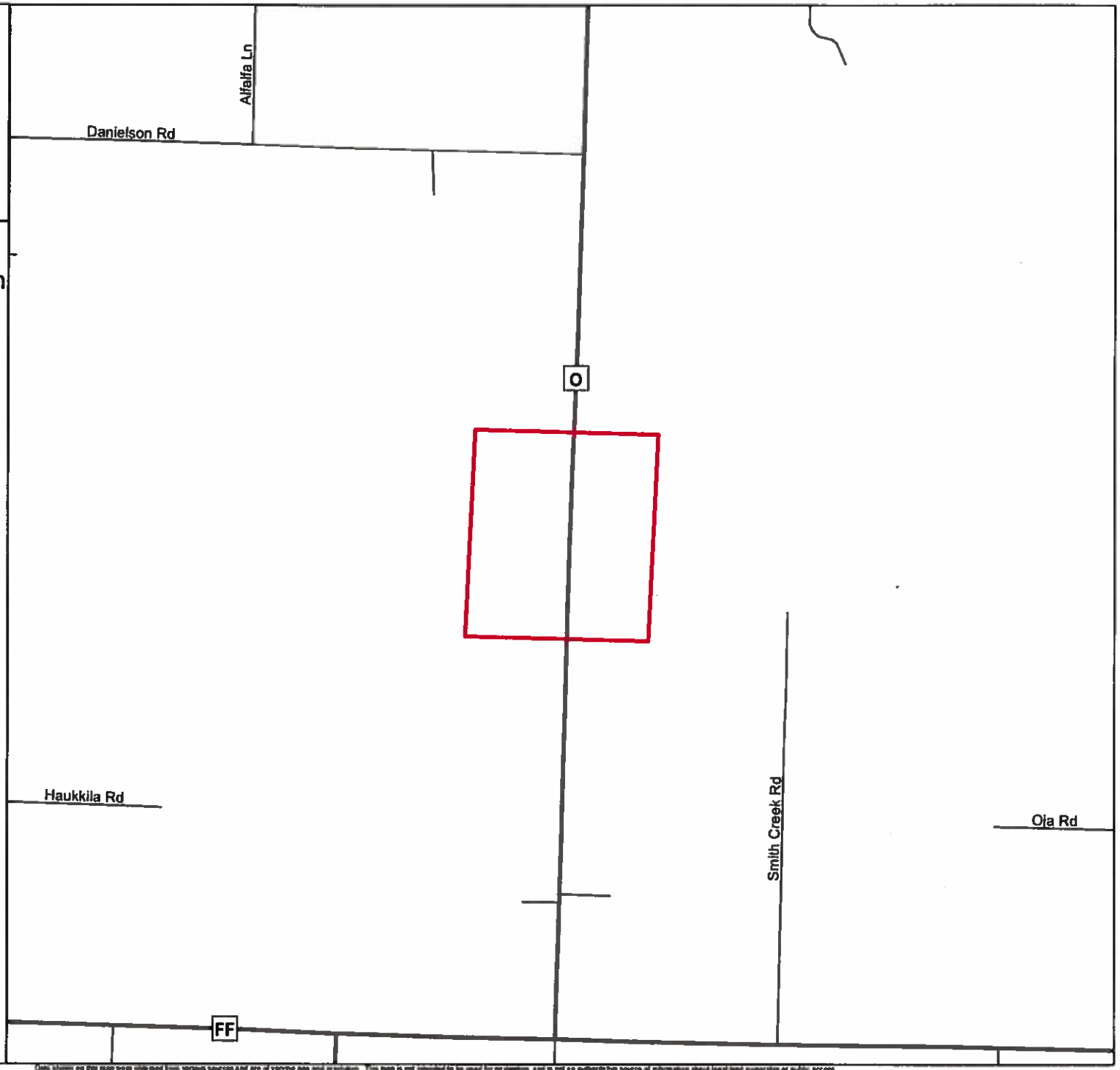


Proposed Gypsy Moth Treatment Site 2016

Douglas6

Treatment Method:
Bacillus thuringensis, kurstaki 24BIUx2

Total Acres: 124



Douglas6
County Line

0 0.225 0.45 Miles

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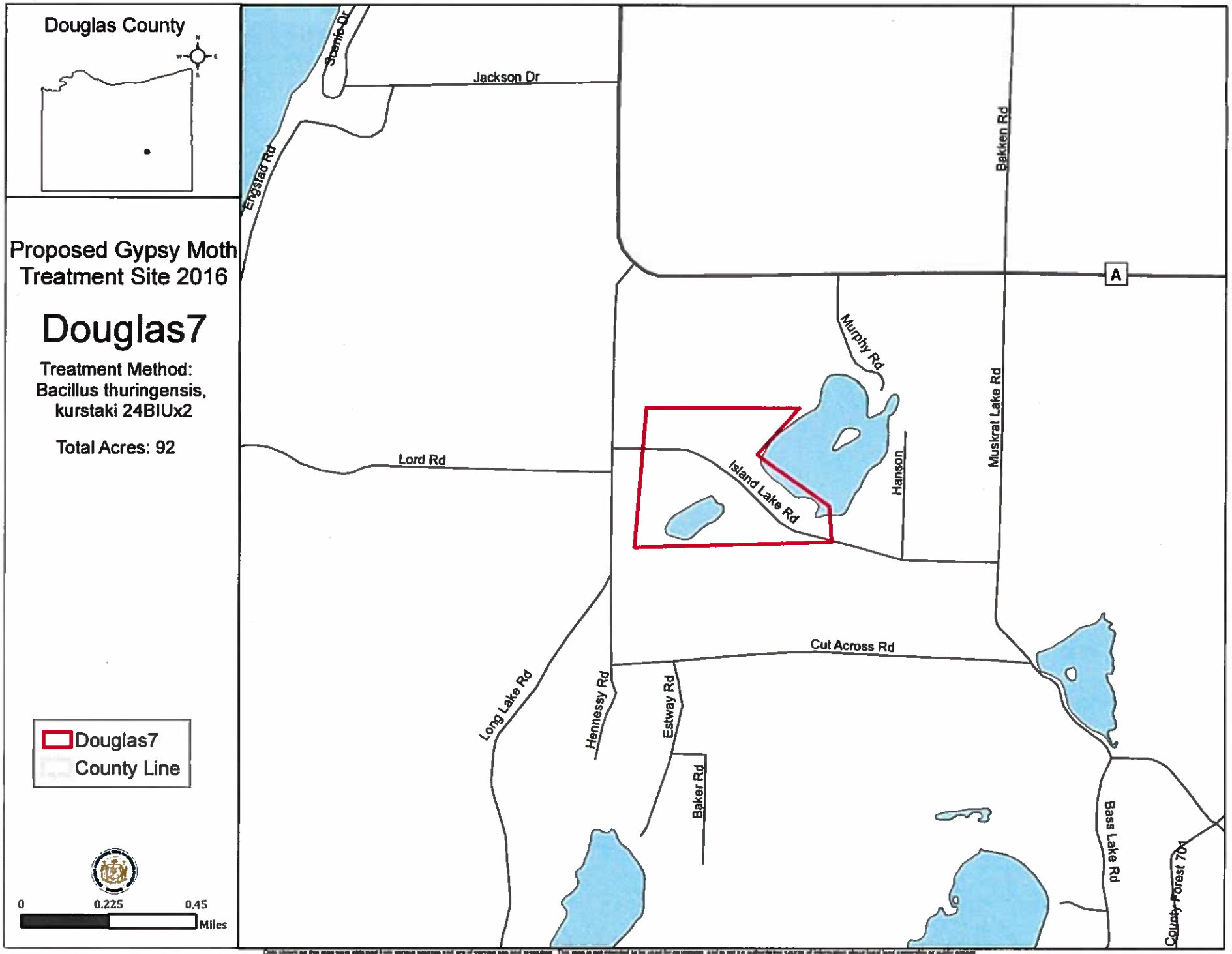
Prepared by john.demino@wisconsin.gov 3/04/16



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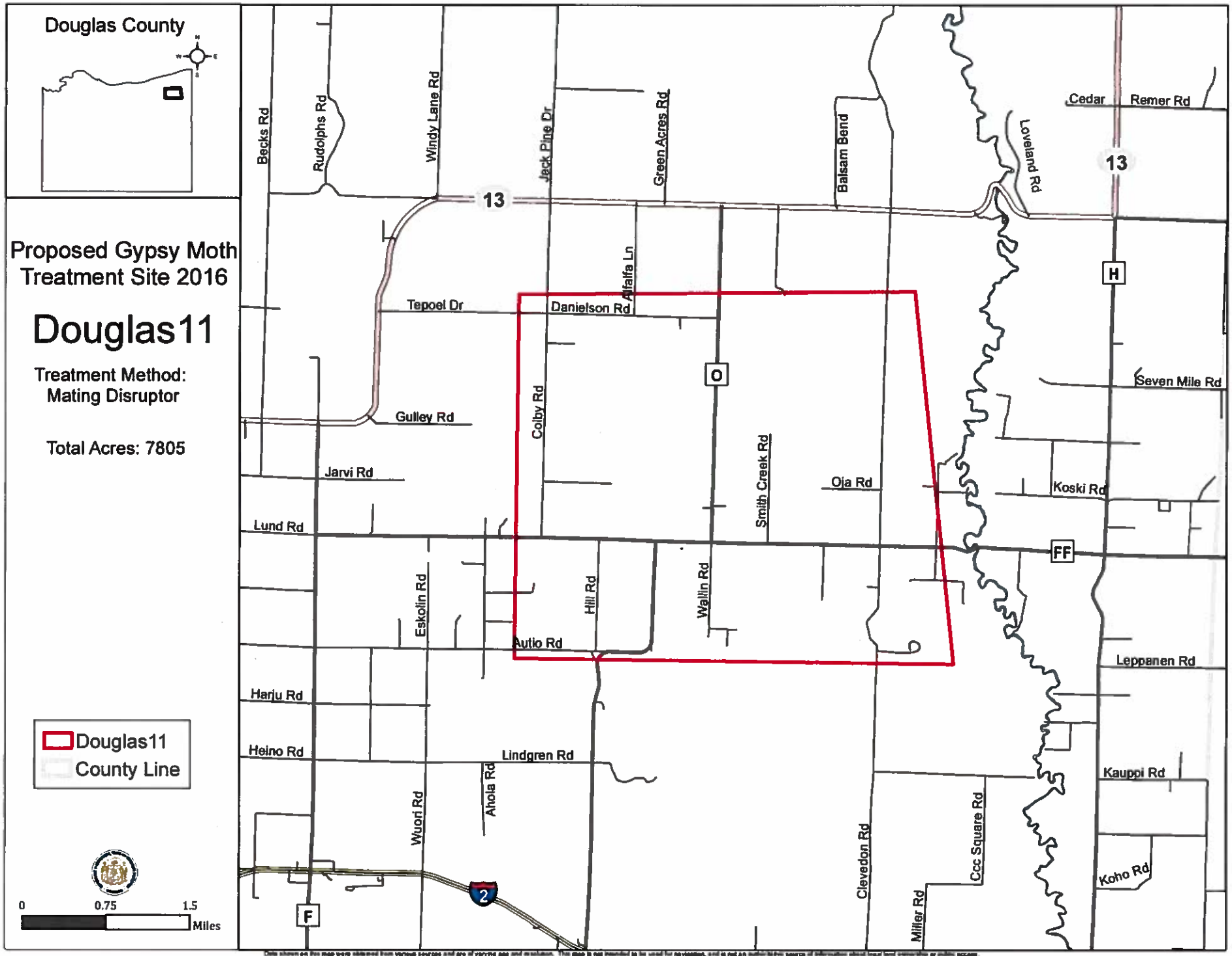

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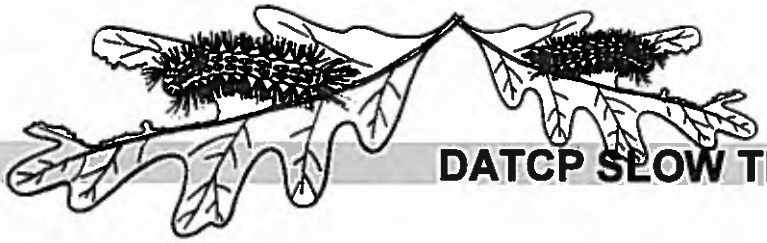
Prepared by John Jeanne@wisconsin.gov 3/04/16

Wisconsin Cooperative Gypsy Moth Program **fast facts**



DATCP SLOW THE SPREAD PROGRAM

The Wisconsin Department of Agriculture, Trade and Consumer Protection Gypsy Moth Slow the Spread Program

- Wisconsin is one of several states participating in the U.S.D.A. National Slow the Spread of the Gypsy Moth Project.
- The program concentrates at the front of the gypsy moth spread zone, which are areas where the pest has not yet been established. In Wisconsin, this is mostly the western half of the state.
- As part of the STS program, DATCP detects spread of gypsy moth by conducting aerial spraying, trapping and egg mass surveys. Trapping and egg mass survey information is used to determine spraying areas.
- DATCP also deals with quarantine issues and regulations for nurseries, paper and lumber mills, and movers to help prevent accidental spread of gypsy moth.

