Appendix A Agency Correspondence

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Agency Consultation

Letters were mailed to various federal, state, and local agencies on June 17, 2014. The letters provided a brief description of the Project and requested information from the various agencies that may help in understanding the issues related to routing, permitting, and design. Specific information was requested from each agency. An example letter follows.

Minnesota Energy Resources Corporation
2665 145th Street West
P.O. Box 455
Rosemount, MN 55068-0455
www.minnesotaenergyresources.com

June 17, 2014

EXAMPLE

Bob Patton
MN Department of Agriculture
625 North Robert Street
St. Paul, MN 55155

Dear Bob Patton,

On behalf of Minnesota Energy Resources, HDR would like to tell you about--and request comments on-- the proposed Rochester natural gas pipeline project (Project). The Project will require a Route Permit from the Minnesota Public Utilities Commission (PUC). Minnesota Energy Resources is in the initial phase of identifying potential routes for the pipeline. A route permit application is expected to be submitted in September 2014, with final approval taking approximately eight to twelve months.

This 400 pounds per square inch (psi) (12 inch diameter) natural gas pipeline will be approximately 12 miles to 22 miles long and will interconnect with Northern Natural Gas stations 1D, northwest of Rochester, Minnesota and 1B south of Rochester, Minnesota in Olmsted County (see enclosed Study Area figure). The project will require an easement that is 30 to 50 feet wide. The project is needed to improve reliability, increase system capacity, and support future growth in the City of Rochester.

We are seeking comments and information regarding the proposed Project and the identified Study Area that would help identify the best possible route for the pipeline. Specifically, we would like information about organic farms, agricultural practices, soils and other agricultural issues that may be helpful in selecting a route.

We appreciate your participation in the Rochester Natural Gas Pipeline project and look forward to working with you. We would like your input by the first week of July, if possible. If you have questions, comments, feedback or would like additional information, please contact Darrin Johnson (Integrys) at 715-697-3130 or email dmjohnson@integrysgroup.com or Lydia Nelson (HDR) at 763-278-5909 or email lydia.nelson@hdrinc.com. Information provided via mail should be sent to Lydia Nelson at HDR, 700 Xenia Avenue South, Suite 600, Minneapolis, MN 55416.

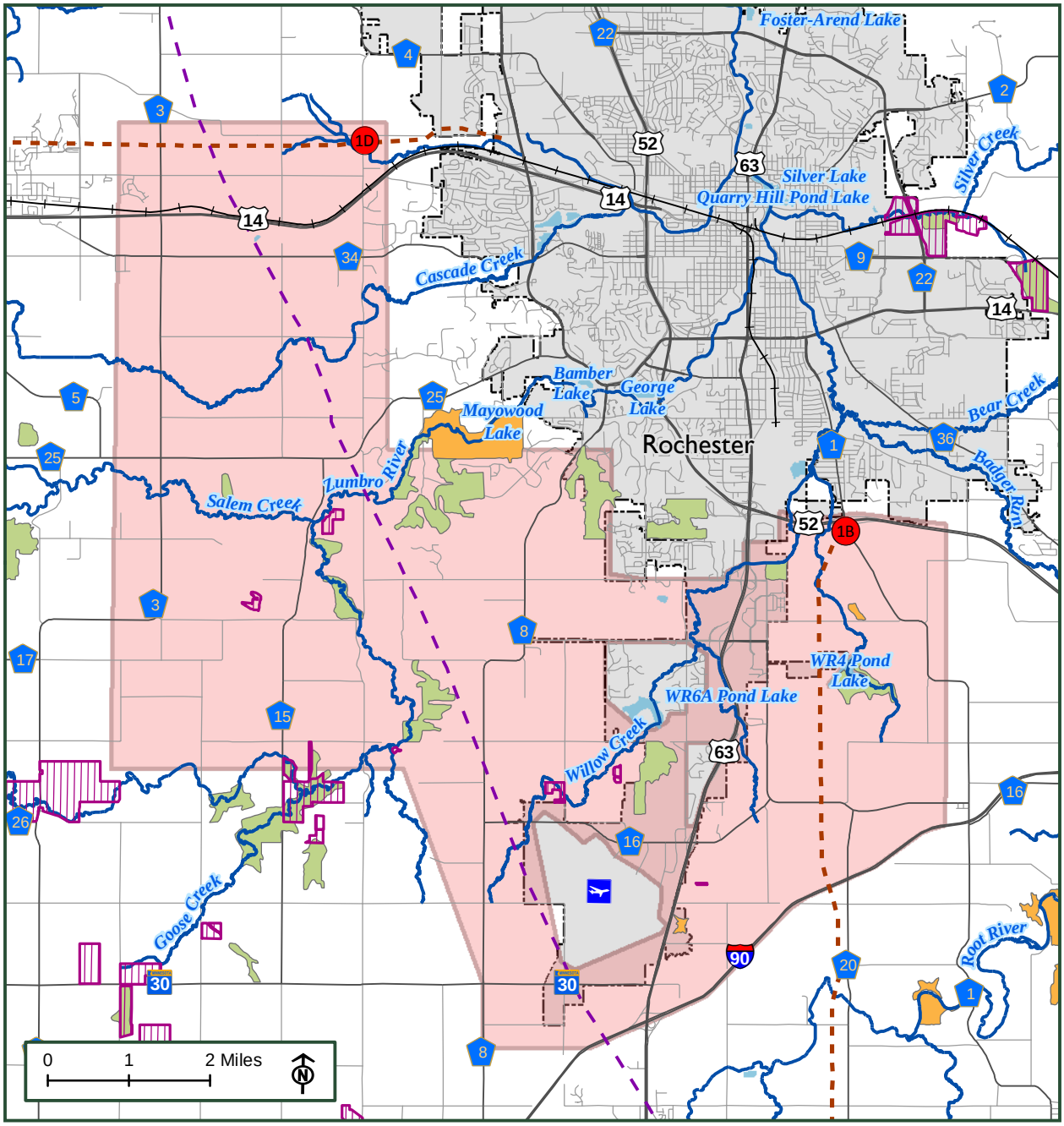
Sincerely,

Darrin Johnson
Environmental Lead

MINNESOTA ENERGY RESOURCES

Study Area

Figure 1-1



Legend

- Study Area
- Interconnection Point
- Railroad

Existing Pipeline

- Natural Gas
- Oil

- PWI Stream
- Waterbody/NWI Wetland
- State Managed Land/Easement
- Moderate Biodiversity Significance Site
- High Biodiversity Significance Site
- City / Township Boundary
- RST Airport

Path: \\mspe-gis-file\gisproj\050_den\232026_MERC\map_docs\Overview_8x11_P.mxd

Agency Mailing List

Technical Team Representatives

Name	Agency	Address	City	State	Zip Code	Letter Specific request
Bob Patton	MN Department of Agriculture	625 North Robert Street	St. Paul	MN	55155	information about organic farms, agricultural practices, soils and other agricultural issues that may be helpful in selecting a route.
Craig Affeldt	MN Pollution Control Agency	520 Lafayette Road North, 4th Floor	St. Paul	MN	55155	information about water quality, pemitting and other PCA issues that may be helpful in selecting a route.
Jamie Schrenzel	MN Department of Natural Resources	500 Lafayette Rd, Box 25	St. Paul	MN	55155	information about DNR properties, threatened/endangered species and other DNR issues that may be helpful in selecting a route.
Travis Germundson	MN Board of Water and Soil Resources	520 Lafayette Road	St. Paul	MN	55155	information about existing wetland mitigation sites, conservation practices and other BWSR issues that may be helfpul in selecting a route.
Jennie Ross	MN Department of Transportation	395 John Ireland Blvd Mail Stop 620	St. Paul	MN	55155	information about highway crossing requriements, permitting and other MnDOT issues that may be helfpul in selecting a route.
Stacy Kotch	MN Department of Transportation	395 John Ireland Blvd Mail Stop 678	St. Paul	MN	55155	information about highway crossing requriements, permitting and other MnDOT issues that may be helfpul in selecting a route.
Kelly Gragg-Johnson	MN Historical Society State Historic Preservation Office	345 Kellogg Blvd. W., Level A	St. Paul	MN	55102-1906	information about the cultural and historic resources, approvals and other SHPO issues that may be helfpul in selecting a route.
Randall Doneen	MN Department of Natural Resources	500 Lafayette Rd, Box 25	St. Paul	MN	55155-4025	information about DNR properties, threatened/endangered species and other DNR issues that may be helpful in selecting a route.
Keith Parker	MN Department of Natural Resources Central Region Office	1200 Warner Rd.	St. Paul	MN	55106	information about the State Game Refuge, DNR lands and other DNR issues that may be helfpul in selecting a route.
Richard G. Devlin	Olmsted County - Administrator	151 4th St. SE	Rochester	MN	55904	information about future development plans, sensitive areas and other county concerns that may be helfpul in selecting a route.
Mitzi Baker	Rochester-Olmsted Planning Department	2122 Campus Drive SE, Suite 100	Rochester	MN	55904	information about future development plans, sensitive areas and other county or city concerns that may be helfpul in selecting a route.
Gary Swenson	Rochester Township Clerk	4111 11th Avenue SW	Rochester	MN	55902	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Janet Hoffmann	Marion Township Clerk	2850 Oakview Ct SE	Rochester	MN	55904	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Michael Brown	Cascade Township Clerk	6002 Buck Hill Ct. NE	Rochester	MN	55906	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Terry Behrens	Kalmar Township Clerk	6429 ValleyHigh Rd NW	Byron	MN	55920	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Betsy Kleinwort	Rock Dell Township Clerk	8075 Co Rd 126 SE	Byron	MN	55920	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Willie Dux	High Forest Township Clerk	2956 Co Rd 120 NE	Stewartville	MN	55976	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Bev Harris	Pleasant Grove Township Clerk	2033 80th St SE	Rochester	MN	55904	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Sharon Petersen	Salem Township Clerk	3802 Co Rd 150 SW	Byron	MN	55920	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Roger Irhke	Township Cooperative Planning Association	Rochester Township Hall, Room 10 4111 11 Ave SW	Rochester	MN	55902	information about future development plans, sensitive areas and other township concerns that may be helfpul in selecting a route.
Stevan Kvenvold	City of Rochester - Administrator	201 4th Street SE	Rochester	MN	55904	information about future development plans, sensitive areas and other city concerns that may be helfpul in selecting a route.
Mary Blair-Hoeft	City of Byron - Administrator	680 - Byron Main Court NE, P.O. Box 1137	Byron	MN	55920	information about future development plans, sensitive areas and other city concerns that may be helfpul in selecting a route.
Bill Schimmel, Jr	City of Stewartville - Administrator	105 East 1st Street	Stewartville	MN	55976	information about future development plans, sensitive areas and other city concerns that may be helfpul in selecting a route.
Project Manager	US Army Corps of Engineers	1114 South Oak Street	La Crescent	MN	55947	information about wetland permitting and other issues that may be helpful in selecting a route.
Tony Sullins	US Fish and Wildlife Service - TC Field Office	4101 East 80th Street	Bloomington	MN	55425	information about federally listed wildlife and USFWS concerns that may be helfpul in selecting a route.
Larry Hartman	MN Department of Commerce	85 7th Place East Suite 500	St. Paul	MN	55101	

Table 1: Summary of Agency Information Requests and Responses

Agency/Recipient	Information Requested	Response
United States Fish and Wildlife Service / Tony Sullins	Information about federally listed wildlife and United States Fish and Wildlife Service concerns that may be helpful in selecting a route.	No response received
US Army Corps of Engineers/ Project Manager	Information about wetland permitting and other issues that may be helpful in selecting a route.	No response received
Minnesota Department of Agriculture (MDA)/ Bob Patton	Information about organic farms, agricultural practices, soils and other agricultural issues that may be helpful in selecting a route.	Mr. Patton responded via email and provided a list of certified organic farmers in Olmsted County. He also expressed interest in discussing an agricultural mitigation plan for the Project. During further coordination, MDA provided an example agricultural mitigation plan and MERC has prepared a draft that it will be reviewing and finalizing with MDA concurrent with seeking a Route Permit.
Minnesota Pollution Control Agency (MPCA)/ Craig Affeldt	Information about water quality, permitting, and other MPCA issues that may be helpful in selecting a route.	An email response was received on June 27, 2014, from Patrice Jensen. In this email, she requested more time to review the proposed routes and the areas of environmental concern. She suggested looking at the routes that are not near residential areas, organic farms, and wetlands. She also stated that the Project will need multiple permits from the MPCA such as a 401 Certification, a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) construction stormwater permit, a NPDES/SDS wastewater permit, and possibly an air permit.
Minnesota Board of Water and Soil Resources / Travis Germundson	Information about existing wetland mitigation sites, conservation practices and other Minnesota Board of Water and Soil Resources issues that may be helpful in selecting a route.	No response received
Minnesota Department of Transportation (MnDOT)/ Jennie Ross	Information about highway crossing requirements, permitting and other MnDOT issues that may be helpful in selecting a route.	Phone and email conversation with Tom Streiff regarding crossing of Trunk Highway 14 and Trunk Highway 63.
MnDOT/ Stacy Kotch	Information about highway crossing requirements, permitting and other MnDOT issues that may be helpful in selecting a route.	See above.
Minnesota Historical Society State Historic Preservation Office (SHPO)/ Kelly Gragg-Johnson	Information about the cultural and historic resources, approvals and other SHPO issues that may be helpful in selecting a route.	Sarah Beimers via mail. In her response she recommended that a Phase IA archaeological assessment be completed for this Project. If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. She also stated that they will reconsider the need for

Agency/Recipient	Information Requested	Response
		survey if the Project area can be documented as previously surveyed or disturbed. This comment letter did not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 Code of Federal Regulations (CFR) 800, procedures of the Advisory Council on Historic Preservation for the protection of historic properties.
Minnesota Department of Natural Resources (DNR)/ Jamie Schrenzel	Information about DNR properties, threatened/endangered species and other DNR issues that may be helpful in selecting a route.	No response received
DNR/ Randall Doneen	Information about DNR properties, threatened/endangered species and other DNR issues that may be helpful in selecting a route.	No response received
DNR Central Region Office/ Keith Parker	Information about the State Game Refuge, DNR lands and other DNR issues that may be helpful in selecting a route.	Received correspondence from Brooke Haworth (DNR Environmental Assessment Ecologist – Central Region) via email and phone. DNR provided a list of the owned/managed lands that should be avoided, location of high biological diversity site for avoidance, sensitive features to consider/avoid (calcareous fens, karst features, public waters, biodiversity sites, wetlands, and native plant communities), recommendation to obtain Natural Heritage Inventory System (NHIS) data review, and list of potential licenses that may be required.
Olmsted County/ Richard G. Delvin	Information about future development plans, sensitive areas, and other county concerns that may be helpful in selecting a route.	A letter was sent in response from the Director of Public Works/County Engineer, Michael T. Sheehan. The letter stated "No Comments."
Rochester-Olmsted Planning Department/ Mitzi Baker	Information about future development plans, sensitive areas and other county or city concerns that may be helpful in selecting a route.	Sandi Goslee, Principal Planner for Rochester-Olmsted Planning Department, sent an email July 2, 2014. The email included a number of documents for consideration while identifying potential routes. Included in the attached documents was a PowerPoint presentation that reviews a number of land use, environmental, and transportation concerns that their staff had identified in the study area.
Rochester Township/ Gary Swenson	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
Marion Township/ Janet Hoffmann	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
Cascade Township/	Information about future development plans, sensitive areas and other township concerns that	No response received

Agency/Recipient	Information Requested	Response
Michael Brown	may be helpful in selecting a route.	
Kalmar Township/ Terry Behrens	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
Rock Dell Township/ Betsy Kleinwort	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
High Forest Township/ Willie Dux	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	A call was received from this township on June 20, 2014 and an MERC representative informed the caller that they were looking at routing a new pipeline somewhere in the study area listed on the map and that we are seeking input the township may have regarding routing the pipeline.
Pleasant Grove Township/ Bev Harris	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
Salem Township/ Sharon Petersen	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	Rick Lutzi, a board member for Salem Township and landowner called to comment. He asked about the public meeting and indicated that the pipeline route seems more practical than a new route down 70th.
Township Cooperative Planning Association/ Roger Irhke	Information about future development plans, sensitive areas and other township concerns that may be helpful in selecting a route.	No response received
City of Rochester/ Stevan Kvenvold	Information about future development plans, sensitive areas and other city concerns that may be helpful in selecting a route.	No response received
City of Byron/ Mary Blair-Hoeft	Information about future development plans, sensitive areas and other city concerns that may be helpful in selecting a route.	Janna Monosmith responded to the letter via email. In the email she stated that Byron identifies some of the study area, specifically the land north of Trunk Highway 14 and West of County Road 3, in its Land Use Plan. Some of this area has been annexed into the City and is being developed and some of this land area is slated to be developed in the future. The City's Land Use Plan does not include area south of Trunk Highway 14 and County Road 5.
City of Stewartville/ Bill Schimmel	Information about future development plans, sensitive areas and other city concerns that may be helpful in selecting a route.	No response received

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From:	Patton, Bob (MDA)
To:	dmjohnson@integrysgroup.com
Cc:	Nelson, Lydia C.; Moynihan, Meg (MDA)
Subject:	Dpt of Ag_20140627_1_Rochester natural gas pipeline
Date:	Friday, June 27, 2014 5:37:22 PM
Attachments:	Certified Organic Farmers-Olmstead.pdf

Mr. Johnson:

In response to your letter of June 17th, I have included a list of certified organic farmers in Olmstead County. If you have questions about the list, please contact Meg Moynihan at 651-201-6616 or Meg.Moynihan@state.mn.us. Meg suggests that you also consult the website www.draiftwatch.org.

If you would like to discuss an agricultural mitigation plan for the project, please let me know. I am out next week, but will be back in the office July 8.

Thanks and please let me know if you have questions.

Bob Patton

Robert Patton, AICP
Supervisor, Energy and Environment Section
Agricultural Marketing and Development Division
Minnesota Department of Agriculture
625 Robert Street North
Saint Paul, MN 55155-2538
Ph: 651-201-6226
MINNESOTA DEPARTMENT OF AGRICULTURE
www.mda.state.mn.us

MINNESOTA DEPARTMENT OF AGRICULTURE

The following list of certified organic farms (operator mailing addresses) is based on their participation in voluntary Minnesota Department of Agriculture (MDA) organic programs and on information supplied by organic certifying agencies and the National Organic Program. The MDA does not require organic farmers to register with the State. Farms that are exempt from the requirement to certify and farms in transition to organic do not appear on this list. In addition, there may be other certified operations that do not appear here. For more information, call 651-201-6012.

Please be advised that any written or verbal contact with persons/companies on the accompanying list may not state nor imply that the Minnesota Department of Agriculture has any knowledge of, supports or endorses any service, product, program, or project.

Certified Organic Farmers
Olmsted County, Minnesota
6-26-14

firstname	lastname	orgn	addrline1	city	state	zipcode
Kenneth	Donovan	Donovan Farm	5827 Salem Rd SW	Rochester	MN	55902-8827
Lauren	Donovan		3487 60th Ave SW	Rochester	MN	55902
Charles	Henry	Minnawana Farms	17838 25th St SE	Dover	MN	55929
Elizabeth	Heublein	TRECC	17434 Co Rd 37	Altura	MN	55910
Don & David	Johnston	Johnston Honey	1221 Westhill Dr	Rochester	MN	55902
Rodney	Morlock	Morlock Farms	9987 Co 20 SE	Stewartville	MN	55976
Raymond & Mark	Nelson	Your Prairie Son Organic Farm	2335 60th St SE	Rochester	MN	55904
Steven	Trogstad	Triple T Organics	11429 Mill Creek Rd SE	Chatfield	MN	55923
Jerome	Walch	Four Sisters' Farm	2447 105th St NE	Rochester	MN	55906
John	Wegman	Wegman Organics	1121 Co Rd 10 NE	Dover	MN	55929
Daniel & Heather	White		1506 1st St East	Stewartville	MN	55976-1050

From: Johnson, Darrin M
To: Jensen, Patrice (MPCA)
Cc: Affeldt, Craig (MPCA)
Subject: MPCA_20140627_RE: Rochester Natural Gas Pipeline
Date: Friday, June 27, 2014 8:43:50 AM

Ms. Jensen:

Thank you for your response. At this stage, we are seeking any preliminary input you may have regarding the study area in general. That will help us to rule out some potential routes. We realize that there will be a more intensive review on your and other resource agencies' parts once we have potential routes selected.

Darrin M. Johnson
Environmental Consultant | Environmental Services | Integrys Business Support, LLC

715-345-7509
715-697-3130 *cell*
715-345-7505 *fax*
dmjohnson@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Integrys Transportation Fuels, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Upper Peninsula Power Company, Wisconsin River Power Company, and Wisconsin Public Service.

