



US Army Corps  
of Engineers  
St Paul District

**SPONSOR:** Ecosystem Investment  
Partners (EIP)

# **Public Notice**

**ISSUED:** August 6, 2013

**EXPIRES:** September 5, 2013

**REFER TO:** 2012-04872-LED

**SECTION:404 - Clean Water Act**

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1. WETLAND COMPENSATORY MITIGATION BANK PROPOSAL

2. SPECIFIC INFORMATION.

**SPONSOR'S ADDRESS:** Ecosystem Investment Partners, LLC  
2002 Clipper Park Road  
Suite 201  
Baltimore, Maryland 21211

**SPONSOR'S AGENT** Deric Deuschle  
Short Elliott Hendrickson, Inc.  
3535 Vadnais Center Drive  
St. Paul, Minnesota 55110

**PROJECT LOCATION:** The project site is located in Sections 5-7, T. 54N., R. 17W.; Sections 1-3, 11, and 12, T. 54N., R. 18W.; Sections 4-10,15-22, and 27-33, T. 55N., R. 17W.; Sections 1-3,10-15, 22-27, and 24-36, T. 55N., R. 18W.; Sections 30 and 31, T. 56N., R. 17W.; and Sections 25-27, and 24-36, T. 56N., R. 18W. in St. Louis County, Minnesota. The approximate UTM coordinates are 47.29033°N, -92.59015°W.

**BANK SERVICE AREA:** The proposed bank service area (BSA) is the Lake Superior Basin (BSA 1) in St. Louis County.

**DESCRIPTION OF PROJECT:** The sponsor is proposing to develop the Lake Superior Wetland Bank. The proposed bank site is approximately 21,292 acres in size, including upland buffer areas.

Currently, the proposed bank site is comprised of County Tax Forfeited and State of Minnesota property. EIP has purchased approximately 3,624 acres of property within the proposed bank site. The parcels primarily consist of fresh (wet) meadow, shrub-carr and coniferous bog wetlands that were historically ditched, many as part of a County ditch network. Land use within the proposed bank site has not changed significantly since aerial photographs were taken in the late 1930's. Historic uses within the site include logging, some agriculture, and a commercial sod farm. See enclosed drawings for more detail about the ditch network.

The Sponsor proposes to restore by rehabilitation 6,785 acres of wetlands partially drained by ditches; enhance 1,641 acres of wetlands by managing native communities to enhance diversity and provide critical habitat for listed species; enhance 613 acres of wetlands by providing for a functional lift of vegetation diversity and controlling invasive species; preserve 11,655 acres of existing high quality wetlands (primarily coniferous bog) not affected or partially drained by the ditch network; and preserve

## **Operations - Regulatory (2012-04872-LED)**

### **SUBJECT: Lake Superior Wetland Bank**

580 acres of native upland buffer. The only invasive species identified in or adjacent to the bank site to date is reed canary grass, which was identified immediately adjacent to CSAH 7.

The rehabilitation of 6,785 acres of wetlands would be accomplished by the installation of 66 ditch checks to restore the natural water table (see enclosed drawings for proposed ditch check locations). Several construction methods for the installation of the ditch checks, including winter installation or the use of helicopters, are being considered. Several types of ditch checks, including rock checks and vinyl sheet piling are being considered. The use of onsite peat material is not being considered as historic spoil piles are no longer identifiable.

Specific site preparation methods for enhancement areas have not yet been determined. The Prospectus proposes that historically logged areas will be managed to promote wildlife habitat and maintain a high quality vegetation community that differs from the rest of the community. The Sponsor is proposing to maintain these areas as cleared of a tree stratum, which may be managed to promote high quality sedge meadow wetlands. It is not known whether the Sponsor is proposing to manage these wildlife enhancement areas for a particular species or native wildlife species in general. The planting of tree species to promote the re-establishment of historic coniferous bog wetlands has not been proposed for either the vegetation or wildlife enhancement areas. Floristic Quality Assessments (RFQA) and hydrology monitoring are being completed across the site during the 2013 growing season. This information would serve as a baseline for documenting functional lift within the project's rehabilitation and enhancement areas.

The established bank site would be managed by the Sponsor in property ownership. Credit sales would be tracked by Sponsor and reported to the state as required by state law. The reported credit releases and sales would be tracked on both Corps and state databases using ledger data supplied by the state. Long-term management of the property would be the responsibility of the Sponsor until and after all released credits have been debited. Long-term management plans being considered for the site, following the sale of all released credits, include the tract's conveyance to the State Wildlife Management Area, to a network of land trust-owned preserves, or sale to a private conservation buyer. The Sponsor suggests that revenues generated by the sale of mitigation credits would allow the Sponsor to establish a long-term monitoring and maintenance fund to provide for the long-term quality and viability of the restored ecosystems on-site if required. Additional protections and management limitations would be spelled out in both a conservation easement and in an approved bank plan.

The Sponsor has identified the following threats to the site: mineral and peat mining, logging, ditch maintenance, and land use changes. The Sponsor proposes to close a majority of ditches within the site, with the exception of those serving existing public roads and private properties beyond the bank boundaries. The sponsor proposes that the establishment of a conservation easement over the bank site will eliminate the threat of mineral and peat mining to the site. However, it is not known whether the Sponsor is proposing to obtain all mineral rights under the property, which would be necessary to remove the threat of mineral mining.

The bank site is located within a sensitive wetland and wildlife area, and is known for the seasonal abundance of boreal bird species. The bank is located within the Sax-Zim Bog, and has been identified by the Audubon Society as an Important Bird Area. The Sponsor believes that the property contains water tracks, a unique groundwater feature, which would benefit from the closure of surface drainages

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to restore the landscape's historic pattern of groundwater recharge and discharge. The Sponsor has identified a State-Listed Endangered species (floating marsh marigold (*Caltha natans*)) within a roadside ditch in the bank area and suggests that similar habitats within the bank's ditches may exist. A County Biological Survey is being completed within the bank to identify plants and animals of Special Concern. The site is currently used by a variety of wildlife such as black bears, grey wolves and moose. The proposed bank site is located immediately adjacent to the Sax Zim and Fermoy Wildlife Management Areas and the University of Minnesota Wetland Banks.

**SURROUNDING LAND USE:** Surrounding land use is comprised of open and forested public lands, agriculture, and commercial sod farms, and rural residential areas.

**COORDINATION WITH RESOURCE AGENCIES:** On October 25, 2012 the Corps coordinated the project's draft prospectus with and solicited comments from the following members of the IRT: EPA, FWS, BWSR, St. Louis County Planning and Zoning, Minnesota DNR, and North St. Louis County SWCD. Comments were received from the North St. Louis County SWCD.

**3. REPLIES/COMMENTS.**

Interested parties are invited to submit to this office written facts, arguments, or objections within 30 days of the date of this notice. These statements should bear upon the suitability of the location and the adequacy of the project and should, if appropriate, suggest any changes believed to be desirable. Comments received may be forwarded to the applicant.

Replies may be addressed to Regulatory Branch, St. Paul District, Corps of Engineers, 1554 Highway 2, Suite 2, Two Harbors, MN 55616, ATTN: Leslie Day.

Or, IF YOU HAVE QUESTIONS ABOUT THE PROJECT, call Leslie Day at the Two Harbors office of the Corps, telephone number (651) 290-5693.

To receive Public Notices by e-mail, go to: [http://www2.mvp.usace.army.mil/list\\_server/](http://www2.mvp.usace.army.mil/list_server/) and add your information in the New Registration Box.

**4. FEDERALLY-LISTED THREATENED OR ENDANGERED WILDLIFE OR PLANTS OR THEIR CRITICAL HABITAT.**

No federally-listed threatened or endangered species were identified by the applicant or are known to exist in the bank site. The proposed bank site is located outside of, but immediately adjacent to, designated critical habitat for Canada lynx (*Lynx canadensis*).

This application is being coordinated with the U.S. Fish and Wildlife Service. Any comments it may have concerning Federally-listed threatened or endangered wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

**5. JURISDICTION.**

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction

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under Sections 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 07-01. We have made a *preliminary determination* that any aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act. Our jurisdictional review and final jurisdictional determination could result in modifications to the scope of the project's regulated waterbody/wetland impacts. Because this project is a mitigation bank, any required compensatory mitigation would be accounted for in the credit yield calculations. Any regulated discharges associated with implementation of a final approved bank plan could likely be authorized by regional general permit if the bank plan is approved before any regulated discharge occurs. Any *approved jurisdictional determination* needed will be made prior to reaching a decision, and will be posted on the St. Paul District web page at <http://www.mvp.usace.army.mil/Missions/Regulatory.aspx>.

6. HISTORICAL/ARCHAEOLOGICAL.

The Corps will review information on known cultural resources and/or historic properties within and adjacent to the project area. The Corps will also consider the potential effects of the project on any properties that have yet to be identified. The results of this review and the Corps' determination of effect will be coordinated with the State Historic Preservation Officer independent of this public notice. Any adverse effects on historic properties will be resolved prior to the Corps authorization, or approval, of the work in connection with this project.

7. PUBLIC HEARING REQUESTS.

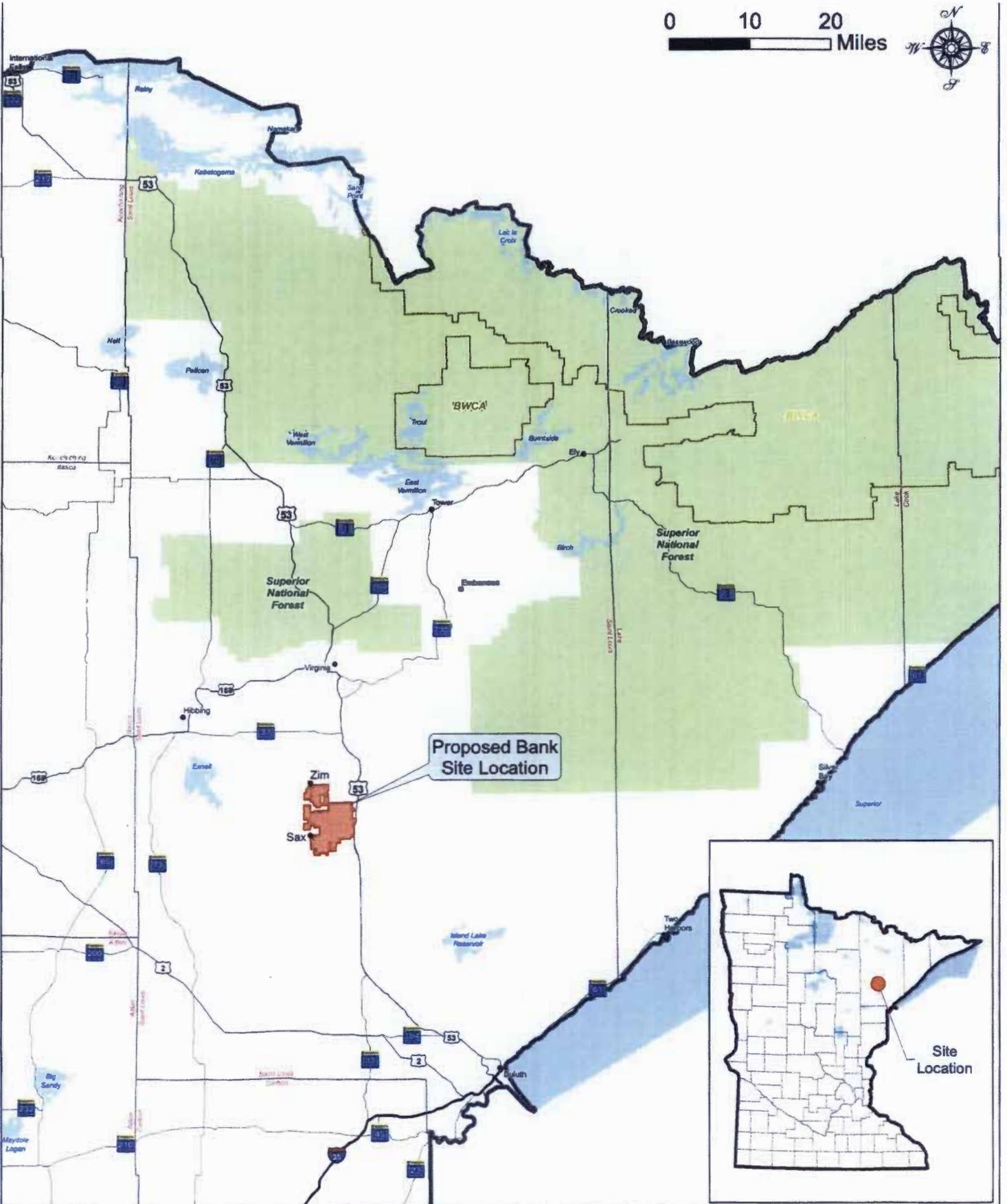
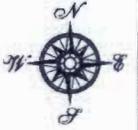
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, in detail, the reasons for holding a public hearing. A request may be denied if substantive reasons for holding a hearing are not provided or if there is otherwise no valid interest to be served.

Tamara E. Cameron,  
Chief, Regulatory Branch

Enclosure(s):

2012-04872-LED, Drawings 1 of 15 through 15 of 15

0 10 20 Miles



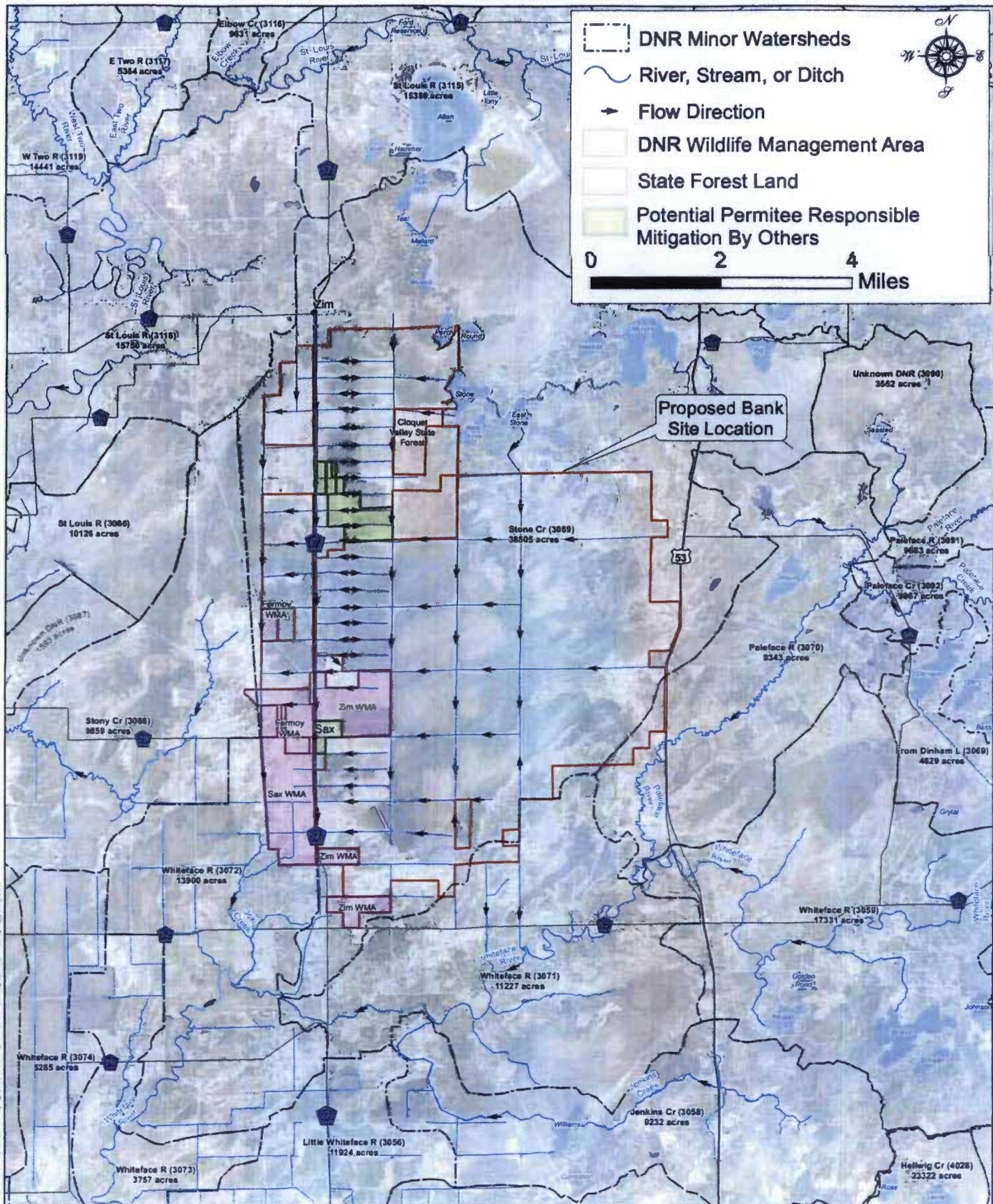
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

Project: ECOSY 120032  
Print Date: 6/18/2013

**SITE LOCATION MAP**  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
1





3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (651) 490-2100

Project: ECOSY 120032  
Print Date: 6/19/2013

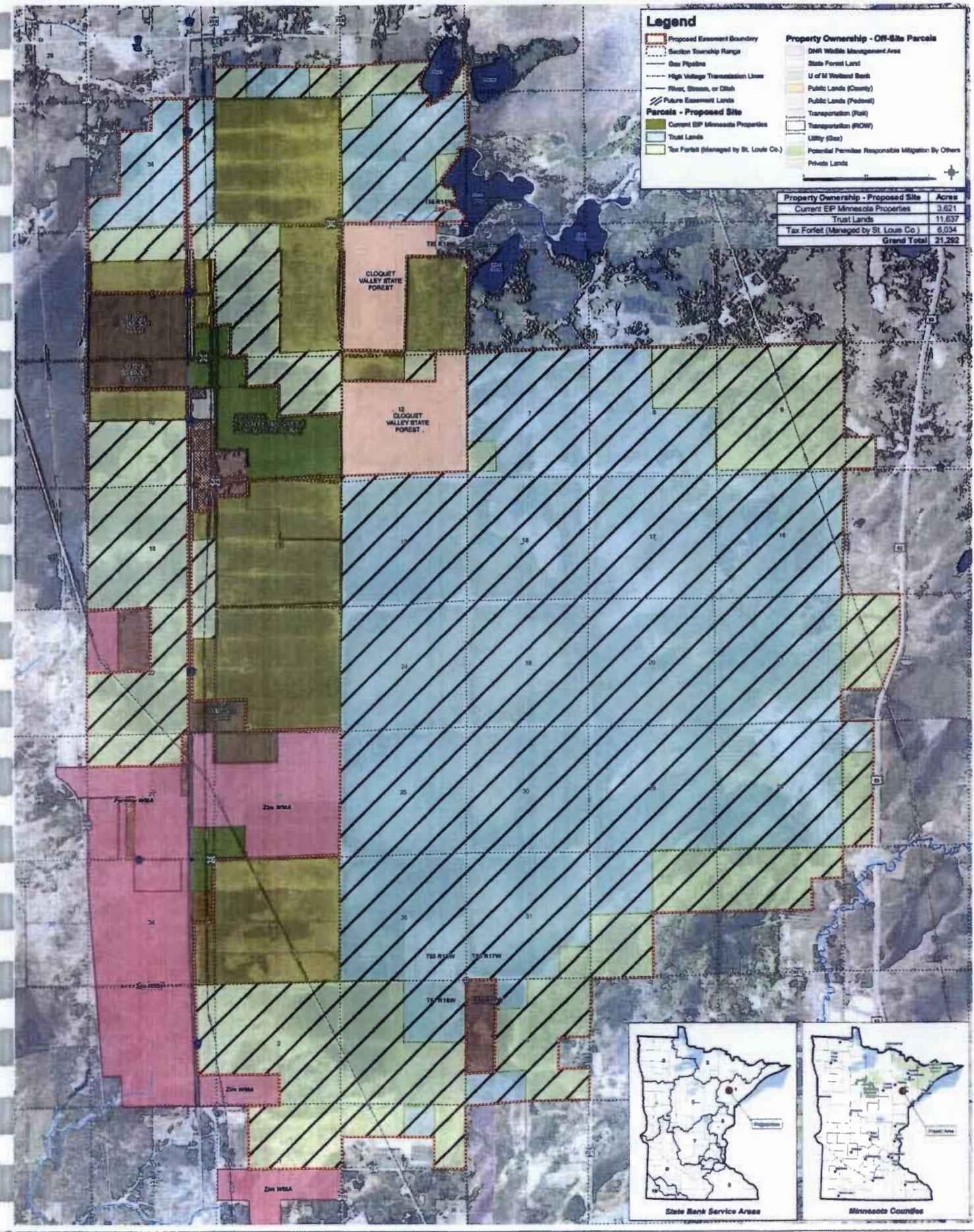
Map by: B. Toloser

### MINOR WATERSHEDS

EIP St. Louis County Wetland Bank

EIP Credit Co., LLC

Figure  
3



**Legend**

- Proposed Easement Boundary
- Section Township Range
- Gas Pipeline
- High Voltage Transmission Lines
- River, Stream, or Ditch
- Future Easement Lands

**Property Ownership - Off-Site Parcels**

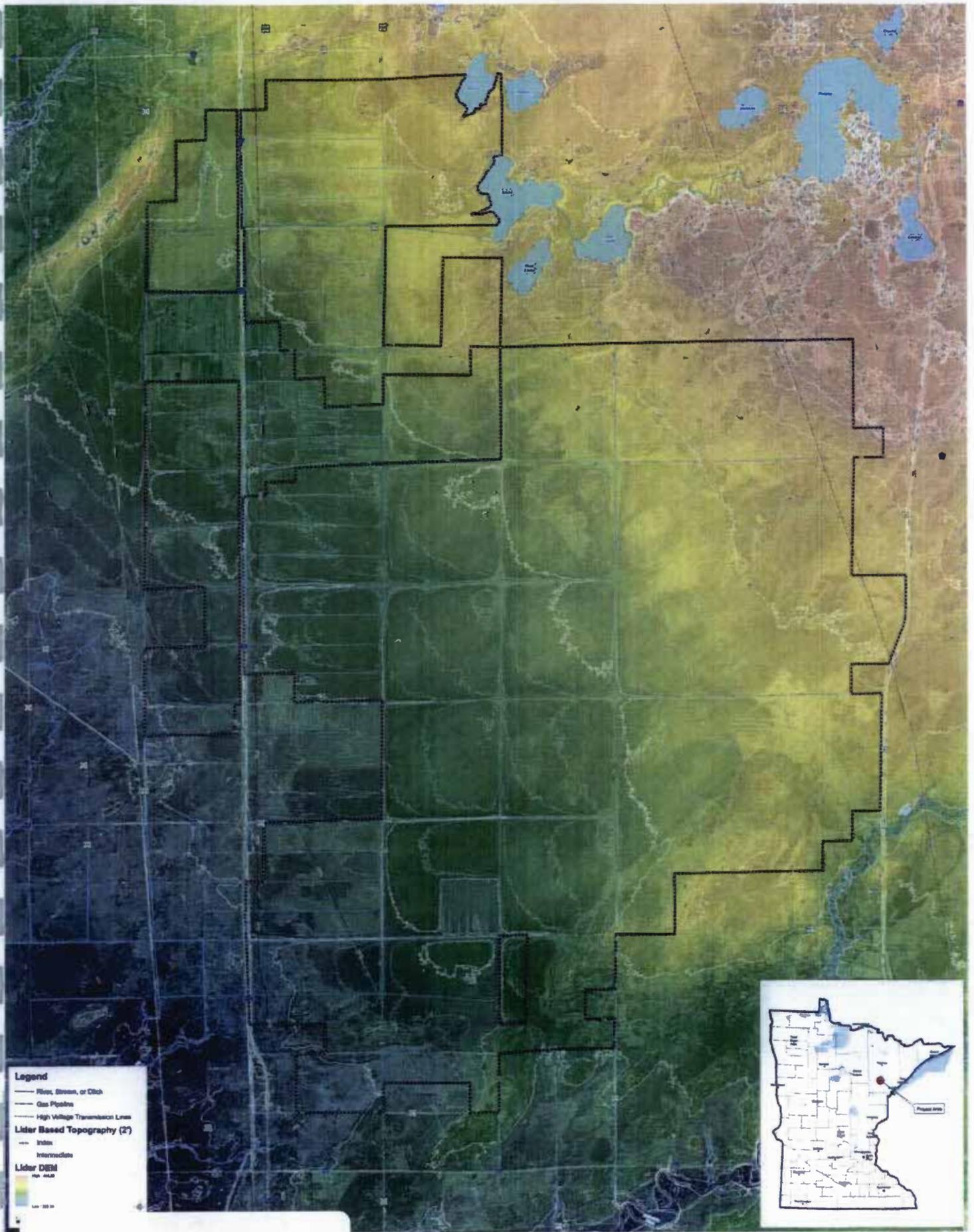
- DNR Wildlife Management Area
- State Forest Land
- U of M Wetland Bank
- Public Lands (County)
- Public Lands (Federal)
- Transportation (Rail)
- Transportation (ROW)
- Utility (Gas)
- Potential Permittee Responsible Mitigation By Others
- Private Lands

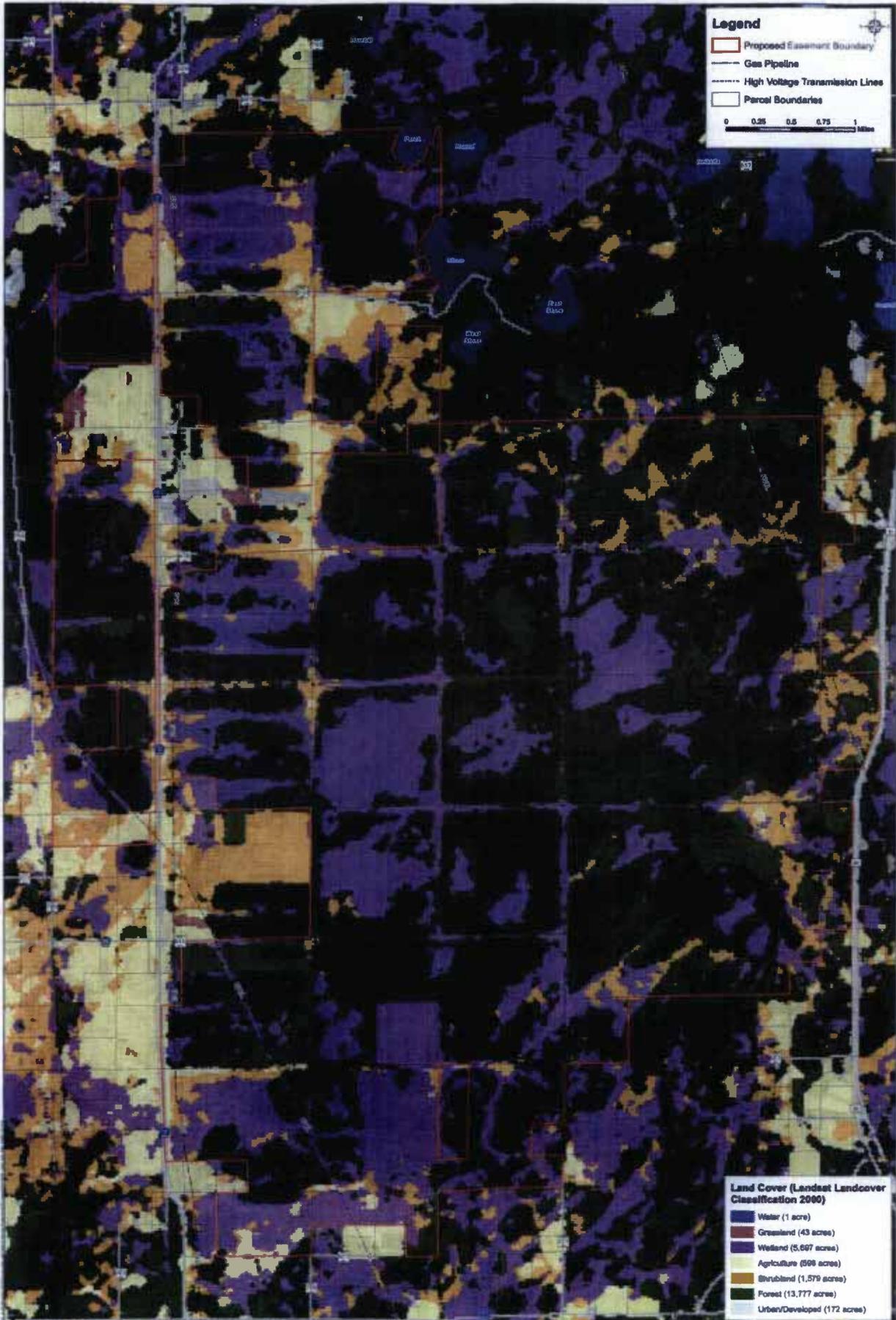
**Parcels - Proposed Site**

- Current EIP Minnesota Properties
- Trust Lands
- Tax Forest (Managed by St. Louis Co.)

| Property Ownership - Proposed Site    | Acres         |
|---------------------------------------|---------------|
| Current EIP Minnesota Properties      | 3,621         |
| Trust Lands                           | 11,637        |
| Tax Forest (Managed by St. Louis Co.) | 6,034         |
| <b>Grand Total</b>                    | <b>21,292</b> |







**Legend**

- Proposed Easement Boundary
- Gas Pipeline
- High Voltage Transmission Lines
- Parcel Boundaries

0 0.25 0.5 0.75 1 Miles

**Land Cover (Landsat Landcover Classification 2000)**

- Water (1 acre)
- Grassland (43 acres)
- Wetland (5,607 acres)
- Agriculture (606 acres)
- Shrubland (1,579 acres)
- Forest (13,777 acres)
- Urban/Developed (172 acres)

**LAND COVER MAP (2000)**  
 EIP St. Louis County Wetland Bank  
 EIP Credit Co., LLC

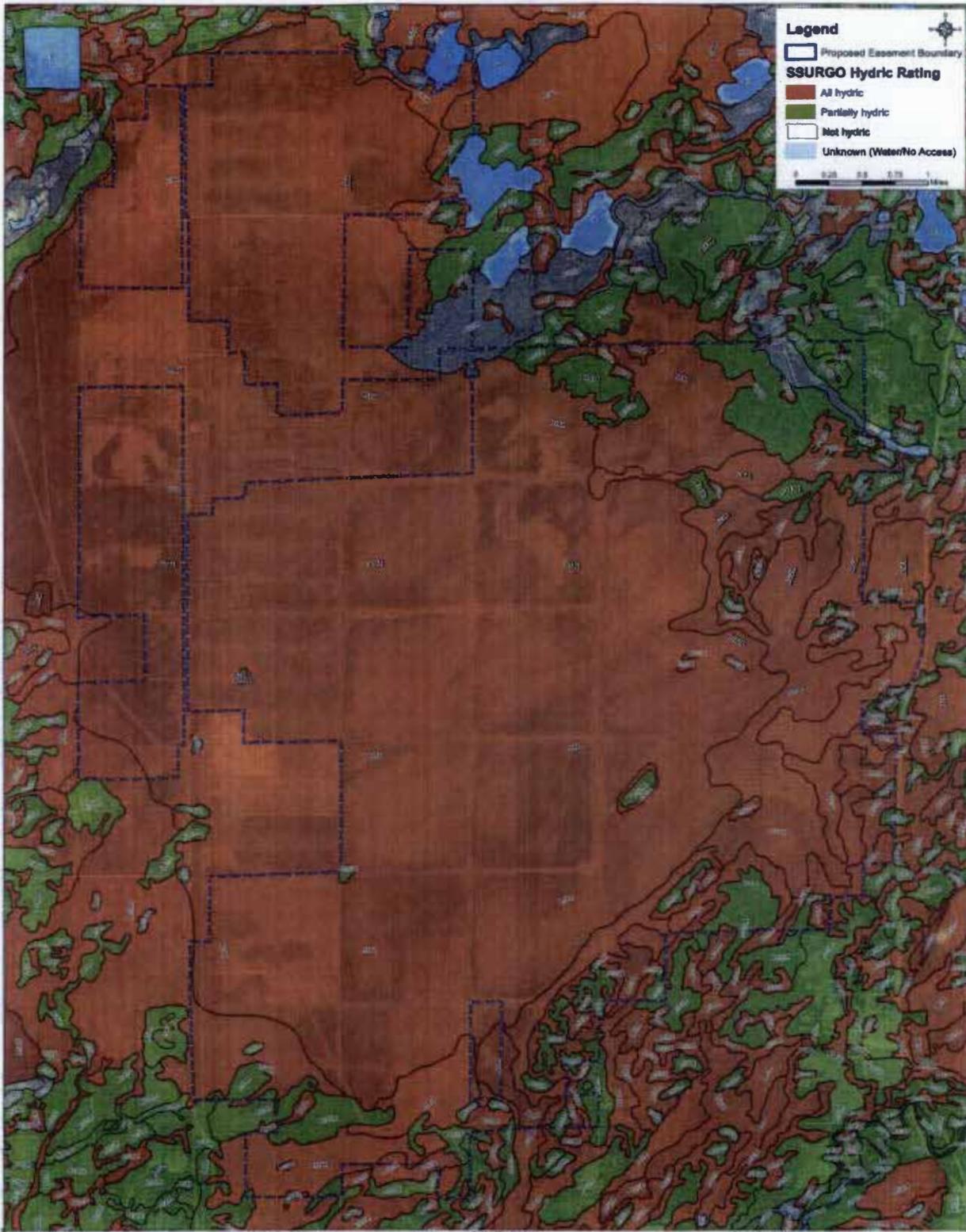
**Figure 6**



2012-04872-LED  
Drawing 7 of 15

**MARSCHNER PRE-SETTLEMENT VEGETATION**  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
6a



| Section | Area (Acres) | Soil Name | Soil Name | Soil Name | Soil Name |
|---------|--------------|-----------|-----------|-----------|-----------|
| 0100    | 1.00         | 01000     | 01000     | 01000     | 01000     |
| 0200    | 2.00         | 02000     | 02000     | 02000     | 02000     |
| 0300    | 3.00         | 03000     | 03000     | 03000     | 03000     |
| 0400    | 4.00         | 04000     | 04000     | 04000     | 04000     |
| 0500    | 5.00         | 05000     | 05000     | 05000     | 05000     |
| 0600    | 6.00         | 06000     | 06000     | 06000     | 06000     |
| 0700    | 7.00         | 07000     | 07000     | 07000     | 07000     |
| 0800    | 8.00         | 08000     | 08000     | 08000     | 08000     |
| 0900    | 9.00         | 09000     | 09000     | 09000     | 09000     |
| 1000    | 10.00        | 10000     | 10000     | 10000     | 10000     |
| 1100    | 11.00        | 11000     | 11000     | 11000     | 11000     |
| 1200    | 12.00        | 12000     | 12000     | 12000     | 12000     |
| 1300    | 13.00        | 13000     | 13000     | 13000     | 13000     |
| 1400    | 14.00        | 14000     | 14000     | 14000     | 14000     |
| 1500    | 15.00        | 15000     | 15000     | 15000     | 15000     |
| 1600    | 16.00        | 16000     | 16000     | 16000     | 16000     |
| 1700    | 17.00        | 17000     | 17000     | 17000     | 17000     |
| 1800    | 18.00        | 18000     | 18000     | 18000     | 18000     |
| 1900    | 19.00        | 19000     | 19000     | 19000     | 19000     |
| 2000    | 20.00        | 20000     | 20000     | 20000     | 20000     |
| 2100    | 21.00        | 21000     | 21000     | 21000     | 21000     |
| 2200    | 22.00        | 22000     | 22000     | 22000     | 22000     |
| 2300    | 23.00        | 23000     | 23000     | 23000     | 23000     |
| 2400    | 24.00        | 24000     | 24000     | 24000     | 24000     |
| 2500    | 25.00        | 25000     | 25000     | 25000     | 25000     |
| 2600    | 26.00        | 26000     | 26000     | 26000     | 26000     |
| 2700    | 27.00        | 27000     | 27000     | 27000     | 27000     |
| 2800    | 28.00        | 28000     | 28000     | 28000     | 28000     |
| 2900    | 29.00        | 29000     | 29000     | 29000     | 29000     |
| 3000    | 30.00        | 30000     | 30000     | 30000     | 30000     |
| 3100    | 31.00        | 31000     | 31000     | 31000     | 31000     |
| 3200    | 32.00        | 32000     | 32000     | 32000     | 32000     |
| 3300    | 33.00        | 33000     | 33000     | 33000     | 33000     |
| 3400    | 34.00        | 34000     | 34000     | 34000     | 34000     |
| 3500    | 35.00        | 35000     | 35000     | 35000     | 35000     |
| 3600    | 36.00        | 36000     | 36000     | 36000     | 36000     |
| 3700    | 37.00        | 37000     | 37000     | 37000     | 37000     |
| 3800    | 38.00        | 38000     | 38000     | 38000     | 38000     |
| 3900    | 39.00        | 39000     | 39000     | 39000     | 39000     |
| 4000    | 40.00        | 40000     | 40000     | 40000     | 40000     |
| 4100    | 41.00        | 41000     | 41000     | 41000     | 41000     |
| 4200    | 42.00        | 42000     | 42000     | 42000     | 42000     |
| 4300    | 43.00        | 43000     | 43000     | 43000     | 43000     |
| 4400    | 44.00        | 44000     | 44000     | 44000     | 44000     |
| 4500    | 45.00        | 45000     | 45000     | 45000     | 45000     |
| 4600    | 46.00        | 46000     | 46000     | 46000     | 46000     |
| 4700    | 47.00        | 47000     | 47000     | 47000     | 47000     |
| 4800    | 48.00        | 48000     | 48000     | 48000     | 48000     |
| 4900    | 49.00        | 49000     | 49000     | 49000     | 49000     |
| 5000    | 50.00        | 50000     | 50000     | 50000     | 50000     |