Wisconsin started a state survey program for gypsy moth in the 1970s after the pest was first known in the state. In 1999, Wisconsin became part of the STS Program. Spray program information for the current year, including maps of the proposed spray sites, are available online at www.gypsymoth.wi.gov. Information is also available by calling 1-800-642-MOTH or by e-mailing gypsymoth@wisconsin.gov.

Benefits

- Reduces the spread of gypsy moth to 3 miles per year.
- Protects the extensive urban and wild land hardwood forests in the south and upper Midwest.
- Protects the environment through the use of gypsy moth specific treatment tactics.
- Unifies and promotes a well coordinated, region-wide action based on biological need.
- Yields a benefit to cost ratio of more than 4 to 1 by delaying the onset of impacts that occur as gypsy moth invades new areas.

Treatment methods

A single or double aerial application of the microbial insecticide Foray, containing the bacterium, *Bacillus thuringiensis kurstaki*, (Btk). Gypchek, a viral insecticide specific to gypsy moth caterpillars, will be applied where endangered or threatened moths or butterflies are present or are likely present. Mating disruptor works to confuse male moths when searching for a female in the summer and prevents reproduction.

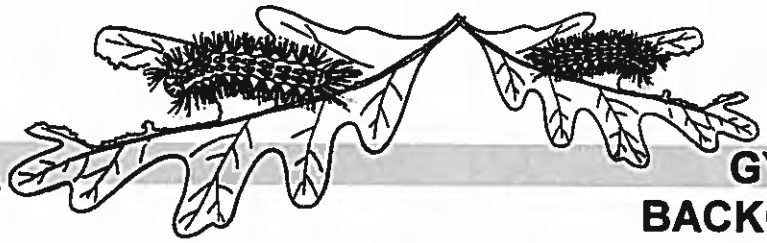
Timing of treatment

It is weather dependent, but generally starts by middle to late May in southern Wisconsin; later further north. Caterpillars are targeted when they are less than half-inch long and when leaves on host trees are less than half size. Mating disruptor treatments start right before moths emerge from their cocoons in the summer.

For additional help, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Wisconsin Cooperative Gypsy Moth Program

fast facts



GYPSY MOTH BACKGROUNDER

Exotic pest

- Native to Europe and Asia
- Introduced to North America in 1869 near Boston
- Distribution ranges from Maine south to Virginia and northwest through Wisconsin
- Well established in eastern and central Wisconsin and is spreading westward

Damage

- Caterpillars feed on the leaves of up to 500 species of trees and shrubs, favoring oak
- May defoliate several million acres in the United States during the summer months
- Defoliated trees grow a new set of leaves, but are weakened and may be killed by other pests
- The first defoliation occurred in Wisconsin in 1999

Impact on people

- Expense to homeowners and communities of removing and replacing dead trees
- Potential decline in property values from tree loss
- Allergic reactions to caterpillar hair
- Nuisance

Costs to businesses

- Inspections and treatments for nursery and Christmas tree growers, timber interests, and paper companies shipping materials to non-infested areas
- Lost recreation dollars
- Environmental damage

Life cycle

- Caterpillars emerge from late April to late May and begin feeding
- Stop feeding and pupate, forming a cocoon-like shell in late June to mid-July
- Adult moths emerge from pupae, mate and die in mid-July to early August
- Eggs over-winter in an egg mass, protected in a blanket of the female moth's hair

Rapid spread

- Each female lays an average of 600 eggs in an egg mass
- Gypsy moths thrive in many habitats because they are not picky eaters
- Because they're not native to North America, they have few natural enemies
- Egg masses are often moved long distances and into new areas on firewood, vehicles, tree trimmings, and other outdoor items

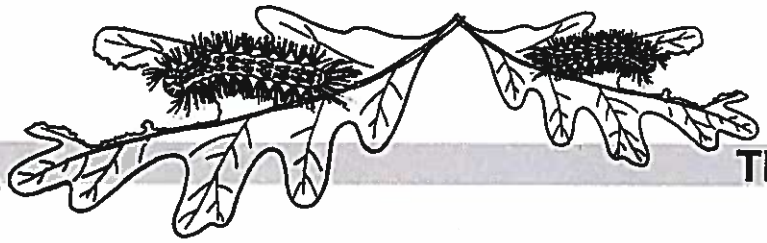
Goals of Wisconsin Cooperative Gypsy Moth Program

- The DNR "Suppression" Program aims to reduce high gypsy moth populations to prevent defoliation in established areas and facilitate federal cost sharing for the suppression treatments
- The Dept. of Agriculture "Slow the Spread" Program aims to delay the establishment of gypsy moth in the western part of the state and to eradicate isolated populations there

For more information, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Wisconsin Cooperative Gypsy Moth Program

fast facts



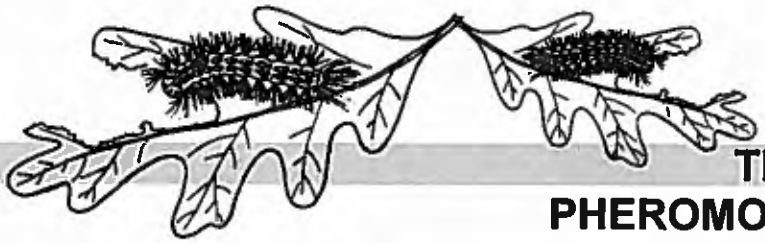
TREATMENT: BTK

Actual name	Foray, containing *Bacillus thuringiensis var. kurstaki (Btk)*
Type of product	Bacterial insecticide
How Btk is made	Btk is a strain of a common soil bacteria that occurs naturally. It is cultured by fermenting grains and potatoes with fish or corn meal, similar to brewing beer. The final product contains 90% water, the leftover growth medium, carbohydrates, inert ingredients approved as food additives, and the active ingredient.
How Btk works	The active ingredient is a toxic protein produced by bacteria when the product is fermented. The protein interacts with bacteria in the caterpillar's digestive tract to kill the caterpillar within a few days.
What Btk affects	Different strains of *Bacillus thuringiensis* affect different species of insects. The kurstaki strain affects the caterpillars of moths and butterflies that ingest it. Not all species of caterpillar are affected by Btk but gypsy moth, tent caterpillars, and Karner blue butterflies are all susceptible. We do not use Btk where we know there are Karner blue butterflies or other threatened or endangered species of moths and butterflies that could be harmed. Numerous studies have documented no apparent toxicity for humans, pets, wild animals, birds, honeybees, or fish. Due to rare cases of mild, short-lasting allergic reactions by humans, you may wish to stay indoors with your windows closed during a spray if you have severe food or chemical sensitivities.
Application rate	Btk is applied at the rate of 3/4 gallon per acre.
Application timing	Most effective if applied when gypsy moth caterpillars have hatched and begun feeding, usually mid-May in southern Wisconsin through early June further north.
Spraying Program	The current year's spray program information, including maps of the proposed spray sites, will be available online starting in early February at the website below. Information is also available by phone or by emailing dnrfrgypsymoth@wisconsin.gov.
Why we use Btk	• Breaks down in sunlight within days • Highly effective; around 90-95% mortality of gypsy moth caterpillars normally seen in treated areas • No apparent toxicity to people, animals, and insects other than caterpillars • Readily available

For more information, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Wisconsin Cooperative Gypsy Moth Program

fast facts



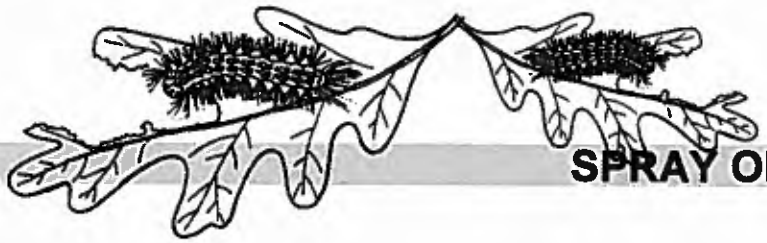
TREATMENT: PHEROMONE FLAKES

Type of product	Mating disruptor.
What pheromone flakes look like	They are flat, green, flake-like pieces baited with synthetic female moth pheromone, the scent that attracts male moths. The flakes are very small—about 1/8 inch by 1/16 inch—about the size of a grain of rice.
How pheromone flakes work	The scent of the female moth floods the area and confuses male gypsy moths so they cannot find females. Because the gypsy moths are at the end of their life cycle, they die without mating. The flakes do not kill the moths; they just carry the scent and prevent reproduction.
What pheromone flakes affect	Because the flakes carry the scent of the female gypsy moth, only male gypsy moths are affected by pheromone flakes.
Application rate	A 1/4 to a 1/2 cup of flakes per acre is applied, which is equivalent to one to two flakes per square foot of leaf canopy. The flakes are so small and applied at an extremely low rate that they are not very noticeable.
Application timing	One application from late June to the end of July, just before the moths emerge from their cocoons. Applications start in southern Wisconsin.
Application method	It is applied by airplane. The flakes are mixed with an adhesive material, similar to white school glue, so flakes stick to tree leaves.
Spraying program	Spray program information, including maps of the proposed spray sites, is available online at www.gypsymoth.wi.gov. Information is also available by calling 1-800-642-MOTH or by emailing gypsymoth@wisconsin.gov.
Why we use pheromone flakes	• The pheromone is detectable only to gypsy moths; no other species are impacted. • Used where endangered or threatened species of butterflies and moths are feeding during spray season. • Flakes are only effective in areas with low gypsy moth populations.

For more information, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Wisconsin Cooperative Gypsy Moth Program

fast facts



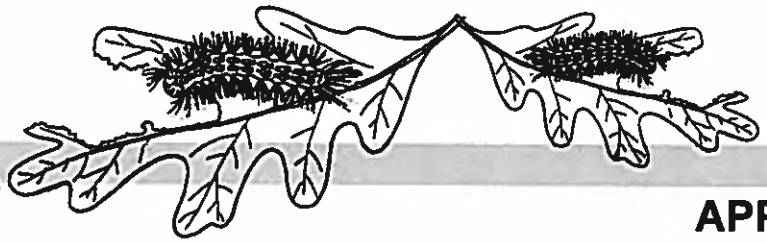
SPRAY OPERATIONS

Targeted pests	Newly hatched gypsy moth caterpillars are targeted in the spring with biological pesticides. Adult male moths are targeted in the summer with mating disruptant, such as pheromone flakes.
Goals	To protect and preserve Wisconsin's trees by slowing the spread of gypsy moth establishment in western Wisconsin and suppressing established gypsy moth populations in eastern and central Wisconsin.
Expected start dates	• May to June: applications of Btk and Gypchek. • Late June to July: applications of mating disruptant.
Number of treatments	• One or two applications of Btk, five to 10 days apart. • One application of Gypchek. • One application of mating disruptant.
Daily start time	• Btk and Gypchek: at around sunrise as weather conditions permit. • Mating disruptant: at around 7 a.m. as weather conditions permit.
Daily finish time	As late as weather conditions remain acceptable: normally noon or early afternoon for Btk and Gypchek; late afternoon for mating disruptant.
Application rates	• Btk and Gypchek: 2 quarts per acre. • Pheromone flakes: one to two flakes per square foot of tree canopy or 1/4 to 1/2 cup per acre.
Necessary weather conditions	Low winds to reduce drift; high humidity levels to reduce evaporation; no precipitation.
Planes used	Aerial application planes are fitted with global positioning systems (GPS) and a computer/satellite system for application precision.