From: Jensen, Patrice (MPCA) [mailto:patrice.jensen@state.mn.us]
Sent: Friday, June 27, 2014 8:21 AM
To: Johnson, Darrin M
Cc: Affeldt, Craig (MPCA)
Subject: Rochester Natural Gas Pipeline

Mr. Johnson – The Minnesota Pollution Control Agency (MPCA), Environmental Review Program, has received your request dated June 17, 2014, for comments and information regarding the proposed Rochester Natural Gas Pipeline project. Without having more information about possible route avenues you are reviewing, our current comments will be limited. We also would need more time than a week to study your proposed routes and the areas of environmental concern these routes may be intersecting.

Given that this is a natural gas line transmission, possibly the greatest risk is due to explosion; however, natural gas condensate can be released from these lines, as well. You will want to look at routes that are not in close proximity to residential areas and organic farming areas. Proposed routes should address the need for access in close proximity to a pipeline in order to reach an area where a release could occur so that additional damages can be prevented.

Permits you will likely need from the MPCA include a 401 Certification (if the pipeline would cross waters of the state), a National Pollutant Discharge and Elimination System/State Disposal System (NPDES/SDS) construction stormwater permit, a NPDES/SDS wastewater permit (if hydrostatic

testing is conducted), and possibly an air permit. You will likely also need a Section 404 Permit from the U.S. Army Corps of Engineers if the pipeline crosses waters of the state. You should also check with the Minnesota Department of Natural Resources. You may need permits such as a utility crossing license or a public waters work permit. It is likely that the county and/or city may have permits, as well.

When looking at routes, wetlands and waterways should be avoided; however, if these would have to be crossed, for wetlands, look at places where access would be available. For waterways, make sure your crossing would be perpendicular to the stream/river.

If you have any further questions, please contact me.

Minnesota Department of Natural Resources
Division of Ecological and Water Resources
1200 Warner Road
Saint Paul, MN 55106-6793

August 8, 2014 Transmitted via Electronic Mail

Ms. Lydia Nelson
HDR, Inc.
700 Xenia Avenue South, Ste. 600
Minneapolis, MN 55416

Ms. Nelson,

The Minnesota Department of Natural Resources (DNR) has reviewed the early coordination information provided by Minnesota Energy Resources regarding routing options for the proposed Rochester natural gas pipeline project (Project). We offer the following comments for your consideration.

Route alternatives that avoid DNR administered lands should be developed. DNR administered lands include Wildlife Management Areas, Scientific and Natural Areas, State Parks, Aquatic Management Areas, and State Trails. There are not many of these within the Project area, but please note Keller WMA, R J Dorer Memorial Hardwood Forest, and a Minnesota Water Trail on stretches of the Zumbro River. Additional conservation lands exist: a Railroad Rights-of-Way Prairie located in T107-R15-S35+36, and a Reinvest in Minnesota conservation easement in T106-R15-S24.

Route alternatives that avoid lands of high conservation value should also be avoided. The early coordination map correctly identifies Sites of high and moderate Biodiversity Significance (SBS). SBS have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as Outstanding contain the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present in the state. The SBS in this area are associated with native plant communities identified by the Minnesota Biological Survey (MBS), each of which has an associated conservation status rank from S1 (critically imperiled) to S5 (apparently secure).

There is an area of particularly high biological diversity in T106-R14-S17+18. This area is associated with the riparian corridor of the Zumbro River and Mayowood Lake, and contains NPC floodplain and terrace forests types with conservation status ranks of S2 (imperiled) and S3 (vulnerable). There are also rare species records of various ranks in that vicinity.

Another area of concern involves a potential approach to the Interconnection Point 1B. Approaching the point from the west and south are a number of sensitive features, including calcareous fens (identified as Rochester 23 and Marion 30), karst features (sinkholes), Sites of moderate Biodiversity Significance, public waters (Willow Creek and an unnamed stream), associated floodplain NWI wetlands (seasonally flooded flats and shrub swamps), native plant wetland communities (Seepage Meadow/Carr-Tussock Sedge Subtype with rank S3-vulnerable and Wet Seepage Prairie-Southern with rank S1-critically imperiled), and rare species records. Negotiating through this area will require close coordination with DNR staff to avoid impacts to sensitive natural resources.

Olmsted County has a number of calcareous fens that are protected by Minnesota Statute 103G.223. Calcareous fens are highly sensitive to groundwater disruption and surface water contamination. Impacts that might affect fens directly or indirectly through disruption to water sources must be avoided. Calcareous fen records do exist within the project area. In addition, there are many karst features (springs and sinkholes) documented throughout the County. The approximate locations of these features can be downloaded from the MN DNR Data Deli website: http://deli.dnr.state.mn.us/. This information should be used to plan a route that avoids these points.

A number of National Wetland Inventory (NWI) wetlands are located within the project area. These are regulated by the Minnesota Wetland Conservation Act (WCA) and subject to WCA processes. Some of these may qualify as "rare natural communities" under Minnesota Rule 8420.0515, Subpart 3, which states that a wetland replacement plan for activities that modify a rare natural community must be denied if the local government unit determines that the proposed activities will permanently adversely affect the natural community. The NHIS review discussed previously will assist in identifying these specially protected wetlands. If you have any questions regarding this provision of the WCA, please contact Doug Norris, the DNR Wetlands Program Coordinator, at 651-259-5125, doug.norris@state.mn.us.

When route alternatives have been narrowed to a general corridor, the DNR requests that a Natural Heritage Information System (NHIS) review be conducted to determine the locations of rare species and rare natural resource features. The NHIS is continually updated as new information becomes available and would include current records and surveys. An NHIS review is considered valid if performed within one year of project implementation. The NHIS Data Request form and rate information can be accessed on the DNR website at http://www.dnr.state.mn.us/eco/nhnrp/nhis.html. Please refer to **ERDB project number 20150007** when requesting this review. Alternatively, you may perform your own review and submit it to the Endangered Species Review Coordinator for concurrence: Lisa Joyal, 651-259-5109, lisa.joyal@state.mn.us. If it is determined that the Project will include unavoidable impacts to rare species or rare features identified by the NHIS review, coordination with Lisa Joyal is required regarding procedures and protocols to address potential takings.

Utility licenses will be required from the Division of Lands and Minerals for crossings of all public waters and public lands. The creeks and rivers in southeastern Minnesota are considered

important fisheries. Utility license conditions may include work exclusion dates for fisheries protection and requirements for particular BMPs to protect water quality. Any de-watering activities associated with construction will require a temporary de-watering appropriations public waters permit issued by DNR area hydrology staff.

We appreciate the opportunity to provide early coordination for this Project. We suggest you continue to coordinate with DNR as the Project develops. As the corridor footprint is further refined, coordination with area staff can provide local knowledge that will be helpful in avoiding and mitigating impacts to natural resources. I will be happy to assist you in coordination with area staff.

If you have any questions regarding these comments, please contact me.

Sincerely,

Brooke

Brooke Haworth
Environmental Assessment Ecologist, Central Region
MnDNR Division of Ecological and Water Resources
1200 Warner Road, St. Paul, MN 55106
Phone: 651-259-5755
Email: Brooke.haworth@state.mn.us

ERDB project: 20150007

From: Schubbe, Jonathan
To: Brooke.haworth@state.mn.us
Cc: Nelson, Lydia C.
Subject: DNR_HDR_20140815_MCBS Site Rochester 24 Oveview Map
Date: Friday, August 15, 2014 1:44:57 PM
Attachments: MCBS_Rochester24_11x17L_20140815.pdf

Hello Brooke,

Thank you for your time this afternoon to discuss this MCBS site. I apologize my GIS screenshot did not make it through in my previous email. Please see the attached pdf as a reference to our preferred route in relation to the MCBS site.

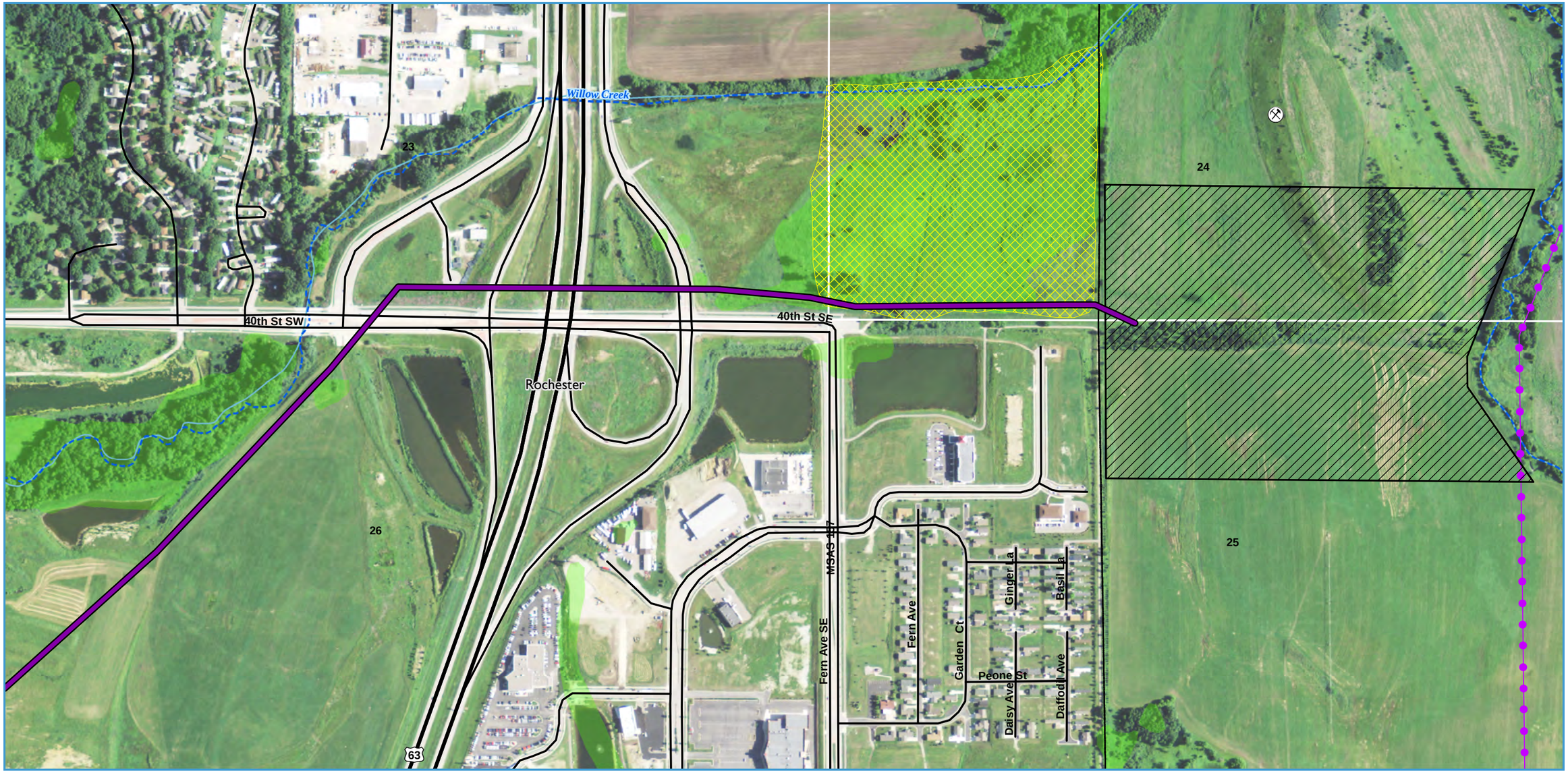
Please feel free to reach out to me with any questions.

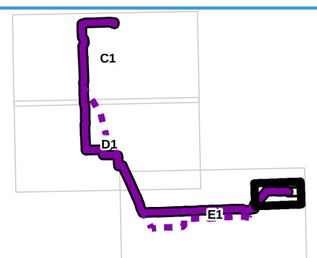
Thanks again,

Jon Schubbe
Biologist

HDR
701 Xenia Ave South - Suite 600
Minneapolis, MN 55416
D 763.278.5975
jschubbe@hdrinc.com

Rochester MCBS Site 24 Overview





- Interconnection Point
- Preferred Route
- Proposed Alternate Route
- Project Endpoint
- City / Township Boundary
- Substation
- 161kV AC Transmission Line
- Spring
- Sinkhole
- Mine
- School
- FCC Tower
- Railroad
- Gas Pipeline
- Liquid Pipeline
- PWI Basin
- PWI Wetland
- PWI Stream
- Waterbody
- River / Stream
- NWI Wetland

MCBS Biodiversity

- Below
- Moderate
- High
- Outstanding

1:6,000

Feet

0 500

Path: \\mspe-gis-file\GISProj\050_den\232026_MERC\map_docs\DNRCoodinatation_11x17L_20140815.mxd

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From:	Nelson, Lydia C.
To:	Tom Strieff (thomas.streiff@state.mn.us)
Cc:	Tuohey, Sean
Subject:	MnDOT_20140623_Integrys Rochester Project
Date:	Monday, June 23, 2014 4:51:50 PM
Attachments:	Routes_8x11_P__hwy crossings20140619.pdf

Tom,

Per our conversation today, see attached draft of our potential routes across TH 14 and MN 63. I've labeled each crossing so that we can discuss any concerns/ideas you might have regarding how to pick the best locations. Suggest that you zoom to 400% to see more clearly.

Sean and I will give you a call in the morning to discuss further.

Thanks!

Lydia

Lydia Nelson, PSS
Project Manager/Environmental Scientist

HDR
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416
D 763.278.5909 **M** 763.226.1450
lydia.nelson@hdrinc.com

hdrinc.com/follow-us

Phone Notes

Date:	June 23 & 24, 2014	
Project:	MERC Rochester Pipeline	
Call To:	Tom Streiff, MnDOT	507-286-7592
From:	Lydia Nelson & Sean Tuohey	
Subject:	Highway Crossings	

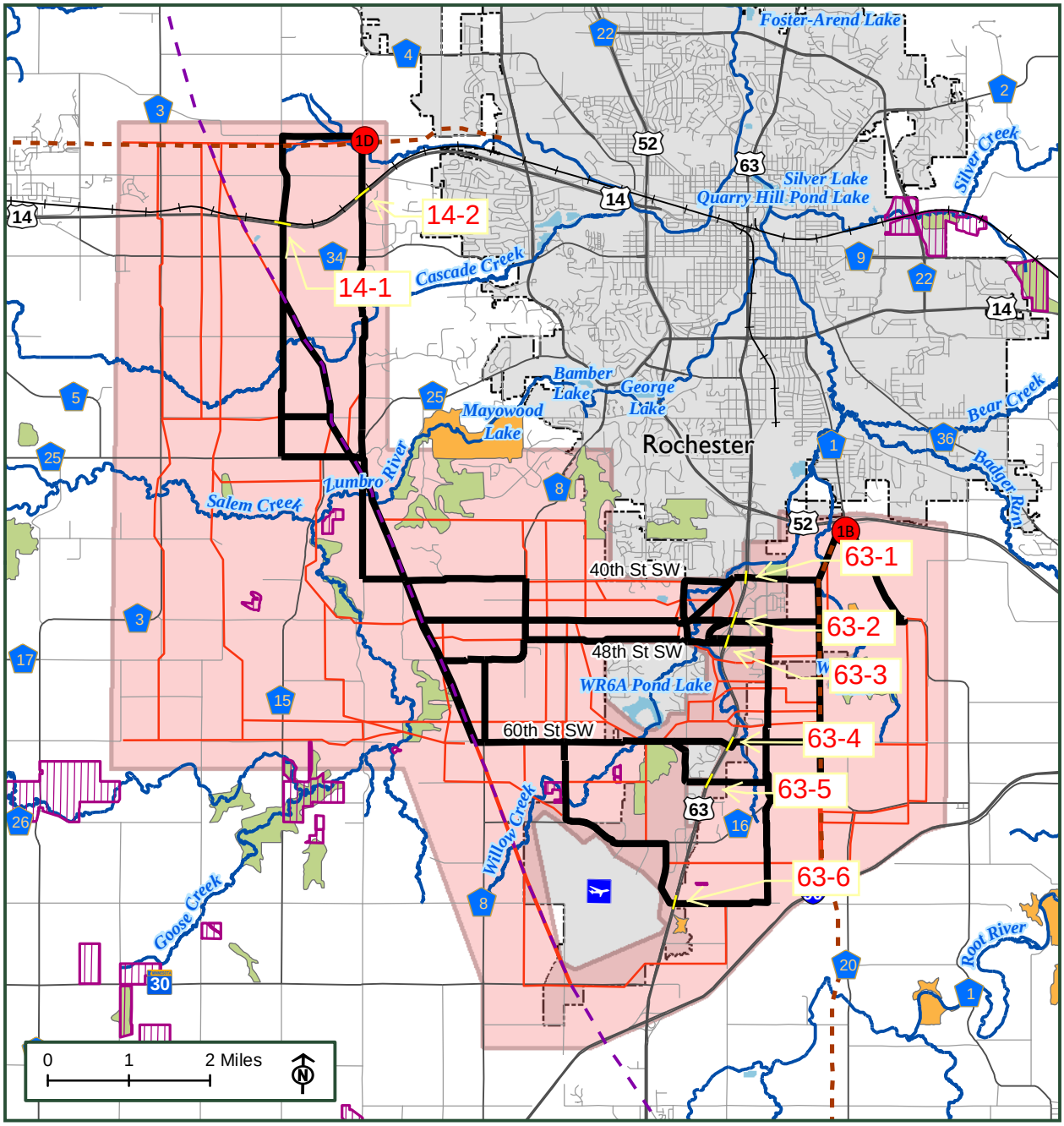
Called Tom to discuss potential crossings at TH 14 and MN 63. Provided him a graphic identifying the current potential crossings, two across TH 14 and six across MN 63. Following is summary of our conversations.

- Not concerned about location of crossing, i.e. at frontage road or at interchanges. Would probably cost more to cross at interchanges because would need to direct bore more crossings.
- MnDOT has “Accommodation Policy” accessible on web site. Provides general requirements for utility crossings.
- At interchanges – prefer that you stay outside of ramps.
- If 50 feet or closer to structures, then Central Office Bridge would need to do review; this can take 4-6 weeks.
- Ann Driver leads permitting out of Central Office.
- Stacy Koch leads environmental review/coordination with PUC out of Central Office.
- TH 14 eastern crossing (14-2 on map) – county is planning future interchange, so this may not be best place to cross.
- No specific issues for any of the MN 63 crossings.
- Engineering would need to follow industry standards as far as using casing or not – regarding pipeline safety.
- Depth is 3 feet below ditches and/or 5 feet below roadway.
- CR 16 – Redoing bridge/interchange, so would not recommend crossing.
- Action Item – Tom will talk to Ann Driver to give her a heads up about the project. We can contact her or Tom if we have other questions.

MINNESOTA ENERGY RESOURCES

Study Area

DRAFT



Legend

- Rejected Route Segment
- Route Segment
- Study Area
- Interconnection Point

Existing Pipeline

- Natural Gas
- Oil

- PWI Stream
- Waterbody/NWI Wetland
- State Managed Land/Easement
- Moderate Biodiversity Significance Site
- High Biodiversity Significance Site
- City / Township Boundary
- RST Airport
- Railroad

Path: \\mspe-gis-file\gisproj\050_den\232026_MERC\map_docs\Routes_8x11_P.mxd

Minnesota Historical Society

Using the Power of History to Transform Lives
PRESERVING • SHARING • CONNECTING

STATE HISTORIC PRESERVATION OFFICE

July 1, 2014

Mr. Darrin Johnson
Environmental Lead
Minnesota Energy Resources Corporation
2665 145th Street West
PO Box 455
Rosemount, MN 55068-0455

RE: Rochester Natural Gas Pipeline Project – route to be determined
Olmsted County
SHPO No. 2014-2193

Dear Mr. Johnson :

Thank you for the opportunity to comment on the above project. It is being reviewed pursuant to the responsibilities given to the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We recommend that a Phase IA archaeological assessment be completed for this project. If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and should include an evaluation of National Register eligibility for any properties that are identified. For a list of consultants who have expressed an interest in undertaking such surveys, please visit the website **preservationdirectory.mnhs.org**, and select "Archaeologists" in the "Search by Specialties" box.

We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed. Any previous survey work must meet contemporary standards. **Note:** plowed areas and right-of-way are not automatically considered disturbed. Archaeological sites can remain intact beneath the plow zone and in undisturbed portions of the right-of-way.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal license or permit, it should be submitted to our office by the responsible federal agency.

If you have any questions regarding our review, please contact Kelly Gragg-Johnson, Review and Compliance Specialist, at (651) 259-3455.

Sincerely,

Sarah J. Beimers

Sarah J. Beimers, Manager
Government Programs and Compliance

From:	Nelson, Lydia C.
To:	Goslee Sandra
Cc:	Darrin Johnson (dmjohnson@integrysgroup.com)
Subject:	RE: RO_OLM_20140702_Minnesota Energy Resources Pipeline Extension
Date:	Monday, July 07, 2014 3:31:27 PM

Thanks for the info Sandi. We will incorporate into our routing files.