**ST. LOUIS COUNTY SOIL SURVEY**  
 EIP St. Louis County Wetland Bank  
 EIP Credit Co., LLC

Figure  
7



**EXISTING VEGETATION MAP**  
Draft Based on Aerial Assessment

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
8

S

2012-04872-LED  
Drawing 9 of 15

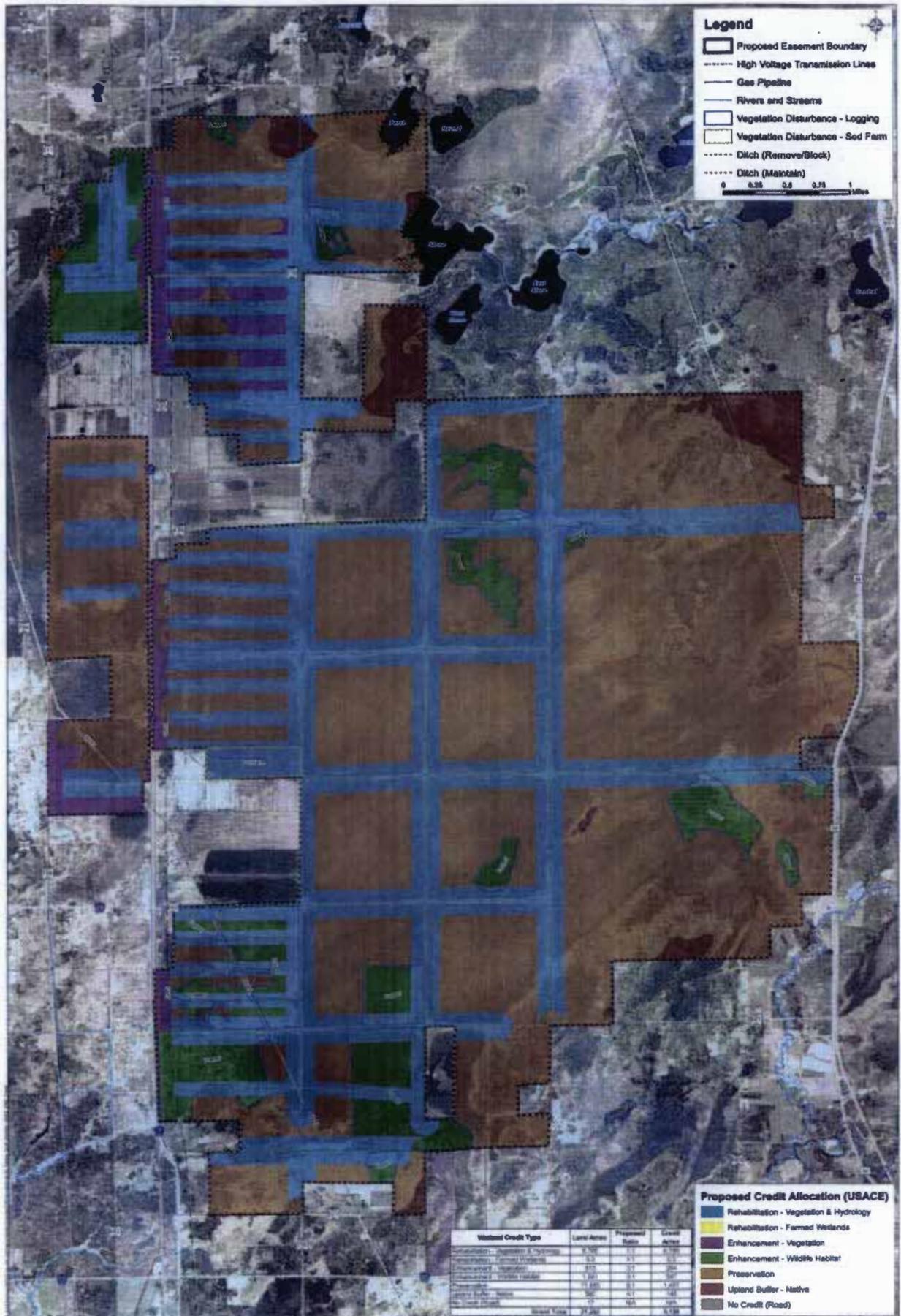


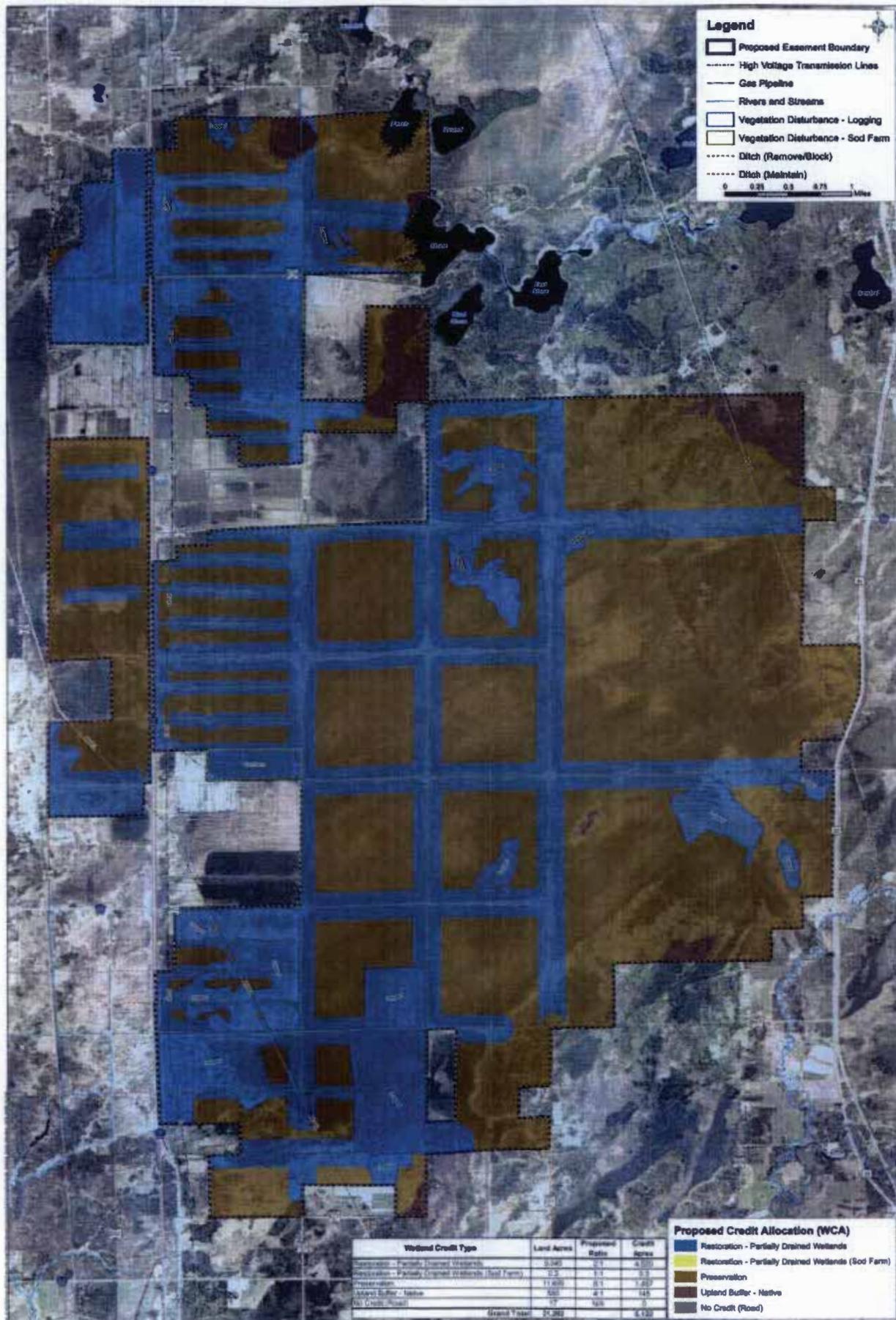
2012-04872-LED  
Drawing 10 of 15

**EXISTING WETLANDS MAP**  
Draft Based on Aerial Assessment

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
9





**Legend**

- Proposed Easement Boundary
- High Voltage Transmission Lines
- Gas Pipeline
- Rivers and Streams
- Vegetation Disturbance - Logging
- Vegetation Disturbance - Sod Farm
- Ditch (Remove/Block)
- Ditch (Maintain)

0 0.25 0.5 0.75 1 Miles

**Proposed Credit Allocation (WCA)**

- Restoration - Partially Drained Wetlands
- Restoration - Partially Drained Wetlands (Sod Farm)
- Preservation
- Upland Buffer - Native
- No Credit (Road)

| Wetland Credit Type                                 | Land Acres    | Proposed Ratio | Credit Acres  |
|---|---------------|----------------|---------------|
| Restoration - Partially Drained Wetlands            | 9,345         | 0.7            | 6,542         |
| Restoration - Partially Drained Wetlands (Sod Farm) | 0.5           | 0.7            | 0.3           |
| Preservation  | 11,400        | 0.7            | 7,980         |
| Upland Buffer - Native                              | 500           | 0.7            | 350           |
| No Credit (Road)                                    | 0.7           | 0.0            | 0             |
| <b>Grand Total</b>                                  | <b>21,251</b> |                | <b>14,872</b> |

**WETLAND CREDIT ALLOCATION**  
*Minnesota Wetland Conservation Act*  
 EIP St. Louis County Wetland Bank  
 EIP Credit Co., LLC

Figure  
10b



2012-04872-LED  
Drawing 13 of 15

**PROPOSED VEGETATION CONDITIONS**  
Proposed Draft Vegetation Plan  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
11



**Legend**

- Proposed Easement Boundary
- Gas Pipeline
- High Voltage Transmission Lines
- Rivers and Streams
- Ditch Block Location
- Ditch (Remove/Block)
- Ditch (Maintain)

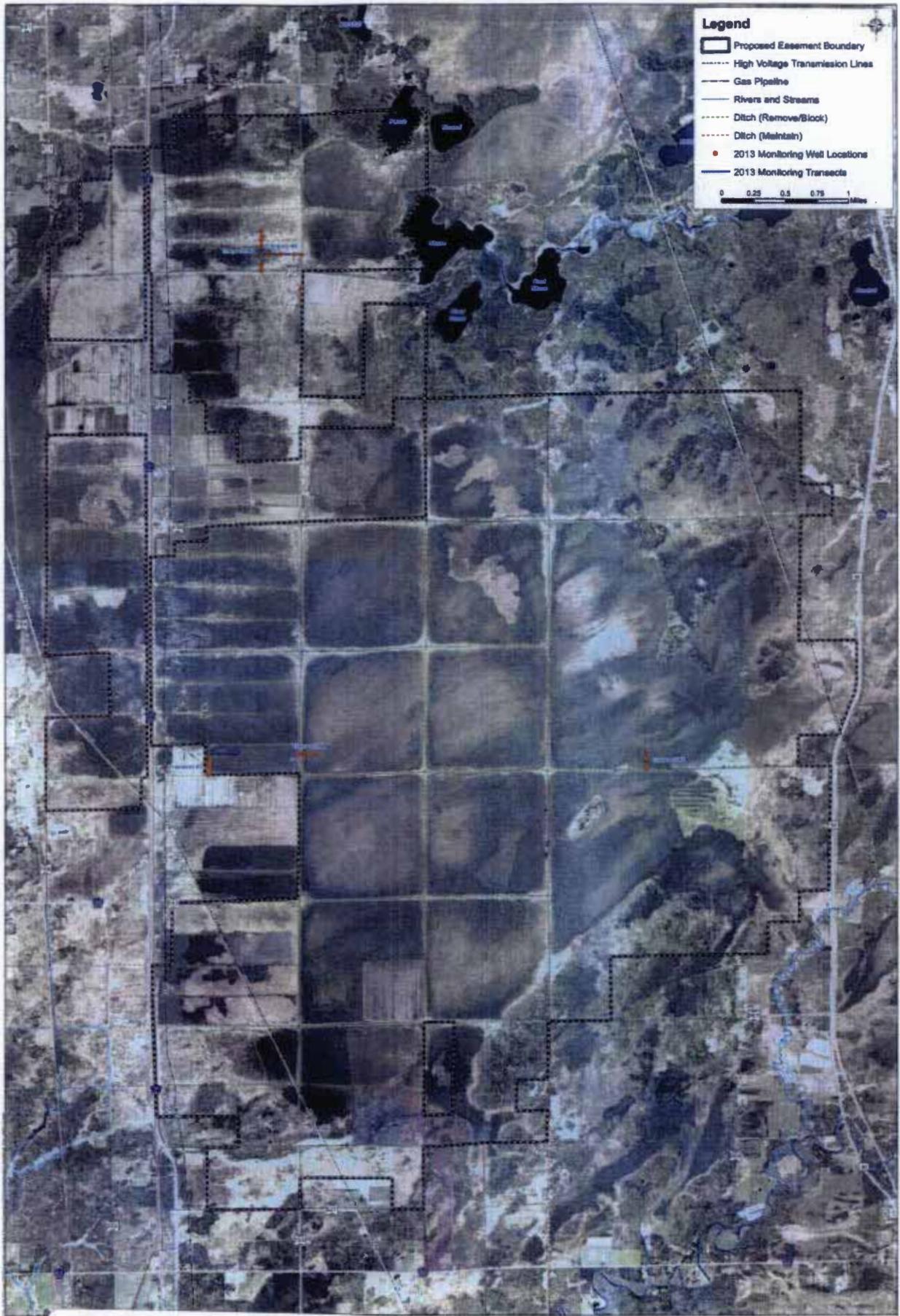
0 0.25 0.50 0.75 1 Miles

**Wetland Types**

|                      |                     |
|----------------------|---------------------|
| Lapped (2,080 ac.)   | P82P04C (10 ac.)    |
| Shell Palm (121 ac.) | PPO1B (10 ac.)      |
| PEM04 (430 ac.)      | PPO1C (280 ac.)     |
| PEMC (370 ac.)       | PPO14B (31 ac.)     |
| PEM05104 (51 ac.)    | PPO14C (280 ac.)    |
| PEM0510C (1,275 ac.) | PPO15B2B (43 ac.)   |
| PEM0520C (2,297 ac.) | PPO20B1C (100 ac.)  |
| PEB1C (122 ac.)      | PPO4B (74 ac.)      |
| P8010C (623 ac.)     | PPO4C (5,173 ac.)   |
| P801P04C (10 ac.)    | PPO4B1C (408 ac.)   |
|                      | PPO4B2C (2,830 ac.) |

**CONCEPT PLAN MAP**  
 Proposed Location of Ditch Blocks  
 EIP St. Louis County Wetland Bank  
 EIP Credit Co., LLC

**Figure**  
 12



2012-04872-LED  
Drawing 15 of 15

**MONITORING PLAN**  
Placement of Monitoring Wells (2013)  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
13

2012-04872-LEH



- 8 2013

July 1, 2013

RE: Ecosystem Investment Partners  
Lake Superior Wetland Bank  
SEH No. ECOSY 120032 14.00

Ms. Leslie Day  
U.S. Army Corps of Engineers  
1554 Highway 2 - Suite 2  
Two Harbors, MN 55616

Mr. Mark Lindhorst  
St. Louis County Planning  
Northland Office Center  
East Wing 307 S First Street  
Virginia, MN 55792

Dear Ms Day and Mr. Lindhorst:

Please find the enclosed Wetland Bank Concept Plan for the proposed Lake Superior Wetland Bank, located near Sax and Zim, St. Louis County, Minnesota.

This Concept Plan, and Prospectus, expand upon the Scoping Plan reviewed in November of 2013. Hard copies are being provided to the Wetland Conservation Act Technical Evaluation Panel. A CD containing electronic copies of the plan and prospectus are included with the hard copy, and available through an FTP site.

Please contact me at 761-490-2114 or at [ddeuschle@sehinc.com](mailto:ddeuschle@sehinc.com) if you have any comments or questions. We look forward to the opportunity to meet and discuss the plan, and submittal of the final plan in the fall of 2013.

Thanks in advance for you review of this project

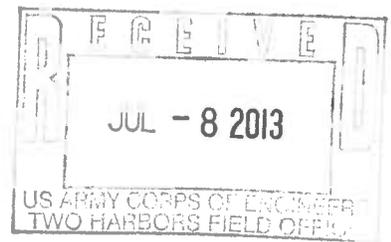
A handwritten signature in black ink, appearing to read "Deric Deuschle".

Deric Deuschle  
Senior Biologist

drd  
Enclosure

c: WCA TEP Members – Joan Weyandt, Paul Ojanen, Martha Minchak, Dale Krystosek  
USACE Staff who requested hard copies – Tom Mings, Barbara Walther, Greg Larson  
Other Requests - Les Lemm, Ken Powell, Jeff Hines, Dave Urban, Steve Gilbertson

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June 27, 2013

Ms. Leslie Day  
U.S. Army Corps of Engineers  
1554 Hwy 2, Suite 2  
Two Harbors, MN 55616

**Subject:** Prospectus for EIP Wetland Bank in St. Louis County, Minnesota

Dear Ms. Day:

Ecosystem Investment Partners (EIP) is pleased to enclose a prospectus for the Lake Superior Watershed Wetland Bank located in St. Louis County, Minnesota. At this time, the proposed bank includes the properties described in the Nevada Properties Scoping Document, and additional land being acquired by EIP from the State of Minnesota and St. Louis County. Collectively, these properties constitute the proposed Lake Superior Wetland Bank.

A Scoping Document was prepared for this project, and is dated October 17, 2012. This document was submitted to the United States Army Corps of Engineers (USACE) and Minnesota Wetland Conservation Act (WCA) Technical Evaluation Panel (TEP). This initial document was specific to the 3,624-acre "Nevada Properties", which are located primarily adjacent to CSAH 7.

A field review of the Nevada Properties was made by the USACE on November 7, 2012. Attendees included Leslie Day, Barbara Walther, and the Sponsor. The TEP, which included representatives from the USACE, was convened on November 19, 2012 to discuss the Scoping Document.

The USACE posted a Public Notice, and provided a written response to the Scoping Document. The response included a checklist of issues recommended be addressed as part of a complete application. We have addressed these recommendations and have provided the information requested in the checklist within the Concept Plan. This prospectus is intended to be used by the USACE and the Interagency Review Team (IRT) for processing this application in accordance with 33 CFR Part 332.8(d) (2).

On December 20, 2013, Staff from SEH met with hydrologists from the USACE and the (BWSR) to discuss hydrology data that was gathered in 2012, and revisions to the data collection proposed for 2013. The recommendations of the hydrologists have been incorporated into the concept plan.

We believe this draft prospectus complies with 33 CFR Part 332.8(d) (2). We understand that upon the

submission of a draft prospectus which complies with this part, the Corps will conduct a preliminary review (33 CFR Part 332(d)(3)) and distribute copies for initial evaluation by the St. Paul District's Inter-Agency Review Team (IRT). The Corps will then forward comments generated by the IRT to EIP. Depending on the comments received, we will then prepare a complete prospectus for public review and comment, and initial evaluation by the Corps (33 CFR Part 332(d)(4) and (5)). The next step would be to submit a draft Mitigation Bank Instrument (MBI) which contains all the information required by 33 CFR Part 332(d)(6). We further understand that the IRT will review the draft MBI for compliance with the regulations and provide comments again to EIP. EIP will then prepare a final MBI that will be the basis for chartering the bank. EIP welcomes a site visit by the IRT to any/all of the sites proposed anytime during this process.

The proposed bank is located on parcels of land that have been, or in the process of, being acquired by EIP Minnesota, LLC. Land use includes large tracts of ditched and partially drained wetland, including areas that have been logged, and are under future logging contracts. Proposed activities include the blockage of the drainage ditches to restore hydrology, enhancement of vegetation, and management of the area for the unique wildlife present. The goal of the project is the removal of artificial drainage and the restoration of the entire watershed.

The entire site will be permanently protected under a conservation easement, eliminating the threat of future degradation of the bank lands, including mineral and peat mining, and timber harvest.

The proposed restoration work may require the filling or blocking of man-made ditches, for which we intend to provide the required Jurisdictional Determination and permit applications during subsequent phases of bank review and approval.

Figures and Appendices referred to in the Prospectus are presented in the joint WCA-USACE Concept Plan.

We look forward to presenting this draft Prospectus to the IRT at your earliest convenience, and request preliminary review of the Bank prospectus in a timely manner. Please do not hesitate to call or email me if you have any questions regarding the draft Prospectus.

We look forward to working with you and the IRT on this important project.

Sincerely,



Nicholas Dilks  
Managing Partner

Cc: Mark Lindhorst, WCA LGU  
Tom Mings, USACE  
Barbara Walther, USACE  
David Urban, Ecosystem Investment Partners

## PROSPECTUS

### WETLAND MITIGATION BANK

EIP Credit Co. LLC (the "Sponsor") proposes to establish the Lake Superior Watershed Wetland Bank (the "Bank") on parcels of land currently owned or are being acquired by the Sponsor in St. Louis County, Minnesota, as shown on Figure 1.

The proposed properties are contiguous, and are generally located along and east of St. Louis County State Aid Highway 7 (CSAH 7), south of Stone Lake Road and the chain of Stone Lakes, west of Trunk Highway 53 (TH 53), and north of St. Louis County Highway 527. Geographically, the project lies between the cities of Sax and Zim, and lies adjacent to the Sax, Zim, and Fermoy Wildlife Management Areas, two University of Minnesota Wetland banks, and two tracts of the Cloquet Valley State Forest. The project area is within the Stone Creek minor watershed (Minnesota Watershed # 3089), the St. Louis River major watershed (HUC # 04010201), which are part of the Lake Superior basin.

The total site comprises a total of 21,292 acres. This includes the Nevada Reno properties owned by EIP (3,622 acres), and lands currently managed by St. Louis County (6,036 acres) and the State of Minnesota (11,637 acres), that are being acquired by EIP.

#### **Items Addressed In 33 CFR Part 332.8(d)(2)**

**“(2) Prospectus. The prospectus must provide a summary of the information regarding the proposed mitigation bank or in-lieu fee program, at a sufficient level of detail to support informed public and IRT comment. The review process begins when the sponsor submits a complete prospectus to the district engineer. .... The district engineer must notify the sponsor within 30 days whether or not a submitted prospectus is complete. A complete prospectus includes the following information:**

#### **(i) The objectives of the proposed mitigation bank or in-lieu fee program.**

The Bank has three primary objectives: A public benefit objective, a restoration objective and a regulatory objective.

The public benefit objective of the proposed Bank is to protect and restore large areas of partially drained wetland and peatlands in northeast Minnesota. These lands were ditched to create agricultural opportunities, although these attempts were generally unsuccessful. Threats to the landscape are present in the form of mineral rights, peat mining options, timber harvest, and maintenance of the ditch system. EIP has previously worked with state agencies and non-governmental organizations to preserve and restore threatened tracts including forest, wetlands, and aquatic ecosystems in other states. These tracts are often open to public access through recreation, hunting, and fishing. EIP will work with its conservation partners in Minnesota to provide similar public benefits. The Sax-Zim area is world renown for the birding opportunities, and this area has been identified by the Audubon Society as an Important Bird Area. The project

is adjacent to portions of the Sax, Zim, and Fermoy Wildlife Management Areas, the Cloquet State Forest, and approved wetland banks with public access. This will provide the opportunity to build on the conservation and public recreation benefits provided by the adjacent state lands.

The restoration objective of the Bank is to restore the minor watershed through the removal of the existing drainage ditch network. This will allow the restoration of hydrology for the areas within the ditch lateral effects that are partially drained. Within these areas, vegetation management is proposed to rehabilitate quality and diversity, as measured through the Floristic Quality Assessment. The area is known for its unique wildlife, and it is proposed to enhance the wildlife habitat, particularly by managing areas that have been used for recent timber harvest. Areas of high quality, but threatened, wetland are proposed for preservation, as are area of upland buffer. Table 1 and the site maps included in the Figures illustrate the restoration objectives.

Table 1: Proposed Wetland Restoration and Enhancement Activities and Areas

| Restoration Category                    | Activity  | Land Acres    |
|---|---|---------------|
| Rehabilitation - Vegetation & Hydrology | Restore hydrology through disabling of drainage ditches. Rehabilitate vegetation within the partially drained areas through management of invasive species, or improvements in species composition and diversity as measured by FQI | 6,785         |
| Enhancement - Wildlife Habitat          | Manage native communities to enhance the diversity and provide critical habitat for listed species  | 1,641         |
| Enhancement - Vegetation                | Provide for a functional lift of vegetation diversity and quality by controlling invasive species   | 613           |
| Preservation                            | Protect existing high quality wetlands from degradation. Provide management to ensure areas remain high quality and diverse wetland   | 11,655        |
| Upland Buffer - Native                  | Designate and protect upland buffer, which is one of the more rare habitats present in the immediate area, and provides diversity and wildlife habitat  | 580           |
| No Credit                               | The project area contains a few roads and utility corridors. These areas are not proposed for credit.   | 17            |
| <b>Grand Total</b>                      |   | <b>21,292</b> |

The regulatory objective for the Bank is to provide credits for use by private and public entities that require mitigation for unavoidable stream and wetland impacts primarily in the lake Superior Watershed (Bank Service Area 1). At this time the applicant and the Corps have not completed discussions on the amount of credit generation that this site may develop. These credits would be generated through a combination of the functional lift which would be created through a) restoring wetland hydrology through disabling of the drainage ditches, b) enhancing existing vegetation, 3) enhancing wildlife habitats in a critical area for many listed species, 4) preserve existing high quality habitats, 4) manage upland buffer.

Functional condition will be assessed using the Floristic Quality Assessment, which has recently been refined by the Minnesota Pollution Control Agency. This will utilize the quality of the vegetation to measure the functional lift of the proposed project, and should be suitable to

document rehabilitation, enhancement, and preservation.

Wetland credits from the proposed project have been estimated using the high and the low ends of the spectrum based on guidance issued by the St. Paul District (Table 2). Based on the guidance, the site has the potential to generate between 5,024 and 9,138 credits.

Table 2: Potential USACE Credits from the Proposed Wetland Bank

| Credit Action                             | Acres               | Credit Allocation |                    |                |                    |
|---|---------------------|-------------------|--------------------|----------------|--------------------|
|   |                     | Minimum Credit    |                    | Maximum Credit |                    |
|   |                     | Ratio             | Credit Amount      | Ratio          | Credit Amount      |
| Rehabilitation – Vegetation and Hydrology | 6,785               | 2:1               | 3,393              | 1:1            | 6,785              |
| Enhancement – Vegetation                  | 613                 | 4:1               | 153                | 3:1            | 204                |
| Enhancement – Wildlife                    | 1,641               | 4:1               | 410                | 3:1            | 547                |
| Preservation                              | 11,655              | 12:1              | 971                | 8:1            | 1,457              |
| Upland Buffer                             | 580                 | 6:1               | 97                 | 4:1            | 145                |
| <b>TOTAL EASEMENT SIZE:</b>               | <b>21,292 acres</b> | <b>TOTAL:</b>     | <b>5,024 acres</b> | <b>TOTAL:</b>  | <b>9,138 acres</b> |

The Bank will be protected in perpetuity by conservation easements, further increasing the credit worthiness of the work and eliminating future threats to the bank site, including mineral and peat mining, logging, ditch maintenance, and land use changes. The bank will be used both to satisfy Section 404 impacts under the US Army Corps of Engineers regulatory requirements for both permitted impacts and violations of the 404 program and the Minnesota Wetland Conservation Act.

**(ii) How the mitigation bank or in-lieu fee program will be established and operated.**

The proposed Bank will be established as a private commercial mitigation bank. The bank sites may be constructed in several phases, as temporal constraints may limit the amount of activity that can occur annually.

The Sponsor proposes to comply with 33 CFR 332.8 in the establishment and operation of the bank. Per the requirements of 33 CFR 332.8, the Sponsor will submit all of the requirements of 33CFR 332.8(d)(6) after the preliminary review, public review, and initial evaluation of this prospectus. The Sponsor intends to provide accounting procedures, default and

closure procedures, reporting protocols, a provision stating that legal responsibility for providing compensatory mitigation will lie with the Sponsor once a permittee secures credits from the Sponsor, plans including all applicable items of 33 CFR 332.4(c)(2)-(14), and a credit release schedule per the regulations and as negotiated, at the point where the draft instrument is required.

**(iii) The proposed service areas.**

As illustrated in Figures 2 and 3, the proposed primary service area for the Bank is the Bank Service Area 1 (BSA 1), which is the Lake Superior Watershed (Region 04). The project site is within the St. Louis River Watershed (HUC # 04010201). Within Minnesota, the project is within the Stone Creek Minor Watershed (Minnesota Watershed # 3089), which has a total drainage area of 38,505 acres. The Bank comprises 18,955 acres, or 49%, of the Stone Creek watershed. Smaller portions of the site are also mapped within the Paleface River and Whiteface River minor watersheds. Table 3 is a summary of the Minor Watersheds, and the area and percentage of the watershed covered by the Bank.

Table 3: Summary of Minor Watersheds within the Bank

| Minor Watershed<br>(Minnesota Watershed No.) | Total Acres   | Acres within<br>Site | % of Minor<br>within Site |
|--|---------------|----------------------|---------------------------|
| Paleface R (3070)                            | 9,343         | 234                  | 3%                        |
| Whiteface R (3071)                           | 11,227        | 143                  | 1%                        |
| Whiteface R (3072)                           | 13,900        | 1,960                | 14%                       |
| Stone Cr (3089)                              | 38,505        | 18,955               | 49%                       |
| <b>Total</b>                                 | <b>72,975</b> | <b>21,292</b>        | <b>29%</b>                |

The Sponsor proposes that any mitigation required in the primary service area (BSA 1), which otherwise comply with US Army Corps permits, be allowed to mitigate at the Bank; and that any mitigation required for projects outside of BSA 1 be allowed if demand for credits in the impact project's primary service area is not available from another approved mitigation bank with in-kind credits available on its bank ledger.

**(iv) The general need for and technical feasibility of the proposed mitigation bank or in-lieu fee program.**

US Army Corps data shows that projects within BSA 1 have traditionally achieved wetland mitigation primarily through the establishment of permittee responsible projects, which are the least desirable form of mitigation under the 2008 mitigation rules. Due to the scarcity of available mitigation within BSA 1, mitigation has often been obtained outside of the Lake Superior watershed. Projections of wetland credit need within BSA 1 far exceed the amount of wetland credits currently available and proposed from wetland bank projects currently in review within BSA 1. This shortage of credits exacerbates the use of adjacent Bank Service Areas, and provides for a conflict in the requirements to provide wetland mitigation consistent with the watershed approach.

The proposed project would provide sufficient credits to meet the projected wetland credit demand for BSA 1 over the next five to ten years, and assist in balancing the historic use of adjacent watersheds as sources of wetland credits.

Using its own private investment capital resources and considerable national experience in mitigation banking (including two operational sites within BSA 5 in Minnesota), the Sponsor proposes to restore, rehabilitate, and enhance the hydrology, vegetation, and communities that support listed wildlife species.

**(v) The proposed ownership arrangements and long-term management strategy for the mitigation bank or in-lieu fee project sites.**

The Sponsor has already purchased, or will purchase the tracts of land on which the proposed Bank sites will be located in fee. The Sponsor will obtain the maintenance rights for the private drainage ditches that currently drain the Bank, and thereby ensure that the ditches can be disabled and are no longer functional, to the detriment of the wetlands within the Bank.

The Sponsor will permit, construct, manage, and maintain the bank during the operational life of the bank. The Sponsor will be in charge of all mitigation credit sales and will be the responsible party per 33CFR Section 332.3(l). Upon approval of the Bank's Mitigation Banking Instrument (MBI) and before any credits are released, the Sponsor will encumber the Bank acreage with a perpetual conservation easement.

Once all of the potential wetland mitigation credits generated on a phase or discrete project area have been released by the IRT, that tract may be conveyed to the State Wildlife Management Area system, added to the network of land trust-owned preserves, or sold to a private conservation buyer(s) subject to the permanent conservation easement. Revenues generated by the sale of mitigation credits will also allow the Sponsor to establish a long-term monitoring and maintenance fund for the properties to provide for the long-term quality and viability of the restored ecosystems, should a surety be required. The new property owner(s) or a designated, third party manager will be responsible for long-term maintenance after bank closure per 33CFR Section 332.3(l). The third party financial assurance designee will be identified in the final Mitigation Banking Instrument (MBI), per 33 CFR 332.3(n)6.

Appropriate documentation will be submitted during the 33 CFR Part 332.8(d)(6) phase of permitting.

**(vi) The qualifications of the sponsor to successfully complete the type(s) of mitigation project(s) proposed, including information describing any past such activities by the sponsor.**

The Sponsor, Ecosystem Investment Partners (EIP), manages numerous mitigation banks that have been successfully permitted, constructed and operated across the nation, including the Deer River and Palisade wetland banks in BSA 5 in Minnesota, St. Paul District. Nationally, the Sponsor has completed the Dover Farm Mitigation Bank in the Norfolk District the Upper Clark

Fork Mitigation Bank in the Omaha District, the Mossy Hill Mitigation Bank, the Chef Menteur Mitigation Bank, and the Calcasieu Mitigation Bank in the New Orleans District. Information on these projects can be found at [www.ecosystempartners.com/projects](http://www.ecosystempartners.com/projects).

In addition, EIP's team of principals and staff bring a wealth of knowledge and experience in all of the aspects required for successful project design, establishment and implementation. EIP partner Nick Dilks has extensive experience in land conservation finance and real estate. He spent 10 years with The Conservation Fund, most recently as its Vice President for Real Estate, completing some of TCF's most complex and innovative transactions. EIP partner Fred Danforth has extensive banking and private equity investing background. Fred was a co-founder of Capital Resource Partners, a private equity investment firm. Recently, Fred was founder of the Upper Clark Fork Mitigation Bank. EIP's Director of Operations, David Urban has successfully permitted, designed, and operated over 20 mitigation banks located in the Chicago and Rock Island Districts in his role at a previous employer.

The Sponsor is prepared to set up financial assurances, in a form acceptable to the IRT, to ensure success of Bank construction. Appropriate documentation will be submitted during the 33 CFR Part 332.8(d)(6) phase of permitting.

**(vii) For a proposed mitigation bank, the prospectus must also address:**

**(A) The ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the bank site and how that site will support the planned types of aquatic resources and functions; and History of the Bank**

The proposed Bank encompasses 21,292 acres of land, which is composed of 3,512 acres owned by the sponsor, and 17,780 acres being obtained by the sponsor from St. Louis County, and the State of Minnesota. The entire site has been ditched and drained for agricultural land use, which was not successful, leaving the majority of the property in a degraded condition. Degradation is a result of extensive ditching, leading to partially drained conditions throughout the proposed Bank. The following sections will summarize the site, and the suitability to support the proposed Bank.