For more information, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Wisconsin Cooperative Gypsy Moth Program

fast facts



AERIAL PESTICIDE APPLICATIONS

Why planes are used

Gypsy moth caterpillars feed on tree leaves. Airplanes are the most efficient and cost-effective way to apply products to the tree canopy over a large area. Aerial application uses less than a gallon of pesticide per acre and is far less expensive per acre than ground-based pesticide applications.

The pilots

Professional pilots who fly the pesticide spray planes are licensed and certified by the Federal Aviation Administration. They are also licensed and certified by the State of Wisconsin as commercial pesticide applicators. Wisconsin also accepts applicator licensing and certification from qualified states.

The companies

Businesses that provide aerial application of pesticides are licensed by the State of Wisconsin. The companies that were awarded the spray contracts for the Wisconsin Gypsy Moth Program meet all of Wisconsin's strict requirements as pesticide application businesses.

The planes

- Spray planes require special flight training.
- The planes carry global positioning systems (GPS) for computer-controlled spraying precision.
- While the spray planes are flying, they are monitored by observers in planes flown by Wisconsin DNR pilots.

Security measures

In recent years, public concern has increased about the possible use of spray planes as instruments of terrorism. The pilots and the Wisconsin Cooperative Gypsy Moth Program are aware of this concern and take extra precautions during gypsy moth treatments including:

- An established chain of custody from the product manufacturers to Wisconsin for all of the biological pesticides.
- Securing pesticides according to the current pesticide law.
- Identification requirements and restricted access to planes.
- On-site security.
- Notification of local law enforcement, local officials and local media.
- Planes are secured or disabled when not in use.

For more information, call 1-800-642-MOTH
or visit Wisconsin Gypsy Moth on the Web at http://gypsymoth.wi.gov

Department of Transportation
Office of the Secretary
4802 Sheboygan Ave, Room 120B
PO Box 7910
Madison, WI 53707-7910

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
wisconsindot.gov

Telephone: (608) 266-1113
FAX: (608) 266-9912

SUSAN T. SANDVICK, CLERK
COUNTY OF DOUGLAS
1313 BELKNAP ST RM 101
SUPERIOR, WI 54880-2779

MAY
6

April 12, 2016

Re: Great Lakes Basin Transportation, Inc. - Railroad Proposal in Wisconsin

Dear Stakeholder:

The Wisconsin Department of Transportation (WisDOT) is monitoring the above listed proceeding with interest. Great Lakes Basin Transportation, Inc. (GLBT) proposes to construct and operate a new railroad on a 278-mile long, 200-feet wide railroad corridor, from Indiana, around Chicago, and into southern Wisconsin. This is an extensive and complex construction project, which may affect your municipality, organization or group.

The federal Surface Transportation Board (STB) Office of Environmental Analysis (OEA) is coordinating the initial "scoping" phase of the environmental process, which will identify potential alternative routes. OEA will then analyze potential impacts of the proposed railroad and alternative corridors, up to 30 miles of each side of the corridors.

This is a significant proposal which may have short- and long-term impacts upon Wisconsin transportation systems and the environment, as well as local, state and regional economies. WisDOT strongly encourages you to review the enclosed material, as well as the information available at the STB website, listed below. We also encourage you to consider participating in the upcoming meeting, as well as future meetings, if you believe it may affect your municipality, organization or group.

In addition, your municipality, organization or group should consider whether to submit a comment on the Environmental Scoping phase. Comments are due June 15, 2016 (extended from May 15, 2016).

- GLBT plans to seek authority from the STB to construct and operate an approximately 278-mile rail line, which would extend generally from La Porte, Indiana through Illinois to Milton, Wisconsin and would connect with existing Class I railroads.

- STB OEA is preparing an Environmental Impact Statement to analyze the potential environmental impacts of the proposed rail line.

- See more at: http://greatlakesbasinraileis.com/index.html

- STB CONTACT:

  Dave Navecky
  Surface Transportation Board
  Docket No. FD35952
  395 E Street SW
  Washington, D.C. 20423-0001
  202-245-0294
  david.navecky@stb.dot.gov

Comments may also be submitted electronically by accessing the following website:

http://www.stb.dot.gov/Ect1/ecorrespondence.nsf/incoming?OpenForm

The only STB public information meeting currently scheduled in Wisconsin will be held at 5:30 p.m. – 8:00 p.m., April 18, 2016, at:

Janesville Craig High School Cafeteria
401 S Randall Ave
Janesville, WI 53545

WisDOT will continue to monitor this proceeding closely and work with our partners during the entire process. Please find enclosed a copy of a March 18, 2016 informational letter to WisDOT from the STB OEA. It describes the intent of GLBT's proposal, the role of the STB, and opportunities for public comment. For information about WisDOT's participation, please contact John Alley, Director of WisDOT Bureau of Transit, Local Roads, Railroads and Harbors at 608-266-2963 or john.alley@dot.wi.gov.

Sincerely,

Mark Gottlieb

Mark Gottlieb, P.E.
Secretary

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

March 18, 2016

Michael Hoelker
Wisconsin Department of Transportation
4802 Sheboygan Avenue
Madison, WI 53705

RE: Docket No. FD 35952, Great Lakes Basin Transportation, Inc (GLBT)—Authority to Construct and Operate a Rail Line in Indiana, Illinois, and Wisconsin: Notice of Intent to Prepare an Environmental Impact Statement, Draft Scope of Study, Notice of Scoping Meetings, and Request for Comments on Draft Scope

Dear Michael Hoelker:

Great Lakes Basin Transportation, Inc (GLBT) plans to file either a petition for exemption pursuant to 49 U.S.C. § 10502, or an application pursuant to 49 U.S. C. § 10901, seeking authority from the Surface Transportation Board (Board) to construct and operate an approximately 278-mile rail line. According to GLBT, the proposed rail line would extend generally from La Porte, Indiana through Illinois to Milton, Wisconsin and would connect with existing Class I railroads.

The construction and operation of the proposed GLBT rail line has the potential to result in significant environmental impacts; therefore, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. § 4321 et seq.).

Today, OEA issued a Notice of Intent (NOI) to prepare an EIS for the project, Draft Scope of Study, Notice of Scoping Meetings, and Request for Comments on the Draft Scope, which can be viewed on a Board-sponsored project website at www.GreatLakesBasinRailEIS.com by clicking on "Notice of Intent" under "Related Links and Documents." This project website includes a map of the project area including GLBT's proposed alignment.

Following the scoping period, OEA will review the scoping comments and then finalize the Scope of Study including the list of alternatives for the proposed rail line to be carried forward for detailed study in the EIS. ICF International, OEA's third-party contractor, will be assisting OEA throughout its EIS process and may contact you directly regarding scoping, data required for the EIS, etc.

We invite you to participate in this EIS scoping process and would appreciate your written comments on the Draft Scope of Study and potential alternatives to GLBT's proposed alignment by the close of the scoping comment period on **May 16, 2016.**

We encourage you to submit scoping comments electronically on the Board's website, www.stb.dot.gov, by clicking on the "E–FILING" link on the home page and then selecting "Environmental Comments." Log-in accounts are not needed to file environmental comments electronically, and comments may be typed into the text box provided or attached as a file. If you have difficulties with the e-filing process, please call 202-245-0350.

You may also send your written comments to Dave Navecky, OEA's Project Manager for the EIS, at:

Dave Navecky
Surface Transportation Board
Docket No. FD 35952
395 E Street SW
Washington, DC 20423-0001

OEA will be hosting a webinar to discuss the project on Wednesday, April 6, 2016 at 9:00 AM Central Time for Indiana, Illinois, and Wisconsin Federal Highway Administration state divisions, state Departments of Transportation, Indiana Toll Road, and Illinois Tollway Authority. If you are interested in participating in the webinar please contact Dave Navecky by phone at 202-245-0294 or by email at David.Navecky@stb.dot.gov.

If you have any questions, please feel free to contact Dave Navecky by phone at 202-245-0294 or by email at David.Navecky@stb.dot.gov. We look forward to your participation in the Board's environmental review process.

Sincerely,

Victoria Rutson
Director
Office of Environmental Analysis

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

April 25, 2016

NF 30143

Sender's Direct Line: 608-266-2136

DOUGLAS FINN
County Chairman
1313 BELKNAP ST
SUPERIOR, WI 54880-2779

7

MAY

Dear Chairperson:

The Department would like to inform you of the proposed state purchase of an easement over 7007 acres of land for the FOREST LEGACY PROGRAM in the Town of SOLON SPRINGS. The site is shown on the attached maps. The land will be managed for conservation and public recreational use. This property is being acquired from a willing seller at appraised value.

We are notifying you of this easement purchase so that you know of Department activities in the project. For all transactions we notify the Town Chairman, the County Chairman, the State Representative, and the State Senator for the area.

The state biennial budget bill includes a provision requiring a Department notice to your Board and alerting you that your Board may adopt a resolution. While the board is not obligated to hold a meeting or adopt a resolution, if you decide to do so, the Department contact is:

Douglas Haag, 608-266-2136
Box 7921
Madison, WI 53707
DouglasJ.Haag@wisconsin.gov

If you decide to adopt a resolution for or against this easement purchase of land for conservation purposes, it must be adopted within 30 days of receipt of this letter. While nonbinding, the Department will consider the resolution. The deadline for sending a resolution to me is May 27, 2016.

If you would like more information, or have questions or concerns about the purchase, please contact me at the above address or at 608-266-2136 by May 27, 2016.

Thank you for this consideration.