Lydia
Lydia Nelson, PSS
D 763.278.5909 **M** 763.226.1450

hdrinc.com/follow-us

From: Goslee Sandra [mailto:goslee.sandi@CO.OLMSTED.MN.US]
Sent: Wednesday, July 02, 2014 3:40 PM
To: dmjohnson@integrysgroup.com; Nelson, Lydia C.
Cc: Reiter Charlie; Ellerbusch Jeff; Baker Mitzi
Subject: RO_OLM_20140702_Minnesota Energy Resources Pipeline Extension

Darrin and Lydia,

I have put a number of documents on our FTP site for you to consider as you identify potential routes for Minnesota Energy Resources' natural gas pipeline extension. The files are just to large to email. To access this data, follow these steps:

1. Go to ftp://olmftp.co.olmsted.mn.us/Planning/Outgoing/SGoslee/
2. The username is ftp-planning and the password is ftp2planning
3. Copy the MinnEnergyPipelineReview folder onto your hard drive or network drive

In this folder you will find a PowerPoint presentation that reviews a number of land use, environmental, and transportation concerns that our staff have identified in the study area (just zoom in to better read the details of the slides), including images of adopted official maps. I have also embedded links to various documents on our website that will assist your analysis. Please keep in mind that I cannot provide maps of features delineated in our County Biological Survey; I did see you noted areas of biodiversity on your study map and will say that some of those also contain noted natural features. Please contact the MnDNR if you need further information on that. The folder also contains a few pdfs of transportation documents that will be of use to you.

Should you have any questions on the transportation issues, please contact Charlie Reiter at reiter.charlie@co.olmsted.mn.us or (507) 328-7136. Any other questions can be directed my way.

Have a great holiday weekend!

Sandi Goslee

Sandi Goslee, Principal Planner | Rochester-Olmsted Planning Department | 2122 Campus Drive SE, Suite 100 |

From:	Collins Lori
To:	Nelson, Lydia C.
Subject:	Olmsted Co Public Works_20140702_Rochester Natural Gas Project Comments
Date:	Wednesday, July 02, 2014 8:46:45 AM
Attachments:	Rochester Natural Gas Project Comments.pdf

Dear Ms. Nelson,

Attached are the comments from Olmsted County Public Works.

Thank you.

Lori

COUNTY OF Olmsted

PUBLIC WORKS DEPARTMENT
2122 CAMPUS DR SE - SUITE 200
ROCHESTER MN 55904-4744
www.olmstedpublicworks.com
507.328.7070

July 1, 2014

HDR
Attn: Lydia Nelson
Email: lydia.nelson@hdrinc.com

Dear Ms. Nelson:

The Public Works Department has reviewed the proposed Rochester natural gas pipeline project.

No Comments

Sincerely,

Michael T. Sheehan
Director of Public Works/County Engineer

MTS/lc

cc: Planning Department

From: Johnson, Darrin M
To: Nelson, Lydia C.
Subject: High___ Twp_20140620_Call from Township
Date: Friday, June 20, 2014 1:12:16 PM

Lydia,

I got a call from the town of High ------ (couldn't make out the rest). I let him know we are looking at routing a new pipeline somewhere in the study area listed on the map and that we are seeking input the town may have regarding routing the pipeline. They have a meeting on July 1 and will discuss with the board at that time. 507-533-5826 was the phone number.

Darrin M. Johnson
Environmental Consultant | Environmental Services | Integrys Business Support, LLC

715-345-7509
715-697-3130 *cell*
715-345-7505 *fax*
dmjohnson@integrysgroup.com

www.integrysgroup.com

Providing support for Integrys Energy Group, Integrys Energy Services, Integrys Transportation Fuels, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Upper Peninsula Power Company, Wisconsin River Power Company, and Wisconsin Public Service.

From:	Nelson, Lydia C.
To:	Darrin Johnson (dmjohnson@integrysgroup.com)
Cc:	Egtvedt, Gregory W (GWEgtvedt@integrysgroup.com); Tuohey, Sean; Hunker, Brian M.
Subject:	Integrys - Call from Salem Twp & Landowner
Date:	Monday, July 14, 2014 11:45:31 AM

Darrin,

Wanted to provide summary of conversation with Rick Lutzi. He is on the board for Salem Twp and a landowner on the oil pipeline in Sections 12 and 13 along CR 25. Our alternative route would go through his property.

Rick asked about a public meeting. I indicated that Integrys will hold a meeting in late July or early August, after we hold meeting with PUC. Explained that PUC will need to permit the project. He should look for a postcard or letter from us announcing the meeting.

Rick indicated that the pipeline route seems more practical than a new route down 70th. I explained that we would need additional right-of-way. He seemed fine with that.

Lydia

Lydia Nelson, PSS
Project Manager/Environmental Scientist

HDR
701 Xenia Avenue South, Suite 600
Minneapolis, MN 55416
D 763.278.5909 **M** 763.226.1450
lydia.nelson@hdrinc.com

hdrinc.com/follow-us

From:	Nelson, Lydia C.
To:	Janna Monosmith
Cc:	dmjohnson@integrysgroup.com
Subject:	RE: City of Byron_20140627_Fwd: Proposed Rochester Natural Gas Pipeline
Date:	Tuesday, July 01, 2014 2:00:56 PM

Janna,

Thank you for your response to our information request. At this time, it appears that our routes will not be located within the City of Byron. We will keep this email in our files in case the routes change and we need to contact you for additional information.

Best regards,
Lydia
Lydia Nelson, PSS
D 763.278.5909 **M** 763.226.1450

hdrinc.com/follow-us

From: Janna Monosmith [mailto:jmonosmith@byronmn.com]
Sent: Friday, June 27, 2014 12:52 PM
To: dmjohnson@integrysgroup.com; Nelson, Lydia C.
Subject: City of Byron_20140627_Fwd: Proposed Rochester Natural Gas Pipeline

> Darrin/Lydia,
>
> Thank you for the opportunity to comment on the proposed Rochester natural gas pipeline project.
>
> The identified route includes the Eastern edge of the City of Byron.
>
> Byron identifies some of the study area, specifically the land north of Highway 14 and West of County Road 3, in it's Land Use Plan. Some of this area has been annexed into the City and is being developed, some of this land area is slated to be developed in the future. The City's Land Use Plan does not include area south of Highway 14 and County Road 5.
>
> Please let me know if you have questions or need further details.

Thanks,
Janna

--
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Appendix B Public Meeting Summary

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September 16, 2015
Routing Open House
Meeting Summary

I. Summary

Minnesota Energy Resources Corporation (MERC) hosted two in-person public meetings in Rochester, Minnesota on September 16, 2015. The purpose of these meetings was to gather input from local stakeholders and members of the public on the proposed route alternatives of the Rochester Natural Gas Pipeline Project.

a. Meeting Attendance

A total of 37 invitees attended the open house meetings held at the Canadian Honker Event Center in Rochester, Minnesota. Nineteen invitees attended the 1:00 pm meeting and 18 invitees attended the 6:30 pm meeting. Attendance was tracked using sign-in sheets.

b. Meeting Materials

- Sign-in sheets
- Project overview handout
- Two large aerial maps (boards)
- Project PowerPoint presentation
- Two sets of detailed project maps (table maps)
- Information board of typical construction process
- Two GIS mapping stations (providing printed maps to attendees)

c. General Comments

Feedback was collected by Project team members during two town hall style presentations. Comments about the project fell into two main categories: agricultural impacts and environmental concerns. A number of commenters requested information about being able to hook up to the line for natural gas service.

d. Mapping Comments

Two sets of large aerial (table) maps and two GIS stations were used to collect comments on specific areas of concern. Sticker dots were place on large aerial maps in areas of concern by Project team members with comments recorded in notebooks. Maps detailing specific areas of concern were printed at the GIS stations. Handwritten comments were added to these maps by Project team members. Detailed maps were printed for 23 attendees. A total of 18 mapping comments were collected.

Table 1 identifies the major topic category and number of comments collected during the meetings:

Comment Type	Count
Agriculture/Farming	8
Cultural Resources	1
Natural Resources	4
Development	1
Mining	2
Utility	2

II. Outreach

Landowners within the 500-foot-wide route and 1.5 mile buffers were sent a letter and map inviting them to the open house meetings. Stakeholders, such as city, state, and county representatives, non-government organizations, and tribal representatives were also sent a letter and map inviting them to the open house meetings. Thirty-six letters were sent to agencies and 318 letters were sent to private stakeholders; both were mailed on August 28, 2015.

Open House Meeting

Invitation Letter

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Minnesota Energy Resources Corporation
3460 Technology Drive NW
Rochester, MN 55901
www.minnesotaenergyresources.com

August 28, 2015

Dear Rochester Area Resident,

We are proposing to upgrade existing natural gas infrastructure in the Rochester area. Our goal is to make sure everyone continues to have a safe and reliable natural gas supply, and to support future economic growth.

This project includes about 13 miles of new natural gas distribution pipeline around the south and west sides of Rochester that will connect two of our existing pipelines. The project will allow us to serve customers from multiple pipelines and allow for anticipated growth in the Rochester area.

We invite you to attend a community informational meeting to learn more about this project.

Information meetings

Date:	Wednesday, Sept. 16
Location:	Kahler Apache 1517 16th Street SW Rochester, MN 55902
Times:	1 p.m. and 6:30 p.m.

Following a presentation, representatives will listen to your input and answer any questions you may have.

Our goal is to locate our facilities alongside (or adjacent to) existing road right-of-ways or property lines as much as possible to minimize impact. The best possible routes we have identified (preferred and alternate) are shown on the enclosed map. These are the routes that we intend to propose in our route permit application to the Minnesota Public Utilities Commission (MPUC) later this fall. After we receive the final route permit from the MPUC we will continue to work with landowners to acquire new easements based on the approved route.

Following the community informational meetings we plan to continue to refine the routes we will propose for the project, finalize our project plans and obtain the necessary regulatory approvals. We are estimating construction to begin in 2017. The route permitting process will provide you with additional opportunities to provide input regarding the most appropriate route for the project.

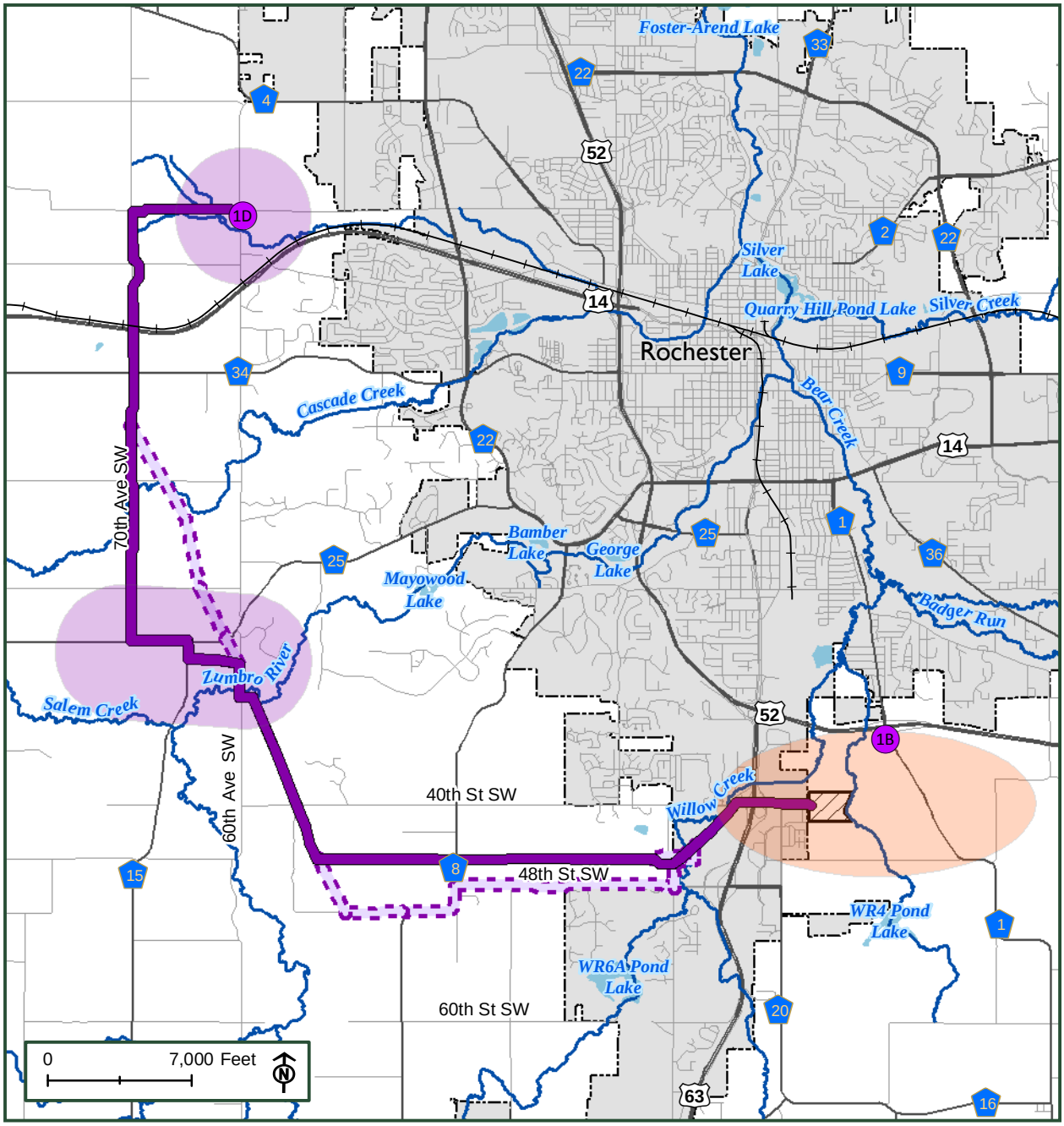
We look forward to seeing you on Wednesday, Sept. 16.

Should you have any questions, please contact me.

Sincerely,

Rory Lenton
Customer Relations
Minnesota Energy Resources
507-529-5117
RDLenton@minnesotaenergyresources.com

Project Area Overview



Legend

- Preferred Route
- Alternate Route
- Town Border Station (TBS)
- District Regulation Station
- Tie-in Distribution Line Buffer
- Town Border Station Buffer
- PWI Stream
- Waterbody/NWI Wetland
- City / Township Boundary
- Railroad

Open House Meeting

Agency Mailing List

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Name	Agency	Address	City	State	Zip Code	Email
Michael Brown	Cascade Township Clerk	6002 Buck Hill Ct. NE	Rochester	MN	55906	
Mary Blair-Hoeft	City of Byron - Administrator	680 - Byron Main Court NE, P.O. Box 1137	Byron	MN	55920	
Stevan Kvenvold	City of Rochester - Administrator	201 4th Street SE	Rochester	MN	55904	
Bill Schimmel, Jr	City of Stewartville - Administrator	105 East 1st Street	Stewartville	MN	55976	
Cody Pogalz	Destination Medical Center					codypogalz@dmceda.org
Willie Dux	High Forest Township Clerk	2956 Co Rd 120 NE	Stewartville	MN	55976	
Terry Behrens	Kalmar Township Clerk	6429 ValleyHigh Rd NW	Byron	MN	55920	
Janet Hoffmann	Marion Township Clerk	2850 Oakview Ct SE	Rochester	MN	55904	
Travis Germundson	MN Board of Water and Soil Resources	520 Lafayette Road	St. Paul	MN	55155	
Bob Patton	MN Department of Agriculture	625 North Robert Street	St. Paul	MN	55155	
Larry Hartman	MN Department of Commerce	85 7th Place East Suite 500	St. Paul	MN	55101	
Karl Howe	MN Department of Employment and Economic Development	332 Minnesota Street, Suite E-200	St Paul	MN	55101	Karl.howe@state.mn.us
	MN Department of Health	85 East 7th Place, PO Box 64882	St Paul	MN	55164	
Jamie Schrenzel	MN Department of Natural Resources	500 Lafayette Rd, Box 25	St. Paul	MN	55155	
Randall Doneen	MN Department of Natural Resources	500 Lafayette Rd, Box 25	St. Paul	MN	4025	
Keith Parker	MN Department of Natural Resources Central Region Office	1200 Warner Rd.	St. Paul	MN	55106	
Jennie Ross	MN Department of Transportation	395 John Ireland Blvd Mail Stop 620	St. Paul	MN	55155	
Stacy Kotch	MN Department of Transportation	395 John Ireland Blvd Mail Stop 678	St. Paul	MN	55155	
Tom Streiff	MN Department of Transportation	2900 48th Street NW	Rochester	MN	55901	
Kelly Gragg-Johnson	MN Historical Society State Historic Preservation Office	345 Kellogg Blvd. W., Level A	St. Paul	MN	55102-1906	
Sarah J. Beimers	MN Historical Society State Historic Preservation Office	345 Kellogg Blvd. W., Level A	St. Paul	MN	55102-1906	
Craig Affeldt	MN Pollution Control Agency	520 Lafayette Road North, 4th Floor	St. Paul	MN	55155	
Patice Jensen	MN Pollution Control Agency	520 Lafayette Road North	St Paul	MN	55155	
Brooke Hayworth	MnDNR Division of Ecological and Water Resources	1200 Warner Road	St Paul	MN	55106	
Johathan Wolfgram	Office of Pipeline Safety	445 Minnesota Street, Suite 147	St Paul	MN	55101	Jonathan.Wolfgram@state.mn.us
Richard G. Devlin	Olmsted County - Administrator	151 4th St. SE	Rochester	MN	55904	
Lori Collins	Olmsted County Public Works	2122 Campus Drive SE, Suite 200	Rochester	MN	55904	
Bev Harris	Pleasant Grove Township Clerk	2033 80th St SE	Rochester	MN	55904	
Gary Swenson	Rochester Township Clerk	4111 11th Avenue SW	Rochester	MN	55902	

Name	Agency	Address	City	State	Zip Code	Email
Mitzi Baker	Rochester-Olmsted Planning Department	2122 Campus Drive SE, Suite 100	Rochester	MN	55904	
Sandra Goslee	Rochester-Olmsted Planning Department	2122 Campus Drive SE, Suite 100	Rochester	MN	55904	
Betsy Kleinwort	Rock Dell Township Clerk	8075 Co Rd 126 SE	Byron	MN	55920	
Sharon Petersen	Salem Township Clerk	3802 Co Rd 150 SW	Byron	MN	55920	
Roger Irhke	Township Cooperative Planning Association	Rochester Township Hall, Room 10 4111 11 Ave SW	Rochester	MN	55902	
Project Manager	US Army Corps of Engineers	1114 South Oak Street	La Crescent	MN	55947	
Tony Sullins	US Fish and Wildlife Service - TC Field Office	4101 East 80th Street	Bloomington	MN	55425	

Open House Meeting

Landowner Mailing List

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Name 1	Name 2	Address	City	State	Zip Code
31 ROCKPORT LANE LLC		1083 WEATHERHILL LN SW	ROCHESTER	MN	55902
3731 ENTERPRISE DR SW LLC		3775 WILLOW RIDGE DR SW	ROCHESTER	MN	55902
ADAMS,NICOLAS		3920 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
ADAMSON,JOHN R	ADAMSON,CAROL A	331 70 AVE SW,	BYRON	MN	55920
ANDERSON,DONNA M	TRUSTEE,TANIS J DEMARIAS	1408 KINGS RUN DR NW	ROCHESTER	MN	55901
ANDERSON,GENA L		4315 FERN AVE SE	ROCHESTER	MN	55904
ANDERSON,RALPH H	ANDERSON,SANDRA H	1921 60 AVE NW	ROCHESTER	MN	55901
ARNOLD,PAT	ARNOLD,KEVIN	7350 SALEM RD SW	BYRON	MN	55920
ARNOLD,PATRICIA	SHIRLEY,SANDRA M	7350 SALEM RD SW	BYRON	MN	55920
ATTN PROPERTY TAX DIVISION	NORTHERN NATURAL GAS COMPANY	PO BOX 3330	OMAHA	NE	68103
B&F PROPERTIES LLC		3800 52 HWY N	ROCHESTER	MN	55901
BACKUS,KAREN L	BACKUS,DAVID L	502 PEONY ST SE	ROCHESTER	MN	55904
BAHR,BEATRICE C		5941 GLENCROFT LN SW	ROCHESTER	MN	55902
BAKKEN,ALLWYN K	BAKKEN,SHIRLEY	4121 SIMPSON RD SE	ROCHESTER	MN	55904
BAKKEN,MICHELLE LEE		2150 60 AVE SW	ROCHESTER	MN	55902
BANDY,JESSE T		737 BASIL LN SE	ROCHESTER	MN	55904
BARNICK,JENNIFER M		4318 DAISY AVE SE	ROCHESTER	MN	55904
BARTS ALLIANCE LLC		5581 40 ST SW	ROCHESTER	MN	55902
BERG,KATI A	BERG,JEREMY E	1075 1 AVE N	MONTEVIDEO	MN	56265
BERGERSON,NANCY A		47 70 AVE NW	BYRON	MN	55920
BESTOR,SCOTT G	BESTOR,PATRICIA D	4130 PETUNIA AVE SE	ROCHESTER	MN	55904
BESTOR,SCOTT G	BESTOR,PATRICIA D	4229 FERN AVE SE	ROCHESTER	MN	55904
BISHOP TRUSTEE,DAVID T	BISHOP TRUSTEE,BEATRICE	922 NORTH BROADWAY	ROCHESTER	MN	55906
BJ INVESTMENT OF ROCHESTER LLC		128 35 ST SE	ROCHESTER	MN	55904
BOSER,JODY LEE		2030 60 AVE SW	ROCHESTER	MN	55902
BOWE,SHARON L	BOWE,DENNIS K	5724 SALEM RD CT SW	ROCHESTER	MN	55902
BOWRON,ROBERT S	BOWRON,JOAN K	605 GERANIUM ST SE	ROCHESTER	MN	55904
BRENNAN,MICHAEL D	BAHN,REBECCA S	5824 HEATHER DR SW	ROCHESTER	MN	55902
BRINK,DUAINE L	BRINK,KATHLEEN H	506 PEONY ST SE	ROCHESTER	MN	55904
BROUILLARD,MARIA	BROUILLARD,MATTHEW	733 BASIL LN SE	ROCHESTER	MN	55904
BUETTNER,JAMES A	BUETTNER,JUDITH E	4307 GARDEN CT SE	ROCHESTER	MN	55904
BULLETS & BROADHEADS LLC		3600 BROADWAY S	ROCHESTER	MN	55904
BURK,JUDITH A		PO BOX 5651	SALTON CITY	CA	92275