#### **Natural History**

The proposed Bank is located within an area identified as Glacial Lake Upham (MNDNR 2010), which formed during the retreat of multiple glaciers, and was part of a series of glacial lakes. Glacial Lake Upham formed approximately 13,000 years ago, as part of the retreat of the St. Louis Sublobe of the des Moines lobe (Ojakangas, R., Matsch, C. 1982). Glacial Lake Upham drained through a series of basins into Glacial Lake Duluth, and is the basis for the current alignment of the St. Louis River. The former bed of Glacial Lake Upham is currently a very large, broad area of bogs and wetlands.

Prior to settlement, the Bank was identified as coniferous bog with patches of wet prairie and adjacent red pine (*Pinus resinosa*), white pine (*Pinus strobus*), and mixed hardwoods in

lands adjacent to the southeast, northeast, and northwest quadrants (Marschner, 1974).

The Bank is located within the Forested Rich Peatland System, and within the Tamarack Lowlands, as identified by the MNDNR Ecological Classification System (2010). The lands along the perimeter of the bank have been classified as Northern Rich Tamarack Swamp - Western Basin (FPn82). These lands are characterized as being tamarack dominated swamps on moderately deep to deep peat, and often occur on glacial lake plains. Mosses typically have greater than 50% coverage, and coniferous species dominate the vegetative community (25% to 75% cover), as does a graminoid layer composed of 5 to 50% cover of grasses and sedges. Ericaceous shrubs typically have greater than 5% cover, and are composed of typical bog species. Tall shrubs typically have greater than 25% cover. Vegetation is influenced by the peat soils, which are low in nutrients, and mineral-influenced groundwater, which is typically neutral. Groundwater is stagnant, and the water table is near the surface. The community is fire-dependant, and natural rotation of catastrophic fires is estimated to be about 360 years.

The larger parcels in the center of the basin have similar characteristics, but appear to potentially be classified as Northern Rich Tamarack Swamp - Water Track (FPn81). The water track community class is similar to the western basin class, but has a patchy to interrupted canopy of tamaracks, is wetter, and is associated with rich fen tracks in large glacial lake peatlands. The bank area has been identified by the MNDNR as an unknown location for watersheds. Aerial photograph review supports that this area may contain water shields, as the vegetative pattern is suggestive of areas with confirmed watersheds.

The Bank is within an area identified as the Sax-Zim Bog, and has been identified by the Audubon Society as an Important Bird Area (National Audubon Society, 2010). The Sax-Zim area is internationally known for the abundance and diversity of birds. The area is best known for the abundance of owls, but the area supports a wide variety of arboreal species, particularly in winter, when the birds migrate to the south from Canada. The birds and owls are attracted to the area for the habitat that is present, which supports high rodent populations.

## **Hydrology**

The proposed bank is located primarily within the Stone creek minor watershed, which has a drainage area of 38,505 acres. Small portions of the site are also mapped within the Paleface River and Whiteface River minor watersheds, but these areas are less than 5% of the total bank area. The northern portion of The Stone Creek watershed is composed of a series of lakes, including Murphy, Heikkila, East Stone, and West Stone, that flow from east to west, and Teal, Mallard, and Bluebill which flow from north to south. Both of these lake chains meet at Stone Lake, which has a ditched outlet that flows along the north side of Stone Lake Road and into the CSAH 7 right of way. The natural Stone Lake outlet is visible on aerial photographs, but has been replaced by the ditched outlet to ensure that it is maintained, as there are several residents along the south shore of Stone Lake.

The entire Bank has been ditched and drained. The majority of the ditching was completed prior to the 1920's, as part of efforts to promote agricultural use of the land. The ditches includes two primary varieties. 1.) Along the section lines are the large regional drainage ditches. These ditches are 15 to 25 feet in width, and vary in depth from 2 to 5 feet of open

water. 2.) Within this larger drainage system are numerous lateral ditches, particularly on the parcels immediate east of CSAH 7 . These laterals are small, with dimensions of a foot or two in width, and variable depths. These smaller laterals are often only apparent on the aerial photographs, or on-site through changes in vegetation (i.e. a strip of cattails), but remain functional.

The primary ditch system is County Ditch #1, which includes all of the ditches on the east side of CSAH 7. Early maps of this ditch network show two major systems, with large sectional ditches on the eastern half of the Bank being collected and discharged to the south into the Whiteface River. The ditches in the western half of County Ditch #1 include the smaller laterals, which flow to the west and adjacent to the DM &I Railroad. This system has been modified since creation, with the biggest change being the connection of the eastern portion into the western portion and termination of the flows to the Whiteface River. The smaller laterals have also been connected to a newer north-south oriented mile and a quarter ditch, and the main discharge is now within the eastern side of the CSAH 7 right of way, not along the railroad right of way.

County Ditch #6 is located on the west side of the railroad tracks and CSAH 7. For the portion of County Ditch #6 within the project area, there is a main north-south oriented main line, and numerous laterals that drain from the CSAH 7 and railroad right of way to the west.

Currently, County Ditch #1 is identified as having 70 miles of ditch, and a drainage area of 38 square miles. With the exception of a short segment of ditch that connects to East Stone Lake, the entire County Ditch #1 is within the limits of the Bank. The portion of the County Ditch #6 within the Bank includes approximately 12 miles of ditch, and has a drainage area of 4.6 square miles.

The main ditch along CSAH 7 serve as the primary collector of the drainage, and discharges through twin culverts under CSAH 7 in the southwest portion of the Bank. Where the collective ditches exit the site, the channel is perennial, and is approximately 30 feet in width, and several feet deep. The channel continues for approximately 2.4 miles before discharging into the Whiteface River.

Hydrology within the Bank is present as a high water table throughout the site, but is at least partially drained by the network of drainage ditches. The extent of drainage is currently being determined, but preliminary data collected in 2012 and 2013 suggests that a lateral effect of 600 feet may be present. This data will be supported by additional hydrology monitoring in 2013.

The Bank plan is to permanently disable County Ditch #1, which is possible as the entire system is within the bank limits, or can be modified to continue to maintained the outlet elevation of Stone Lake. On the west side of CSAH 7, it is proposed to disable all of the laterals that flow into County Ditch #6. Disabling of the system is proposed through the placement of ditch plugs, which will effectively stop surface water flows from the Bank. Details of the ditch plugs design will be developed for the final prospectus.

## Vegetation

The historic vegetation of the Bank would have been composed of coniferous bog species, including tamarack (*Larix laricina*), black spruce (*Picea mariana*), bog rosemary (*Andromeda polifolia*), blueberries (*Vaccinium* spp.), and sphagnum moss (*Sphagnum* spp.). These communities are still present, and dominate overall, but are highly fractured by the drainage system and past disturbances. Vegetation within the eastern sections appears to be coniferous bog, but vegetation is noticeable more sparse and shrubby, which may be related to the influence of the water tracks, and less disturbance and drainage.

Where ditches are present, the vegetation is typically composed of a lateral wet meadow zone that parallels the ditch. These wet meadow areas are dominated by Canada bluejoint grass (*Calamagrostis canadensis*) and stinging nettle (*Urtica dioica*). Species diversity is low, which may be indicative of the partial or complete drainage. Moving laterally from the ditches, the vegetation transitions to a more diverse zone of wet meadow, which is similarly dominated by Canada bluejoint grass, but includes Joe-pye weed (*Eutrochium maculatum*), New England aster (*Symphotrichum novae-angliae*), steplebush (*Spiraea tomentosa*), red raspberry (*Rubus idaeus*), sensitive fern (*Onoclea sensibilis*), arrow-leaf tearthumb (*Persicaria sagittata*), and red osier dogwood (*Cornus alba*) shrubs. For the large section-sized ditches, these wet meadow zones can be as much as 250 feet on either side of the ditch. Smaller laterals are more variable, with the wet meadow zones being as small as 25 feet, but as great as 1,300 feet where scope and effect may overlap between the lateral and main ditches.

Shrub-carr habitat is present, and also appears to be associated with drainage. The observed shrub carr habitats are dominated by bog birch (*Betula pumila*), but some willow (*Salix* spp.) are present. Speckled alder (*Alnus rugosa*) has not been observed within the Bank except within areas on the east side that have been logged, and have recovered as alder thickets.

Sphagnum moss is present throughout the site, but is very limited on the western side to within the remaining areas of tamarack, and is typically very thin and provides less than 5% cover. The eastern portion of the site, where the water tracks are present, are dominated by sphagnum moss as a base layer (nearly 100% of cover), and is hummocky, and up to two feet thick. The distribution of the sphagnum moss appears to be related to the extent of hydrology alteration.

Invasive species, primarily reed canary grass (*Phalaris arundinacea*) have been observed adjacent to CSAH 7, but do not appear to be widespread within the majority of the Bank. Stinging nettle is present in the wet meadow habitats, but is more indicative of partial drainage than being an invasive species.

Approximately 1,648 acres of land have also been logged within the last three years. It is unknown the impact that logging has had on these areas, as a vegetation survey has not been completed for these areas yet. Review of portions of the logged areas in 2013 suggests that the disturbance resulted in a transition from tamarack and black spruce to alder thickets.

## **Geology and Soils**

The majority (approximately 99% by area) of the soils within the proposed bank are hydric, with the most common mapped soil type (approximately 67%) being Greenwood Soils, Upham Basin, 0 to 1 percent slopes (USDA 2010) (Figure 7). The Greenwood series consists of very deep, very poorly drained soils formed in organic deposits more than 51 inches thick on outwash plains, till floored lake plains, or lake plains. These soils have moderate or moderately rapid permeability. Slopes range from 0 to 2 percent. Mean annual precipitation is about 29 inches, and mean annual temperature is about 43 degrees F. The depth of organic material is typically more than 51 inches. The soil series description identifies the soil as composed of fibrous material at the surface, above layers of mucky peat. Direct observations indicated a larger wood fiber component within the peat layers, with buried logs and branches occasionally encountered, typically greater than two feet below ground surface. Gleyed silty clay was observed along the south side of Stone Lake Road at three feet below ground surface, and is presumed to be lacustrine deposits.

Other soil types are also present, and tend to be along the eastern and southern perimeter of the Bank, which corresponds to the perimeter of the Glacial Lake Upham, and are composed of glaciofluvial sediments formed on glacial till plains. Soil textures vary considerably from sandy loam to clay loam, and many complexes are present. A large band of Tacoosh mucky peat and Cathro Muck are also present along the eastern perimeter, as the site transitions from Greenwood to the glaciofluvial soil types. The Tacoosh, Cathro, Baden, Rifle, and Blackhoof soils comprise approximately 14.98% of the soils within the Bank, and are all muck soils. Table 1 is a summary of all the soil types located with the Bank.

## **Proposed Restoration Goals and Sustainability**

The goal of the project is to protect, enhance, and restore the Exceptional Natural Resource Values within Stone Creek minor watershed. The proposed Bank would disable the entire County Ditch #1 system, and a large area of the County Ditch #6 laterals. This is the hydrologic restoration of approximately 45 square miles of land.

Restoration of hydrology is proposed through a series of ditch checks to prevent or greatly reduce the current discharge from the Bank. The ditches currently remove groundwater hydrology, and result in a lowered water table, particularly within the scope and effect of the ditches, but potentially over a larger area. Disabling of the ditches will result in restoration of the natural water table, and will stabilize the current hydrology alteration. The current ditch maintenance program, which is primarily removal of beaver and obstructions, with periodic maintenance of the channels, would be eliminated, ending the periodic unnatural fluctuation of the water table. Removal of the ditches would allow for additional storage of ground water at the site, and may promote the function of the water tracks. Groundwater monitoring will be completed to determine the scope and effect of the ditches, and to provide a baseline for comparison after ditch removal.

Vegetation within the property is generally of moderate to high quality, but varies in relation to the degree of hydrology alteration. The closer to the drainage ditches, the lower the quality (as measured as species diversity, occurrence of invasive species, and coefficient of

conservatism). It is proposed that vegetation rehabilitation and enhancement will occur in conjunction with the hydrology restoration. Efforts will be taken to improve species diversity, remove invasive species, and raise the coefficient of conservatism. Areas of the property that have been logged will be managed to promote wildlife habitat, and maintain a high quality vegetation community that may differ from the rest of the near-climax community. For example, high quality sedge meadow is a rare wetland feature that may be promoted in areas that have been previously logged. Overall, it is proposed that the hydrology restoration and active management of the vegetation will provide a functional lift to the entire Bank.

Hydrology restoration is proposed through the permanent disabling of County Ditch #1, and all of the laterals with the northern branch of County Ditch #6. The original spoil material from the ditch excavation has decomposed and is not available for re-filling the ditches. Disabling of the ditches is proposed through the placement of ditch checks at strategic locations to block all possible ditch paths from the Bank. A total of 66 checks are proposed (Figure 12), but may be scaled down if fewer checks would be as effective.

Several construction methods for the checks are being considered, as the site may have some limitation on access for equipment and installation. One option is to install most of the checks in winter when frozen ground will protect the soils and vegetation from most of the disturbance. A second option is place rock checks through the use of a helicopter, which can lift pre-constructed rock checks in mesh bags to the ditches, and workers on the ground can secure them through anchors. It is expected that ditch checks will be constructed of rock, and will be of suitable mass to remain in place. The ditch checks are intended to have a low point, which will allow high water to pass, but will block flows at when bankful conditions are not present. Smaller laterals with easier access may be blocked using other methods, potentially hand driven vinyl sheet piling.

The proposed Bank will remove all the public and private drainages within the Stone Creek minor watershed, and restore the hydrology to more than 38 square miles of land. The plan to restore the hydrology of the entire minor watershed presents a great opportunity to provide long-term sustainability. The scale of the project provides additional protection, as there will be no future opportunities to degrade the area through future ditching, development, or land alteration. Should changes to surrounding lands occur, the project will provide protection from incidental effects. It is expected that the restoration of hydrology will take many years or even decades to fully occur. Vegetation may similarly take considerable time and management, but once it has been achieved, it is expected to be self sustaining. The site is anticipated to be resilient enough to withstand natural fluctuations and ecological setbacks, such as fire, disease, wind storms, flooding, and drought.

The Bank is within a sensitive wetland and wildlife area, and is internationally known for the seasonal abundance of boreal bird species. The Bank follows the guidance of the USACE for Preservation, and meets 11 considerations, including:

1. The Bank is within an area identified as the Sax-Zim Bog, and has been identified by the Audubon Society as an Important Bird Area (National Audubon Society, 2010).

The Sax-Zim area is internationally known for the abundance and diversity of birds. The area is best known for the abundance of owls, but the area supports a wide variety of arboreal species, particularly in winter, when the birds migrate to the south from Canada. The birds and owls are attracted to the area for the habitat that is present, which supports high rodent populations. **(Special Wildlife Resources, wildlife concentrations)**

2. The Bank will restore the hydrology to 42.6 square miles of drained land through the disabling of 82 miles of drainage ditch, most of which has been present since prior to the 1920's. Of this area, 38 square miles are directly within the bank. This is the restoration of hydrology to the entire Stone Creek minor watershed. **(Reestablishing Natural Hydrology, Ecological Function of the Watershed)**
3. The property is believed to contain water tracks, which are unique ground water features. The removal of surface drainages will also restore the historic pattern of groundwater discharge and recharge. **(Reestablishing Natural Hydrology, Sensitive Groundwater Features)**
4. The site contains habitat for state-listed endangered or threatened species. A State-Listed Endangered floating marsh marigold (*Caltha natans*) has been identified within a roadside ditch within the Bank. Similar habitats are present within the ditches throughout the site. **(Habitat for State-listed Species)**
5. Numerous plants and animals of Special Concern have been identified within and adjacent to the Bank. The County Biological Survey is currently working within the Bank, and expects to have results following surveys completed in 2012, 2013, and 2014. It is anticipated that additional species will be identified once surveys have been completed. **(Habitat for State-listed Species)**
6. The site is currently used by a variety of wildlife, in addition to the well-known birds. Bears, timber wolves (Special Concern), and moose (proposed Special Concern) reside within the Bank. **(Habitat for State-listed Species)**
7. The Bank is adjacent to the Sax, Zim, and Fermoy Wildlife Management Areas, and the University of Minnesota Wetland Banks. The Bank will expand on these designated areas, and provide an even larger area of protection for our natural resources. Ecologically, larger tracks of land are more stable and provide a greater resilience to natural disturbances. **(Habitat Connectivity, Proximity to Public Lands)**
8. The Whiteface River is listed as impaired for mercury. This is a downstream resource that may benefit from a reduction in surface water inputs. **(Water Quality)**
9. Portions of the Bank have peat mining permits and mineral rights. Logging has occurred on portions of the site to remove tamarack and black spruce trees. Drainage ditches have been maintained, and could continue to be maintained as requested by beneficiaries. **(Demonstrable Threats)**
10. The proposed actions will provide functional lift, and protected under a permanent conservation easement. **(Protect the Resource)**
11. Rapid Floristic Quality Assessments and hydrology monitoring are proposed for 2013. These will serve as functional assessments, and serve as a baseline to document functional lift. **(Functional Assessments/Gain)**

**(B) Assurance of sufficient water rights to support the long-term sustainability of the mitigation bank.**

No water rights are needed. The private drainage ditches that are present on the property will be obtained by the Sponsor through the acquisition of property.

The Sponsor understands that upon this submittal of this prospectus, the Corps will conduct a preliminary review (33 CFR Part 332.8(d)(3)) and initial evaluation by the IRT ((33 CFR Part 332.8(d)(5)). The Corps will then forward comments to the Sponsor for use in preparing the final prospectus. We understand that upon submitting the final prospectus, the Corps will conduct another review, including public review and comment (33 CFR Part 332.8(d)(4)) and evaluation by the IRT, and again forward comments to the Sponsor. The Corps would then request the Sponsor to submit a draft instrument which contains all the information required by 33 CFR Part 332.8(d)(6). We further understand that the IRT will review the draft instrument for compliance with the regulations and provide comments again to the Sponsor. The Sponsor will then prepare a final instrument, which will be the basis for chartering the bank.

**References:**

Marschner, F.J., 1974, The original vegetation of Minnesota, a map compiled in 1930 by F.J. Marschner under the direction of M.L. Heinselman of the U.S. Forest Service: St. Paul, Minnesota, Cartography Lab of the Department of Geography, University of Minnesota. GIS data available from the Minnesota Department of Natural Resources at URL:

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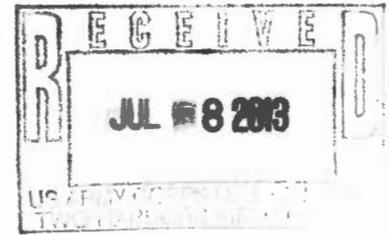
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USDA-NRCS. 2009. Soil Survey Geographic (SSURGO) database for St. Louis County, Minnesota, Meadowlands Part. United States Department of Agriculture – Natural Resources Conservation Service. Fort Worth, TX: mn619. URL: <http://soildatamart.nrcs.usda.gov/>.



# Wetland Bank Plan Concept Document



## PROJECT SPONSOR INFORMATION

|   |  |  |  |                    |                          |
|---|--|--|--|--------------------|--------------------------|
| Sponsor's Full Name<br><b>EIP Credit Co. LLC</b>  |  |  |  |                    |                          |
| Complete Mailing Address (Street, RFD, Box No.)<br><b>2002 Clipper Park Rd. Suite 201</b>   |  |  | City<br><b>Baltimore</b>                             | State<br><b>MD</b> | Zip Code<br><b>21211</b> |
| Phone Number (Home)   | Phone Number (Work)<br><b>443-921-9441</b> | Phone Number (Cell)<br><b>847-553-8675</b> | E-Mail Address<br><b>david@ecosystempartners.com</b> |                    |                          |
| Sponsor's Relationship to Property  |  |  |  |                    |                          |
| <input type="checkbox"/> Fee Title Owner <input type="checkbox"/> Contract for Deed Owner <input type="checkbox"/> Contract or Agreement with Landowner <input checked="" type="checkbox"/> Other: <b>Multiple agreements</b> |  |  |  |                    |                          |

## PROJECT LOCATION

|   |   |                                      |                            |           |  |
|---|---|--------------------------------------|----------------------------|-----------|--|
| Project Name (if known)<br><b>Lake Superior Wetland Bank (See Figure 1)</b> |   |                                      | County<br><b>St. Louis</b> |           |  |
| Est. Easement Size (acres)<br><b>21,292 acres</b>                           | Township Name<br><b>McDavitt and Ellsburg</b> | Section No.<br><b>See Appendix A</b> | Township No.               | Range No. |  |

- Check this box to request concurrent review by the U.S. Army Corps of Engineers under the Federal Clean Water Act.
- Check this box if credits from this bank are intended for deposit into the Minnesota *Agricultural* Wetland Bank only.

## GENERAL INFORMATION

To establish a wetland bank in Minnesota, approval of a wetland bank plan must first be obtained. There is a three-step process for obtaining approval of a wetland bank plan under Minnesota Wetland Conservation Act (WCA) program requirements. The three steps are as follows:

1. Wetland Bank Plan Scoping Document
2. Wetland Bank Plan Concept Document
3. Wetland Bank Plan Full Application

This document is Step 2 in the process. Applicants should first submit a Wetland Bank Plan Scoping Document and receive an evaluation of their potential project from the WCA Local Government Unit (LGU) and/or the Technical Evaluation Panel (TEP) before completing and submitting this document. The submittal of this form and supporting information will initiate Step 2 of the bank plan review process.

Review of this document will help identify any potential issues with the project design, proposed easement, credit amount, credit criteria, credit release schedule, and any other issues prior to investing the time and expense necessary to complete a final plan and full application.

The project sponsor will receive a copy of the findings and recommendations that result from this concept plan review. These findings and recommendations do not constitute final approval of a wetland replacement project or guarantee success should the project continue with the review process. Only the approval of a full application by the LGU constitutes approval of a wetland bank plan for WCA purposes.

## LIST OF FIGURES

List and label all figures and appendices in the order in which they are referenced in this submission form.

*The following figures are required (reference them in applicable sections of the narrative):*

- ✓ Site Location Map
- ✓ Land Use Map of Project Site and Surrounding Properties
- ✓ Existing Conditions Topographic Map (include topography of adjacent lands if they contribute to or could be affected by the project) – map should at minimum include contours (preferably 1-foot referenced to msl datum), property lines, culverts, bridges, roads, structures, subsurface drainage features, power lines and other utilities, property ownership, benchmarks, north arrow, scale, and proposed easement boundary. In most instances LiDAR data can be used at this stage.
- ✓ Web Soil Survey Map (or other soil information if Web Soil Survey not available for the area)
- ✓ Minor Watershed (DNR 5-digit HUC) Map (show location of site within minor watershed)
- ✓ Existing Wetlands Map (approved delineation or estimate based on best available data)
- ✓ Existing Conditions Vegetation Map (current dominant vegetative cover of site and surrounding area)
- ✓ Map of Proposed Easement Boundaries (preferably overlaid on topo map and/or aerial photo)
- ✓ Credit Area Map (see item # 6)
- ✓ Proposed Vegetation Conditions Map (based on vegetation establishment plan)
- ✓ Concept Plan Map showing anticipated construction features (berms, control structures, inlets, etc.)
- ✓ Monitoring Plan Map showing proposed monitoring locations

*The following figures are recommended, if applicable:*

- ✓ Historical Air Photo(s) (representative of pre-altered conditions)
- ✓ Site Photographs
- ✓ Photographs of Reference Wetland(s) (reflective of post-plan conditions)

## SECTIONS

Do not leave any of the following sections or subsections blank. If a section does not apply to your project, then enter "not applicable" for that section and explain why.

### 1. Regulatory Review Status and Application History

*Identify and discuss the extent of review and comments received on this pending wetland banking project to date. Reference and include review letters and findings related to previous scrutiny of the proposed project by local, state, and federal review entities.*

A Scoping Document was prepared for this project, and is dated October 17, 2012. This document was submitted to the United States Army Corps of Engineers (USACE) and Minnesota Wetland Conservation Act (WCA) Technical Evaluation Panel (TEP). This initial document was specific to the 3,624-acre "Nevada Properties", which are located primarily adjacent to CSAH 7.

A field review of the Nevada Properties was made by the USACE on November 7, 2012. Attendees included Leslie Day, Barbara Walther, and the Sponsor.

The TEP was convened on November 19, 2012 to discuss the Scoping Document. This meeting concluded with the recommendation to proceed with the Part A Application. Between the TEP meeting and this submittal, the Board of Water and Soil Resources (BWSR) replaced the Part A Application with the Concept Plan Application. Concerns expressed by the TEP included the ability to remove the drainage ditches and ditch ownership (Appendix E), determination of ditch scope and effect (Appendix F), and applicability of the site to receive preservation credits (discussed in Concept Plan).

The USACE posted a Public Notice, and provided a written response to the Scoping Document. The response included a checklist of issues recommended be addressed as part of a complete application. We have addressed these recommendations and have provided the information requested in the checklist within the Concept Plan. This prospectus is intended to be used by the USACE and the Interagency Review Team (IRT) for processing this application in accordance with 33 CFR Part 332.8(d) (2).

On December 20, 2013, Staff from SEH met with hydrologists from the USACE and the (BWSR) to discuss hydrology data that was gathered in 2012, and revisions to the data collection proposed for 2013. The recommendations of the hydrologists have been incorporated into the current plans.

Copies of referenced documents are included in **Appendix B**.

### 2. Project Sponsor - Landowner

*Identify who will be the official project proposer that is ultimately responsible for completing the project and owning the result wetland credits. Discuss any agreements between the sponsor and landowner (if different) or other legal circumstances related to project ownership.*

The land within the proposed Bank will be owned by EIP Minnesota, LLC (EIP Minn), and operated by an affiliated entity, EIP Credit Co, LLC, under a lease agreement. The 3,624 acres described in the Scoping Document as the Nevada Properties have been purchased by EIP Minnesota, LLC. The remaining properties described in the Concept Plan are currently owned/controlled by St. Louis County (6,034 acres) or the State of Minnesota (11,637 acres) (**Figure 4**). With assistance from the Conservation Fund, EIP Minn expects to take title to these properties by the end of 2013. St. Louis County and the Minnesota Department of Natural Resources are actively participating in completing these transactions, and support the submittal of this Concept Plan. The parcels proposed for acquisition and adjacent properties are listed in **Appendix B**.

### 3. Proposed Bank Easement Description

*Discuss the proposed easement boundary (a required figure) in terms of its location (e.g. coincides with property line, follows road or ditch right-of-way boundary, etc.) and the reasons for including or excluding certain areas (e.g. excludes field road to allow access to adjacent property, etc.).*

The proposed easement is composed of 21,292 acres. The Bank is generally located along and east of St. Louis County State Aid Highway 7 (CSAH 7), between the communities of Sax and Zim. The Bank is south of the chain of Stone lakes, west of Trunk Highway 53 (TH 53), and north of St. Louis County Highway 527 (**Figure 1**). The Sax, Zim, and Fermoy Wildlife Management Areas, two University of Minnesota Wetland banks, and two tracts of the Cloquet Valley State Forest are contiguous to the Bank. Businesses adjacent to the project include Zim Sod and a commercial greenhouse. The Zim Sod property is currently in the process of being proposed as a permittee responsible wetland mitigation project.

The Bank is within Bank Service Area 1 (**Figure 2**), within the Lake Superior Watershed. The Bank is within the St. Louis River major watershed (HUC # 04010201, Minnesota Watershed # 3), and almost entirely within the Stone Creek minor watershed (Minnesota Watershed # 3089) (**Figure 3**).

Within the Bank are easements for a natural gas pipeline, two HVTL powerlines, and a designated snowmobile trail. It is assumed that these areas would be excluded from the Bank, as would any additional existing utility or road authority rights of way. Specific details on the exact footprint are subject to the completion of the title review, but the excluded areas are minor in relation to the total project area.

The properties proposed for the Bank, in addition to the known exclusion areas, are identified on **Figure 4**.

### 4. Existing Conditions

*Provide a description of existing physical conditions of the bank site and surrounding area including current land use, vegetation, roads, structures, wells, utility lines, hydrology, etc. For hydrology describe water flow sources and flow directions and identify tiles, ditches and any other drainage components on or near the site. Also include a discussion of existing wetlands on the site including reference to any wetland delineations or determinations previously conducted and approved. Include and reference figures to supplement the narrative.*

#### Topography

The Bank is located on a relatively flat plain, with surface topography evenly sloping from a high elevation of approximately 400 meters Mean Sea Level in the northeast to a low elevation of approximately 390 meters in the southwest. This is a 10-meter (roughly 30 foot) change in elevation over approximately seven miles. A LiDAR map of the Bank and surrounding area is provided in **Figure 5**.

#### Land Cover

The 2000 Landsat landcover classifications for the Bank include large tracts of forest, wetland, shrub land, and smaller area of grassland, former agricultural land, and areas that have been logged (**Figure 6**). Land cover has been modified by the construction of numerous drainage ditches, which has altered hydrology, and has influenced the plant communities that are present.

The Bank is located within the Forested Rich Peatland System, and within the Tamarack Lowlands, as identified by the Minnesota Department of Natural Resources (MNDNR) Ecological Classification System (2010). The lands within the Bank have been classified as Northern Rich Tamarack Swamp - Western Basin (FPn82). These lands are characterized as being tamarack-dominated swamps on moderately deep to deep peat, and often occur on glacial lake plains. Mosses typically have greater than 50% coverage, and coniferous species dominate the vegetative community (25% to 75% cover), as does a graminoid layer composed of 5 to 50% cover of grasses and sedges. Ericaceous shrubs typically have greater than 5% cover, and are composed of typical bog species. Tall shrubs typically have greater than 25% cover. Vegetation is influenced by the peat soils, which are low in nutrients, and mineral-influenced groundwater, which is typically neutral. Groundwater is stagnant, and the water table is near the surface. The community is fire-dependant, and natural rotation of catastrophic fires is estimated to be about 360 years.

The larger parcels in the center of the basin have similar characteristics as the Northern Rich Tamarack Swamp - Western Basin, but appear to potentially be classified as Northern Rich Tamarack Swamp - Water Track (FPn81), a less common ecological classification. The water track community class is similar to the Western Basin class, but has a patchy to interrupted canopy of tamaracks, is wetter, and is associated with rich fen tracks in large glacial lake peatlands. The bank area has been identified by the MNDNR as an unknown location for water tracks. Aerial photograph review supports that this area may contain water tracks, as the vegetative pattern is suggestive of areas with confirmed water tracks. Preliminary data from the 2012 Minnesota County Biological Survey also indicates that the eastern two thirds of the Bank are likely water tracks.

### Geology and Soils

The majority (approximately 99% by area) of the soils within the proposed bank are hydric, with the most common mapped soil type (approximately 67%) being Greenwood Soils, Upham Basin, 0 to 1 percent slopes (USDA 2010) (Figure 7). The Greenwood series consists of very deep, very poorly drained soils formed in organic deposits more than 51 inches thick on outwash plains, till floored lake plains, or lake plains. These soils have moderate or moderately rapid permeability. Slopes range from 0 to 2 percent. Mean annual precipitation is about 29 inches, and mean annual temperature is about 43 degrees F. The depth of organic material is typically more than 51 inches. The soil series description identifies the soil as composed of fibrous material at the surface, above layers of mucky peat. Direct observations indicated a larger wood fiber component within the peat layers, with buried logs and branches occasionally encountered, typically greater than two feet below ground surface. Gleyed silty clay was observed along the south side of Stone Lake Road at three feet below ground surface, and is presumed to be lacustrine deposits.

Other soil types are also present, and tend to be along the eastern and southern perimeter of the Bank, which corresponds to the perimeter of the Glacial Lake Upham, and are composed of glaciofluvial sediments formed on glacial till plains. Soil textures vary considerably from sandy loam to clay loam, and many complexes are present. A large band of Tacoosh mucky peat and Cathro Muck are also present along the eastern perimeter, as the site transitions from Greenwood to the glaciofluvial soil types. The Tacoosh, Cathro, Baden, Rifle, and Blackhoof soils comprise approximately 14.98% of the soils within the Bank, and are all muck soils. Table 1 is a summary of all the soil types located with the Bank.

**Table 1: St. Louis County Soil Survey Information within the Bank Footprint**

| Map Symbol | Map Unit Name  | Acres | Percentage of Bank |
|------------|--|-------|--------------------|
| 1020A      | Bowstring muck and Fluvaquents, loamy, 0 to 1 percent slopes, frequently flooded | 10    | 0.05%              |
| B101A      | Schisler-Ellsburg-Baden, depressionnal, complex, 0 to 2 percent slopes           | 168   | 0.79%              |
| B102A      | Hellwig-Ellsburg-Baden, depressionnal, complex, 0 to 2 percent slopes            | 447   | 2.10%              |
| B103A      | Melrude-Schisler-Baden, depressionnal, complex, 0 to 2 percent slopes            | 129   | 0.61%              |
| B104A      | Ellsburg-Baden complex, 0 to 2 percent slopes                                    | 79    | 0.37%              |
| B107A      | Baden muck, depressionnal, 0 to 1 percent slopes                                 | 553   | 2.60%              |
| B108A      | Cathro muck, depressionnal, upham basin, 0 to 1 percent sloes                    | 657   | 3.09%              |
| B119A      | Tacoosh mucky peat, upham basin, 0 to 1 percent slopes                           | 899   | 4.22%              |
| B121A      | Merwin peat, duluth catena, 0 to 1 percent slopes                                | 22    | 0.10%              |
| B122A      | Tacoosh mucky peat, duluth catena, 0 to 1 percent slopes                         | 1,166 | 5.48%              |
| B123A      | Blackhoof-Cathro-Baden complex, depressionnal, 0 to 1 percent slopes             | 700   | 3.29%              |
| B124A      | Dusler-Ellsburg complex, 0 to 3 percent slopes                                   | 44    | 0.21%              |
| B127B      | Culver-Dusler-Ellsburg complex, 0 to 8 percent slopes                            | 64    | 0.30%              |
| B143B      | Dinham-Dusler complex, 1 to 8 percent slopes                                     | 140   | 0.66%              |
| B147A      | Rifle soils, upham basin, 0 to 1 percent slopes                                  | 379   | 1.78%              |
| B149A      | Zimm-McDavitt, depressionnal-Brickton complex, 0 to 2 percent slopes             | 1     | 0.00%              |

| Map Symbol         | Map Unit Name   | Acres         | Percentage of Bank |
|--------------------|---|---------------|--------------------|
| B14A               | Greenwood soils, upham basin, 0 to 1 percent slopes                     | 14,286        | 67.10%             |
| B152A              | Greenwood soils, hibbing catena, 0 to 1 percent slopes                  | 29            | 0.14%              |
| B17B               | Graycalm-Biwabik complex, 1 to 6 percent slopes                         | 109           | 0.51%              |
| B17D               | Graycalm-Biwabik complex, pitted, 6 to 25 percent slopes                | 4             | 0.02%              |
| B230A              | Joki-McDavitt, depressional-Little White complex, 0 to 2 percent slopes | 6             | 0.03%              |
| B27A               | Mcquade-Buhl complex, 0 to 3 percent slopes                             | 14            | 0.07%              |
| B30A               | Sago mucky peat, depressional, 0 to 1 percent slopes                    | 141           | 0.66%              |
| B34B               | Majestic-Hibbing complex, 2 to 8 percent slopes                         | 0             | 0.00%              |
| B65A               | Merwin peat, upham basin, 0 to 1 percent slopes                         | 107           | 0.50%              |
| B74A               | Kapla, depressional-Wabuse complex, 0 to 2 percent slopes               | 7             | 0.03%              |
| B81A               | Cathro muck, depressional, duluth catena, 0 to 1 percent slopes         | 495           | 2.32%              |
| B99A               | Cathro-Sago complex, depressional, 0 to 1 percent slopes                | 19            | 0.09%              |
| F120A              | Grayling-Cromwell complex, 0 to 3 percent slopes                        | 158           | 0.74%              |
| F126A              | Grytal sandy loam, 0 to 3 percent slopes                                | 25            | 0.12%              |
| F162A              | Spidercreek sandy loam, 0 to 1 percent slopes                           | 421           | 1.98%              |
| GP                 | Pits, gravel-Udipsamments complex                                       | 5             | 0.02%              |
| W                  | Water   | 3             | 0.02%              |
| <b>Total Acres</b> |   | <b>21,292</b> | <b>100%</b>        |

### Hydrology

The proposed bank is located partly within the Stone Creek minor watershed, which has a total drainage area of 38,505 acres. The Bank comprises 18,955 acres, or 49%, of the Stone Creek watershed. Smaller portions of the site are also mapped within the Paleface River and Whiteface River minor watersheds. **Table 2** is a summary of the Minor Watersheds, and the area and percentage of the watershed covered by the Bank.