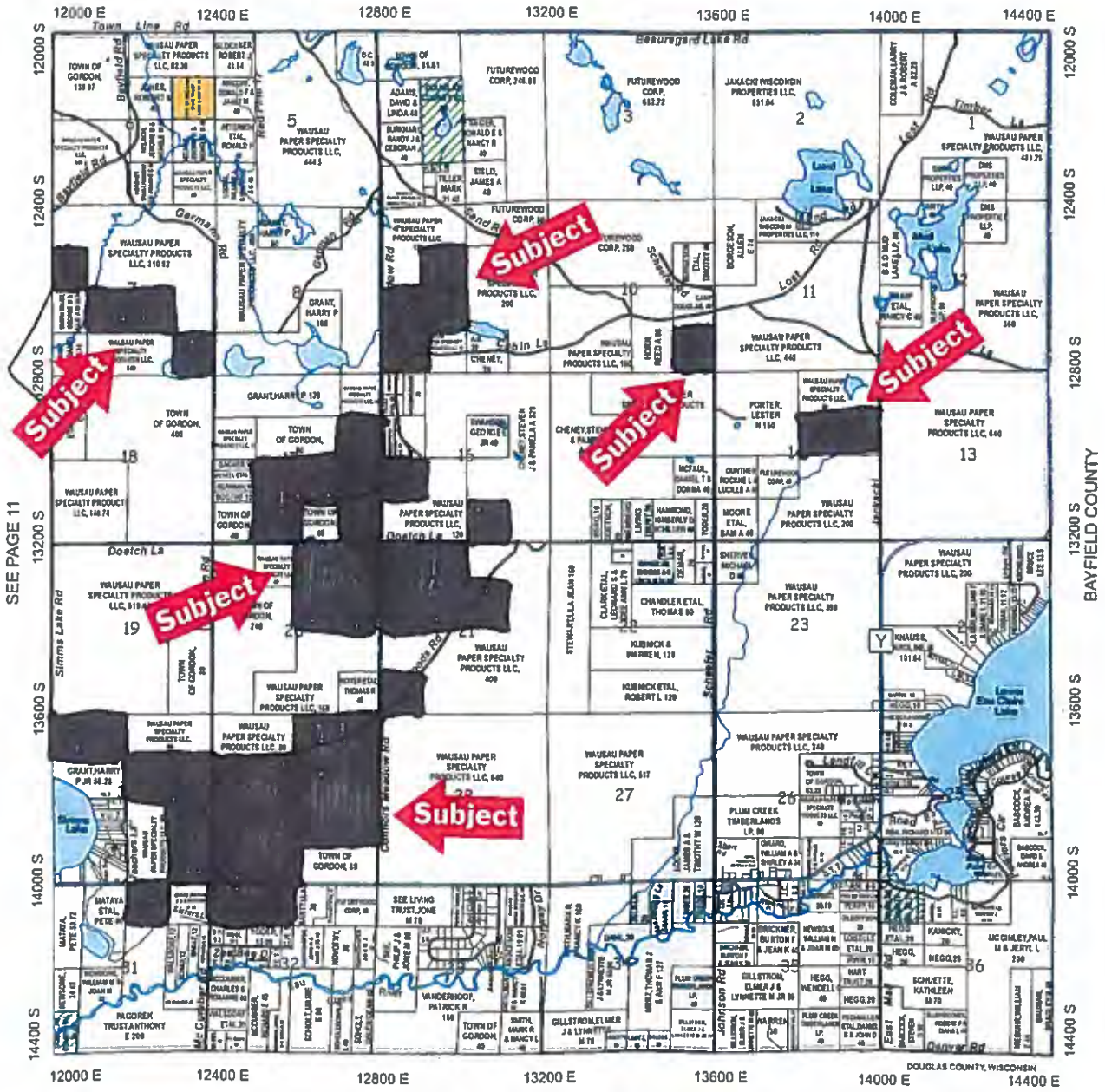
Sincerely,

Douglas J. Haag /KH

Douglas J Haag
Natural Resources Deputy Director, Bureau of Facilities and Lands

Attach.

SEE PAGE 18



SEE PAGE 6

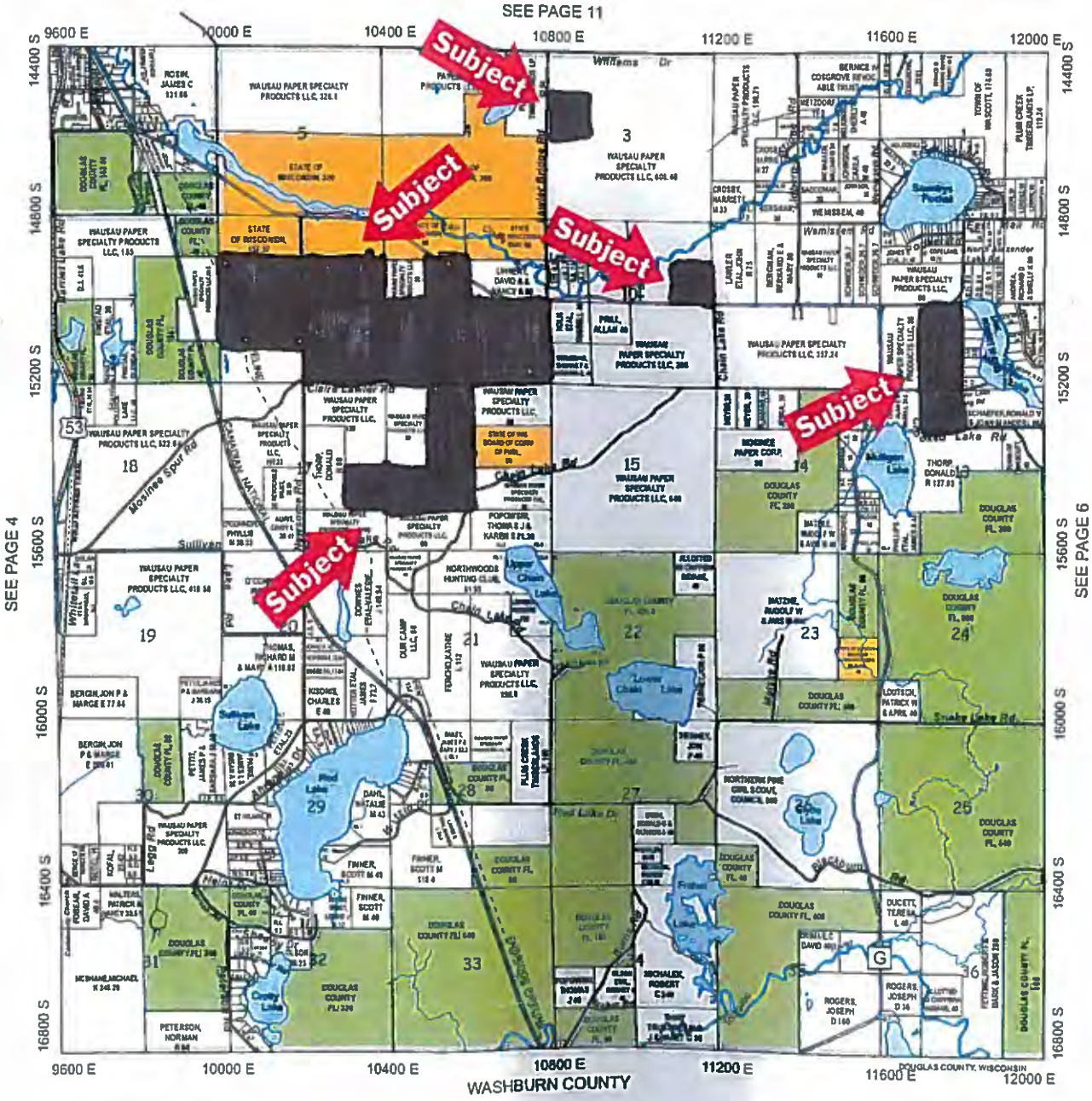
Legend

US Highway
State Highway
County Road
Town Roads
Unpaved Roads
Village Roads
Pipelines
Railroads
Major Trails
State Land
Douglas County FL
Douglas County SU

N

5 SOUTHEAST PART GORDON EASTCENTRAL PART WASCOTT T.43N.-R.11W. 5

SEE PAGE 11



Legend

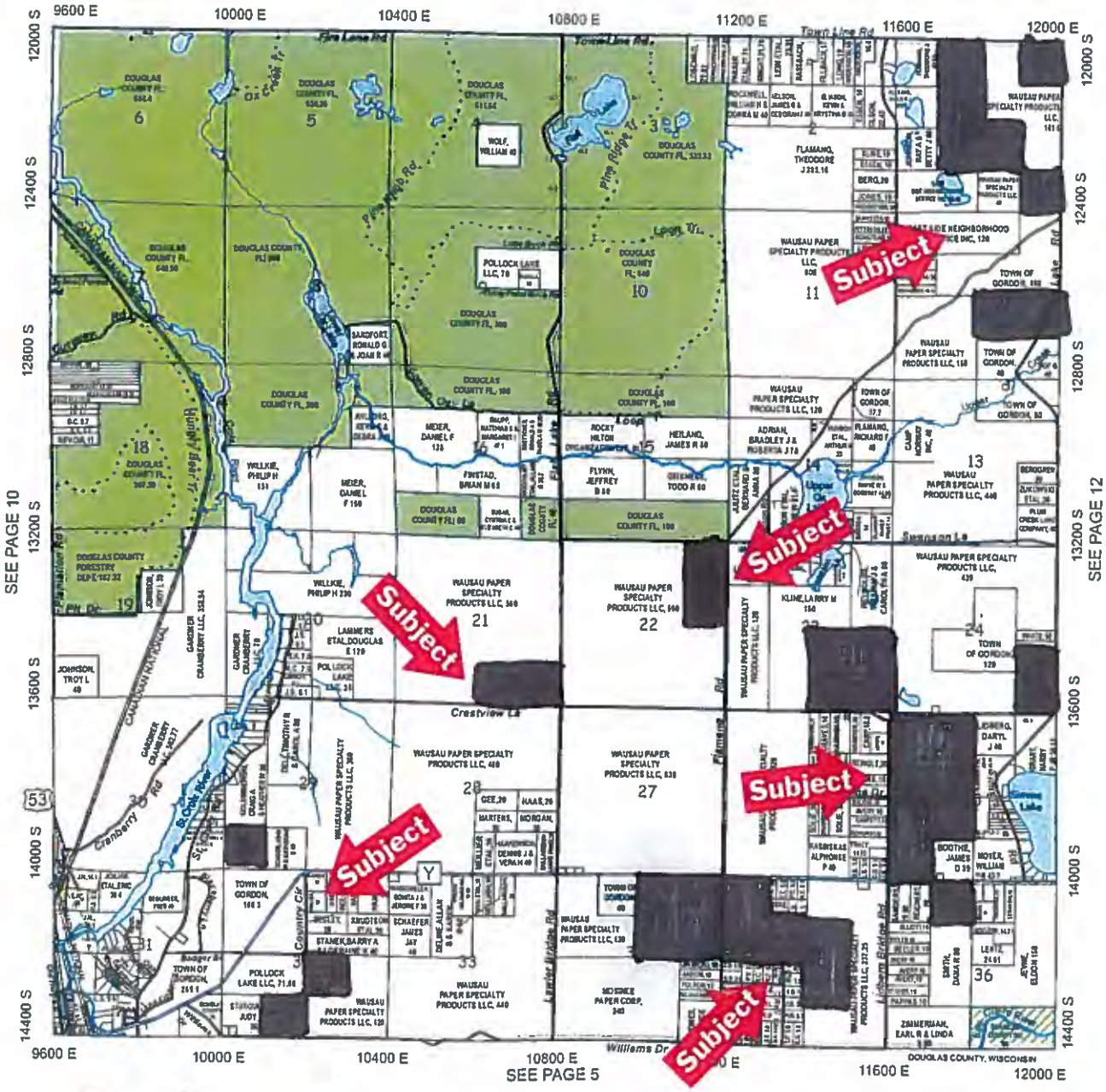
US Highway
State Highway
County Road
Town Roads
Unpaved Roads
Village Roads
Pipelines
Railroads
Major Trails
State Land
Douglas County FL
Douglas County SU