Name 1	Name 2	Address	City	State	Zip Code
BURKE,COURTNEY E	JONES,KRISTA M	1140 70 AVE SW	BYRON	MN	55920
BURNS,DONALD W	BURNS,PAMELA K	PO BOX 9	ST ANSGAR	IA	50472
C&N HOLDINGS LLC		PO BOX 143	KASSON	MN	55594
CAIRNBRAE HOME OWNERS ASSN INC		5720 GLENCROFT LN SW	ROCHESTER	MN	55902
CAIRNBRAE LLC		5732 GLENCROFT LN SW	ROCHESTER	MN	55902
CALLAHAN,RICHARD	CALLAHAN,LAURA	4225 DAISY AVE SE	ROCHESTER	MN	55904
CALLI R LLC		6608 ZUMBRO HYLAND LN NW	ROCHESTER	MN	55901
CANAL PLACE LOT 2 LLC		PO BOX 620350	MIDDLETON	WI	53562
CAPITOL BANK		710 HIGH POINT RD N	MADISON	WI	53717
CARTNEY,JASON G	CARTNEY,COURTNEY E	6058 20 ST SW	ROCHESTER	MN	55902
CASELTINE,AUDREY I		4129 GARDEN CT SE	ROCHESTER	MN	55904
CASSMAN,BERNICE M		604 PEONY ST SE	ROCHESTER	MN	55904
CAT COMMERCIAL HOLDINGS LLC		3706 ENTERPRISE DR SW	ROCHESTER	MN	55902
CEMSTONE PRODUCTS COMPANY		2025 CENTRE POINTE BLVD S	MENDOTA HEIGHTS	MN	55120
CHESTER PROPERTIES LLC		515 19 ST N	FARGO	ND	58102
CHINNOW,MELISSA K		4312 DAFFODIL AVE SE	ROCHESTER	MN	55904
CHR WAL BRI LEI JUL INC		243 TRILLIUM LN	ANNANDALE	MN	55302
CHRISTOPHERSON,MILDRED	CHRISTOPHERSON,M P	4902 55 AVE SW	ROCHESTER	MN	55902
CHURCHILL,TROY	CHURCHILL,ELIZABETH	6286 SOMERSBY CT NW	ROCHESTER	MN	55901
CITY OF ROCHESTER		201 4 ST SE	ROCHESTER	MN	55904
CLEMENS,BRADLEY A		5920 SALEM RD SW	ROCHESTER	MN	55902
COATS DEVELOPMENT LLC		4410 19 ST NW	ROCHESTER	MN	55901
CONNELLY,CRAIG ROBERT		1421 70 AVE SW	BYRON	MN	55920
CONNELLY,KEVIN J	CONNELLY,KATHERINE A	5508 40 ST SW	ROCHESTER	MN	55902
CONNELLY,MICHAEL	CONNELLY,EVELYN	1771 COUNTY RD 3	BYRON	MN	55920
CONNELLY,WILLIAM J	CONNELLY,DIANE M	1512 RIDGE CLIFF LN NE	ROCHESTER	MN	55906
COOPER,ROBERT		4314 GARDEN CT SE	ROCHESTER	MN	55904
CRANSTON,DOUGLAS M	CRANSTON,EDITH J	6906 20 ST SW	BYRON	MN	55920
CRAVATH HOMES LLC		3990 CREEK VIEW LN SW	ROCHESTER	MN	55902
DAKOTA MN AND EASTERN RR CORP		120 S 6TH ST	MINNEAPOLIS	MN	55402
DECOOK,ANGELA G		1444 13 ST NW	BYRON	MN	55920
DECOOK,DANIEL	ETAL	3141 60 AVE SW	ROCHESTER	MN	55902
DECOOK,DANIEL	DECOOK,ANYA DONOVAN	3141 60 AVE SW	ROCHESTER	MN	55902

Name 1	Name 2	Address	City	State	Zip Code
DECOOK,DANIEL PAUL	DECOOK,DANIEL P	3141 60 AVE SW	ROCHESTER	MN	55902
DECOOK,JESSUP		1444 13 ST NW	BYRON	MN	55920
DEE,JOHN J	DEE,HELEN M	1626 10 AVE SE	ROCHESTER	MN	55904
DEER ACRES INC		3930 SIMPSON RD SE	ROCHESTER	MN	55904
DEGEUS PROPERTIES LLC		3532 63 HWY S	ROCHESTER	MN	55904
DEPT OF NATURAL RESOURCES	STATE OF MINNESOTA	PO BOX 30, 500 LAFAYETTE RD	ST PAUL	MN	55155
DILWORTH PROPERTIES LLP		6828 COUNTRY CLUB RD SW	ROCHESTER	MN	55902
DNG PROPERTIES LLC		1435 STOPPEL LN SW	ROCHESTER	MN	55902
DOKKEN,MARLENE		4218 GARDEN CT SE	ROCHESTER	MN	55904
DONOVAN FAMILY FARMS		4444 60 AVE SW	ROCHESTER	MN	55902
DONOVAN,GARY		4444 60 AVE SW	ROCHESTER	MN	55902
DONOVAN,JOHN M		3701 60 AVE SW	ROCHESTER	MN	55902
DORE,DENNIS	DORE,CAROLYN	508 GERANIUM LN SE	ROCHESTER	MN	55904
DRIPPS FAMILY LLC		2715 PENNINGTON CT NW	ROCHESTER	MN	55901
DRIPPS,DAVID S	DRIPPS,SUSAN K	3497 SIMPSON RD SE	ROCHESTER	MN	55904
DRY ENTERPRISES INC		2633 SUPERIOR DR NW	ROCHESTER	MN	55901
DTD PROPERTIES LLC		1530 GREENVIEW DR SW	ROCHESTER	MN	55902
DUNCAN,ALAN K	DUNCAN,AUDRA A	2506 SALEM HEIGHTS LN SW	ROCHESTER	MN	55902
DUTTON,LINDA M		4209 GARDEN CT SE	ROCHESTER	MN	55904
EASTVOLD,COLE	DREYER,MEGAN	4114 GARDEN CT SE	ROCHESTER	MN	55904
EINERTSON,TRAVIS R	EINERTSON,MARLENE	1900 45 ST SE	ROCHESTER	MN	55904
ELCOR ENTERPRISES INC	FRASER,CONSTRUCTION CO	3725 ENTERPRISE DR SW	ROCHESTER	MN	55902
ELLIOTT,DANIEL S	ELLIOTT,ELISSA L	4588 55 AVE SW	ROCHESTER	MN	55902
ENTERPRISES,WGR		3741 ENTERPRISE DR SW	ROCHESTER	MN	55902
FAGERLIND,DALE L	FAGERLIND,MARY L	3730 SIMPSON RD SE	ROCHESTER	MN	55904
FANNING,TODD		4364 CIMARRON CT NW	ROCHESTER	MN	55901
FARNBERG,ERIC	FARNBERG,LISA	7572 SALEM RD SW	BYRON	MN	55920
FIECK,RICHARD C	FIECK,MAXINE D	3677 SIMPSON RD SE	ROCHESTER	MN	55904
FORBES,GLENN S	FORBES,CELESTE S	5199 MEADOW CROSSING RD SW	ROCHESTER	MN	55902
FRANCK,EMILY	FRANCK,LARRY	901 70 AVE SW	BYRON	MN	55920
FREESE,JASON R	FREESE,SARA J	229 70 AVE SW	BYRON	MN	55920
FRIEDT,RALPH A	FRIEDT,MARY A	1113 KNOLL CT NW	ROCHESTER	MN	55901
FULLER,DOROTHY KASPER	ETAL	1946 49 ST NW	ROCHESTER	MN	55901

Name 1	Name 2	Address	City	State	Zip Code
FUNK,ERIC A	FUNK,KARISSA L	5440 CREEK SIDE LN SW	ROCHESTER	MN	55902
GARDEN MILL CONSTRUCTION LLC		3347 GESELLE LN NW	ROCHESTER	MN	55901
GAULTNEY,JODY		4207 GINGER LN SE	ROCHESTER	MN	55904
GESELL,JOSHUA L		4304 GARDEN CT SE	ROCHESTER	MN	55904
GETTMAN,MATTHEW T	GETTMAN,SARA B	2187 HIGHTOP LN NE	ROCHESTER	MN	55906
GILL PROPERTIES		511 NORTHERN HILLS DR NE	ROCHESTER	MN	55906
GLOFF,MARTIN R	GLOFF,PATTI K	3930 SIMPSON RD SE	ROCHESTER	MN	55904
GOMMELS,LINDA		4212 GINGER LN SE	ROCHESTER	MN	55904
GORDER,WILLIAM H	GORDER,CAROL D	6751 COUNTRY CLUB RD	ROCHESTER	MN	55902
GRAFSTROM,BART	GRAFSTROM,KARI	3559 SIMPSON RD SE	ROCHESTER	MN	55904
GRAHAM PROPERTIES LTD PARTNERS	ATTN BRAD LARSEN	110 CENTER ST W	ROCHESTER	MN	55902
GRAND LUX STORAGE LLC		5803 15 ST NW	ROCHESTER	MN	55901
GREBE,STEFAN K	MAYR,URSULA	5825 GLENCROFT LN SW	ROCHESTER	MN	55902
GREENE,MAURICE	GREENE,ALICE	1147 ESSEX PKWY NW	ROCHESTER	MN	55901
GREENLUND,ANDREW C	GREENLUND,LAURA J	5620 HEATHER DR SW	ROCHESTER	MN	55902
GRESETH,TODD ORDEAN		46804 57 HWY BLVD	WANAMINGO	MN	55983
GRIFFITH TRUSTEE,JOHN R	GRIFFITH TRUSTEE,ELAINE D	535 LOWRY CT NW	ROCHESTER	MN	55901
GUENTHER,KEVIN	GUENTHER,KRISTIN	6524 20 ST SW	ROCHESTER	MN	55902
HAASE,RICHARD J	HAASE,EDNA M	26008 466 AVE	HARTFORD	SD	57033
HAGEDORN,JILL L		606 GERANIUM ST SE	ROCHESTER	MN	55904
HAMZAGIC,HAMDIJA		539 LOWRY CT NW	ROCHESTER	MN	55901
HANSON,IRROLD M		4635 11 AVE SW	ROCHESTER	MN	55902
HART TRUSTEE,DELMAN H	HART TRUSTEE,BEVERLY	1805 HILLCREST DR	TRENTON	MO	64683
HART TRUSTEE,DELMAN H	HART TRUSTEE,BEVERLY L	1805 HILLCREST DR	TRENTON	MO	64683
HARTHAN,MATTHEW D	HARTHAN,KATE L	4234 GARDEN CT SE	ROCHESTER	MN	55904
HARTWICH,LEONARD	HARTWICH,JANICE A	4319 DAISY AVE SE	ROCHESTER	MN	55904
HELLKAMP,DONAVAN A	HELLKAMP,CRYSTAL	3870 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
HERDBULL HOLDINGS LLC		3706 ENTERPRISE DR SW	ROCHESTER	MN	55902
HERITAGE HILLS 2ND SUB HOA		1903 BROADWAY S	ROCHESTER	MN	55904
HOFFMAN,RONALD	HOFFMAN,MARCIA	4410 55 AVE SW	ROCHESTER	MN	55902
HOLLAR,RYAN M	DRYER,NICOLE A	4226 DAISY AVE SE	ROCHESTER	MN	55904
HOLMES,GREGORY J	HOLMES,REBECCA B	3741 SIMPSON RD SE	ROCHESTER	MN	55904
HUSTON III,JOHN	HUSTON,ELLEN E	5500 HEATHER DR SW	ROCHESTER	MN	55902

Name 1	Name 2	Address	City	State	Zip Code
J B INVESTMENTS LLC		6073 SOUTH POINTE DR SW	ROCHESTER	MN	55902
JACOBSON,RONALD D	JACOBSON,KAY M	5264 40 ST SW	ROCHESTER	MN	55902
JAHR,JAMES V	JAHR,REBECCA L	4220 DAFFODIL AVE SE	ROCHESTER	MN	55904
JAMES,CHERYL L		4307 FERN AVE SE	ROCHESTER	MN	55904
JENSEN,JOHN J	JENSEN,BARBARA L	3800 SIMPSON RD SE	ROCHESTER	MN	55904
JEPSON,KEITH	JEPSON,PATRICIA	4311 FERN AVE SE	ROCHESTER	MN	55904
JEROME FAIRBO FARMS INC		34 7 ST N	BARRON	WI	54812
JOHNSON,HOWARD WARNER		1904 BAIHLY HILLS DR SW	ROCHESTER	MN	55902
JOHNSTON,CHARLES E		5841 SALEM RD SW	ROCHESTER	MN	55902
KAHN,JERRY H	KAHN,DORIS M	4200 GARDEN CT SE	ROCHESTER	MN	55904
KAIHOI TRUSTEE,ELAINE		4303 FERN AVE SE	ROCHESTER	MN	55904
KANE,DAVID		4321 GARDEN CT SE	ROCHESTER	MN	55904
KARI,LORI JEAN		3980 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
KEARNEY,R WYNN	KEARNEY,R WYNN JR	133 IRONWOOD CT	MANKATO	MN	56001
KELLY,HEATHER R		745 BASIL LN SE	ROCHESTER	MN	55904
KHATH,AMY NAROEN	CHICK,NARANN KHATH	505 PEONY ST	ROCHESTER	MN	55904
KING,EARL G	ABBOTT,ERIN N	4315 GARDEN CT SE	ROCHESTER	MN	55904
KINSEY,KENNETH BRYCE		5610 HEATHER DR SW	ROCHESTER	MN	55902
KK&G PROPERTIES LLC		4200 ST BRIDGET RD SE	ROCHESTER	MN	55904
KNAUSS,SCOTT A		4505 11 AVE SW	ROCHESTER	MN	55902
KOPERSKI,PAUL J	KOPERSKI,NINA	7135 SALEM RD SW	BYRON	MN	55920
KOSKI,KIMBERLEE A		5714 GLENCROFT LN SW	ROCHESTER	MN	55902
KOSKOVICH,JEROME E	KOSKOVICH,MARLYCE L	3321 CTY RD 15 SW	BYRON	MN	55920
KOTTSCHADE,FRANKLIN P		3800 HWY 52 N STE 130 HWY N	ROCHESTER	MN	55901
KRABBENHOFT,ROGER S	KRABBENHOFT,BONNIE S	5716 STENBRAE CT SW	ROCHESTER	MN	55902
KRIER,JAMES D	KRIER,JANE R	7034 SALEM RD SW	BYRON	MN	55920
KVENVOLD,STEVAN E	KVENVOLD,SANDRA	2329 OLD VALLEY RD SW	ROCHESTER	MN	55902
LAND DEVELOPERS OF ROCHESTER L		3990 CREEK VIEW LN SW	ROCHESTER	MN	55902
LEITZEN SAND AND GRAVEL INC		4019 HWY 14 W	ROCHESTER	MN	55901
LEITZEN,MARK	LEITZEN,GARY	4019 HWY 14 W	ROCHESTER	MN	55901
LEITZEN,MARK J	LEITZEN,GARY A	4019 HWY 14 W	ROCHESTER	MN	55901
LJT PARTNERSHIP LLP		60 WEST SYCAMORE ST	ST PAUL	MN	55117
LOCHNER TRUSTEE,DOUGLAS L	LOCHNER TRUSTEE,VALDINE	3924 SIMPSON RD SE	ROCHESTER	MN	55904

Name 1	Name 2	Address	City	State	Zip Code
LOGAN-CASSIDY,BARBARA J		4221 FERN AVE SE	ROCHESTER	MN	55904
LOOMIS,MARDEE A		3510 SIMPSON RD SE	ROCHESTER	MN	55904
LUETMER,PATRICK H	LUETMER,LISA A	5530 HEATHER DR SW	ROCHESTER	MN	55902
LUICK,DAVID A	LUICK,NATALIA	3563 SIMPSON RD SE	ROCHESTER	MN	55904
LUICK,DAVID A	LUICK,JANET L	3563 SIMPSON RD SE	ROCHESTER	MN	55904
LUTZI,RICHARD		6031 20 ST SW	ROCHESTER	MN	55902
LUTZI,RICHARD L	LUTZI,CHARLENE A	6031 20 ST SW	ROCHESTER	MN	55902
M A P PARTNERSHIP LLP		4300 PARK GLEN RD	MINNEAPOLIS	MN	55416
MAINE LAND LLC		3500 AMERICAN BLVD W	BLOOMINGTON	MI	55431
MAINE STREET DEV CO OF ROCH LL		4325 MAINE AVE SE	ROCHESTER	MN	55904
MAINE STREET DEVELOPMENT CO		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
MAINE STREET INVESTORS OF ROCH		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
MARTIN,TERRANCE L	MARTIN,KAREN L	5811 19 ST NW	ROCHESTER	MN	55901
MCCLARNEN,PATRICIA ANN		3490 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
MED CITY LODGING GROUP LLC		4210 HWY 52 N	ROCHESTER	MN	55901
MELQUIST,NEIL T	MELQUIST,JOYCE A	6241 14 ST NW	BYRON	MN	55920
MEYER,DIANE L		1814 70 AVE SW	BYRON	MN	55920
MEYER,HARRY E	MEYER,CAROL A	1814 70 AVE SW	BYRON	MN	55920
MEYER,LOWELL R		7711 SALEM RD SW	BYRON	MN	55920
MEYER,WILLIAM H		1826 70 AVE NW	BYRON	MN	55920
MIDWEST WIRELESS COMMUNICATION	SITE ID MN20756-A	PO BOX 260888	PLANO	TX	75026
MILDE,JAMES H		39204 BOULDER VIEW DR	SCOTTSDALE	AZ	85262
MILLER,RICHARD D	MILLER,JACQUELYNN A	4123 GARDEN CT SE	ROCHESTER	MN	55904
MMR LEASING LLC		3230 LAS FALDAS DR	FULLERTON	CA	92835
MOLINE,EDWARD J	MOLINE GUNNEL M	4300 42 ST SW	ROCHESTER	MN	55902
MORRIS III,JOHN C	MORRIS,VICKIE A	5830 HEATHER DR SW	ROCHESTER	MN	55902
MORRIS,RICHARD T		507 GERANIUM ST SE	ROCHESTER	MN	55904
MSIR 1 LLC		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
MSIR 6 LLC		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
MSIR 7 LLC		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
MUELLNER,KATHERINE H		6005 SALEM RD SW	ROCHESTER	MN	55902
MULHOLLAND TRUSTEE,GLENN E	MULHOLLAND TRUSTEE,NANCY B S	1631 TETON CT NE	ROCHESTER	MN	55906
MURPHY,JOSEPH G	MCEVOY,MARIAN T	5600 STENBRAE CT SW	ROCHESTER	MN	55902