**Table 2: Summary of Minor Watersheds within the Bank**

| Minor Watershed (Minnesota Watershed No.) | Total Acres   | Acres within Site | % of Minor within Site |
|---|---------------|-------------------|------------------------|
| Paleface R (3070)                         | 9,343         | 234               | 3%                     |
| Whiteface R (3071)                        | 11,227        | 143               | 1%                     |
| Whiteface R (3072)                        | 13,900        | 1,960             | 14%                    |
| Stone Cr (3089)                           | 38,505        | 18,955            | 49%                    |
| <b>Total</b>                              | <b>72,975</b> | <b>21,292</b>     | <b>29%</b>             |

The northern portion of the Stone Creek watershed is composed of a series of lakes, including Murphy, Heikkila, East Stone, and West Stone, that flow from east to west, and Teal, Mallard, and Bluebill which flow from north to south. Both of these lake chains meet at Stone Lake, which has a ditched outlet that flows along the north side of Stone Lake Road and west into the CSAH 7 right of way. The natural Stone Lake outlet is visible on aerial photographs north of Stone Lake Road, but has been replaced by the ditched outlet to ensure that it is maintained, as there are several residents along the south shore of Stone Lake. East Stone Lake is also depicted as draining to the south into the ditch system, which may be a secondary outlet, as East Stone Lake is higher in elevation than Stone Lake.

The entire Bank has been ditched and drained. Historic maps of the ditch system have been included in **Appendix E**. The majority of the ditching was completed prior to the 1920's, as part of efforts to promote agricultural land use in the area. The ditches includes two primary varieties. Along the section lines are the large regional drainage ditches. These ditches are 15 to 30 feet in width, and vary in depth from 2 to 6 feet of open water depending on the season. In the spring snowmelt, the ditches are near bankful and cannot be crossed. In late summer, the water levels are greatly depressed, and are typically wadeable. Within this larger drainage system are numerous lateral ditches, particularly on the parcels immediate adjacent to CSAH 7. These laterals are small, with dimensions of a foot or two in width, and variable depths. These smaller laterals are often only apparent on the aerial photographs, or on-site through changes in vegetation (i.e. a strip of cattails), but they remain functional.

The primary ditch system is County Ditch #1, which includes all of the ditches on the east side of CSAH 7. Early maps of this ditch network show two major systems, with large sectional ditches on the eastern half of the Bank being collected and discharged to the south into the Whiteface River. At the time this area was referenced as State Ditch #54. The pre-1920's ditches in the western half of County Ditch #1 include the smaller laterals which flowed to the west and adjacent to the DM&IR Railroad.

The County Ditch #1 system has been modified since creation, with the biggest change being the incorporation of State Ditch #54, which connected of the eastern portion and the western portion and terminated flows to the Whiteface River. This change officially happened sometime after 1954, but was indicated to have occurred naturally due to beavers and a forest fire that burned portions of the peat big, and altered the drainage pattern. The smaller laterals located on the parcels immediately east of CSAH 7 have also been connected to a newer north-south oriented "mile and a quarter ditch," which was excavated between 1947 and 1950 as a means to alleviate all of the laterals flowing to the west and into the CSAH 7 right of way. The mile and a quarter ditch continues to serve as the primary north-south drainage, and the laterals between the mile and a quarter ditch and CSAH 7 likely can flow in either direction.

County Ditch #6 is located on the west side of the railroad tracks and CSAH 7. For the portion of County Ditch #6 within the project area, there is a main north-south oriented main line, and numerous laterals that drain from the CSAH 7 and railroad right of way to the west.

Currently, County Ditch #1 is identified as having 70 miles of ditch, and a drainage area of 38 square miles. With the exception of a short segment of ditch that connects to East Stone Lake, the entire County Ditch #1 is within the limits of the Bank. The portion of the County Ditch #6 within the Bank includes approximately 12 miles of ditch, and has a drainage area of 4.6 square miles. Areas of private ditch are adjacent to the proposed Bank, including those within the Zim Sod farm, and areas adjacent to the University of Minnesota Fens Research Wetland Bank.

The main ditch along the east side of CSAH 7 serves as the primary collector of the drainage, and discharges through twin culverts under CSAH 7 just outside the southwest portion of the Bank. Where the collective ditches exit the site, the channel is perennial, and is approximately 30 feet in width, and several feet deep. The channel continues for approximately 2.4 miles before discharging into the Whiteface River.

Hydrology within the Bank is present as a high water table throughout the site, but is at least partially drained by the network of drainage ditches. The appearance of water tracks in the eastern half of the Bank suggests a complex groundwater system, which has been interrupted through the construction of the drainage ditch systems. The general pattern of the flow is from the northeast to the southwest. Within the ditch system, flows can be variable, as evidenced by the influence on beaver dams changing flow patterns at Stone Lake Road from flowing to the south within the Mile and a Quarter ditch system, to following a roadside ditch to the west. It is believed that the ditch system is variable depending on beaver dams, maintenance history, and precipitation/snowmelt patterns within the basin.

Wetland hydrology monitoring was completed in the fall of 2012 and is continuing in 2013 to record the depth to groundwater at representative locations throughout the bank. Data from the 2012 hydrology monitoring is detailed in **Appendix F**.

In May 23, 2013, the sponsor installed 30 wells for the annual hydrology monitoring program. It was observed that along the main ditches, that the wells could be installed with no evidence of frost in the ground. Once the transects were moved back to 300 feet from the ditch, a six inch layer of frost was encountered. This frost layer thickened as it moved away from the ditches, and was a full 12 inch layer of frozen ground at 500 feet from the ditch and beyond. This frost layer appears to correlate with the thickness of the sphagnum moss, with the thicker layers providing more insulation. The lack of frost near the ditches appears to be a secondary indicator of hydrology alteration, as the sphagnum layer is no longer present near the ditches, and allows the areas to thaw faster than the rest of the wetland. Frost layers were also observed within the Nevada Properties, but was not as thick as the larger parcels with fewer laterals, and was only observed greater than 800 feet from the ditches and laterals.

### **Vegetation**

The historic vegetation of the Bank would have been composed of coniferous bog species, including tamarack (*Larix laricina*), black spruce (*Picea mariana*), bog rosemary (*Andromeda polifolia*), blueberries (*Vaccinium* spp.), and sphagnum moss (*Sphagnum* spp.). These communities are still present, and dominate overall, but are highly fractured by the drainage system and past disturbances. Vegetation within the eastern sections appears to be coniferous bog, but vegetation is noticeable more sparse and shrubby, which may be related to the influence of the water tracks, and less disturbance and drainage.

Where ditches are present, the vegetation is typically composed of a lateral wet meadow zone that parallels the ditch. These wet meadow areas are dominated by Canada bluejoint grass (*Calamagrostis canadensis*) and stinging nettle (*Urtica dioica*). Species diversity is low, which may be indicative of the partial or complete drainage. Moving laterally from the ditches, the vegetation transitions to a more diverse zone of wet meadow, which is similarly dominated by Canada bluejoint grass, but includes Joe-pye weed (*Eutrochium maculatum*), New England aster (*Symphotrichum novae-angliae*), steplebush (*Spiraea tomentosa*), red raspberry (*Rubus idaeus*), sensitive fern (*Onoclea sensibilis*), arrow-leaf tearthumb (*Persicaria sagittata*), and red osier dogwood (*Cornus alba*) shrubs. For the large section-sized ditches, these wet meadow zones can be as much as 250 feet on either side of the ditch. Smaller laterals are more variable, with the wet meadow zones being as small as 25 feet, but as great as 1,300 feet where scope and effect may overlap between the lateral and main ditches.

Shrub-carr habitat is present, and also appears to be associated with drainage. The observed shrub carr habitats are dominated by bog birch (*Betula pumila*), but some willow (*Salix* spp.) are present. Speckled alder (*Alnus rugosa*) has not been observed within the Bank except within areas on the east side that have been logged, and have recovered as alder thickets.

Sphagnum moss is present throughout the site, but is very limited on the western side to within the remaining areas of tamarack, and is typically very thin and provides less than 5% cover. The eastern portion of the site, where the water tracks are present, are dominated by sphagnum moss as a base layer (nearly 100% of cover), and is hummocky, and up to two feet thick. The distribution of the sphagnum moss appears to be related to the extent of hydrology alteration.

Based on personal communication with the MNDNR County Biological Survey, the areas of groundwater upwelling within the water tracks is also dominated by bog birch, sedge meadow, and sparse tamarack trees. Review of portions of the eastern portions of the property concur with this observation.

Invasive species, primarily reed canary grass (*Phalaris arundinacea*) have been observed adjacent to CSAH 7, but do not appear to be widespread within the majority of the Bank. Stinging nettle (*Urtica dioica*) is present in the wet meadow habitats, but is more indicative of partial drainage than being an invasive species.

Approximately 1,648 acres of land have also been logged within the last three years. It is unknown the impact that logging has had on these areas, as a vegetation survey has not been completed for these areas yet. Review of portions of the logged areas in 2013 suggests that the disturbance resulted in a transition from tamarack and black spruce to alder thickets.

An existing vegetation map has been prepared using aerial photographic interpretation and ground truthing to verify the aerial signatures (**Figure 8**). The Bank was also surveyed by the Minnesota County Biological Survey in 2012, and additional surveys are planned for 2013 and 2014. When available, the findings of the County Biological Survey will be integrated in the project design.

Site photos taken of the Nevada Properties and from the 2013 monitoring wells installation are presented in **Appendix C**.

### **Existing Wetlands**

The majority of the site is wetland, although portions of it are partially drained. If standard scope and effect calculations are used, there are potentially areas that are effectively drained, but these equations are not intended for peat soils, and may be further complicated if there is groundwater upwelling within portions of the Bank. It is assumed that the ditches are not draining the site effectively enough to create a lateral effect that has converted areas into upland. Hydrology data collected in 2012 (**Appendix F**) supports a partial drainage, as does evidence of the effect of ditches on the rate of thawing of the soils in the spring of 2013.

A remote sensing model was prepared to determine if areas of upland are present within the Bank. This model follows the methodology of the Minnesota National Wetlands Inventory update, and incorporates LiDAR data, aerial photographs, soil survey information, and other GIS data and attributes to predict where wetland is present. This model has been used to determine the type of wetland present, and identify upland. Upland has been determined to be a minor component of the Bank, and only covers 580 acres in areas associated with Stone Lake and the Cloquet National Forest, the northeast portion of the Bank, and two small areas in the southeast portion of the Bank. Upland areas are a mixture of red pine (*Pinus resinosa*), white pine (*Pinus strobus*). If water tracks are present, the upland areas may be critical for groundwater recharge.

The GIS modeling and ground truthing have resulted in preliminary classifications of the existing wetland types within the Bank. These wetland classifications have been included in **Figure 9**.

### **Utilities, Wells, and Other Features**

The Bank is crossed by two HVTL power lines, with one each in the southeast and northeast quadrants of the site. A natural gas pipeline is located approximately 800 feet east of CSAH 7, and crosses the entire Bank from north to south. Currently, the utilities have been included within the Bank, but it is expected that these easement areas will be eligible for no or reduced credit.

A snowmobile trail is identified in the northeast quadrant of the Bank. It is unknown if this trail is protected or just a publicly used route. If the trail needs to remain, it would be excluded from the bank, or relocated.

A review of the Minnesota County Well Index (CWI) did not identify any wells within the Bank. It is assumed that Zim Sod and the commercial greenhouse have wells, although these are not identified on the CWI. The proposed Bank is not anticipated to have any negative impacts on groundwater wells.

There are no structures within the proposed wetland bank.

## **5. Historical Conditions**

*Provide an assessment of historical site conditions from pre-settlement to current condition. Utilize historical air photos, soils information, and other available information sources to estimate historical conditions based on available evidence. Discuss the extent of restoration proposed and describe any constraints that prevent full*

*restoration (such as access to other lands, need to maintain drainage from other properties, etc.). If the project is a wetland creation, discuss historic watershed conditions, changes over time, and how the project will replace or enhance important wetland functions. Attach and reference supporting documents as necessary.*

The proposed Bank is located within an area identified as Glacial Lake Upham (MNDNR 2010), which formed during glacial retreats, and was part of a series of glacial lakes. Glacial Lake Upham formed approximately 13,000 years ago, as part of the retreat of the St. Louis Sublobe of the Des Moines lobe (Ojakangas, R., Matsch, C. 1982). Glacial Lake Upham drained through a series of basins into Glacial Lake Duluth, and is the basis for the current alignment of the St. Louis River. The former bed of Glacial Lake Upham is currently a very large, broad area of bogs and wetlands.

Prior to settlement, the Bank was identified as coniferous bog with patches of wet prairie and adjacent red and white pine, and mixed hardwoods in lands adjacent to the southeast, northeast, and northwest quadrants (Marschner, 1974).

In general, land use within the proposed for the Bank has not been changed significantly since aerial photographs were taken in the late 1930's (MNDNR LandViewer website) and since 1941 (**Appendix D**). Areas of pasture and logging are historically present, but are more modifications of vegetation than land use.

The Bank has a long history of ditching and draining, which was initiated prior to the 1920's. The ditch system has been expanded since then, and periodic maintenance activities have been identified. Maps of the historic ditch system are provided in **Appendix E**. These maps currently only cover the area previously identified as the Nevada Properties. Additional historic aerial photos are expected to be available with the Final Plan.

Wetland restoration and enhancement is possible through the removal of the county ditch system. County Ditch #1 is entirely within the Bank limits, and can be removed without affecting any other land owners. County Ditch #6 will need to be maintained, as it serves upstream land owners, but all of the laterals within the Bank limits can be removed without harm. The only constraints to the hydrology restoration would be the maintenance of the outlet of Stone Lake, which can be kept in its current configuration along the north side of Stone Lake Road, and either utilize the mile and a quarter ditch, or continue to the west to CSAH 7.

## **6. Project Goals, Expected Outcomes and Crediting**

*Identify overall project goals and discuss the anticipated project outcomes in terms of hydrology, vegetation, and wetland functions. Identify credit areas on a Credit Area Map and complete the following Wetland Bank Credit Allocation and Proposed Credit Release Tables. Discuss the rationale for the credit release and any possible modifications to credit releases related to project conditions (such as reduced crediting for partial outcome conditions).*

The goal of the project is to protect, enhance, and restore the Exceptional Natural Resource Values within Stone Creek minor watershed. The proposed Bank would disable the entire County Ditch #1 system, and a large area of the County Ditch #6 laterals. This is the hydrologic restoration of approximately 45 square miles of land.

Restoration of hydrology is proposed through a series of ditch checks to prevent or greatly reduce the current discharge of water from the Bank. The ditches currently remove groundwater hydrology, and result in a lowered water table, particularly within the scope and effect of the ditches, but potentially over a larger area. Permanent disabling of the ditches will result in restoration of the natural water table, and will stabilize the current hydrology alteration, and restore coniferous bogs within areas that have been altered hydrologically, and have converted to wet meadow habitat. The current ditch maintenance program, which is primarily removal of beaver and obstructions, with periodic maintenance of the channels, would no longer be needed. Removal of the ditches would allow for additional storage of ground water at the site, and may promote the function of the water tracks. Groundwater monitoring has been initiated, and will be completed to determine the scope and effect of the ditches, and to provide a baseline for comparison after ditch removal.

Vegetation within the property is generally of moderate to high quality, but varies in relation to the degree of hydrology alteration. The closer to the drainage ditches, the lower the quality (as measured as species diversity, occurrence of invasive species, and coefficient of conservatism). It is proposed that vegetation rehabilitation and enhancement will occur in conjunction with the hydrology restoration. Efforts will be taken to improve species diversity, remove invasive species, and raise the coefficient of conservatism. Areas of the property that have been logged will be managed to promote wildlife habitat, and maintain a high quality vegetation community that may differ from the rest of the near-climax community. For example, high quality sedge meadow is a rare wetland feature that may be promoted in areas that have been previously logged. Overall, it is proposed that the hydrology restoration and active management of the vegetation will provide a functional lift to the entire Bank. **Figure 11** displays the proposed actions to promote vegetation enhancement.

Because of the scale of the project, there is ample opportunity to enhance a wide variety of wetland functions. **Table 3** summarizes the anticipated change in wetland functions from the proposed Bank. The wetland functions used by the TEP Findings of Fact form have been utilized, as these are the functions considered for project impacts.

**Table 3: Proposed Changes in Wetland Functions**

| Wetland Functions         | Degrade | Neutral | Improve | Comment   |
|---------------------------|---------|---------|---------|---|
| Floodwater Storage        |         |         | X       | Disabling the ditches will allow for additional flood storage   |
| Nutrient Assimilation     |         |         | X       | A longer groundwater residence time will reduce nutrient loading  |
| Sediment Entrapment       |         |         | X       | Reduced outflow will reduce sediment loading  |
| Groundwater Recharge      |         |         | X       | Disabling the ditches will promote groundwater recharge   |
| Low Flow Augmentation     |         |         | X       | Additional groundwater storage will promote low flow augmentation   |
| Aesthetics / Recreation   |         |         | X       | Making the area available to the public will enhance recreational opportunities   |
| Shoreland Anchoring       |         | X       |         | No shoreland is present within the Bank   |
| Wildlife Habitat          |         |         | X       | Logged areas will be managed to promote wildlife functions, and the site will expand the Sax, Zim, and Fermoy WMAs.   |
| Fisheries Habitat         |         | X       |         | fisheries habitat is not present within the Bank  |
| Rare Plant/Animal Habitat |         |         | X       | The site currently harbors rare plants and animals, and restoration will reduce threats and promote protection  |
| Commercial Uses           | X       |         | X       | The site will not be used for commercial products, but will allow for the expansion of birding opportunities, which is an economic enhancement. The Bank will also prevent the site from being used for mineral and peat mining, which could be considered a commercial loss. |

Because of the complexity and scale of the Bank, multiple credit opportunities are possible. It is our opinion that the site is best considered a Restoration and Protection of Exceptional Natural Resource Value (ENRV). It is also recognized that the USACE does not have an equivalent credit classification system for ENRV, and therefore it may be helpful to present crediting in an expanded format.

The preferred alternative is to include the entire site as ENRV. The property has a footprint of 21,292 acres. Credit allocations have been presented as a range from 25% to 40% to provide a range of values for discussion (Table 4).

Because the ENRV crediting covers the entire Bank as one credit type, no specific credit figure has been made.

**Table 4: Wetland Bank Credit Allocation Table- Preferred Methodology (ENRV) <sup>1</sup>**

| Map ID | Credit Action <sup>2</sup>  | Acres <sup>3</sup> | Credit Allocation           |               |                             |               |
|--------|-----------------------------|--------------------|-----------------------------|---------------|-----------------------------|---------------|
|        |                             |                    | Minimum Credit <sup>4</sup> |               | Maximum Credit <sup>5</sup> |               |
|        |                             |                    | % Credit                    | Credit Amount | % Credit                    | Credit Amount |
| No Map | Subp 8 - ENRV               | 21,292             | 25                          | 5,323         | 40                          | 8,517         |
|        | <b>TOTAL EASEMENT SIZE:</b> | 21,292 acres       | <b>TOTAL:</b>               | 5,323 acres   | <b>TOTAL:</b>               | 8,517 acres   |

As an alternative to the ENRV crediting, a variety of wetland credits have been proposed (Table 5). These are proposed in accordance with USACE guidelines, in anticipation of achieving unity between the WCA and USACE credit values. Upland buffer has been provided as a range of values to account for potential variation in quality. Restoration is a range to reflect the percentage of restoration potential. The proposed WCA wetland credits are presented in Figure 10a and for the USACE in Figure 10b.

**Table 5: Wetland Bank Credit Allocation Table – Multiple Credit Allocation<sup>1</sup>**

| Map ID    | Credit Action <sup>2</sup>                          | Acres <sup>3</sup> | Credit Allocation           |               |                             |               |
|-----------|---|--------------------|-----------------------------|---------------|-----------------------------|---------------|
|           |   |                    | Minimum Credit <sup>4</sup> |               | Maximum Credit <sup>5</sup> |               |
|           |   |                    | % Credit                    | Credit Amount | % Credit                    | Credit Amount |
| Figure 10 | Subp 2 – Upland Buffer                              | 580                | 10                          | 58            | 25                          | 145           |
| Figure 10 | Subp 4B – Restoration of Partially Drained Wetlands | 9040               | 33                          | 2,983         | 50                          | 4,520         |
| Figure 10 | Subp 9 - Preservation                               | 11,655             | 10                          | 1,165         | 12.5                        | 1,457         |
| Figure 10 | No Credit   | 17                 | 0                           | 0             | 0                           | 0             |
|           | <b>TOTAL EASEMENT SIZE:</b>                         | 21,292 acres       | <b>TOTAL:</b>               | 4,206 acres   | <b>TOTAL:</b>               | 6,122 acres   |

<sup>1</sup>A **Wetland Credit Allocation Map** of the project site must accompany this form. The map should:

- Provide a clear depiction/outline of the planned/actual easement boundary
- Show all separate “credit action areas” within the easement boundary using the associated map identifiers (Map ID) from above table.

<sup>2</sup>As identified by MN Statutes Chapter 8420.056.

- **Subp. 2** Upland Buffer Areas
- **Subp. 3** Restoration of Completely Drained or Filled Wetland Areas
- **Subp. 4** Restoration of Partially Drained or Filled Wetland Areas
- **Subp. 5** Vegetative Restoration of Farmed Wetlands
- **Subp. 6** Protection of Wetlands Previously Restored via Conservation Easements
- **Subp. 7** Wetland Creations
- **Subp. 8** Restoration and Protection of Exceptional Natural Resource Value
- **Subp. 9** Preservation of Wetlands Owned by the State or a Local Unit of Government
- **No Credit** Portions of planned easement area not subject to credit

<sup>3</sup>Acres of land within the planned bank easement that corresponds to the identified credit action. The sum total of these acres must equal the acres of land within the planned or actual easement area.

<sup>4</sup>Enter the lowest credit value expected from the action. Values entered must be consistent with allowable credit yield as defined by associated credit action.

<sup>5</sup>Enter the highest credit value expected from the action. This will be the same as the minimum credit unless a range of credit is proposed based on different possible outcomes (for example: 50% credit for moderate quality, 100% credit for high quality).

**Proposed Credit Release Table**

| % of Anticipated Credits Released | Basis for Credit Release (include basis for both wetland and upland areas)                           |
|-----------------------------------|--|
| 15%                               | Complete installation of ditch checks, removal of drain tile and seeding of sod farm.                |
| 20%                               | Completion of vegetation management, one full growing season, and documentation of functional lift   |
| 20%                               | Completion of vegetation management, two full growing seasons, and documentation of functional lift  |
| 20%                               | Completion of vegetation management, three full growing season, and documentation of functional lift |
| 25%                               | Completion of vegetation management, four full growing season, and documentation of functional lift  |

**7. Ecological Suitability and Sustainability**

*Specifically address the compatibility of the project with surrounding land uses, habitat types, and ecological communities. Discuss the long-term sustainability of the project in terms of hydrology and vegetation. Specifically address the ability of the project to continue to provide important wetland functions in the context of reasonably foreseeable land use and landscape changes.*

The proposed bank is compatible with the surrounding land uses, as it is similar in the lack of development, and preservation of natural features. The Bank is surrounded by primarily public lands, including the Sax, Zim, and Fermoy Wildlife Management Areas, the University of Minnesota Fens Wetland Bank, an area of the Cloquet National Forest, and thousands of acres of undeveloped land.

The proposed Bank will remove all the public and private drainages within the Stone Creek minor watershed, and restore the hydrology to more than 38 square miles of land. The plan to restore the hydrology of the entire minor watershed presents a great opportunity to provide long-term sustainability. The scale of the project provides additional protection, as there will be no future opportunities to degrade the area through future ditching, development, or land alteration. Should changes to surrounding lands occur, the project will provide protection from incidental effects. It is expected that the restoration of hydrology will take many years or even decades to fully occur. Vegetation may similarly take considerable time and management, but once it has been achieved, it is expected to be self sustaining. The site is anticipated to be resilient enough to withstand natural fluctuations and ecological setbacks, such as fire, disease, wind storms, flooding, and drought.

The Bank is within a sensitive wetland and wildlife area, and is internationally known for the seasonal abundance of boreal bird species. The Bank follows the guidance of the BWSR and the USACE for ENRV and Preservation. The Bank plan meets 12 ENRV and Preservation considerations, as described in Sections 10 and 11. The Bank is ecologically suitable and sustainable, primarily because of the scale of the project, and the ability to restore an entire watershed.

**8. Vegetation Plan**

*Identify and discuss anticipated actions to restore vegetation including (but not limited to) seeding, planting, invasive species control, and anticipated maintenance/management activities.*

Vegetation enhancement is proposed for the control of invasive species, and to provide diversity and establishment of higher quality vegetation than is present currently. **Figure 11** illustrates the areas where

vegetation enhancement activities are proposed. Invasive species (primarily reed canary grass) are present within the Bank along CSAH 7. It is proposed to use repeated herbicide applications through wick applications to remove the reed canary grass, and promote native species. For large areas, aerial spray would be considered, along with reseeding with native species. Ongoing wick applications may be needed over a period of several years to get complete control.

Enhancement of vegetation along the drainage ditches will be achieved through a variety of techniques. As these areas generally do not have an abundance of invasive species, it is proposed to use management techniques to promote diversity and abundance of native species. This can occur through mowing, burning, selective herbicide applications, tilling, and reseeding. Tree and shrub planting is not proposed at this time.

Enhancement of vegetation will occur within the areas that have been recently logged, but will be specific to managing these areas for wildlife, and promoting less common wetland communities, such as sedge meadow. An evaluation of the logged areas will occur in 2013, and will determine what are the most efficient management techniques to provide high quality habitat. Potential threatened and endangered species requirements will also be considered.

Plant surveys are planned for summer 2013 to verify the various communities believed to be present within the Bank. A Rapid Floristic Quality Assessment (RFQA), an ecological assessment technique based on plants and their associations with unaltered habitats, will be completed for each habitat present within the Bank. A timed meander approach is proposed. The RFQA will be used to assess the current conditions, the extent of degradation present, and to establish a baseline for measuring functional lift. The results of the RFQA surveys will be considered in the Full Application, along with a refinement of vegetation management techniques proposed.

## **9. Construction Plan**

*Discuss the general design approach proposed to achieve the planned restoration goals for hydrology such as disable drainage system, divert water, impound water, etc. Describe and identify the location of anticipated construction features of the project (berms, tile breaks, scrapes, control structures, etc.) and their purpose. Discuss soils, topography, and hydrology as it relates to the conceptual construction plan. Identify and discuss any anticipated investigations that will be needed prior to development of a final construction plan (soil borings, etc.).*

Hydrology restoration is proposed through the permanent disabling of County Ditch #1, and all of the laterals with the northern branch of County Ditch #6. The original spoil material from the ditch excavation has decomposed and is not available for re-filling the ditches. Disabling of the ditches is proposed through the placement of ditch checks at strategic locations to block all possible ditch paths from the Bank. A total of 66 checks are proposed (**Figure 12**), but may be scaled down if fewer checks would be as effective.

Several construction methods for the checks are being considered, as the site may have some limitation on access for equipment and installation. One option is to install most of the checks in winter when frozen ground will protect the soils and vegetation from most of the disturbance. A second option is place rock checks through the use of a helicopter, which can lift pre-constructed rock checks in mesh bags to the ditches, and workers on the ground can secure them through anchors. It is expected that ditch checks will be constructed of rock, and will be of suitable mass to remain in place. Smaller laterals with easier access may be blocked using other methods, potentially hand driven vinyl sheet piling.

It is proposed to continue to monitor hydrology in 2013, and investigate the soils and stability of the ditches, and the ability to plug the ditches in the most effective and efficient manner. A refined construction plan is proposed for inclusion in the Final Plan.

## **10. Supplemental Information**

*If the project involves protection of wetlands previously restored via conservation, restoration and protection of exceptional natural resource value, or preservation credit actions (WCA rule subparts 6, 8, and 9 respectively), provide a narrative discussion of how the project meets the requirements of actions. Discuss and reference*

*applicable guidance documents and support materials. If necessary, discuss any other information that is relevant to the plan and not discussed in the other sections of the document.*

It is believed that this project is eligible for consideration of crediting through restoration and protection of exceptional natural resource values, (ENRV) and preservation. The following is a summary of the reasons to support this claim. Text in bold highlights ENRV factors identified in either MN Statutes Chapter 8420.056.Subp 8, or from the Wetland Conservation Act Guidance on the use of ENRV.

1. The Bank is within an area identified as the Sax-Zim Bog, and has been identified by the Audubon Society as an Important Bird Area (National Audubon Society, 2010). The Sax-Zim area is internationally known for the abundance and diversity of birds. The area is best known for the abundance of owls, but the area supports a wide variety of arboreal species, particularly in winter, when the birds migrate to the south from Canada. The birds and owls are attracted to the area for the habitat that is present, which supports high rodent populations. **(Special Wildlife Resources, wildlife concentrations)**
2. The Bank will restore the hydrology to 42.6 square miles of drained land through the disabling of 82 miles of drainage ditch, most of which has been present since prior to the 2920's. Of this area, 38 square miles are directly within the bank. This is the restoration of hydrology to the entire Stone Creek minor watershed. **(Reestablishing Natural Hydrology, Ecological Function of the Watershed)**
3. The property is believed to contain water tracks, which are unique ground water features. The removal of surface drainages will also restore the historic pattern of groundwater discharge and recharge. **(Reestablishing Natural Hydrology, Sensitive Groundwater Features)**
4. The site contains habitat for state-listed endangered or threatened species. A State-Listed Endangered floating marsh marigold (*Caltha natans*) has been identified within a roadside ditch within the Bank. Similar habitats are present within the ditches throughout the site. **(Habitat for State-listed Species)**
5. Numerous plants and animals of Special Concern have been identified within and adjacent to the Bank. The County Biological Survey is currently working within the Bank, and expects to have results following surveys completed in 2012, 2013, and 2014. It is anticipated that additional species will be identified once surveys have been completed. **(Habitat for State-listed Species)**
6. The site is currently used by a variety of wildlife, in addition to the well-known birds. Bears, timber wolves (Special Concern), and moose (proposed Special Concern) reside within the Bank. **(Habitat for State-listed Species)**
7. The Bank is adjacent to the Sax, Zim, and Fermoy Wildlife Management Areas, and the University of Minnesota Wetland Banks. The Bank will expand on these designated areas, and provide an even larger area of protection for our natural resources. Ecologically, larger tracks of land are more stable and provide a greater resilience to natural disturbances. **(Habitat Connectivity, Proximity to Public Lands)**
8. The Whiteface River is listed as impaired for mercury. This is a downstream resource that may benefit from a reduction in surface water inputs. **(Water Quality)**
9. Portions of the Bank have peat mining permits and mineral rights. Logging has occurred on portions of the site to remove tamarack and black spruce trees. Drainage ditches have been maintained, and could continue to be maintained as requested by beneficiaries. **(Demonstrable Threats)**
10. The proposed actions will provide functional lift, and protected under a permanent conservation easement. **(Protect the Resource)**
11. Rapid Floristic Quality Assessments and hydrology monitoring are proposed for 2013. These will serve as functional assessments, and serve as a baseline to document functional lift. **(Functional Assessments/Gain)**

## 11. Monitoring Plan

*Describe a plan to annually monitor vegetation and hydrology as it relates to the identified credit release criteria. The plan should include anticipated transects and sampling point locations, and a description of the methodology to estimate important measures such as vegetation areal coverage, species diversity, and water table elevations. Plans should identify the proposed frequency and timing of annual monitoring efforts.*

Hydrology will be monitored through placement of electronic pressure transducers. Hydrology monitoring was initiated in the fall of 2012, and will continue through 2013 as summarized in **Appendix F**. It is proposed to continue to use these monitoring locations to record water elevations following disabling of the ditches. If successful, the monitoring would demonstrate a general increase in groundwater elevations, and less variability in water levels (bounce).

Vegetation monitoring will include the initial baseline data collection of RFQA data for each of the communities present. Data will also be collected with each hydrology transect to ensure consistent location, and to correlate changes in hydrology to biological expression in the vegetation. RFQA will be completed annually after disabling of the ditches occurs. This data will use the same locations as the baseline measurements, and will be used to verify functional lift due to enhancement, and maintenance of high coefficients of conservatism for areas of preservation. Areas that have partial drainage also tend to lack sphagnum moss, or a greatly reduced coverage and thickness. Tracking sphagnum recovery may also be a surrogate to demonstrate hydrology restoration.

**Figure 13** shows the proposed location of groundwater monitoring wells and RFQA baseline target locations.

Release of credits will be tied to the completion of the ditch disabling, and the annual verification of hydrology restoration and functional lift of the site.

## 12. Special Considerations

*WCA rules (8420.0515) identify nine factors that must be considered when submitting a wetland replacement/banking plan. Identify and discuss any and all of these factors that are applicable or potentially applicable to the project and site.*

1. **Endangered and Threatened Species:** The proposed bank includes a Minnesota-listed threatened species. The known location of this species is not within any of the areas where work is proposed. The Bank will provide habitat for this species, although active management is not proposed. The restoration activities are expected to enhance the opportunity for threatened and endangered species to be present. Additional information on endangered and threatened species is expected to be known through the continuing effects of the County Biological Survey. Species of Special Concern are also present within the site.
2. **Rare Natural Communities:** the majority of the site is composed of coniferous bog dominated by tamarack, which is by itself not a rare community. The indication that water tracks are present does allow that portion to be considered a potentially rare, or uncommon, natural community.
3. **Special Fish and Wildlife Resources:** The Bank is a known area for attracting unique avifauna, particularly boreal species in the winter months. Owls are known to concentrate in this area, including within the Bank.
4. **Archeological, Historic, or Cultural Resource Sites:** No known resources are present within the Bank.
5. **Groundwater Sensitivity:** the project proposes to remove ditch drainage, which will promote groundwater recharge. No negative effects to groundwater are anticipated.
6. **Sensitive Surface Waters:** No outstanding resource value or trout waters will be affected by this project.
7. **Education or Research Use:** the site is not currently used for research or education, but these would be available uses after establishment of the Bank.
8. **Waste Disposal Sites:** No known hazardous or contaminants are known to be present. A Phase I Environmental Site Assessment has been completed for the Nevada Properties, and found no concerns. A similar effort is currently being completed for the Zim Sod properties.
9. **Consistency with Other Plans:** the project is believed to be consistent with local plans. The Sponsor is currently negotiating the project with St. Louis County and the Minnesota Department of Natural Resources to ensure the project complies with all requirements.

## Signature

By signing this form I am authorizing the review of my concept plan as part of the wetland bank application process. I am familiar with the information contained in this submittal and, to the best of my knowledge and belief, all information is true, complete, and accurate. I understand that submission of this form and associated information does not constitute a complete application for Wetland Conservation Act purposes, but will result in review and feedback from the local Technical Evaluation Panel, BWSR and other wetland bank interagency review team members evaluating the project for inclusion in the regulatory wetland banking program. I understand that a favorable review does not constitute a formal decision nor does it guarantee that the final plan will be approved by the Wetland Conservation Act Local Government Unit or the U.S. Army Corps of Engineers. If I am not the fee title owner of property involved in the bank plan proposal, I have obtained permission from the fee title owner to allow BWSR and other members of the Technical Evaluation Panel reasonable access to the property prior to easement conveyance for purposes of the review.