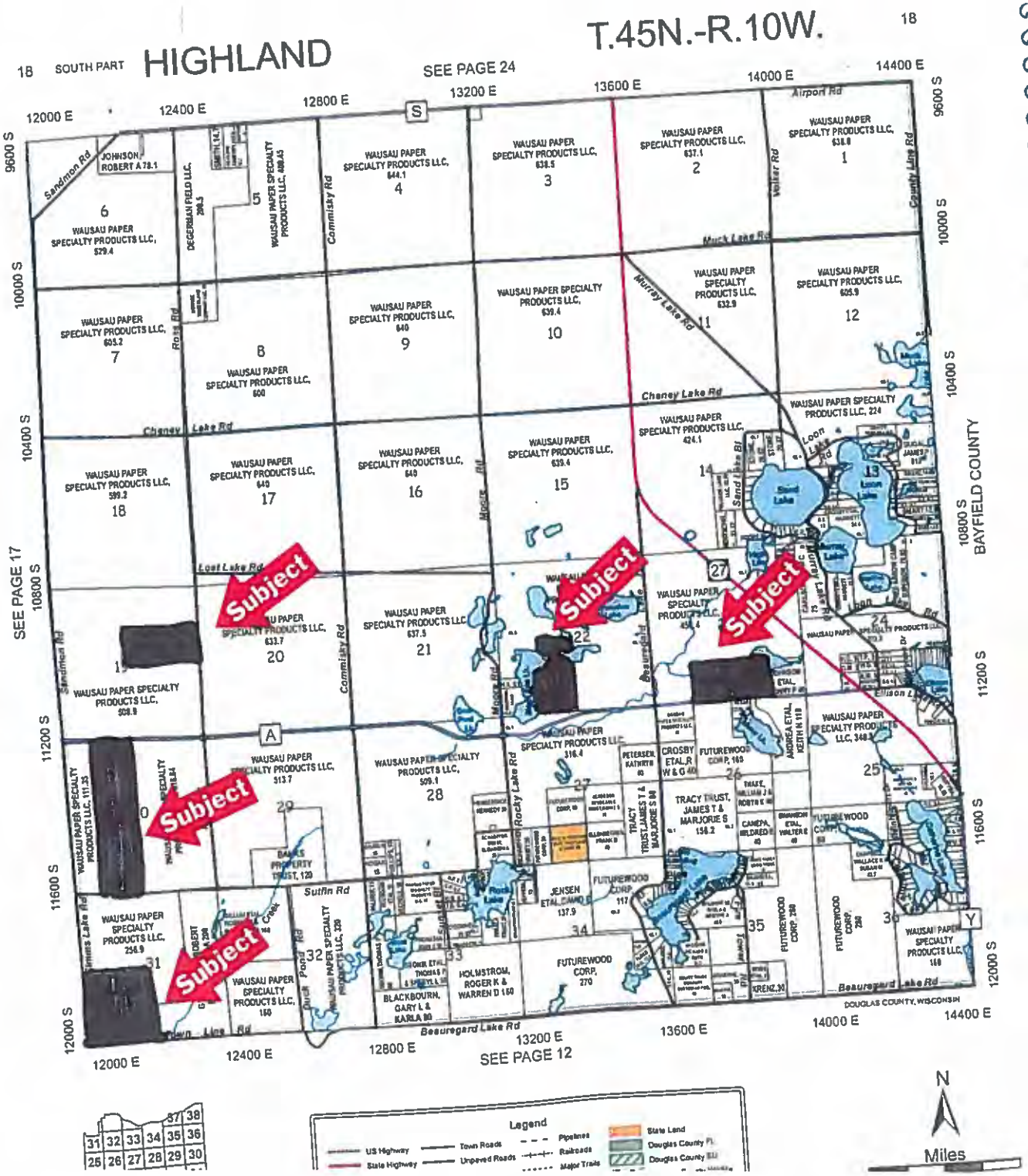
N

GORDON

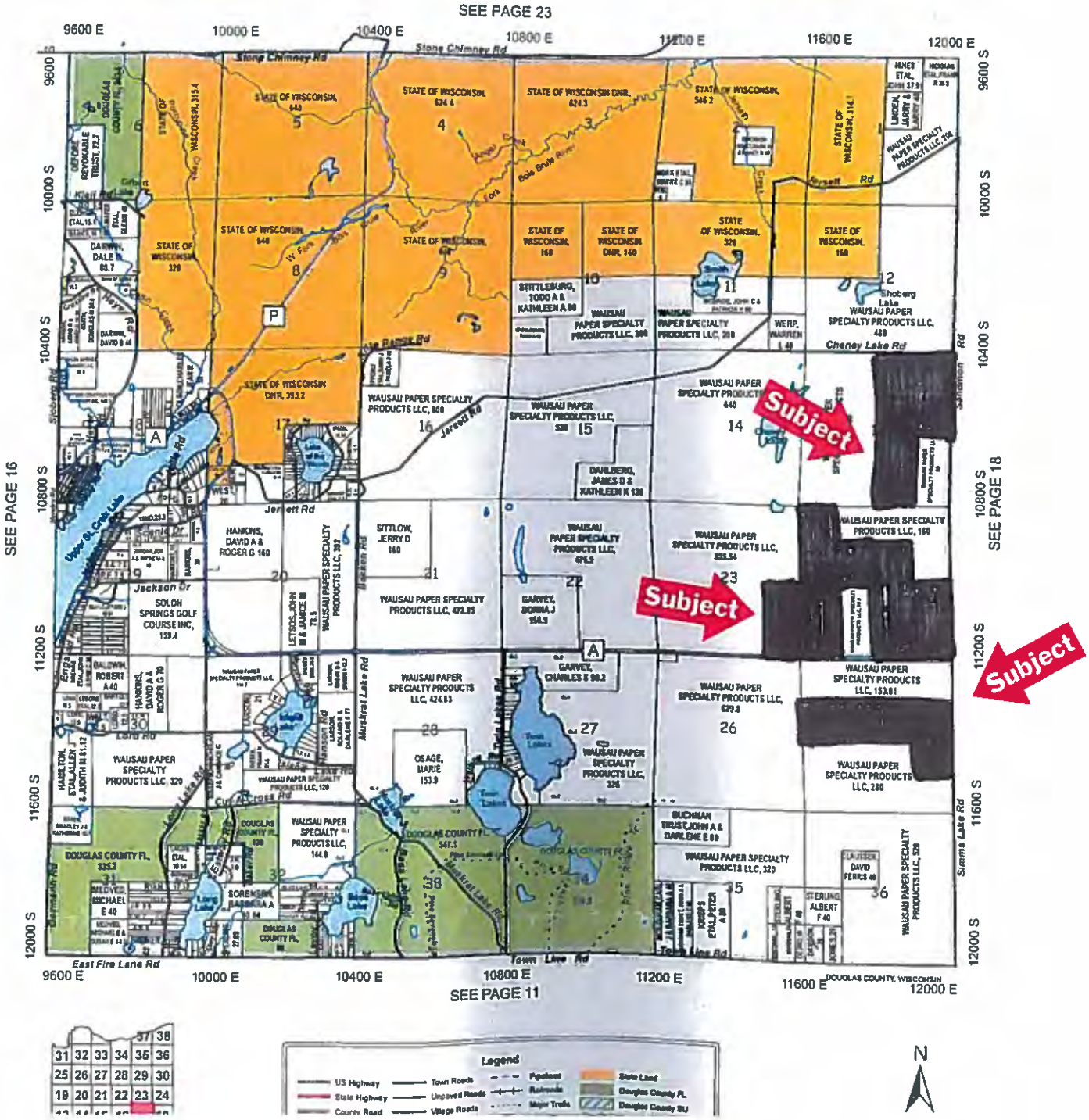
T.44N.-R.11W.

SEE PAGE 17




T.45N.-R.10W.
18 SOUTH PART HIGHLAND
SEE PAGE 24
SEE PAGE 17
SEE PAGE 12
BAYFIELD COUNTY
DOUGLAS COUNTY, WISCONSIN
Subject
Subject
Subject
Subject
Sand Lake
Loon Lake
Rocky Lake
Beauregard Lake Rd
Cheney Lake Rd
Lost Lake Rd
Muck Lake Rd
Airport Rd
Sutfin Rd
Commisky Rd
Rocky Lake Rd
Sandmon Rd
Walker Rd
County Line Rd
Murray Lake Rd
Sand Lake Rd
Loon Lake Rd
Ellison Lake Rd
Simms Lake Rd
Duck Pond Rd
Moore Rd
Ross Rd
Beauregard
N
Miles
Legend
US Highway
State Highway
Town Roads
Unpaved Roads
Pipelines
Railroads
Major Trails
State Land
Douglas County Fl.
Douglas County SU

17 EAST PART SOLON SPRINGS T.45N.-R.11W. 17

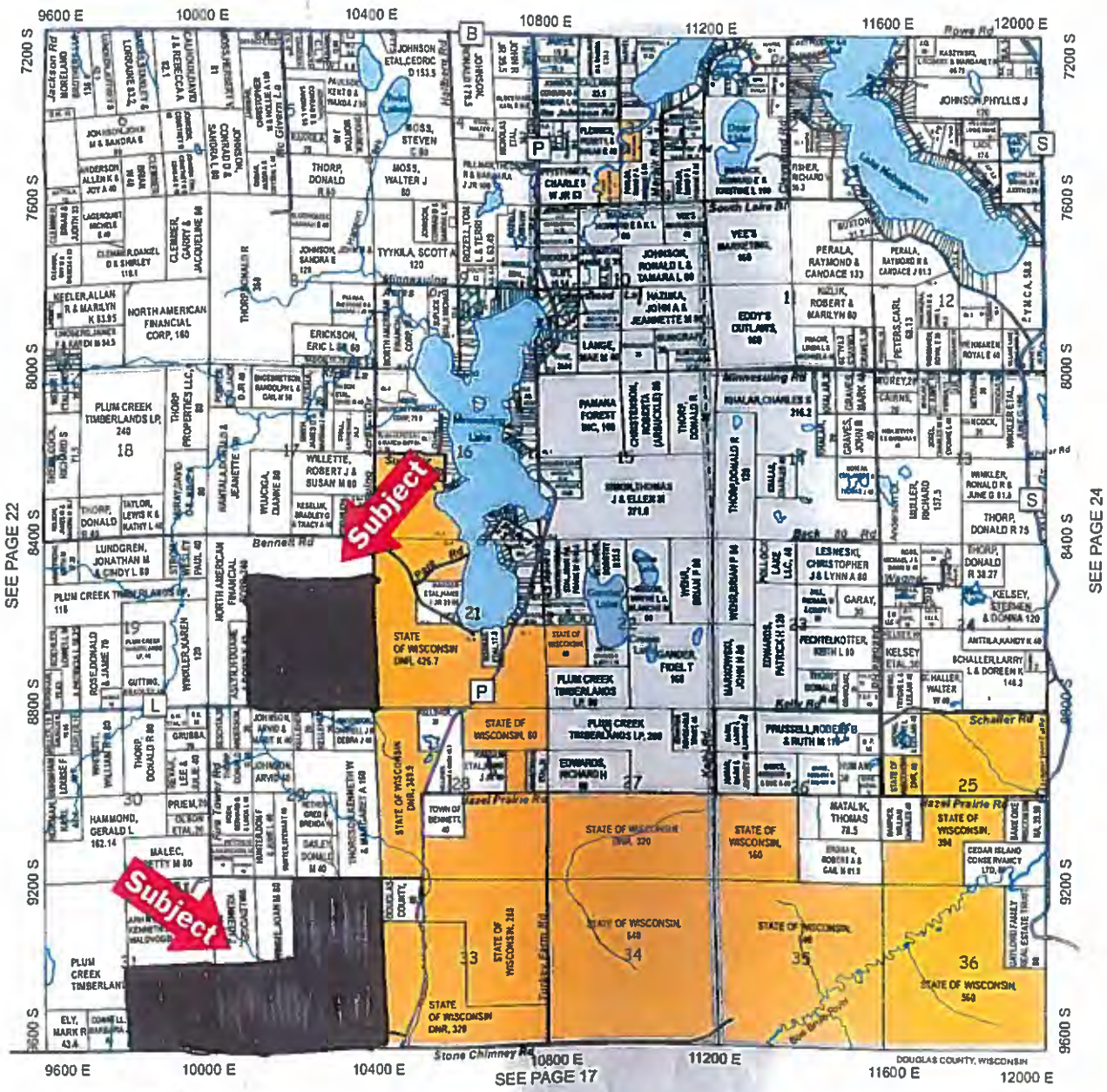


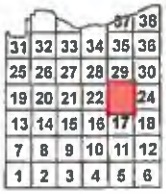
23 SOUTHEAST PART HAWTHORNE NORTHEAST PART BENNETT SOUTH PART LAKE NEBAGAMON VILLAGE WEST PART HIGHLAND

T.46N.-R.11W.