Name 1	Name 2	Address	City	State	Zip Code
NAGELE,MARK A	NAGELE,ANGELA L	3900 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
NATIVIDAD,LIS TIDEMANN		603 PEONY ST SE	ROCHESTER	MN	55904
NIEDFELDT,RYAN		608 PEONY ST SE	ROCHESTER	MN	55904
NIEMELA,GORDON A	NIEMELA,JUDY J	4213 FERN AVE SE	ROCHESTER	MN	55904
NIHART-REARICK,KAREN L	REARICK,KENNETH	602 GERANIUM ST SE	ROCHESTER	MN	55904
NORTHERN PROPERTIES LLC		47061 CHARLOTTE CT	SIOUX FALLS	SD	57108
NORTHWESTERN BELL TELEPHONE CO		1801 CALIFORNIA	DENVER	CO	80202
NOWAK,BRIAN T	MINTER-DYKHOUSE,KATHERINE	6708 20 ST SW	BYRON	MN	55920
OCONNOR,JOHN P	OCONNOR,PHYLLIS	4214 GARDEN CT SE	ROCHESTER	MN	55904
OF,WOOD LAKE LAND ENTERPRISES	WOOD,LAKE LAND ENTERPRISES OF	209 WOODLAKE DR SE	ROCHESTER	MN	55904
OLDFIELD,WILLIAM L	OLDFIELD,CAROL A	2529 60 AVE SW	ROCHESTER	MN	55902
OLMSTED COUNTY HOUSING REDEV A		2122 CAMPUS DR SE	ROCHESTER	MN	55904
OLSEN,RICHARD D		2301 OLD VALLEY RD SW	ROCHESTER	MN	55902
OLSON REVOCABLE TRUST		4306 IVY AVE SE	ROCHESTER	MN	55904
O'NEILL,C MICHAEL		2308 45 ST SE	ROCHESTER	MN	55904
O'NEILL,MIKE	O'NEILL,YVONNE	4320 DAFFODIL AVE SE	ROCHESTER	MN	55904
OPPORTUNITY SERVICES INC		1618 WEST THIRD ST	RED WING	MN	55066
ORTH,JEFFERY D	ORTH,KATHY S	5414 HERITAGE LN SW	ROCHESTER	MN	55902
OUDEKIRK,DALLAS W	POWERS,SERENA N	7706 SALEM RD SW	BYRON	MN	55920
PARTNERSHIP,WILLOW CREEK FARM	WILLOW,CREEK FARM PARTNERSHIP	1001 PLUMMER CIR SW	ROCHESTER	MN	55902
PASSE TRUSTEE,FRANCIS L	ETAL	3242 60 AVE SW	ROCHESTER	MN	55902
PENZ,DANIEL L		123 CARLTON ST SW	ROCHESTER	MN	55902
PEOPLES COOPERATIVE SERVICES		1775 LAKE SHADY AVE S	ORONOCO	MN	55960
PETERSON,KATY J		4237 DAISY AVE SE	ROCHESTER	MN	55904
PIHART,JOHN L	PIHART,BRENDA L	4205 FERN AVE SE	ROCHESTER	MN	55904
POCHETTINO,REBECCA M	POCHETTINO,ALBERTO	2363 60 ST NW	ROCHESTER	MN	55901
POHOCOGO LLC		1244 60 AVE NW	ROCHESTER	MN	55901
PROPERTIES OF D&D LLC		5937 15 ST NW	ROCHESTER	MN	55901
PYFFEROEN,MARY DEE	HUTCHINS,KATHRYN A PYFFEROEN	4434 40 ST SW	ROCHESTER	MN	55902
QUALITY SELF STORAGE LLC		128 35 ST SE	ROCHESTER	MN	55904
RABEHL TRUSTEE,NEIL A K	RABEHL TRUSTEE,DEE ANN K	7041 14 ST NW	BYRON	MN	55920
RANWEILER,JAMES G	RANWEILER,VIRGINIA T	5720 GLENCROFT LN SW	ROCHESTER	MN	55902
RAVE PROPERTIES LLC		14000 VEIT PL	ROGERS	MN	55374

Name 1	Name 2	Address	City	State	Zip Code
REICH,WAYNE G		3741 ENTERPRISE DR SW	ROCHESTER	MN	55902
REID,GREG	NORDSVING,DEAN	5012 BAMBER VALLEY RD SW	ROCHESTER	MN	55902
ROBERTSON,E JEFF	ROBERTSON,NANCY	5630 HEATHER DR SW	ROCHESTER	MN	55902
ROCHESTER CLINIC PARTNERS LLC		30 CIRCLE PINE DR	MANKATO	MN	56001
ROCHESTER TOPSOIL INC		2047 CENTURY VIEW LN NE	ROCHESTER	MN	55906
ROENIGK,JULIE A	ROENIGK,RANDALL K	5510 HEATHER DR SW	ROCHESTER	MN	55902
ROETZER-SIMONSON,MARGARET M		4993 50 ST SW	ROCHESTER	MN	55902
ROETZLER,CATHERINE M		4815 50 ST SW	ROCHESTER	MN	55902
RP LAND LLC		10350 BREN RD W	MINNETONKA	MN	55343
RYAN,BRUCE E		PO BOX 5937	ROCHESTER	MN	55902
RYAN,DANIEL W	RYAN,MARGARET A	5605 STENBRAE CT SW	ROCHESTER	MN	55902
RYANNA LLC		4900 HWY 52 N	ROCHESTER	MN	55901
SACKETT,JANET		4219 GINGER LN SE	ROCHESTER	MN	55904
SACKETT,JOEL	SACKETT,PATRICIA	4126 PETUNIA AVE SE	ROCHESTER	MN	55904
SALAZAR,CONSTANCE MARIE DRAKE		758 BASIL LN SE	ROCHESTER	MN	55904
SALZWEDEL,KRIS A		4231 FERN AVE SE	ROCHESTER	MN	55904
SCHMIDT,HARRIS		9001 E BLOOMINGTON FWY	BLOOMINGTON	MN	55420
SCHNEIDER,JEREMY D		4208 GINGER LN SE	ROCHESTER	MN	55904
SCHOENFELDER FARMS		4314 30 AVE SE	ROCHESTER	MN	55904
SCHOENFELDER,KENNETH	SCHOENFELDER,RANDALL R	2331 PINESTAR LN SE	ROCHESTER	MN	55904
SCHOENFELDER,KENNETH W	SCHOENFELDER,KENNETH	2331 PINESTAR LN SE	ROCHESTER	MN	55904
SCHOENFELDER,KENNETH W	SCHOENFELDER,PATRICIA	2331 PINESTAR LN SE	ROCHESTER	MN	55904
SCHOENFELDER,KENNETH W	SCHOENFELDER,PATRICIA ANN	2331 PINESTARE LN SE	ROCHESTER	MN	55904
SCHROEDER,DEBRA		4304 DAFFODIL AVE SE	ROCHESTER	MN	55904
SCOTT,KENNETH P	SCOTT,MARGARET S	2245 48 ST SW	ROCHESTER	MN	55902
SEECHAN,LAO P	SEECHAN,EESAI M	4234 DAISY AVE SE	ROCHESTER	MN	55904
SEELING,RICHARD M		4316 DAFFODIL AVE SE	ROCHESTER	MN	55904
SEIFERT,LOUIS C	SEIFERT,DEBRA J	6990 19 ST NW	ROCHESTER	MN	55901
SENECA FOODS CORPORATION		1217 3 AVE SE	ROCHESTER	MN	55904
SHERIFFS YOUTH PROGRAMS OF MN		PO BOX 249	AUSTIN	MN	55912
SJC PROPERTIES LLC		3800 HWY 52 N	ROCHESTER	MN	55901
SMITH,SHARON		4119 GARDEN CT SE	ROCHESTER	MN	55904
SMUDE,HERMAN JEROME		1939 EAGLE LN	SPOONER	WI	54801

Name 1	Name 2	Address	City	State	Zip Code
SORENSEN,STEVEN D	SORENSEN,JENNIFER K	5927 GLENCROFT LN SW	ROCHESTER	MN	55902
SOUTH BROADWAY PARTNERS LLC		102 SOUTH BROADWAY	ROCHESTER	MN	55904
SOUTH FORK VENTURES LLC		4321 GARDEN CT SE	ROCHESTER	MN	55904
SOUTHEAST SERVICE CORPORATIVE		210 WOOD LAKE DR SE	ROCHESTER	MN	55904
STATE OF MINNESOTA	DEPARTMENT OF TRANSPORTATION	395 JOHN IRELAND BLVD	ST PAUL	MN	55155
STEVENS,VIRGINIA F	KLEES,GREGORY J	607 PEONY ST SE	ROCHESTER	MN	55904
STEWART,JAMES A	STEWART,KAREN M	5812 GLENCROFT LN SW	ROCHESTER	MN	55902
STRADER,JENNIFER		4217 GARDEN CT SE	ROCHESTER	MN	55904
STRAIN,JANISE K		504 GERANIUM ST SE	ROCHESTER	MN	55904
STREIFF,LEE C		4233 DAISY AVE SE	ROCHESTER	MN	55904
TAYLOR,CHRISTOPHER S	TAYLOR,LISA K	5721 GLENCROFT LN SW	ROCHESTER	MN	55902
THE GARDENS MANUF HOME COMM		102 BROADWAY S	ROCHESTER	MN	55904
THE GARDENS OWNERS ASSOC. INC		4325 MAINE AVE SE	ROCHESTER	MN	55904
THE GARDENS OWNERS ASSOCIATION		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
THE GARDENS OWNERS ASSOCIATION		102 SOUTH BROADWAY 1ST F	ROCHESTER	MN	55904
THEEL,PATTI KAE	GLOFF,PATTI KAE	3930 SIMPSON RD SE	ROCHESTER	MN	55904
THEEL,TERRY M	THEEL,SANDRA A	2025 45 ST SE	ROCHESTER	MN	55904
THONE,HARLAN N	THONE,ARLENE J	1734 WALDEN LN SW	ROCHESTER	MN	55902
TLOUGAN,MARLIN I		6844 14 ST NW	BYRON	MN	55920
TOMFOHRDE,RANDY P	TOMFOHRDE,REBECCA A	1413 60 AVE NW	BYRON	MN	55920
TOWNSEND,RICKY A		3763 SIMPSON RD SE	ROCHESTER	MN	55904
TRUSTEE,ALLEN B BENSON	BENSON,ALLEN B	5715 GLENCROFT LN SW	ROCHESTER	MN	55902
TRUSTEE,EILEEN J BROWN	BROWN,EILEEN J	4209 FERN AVE SE	ROCHESTER	MN	55904
TRUSTEE,GRETCHEN LOUISE TURRI	TURRI,GRETCHEN LOUISE	4326 GARDEN CT SE	ROCHESTER	MN	55904
TRUSTEE,JOHN R PERKINS	PERKINS,JOHN R	2315 BAIHLY LN SW	ROCHESTER	MN	55902
TRUSTEE,MARGARET A JOST	JOST,MARGARET A	5929 HEATHER DR SW	ROCHESTER	MN	55902
TRUSTEE,PATRICIA A JULSRUD	JULSRUD,PATRICIA A	5298 MEADOW CROSSING RD SW	ROCHESTER	MN	55902
TRUSTEE,RUDOLPH A KLASSEN	KLASSEN,RUDOLPH A	5730 HEATHER DR SW	ROCHESTER	MN	55902
TRUSTEE,STANLEY JOHN DEE	DEE,STANLEY JOHN	4525 42 ST SW	ROCHESTER	MN	55902
TRUSTEE,W EUGENE MILLER	MILLER,W EUGENE	3200 VAN DORN ST	LINCOLN	NE	68502
TRUWE,THOMAS		3883 WILLOW HEIGHTS DR SW	ROCHESTER	MN	55902
TURTLE,JULIE L		4322 GARDEN CT SE	ROCHESTER	MN	55904
TWETEN,ROBERT K	TWETEN,CAROL J	718 2 AVE NW	BYRON	MN	55920

Name 1	Name 2	Address	City	State	Zip Code
VASDEV,GURINDER	VASDEV,PARABHAJOT K	5581 40 ST SW	ROCHESTER	MN	55902
VP 2 LLC		1109 LYONS AVE S	SIOUX FALLS	SD	57106
WAGNER,ANTHONY L	WAGNER,CORRIE E	3310 COUNTY RD 15 SW	BYRON	MN	55920
WAGNER,LOUIS L	WAGNER,ILA J	3615 SIMPSON RD SE	ROCHESTER	MN	55904
WEDEL,DENISE JEANNE		5930 HEATHER DR SW	ROCHESTER	MN	55902
WESTPHAL,ROGER M	WESTPHAL,RITA K	3550 HWY 63 S	ROCHESTER	MN	55904
WESTRIDGE HILLS CORPORATION		1320 WICKLOW LN SW	ROCHESTER	MN	55902
WHIPPLE,KEVIN J	WHIPPLE,LONNIE J	3661 36 AVE SE	ROCHESTER	MN	55904
WILLIAMS HILLTOP PLD HEREFORDS	WILLIAMS,AUGUST A	5248 SIMPSON RD SE	ROCHESTER	MN	55904
WILLIAMS,CURT		757 BASIL LN SE	ROCHESTER	MN	55904
WILLIAMS,TAWNY		746 BASIL LN SE	ROCHESTER	MN	55904
WILLOW CREEK COMMONS LLC		3800 52 HWY N	ROCHESTER	MN	55901
WILLOW RIDGE MOBILE HOME PARK		3775 WILLOW RIDGE DR SW	ROCHESTER	MN	55902
WOOD LAKE LAND ENTER OF ROCH I	CE,ZUMBRO VALLEY MENTAL HEALTH	343 WOOD LAKE DR SE	ROCHESTER	MN	55904
XW II LLC		3230 LAS FALDAS DR	FULLERTON	CA	92835
YOUNG,DALE		4115 GARDEN CT SE	ROCHESTER	MN	55904
ZARROUG,ABDALLA E	ELAMIN,ALAA M	1224 BAIHLY VIEW LN SW	ROCHESTER	MN	55902
ZENKOVA,FOXFEATHER R	ZENKA,ROMAN	741 BASIL LN SE	ROCHESTER	MN	55904
ZIMMERMAN,JUDY		4316 FERN AVE SE	ROCHESTER	MN	55904
ZIMMERMAN,KENNETH D	ZIMMERMAN,ADELE	2509 48 ST SW	ROCHESTER	MN	55902
ZYCH,JON	ZYCH,MELANIE	4212 DAFFODIL AVE SE	ROCHESTER	MN	55904

Open House Meeting

Handout

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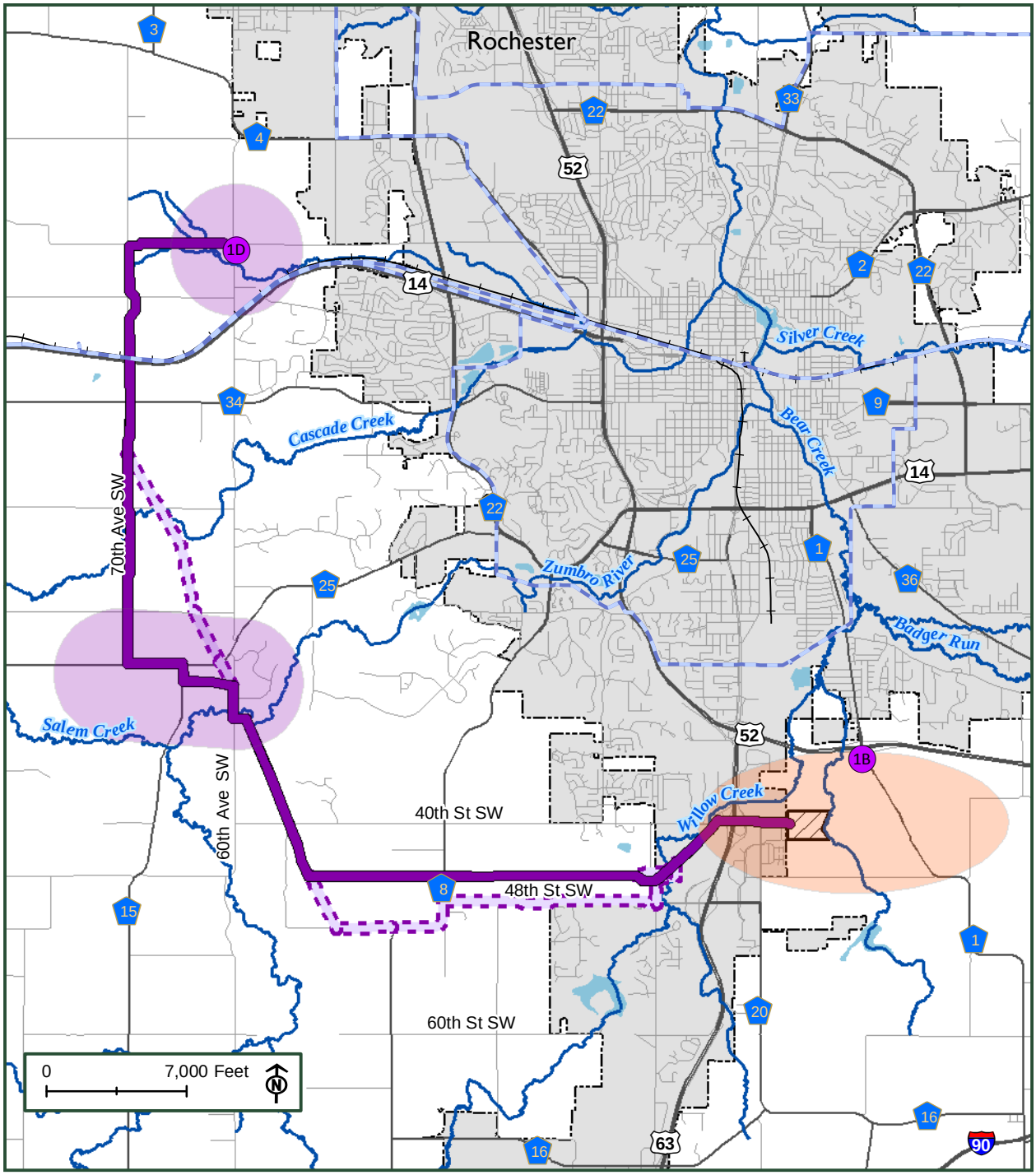
MINNESOTA ENERGY RESOURCES

Project Area Overview



Legend

- Preferred Route
- Alternate Route
- Town Border Station (TBS)
- District Regulation Station
- DRS/Future Tie-in Distribution Line Buffer
- Town Border Station Buffer
- PWI Stream
- Waterbody/NWI Wetland
- City / Township Boundary
- Railroad
- 161kV AC Transmission Line
- County Highway
- State Highway

*Buffer distance is 1.25 miles

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FACT SHEET

Project: Rochester Area Natural Gas Expansion Project

Proposed by: Minnesota Energy Resources

Purpose: Upgrade the natural gas infrastructure in the Rochester area.

Why: Rochester and the surrounding communities have experienced continued residential and commercial growth, in large part due to the expanding health care facilities in and around the city. This expansion will help us provide safe, reliable natural gas to the growing area.

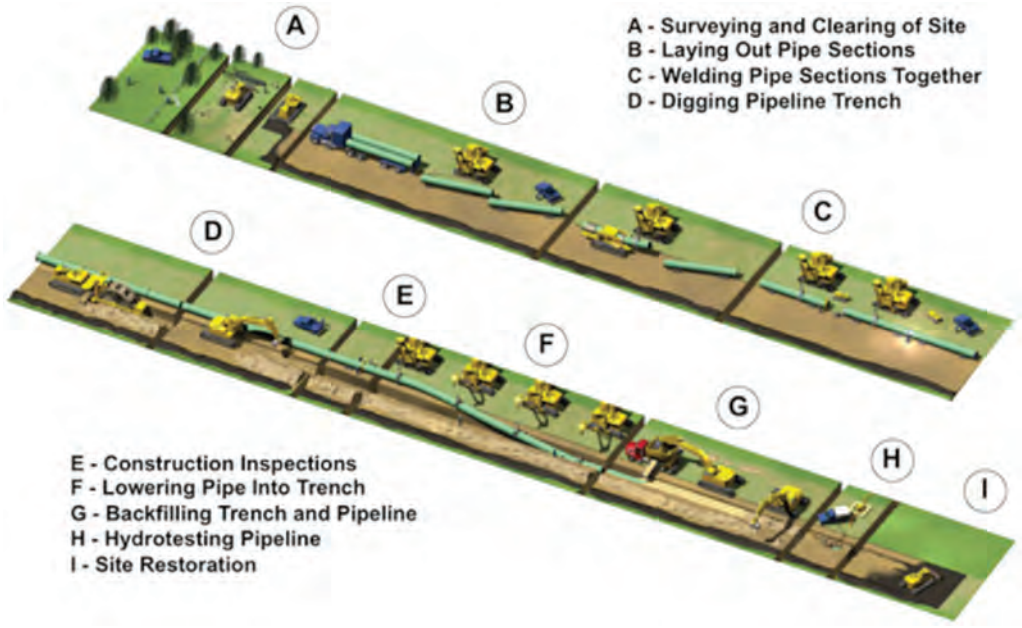
Description: Add 13.1 miles of natural gas distribution pipeline between the south and west side of Rochester connecting to the Northern Natural Gas Transmission Pipeline.