Signature of Project Sponsor

6/28/2013

Date

**References:**

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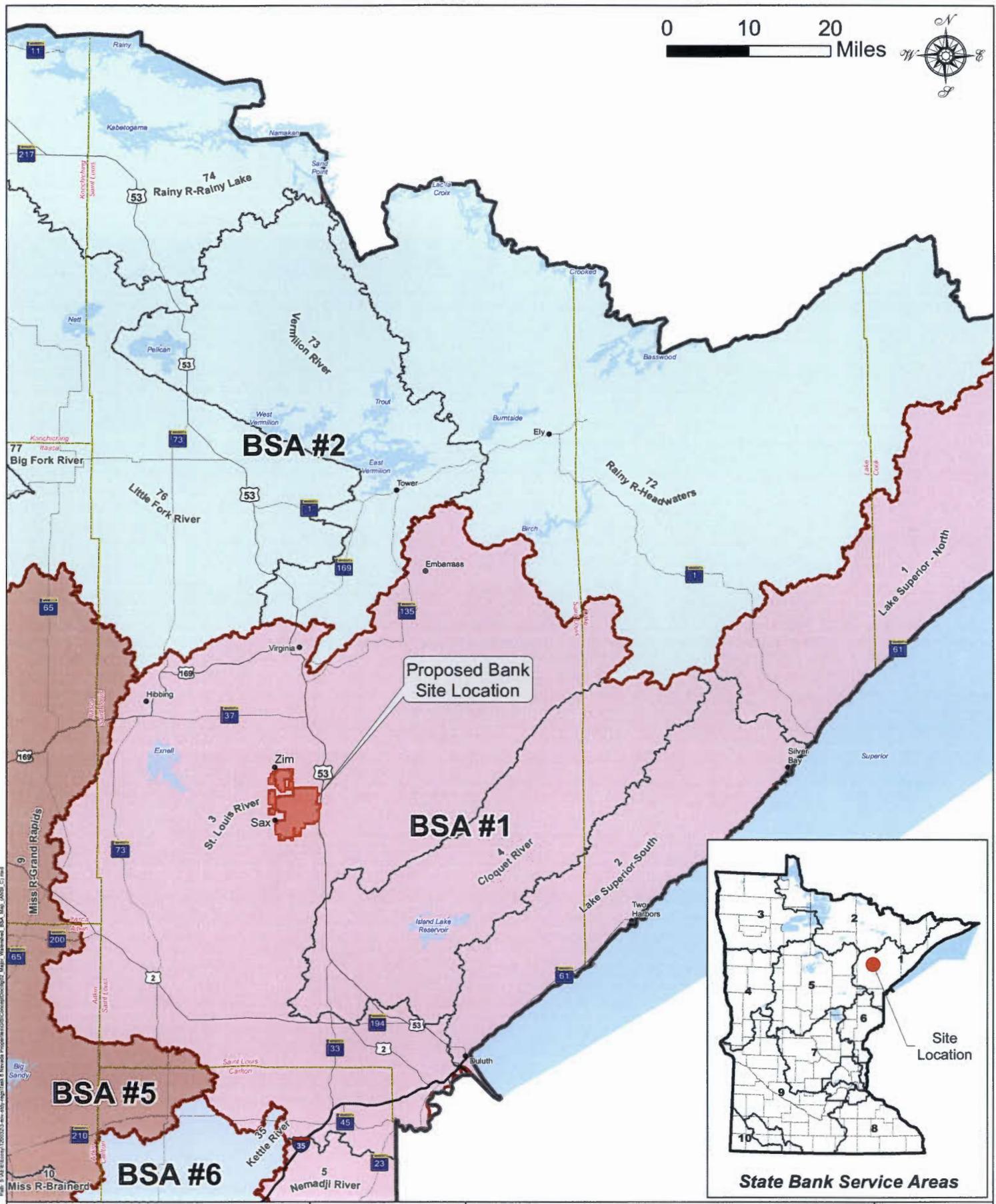
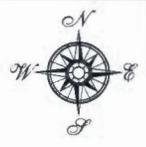
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## Enclosed Figures

- Figure 1. Project Location
- Figure 2. Major Watershed and Bank Service Area
- Figure 3. Minor Watersheds and Existing Ditches
- Figure 4. Proposed Easement
- Figure 5. Existing Conditions – Topography
- Figure 6. Land Cover Map (2000)
- Figure 7. St. Louis County Soil Survey
- Figure 8. Existing Vegetation
- Figure 9. Existing Wetlands
- Figure 10. Wetland Credit Allocation
- Figure 11. Proposed Vegetation Conditions
- Figure 12. Proposed Construction Plan
- Figure 13. Proposed Monitoring Plan



0 10 20 Miles



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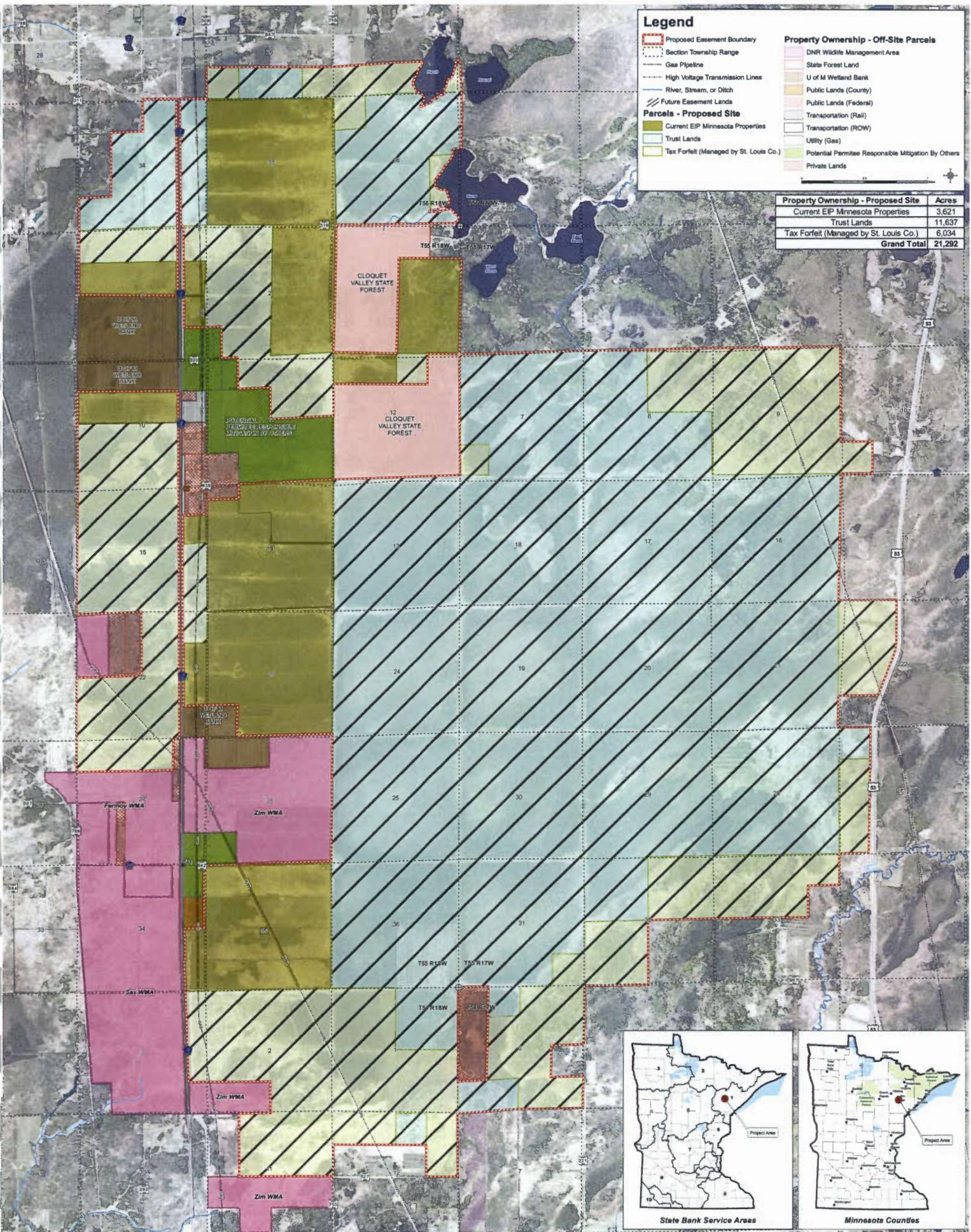
Project: ECOSY 120032  
 Print Date: 6/18/2013

Map by: B. Tolcser  
 Projection: NAD83 UTM15N  
 Source: MnDNR, EcoSy

**MAJOR WATERSHEDS AND  
 BANK SERVICE AREAS MAP**  
 EIP St. Louis County Wetland Bank  
 EIP Credit Co., LLC

Figure  
 2





**Legend**

- Proposed Easement Boundary
- Section Township Range
- Gas Pipeline
- High Voltage Transmission Lines
- River, Stream, or Ditch
- Future Easement Lands

**Property Ownership - Off-Site Parcels**

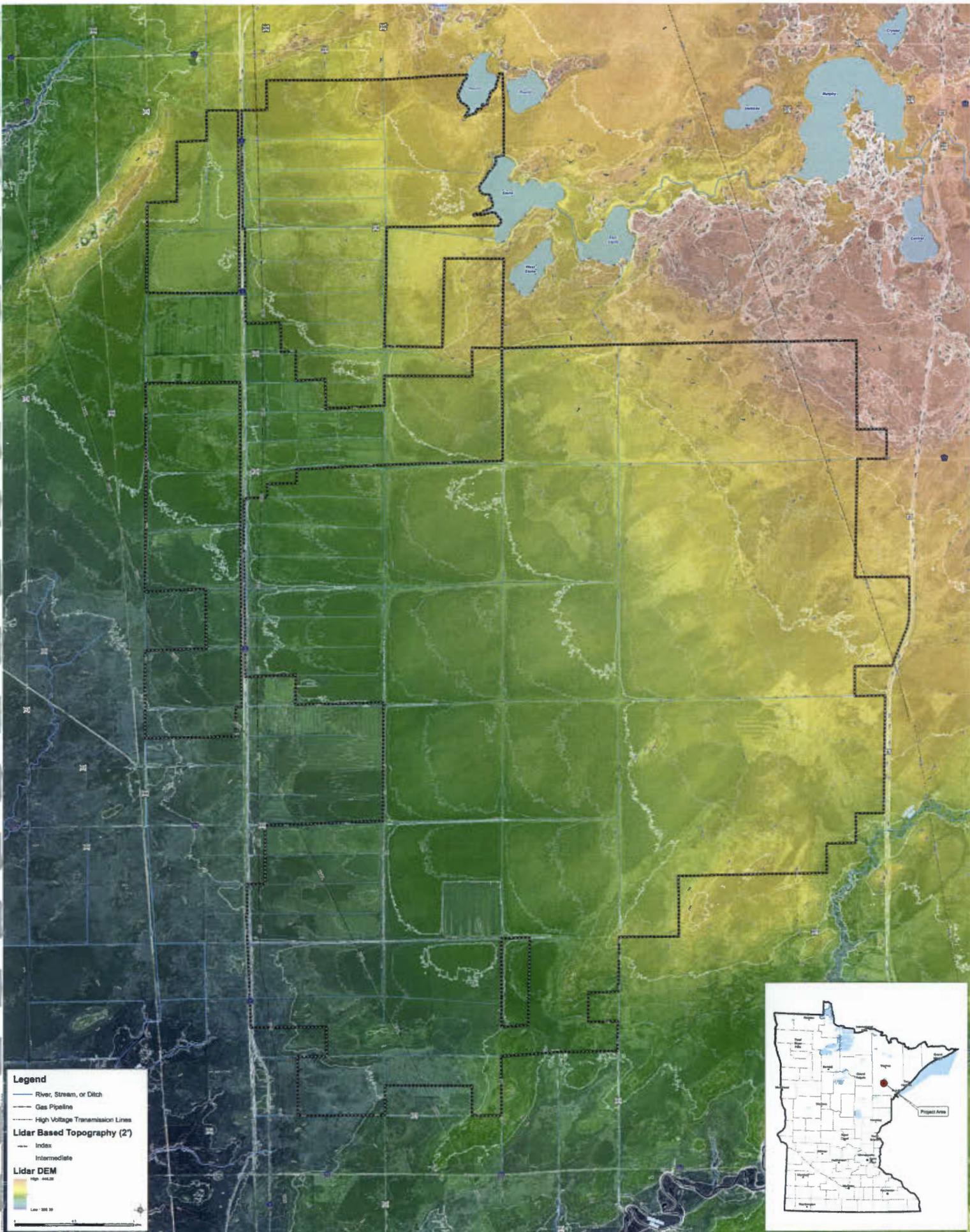
- DNR Wildlife Management Area
- State Forest Land
- U of M Wetland Bank
- Public Lands (County)
- Public Lands (Federal)
- Transportation (Rail)
- Transportation (ROW)
- Utility (Gas)
- Potential Permittee Responsible Mitigation By Others
- Private Lands

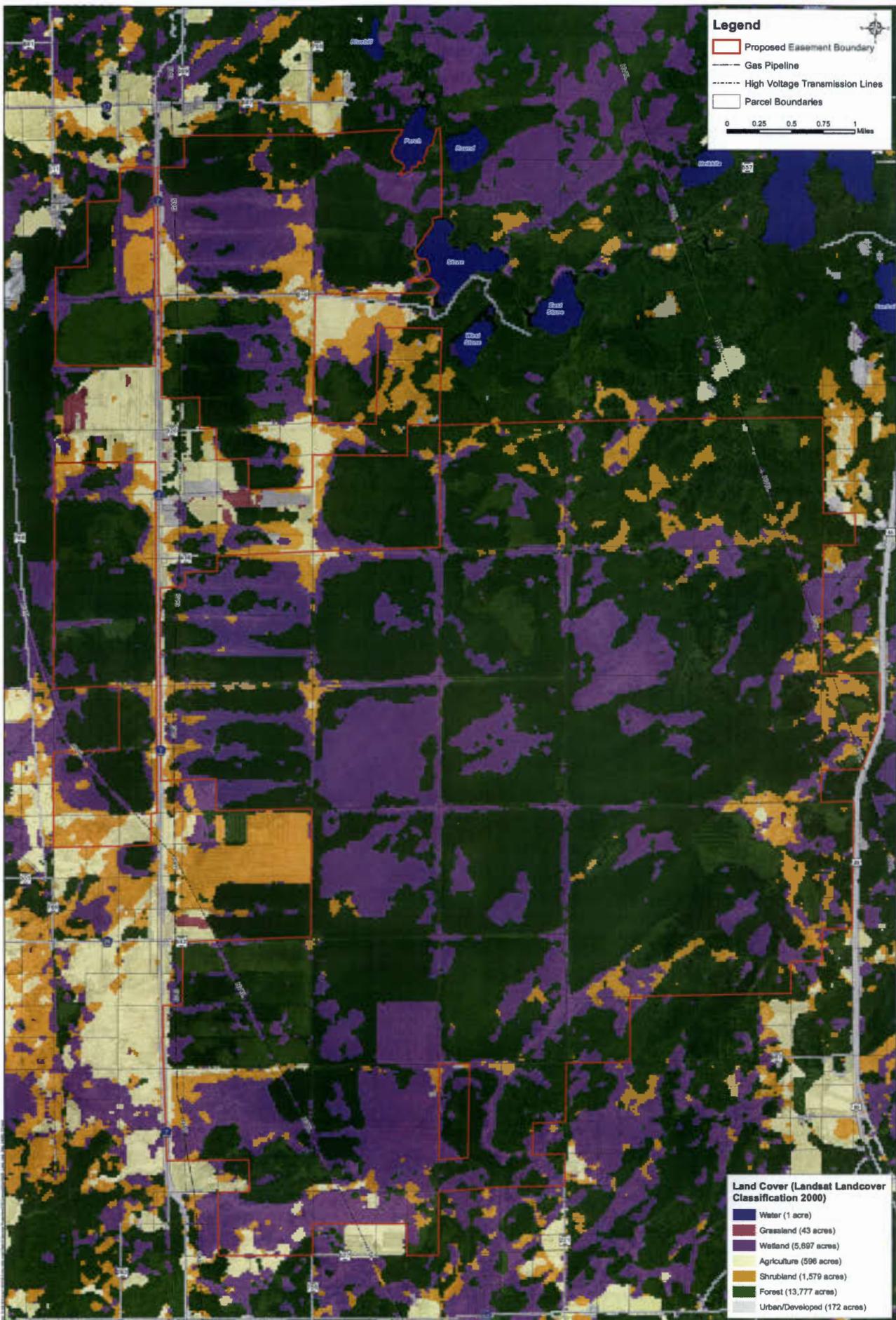
**Parcels - Proposed Site**

- Current EIP Minnesota Properties
- Trust Lands
- Tax Forfeit (Managed by St. Louis Co.)

| Property Ownership - Proposed Site     | Acres         |
|--|---------------|
| Current EIP Minnesota Properties       | 3,621         |
| Trust Lands                            | 11,637        |
| Tax Forfeit (Managed by St. Louis Co.) | 6,034         |
| <b>Grand Total</b>                     | <b>21,292</b> |







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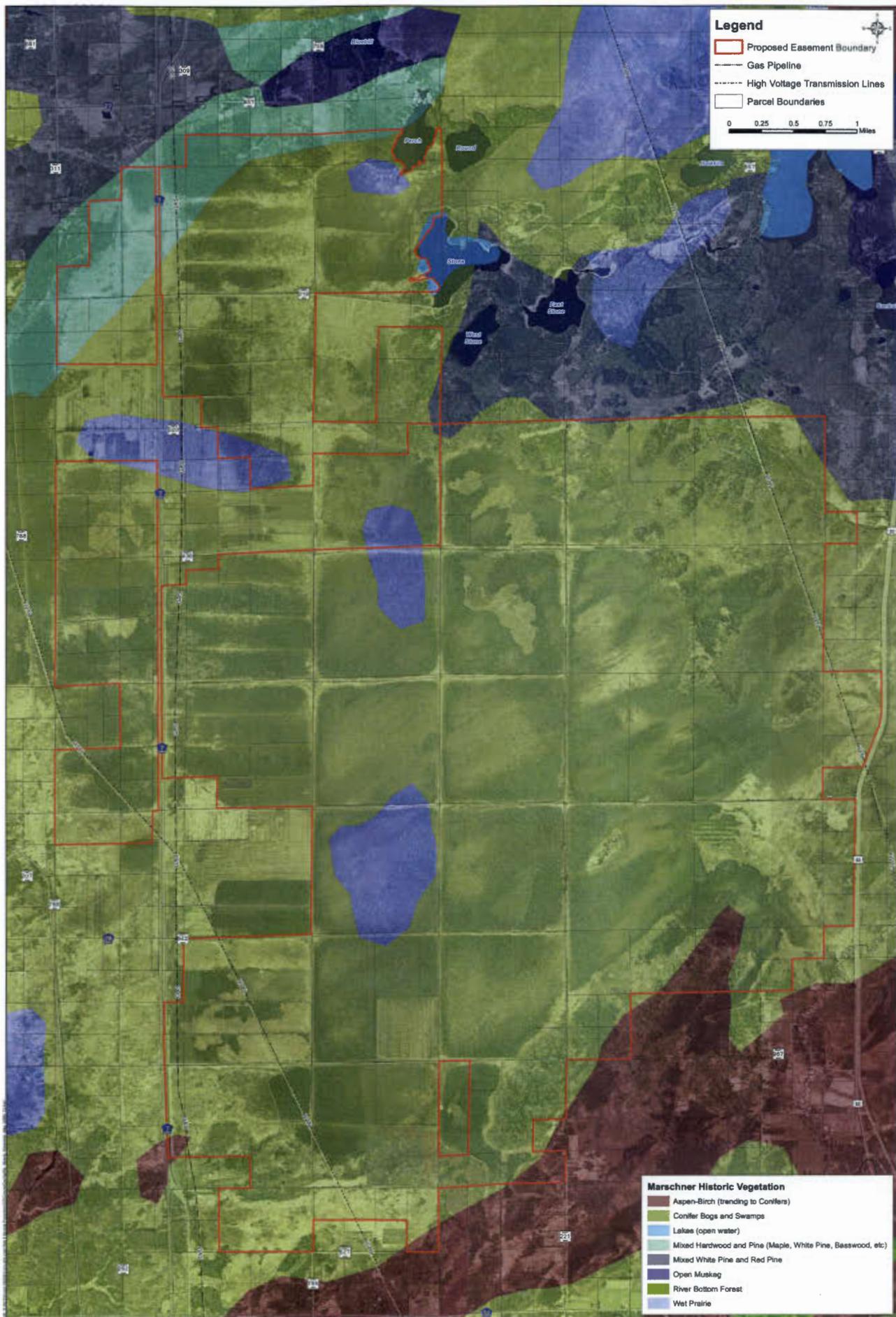
Project: ECOSY 120032  
Print Date: 6/19/2013

Map by: B. Tolson  
Projection: NAD83 UTM 15N  
Source: MNDNR, NRCS, Ecofy, SEHinc  
Background: MNDNR 2009

### LAND COVER MAP (2000)

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
6



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Print Date: 6/19/2013

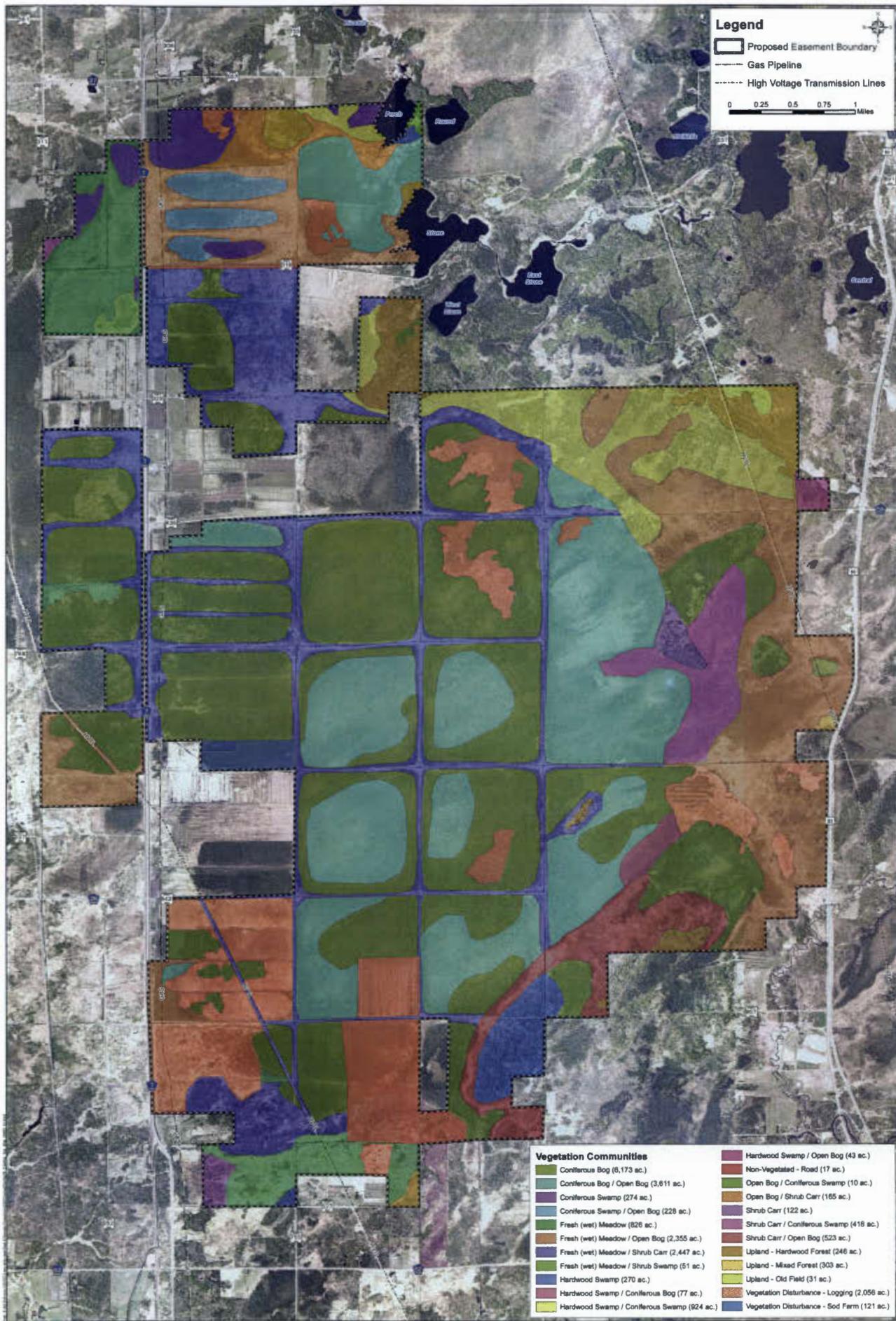
Map by: B. Tolson  
Projection: NAD83 UTM18M  
Source: MNDNR, NRCS, EcoBy, SEHinc  
Background: MNDNR 2008

**MARSCHNER PRE-SETTLEMENT VEGETATION**

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
6a





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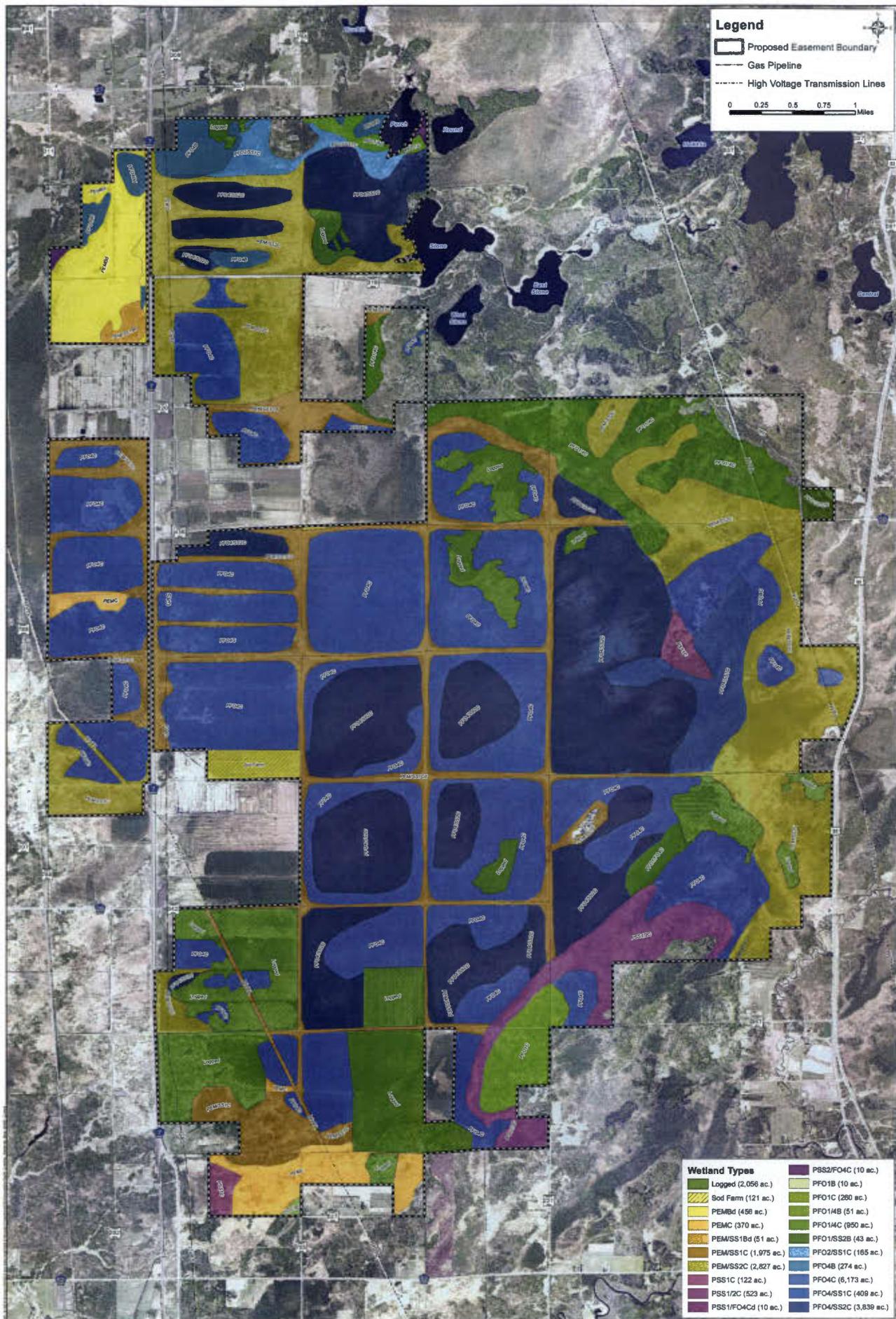
Map by: B. Tolson  
Projection: NAD83 UTM 15N  
Source: MNDNR, MRCB, EcoSys, SEHinc.  
Background: MNDNR 2009

### EXISTING VEGETATION MAP

Draft Based on Aerial Assessment

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
8



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Project: ECOSY 120032  
Print Date: 6/19/2013

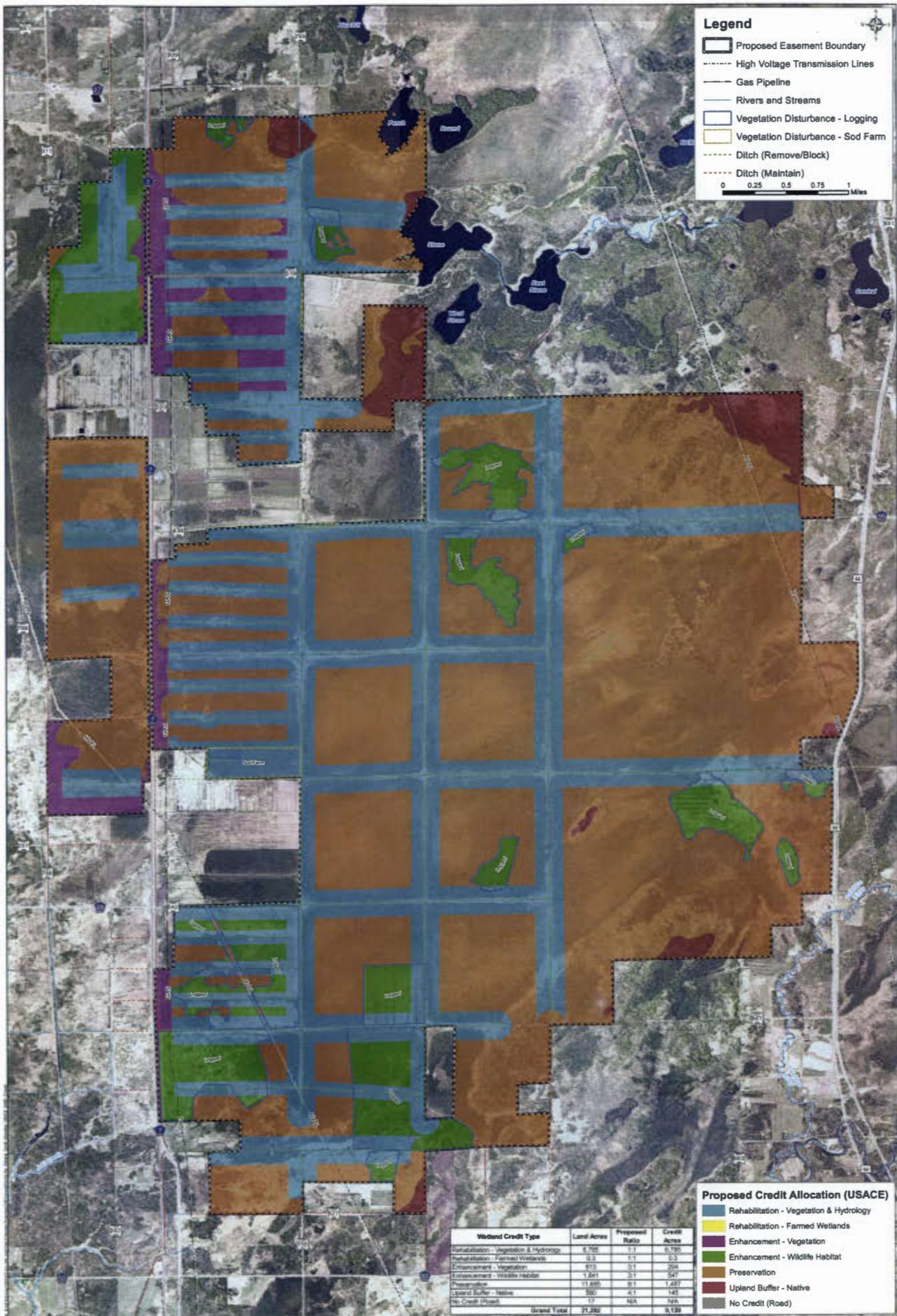
Map by: B. Tolcar  
Projection: NAD83 UTM 11N  
Source: MADM, NRCS, EcoBy, SEHinc.  
Background: MADM 2008

## EXISTING WETLANDS MAP

Draft Based on Aerial Assessment

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
9



**Legend**

- Proposed Easement Boundary
- High Voltage Transmission Lines
- Gas Pipeline
- Rivers and Streams
- Vegetation Disturbance - Logging
- Vegetation Disturbance - Sod Farm
- Ditch (Remove/Block)
- Ditch (Maintain)

0 0.25 0.5 0.75 1 Miles

**Proposed Credit Allocation (USACE)**

- Rehabilitation - Vegetation & Hydrology
- Rehabilitation - Farmed Wetlands
- Enhancement - Vegetation
- Enhancement - Wildlife Habitat
- Preservation
- Upland Buffer - Native
- No Credit (Road)

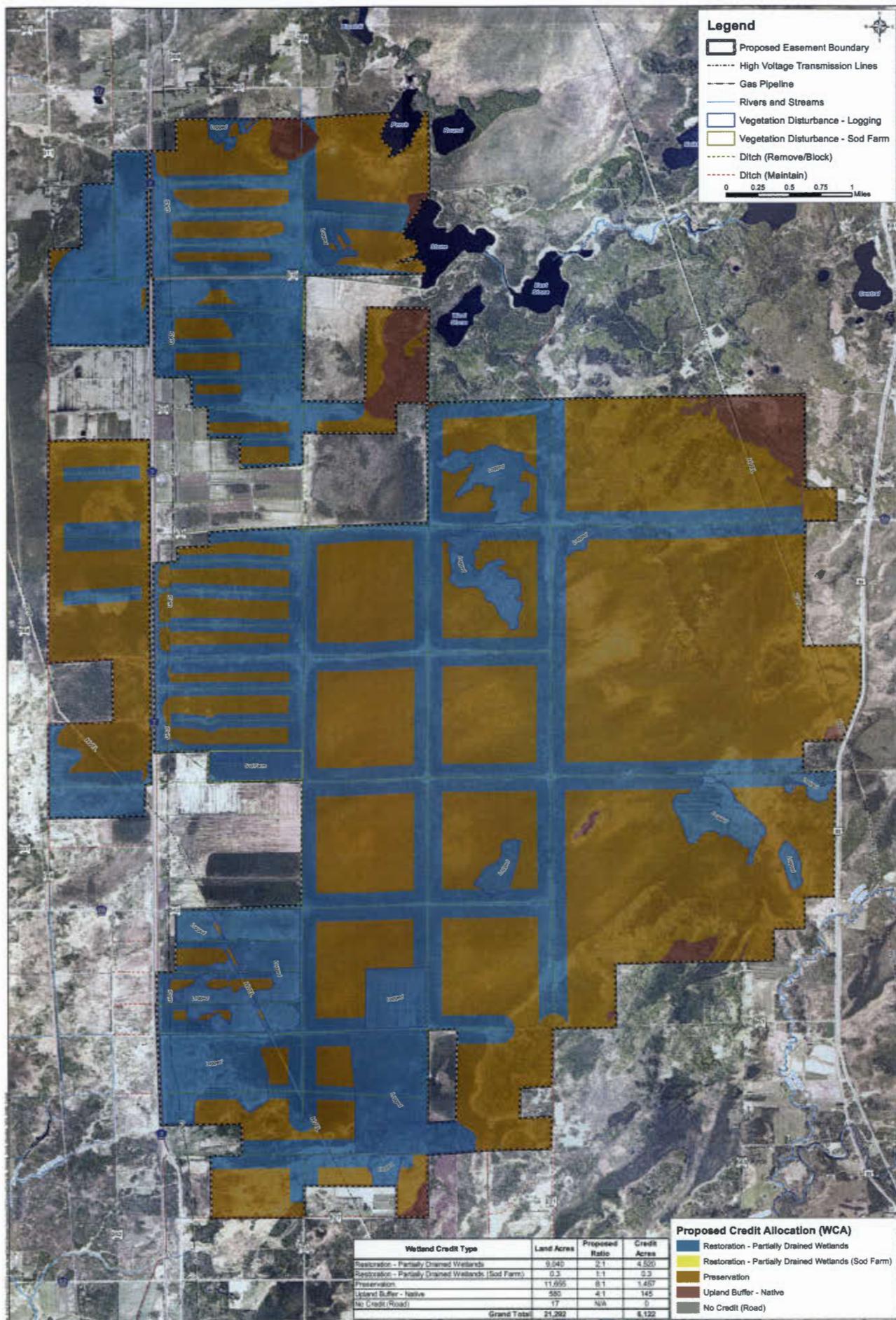
| Wetland Credit Type                     | Land Acres    | Proposed Ratio | Credit Acres  |
|---|---------------|----------------|---------------|
| Rehabilitation - Vegetation & Hydrology | 8,705         | 1:1            | 8,705         |
| Rehabilitation - Farmed Wetlands        | 0.3           | 1:1            | 0.3           |
| Enhancement - Vegetation                | 813           | 3:1            | 264           |
| Enhancement - Wildlife Habitat          | 1,341         | 2:1            | 671           |
| Preservation                            | 11,695        | 8:1            | 1,462         |
| Upland Buffer - Native                  | 593           | 4:1            | 148           |
| No Credit (Road)                        | 17            | N/A            | 0             |
| <b>Grand Total</b>                      | <b>21,964</b> |                | <b>11,153</b> |