23

SEE PAGE 29





Legend

US Highway
State Highway
County Road
City Streets
Town Roads
Unpaved Roads
Village Roads
Private Roads
Forest Roads
Pipelines
Railroads
Major Trails
Lakes/Rivers
Municipalities
State Land
Douglas County FL
Douglas County SLI
Douglas County Wildlife

N

Miles

0 0.5 1

(8) MAY

DOUGLAS COUNTY BOARD OF SUPERVISORS 5-5-16
Government Center
1316 North 14th ST
SUPERIOR, WI. 54880

*
1313 BELKNAP ST
SUPERIOR, WI. 54880

To THE DOUGLAS COUNTY BOARD + Andy Lisak:

This letter is in regard to the condition of County "C" from State 35 west to "W". THE ROAD is in terrible condition in that it has many growing potholes and is very Rough. Please take some time and drive it so that you may know the terrible condition of this road. I know I speak for all the residents along the road and for all the drivers using County C in pleading for the county to commit to doing your much needed maintenance. THE condition of the road will not improve on its own and it is a safety concern and also very hard on vehicles.

5414 S. Miller Rd
SUPERIOR, WI. 54880

Thank You
Dennis W. Lecher

Engage your community - connect to news, events and information you care about. View more information...

County Board

County Board of Supervisors

The County legislative body is the County Board of Supervisors. Members are elected to two-year terms at the April election held in even-numbered years. There are 21 supervisory districts, with one supervisor representing each district.

The County Board holds regular meetings on the third Thursday of each month, except during the month of February when there is no meeting scheduled. The County Board holds an annual meeting on the last Thursday in October in which it reviews and approves the budget for the following year. In even-numbered years, the County Board holds a meeting on the third Tuesday in April for organization. The Board elects a Chair and First, Second, and Third Vice Chairs.

General Powers

In summary, the general powers of the Board are to:

- Manage, operate, sell, buy, and maintain all County-owned property
- Enact ordinances authorized by statute
- Set salaries and fringe benefits for County employees
- Approve a budget and tax levy each year and delegate the use of revenues for County government costs
- Transfer funds during the year and borrow by bond issues or other means for construction of facilities and County needs deemed necessary and not otherwise provided for
- Examine and settle all accounts of the County and all claims, demands, or causes against the County and issue County orders therefore
- Prescribe the form and manner of keeping the records in any County office and the accounts of the County officers and designation of depositories
- Join with the State, other counties, or municipalities in a cooperative arrangement as provided in Section 66.30 of the Wisconsin Statutes

County Board Chair

The Chairperson of the County Board is elected by the Board at the organizational meeting in April of even-numbered years. The Chairperson is responsible for expediting all measures passed by the Board.

Some of the duties of the Chairperson are:

- To preside over all meetings of the County Board and Executive Committee
- To appoint the County Board standing committees, special committees, and representatives to other committees, boards, and commissions
- To represent the County Board and carry out its work
- To sign contracts and legal papers for the County

Administration

Mission Statement

The County Administrator and Human Resources Department work to make Douglas County a leader in the provision of valued, necessary, and cost-effective services to County constituencies.

Goals

Goals for the Department include:

- Professionalizing the workforce
- Strengthening financial planning
- Improving ability to evaluate programs and departments
- Improving performance standards and accountability
- Developing skilled and effective management
- Establishing a climate for innovation and change
- Facilitating the type of organizational development that enhances effectiveness and increases efficiency

Contact
Andrew "Andy" Lisak
County Administrator
Email

Government Center
1316 North 14th Street
Room 301
Superior, WI 54880

Ph: (715) 395-1429
Fx: (715) 395-1312

Hours
Monday - Friday
8:00 am - 4:30 pm

Division of Transportation
System Development
Northwest Region – Spooner Office
W7102 Green Valley Road
Spooner, WI 54801

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: 715-392-7925
Toll Free: 800-590-1868
Facsimile (FAX): 715-635-2309
E-mail: nwr.dtsd@dot.wi.gov

May 9, 2016

DOUGLAS COUNTY
1313 BELKNAP STREET
SUPERIOR, WI 54880

MAY 9

Re: **Notice of Recording of Designated Freeway Map**
USH 2/USH 53 and County E/Moccasin Mike Road

Dear Douglas County:

US Highway (USH) 53 was designated a Freeway under State Statute 84.295 by the Wisconsin Department of Transportation on December 21, 1967. The Finding, Determination and Order designating this segment of the highway as a Freeway was recorded in the Register of Deeds office in Douglas County on February 19, 2010.

A Designated Freeway Map was recorded March 4, 2016 in the Douglas County register of deeds office showing the future right-of-way needed for future improvements to the Freeway at the CTH E/Moccasin Mike Road intersection. Following the recording of the Designated Freeway Map, a document titled "Notice and Order Establishing Locations and Right-Of-Way Widths" was recorded on April 20, 2016 against those specific properties that are directly affected by the mapping of the future right-of-way needs. Your property or properties are of those that are directly affected by the Map.

Enclosed for your records, is a copy of the "Order Establishing Locations and Right-Of-Way Widths" document that was recorded against your property. Also enclosed is the recorded Designated Freeway Map showing the future right-of-way needed (highlighted in yellow) from your property or properties for the actual physical improvements to the intersection at USH 2/53.

Please note the fourth paragraph of the enclosed Notice which states that "No one shall erect, move in, rebuild, alter or add to, any structure within the area of the right-of-way as shown on the Map without first notifying the Wisconsin Department of Transportation by registered mail at least 60 days prior to the contemplated construction, as required by Wisconsin State Statute s. 84.295(10)(b). Such notice shall be made to the Department of Transportation regional Office in Superior, Wisconsin. Should you have any questions about notifying the Department or general questions concerning future right-of-way purchases for the Freeway improvements, please contact the **Superior Office Real Estate Section at 715-392-7925**.

The Department does not have the proposed improvements scheduled for construction in the six year program and do not anticipate the need to physically construct the proposed improvements for a number of years beyond that. However, due to safety or operational issues that may occur, it may be necessary to acquire the right-of-way earlier than anticipated and construct the needed improvement. Regardless of when the right-of-way is purchased by the Department, the amount paid will be based upon the current market value at the time of purchase.

If you have any questions, please contact me via phone at (715) 635-4975 or via email at marc.bowker@dot.wi.gov.

Sincerely,

Marc Bowker

Project Manager
NW Region, WisDOT

Enclosures
- Notice and Order Establishing Locations and Right-of-Way Widths
- Designated Freeway Map

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

MAP OF FUTURE RIGHT-OF-WAY FOR DESIGNATED FREEWAY

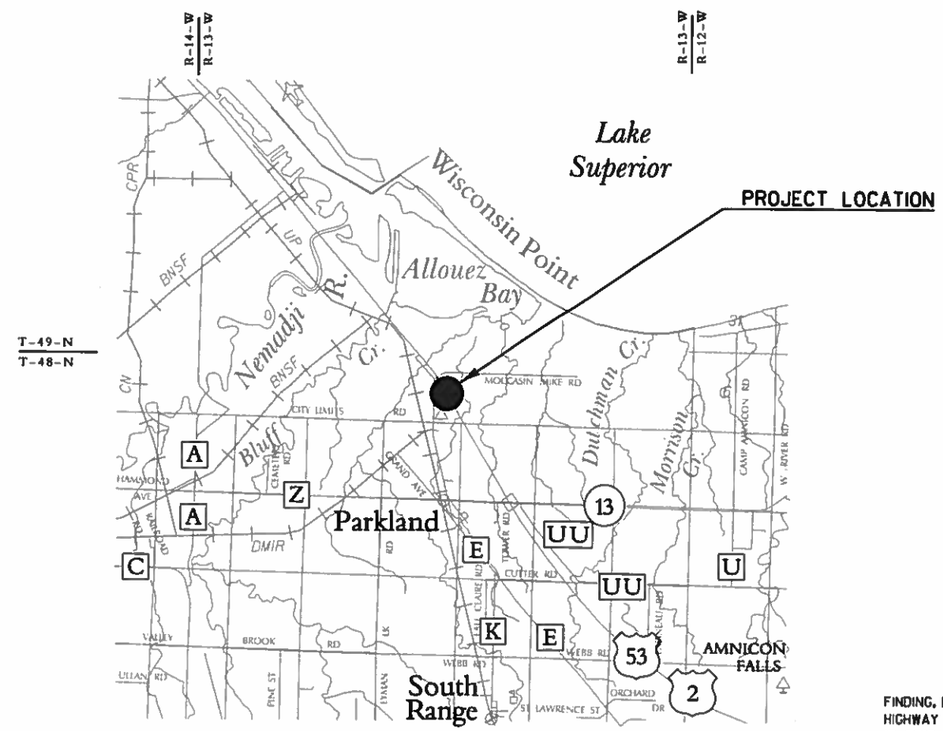
USH 2/USH 53

SUPERIOR - DULUTH

STH 13 TO 53RD AVE EAST
DOUGLAS COUNTY

N

STATE PROJECT NUMBER
1195-00-08



FINDING, DETERMINATION & ORDER APPROVED BY THE WISCONSIN STATE HIGHWAY COMMISSION ON DECEMBER 21, 1967, AND RECORDED ON FEBRUARY 19, 2010 AS DOCUMENT #832708 IN THE DOUGLAS COUNTY REGISTRY.

emcs inc

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.00 MILES

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING PREVIOUS PROJECTS: RW PLAT T 08-5 (36), 1190-07-21, HARBER VIEW DIVISION, ALTA SURVEY FOR FABCO EQUIP. DATED 4/5/1998 & DOUGLAS COUNTY PARCEL MAPPING

WISCONSIN DEPARTMENT OF TRANSPORTATION

THIS TRANSPORTATION MAP IS APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DATE:_____ _____