Timeline:

Fall 2015	Project Announcement/Community Meeting
Fall 2015	Route Permit Request Submitted to Regulators
2017	Construction Anticipated to Begin

Project details: 8.0 miles of 12-inch diameter pipe and 5.1 miles of 16-inch diameter pipe.

Construction details: 12.7 miles of open cut trenching, 0.4 miles of underground trenching (horizontal directional drilling).



Safety focus: Project will comply with all federal, state and local safety requirements during construction and operation.

Contact information:
Rory Lenton
Minnesota Energy Resources
507-529-5117
RDLenton@minnesotaenergyresources.com

Website information:
http://www.minnesotaenergyresources.com/company/rochester.aspx

MINNESOTA ENERGY RESOURCES®

Open House Meeting

Table Maps

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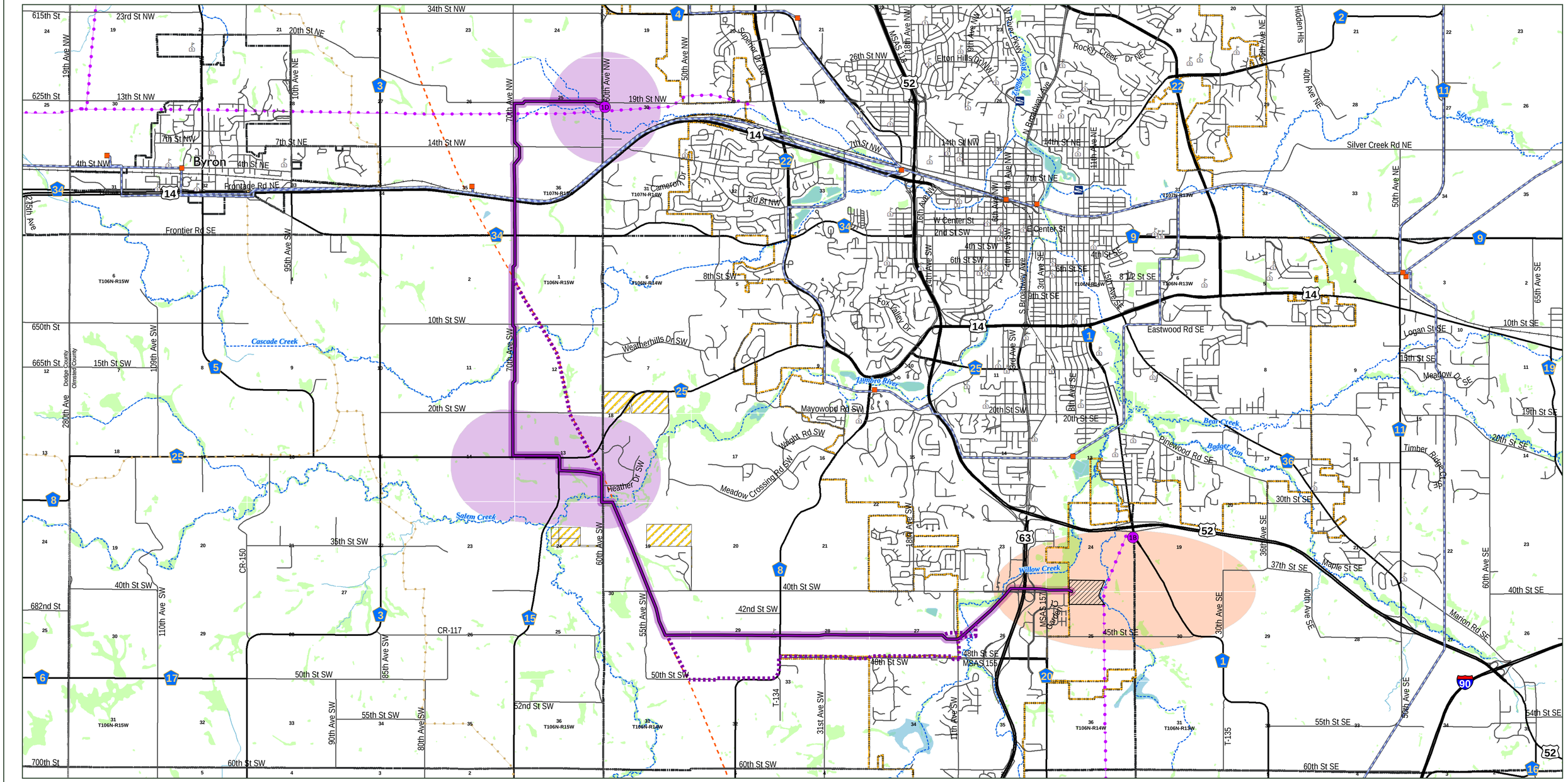
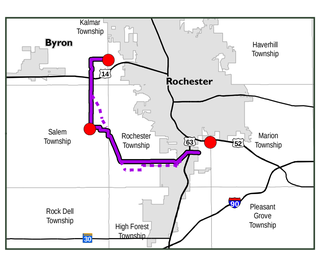
MINNESOTA ENERGY RESOURCES

Proposed and Alternative Routes





- Town Border Station (TBS)
- Preferred Route
- Alternate Route
- Preferred Route (500 ft)
- District Regulation Station
- District Regulation Station Buffer
- Town Border Station Buffer
- County Boundary
- Rochester Boundary
- City / Township Boundary
- Public Water Access
- School
- Substation
- Certified Organic Farm
- 161kV AC Transmission Line
- Snowmobile Trail
- Railroad
- Gas Pipeline
- Liquid Pipeline
- Waterbody
- National Wetland Inventory Wetland
- River / Stream
- PWI Stream

N

Feet
0 2,000 4,000

HDR

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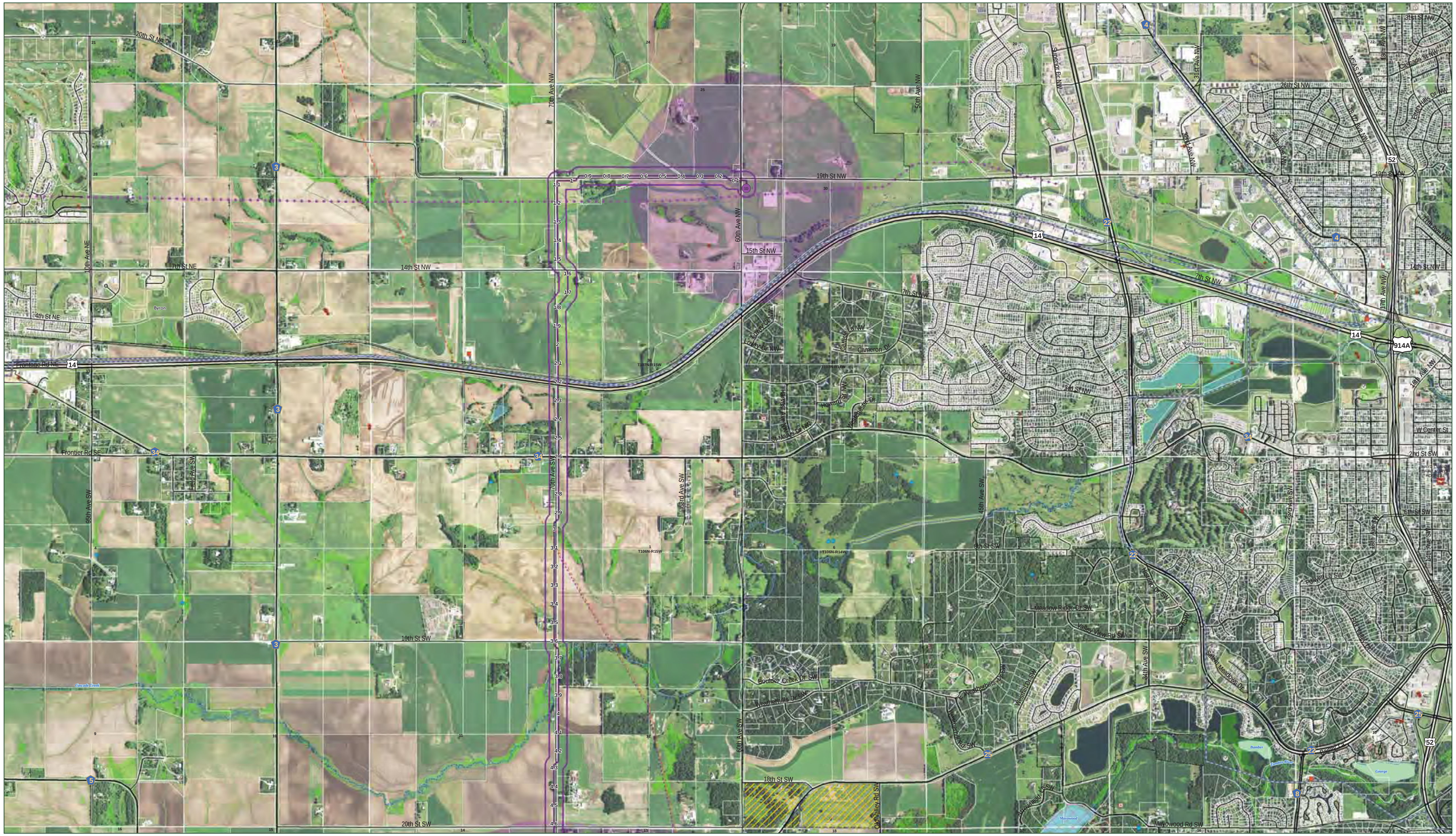
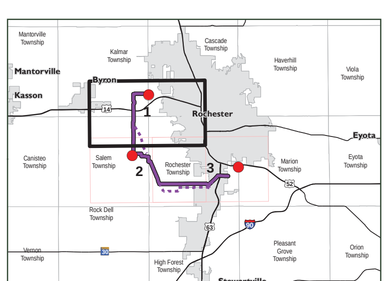
MINNESOTA ENERGY RESOURCES®

Potential Routes





- Town Border Station (TBS)
- District Regulation Station
- Preferred Route (500 ft)
- Preferred Centerline
- Alternate Centerline
- District Regulation Station Buffer
- Town Border Station Buffer
- County Boundary
- City / Township Boundary
- Spring
- Sinkhole
- Private-use Airport
- Public-use Airport
- National Register Historic Place
- Public Water Access
- Mine
- School
- FCC Tower
- Substation
- 161kV AC Transmission Line
- Snowmobile Trail
- Railroad
- Gas Pipeline
- Liquid Pipeline

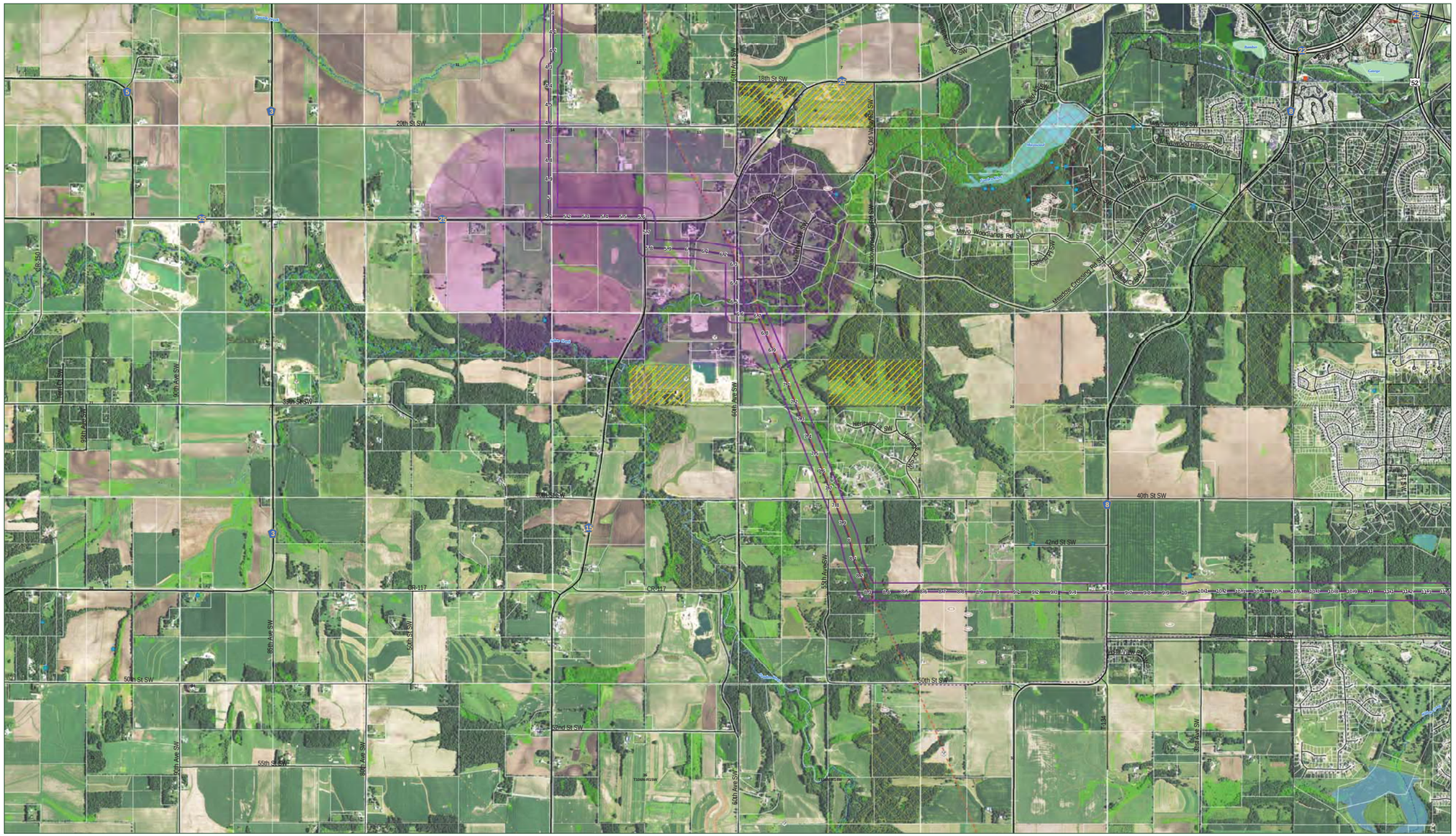
MBS Biodiversity
- Below
- Moderate
- High
- Outstanding
- Certified Organic Farm

- PWI Basin
- PWI Wetland
- PWI Stream
- River / Stream
- Waterbody
- NWI Wetland

1:12,000

Feet 0 1,000 2,000

HDR



Potential Routes

Sheet 2 of 3

- ● Town Border Station (TBS)
- ▨ District Regulation Station
- ☐ Preferred Route (500 ft)
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MBS Biodiversity

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1:12,000

0 1,000 2,000 Feet

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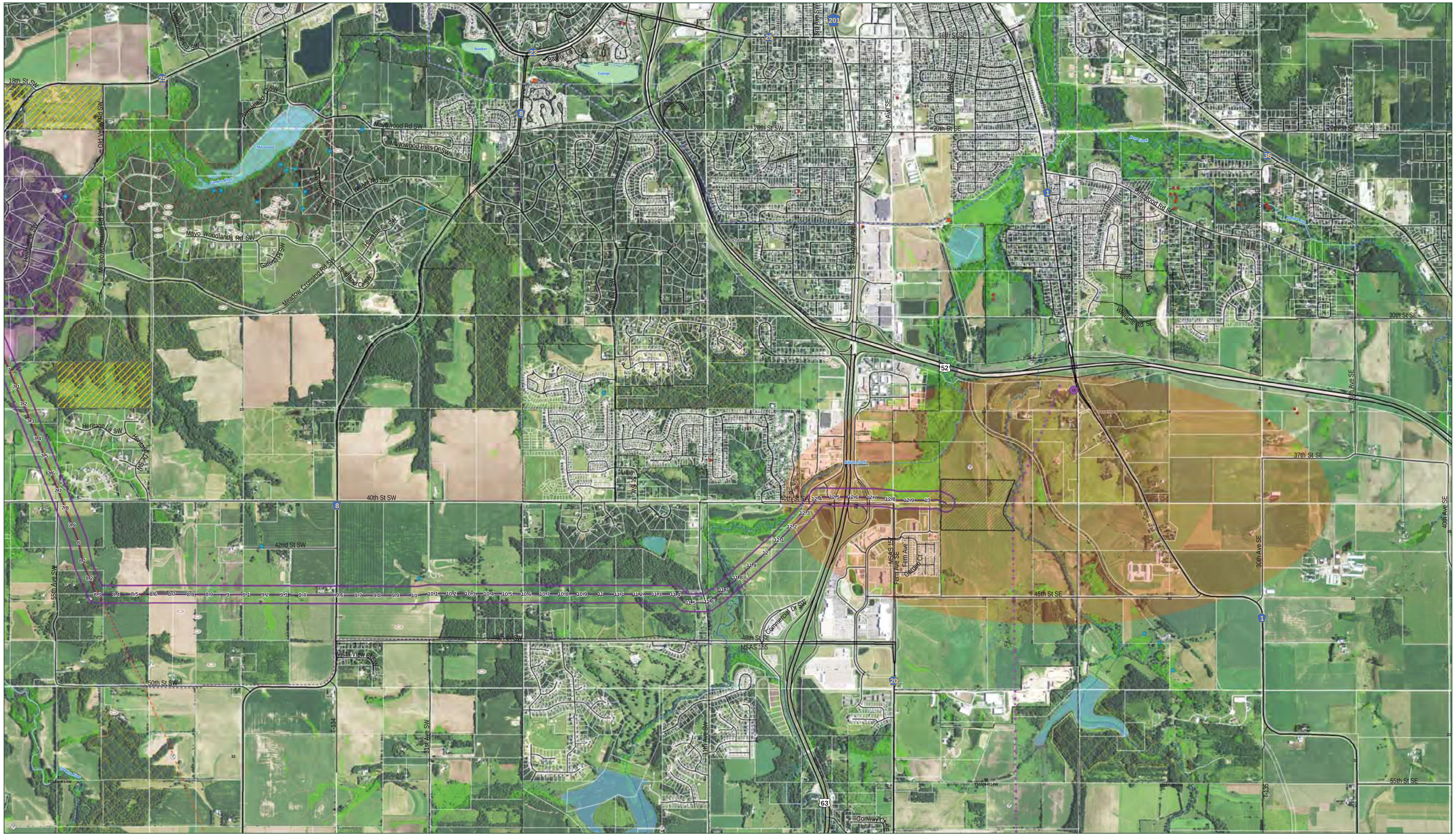
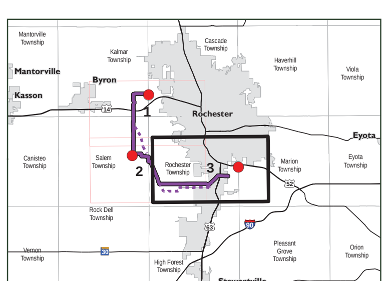
Potential Routes

Sheet 3 of 3





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1:12,000

Feet: 0 1,000 2,000

Appendix C Material Safety Data Sheet

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SAFETY DATA SHEET

1400, 332 6TH AVE. SW. Calgary, Alberta, t2p0b2 PHONE: (403) 290-2900 FAX: (403) 263-8915

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER:	Natural Gas (Pipeline Quality)	**PRODUCT CODE:**	W247
PRODUCT USE:	Use as fuel or as process feedstock for industrial, residential and commercial purposes.		
SYNONYMS:	Natural Gas (sales gas), primarily methane; Liquified Natural Gas; Dry Natural Gas.		
MANUFACTURER:	TRILOGY ENERGY	**SUPPLIER:**	TRILOGY ENERGY
ADDRESS:	1400, 332 6th Avenue SW, Calgary, Alberta, Canada, T2P 0B2 Telephone: (403) 290-2900 Fax: (403) 263-8915	**ADDRESS:**	1400, 332 6th Avenue SW, Calgary, Alberta, Canada, T2P 0B2 Telephone: (403) 290-2900 Fax: (403) 263-8915
24-HOUR EMERGENCY CONTACT:	Trilogy Energy (403) 290-2900 CANUTEC (613) 996-6666		

GHS Product Identifier

NAV	NAV

SECTION 2 – HAZARD IDENTIFICATION

Emergency Overview

APPEARANCE AND ODOR:	Gas exists under various pressures depending on pipeline systems. Odorless gas in natural state at any concentration. Natural gas sold for fuel purposes under pressure usually has an odorant added to it. This odorant is usually a mercaptan, which has an odor similar to "rotten eggs" or "skunk". The odorant level is such that it is noticeable below the Lower Explosive Limit (LEL) of the natural gas.
HEALTH HAZARDS:	Avoid breathing gas. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. The health effects caused by exposure to Natural Gas (pipeline quality) are minimal in concentrations less than the lower explosive limit. At high concentrations, it can displace oxygen and cause asphyxiation. A minimal requirement of 19.5% of oxygen at sea level (148 torr O2, dry air) is recommended.
FIRE AND EXPLOSION HAZARDS:	CAUTION! EXTREMELY FLAMMABLE GAS. MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS. Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Keep away from heat, sparks and flame. Do not puncture or incinerate container.