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Map by: B. Tolson  
Projection: NAD83 UTM 15N  
Source: MNDNR, NRCS, EcoSys, SEHinc  
Background: MNDNR 2009

**WETLAND CREDIT ALLOCATION**  
U.S. Army Corps of Engineers  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure 10a



**Legend**

- Proposed Easement Boundary
- High Voltage Transmission Lines
- Gas Pipeline
- Rivers and Streams
- Vegetation Disturbance - Logging
- Vegetation Disturbance - Sod Farm
- Ditch (Remove/Block)
- Ditch (Maintain)

0 0.25 0.5 0.75 1 Miles

| Wetland Credit Type                                 | Land Acres    | Proposed Ratio | Credit Acres |
|---|---------------|----------------|--------------|
| Restoration - Partially Drained Wetlands            | 9,640         | 2:1            | 4,520        |
| Restoration - Partially Drained Wetlands (Sod Farm) | 0.3           | 1:1            | 0.3          |
| Preservation  | 11,995        | 8:1            | 1,467        |
| Upland Buffer - Native                              | 585           | 4:1            | 145          |
| No Credit (Road)                                    | 17            | N/A            | 0            |
| <b>Grand Total</b>                                  | <b>21,299</b> |                | <b>6,132</b> |

**Proposed Credit Allocation (WCA)**

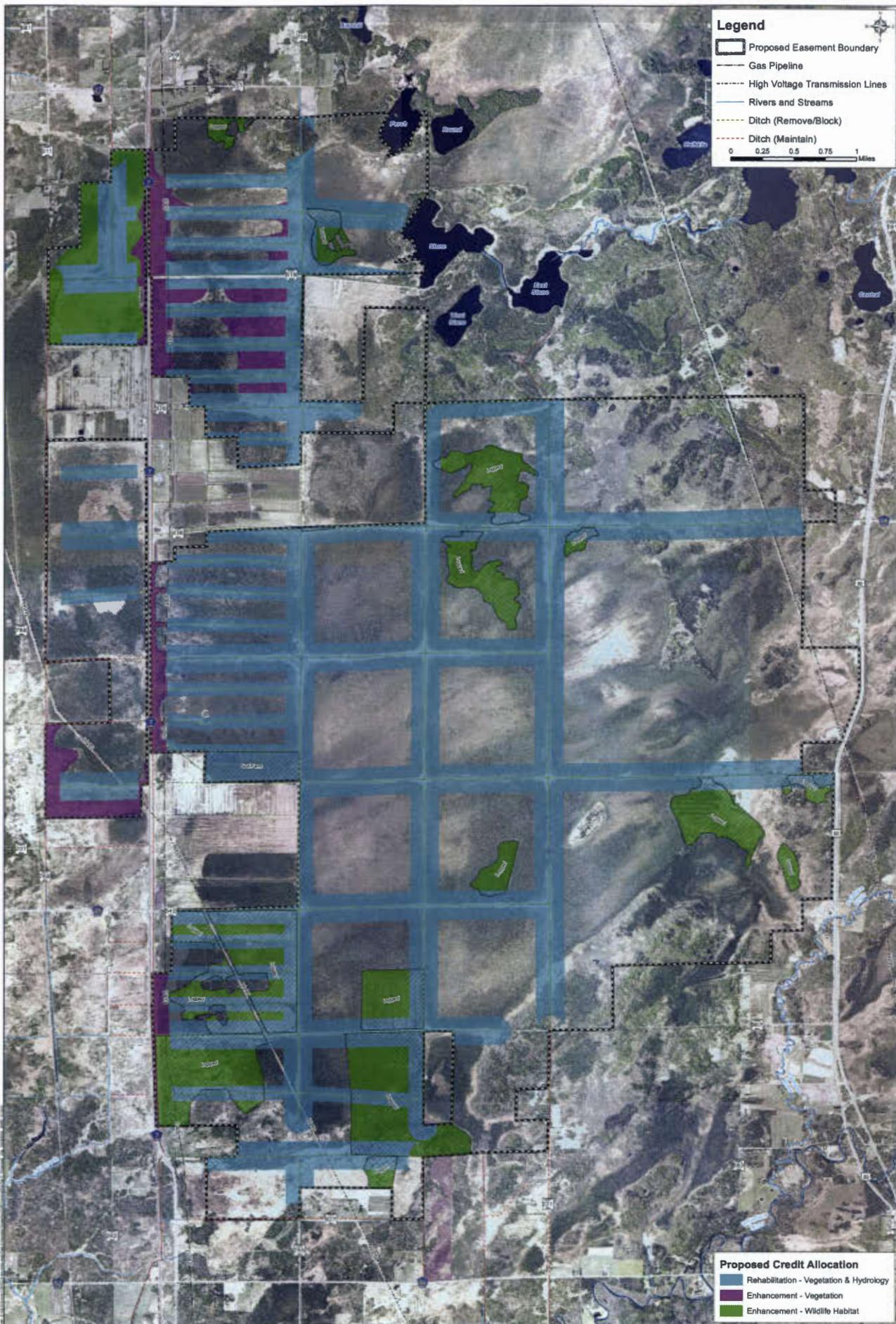
- Restoration - Partially Drained Wetlands
- Restoration - Partially Drained Wetlands (Sod Farm)
- Preservation
- Upland Buffer - Native
- No Credit (Road)

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Project: ECOSY 120032  
Print Date: 8/20/2013  
Map by: B. Tolson  
Projection: NAD83 UTM 15N  
Source: MNDNR, NRCS, Esri, SEHinc  
Background: MNDNR 2009

**WETLAND CREDIT ALLOCATION**  
*Minnesota Wetland Conservation Act*  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure 10b



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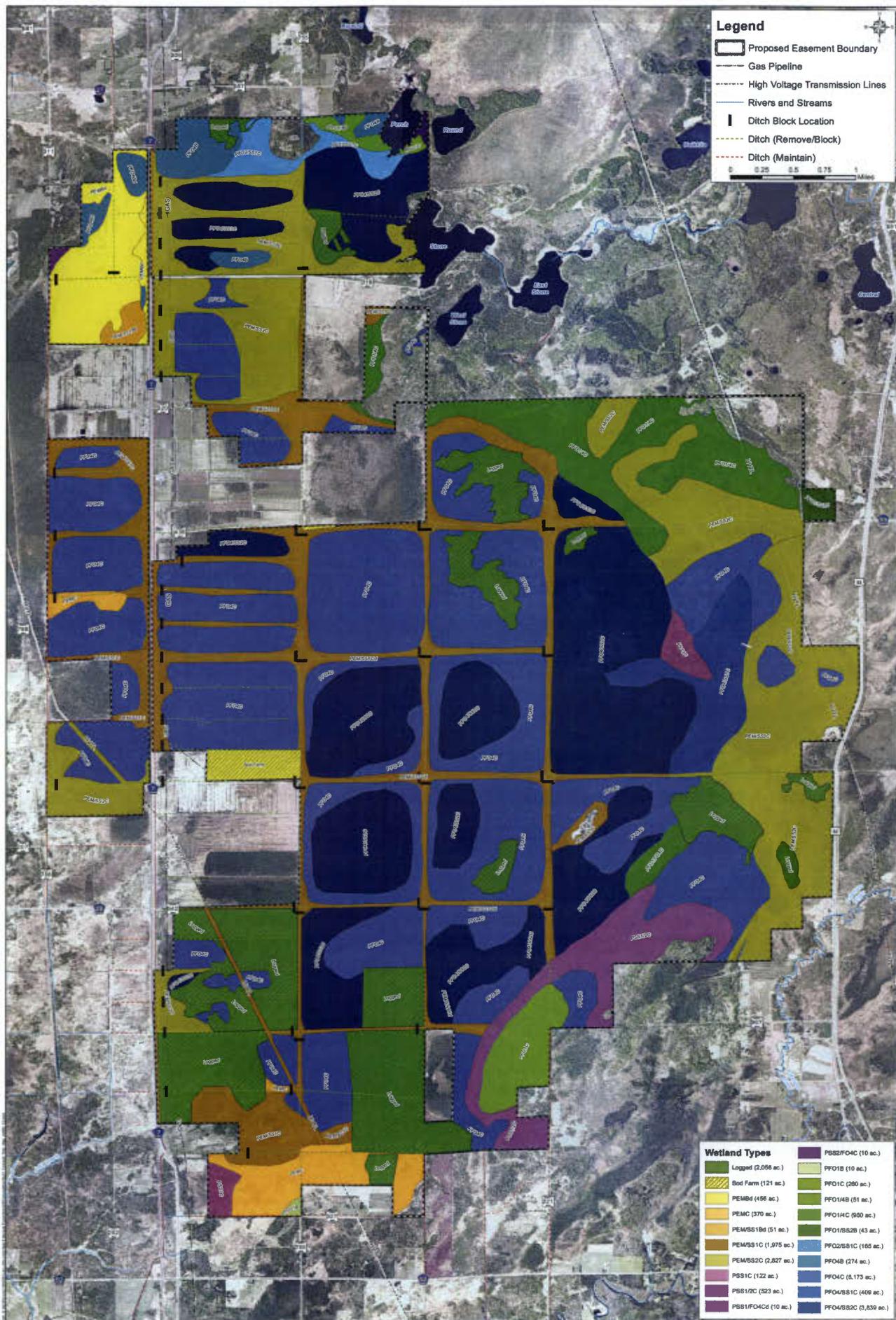
Project: ECOSY 120032  
Print Date: 6/20/2013  
Map by: B. Totscher  
Projection: NAD83 UTM10N  
Source: M/DNR, M/CIS, EcoSys, SEHinc.  
Background: M/DNR 2009

## PROPOSED VEGETATION CONDITIONS

Proposed Draft Vegetation Plan

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
11



**Legend**

- Proposed Easement Boundary
- Gas Pipeline
- High Voltage Transmission Lines
- Rivers and Streams
- Ditch Block Location
- Ditch (Remove/Block)
- Ditch (Maintain)

0 0.25 0.5 0.75 Miles

**Wetland Types**

|                     |                     |
|---------------------|---------------------|
| Lotted (2,056 ac.)  | P8S2F04C (10 ac.)   |
| Sod Farm (121 ac.)  | PFO1B (10 ac.)      |
| PEMB4 (496 ac.)     | PFO1C (280 ac.)     |
| PEMC (370 ac.)      | PFO14B (51 ac.)     |
| PEM5B1Bd (51 ac.)   | PFO14C (90 ac.)     |
| PEM5S1C (1,975 ac.) | PFO1S2B (43 ac.)    |
| PEM5S2C (2,827 ac.) | PFO2S1C (105 ac.)   |
| PBS1C (122 ac.)     | PFO4B (274 ac.)     |
| PBS12C (823 ac.)    | PFO4C (8,173 ac.)   |
| PBS1F04Cd (10 ac.)  | PFO4S1C (406 ac.)   |
|                     | PFO4S2C (3,839 ac.) |



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Map by: B. Tolson  
Projection: NAD83 UTM10N  
Source: MNDNR, NRCS, EcoSys, SEHinc.  
Background: MNDNR 2009

**CONCEPT PLAN MAP**  
Proposed Location of Ditch Blocks  
EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
12



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Project: ECOSY 120032  
Print Date: 6/20/2013

Map by: B. Tolson  
Projection: NAD83 UTM 18N  
Source: MNDNR, NRCIS, Ecofy, SEHinc  
Background: MNDNR 2009

**MONITORING PLAN**  
**Placement of Monitoring Wells (2013)**

EIP St. Louis County Wetland Bank  
EIP Credit Co., LLC

Figure  
13

---

**Appendix A**  
Proposed Bank Properties Location and Ownership

Table 1: Township Section and Range of Proposed Wetland Bank (to nearest section)

| Township | Range | Section | Township | Range | Section |
|----------|-------|---------|----------|-------|---------|
| 54       | 17    | 5       | 55       | 18    | 1       |
|          |       | 6       |          |       | 2       |
|          |       | 7       |          |       | 3       |
|          | 18    | 1       |          |       | 12      |
|          |       | 2       |          |       | 11      |
|          |       | 3       |          |       | 10      |
|          |       | 11      |          |       | 13      |
|          |       | 12      |          |       | 14      |
|          |       | 4       |          |       | 15      |
|          |       | 5       |          |       | 24      |
|          |       | 6       |          |       | 22      |
|          |       | 10      |          |       | 23      |
| 55       | 17    | 9       |          |       | 25      |
|          |       | 7       |          |       | 26      |
|          |       | 8       |          |       | 27      |
|          |       | 15      |          |       | 36      |
|          |       | 16      |          |       | 35      |
|          |       | 17      |          |       | 34      |
|          |       | 18      |          |       | 30      |
|          |       | 22      |          |       | 31      |
|          |       | 21      |          |       | 25      |
|          |       | 20      |          |       | 26      |
|          |       | 19      |          |       | 27      |
|          |       | 27      |          |       | 36      |
|          |       | 28      | 35       |       |         |
|          |       | 29      | 34       |       |         |
|          |       | 30      |          |       |         |
|          |       | 33      |          |       |         |
|          |       | 32      |          |       |         |
|          |       | 31      |          |       |         |
|          |       | 56      | 17       | 30    |         |
|          |       |         |          | 31    |         |
| 18       | 25    |         |          |       |         |
|          | 26    |         |          |       |         |
|          | 27    |         |          |       |         |
|          | 36    |         |          |       |         |
|          | 35    |         |          |       |         |
|          | 34    |         |          |       |         |

Table 2: Properties Within the Proposed Bank, and Notable Adjacent Properties

| Land Classification      | Parcel #       | Acres  | Owner                   | Tax Name          | Tax Class                                |
|--------------------------|----------------|--------|-------------------------|-------------------|--|
| Nevada Properties*       | 435-0010-06300 | 646.39 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00030 | 80.87  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00130 | 162.03 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00170 | 169.62 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00340 | 162.52 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00420 | 76.79  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00480 | 82.57  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-00610 | 26.11  | TOMAJKO CHARLES E       | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-01810 | 46.18  | TOMAJKO CHARLES E       | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-01860 | 82.57  | TOMAJKO CHARLES E       | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-02280 | 80.19  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-02560 | 195.06 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-02620 | 429.43 | TOMAJKO CHARLES E       | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-02782 | 27.85  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-03982 | 28.89  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-04072 | 28.43  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-04240 | 202.28 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-04130 | 399.30 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-06320 | 25.34  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-06370 | 24.34  | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| Nevada Properties*       | 435-0020-06400 | 645.68 | NEVADA SW RENO PROP INC | KELLER REALTY     | Rural Vacant Land                        |
| School Trust Lands       | 435-0020-06600 | 325.50 | ST OF MN                | STATE SCHOOL LAND | State Trust Lands/PILT                   |
| State Administered Lands | 305-0020-00905 | 37.96  | ST OF MN                | UNKNOWN           | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 305-0020-00955 | 75.92  | ST OF MN                | UNKNOWN           | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-00980 | 568.06 | ST OF MN                | UNKNOWN           | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-01180 | 477.21 | ST OF MN                | UNKNOWN           | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-02430 | 651.03 | ST OF MN                | UNKNOWN           | State Administered Lands-Prv Exempt/PILT |

| Land Classification      | Parcel #       | Acres  | Owner    | Tax Name                  | Tax Class                                |
|--------------------------|----------------|--------|----------|---------------------------|--|
| State Administered Lands | 320-0020-02590 | 645.44 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-02750 | 632.31 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-02910 | 628.33 | ST OF MN | *EXEMPT                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-03070 | 323.11 | ST OF MN | GREAT LAKES PEAT PRODUCTS | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-03150 | 324.28 | ST OF MN | *EXEMPT                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-03230 | 649.16 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-04370 | 642.12 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-04530 | 652.18 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-04690 | 630.47 | ST OF MN | *EXEMPT                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-04850 | 598.30 | ST OF MN | *EXEMPT                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 320-0020-05050 | 163.42 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 405-0010-00010 | 159.86 | ST OF MN | *EXEMPT                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 405-0010-01940 | 39.52  | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 435-0010-04630 | 39.86  | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 435-0010-04660 | 39.49  | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 435-0010-06090 | 152.98 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 435-0010-06200 | 40.61  | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |
| State Administered Lands | 435-0010-06210 | 122.37 | ST OF MN | UNKNOWN                   | State Administered Lands-Prv Exempt/PILT |

| Land Classification                    | Parcel #       | Acres  | Owner              | Tax Name          | Tax Class                                 |
|--|----------------|--------|--------------------|-------------------|---|
| State Administered Lands               | 435-0010-06250 | 152.47 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0010-06460 | 539.62 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-00020 | 369.80 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-02240 | 513.98 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-02400 | 651.75 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-04290 | 651.73 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-04450 | 653.65 | ST OF MN           | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 435-0020-06560 | 326.74 | ST OF MN           | ST OF MN          | State Administered Lands-Prv Exempt/PILT  |
| State Administered Lands               | 320-0020-04250 | 72.82  | STATE OF MINNESOTA | UNKNOWN           | State Administered Lands-Prv Exempt/PILT  |
| Tax Forfeit (Managed by St. Louis Co.) | 305-0020-00870 | 352.24 | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-01080 | 34.72  | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-01140 | 161.22 | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-01300 | 654.19 | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-01560 | 40.15  | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-03480 | 40.63  | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-04270 | 40.39  | ST OF MN C278 L35  | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-04300 | 39.07  | ST OF MN C278 L35  | *FORFEITED        | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-04310 | 38.04  | ST OF MN C278 L35  | *FORFEITED        | Tax Forfeited-Real Estate/PILT or Sev Min |

| Land Classification                    | Parcel #       | Acres  | Owner             | Tax Name          | Tax Class                                 |
|--|----------------|--------|-------------------|-------------------|---|
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05000 | 40.73  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05010 | 163.24 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05090 | 41.24  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05100 | 40.91  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05110 | 40.78  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05120 | 41.12  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05170 | 80.09  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05190 | 40.12  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-05210 | 160.62 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-00050 | 477.49 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-00170 | 548.16 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-00330 | 65.94  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-01770 | 238.35 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-01930 | 78.94  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 405-0010-01970 | 79.36  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04450 | 39.52  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04460 | 38.92  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04490 | 25.91  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |

| Land Classification                    | Parcel #       | Acres | Owner             | Tax Name          | Tax Class                                 |
|--|----------------|-------|-------------------|-------------------|---|
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04500 | 12.81 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04620 | 39.91 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-04670 | 39.60 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-06510 | 40.02 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00210 | 44.72 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00220 | 45.34 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00230 | 89.45 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00250 | 83.09 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00290 | 20.36 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00320 | 30.37 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00330 | 10.36 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00380 | 3.56  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00390 | 16.64 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00400 | 16.23 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00410 | 43.26 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00460 | 42.54 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-00470 | 41.51 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01880 | 41.24 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |

| Land Classification                    | Parcel #       | Acres  | Owner             | Tax Name          | Tax Class                                 |
|--|----------------|--------|-------------------|-------------------|---|
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01890 | 41.48  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01900 | 82.78  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01920 | 5.16   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01940 | 41.07  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01970 | 20.53  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-01990 | 20.62  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02000 | 5.07   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02040 | 40.69  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02050 | 40.63  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02060 | 40.59  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02070 | 40.64  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02080 | 40.57  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02250 | 39.29  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02750 | 4.64   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02760 | 37.99  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02770 | 38.23  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02780 | 5.22   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02790 | 157.07 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |

| Land Classification                    | Parcel #       | Acres  | Owner             | Tax Name          | Tax Class                                 |
|--|----------------|--------|-------------------|-------------------|---|
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02830 | 41.13  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02840 | 40.53  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02850 | 81.91  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02870 | 39.54  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02880 | 42.86  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02890 | 43.03  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-02900 | 39.71  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-03950 | 36.18  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-03960 | 82.10  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-03980 | 6.78   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04030 | 165.68 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04070 | 7.24   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04080 | 40.74  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04090 | 40.19  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04110 | 7.22   | ST OF MN C278 L35 | *FORFEITED        | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04810 | 38.50  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-04860 | 80.53  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-05210 | 4.78   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |

| Land Classification                    | Parcel #       | Acres  | Owner             | Tax Name          | Tax Class                                 |
|--|----------------|--------|-------------------|-------------------|---|
| Tax Forfeit (Managed by St. Louis Co.) | 435-0020-05240 | 3.16   | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-03430 | 146.98 | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 435-0010-06580 | 30.74  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |
| Tax Forfeit (Managed by St. Louis Co.) | 320-0020-03470 | 31.20  | ST OF MN C278 L35 | ST OF MN C278 L35 | Tax Forfeited-Real Estate/PILT or Sev Min |

| Adjacent Parcels             |                |        |          |                      |                                      |
|------------------------------|----------------|--------|----------|----------------------|--------------------------------------|
| DNR Wildlife Management Area | 405-0010-00270 | 40.09  | ST OF MN | STATE OF MINNESOTA   | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00280 | 40.06  | ST OF MN | STATE OF MINNESOTA   | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00340 | 99.38  | ST OF MN | DNR REAL ESTATE MGMT | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00390 | 65.04  | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00430 | 129.66 | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00500 | 39.09  | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00520 | 105.49 | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 405-0010-00560 | 21.92  | ST OF MN | STATE OF MINNESOTA   | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 435-0020-04000 | 40.72  | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 435-0020-04010 | 40.82  | ST OF MN | ST OF MN             | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 435-0020-04610 | 532.18 | ST OF MN | UNKNOWN              | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 435-0020-04790 | 26.98  | ST OF MN | UNKNOWN              | State Wildlife Management Areas/PILT |
| DNR Wildlife Management Area | 435-0020-04820 | 38.46  | ST OF MN | DNR REAL ESTATE MGMT | State Wildlife Management Areas/PILT |

| Land Classification          | Parcel #       | Acres | Owner                     | Tax Name                  | Tax Class                                |
|------------------------------|----------------|-------|---------------------------|---------------------------|--|
| DNR Wildlife Management Area | 435-0020-04840 | 26.22 | ST OF MN                  | UNKNOWN                   | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04880 | 40.12 | ST OF MN                  | DNR REAL ESTATE MGMT      | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04890 | 39.84 | ST OF MN                  | DNR REAL ESTATE MGMT      | State Acquired Lands-From Taxable/PILT   |
| DNR Wildlife Management Area | 435-0020-04902 | 20.07 | ST OF MN                  | STATE OF MN DNR           | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04905 | 40.36 | ST OF MN                  | STATE OF MN DNR           | State Administered Lands-Prv Exempt/PILT |
| DNR Wildlife Management Area | 435-0020-04910 | 40.07 | STATE OF MN DNR           | STATE OF MN DNR           | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04920 | 39.80 | STATE OF MN DNR           | STATE OF MN DNR           | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04950 | 35.70 | ST OF MN                  | UNKNOWN                   | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04970 | 39.74 | ST OF MN                  | DNR REAL ESTATE MGMT      | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04980 | 20.01 | ST OF MN                  | ST OF MN DNR              | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-04985 | 20.16 | ST OF MN                  | ST OF MN                  | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-05000 | 8.43  | ST OF MN                  | DNR REAL ESTATE MGMT      | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-05010 | 0.99  | ST OF MN                  | DNR REAL ESTATE MGMT      | State Administered Lands-Prv Exempt/PILT |
| DNR Wildlife Management Area | 435-0020-05090 | 10.64 | ST OF MN                  | STATE OF MN DNR           | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-05080 | 16.99 | ST OF MN                  | STATE OF MN DNR           | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06140 | 9.52  | ST OF MN                  | DNR REAL ESTATE MGMT      | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06150 | 40.13 | DEPT OF NATURAL RESOURCES | DEPT OF NATURAL RESOURCES | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06160 | 49.86 | ST OF MN                  | ST OF MN                  | State Wildlife Management Areas/PILT     |

| Land Classification          | Parcel #       | Acres  | Owner                     | Tax Name                    | Tax Class                                |
|------------------------------|----------------|--------|---------------------------|-----------------------------|--|
| DNR Wildlife Management Area | 435-0020-06190 | 20.17  | DEPT OF NATURAL RESOURCES | DEPT OF NATURAL RESOURCES   | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06200 | 97.87  | ST OF MN                  | ST OF MN                    | State Administered Lands-Prv Exempt/PILT |
| DNR Wildlife Management Area | 435-0020-06240 | 114.80 | ST OF MN                  | ST OF MN                    | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06300 | 71.43  | ST OF MN                  | ST OF MN                    | State Wildlife Management Areas/PILT     |
| DNR Wildlife Management Area | 435-0020-06330 | 101.08 | ST OF MN                  | ST OF MN                    | State Wildlife Management Areas/PILT     |
| Private Lands                | 435-0020-01830 | 24.98  | NORTHERN NATURAL GAS CO   | NORTHERN NATURAL GAS CO     | Rural Vacant Land                        |
| Private Lands                | 435-0020-01835 | 5.82   | MASHUGA TODD              | MASHUGA TODD                | Residential 1 unit                       |
| Private Lands                | 435-0020-01930 | 26.09  | ERICKSON TODD W           | ERICKSON TODD W & DEBORAH A | Residential 1 unit                       |
| Private Lands                | 435-0020-01932 | 4.89   | ERICKSON TODD             | ERICKSON TODD W & DEBORAH A | Agricultural                             |
| Private Lands                | 435-0020-02010 | 13.85  | ERICKSON TODD             | ERICKSON TODD               | Ag Non-Productive Contiguous             |
| Private Lands                | 435-0020-02020 | 13.88  | DAQUILA BARBARA J TRUSTEE | ERICKSON TODD W & DEBORAH   | Ag Non-Productive Contiguous             |
| Private Lands                | 435-0020-02180 | 40.38  | BAFFOE WENDIE E           | BAFFOE WENDIE               | Rural Vacant Land                        |
| Private Lands                | 435-0020-02610 | 18.30  | AUSTMAN - JONES INC       | AUSTMAN-JONES INC           | Rural Vacant Land                        |
| Private Lands                | 435-0020-02730 | 5.85   | AUSTMAN - JONES INC       | AUSTMAN-JONES INC           | Rural Vacant Land                        |
| Private Lands                | 435-0020-02740 | 18.41  | BYRNS ROBERT H            | BYRNS ROBERT & PATRICIA     | Agricultural                             |
| Private Lands                | 435-0020-03990 | 20.56  | THIELKE MILTON G          | THEILKE MILTON G & EDITH E  | Rural Vacant Land                        |
| Private Lands                | 435-0020-03991 | 41.01  | LADUE STEPHANIE M         | LADUE STEPHANIE M           | Rural Vacant Land                        |
| Private Lands                | 435-0020-04020 | 20.61  | THIELKE EDITH E           | THEILKE MILTON G & EDITH E  | Rural Vacant Land                        |
| Private Lands                | 435-0020-04800 | 7.66   | PALUSKY L R               | PALUSKY DONALD J & DONNA    | Rural Vacant Land                        |
| Private Lands                | 435-0020-04830 | 8.38   | PALUSKI LOUIS R           | PALUSKY DONALD J & DONNA    | Rural Vacant Land                        |

| Land Classification    | Parcel #       | Acres  | Owner                  | Tax Name                      | Tax Class                             |
|------------------------|----------------|--------|------------------------|-------------------------------|---------------------------------------|
| Private Lands          | 435-0020-04900 | 10.06  | THOMAS JAMES A         | THOMAS JAMES A                | Rural Vacant Land                     |
| Private Lands          | 435-0020-04903 | 10.05  | THOMAS JAMES A         | THOMAS JAMES A                | Rural Vacant Land                     |
| Public Lands (County)  | 435-0020-02732 | 1.01   | ST LOUIS COUNTY        | ST LOUIS CO<br>PUBLIC WORKS   | County Public Property - All<br>Other |
| Public Lands (County)  | 435-0020-06180 | 25.56  | ST LOUIS COUNTY        | UNKNOWN                       | County Public Property - All<br>Other |
| Public Lands (Federal) | 305-0020-00910 | 111.10 | USA                    | USA                           | Federal Public Property               |
| Sod Farm               | 435-0020-00300 | 10.18  | BLOCKER GARY D         | BLOCKER GARY D<br>& SHERRIE L | Residential 1 unit                    |
| Sod Farm               | 435-0020-00310 | 10.17  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-00690 | 24.88  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-01790 | 28.80  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-02090 | 20.25  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-02100 | 20.27  | BLOCKER GARY D         | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-02120 | 40.47  | BYRNS ROBERT H         | BYRNS ROBERT H                | Agricultural                          |
| Sod Farm               | 435-0020-02150 | 40.53  | BYRNS ROBERT H         | BYRNS ROBERT H                | Agricultural                          |
| Sod Farm               | 435-0020-02160 | 80.93  | BYRNS ROBERT H         | BYRNS ROBERT H                | Agricultural                          |
| Sod Farm               | 435-0020-02170 | 40.43  | BYRNS ROBERT H         | BYRNS ROBERT H                | Rural Vacant Land                     |
| Sod Farm               | 435-0020-02200 | 162.20 | BYRNS ROBERT H         | BYRNS ROBERT H                | Agricultural                          |
| Sod Farm               | 435-0020-04730 | 41.57  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-04990 | 26.69  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Sod Farm               | 435-0020-06130 | 25.82  | BLOCKER GARY & SHERRIE | BLOCKER GARY &<br>SHERRIE     | Agricultural                          |
| Transportation (Rail)  | 405-0010-00570 | 17.67  | UNKNOWN                | UNKNOWN                       | Railroads                             |
| Transportation (Rail)  | 435-0010-06290 | 18.35  | UNKNOWN                | UNKNOWN                       | Railroads                             |
| Transportation (Rail)  | 435-0020-00715 | 19.11  | UNKNOWN                | UNKNOWN                       | Railroads                             |
| Transportation (Rail)  | 435-0020-02030 | 18.42  | D M & N RY CO          | UNKNOWN                       | Railroads                             |
| Transportation (Rail)  | 435-0020-02910 | 18.11  | D M & N RY CO          | UNKNOWN                       | Railroads                             |

| Land Classification   | Parcel #       | Acres  | Owner                      | Tax Name                                  | Tax Class                    |
|-----------------------|----------------|--------|----------------------------|---|------------------------------|
| Transportation (Rail) | 435-0020-05015 | 18.39  | UNKNOWN                    | UNKNOWN                                   | Railroads                    |
| Transportation (Rail) | 435-0020-04120 | 18.26  | D M & N RY CO              | UNKNOWN                                   | Railroads                    |
| Transportation (Rail) | 435-0020-06380 | 18.20  | D M & N RY CO              | UNKNOWN                                   | Railroads                    |
| U of M Wetland Bank   | 435-0020-00500 | 252.22 | REGENTS OF THE U OF M      | UNIVERSITY OF MN<br>REAL ESTATE<br>OFFICE | Colleges - Public            |
| U of M Wetland Bank   | 435-0020-01780 | 128.71 | REGENTS OF THE U OF M      | UNIVERSITY OF MN<br>REAL ESTATE<br>OFFICE | Colleges - Public            |
| U of M Wetland Bank   | 435-0020-04100 | 27.90  | REGENTS OF THE U OF M      | UNIVERSITY OF MN<br>REAL ESTATE<br>OFFICE | Colleges - Public            |
| U of M Wetland Bank   | 435-0020-04650 | 81.49  | REGENTS OF THE U OF M      | UNIVERSITY OF MN<br>REAL ESTATE<br>OFFICE | Colleges - Public            |
| U of M Wetland Bank   | 435-0020-04230 | 40.31  | REGENTS OF THE U OF M      | UNIVERSITY OF MN<br>REAL ESTATE<br>OFFICE | Colleges - Public            |
| Unknown (ROW)         | UNIDENTIFIED   | 12.78  |                            |   |                              |
| Unknown (ROW)         | UNIDENTIFIED   | 6.33   |                            |   |                              |
| Utility (Gas)         | 435-0020-00691 | 1.82   | NORTHERN NATURAL GAS<br>CO | NORTHERN<br>NATURAL GAS CO                | Public Utility Non-Preferred |
| Utility (Gas)         | 435-0020-01791 | 1.83   | NORTHERN NATURAL GAS<br>CO | NORTHERN<br>NATURAL GAS CO                | Public Utility Non-Preferred |

\*The Nevada properties have been purchased by the Sponsor, and are currently owned by Ecosystem Investment Partners

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**Appendix B**  
Comments Received on the Scoping Document



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**ST. PAUL DISTRICT, CORPS OF ENGINEERS**  
**180 FIFTH STREET EAST, SUITE 700**  
**ST. PAUL, MN 55101-1678**

**NOV 27 2012**

Operations  
Regulatory (2012-04872-LED)

Mr. David Urban  
Ecosystem Investment Partners, LLC.  
2002 Clipper Park Road, Suite 201  
Baltimore, Maryland 21211

Dear Mr. Urban:

This letter is in regards to the scoping document that was submitted for the proposed 3,624-acre mitigation bank identified as the "Nevada Properties Wetland Bank," located in Sections 27 and 35, T. 56N., R. 18W., and Sections 1, 2, 3, 10, 12, 14, 15, 22, 23, 34, and 35, T. 55N., R. 18W., St. Louis County, Minnesota. We have reviewed your submitted documents, solicited Interagency Review Team (IRT) comments (attached), and reviewed your proposed bank site.

In our preliminary review, we have determined that, of issues identified thus far, the issues identified in the following attachments seem most important as you decide whether or not to submit a more detailed proposal in the form of a concept plan. Refer to the "Prospectus Requirements" attachment for the list of information that is necessary to make a prospectus complete. Items required, or those requiring more detail, based on our review of the draft prospectus document have been circled.

In addition, based on this review and results from our field review of the bank site on November 7, 2012, we have determined that additional information beyond the general prospectus list is needed before we can complete our review of this site's potential as a wetland bank. Refer to the "Additional Information" attachment for a list of additional information requested. While the field review provided an opportunity to determine that the site has some level of potential for resulting in mitigation credits, prior to receiving the required information we cannot provide specific comments or recommendations regarding the bank site's ultimate potential for success for each proposed mitigation action or the potential credits that may result.

To move forward with the project, please provide the Corps with the information listed in the two attached checklists. Once this information is received and deemed adequate, we will be able to provide more specific comments regarding the site's potential for creating credit. At that time, we will notify you that your concept plan is complete and will be put out on public notice and for IRT review.

**Operations - Regulatory (MVP-2012-04872-LED)**

**SUBJECT: Nevada Properties Wetland Bank**

**Page 2 of 2**

If you have any questions, contact Ms. Leslie Day, in our Two Harbors office at (651) 290-5693. In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,



Tamara E. Cameron  
Chief, Regulatory Branch

Enclosure:

Prospectus Requirements

Additional Information Requested

Copy furnished w/o attachments:

IRT: Rich Davis, USF&WS  
Kerryann Weaver, EPA, Region  
Joan Weyandt, BWSR Wetland Specialist  
Mark Lindhorst, LGU  
Paul Ojanen, SWCD  
Doug Norris, Minnesota DNR  
State Bank Coordinator, Ken Powell  
District Bank Coordinator, Tom Mings



US Army Corps  
of Engineers  
St. Paul District

## Requirements for submitting a complete Mitigation Bank Prospectus to the St. Paul District Corps of Engineers

### Evaluation of Nevada Properties Mitigation Bank submittal

A wetland mitigation bank prospectus must contain the following information to be deemed complete by the St. Paul District. Please provide the following information and a copy of this checklist with the submittal of a Prospectus:

**Owner.** Identify the bank sponsor, landowners, and any agent for the sponsor.

**Agent.** Identify consultants or experts to be involved in design of the compensation site, and list the qualifications of the sponsor's team to successfully complete the type(s) of mitigation project(s) proposed, including information describing any past such activities by the sponsor.