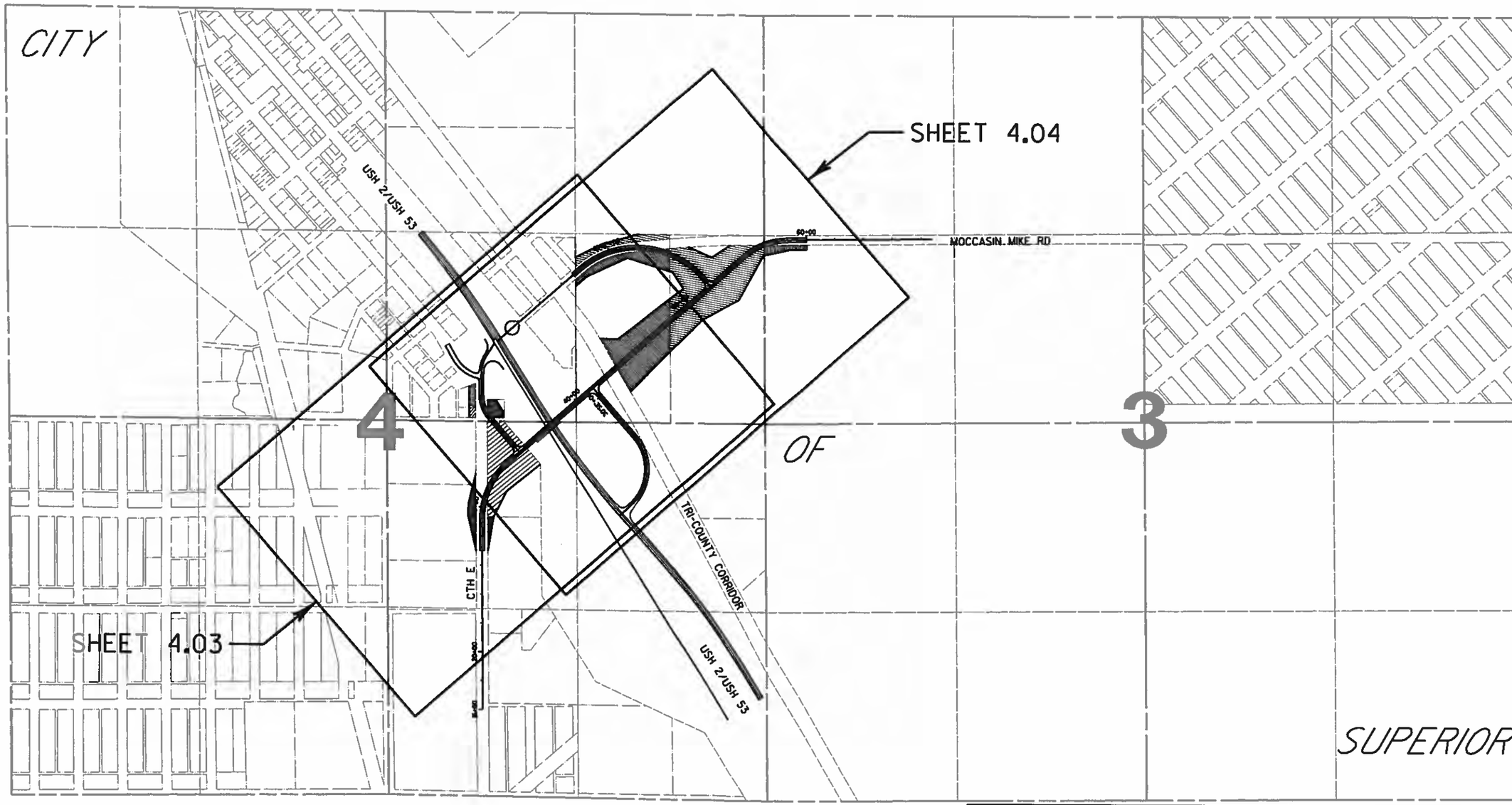
Name_____

Title_____

SHEET 1 OF 4

E

OVERVIEW MAP OF ESTABLISHED LOCATIONS AND RIGHT-OF-WAY WIDTHS FOR FUTURE FREEWAY SECTION 84.295 (10) WISCONSIN STATE STATUTES. PROJECT NO: 1195-00-08 USH 2/USH 53 DOUGLAS COUNTY



emcs inc

SCALE, FEET
0 375 750

N

WISCONSIN DEPARTMENT OF TRANSPORTATION

NOTE: Please be advised that this document has been reduced from it's original size and should not be used for scaling purposes. Only the spatial relationships of the illustrations on the Map are being presented for your information. some text may not be legible at this reduced size. A larger version of this Map or additional information about this Map may be obtained by contacting the Wisconsin Department of Transportation (WisDOT). The phone number and address of the WisDOT can be obtained by contacting the County Highway Department.

SHEET 2 OF 4

FILE NAME : P:\46xx\4653_DP.11.USH53.DOU\CADDS\Plan\84.295 Official Mapping\040102_rp.dgn PLOT DATE : 2/12/2016 PLOT BY : tgr PLOT NAME : PLOT SCALE : 1:750

1195-00-08-4.02

DESIGNATED FREEWAY MAP PROJECT NO: 1195-00-08-4.03

THAT PART OF LOTS 4-11, BLOCK 19, ALSO LOTS 22-26, BLOCK 13, HARBOR VIEW DIVISION, LOCATED IN PART OF THE SW 1/4 OF THE NE 1/4, ALSO PART OF THE NW 1/4 OF THE SE 1/4 ALL BEING LOCATED IN SECTION 4, TOWNSHIP 48 NORTH, RANGE 13 WEST, CITY OF SUPERIOR, DOUGLAS COUNTY, WISCONSIN

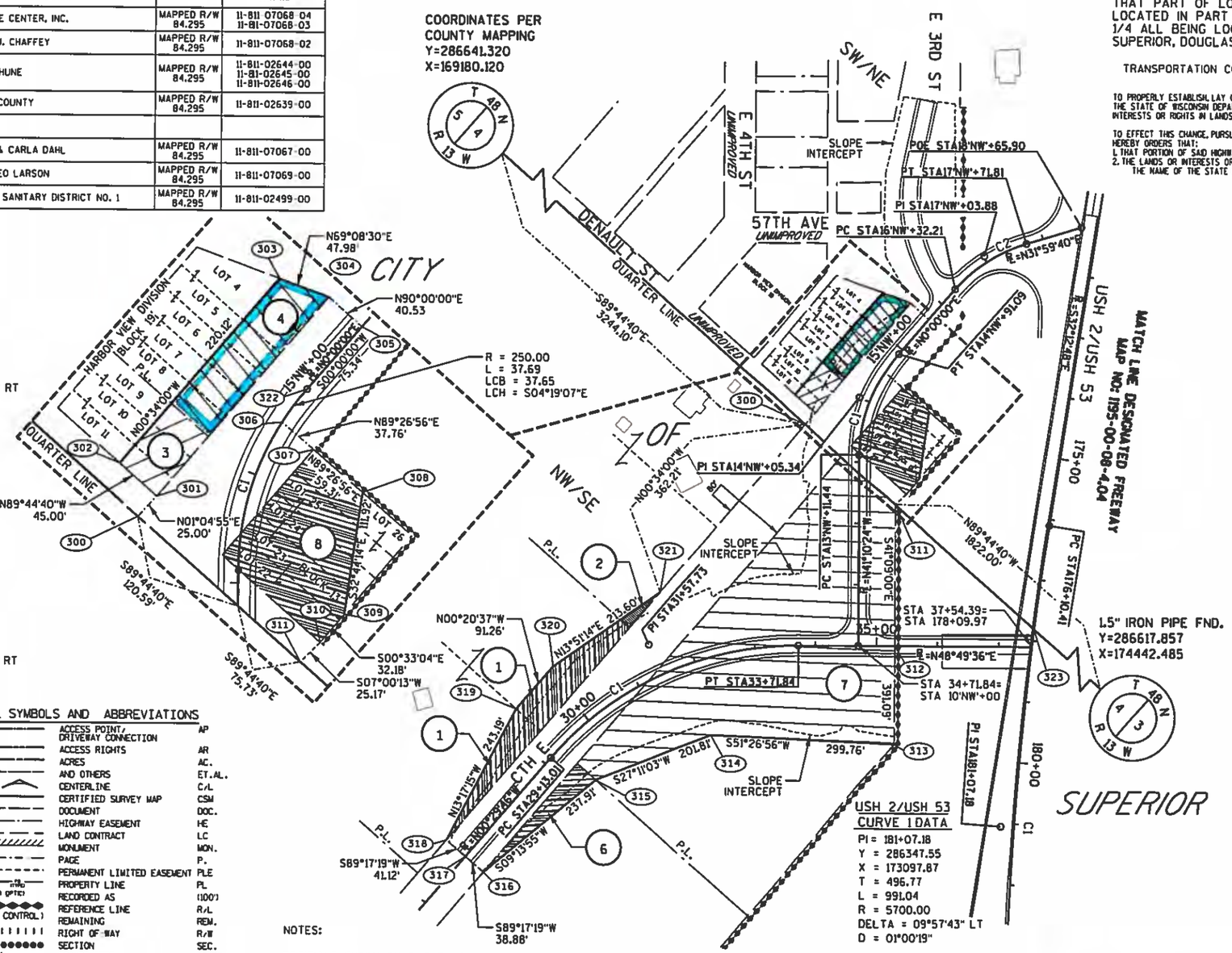
TRANSPORTATION CORRIDOR MAP USH 2/USH 53 DOUGLAS COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS MAP IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS MAP ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

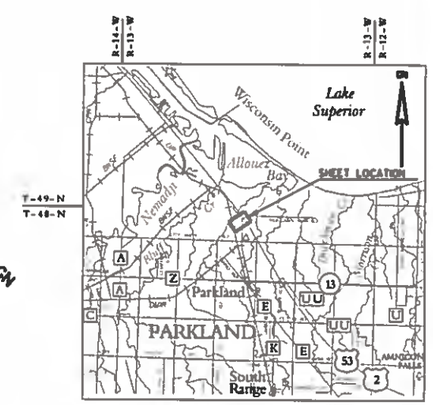
AFFECTED PROPERTIES

PARCEL NUMBER	OWNER(S)		TAX I.D
1	CHALLENGE CENTER, INC.	MAPPED R/W 84.295	11-811 07068 04 11-811-07068-03
2	KENNETH J. CHAFFEY	MAPPED R/W 84.295	11-811-07068-02
3	RENE O. THUNE	MAPPED R/W 84.295	11-811-02644-00 11-811-02645-00 11-811-02646-00
4	DOUGLAS COUNTY	MAPPED R/W 84.295	11-811-02639-00
6	DOUGLAS & CARLA DAHL	MAPPED R/W 84.295	11-811-07067-00
7	WALTER LEO LARSON	MAPPED R/W 84.295	11-811-07069-00
8	PARKLAND SANITARY DISTRICT NO. 1	MAPPED R/W 84.295	11-811-02499-00



STATION/OFFSET & COORDINATE TABLE

POINT NO.	STATION	OFFSET	Y	X
300	13'NW'+47.35	-93.96	286626.856	172424.188
301	13'NW'+63.03	-80.62	286651.854	172424.660
302	13'NW'+78.04	-120.41	286652.055	172379.656
303	15'NW'+49.35	85.36'	286872.163	172377.479
304	15'NW'+66.44	40.53'	286889.246	172422.312
305	15'NW'+66.44	0.00'	286889.246	172462.837
306	14'NW'+53.41	0.00'	286776.359	172465.672
307	14'NW'+47.16	37.32'	286776.722	172503.429
308	14'NW'+31.28	95.50'	286777.293	172562.740
309	12'NW'+71.99	96.50'	286683.150	172623.265
310	12'NW'+47.56	75.54	286650.967	172623.574
311	12'NW'+30.78	56.78	286625.981	172620.501
312	10'NW'+00.00	56.69'	286452.211	172772.361
313	35+28.47	160.31'	286331.497	172877.852
314	31+83.14	121.05'	286144.684	172643.426
315	29+37.93	78.58'	285965.163	172551.228
316	26+99.76	38.88'	285730.333	172513.059
317	26+99.61	0.00'	285729.850	172474.181
318	26+99.46	41.12'	285729.340	172433.065
319	29+33.03	95.40'	285966.017	172377.171
320	30+09.48	105.14'	286057.280	172376.624
321	31+85.05	125.73'	286264.667	172427.770
322	14'NW'+91.09	0.00'	286813.904	172462.837
323	37+57.93	28.41'	286624.617	172926.334



NW CONNECTOR CURVE 1 DATA
PI = 14'NW'+05.34
Y = 286720.00
X = 172462.84
T = 93.90
L = 179.65
R = 250.00
DELTA = 41°10'24" RT
D = 22°55'05"

NW CONNECTOR CURVE 2 DATA
PI = 17+03.88
Y = 287026.69
X = 172462.84
T = 71.67
L = 139.60
R = 250.00
DELTA = 31°59'39" RT
D = 22°55'05"

USH 2/USH 53 CURVE 1 DATA
PI = 181+07.18
Y = 286347.55
X = 173097.87
T = 496.77
L = 991.04
R = 5700.00
DELTA = 09°57'43" LT
D = 01°00'19"

CTH E CURVE 1 DATA
PI = 31+57.73
Y = 286187.95
X = 172470.21
T = 244.72
L = 458.83
R = 533.00
DELTA = 49°19'22" RT
D = 10°44'58"

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

STATE, COUNTY, OR TOWN LINE	
SECTION LINE	
QUARTER LINE	
SIXTEENTH LINE	
PROPOSED REFERENCE LINE	
PROPOSED R/W LINE	
EXISTING H.E. LINE	
PROPERTY LINE	
EASEMENT LINE	
CORPORATE LIMITS	
EXISTING CENTERLINE	
LOT & TIE LINES	
UTILITIES (TELEPHONE,GAS,ELECTRIC,CABLE TV,FIBER OPTIC)	TE GAS
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	
ACCESS RESTRICTED (BY ACQUISITION)	
NO ACCESS (BY STATUTORY AUTHORITY)	
FEE (HATCH VARIES)	
TEMPORARY LIMITED EASEMENT	
PERMANENT LIMITED EASEMENT	
PARCEL NUMBER	02
UTILITY PARCEL NUMBER	92
SIGN NUMBER (OFF PREMISE)	21
BUILDING	
FOUND IRON PIPE/PIN	LP (1" UNLESS NOTED)
R/W MONUMENT	●(SET)
R/W STANDARD	▲(SET)
SIGN	SIGN
SECTION CORNER SYMBOL	

ACCESS POINT/ DRIVEWAY CONNECTION	AP
ACCESS RIGHTS	AR
ACRES	AC.
AND OTHERS	ET.AL.
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
DOCUMENT	DOC.
HIGHWAY EASEMENT	HE
LAND CONTRACT	LC
MONUMENT	MON.
PAGE	P.
PERMANENT LIMITED EASEMENT	PLE
PROPERTY LINE	PL
RECORDED AS	(100')
REFERENCE LINE	R/L
REMAINING	REM.
RIGHT OF WAY	R/W
SECTION	SEC.
SQUARE FEET	SQ.FT.
STATION	STA.
TEMPORARY LIMITED EASEMENT	TLE
VOLUME	V.