GHS Classification

Health	Environmental	Physical
NAV	NAV	NAV

GHS Label

Symbols:	NAV
Signal Word:	NAV
Hazard Statement: NAV	**Precautionary Statements:** NAV

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS No.	% (w or v)
Natural Gas	8006-14-2	100

May Contain small amounts of benzene, carbon dioxide, nitrogen and other inert gases, depending on pipeline specifications.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4 – FIRST AID MEASURES

INHALATION:	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
SKIN CONTACT:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately
EYE CONTACT:	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention Immediately
INGESTION:	As this product is a gas, refer to the inhalation section.
NOTE TO THE PHYSICIAN:	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Protection of first-aiders: No action shall be taken involving an personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5 - FIRE FIGHTING MEASURES

FIRE OR EXPLOSION HAZARDS:	Class I – Flammable Gas (NFPA). Extremely flammable in presence of open flames, sparks, and heat. Rapid escape of vapor may generate static charge causing ignition. May accumulate in confined spaces. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Ruptured cylinders may rocket. Evacuate area if pressure relief valves activate, or if containers are discolored due to flames on tanks. Vapors may form explosive mixtures with air.
SUITABLE EXTINGUISHING MEDIA:	Use an extinguishing agent suitable for surrounding fire.
UNSUITABLE EXTINGUISHING MEDIA:	None known.
SPECIAL PROTECTION ACTIONS/EQUIPMENT FOR FIREFIGHTERS:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Fire-fighters should wear appropriate protective equipment and self –contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon oxides (CO, CO_2), sulphur oxides (SO_x), sulphur compounds (H2S), smoke and irritating vapors as products of incomplete combustion.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

SMALL SPILL:	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.	
LARGE SPILL:	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.	
PERSONAL PRECAUTIONS:	**For non-emergency personnel:**	**For emergency responders:** Accidental releases pose a serious fire or explosion hazard. Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear protective respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
ENVIRONMENTAL PRECAUTIONS:	Ensure emergency procedures to deal with accidental gas release are in place to avoid contamination of the environment. Inform the relevant authorities if this product has caused environmental pollution (sewers, waterways, soil or air).	
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:	NAV	

SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:	Put on appropriate personal protective equipment (see section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking. Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-spark tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
CONDITIONS FOR SAFE STORAGE:	Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Ensure the storage containers are grounded/bonded.
INCOMPATIBILITIES:	NAV
SENSITIVITY TO IMPACT:	NAV
SENSITIVITY TO STATIC DISCHARGE:	NAV

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Component Name (CAS No.)	**Reference**	**8-HR TWA**		**15-MIN STEL/C**		**Notation/Comments**
		ppm	mg/m^3	ppm	mg/m^3	
Methane	ACGIH TLV (United States).	1000	NAV	NAV	NAV	NAV
Consult local authorities for acceptable exposure limits.						

Exposure Controls

ENGINEERING CONTROLS:	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.	
ADMINISTRATIVE CONTROLS:	Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workspace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or necessity to use respiratory protective equipment. Hygiene measure: wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to workstation location.	
PERSONAL PROTECTIVE EQUIPMENT:	**Respiratory:**	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator section must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved positive-pressure, air-supplied respirator or self-contained breathing apparatus may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.
	Skin (hands, etc.):	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all time when handling chemical products if a risk assessment indicates this is necessary. Recommended: wear insulated gloves to prevent frostbite.
	Eyes:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
	Body:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
	Feet:	NAV
	Other:	NAV
OTHER CONSIDERATIONS:	Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.	

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Gas exists under various pressures depending on pipeline systems.	**ODOR & APPEARANCE:**	Odorless gas in natural state at any concentration. Natural Gas sold for fuel purposes under pressure usually had an odorant added to it. This odorant is usually a mercaptan, which had an odor similar to " rotten eggs" or "skunk". The odorant level is such that it is noticeable below the Lower Explosive Limit (LEL) of the natural gas. Colorless.

ODOR THRESHOLD (ppm):	WARNING: Studies have shown that not all persons are sensitive to this skunky smell and may not be able to detect this warning device!	**pH:**	NAV
MELTING POINT/ FREEZING POINT (˚C):	NAV	**INITIAL BOILING POINT (˚C):**	NAV
FLASHPOINT (°C) & METHOD:	Open cup: -188˚C (-306.4˚F) (NFPA) varies with crude sources	**EVAPORATION RATE:**	NAV
FLAMMABILITY (SOLID, GAS):	Class I - Flammable gas (NFPA)	**IF YES, UNDER WHAT CONDITIONS?**	
LOWER FLAMMABLE LIMIT (%):	5% (NFPA)	**UPPER FLAMMABLE LIMIT (%):**	15% (NFPA)
VAPOR PRESSURE (mmHg):	552 kPa @68˚F (4140 mm Hg @ 20˚C	**VAPOR DENSITY (air=1):**	0.554 @ 0˚C (32˚F)
PERCENT VOLATILITY:	100%	**SPECIFIC GRAVITY:**	NAV
SOLUBILITY (in water):	Soluble in water, methanol, diethyl ether, n-octanol, acetone.	**PARTITION COEFFICIENT (N-OCTANOL/WATER):**	NAV
AUTO-IGNITION TEMPERATURE (˚C):	540˚C (1004˚F) (NFPA)	**DECOMPOSITION TEMPERATURE (˚C):**	NAV
VISCOSITY	NAV	**OTHER:**	Pour point: NAV

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY AND UNDER WHAT CONDITIONS:	NAV
CHEMICAL STABILITY:	This product is stable.
HAZARDOUS REACTIONS:	Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.
CONDITIONS TO AVOID:	NAV
INCOMPATIBLE MATERIALS:	Reactive with oxidizing agents, combustible materials and halogen compounds.
HAZARDOUS DECOMPOSITION PRODUCTS:	May release CO_x, SO_x, H2S, smoke and irritating vapors when heated to decomposition.

SECTION 11 – TOXICOLOGICAL INFORMATION

HAZARDOUS INGREDIENT (CAS No.)	**LD_{50} (SPECIES & ROUTE)**	**LC_{50} (SPECIFY SPECIES)**	**COMMENTS**
NAV	NAV	NAV	NAV

ROUTE OF ENTRY:									
SKIN CONTACT:	YES	**SKIN ABSORPTION:**	NAV	**EYE CONTACT:**	YES	**INHALATION:**	YES	**INGESTION:**	NAV

EFFECTS OF ACUTE EXPOSURE TO PRODUCT	
ACUTE TOXICITY:	NAV

NAP: Not applicable NAV: Not available

INGESTION:	As this product is a gas, refer to the inhalation section.
INHALATION:	Inhalation of vapors can cause irritation of the respiratory tract and CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death.
EYE CONTACT:	Contact with rapidly expanding gas may cause burns or frostbite.
SKIN CONTACT:	Contact with rapidly expanding gas may cause burns or frostbite.

EFFECTS OF CHRONIC EXPOSURE

TARGET ORGANS:	NAV		
SUSCEPTIBLE POPULATIONS:	Medical conditions aggravated by over-exposure: Overexposure may lead to cardiac sensitization.		
CARCINOGENICITY:	Not listed as carcinogenic by OSHA, NTP or IARC.	**MUTAGENICITY:**	No known significant effects or critical hazards.
REPRODUCTIVE HAZARD:	No known significant effects or critical hazards.	**TERATOGENICITY:**	No known significant effects or critical hazards.
IRRITANCY:	NAV	**SENSITIZATION:**	
SYNERGISTIC PRODUCTS:	NAV		
DEVELOPMENTAL EFFECTS:	No known significant effects or critical hazards.		
CHRONIC EFFECTS:	No known significant effects or critical hazards.		

SECTION 12 – ECOLOGICAL INFORMATION

HAZARDOUS INGREDIENT	**LD_{50} (SPECIES & ROUTE)**	**LC_{50} (SPECIFY SPECIES)**
NAV	NAV	NAV

PERSISTENCE & DEGRADABILITY:	This product itself and its products of degration are not toxic.
BIO-ACCUMULATIVE POTENTIAL:	NAV
MOBILITY IN SOIL:	NAV
OTHER ADVERSE EFFECTS:	**Environmental effects:** No known significant effects or critical hazards. Aquatic ecotoxicity Conclusion/Summary: Not Available. Biodegradability Conclusion/Summary: Not Available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licence waste disposal contractor. Disposal of this product, solutions and the by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Empty pressure vessels should be returned to the supplier.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION for additional handling information and protection of employees.

SECTION 14 – TRANSPORTATION INFORMATION

	UN PROPER SHIPPING NAME	HAZARD CLASS	UN/NA	PACKING GROUP	LABELS REQUIRED
US DOT:	Compressed Gas Flammable, N.O.S.	2.1	UN1954	NAV	NAV
CANADIAN TDG:	Compressed Gas Flammable, N.O.S. (Methane)	2.1	UN1954	NAV	NAV
INTERNATIONAL:	NAV	NAV	NAV	NAV	NAV
ENVIRONMENTAL HAZARDS:	NAV				
SPECIAL PRECAUTIONS FOR USER:	NAV				

SECTION 15 – REGULATORY INFORMATION

CANADA REGULATIONS:	**WHMIS Classification:**	Class A: Compressed Gas. Class B-1: Flammable Gas. **This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**
	Canada Inventory	All components are listed or exempted.
U.S. FEDERAL REGULATIONS:	**OSHA/HCS Classification:**	Compressed Gas. Flammable Gas. This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200).
	TSCA 8B:	All components are listed or exempted.
OTHER:	**Europe Inventory:**	All components are listed or exempted.
	EU Regulations: Risk Phrases	This product is not classified according to EU legislation.

SECTION 16 – OTHER INFORMATION

SDS TRANSCRIBED FROM THE ORIGINAL BY: Golder Associates, Ltd. (#300, 10525 – 170 Street, Edmonton, AB T5P 4W2. Phone: 780-483-3499).	**SDS VERSION No.:** 1.0 **SDS PREPARATION DATE:** December 14, 2013.

LIST OF ABBREVIATIONS & ACRONYMS: NA

DISCLAIMER:

The information contained herein is based on the information available at the indicated date of preparation, and is believed to be accurate. The company makes no warranties, guarantees, or conditions expressed or implied, in respect to the data contained herein; and shall not be liable for any damages, or injury, either direct or consequential, however caused, arising out of the use of information contained on the data sheet. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

LABEL REQUIREMENTS: EXTREMELY FLAMMABLE GAS.MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS.

Hazardous Material Information System (USA):

Health: 1 Flammability: 4 Physical hazard: 0 Personal Protection: K

National Fire Protection association:

Health: 1 Flammability: 4 Instability: 0 Special: NAV

Ethyl Mercaptan

Version 2.0 Revision Date 2013-09-13

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Trade name : Ethyl Mercaptan
Material : 1111485, 1024772, 1086422, 1086423, 1021429, 1021431, 1021426, 1021430, 1021425, 1021424, 1024773, 1024771, 1024770, 1021427, 1026776, 1021428, 1104918

Company : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
North America: CHEMTREC 800.424.9300 or 703.527.3887
Asia: +800 CHEMCALL (+800 2436 2255)
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : MSDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Emergency Overview

Danger

Form: Liquid **Physical state**: Liquid **Color**: Colorless **Odor**: Repulsive

OSHA Hazards : Combustible liquid and vapor., Skin sensitizer

GHS Classification

: Flammable liquids, Category 1
Acute toxicity, Category 4, Oral
Acute toxicity, Category 4, Inhalation
Aspiration hazard, Category 2
Skin sensitization, Sub-category 1B
Acute aquatic toxicity, Category 1
Chronic aquatic toxicity, Category 1

GHS-Labeling

Symbol(s) :

Signal Word : Danger

Hazard Statements : H224: Extremely flammable liquid and vapor.
H302: Harmful if swallowed.
H305: May be harmful if swallowed and enters airways.
H317: May cause an allergic skin reaction.
H332: Harmful if inhaled.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P243: Take precautionary measures against static discharge.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P331: Do NOT induce vomiting.
P312: Call a POISON CENTER or doctor/ physician if you feel unwell.
Storage:
P403 + P235: Store in a well-ventilated place. Keep cool.
Disposal:
P501: Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3: Composition/information on ingredients

Synonyms : Scentinel® A Gas Odorant
ETSH
Ethanethiol
Ethyl Mercaptan

Molecular formula : C2H6S

Component	CAS-No.	Weight %
Ethyl Mercaptan	75-08-1	99

SECTION 4: First aid measures

General advice : Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.

If inhaled : Call a physician or poison control center immediately. If unconscious place in recovery position and seek medical advice.

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : -48 °C (-54 °F)

Autoignition temperature : 295 °C (563 °F)

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion : Do not spray on an open flame or any other incandescent

protection		material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.
Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.

SECTION 6: Accidental release measures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers	:	Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

US

Ingredients	Basis	Value	Control parameters	Note
Ethyl Mercaptan	ACGIH	TWA	0.5 ppm,	
	OSHA Z-1	C	10 ppm, 25 mg/m3	(b), (C),
	OSHA Z-1-A	TWA	0.5 ppm, 1 mg/m3	

(b) The value in mg/m3 is approximate.
(C) Ceiling limit is to be determined from breathing-zone air samples.

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Ethyl Mercaptan	75-08-1	Immediately Dangerous to Life or Health Concentration Value 500 parts per million	1995-03-01

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Flame retardant protective clothing. Workers should wear antistatic footwear.

Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Liquid
Physical state	:	Liquid
Color	:	Colorless
Odor	:	Repulsive

Safety data

Flash point	:	-48 °C (-54 °F)
Lower explosion limit	:	2.8 %(V)
Upper explosion limit	:	18 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	295 °C (563 °F)
Molecular formula	:	C2H6S
Molecular Weight	:	62.14 g/mol
pH	:	Not applicable
Pour point	:	No data available
Boiling point/boiling range	:	35 °C (95 °F)
Vapor pressure	:	16.20 PSI at 37.8 °C (100.0 °F)
Relative density	:	0.84, 15.6 °C(60.1 °F)
Water solubility	:	Negligible
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	No data available
Relative vapor density	:	2.1 (Air = 1.0)
Evaporation rate	:	1
Percent volatile	:	> 99 %

SECTION 10: Stability and reactivity

Chemical stability	:	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Conditions to avoid	:	Heat, flames and sparks.
Materials to avoid	:	May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Other data	:	No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Acute oral toxicity

Ethyl Mercaptan : LD50: 682 mg/kg
Species: rat
Sex: male
Method: Fixed Dose Method

Acute inhalation toxicity

Ethyl Mercaptan : LC50: > 2.52 mg/l
Exposure time: 4 h
Species: rat
Sex: male and female
Test atmosphere: vapor
Method: OECD Test Guideline 403

Acute dermal toxicity

Ethyl Mercaptan : LD50: > 2,000 mg/kg
Species: rat
Sex: male
Method: OECD Test Guideline 402

Ethyl Mercaptan
Skin irritation : Mild skin irritation

Ethyl Mercaptan
Eye irritation : Mild eye irritation

Sensitization

Ethyl Mercaptan : Causes sensitization.
Information given is based on data obtained from similar substances.

Repeated dose toxicity

Ethyl Mercaptan : Species: rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 25, 100, 400 ppm
Exposure time: 13 wks
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 100 ppm

Lowest observable effect level: 400 ppm
Method: OECD Guideline 413
Information given is based on data obtained from similar substances.

Species: rat, Male and female
Sex: Male and female
Application Route: Oral
Dose: 0, 10, 50, 200 mg/kg
Exposure time: 42-53 days
NOEL: 50 mg/kg
Method: OECD Guideline 422
Information given is based on data obtained from similar substances.

Reproductive toxicity

Ethyl Mercaptan : Species: rat
Sex: male and female
Application Route: Oral diet
Dose: 0, 10, 50, 200 mg/kg
Exposure time: 42-53 days
Number of exposures: once daily
Method: OECD Guideline 422
NOAEL Parent: 200 mg/kg
NOAEL F1: 50 mg/kg
Information given is based on data obtained from similar substances.

Developmental Toxicity

Ethyl Mercaptan : Species: rat
Application Route: Inhalation
Dose: 0, 0.037, 0.28, or 0.56 mg/L
Number of exposures: 6 hrs/d
Test period: GD 6-19
Method: OECD Guideline 414
NOAEL Teratogenicity: > 0.56 mg/l
Information given is based on data obtained from similar substances.

Species: rat
Application Route: Inhalation
Dose: 0, 10, 100, 200 ppm
Number of exposures: 6 hrs/d
Test period: GD 6-19
Method: OECD Guideline 414
NOAEL Teratogenicity: > 200 ppm
NOAEL Maternal: > 200 ppm
Information given is based on data obtained from similar substances.

Aspiration toxicity

Ethyl Mercaptan : May be harmful if swallowed and enters airways.

CMR effects

Ethyl Mercaptan : Carcinogenicity: Not available

Mutagenicity: Not mutagenic in Ames Test.
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

Ethyl Mercaptan
Further information : Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

Ethyl Mercaptan : 2.4 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Ethyl Mercaptan : EC50: < 0.1 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae

Ethyl Mercaptan : EC50: 3 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Method: OECD Test Guideline 201

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Biodegradability : This material is not expected to be readily biodegradable.

Results of PBT assessment

Ethyl Mercaptan : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this MSDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
UN2363, ETHYL MERCAPTAN, 3, I, MARINE POLLUTANT, (ETHYL MERCAPTAN)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN2363, ETHYL MERCAPTAN, 3, I, (-48 °C), MARINE POLLUTANT, (ETHYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN2363, ETHYL MERCAPTAN, 3, I

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN2363, ETHYL MERCAPTAN, 3, I, (D/E), ENVIRONMENTALLY HAZARDOUS

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN2363, ETHYL MERCAPTAN, 3, I, ENVIRONMENTALLY HAZARDOUS

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN2363, ETHYL MERCAPTAN, 3, I, ENVIRONMENTALLY HAZARDOUS

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	Acute Health Hazard Fire Hazard
CERCLA Reportable Quantity	:	This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Ingredients	:	SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : Ethyl Mercaptan - 75-08-1

New Jersey Right To Know : Ethyl Mercaptan - 75-08-1

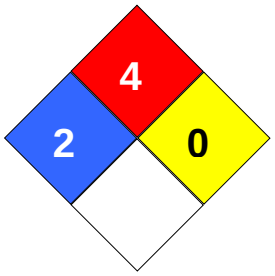
California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
United States of America TSCA	:	On the inventory, or in compliance with the inventory
Canada DSL	:	On the inventory, or in compliance with the inventory
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 4
Reactivity Hazard: 0



Further information

Legacy MSDS Number : 10555

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this MSDS pertains only to the product as shipped.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%

AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

Appendix D Phase Ia Literature Search

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MINNESOTA ENERGY RESOURCES CORPORATION

ROCHESTER NATURAL GAS PIPELINE PROJECT, OLMSTED COUNTY, MINNESOTA

PHASE IA LITERATURE SEARCH

By

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(Principal Investigator)

and

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Prepared For:

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August 2014

Abstract

Minnesota Energy Resources Corporation (MERC) proposes to construct an approximately 12- to 14-mile-long pipeline near the City of Rochester in Olmsted County, Minnesota. The Rochester Natural Gas Pipeline Project (Project) will extend between two identified interconnection points on the west and south sides of the City of Rochester. HDR Engineering, Inc. (HDR) was contracted by MERC to complete a Phase Ia Literature Search (Phase Ia) and provide assistance drafting a route permit application that will be submitted to and reviewed by the Minnesota Public Utilities Commission (PUC) and the Minnesota Department of Commerce (DOC).

At this time, federal funding is not anticipated. However, it is likely that federal permits may be required for portions of the Project. These portions could therefore be considered by a federal agency as an "undertaking", which requires consultation under Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106), and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800). Section 106 requires federal agencies to consider the potential effects of undertakings within their jurisdictions on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP). The Project would also require consideration of cultural resources under Section 101(b) of the National Environmental Policy Act (NEPA).

On June 17, 2014, HDR, on behalf of MERC, contacted the Minnesota State Historic Preservation Office (SHPO) to inform them of the proposed Project and request comments. The SHPO is responsible for the review of state agency projects which may affect state archaeological sites (Minnesota Field Archaeology Act of 1963 [Minnesota Statutes 138.40]) and the review of state agency projects which may affect sites listed on the State or National Register of Historic Places (Minnesota Historic Sites Act [Minnesota Statues 138.665, Subd.2]). In a response dated July 1, 2014, the SHPO recommended the completion of a Phase Ia Literature Search. In June and July 2014, HDR, on behalf of MERC, completed the Phase Ia for the proposed Project.

The purpose of the Phase Ia is to determine the location of previously recorded historic properties and surveys (that is, archaeological surveys, archaeological sites, and architectural structures), and to assess the potential for the presence of as yet unrecorded archaeological resources. The Phase Ia includes the review of a Preferred Route and an Alternate Route. The proposed right-of-way (ROW) for each route is estimated at a total of 100 feet (that is, 50 feet off the center of the pipeline). The 100-foot ROW was used to determine if previously identified resources intersect the routes.