**Objective.** Elaborate on the broad purpose and specific objectives of the proposed mitigation bank.

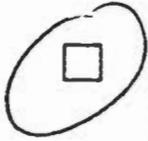
**Maps** **1** Provide a map of the proposed bank service area that shows the location of the bank site, county boundaries, and major municipalities. **2** Provide a plat or land ownership map. **3** Provide a topographic map and a map with recent aerial imagery with the following information/layers included on each:

- Boundaries of the proposed compensatory mitigation site;
- National (or Minnesota) Wetland Inventory;
- USDA soil survey map that shows soil map units (w/legend, series descriptions) and include a list of map units that are:
  - Predominantly hydric (list % hydric soil series in map unit);
  - Have some portion hydric (list % hydric soil series in map unit); and
  - Predominantly upland (list % hydric soil series in map unit, if any)
- Adjacent county highway information; and
- Land-cover/land-use map (where available)

**Narrative.** Prepare a BRIEF narrative that describes:

How the mitigation bank will be established and operated. Include a general description of anticipated design concept for wetland restoration, enhancement, or creation at the proposed compensation site (e.g., "existing tile will be fully removed and excavated ditches will be filled completely to re-establish wetland hydrology and bank site will be managed to promote wet meadow, sedge meadow, and shrub-carr plant communities);

- Pre-existing wetland acreage;
- Existing land use;
- Proposed soil and hydrologic modifications (e.g. "excavate to existing water table (include the approximate depth)");
- Proposed plant communities and anticipated dominant species, water regime, and approximate acreage;
- Proposed areas, by plant community, of wetland and upland that will be restored (by re-establishment and by rehabilitation – list separately), established (created), enhanced, or preserved (e.g., "15 acres of shallow marsh restored by rehabilitation, 10 acres of sedge meadow enhanced, 25 acres of wet prairie restored, 20 acres of tallgrass prairie restored, and 5 acres of southern deciduous forest preserved"). **Do not** propose multiple restoration options for a single piece of land (e.g., **do not** propose to "restore 10 acres to prairie or savannah or deciduous forest");
- Ecological suitability of the site to achieve the objectives of the proposed mitigation bank (e.g., "the site was prairie and wetland, was drained and then farmed, and is now proposed to be restored to prairie and a wetland complex of shallow marsh, wet meadow, and wet prairie");
- How the proposed project will increase specific wetland functions and services above the pre-project levels;
- Proposed ownership arrangements and long-term management strategy for the mitigation bank or in-lieu fee project sites (e.g., "DNR, who manages adjacent property, has indicated an interest in owning and managing the site long-term");
- The general need for the proposed mitigation bank (e.g., 1. There are currently no banks located in this bank service area, 2. Wetlands of the types proposed to be restored have been lost in large quantities in the watershed);
- The technical feasibility of the proposed mitigation bank (e.g., "this kind of restoration has proven successful on XX sites in comparable landscape positions in this ecoregion"); and
- Include proposed Performance Standards and monitoring methods for assessing how the objectives of the mitigation bank will be met



**Hydrology.** Provide assurance of sufficient water supply and drainage rights to sustain the proposed water regimes on the site in both the short- and long-term. Include documentation of any existing or anticipated right of the landowner or others to remove water, soil, minerals or biomass from within or adjacent to the site boundary (e.g. irrigation pumps or rights to withdraw surface or groundwater that would otherwise be assumed to provide wetland hydrology for the site). Also include documentation of any existing or anticipated right to drain water through from, or onto the bank site or impound water on the bank site (e.g., tile outlets onto the property, ditches through the property, flooding easements, flowage easements, drainage easements, maintenance easements).



**US Army Corps  
of Engineers**  
St. Paul District

## **Additional Information Requested to Support the Nevada Properties Mitigation Bank Submittal**

This additional information has been deemed necessary to assist the Corps in the review in determining the potential for success of the proposed mitigation bank. Please provide the following information and a copy of this checklist with the submittal of a Prospectus:

- History of the Site.** Provide a comprehensive history of use across the site. This could include both a discussion of known uses (including dates) and a set of historic aerial photos.
  
- Hydrology Rehabilitation Areas.** To demonstrate the potential of the areas proposed for hydrologic rehabilitation work, please provide the following:
  - Determine the ownership of each ditch within, along the boundary, and adjacent to the property;
  - Explore the potential for performing work in public and private ditches, and provide all easements and other permissions obtained for this work;
  - Document the existence and extent of partial drainage effects from all ditches onsite;
    - Assess changes in vegetation immediate to the ditches and at intervals from the ditches to determine the ditches' zone of influence. If a ditch is indeed having an effect, it will likely be seen as a shift from highly diverse OBL/FACW plant communities further from the ditch to possibly less diverse FACW/FAC plant communities closer to the ditch. The existence of opportunistic FACU and other weedy species may also be observed within the ditches' zone of influence. In this case, the lack of some species essential to the historic community may be observed with proximity to the ditch.
    - Complete additional hydrology monitoring across the site for the entire 2013 growing season. The use of additional staff gauges in ditches is highly recommended as efforts should be towards proving that the proposed hydraulic lift would result from the hydraulic stabilization of the ditches. Monitoring equipment should be in place prior to the start of the 2013 growing season in order to document the effect of ditches during the spring melt.
  - Assess the effectiveness of the ditch outlets transporting water off-site. Do the outlets allow water from the ditches to leave the site faster than water enters the site from precipitation, overland and groundwater sources?
  - See Vegetation Enhancement Areas below.

- Preservation Areas.** To demonstrate the potential of the areas proposed for preservation, please provide the following additional documentation:
- Complete a MnRAM evaluation of each area proposed for preservation to demonstrate the quality and functionality of the site;
  - Provide documentation supporting your presumption that the preservation areas contain wetlands that are rare and unique to the region/landscape;
  - Provide documentation supporting your presumption that the preservation areas are under demonstrable threat of degradation or destruction;
  - Is the bank sponsor/management entity willing/able to provide long term management as necessary?
- Vegetation Enhancement Areas.** To demonstrate the potential of the areas proposed for vegetation enhancements, please provide the following additional information:
- Complete a floristic quality assessment of each area proposed for vegetation enhancement actions to demonstrate the potential for improvement; and
  - Provide a discussion of vegetation enhancement actions proposed.
- Upland Buffer.** Assess the quality of the proposed upland buffer areas. Assessment should include a discussion of vegetative community type, list of dominant species, and invasive species identified (and their abundance), and a discussion of any human manipulation or use observed (both onsite and on adjacent properties). A wetland delineation of the property containing any proposed upland buffer areas will be required prior to the submission of a mitigation bank application.
- Other Property Rights and Contracts.** Document the ownership of mineral rights, timber harvest rights or contracts, peat harvest rights or contracts and any other comparable contract or property right associated with the various properties identified in the proposal.
- Evaluation of Soils Across the Site.** Provide any soil data collected for the site and identify the locations where this data was collected. For example, where the depth of organic soil material to a mineral horizon has been measured, please provide this depth information.
- Effect of Closing Ditches.** Evaluate the hydraulic effect of closing ditches on both upstream and downstream properties, particularly for those properties which are developed (residential, commercial, etc.).

North St Louis County Draft Prospectus IRT Comments.txt

From: Paul Ojanen [resources@nslswcd.org]  
Sent: Thursday, October 25, 2012 4:35 PM  
To: Lindhorst, Mark; Day, Leslie E MVP  
Subject: Nevada Comments

They need better criteria match before they ask for ENRV. Here are my comments:

- 1: There is no documentation for a rare, threatened or endangered species. It is not a unique or threatened habitat.
- 2: Before ENRV, they need a MNRAM and documentation showing a high Coefficient of Conservatism from a Floristic Quality Assessment or
- 3: Before the possibility of ENRV is accepted, a conservation status rank of G-3 or higher..meaning threatened...and a site significance of N3/S3, meaning vulnerable at least locally. This habitat is in the middle of Glacial Lake Upham lake plain...it isn't unique or rare.
- 4: Show some linkage to a Species of Greatest Conservation Need (SCGN)
- 4: At this time, the main potential I see is for partial drainage only. And that is limited...they need to compare before and after scores for species/community targets using one of the indices and quantify the drainage effect.

Under Goals:

- Goal 1: Timber harvests will not impede wetland function. The minimal slopes and already thin forest cover are typical of the area. These areas are usually naturally re-vegetated within several years.
- Goal 2: This is not a socio-ecological experiment. The quantity asked for must match the wetland banking criteria.

---

**Appendix C**  
Representative Site Photographs

## Representative Site Photographs



Large regional ditches along the section lines. Looking north from Stone Lake Road



Smaller roadside drainage ditch along the north side of Stone Lake Road



Large regional section boundary ditch along south side of Stone Lake Road



Soils within the bank are composed of fibrous peat.



Typical transitional habitat along the ditches



Transition from wet meadow to shrub carr and wooded habitat along a lateral



Tamarack bog in center of Nevada Property parcels and furthest removed from the ditches



Expansive areas of Canada bluejoint transitioning to shrub carr within a lateral affected area



Strips of cattail mark the location of lateral ditches



Bog birch-dominated shrub carr habitat between lateral ditches



Canada bluejoint with stinging nettle.



Abundant beaver alter hydrology at the few road crossings



Even at bankful, beaver dams are effective at altering hydrology



Moose are present, as this young dead one verifies.



The proposed bank abuts existing Wildlife Management Areas.



The larger properties on the eastern side of the bank are dominated by tamarack and bog birch



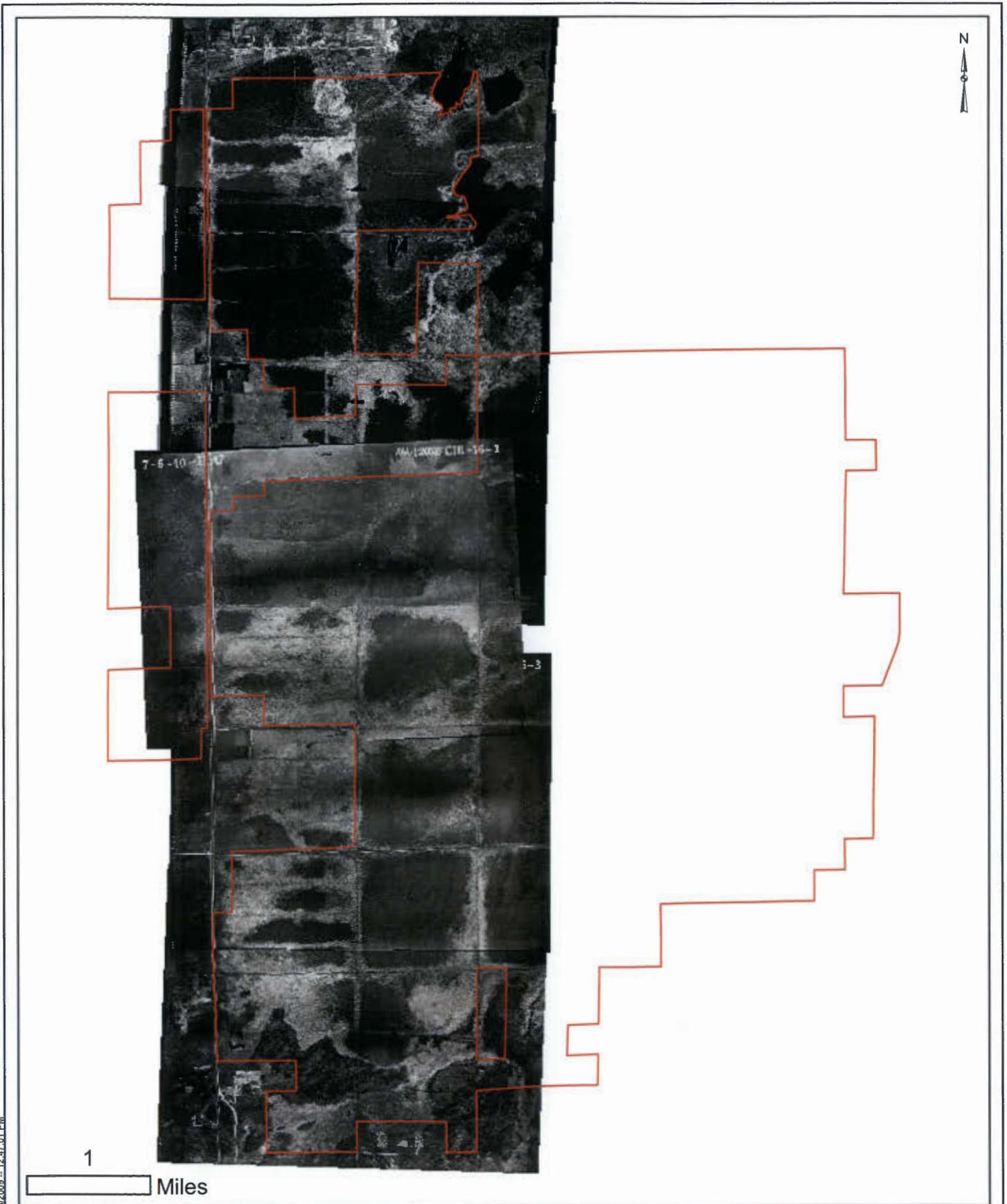
The large ditch entering the site from the east off of Th53 is broad and deep



The vegetation on portions of the eastern half are composed of more mature tamarack trees

---

**Appendix D**  
Historic Aerial Photographs



3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-8166  
TF: (800) 325-2055  
www.sehinc.com

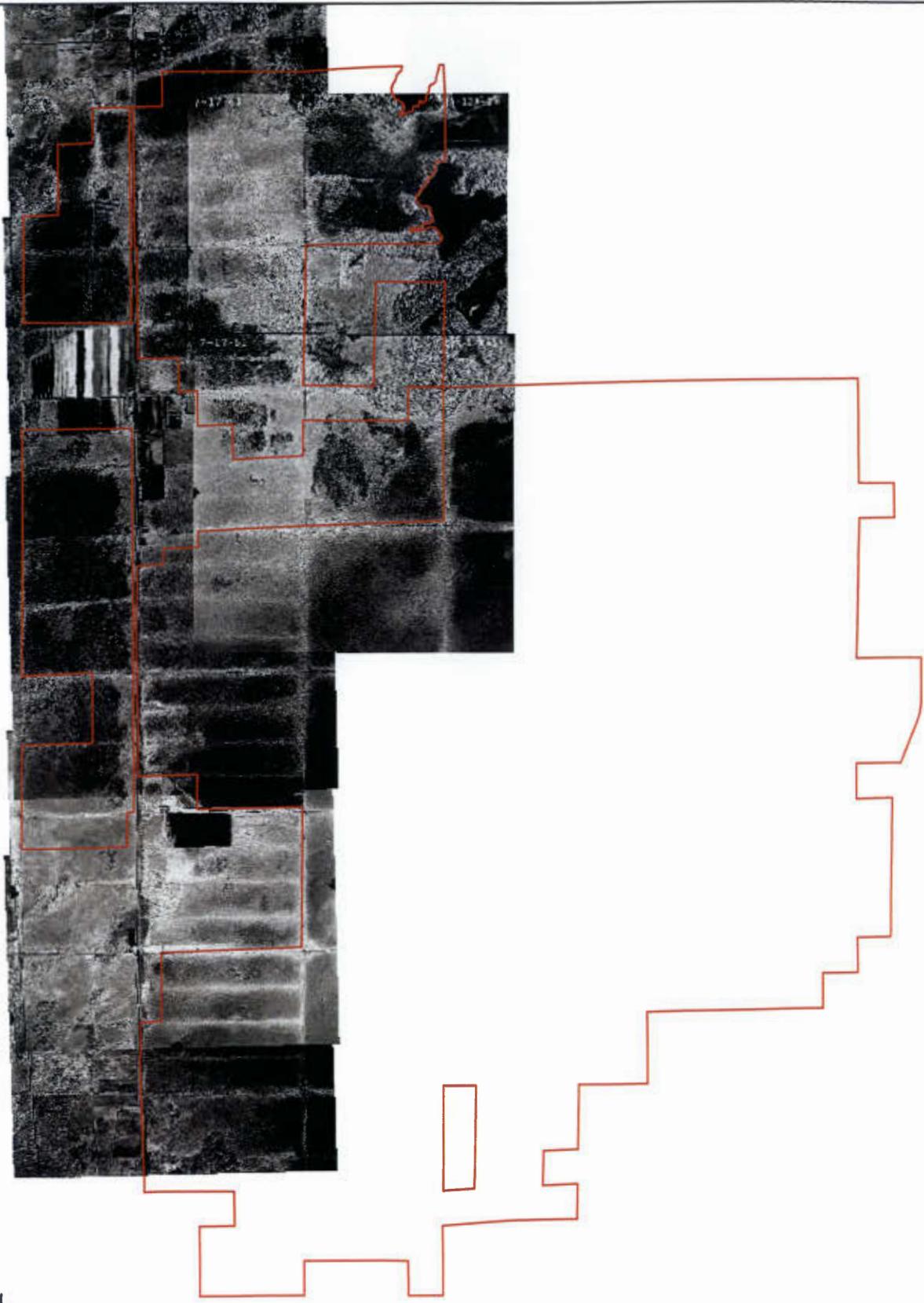
Project: ECOSY 120032  
Print Date: 04/12/2013

Map by: drd  
Projection: UTM NAD83  
Source: LMIC

### 1941 Aerial Photograph

EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D



1  
Miles

Map Document: (L:\Resources\Cartographic\Templates\EmptyLayouts\ANSI\_8x11P8x11P\_Sld\_Nealime.mxd)  
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3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-8166  
TF: (800) 325-2055  
www.sehinc.com

Project: ECOSY 120032  
Print Date: 04/12/2013  
Map by: drd  
Projection: UTM NAD83  
Source: LMIC

**1961 Aerial Photograph**  
EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.





Map Document: (L:\Resources\Cartographic\Templates\Empty\Layouts\ANSI\_8x11P\8x11P\_Std\_Neartline.mxd) 2/13/2009 -- 12:47:01 PM

1 Miles



3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-6166  
TF: (800) 325-2055  
www.sehinc.com

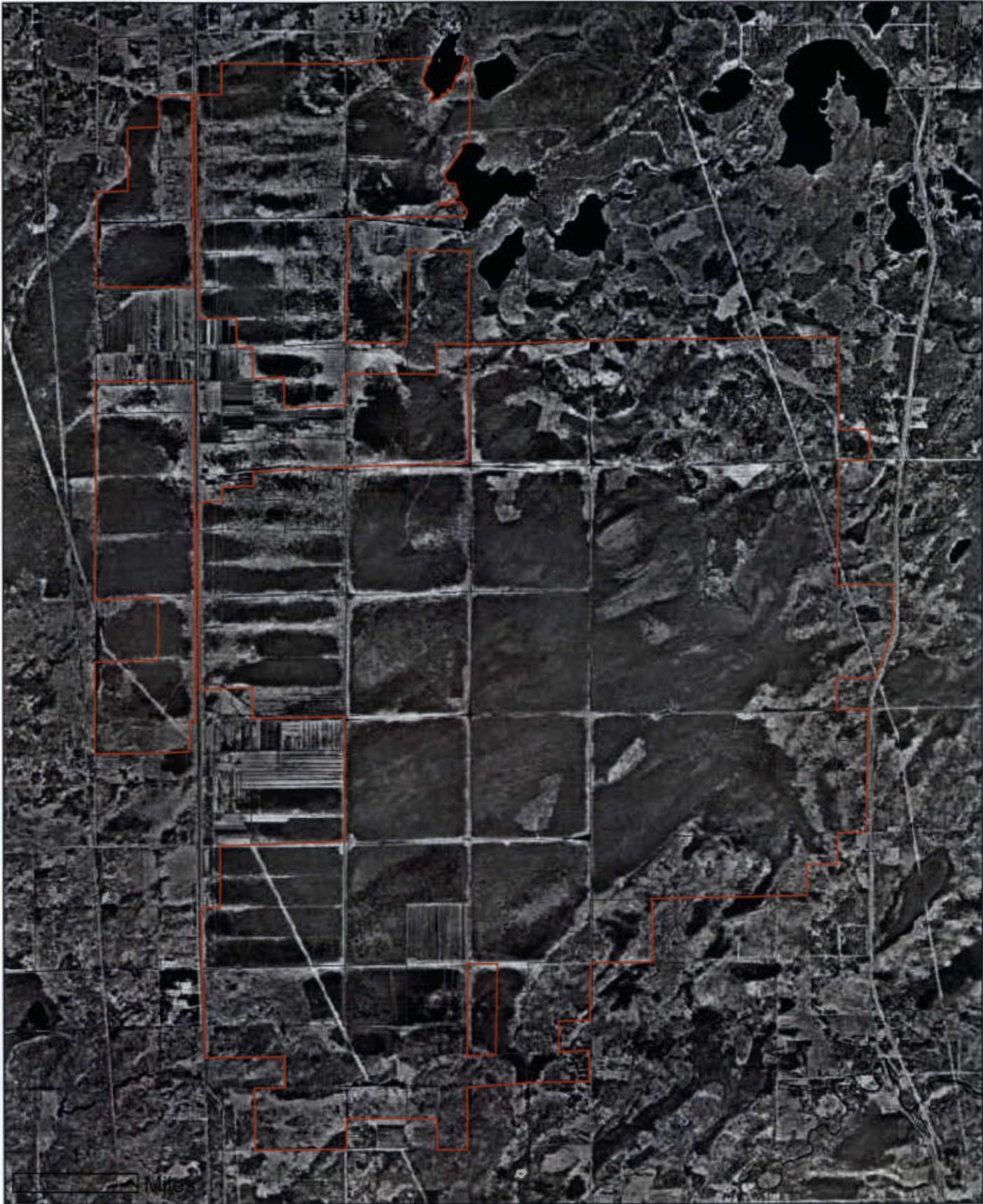
Project: ECOSY 120032  
Print Date: 04/12/2013  
Map by: drd  
Projection: UTM NAD83  
Source: LMIC

**1981 Aerial Photograph**  
EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Map Document: (L:\Resources\Cartography\EmptyLayouts\ANSI\_8x11P\8x11P\_Sig\_Nealline.mxd)  
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ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-8166  
TF: (800) 325-2055  
www.sehinc.com

Project: ECOSY 120032  
Print Date: 04/12/2013

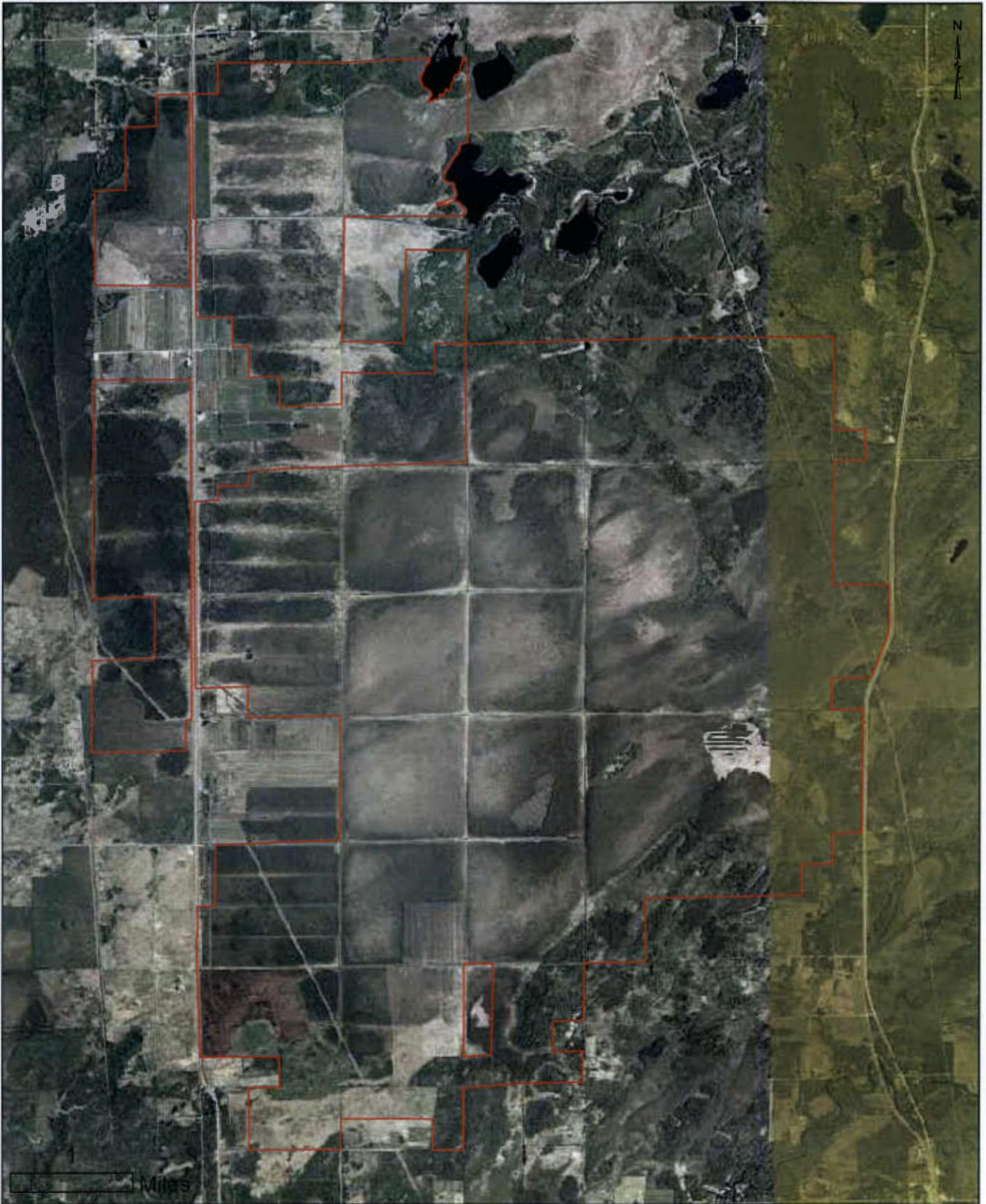
Map by: drd  
Projection: UTM NAD83  
Source: LMIC

**1991 Aerial Photograph**  
EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-8166  
TF: (800) 325-2055  
www.sehinc.com

Project: ECOSY 120032  
Print Date: 04/12/2013

Map by: drd  
Projection: UTM NAD83  
Sources: LMIC

**2003 Aerial Photograph**  
EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Map Document: (L:\Resources\Cartographic\EmptyLayouts\ANSI\_8x11P18x11P\_SIG\_Nealime.mxd)  
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3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110  
PHONE: (651) 490-2000  
FAX: (888) 908-8166  
TF: (800) 325-2055  
www.sehinc.com

Project: ECOSY 120032  
Print Date: 04/12/2013

Map by: drd  
Projection: UTM NAD83  
Source: LMIC

**2008 Aerial Photograph**  
EIP St. Louis County Wetland Bank  
McDavitt and Ellsburg Townships

Appendix  
D

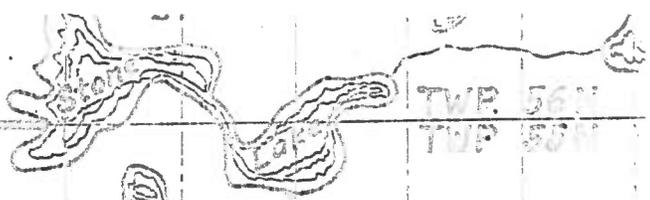
This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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**Appendix E**  
Ditch Ownership Maps



1920's Ditch Map



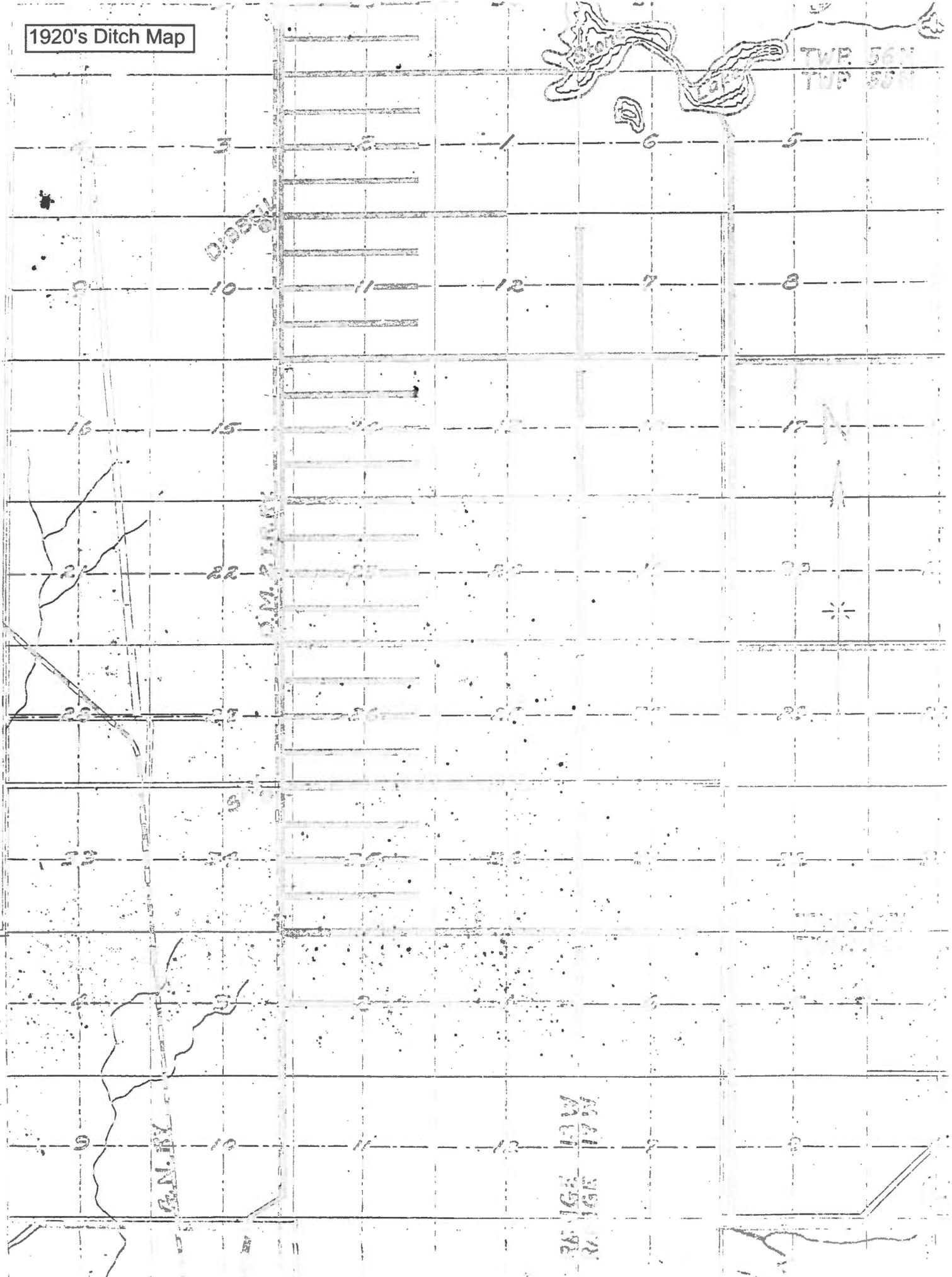
TWP. 56N  
TWP. 58N

DIBBLE

S.M. P. R. R.

P.N. R.R.

RANGE 13W  
RANGE 14W





Letter from 1954  
Reference expansion of County  
Ditch #1, Construction of the Mile  
and a Quarter Ditch

January 20, 1954

Mr. Edw. J. Bayuk  
Commissioner, Iron Range Resources  
& Rehabilitation Comm.  
624 State Office Building  
St. Paul, Minnesota

Dear Mr. Bayuk:

We wish to acknowledge receipt of your letter of January 18, 1954, and also a copy of the letter from Senator H. M. Carr to you under date of January 10, in reference to the drainage problem in the Zim-Sax area south of Eveleth.

In order to give you a general idea of this drainage problem we are enclosing a blueprint of this area which shows the location of County Ditch No. 1 which is adjacent to State Aid Road No. 7 and also State Ditch System No. 54 which lies immediately to the west of State Trunk Highway No. 53. State Ditch No. 1 contains approximately 70 miles of drainage ditches and drains an area of about 28 square miles. You will note from the map that originally all of the laterals were designed to carry the water to the main ditch which is located adjacent to the D M & I R Railroad tracks along State Aid Road No. 7. Several years the county found that due to forest fires which burned out some of the peat bog and also due to the operation of the beavers this drainage system was changed to a considerable extent. In fact it was found that a considerable portion of the water that should have been taken care of by State Ditch No. 54 had become diverted and was finding its way to the west into County Ditch No. 1 system. This did create a serious problem for a few residents that had improvements along the main ditch. During the years from 1947 to 1950, the county expended about \$12,000 for the opening of an auxiliary ditch 1 mile to the east of the original main ditch and this is indicated by solid red line on the map. The idea was to intercept along this line as much of the water as we could that was coming from the east both out of State Ditch No. 54 and that part of State Ditch No. 1 and carry the water to a point one mile below Sax which would relieve the main ditch and thus eliminate the flooding conditions adjacent to this improved property. This has worked out quite successfully and we have relieved some of the flooding conditions that formerly existed along the main ditch.

We have also shown on the map by a broken red line a proposed future extension of this auxiliary main ditch extending straight south to the White Face River. This however would involve going through some high ground and some improved property which might involve a considerable cost.

We are enclosing also a section of the county zoning map on which we have outlined the area included in County Ditch No. 1 and also State Ditch No. 54. You will note from this map that practically all of the land included in these two systems is in the restricted zone and not considered desirable for future development. I should perhaps qualify that statement by stating that it was considered undesirable at the time the county was zoned. However, a development has taken place immediately to the west by Chung King Company of Duluth which would indicate that some of this land might be considered desirable for certain uses.

St. Louis County now attempts to maintain approximately 740 miles of these drainage ditches throughout the county and about ten years ago we were successful in obtaining an authorization from the Legislature to levy and expend from the county general fund a sum not to exceed \$10,000 per year for the maintenance of these drainage ditches. We feel that this authorization was essential because in certain ditch systems such as we are now discussing practically all of the land involved was either tax forfeited or state owned lands. It was therefore not considered practical to repair or maintain these ditch systems by a reassessment as is provided for in a general drainage law. During the past three years we have used most of these funds in the Meadowlands and Floodwood area where these old drainage ditches were in very poor condition and in many instances effected the use of high grade farm lands. We are making considerable progress in the maintenance and repair of these drainage systems but naturally we are trying to give first attention to what we consider to be the most important areas.

I would be glad to go over this matter with you in more detail any time but I hope that this will give you sufficient information for your present discussions.

Yours very truly,

---

County Highway Engineer.

GWD-H  
Encs.