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

	NON COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		

NOTES:

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emcs inc

WISCONSIN DEPARTMENT OF TRANSPORTATION

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SHEET 3 OF 4

FILE NAME : P:\46xx\4653_DP.11.USH53.DOU\CADDS\Plan\84.295 Official Mapping\040103_rp.dgn PLOT DATE : 2/12/2016 PLOT BY : tgr PLOT NAME : PLOT SCALE : 1:200

1195-00-08-4.03

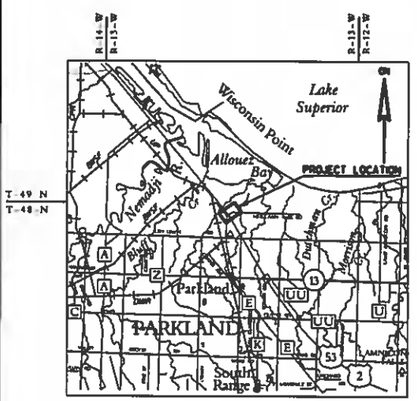
DESIGNATED FREEWAY MAP PROJECT NO: 1195-00-08-4.04

THAT PART OF THE SE 1/4 OF THE NE 1/4 OF SECTION 4, ALSO THAT PART OF THE SW 1/4 OF THE NW1/4 OF SECTION 3, ALL IN TOWNSHIP 48 NORTH, RANGE 13 WEST, CITY OF SUPERIOR, DOUGLAS COUNTY, WISCONSIN

TRANSPORTATION CORRIDOR MAP USH 2/USH 53 DOUGLAS COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS MAP IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS MAP ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.



COORDINATES PER COUNTY MAPPING
Y=286641.320
X=169180.120

SCALE, FEET
0 100 200

NE CONNECTOR CURVE 1 DATA

PI = 13+67.17
Y = 288083.28
X = 173600.46
T = 600.00
L = 942.47
R = 600.00
DELTA = 89°59'59" RT
D = 09°32'57"

USH 2/USH 53 CURVE 1 DATA

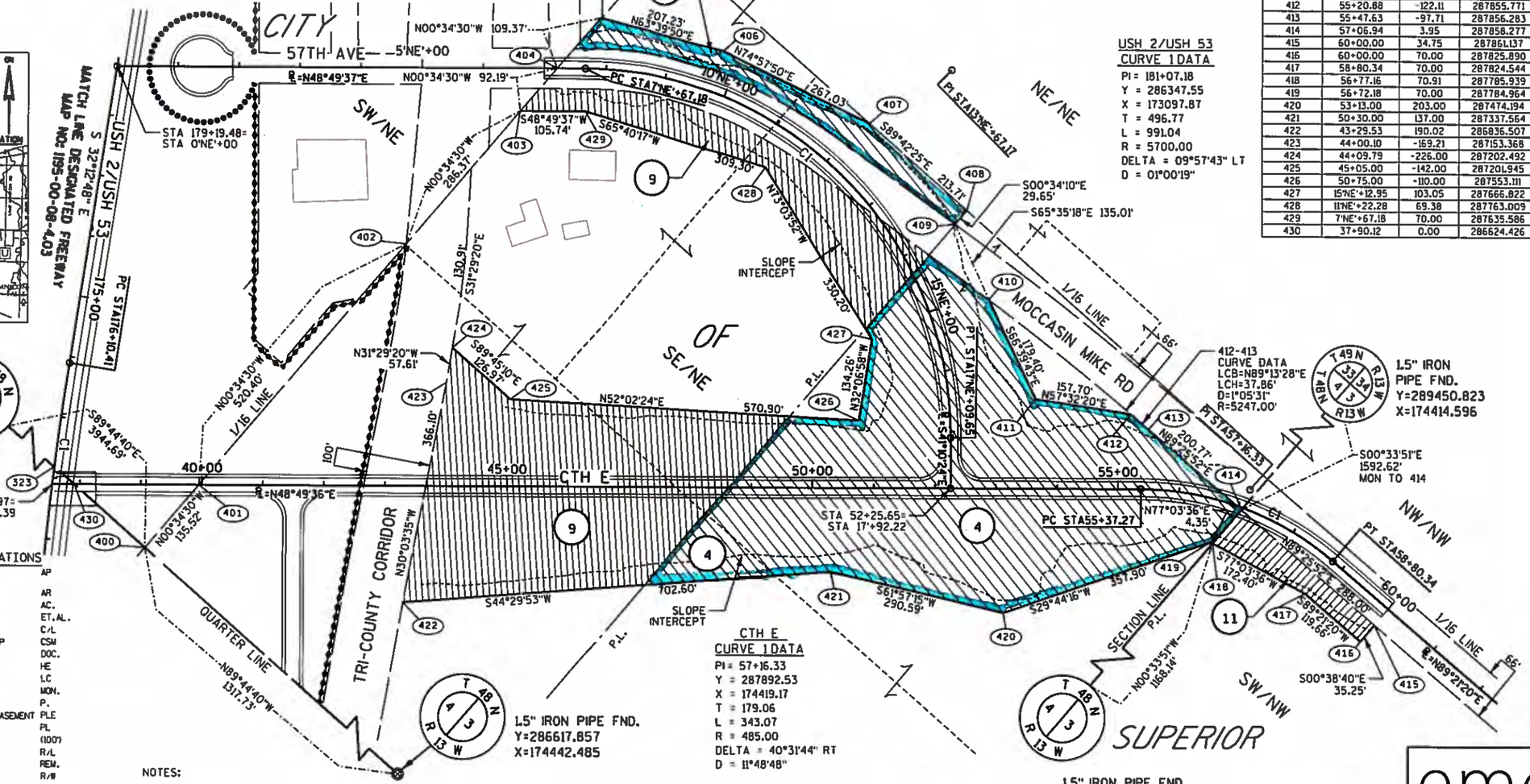
PI = 181+07.18
Y = 286347.55
X = 173097.87
T = 496.77
L = 991.04
R = 5700.00
DELTA = 09°57'43" LT
D = 01°00'19"

CTH E CURVE 1 DATA

PI = 57+16.33
Y = 287892.53
X = 174419.17
T = 179.06
L = 343.07
R = 485.00
DELTA = 40°31'44" RT
D = 11°48'48"

412-413 CURVE DATA

LCB=N89°13'28"E
LCH=37.86'
D=1°05'31"
R=5247.00'



AFFECTED PROPERTIES

PARCEL NUMBER	OWNER(S)		TAX I.D
4	DOUGLAS COUNTY	MAPPED R/W 84.295	11-811-07056-00 11-811-07060-00 11-811-07059-00
9	ELIZABETH M. FREDRICK	MAPPED R/W 84.295	11-811-07055-00 11-811-07059-01
11	SCOTT E. DEBEIR	MAPPED R/W 84.295	11-811-07038-00

STATION/OFFSET & COORDINATE TABLE

POINT NO.	STATION	OFFSET	Y	X
323	37+57.93	28.41'	286624.617	172926.334
400	39+06.72	102.90	286623.732	173124.772
401	39+94.91	0.00	286759.245	173123.413
402	43+33.56	-395.13	287279.619	173118.191
403	6'NE'+61.44	70.00	287565.974	173115.317
404	7'NE'+21.43	0.00	287658.161	173114.392
405	7'NE'+89.50	-83.51	287767.520	173113.295
406	9'NE'+73.62	-69.20	287859.453	173299.012
407	12'NE'+09.70	-92.22	287928.738	173556.935
408	13'NE'+88.63	-127.27	287927.645	173770.639
409	13'NE'+96.81	-99.26	287897.995	173770.934
410	15'NE'+12.82	-99.45	287842.196	173893.875
411	53+65.00	-146.00	287771.127	174058.592
412	55+20.88	-122.11	287855.771	174191.655
413	55+47.63	-97.71	287856.283	174229.514
414	57+06.94	3.95	287858.277	174430.274
415	60+00.00	34.75	287861.137	174718.264
416	60+00.00	70.00	287825.890	174718.660
417	58+80.34	70.00	287824.544	174599.006
418	56+77.16	70.91	287785.939	174430.986
419	56+72.18	70.00	287784.964	174426.743
420	53+13.00	203.00	287474.194	174249.211
421	50+30.00	137.00	287337.564	173992.741
422	43+29.53	190.02	286836.507	173500.389
423	44+00.10	-169.21	287153.368	173317.008
424	44+09.79	-226.00	287202.492	173286.918
425	45+05.00	-142.00	287201.945	173413.885
426	50+75.00	-110.00	287553.111	173864.003
427	15'NE'+12.95	103.05	287666.822	173792.628
428	11'NE'+22.28	69.38	287763.009	173476.747
429	7'NE'+67.18	70.00	287635.586	173194.910
430	37+90.12	0.00	286624.426	172969.265

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

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PROPERTY LINE	
EASEMENT LINE	
CORPORATE LIMITS	
EXISTING CENTERLINE	
LOT & TIE LINES	
UTILITIES (TELEPHONE,GAS,ELECTRIC,CABLE TV,FIBER OPTIC)	
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	
ACCESS RESTRICTED (BY ACQUISTION)	
NO ACCESS (BY STATUTORY AUTHORITY)	
FEE (HATCH VARIES)	
TEMPORARY LIMITED EASEMENT	
PERMANENT LIMITED EASEMENT	
PARCEL NUMBER	102
UTILITY PARCEL NUMBER	92
SIGN NUMBER (OFF PREMISE)	21-1
BUILDING	
FOUND IRON PIPE/PIN	1/2" (1" UNLESS NOTED)
R/W MONUMENT	● #(SET)
R/W STANDARD	▲ #(SET)
SIGN	(SIGN
SECTION CORNER SYMBOL	

ACCESS POINT, DRIVEWAY CONNECTION	AP
ACCESS RIGHTS	AR
ACRES	AC.
AND OTHERS	ET.AL.
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
DOCUMENT	DOC.
HIGHWAY EASEMENT	HE
LAND CONTRACT	LC
MONUMENT	MON.
PAGE	P.
PERMANENT LIMITED EASEMENT	PLE
PROPERTY LINE	PL
RECORDED AS	(100')
REFERENCE LINE	R/L
REMAINING	REM.
RIGHT-OF-WAY	R/W
SECTION	SEC.
SQUARE FEET	SQ.FT.
STATION	STA.
TEMPORARY LIMITED EASEMENT	TLE
VOLUME	V.

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

	NON COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		

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SHEET 4 OF 4