---

**Appendix F**  
2012 Groundwater Monitoring Data

Map Document (L:\Resources\Cartographic\Templates\EmptyLayouts\ANSI\_Bx11P\0x11P\_Std\_Neutral.mxd)  
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Project: ECOSY 120032  
Print Date: 10-25-2012

Map by: drd  
Projection: UTM NAD83  
Source: LMIC

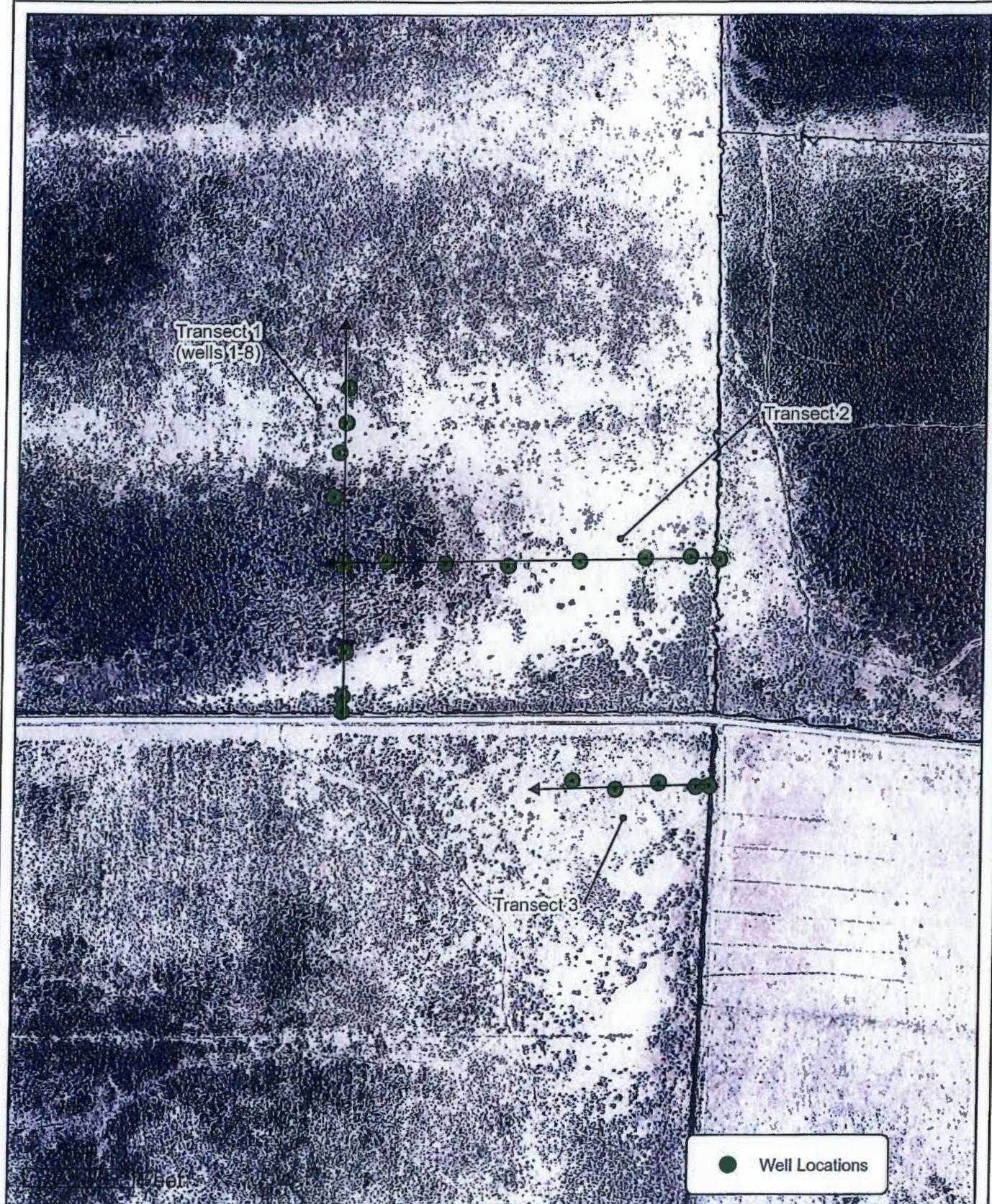
### Location of Monitoring Wells

Nevada Properties  
Fall 2012

Figure  
1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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Project: ECOSY 120032  
Print Date: 10-25-2012

Map by: dtd  
Projection: UTM NAD83  
Source: LMIC

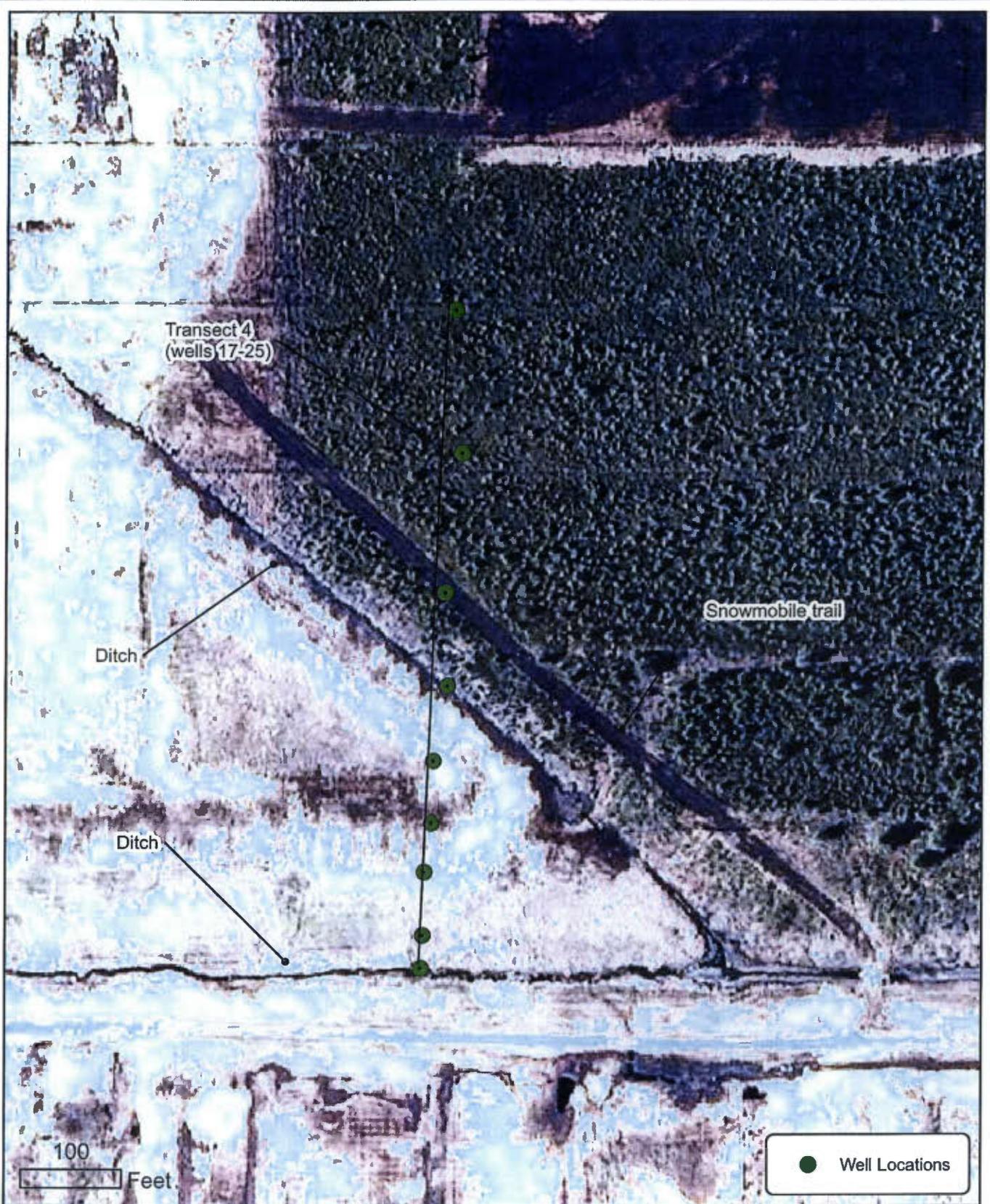
## Area 1 Monitoring Wells

Nevada Properties  
Fall 2012

Figure  
2

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Project: ECOSY 120032  
Print Date: 10-25-2012  
Map by: drd  
Projection: UTM NAD83  
Source: LMIC

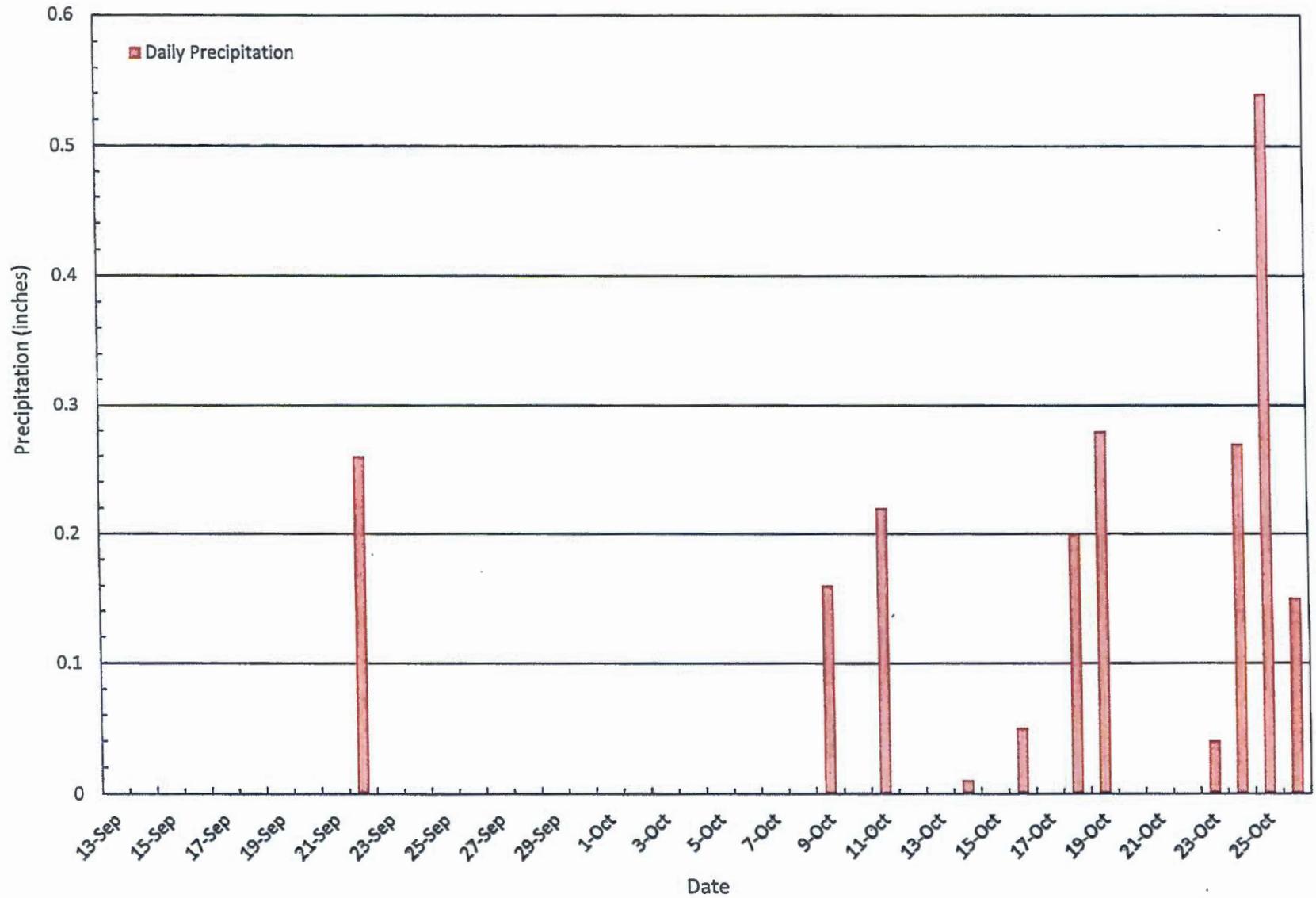
### Area 2 Monitoring Wells

Nevada Properties  
Fall 2012

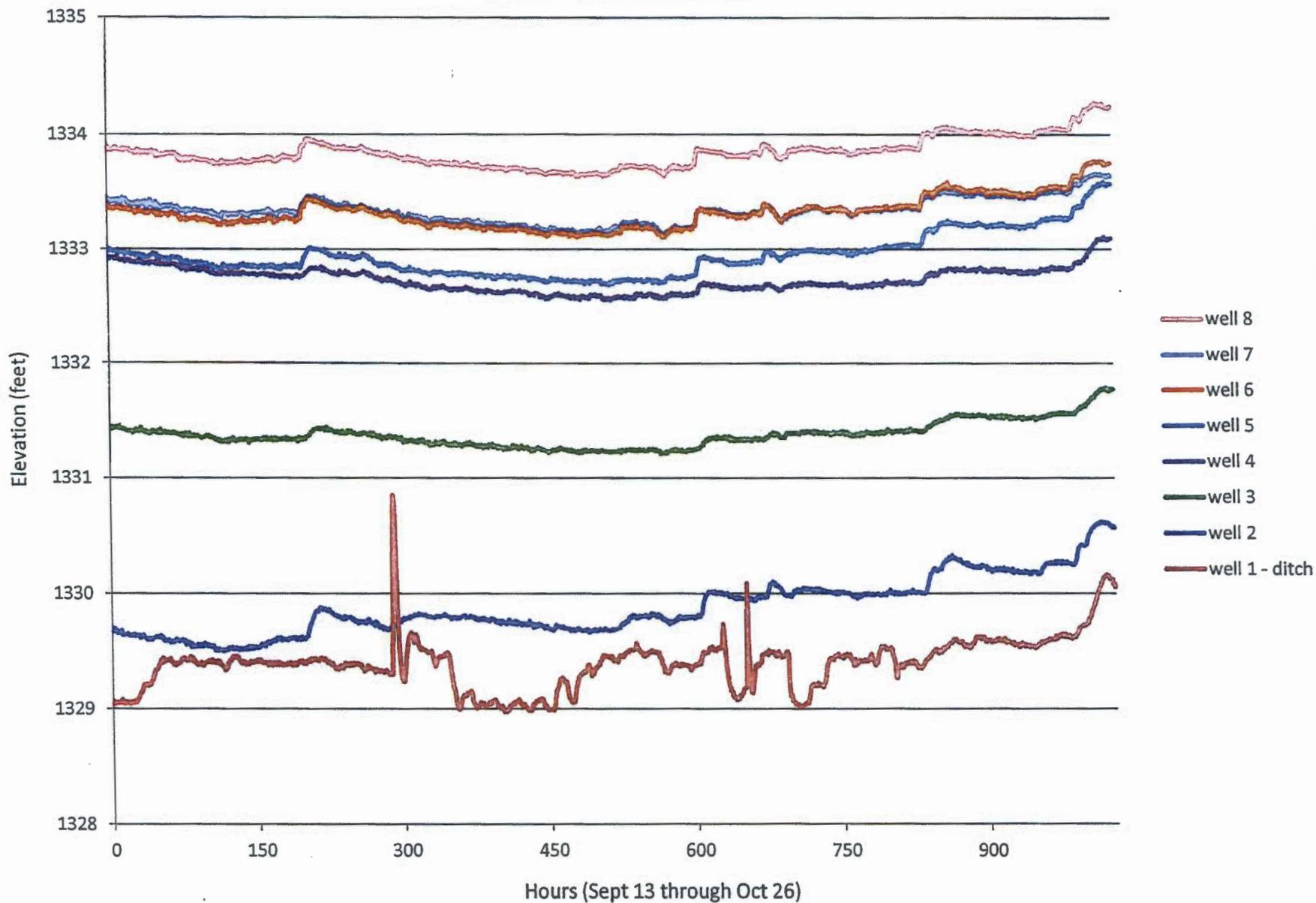
Figure 3

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

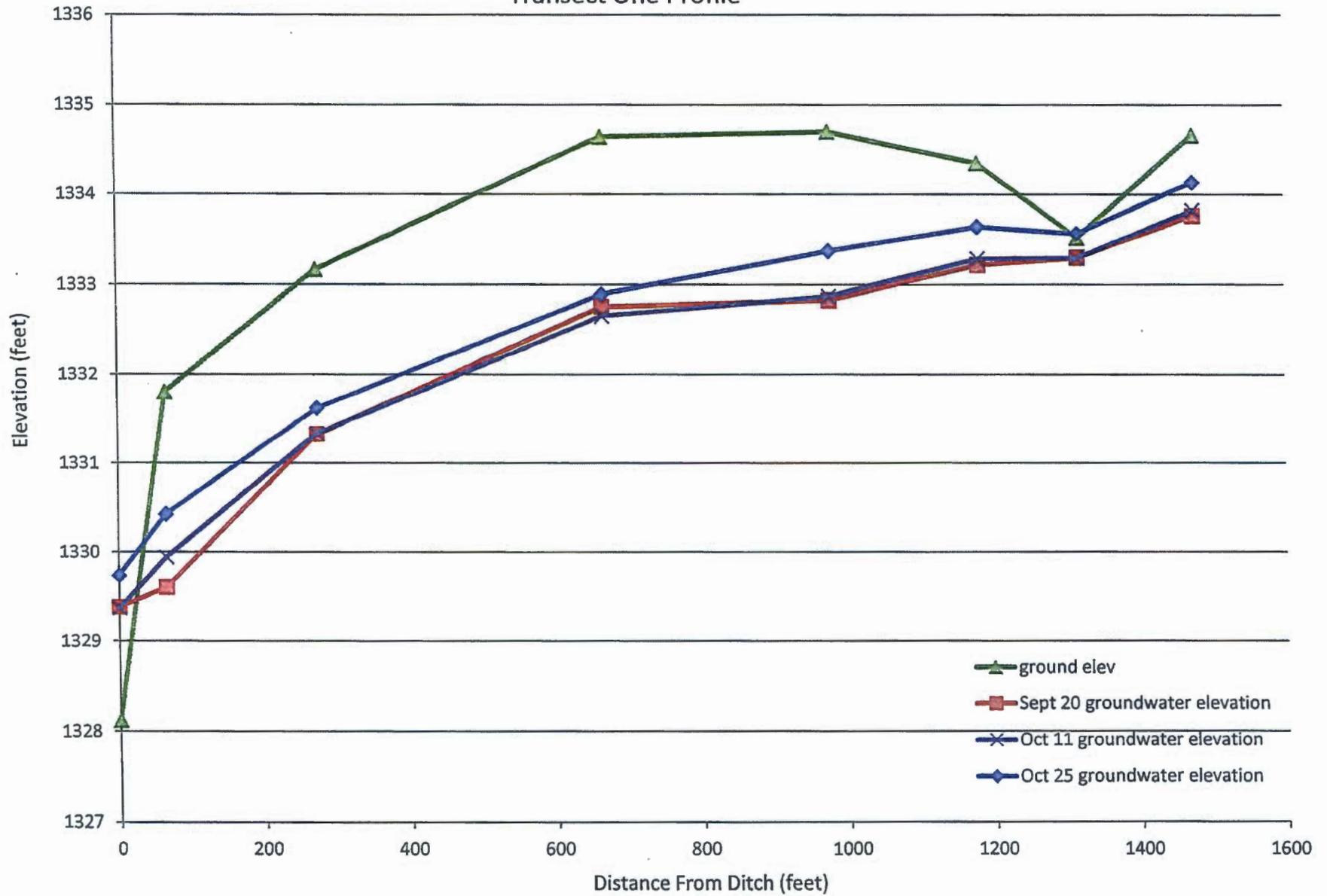
# Fall 2012 Precipitation



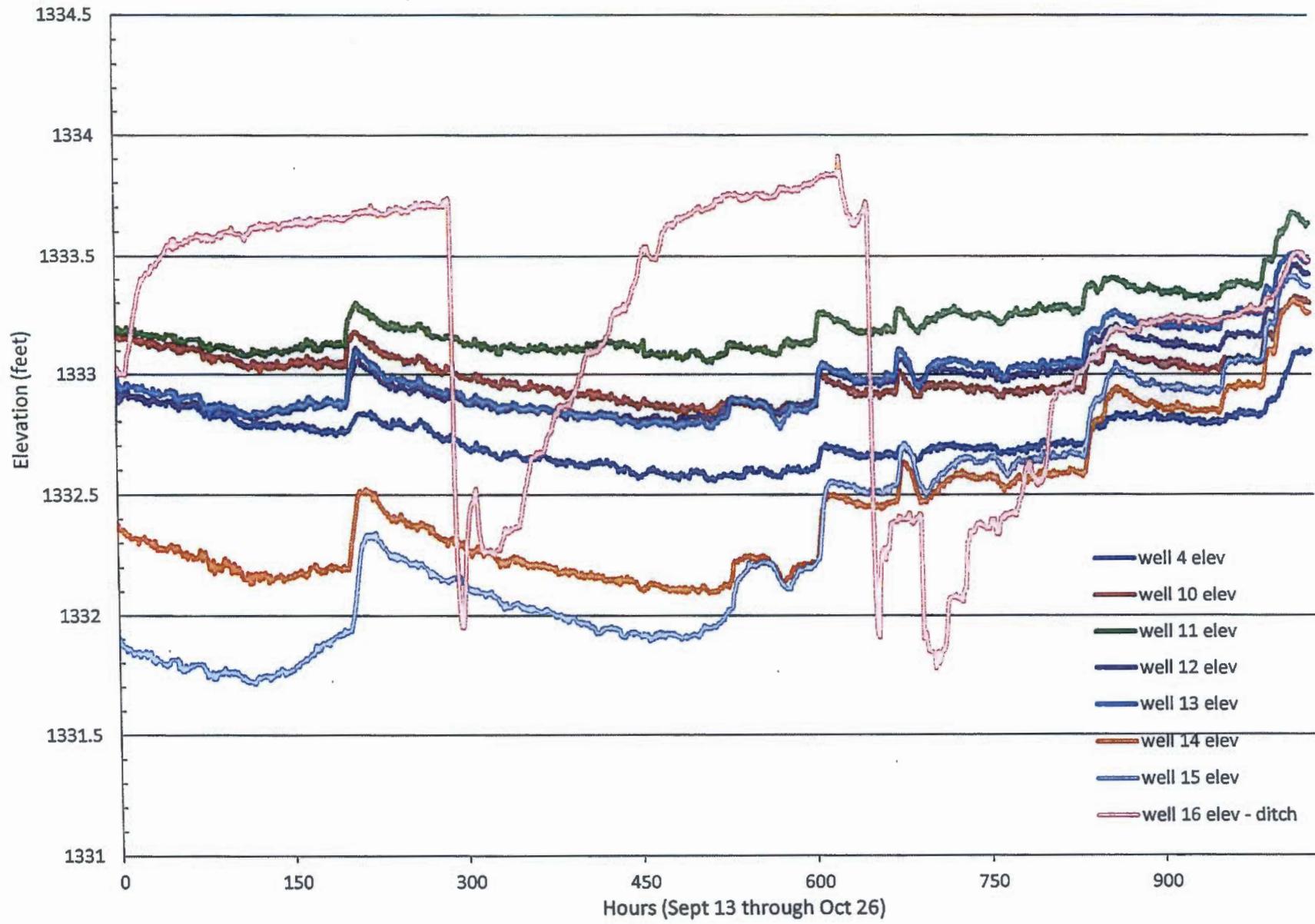
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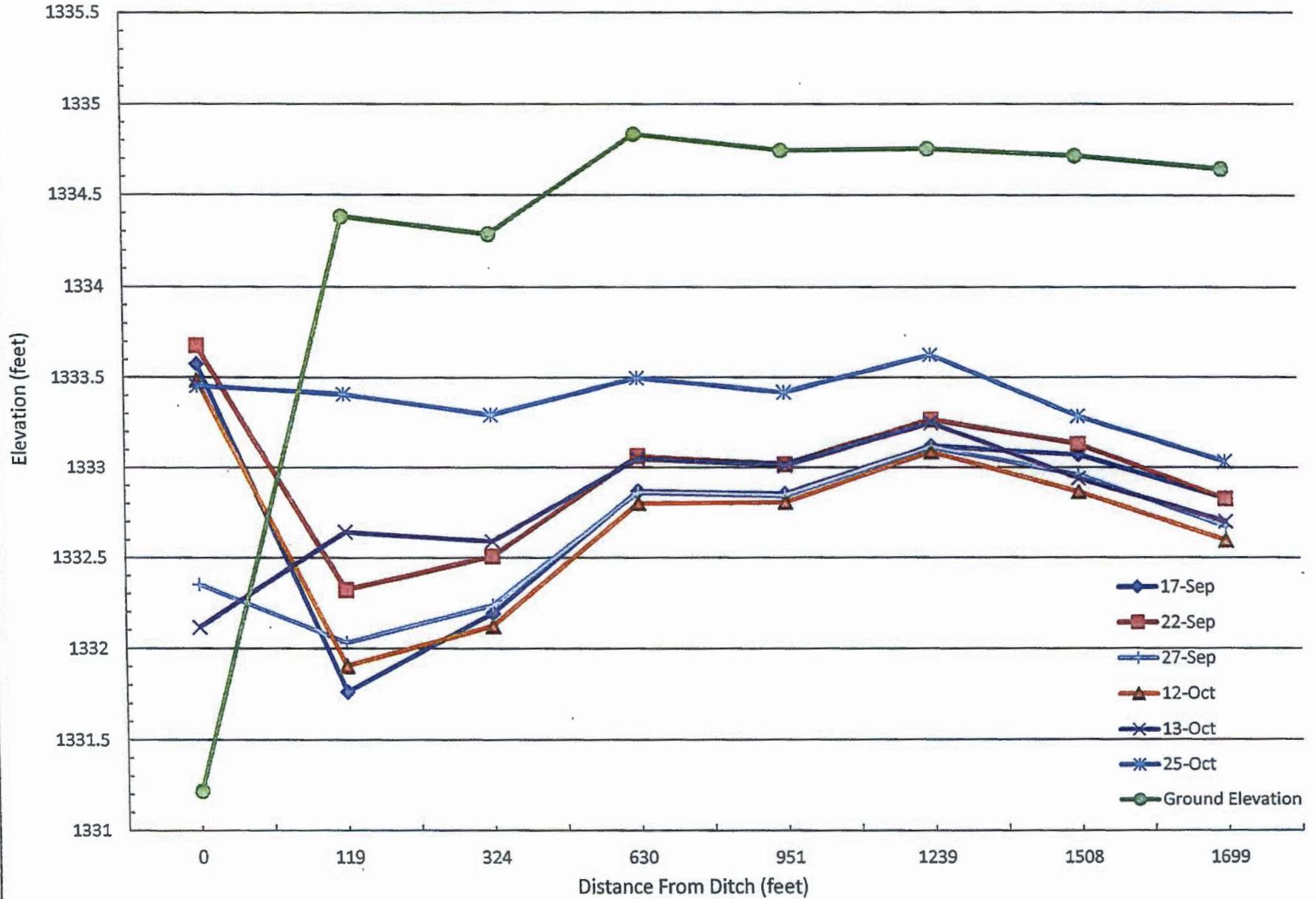
Transect One Profile



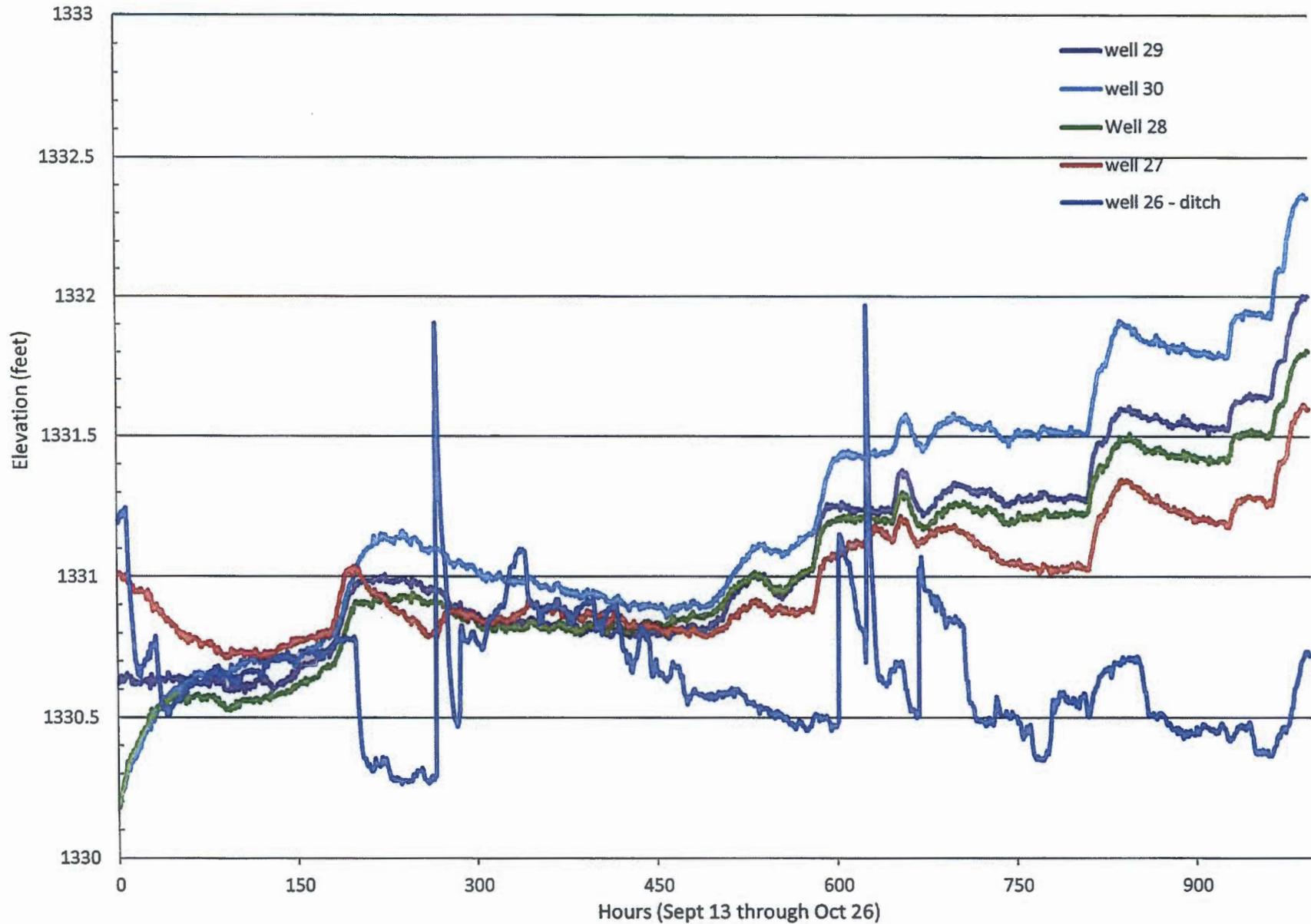
### Transect Two Elevations



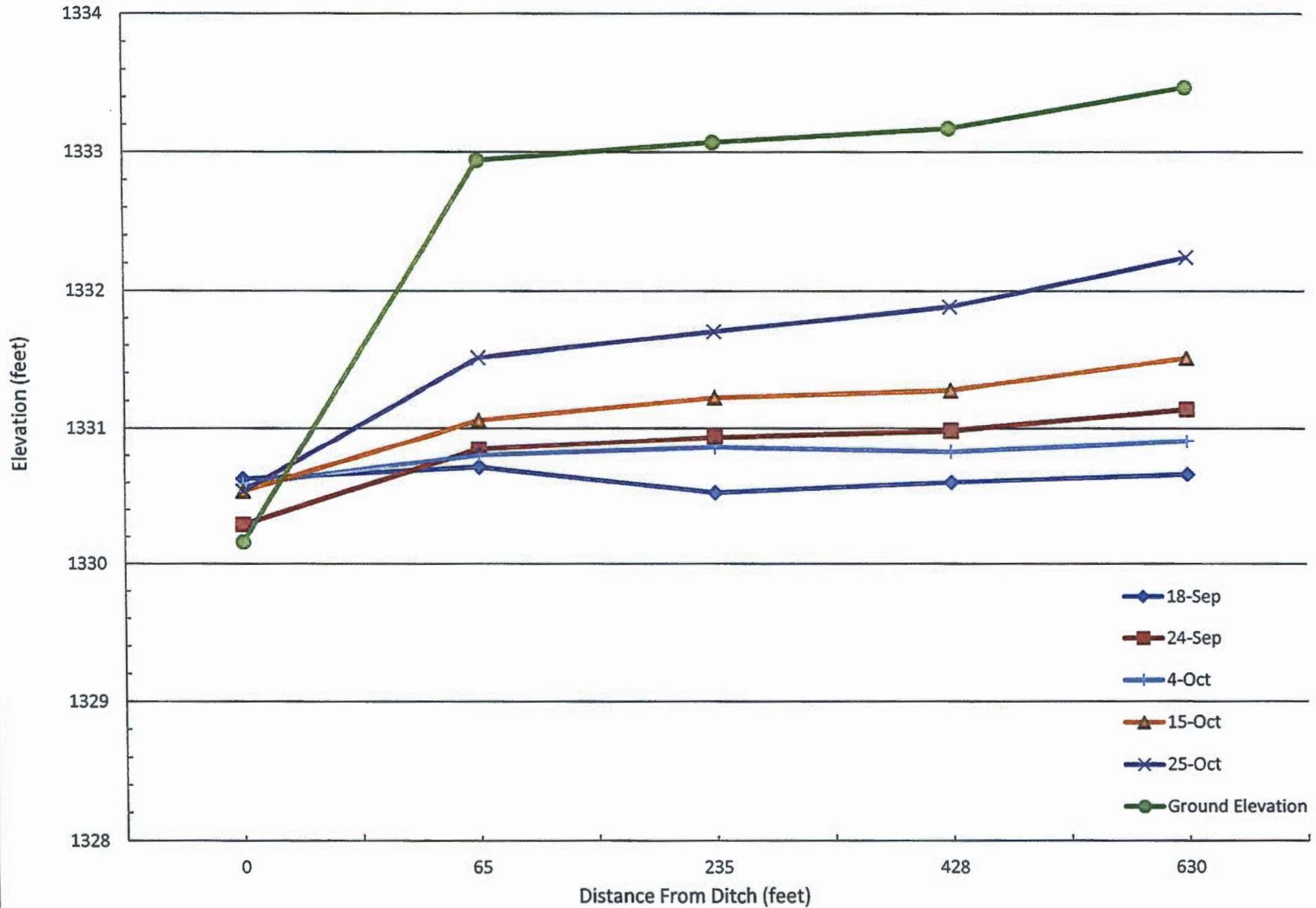
Transect Two Profile



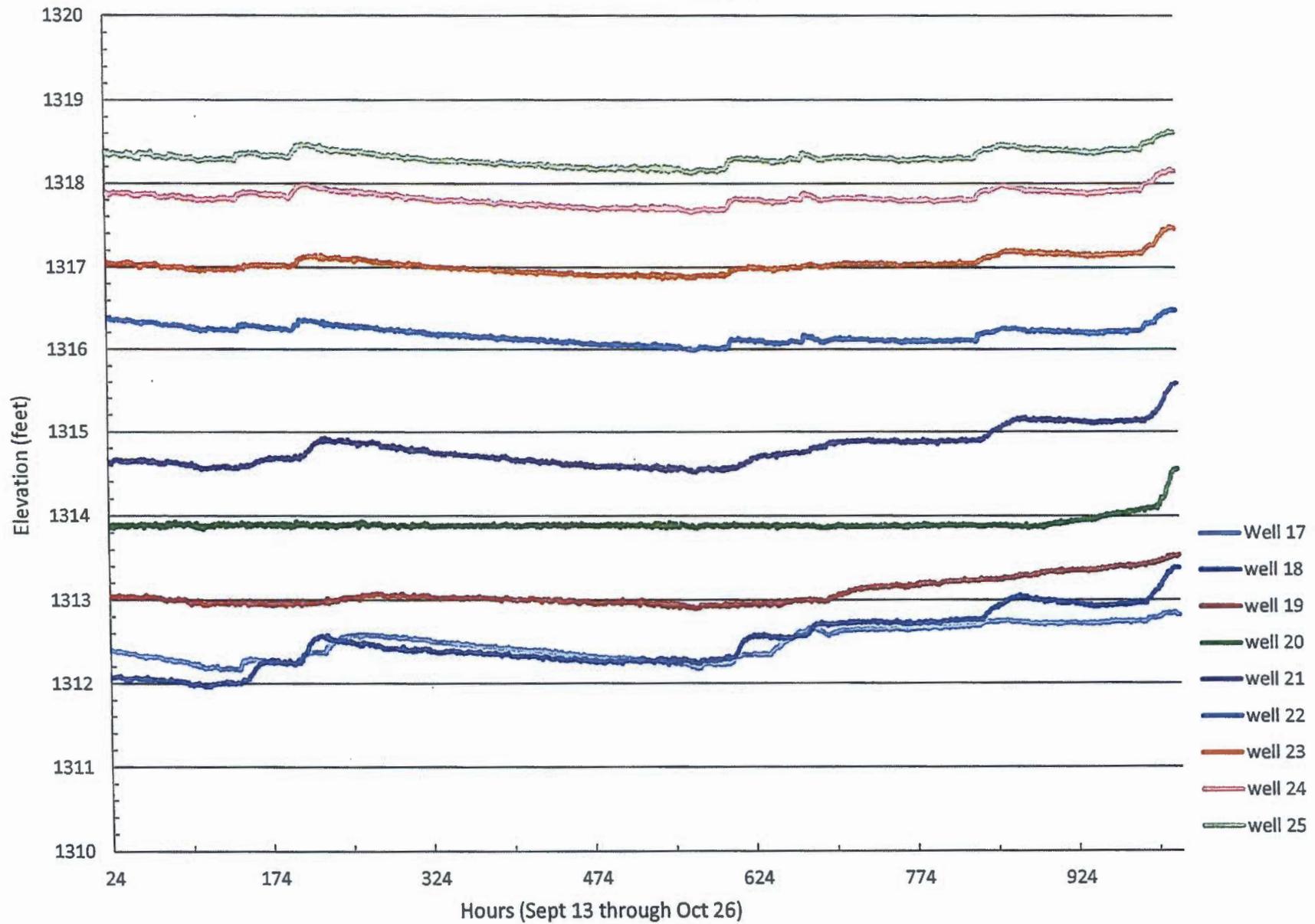
Transect Three Elevations



Transect Three Profile



### Transect Four Elevations



Transect Four Profile