In addition, two Study Areas were reviewed for both the Preferred Route and the Alternate Route. The Preferred Route Study Area and the Alternate Route Study Area each include a 1-mile buffer off the two proposed routes. The larger areas were reviewed to provide flexibility during the early Project planning stages.

One previously recorded archaeological site and 13 previously identified architectural properties were identified within the Preferred Route Study Area. The archaeological site and the architectural properties do not transect the Preferred Route ROW and they have not been evaluated for NRHP eligibility.

One previously recorded archaeological site and 13 previously identified architectural properties were identified within the Alternate Route Study Area. The archaeological site and the architectural properties do not transect the Alternate Route ROW and they have not been evaluated for NRHP eligibility.

Based on the data presented in this Phase Ia, the Preferred Route Study Area and the Alternate Route Study Area contain a moderate to high potential for additional cultural resources. As such, HDR recommends developing a Project Area of Potential Effects (APE) that encompasses any areas that will be impacted by Project development. Once an APE is defined, HDR recommends a Phase I archaeological survey and standing structures survey of the APE, along with evaluation of archaeological resources or standing structures receiving impacts, and possible mitigation, if applicable, of significant resources receiving impacts.

In addition, both the Preferred Route Study Area and the Alternate Route Study Area transect several streams and rivers including Cascade, Salem, and Willow creeks and the Zumbro River. The alluvial settings of these stream and river crossings may be conducive to burying and preserving archaeological deposits, indicating there is potential for encountering deeply buried archaeological sites at these locations. Therefore, HDR recommends a geomorphological assessment of the APE be conducted by a qualified geomorphologist to identify portions of the Project with potential for deeply buried archaeological deposits. The geomorphological assessment should be conducted prior to or concurrent with the Phase I archaeological survey.

Contents

Tables

List of Appendices

Introduction

Minnesota Energy Resources Corporation (MERC) proposes to construct an approximately 12 to 14 mile long pipeline near the City of Rochester in Olmsted County, Minnesota. The Rochester Natural Gas Pipeline Project (Project) will extend between two identified interconnection points on the west and south sides of the City of Rochester. HDR Engineering, Inc. (HDR) was contracted by MERC to complete a Phase Ia Literature Search (Phase Ia) and provide assistance drafting a route permit application that will be submitted to and reviewed by the Minnesota Public Utilities Commission (PUC) and the Minnesota Department of Commerce (DOC).

At this time, federal funding is not anticipated. However, it is likely that federal permits may be required for portions of the Project. These portions could therefore be considered by a federal agency as an "undertaking", which requires consultation under Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106), and its implementing regulations (36 CFR Part 800). Section 106 requires federal agencies to consider the potential effects of undertakings within their jurisdictions on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP). The Project would also require consideration of cultural resources under Section 101(b) of the National Environmental Policy Act (NEPA).

In June and July 2014, HDR, on behalf of MERC, completed the Phase Ia for the proposed Project. The Phase Ia includes the review of a Preferred Route and an Alternate Route (Appendix A, Figure 1). The proposed right-of-way (ROW) for each route is estimated at a total of 100 feet (that is, 50 feet off of the center of the pipeline). The 100 foot ROW was used to determine if previously identified resources intersect the routes.

In addition, two Study Areas were reviewed for both the Preferred Route and the Alternate Route (Tables 1-1 and 1-2 and Appendix A, Figure 1). The Preferred Route Study Area and the Alternate Route Study Area include a 1-mile buffer off the two proposed routes. The larger areas were reviewed to provide flexibility during the early Project planning stages. The purpose of the Phase Ia is to determine the location of previously recorded historic properties and surveys (that is, archaeological surveys, archaeological sites, and architectural structures), and to assess the potential for the presence of as yet unrecorded archaeological resources.

Table 1–1. Preferred Route Study Area

Township	Range	Sections
106N	13W	19 and 30
106N	14W	6-7, 13-14, and 17-36
106N	15W	1-3, 10-15, 23-25, and 36
107N	14W	19 and 29-31
107N	15W	23-26 and 34-36

Table 1–2. Alternate Route Study Area

Township	Range	Sections
105N	14W	5-6
106N	13W	19 and 30
106N	14W	6-7, 13-14, and 17-36
106N	15W	1-3, 10-15, 23-25, and 36
107N	14W	19 and 29-31
107N	15W	23-26 and 34-36

This Phase Ia is divided into four sections. The first section provides a general overview of the environmental and cultural contexts within the Preferred Route Study Area and the Alternate Route Study Area. The second section describes the resources identified during the file search and map review. The third section provides both precontact and historic site potential and site types that may be encountered within the Study Areas. The forth section presents a summary and survey recommendations. The authors of this Phase Ia, Erika Eigenberger and Andrew Kurth, meet the Secretary of the Interior's Professional Qualification Standards for Archaeology as published in 36 Code of Federal Regulations (CFR) 61.

General Background

Environment

The following environmental history of the region is based on information contained in *Minnesota's Environment and Native American Culture History* (Gibbon et al. 2002), the Minnesota Department of Natural Resources, Ecological Classification System (Minnesota Department of Natural Resources 2014), and the United States Environmental Protection Agency's (EPA) Minnesota Level III and IV Eco-regions (EPA 2014).

The proposed Project transects two ecological regions as defined by EPA. The Project is principally located in the Rochester/Paleozoic Plateau Upland Level IV eco-region of the Driftless Area Level III eco-region. The northwestern portion of the Project is located in the Eastern Iowa and Minnesota Drift Plains Level IV eco-region of the Western Corn Belt Plains Level III eco-region.

The Rochester/Paleozoic Plateau Upland Level IV eco-region is characterized by rolling older loess covered plains, predominately used for row crops with some pasture land intermixed. The Eastern Iowa and Minnesota Drift Plains Level IV eco-region is characterized by older till plain and outwash valleys. This region is commonly used for row crops and pasture land.

In general, soils in the both Study Areas are a mix of fine textured forest and prairie soils formed in loess over Palezoic and Cambrian aged bedrock. The average annual precipitation ranges from 28 to 30 inches. The average January high temperature is 23° Fahrenheit and the average July high temperature is 85° Fahrenheit. The frost-free season lasts at least 160 days per year, making it the mildest climate in the state.

Prior to Euro-American settlement, vegetation in the region consisted of tallgrass prairie and bur oak savanna and barrens. Today most of the region is heavily farmed with areas of urban development near the center and along the northern boundary of both Study Areas.

Minnesota Archaeological Regions

The Project falls within the Western portion of the Southeast Riverine Archaeological Region of Minnesota. The following discussion of the archaeological region is summarized from *A Predictive Model of Precontact Archaeological Site Location for the State of Minnesota* (Gibbon et al. 2005).

Southeast Riverine Archaeological Region

The Southeast Riverine Archaeological Region covers the southeast portion of Minnesota and extends into adjacent corners of Wisconsin and Iowa. This region was not glaciated during the Wisconsin Glacial Period and the area is characterized by stream-dissected, level to gently rolling loess covered Pre-Wisconsinan till plains, with a notable absence of natural lakes. The major river systems in the region extend west from the Mississippi River and include the Cannon, Cedar, Root, and Zumbro rivers.

The Southeast Riverine Archaeological Region contains extensive rock outcroppings of high quality flaking materials. Chert concentrations are found along the Mississippi River Valley and just below the surface is less-dissected areas in the western part of the region.

During the Late Holocene, elm, ash, and cottonwood forests lined the river lowlands with maple, elm, and basswood occupying the uplands near the Mississippi River. Oak barrens, patches of oak groves, were scattered across the western portion of the region in the prairie.

Subsistence resources during the Late Holocene would have included deer, elk, and bison in the uplands and mussels, fish, and waterfowl in the rich bottom lands. Edible plants would have included water lilies and other aquatic flora as well as plants like prairie turnips in the uplands. The Southeast Riverine Archaeological Region would have provided a favorable climate and extensive bottomlands for Woodland horticulture.

Cultural Contexts

The following summaries of cultural contexts relevant to the proposed Project are based on information found in a series of statewide historic contexts developed by the Minnesota State Historic Preservation Office (SHPO) (Dobbs 1990a; 1990b; and SHPO 1993); *2010 Archaeological Reconnaissance Survey of Olmsted County, Minnesota* (Arzigian and Kolb 2011); *Investigating the Earliest Human Occupation of Minnesota: A Multidisciplinary Approach to Modeling Landform Suitability & Site Distribution Probability for the State's Early Paleoindian Resources* (Buhta et al. 2011); Mn/Model Final Report Phases 1-3, 2002: A Predictive Model of Precontact Archaeological Site Location for the State of Minnesota (Hudak et al. 2002); and *Archaeology of Minnesota: The Prehistory of the Upper Mississippi River Region* (Gibbon 2012).

Paleoindian Tradition (12,000 – 8,000 B.P.)

The earliest human inhabitants of what is now Minnesota entered the area approximately 12,000 years ago as the glacial front of the Late-Wisconsin Glacial Period receded. These peoples, comprising the Paleoindian Tradition, were migratory groups of mobile hunter-gatherers who followed herds of large game animals such as bison, woodland caribou, and mastodon into the tundra, open pine, and oak forests that characterized Minnesota at the end of the Pleistocene.

Archaeological evidence from this period is limited in Minnesota. Paleoindian Tradition sites in the state consist mostly of isolated discoveries of large, distinct projectile points that are characteristic of the tradition. These points are divided into the Early Paleoindian—Fluted Point Pattern (Clovis, Gainey, and Folsom points), and the Late Paleoindian—non-fluted Lanceolate Point Pattern (Plano and Cody complex points). Other lithic tool types associated with the patterns of the Paleoindian Tradition in Minnesota include bifacially flaked knives, simple choppers, adzes, and large scrapers.

Archaic Tradition (8,000 – 2,500 B.P.)

As Minnesota became warmer and drier, expanses of prairie began to displace the forests that established following the glacial retreat. The retreating glaciers exposed new land surfaces with expansive lakes and large, swift rivers, fed by glacial runoff, unlike any in present-day Minnesota. As the Pleistocene megafauna died out, the human inhabitants of the state had to adapt to the ever-changing landscape. This led to the development of new tool types and subsistence practices.

The Archaic Tradition is distinguished from the Paleoindian Tradition by an increased diversity in tool types, a broader range of raw material utilization, and an increase in the exploitation of a variety of local

animal and plant communities. This diversity is attributed to the adaptation of Archaic Tradition peoples to local resources and a relative abundance of animal and plant resources. The archaeological record of the Archaic Tradition shows evidence of the beginnings of cultural variation in the state. Notched and stemmed projectile points, along with groundstone tools and chipped-stone scrapers, knives, punches, and drills, are found in the Archaic Tradition toolkit. Copper implements appear in archaeological assemblages from approximately 7,000 years ago and continued until approximately 3,500 years ago.

Four distinct Archaic Tradition contexts have been identified in Minnesota: the Shield Archaic, Lake-Forest Archaic, Prairie Archaic, and Eastern Archaic. Site locations from this period tend to be located near water. These sites appear to have been occupied for longer periods of time and tend to produce larger amounts of artifacts than small encampments, which have be found scattered throughout the environment. Small encampments often represent specific resource extraction or use of a location that takes advantage of a seasonal event, such as a bison kill site, a floral resource gathering site, or a waterfowl-breeding site. Artifact deposition at these locations is generally very minimal.

Woodland Tradition (2,500 B.P. – A.D. 1650)

Beginning approximately 3,000 years ago, Minnesota's climate began to stabilize and resembled the climate that exists in the state today. Expanses of prairie were found in the western portion of the state. A swath of oak savanna, stretching from the northwest to the southeast, separated these prairies from the pine forests of the northeast.

Woodland Tradition cultures exhibit evidence of an increasingly sedentary lifestyle. The domestication of plants, adoption of ceramic technology, re-occurring occupation of long-term seasonal village sites, and construction of mounds emerge in the Woodland Tradition. These innovations were not all adopted in all areas of the state at the same time or necessarily together. Woodland Tradition sites are often identified more than Paleoindian Tradition or Archaic Tradition sites, because they are not as deeply buried. As a result, more is known about the groups of the Woodland Tradition than of the Paleoindian or Archaic traditions.

Woodland Tradition sites can often be associated with a particular group based on distinct ceramic and lithic tool types. In the United States, the Woodland Tradition has been divided into an Early, Middle, and Late chronological framework based on ceramic traditions. In Minnesota, the tradition has also been divided into an earlier Initial Woodland period (including the Early and Middle periods, ca. 2,500 B.P. - 1,500 B.P.) and a later Terminal Woodland period (including the Late Woodland period, 1,500 B.P. - A.D. 1650).

Regional differences in the Woodland Tradition resulted in the identification of distinct regional complexes. The Southeast Riverine region is associated with pottery types such as Marion Thick-like, Havanoid, and Effigy Mound.

Mississippian/Plains Village Tradition

Approximately 1,000 years ago, a new tradition developed in southern Minnesota. In the western part of the state, this tradition is known as the Plains Village Tradition, and in the eastern part of the state, it is known as the Mississippian Tradition. These traditions are distinguished from the Woodland Tradition

by an intensification of agriculture, including cultivation of corn, and larger, more complex societies. These traditions spread into southwestern Minnesota from the Missouri River and into southeastern Minnesota from the Mississippi River, with possible ties to cultures of the southern United States and Mexico.

Distinct ceramic styles, large village complexes, greater density of artifacts and community vegetable storage pits distinguish Mississippian/Plains Village Tradition sites. Effigy mounds in the shape of animals such as birds and snakes, as well as flat-topped mounds and villages encircled by protective palisades, were constructed during this period.

Oneota Tradition (A.D. 1200 – 1650)

The Oneota Tradition emerged approximately 800 years ago and existed until around the time of European contact in southern Minnesota. It is unknown whether the groups of the Oneota Tradition developed out of the Terminal Woodland Traditions of the state or if they migrated to the area from southern parts of the Midwest.

Oneota Tradition sites are widely distributed throughout the prairie and forest regions of southern Minnesota. Like the Mississippian/Plains Village Tradition, the Oneota Tradition is distinguished from the Woodland Tradition by an intensification of agriculture, the establishment of larger village sites, and an increase in social complexity. Sites from the Oneota Tradition are identifiable by their distinct globular shaped shell tempered pottery. Regional and temporal variation in Oneota Tradition pottery has lead to the dissection of two phases, the Blue Earth Phase, and the later, southwestern, Orr Phase. The most common site types found in Minnesota for the Oneota Tradition are village sites and burial mound sites.

Fur Trade/Contact (1630s – 1858)

By the 1620s, the first European goods may have reached the Upper Midwest through trade with the Ottawa and Huron. The first fur trade contact in this state occurred between 1659 and 1660, when two French explorers named Sieur des Groseilliers and Sieur de Radisson entered present-day Minnesota. Increasing numbers of explorers and fur tradesmen would reach the area in the years to follow. During the time of initial contact, the Ioway, Santee Dakota, and possibly the Oto occupied the southeastern portion of Minnesota. This period is recognized by the establishment, operation, and adaptation of gathering fur-bearing mammals in exchange for other goods and materials. This exchange linked the Northern Plains to a worldwide economic and political system.

By the late 1670s, a trade agreement had been established between the Dakota and merchants in Quebec and Montreal, Canada. This relationship initiated the French period of exploration and occupation in Minnesota, which lasted into the early 1760s. During this period of French influence, much of the state and the surrounding region was occupied with an extensive network of forts and fur trading posts.

The 1760s (after the Treaty of Paris) brought a half-century of British activity in Minnesota. This period brought further development of the fur trade industry, with more trading posts and consequently major changes in the distribution of Native American people in the region. By 1800, the Ojibwa took control of

the lakes and forests of northern Minnesota, and the Dakota moved south along the Minnesota River Valley.

After a peace treaty with the British in 1763, the United States gained legal possession of the state. The United States exerted control of Minnesota after Zebulon Pike's 1805 to 1807 expedition and with the establishment of Fort Snelling at the junction of the Minnesota and Mississippi rivers in 1819. The changes in Native American life brought about by the French and British presence in Minnesota included migrations of Native American populations from the east, depopulation of native peoples in certain areas because of introduced diseases and warfare, and gradual movement of the Ojibwa into northern Minnesota and of the Dakota into southern Minnesota. The Native American populations in Minnesota began to switch from hunting for subsistence to hunting for trade, and Native American manufacturing materials began to be replaced by European materials.

Travel and settlement of the state were mostly restricted to corridors along larger bodies of water. In 1837, the Dakota, Winnebago, and Ojibwa signed treaties that opened up east-central Minnesota to logging and settlement, and by 1849, Minnesota had become organized as a Territory. When Minnesota gained statehood in 1858, Euro-American settlement increased, bringing a wave of new towns, cities, and non-fur trade-related enterprises.

Early Minnesota Military Activity (1800 – 1890)

Beginning in the mid-19th century, Minnesota Territory representatives appealed to the United States Congress to appropriate funds to build and maintain a series of five military roads in the state. Minnesota Territory representatives argued that these roads were justified on the grounds of frontier defense and would aid in territorial settlement and commercial development. In July 1850, the representatives secured funding for road development. Over the next decade, territorial representatives and the War Department's United States Army Corps of Engineers (USACE) of Topographical Engineers would oversee the creation of five original roads that would extend from Fort Snelling to government forts or Indian agencies. Not all of the roads were completed, but the local population used the segments that were completed heavily.

Around 1862, growing tension between the Dakota and the United States government escalated into violence. Over a 6-week period, many lives were lost on both sides of the U.S. - Dakota Conflict, and the violence prompted a large-scale evacuation of settlement areas in southern Minnesota. On December 26, 1862, the United States government rescinded all treaties signed with the Dakota of Minnesota and forcibly removed them from the state. The conflict of 1862 led to major military expeditions by the United States government in 1863, 1864, and 1865 in Minnesota and the adjacent states of North Dakota and South Dakota.

Early Agriculture and River Settlement (1840 – 1870)

Some of the earliest agricultural farming practices in the state occurred in southern Minnesota. Treaties with the Ojibwa and Eastern Dakota in the early and mid-19th century allowed for European settlement in certain areas of the state west of the Mississippi River. Acts passed in the state in the mid-19th century fostered an influx of settlers from the eastern states and Europe. These initial settlers came by

steamboat and followed the major rivers and tributaries into the interior of the state. Town sites focused on rivers as a source of transportation and power and often developed according to resource need, company and industry need, or via social and ethnic boundaries. Many towns developed into agricultural processing and distribution centers. Industries such as milling and brewing became widespread throughout southern Minnesota. The initial farming practice of the time was subsistence, but farmers in the state were at the cusp of large-scale farming, and began to grow wheat as a cash crop.

Railroads and Agricultural Development (1870 – 1940)

After 1870, railroads were the single most important factor in the rapid growth of agriculture in southern Minnesota because their expansion onto the Great Plains increased the market for cash crops. New railroads in Minnesota opened tillable land to farmers, reduced dependence on risky water transportation, and allowed for the transportation of goods and services away from major river transportation corridors. Railroads had become the primary mover of crops by the late 19th century.

After 1870, an agricultural land boom began in Minnesota as railroads, chambers of commerce, land colonization companies, real estate companies, the State Bureau of Immigration, and other private and public agencies encouraged settlement of the large expanses of land in southern Minnesota. Good soil, a favorable climate, and the low cost of cultivating land made farming profitable. This solidified agriculture as the dominant industry in southern Minnesota. Two of the most important industrial centers for this time became the milling district in St. Anthony Falls and the meat packing operation in South St. Paul. Railroads were paramount in supplying unrefined resources from southern Minnesota to these locations.

Olmsted County History

The following history of Olmsted County is compiled from 2010 Archaeological Reconnaissance Survey of Olmsted County, Minnesota (Arzigian and Kolb 2011); Handbook of North American Indians (DeMallie 2001); History of Olmsted County (County of Olmsted 2014); History of Olmsted County (Hill 1883); Investigating the Earliest Human Occupation of Minnesota: A Multidisciplinary Approach to Modeling Landform Suitability & Site Distribution Probability for the State's Early Paleoindian Resources (Buhta et al. 2011); Mn/Model Final Report Phases 1-3, 2002: A Predictive Model of Precontact Archaeological Site Location for the State of Minnesota (Hudak et al. 2002); Minnesota Place Names: A Geographical Encyclopedia (Upham 2001); Soil Survey of Olmsted County, Minnesota (Elwell et al. 1928); and Soil Survey of Olmsted County, Minnesota (Poch 1980).

Olmsted County is located in the Driftless Area of southeastern Minnesota. The large sheets of glacial ice that dominated the rest of the region during the Wisconsin Glacial Period and preceding Illinoian Glacial Stage never covered this portion of the state. As a result, the topography of the county is characterized by loess-covered, level to gently rolling pre-Wisconsin till plains. The Zumbro and Root rivers, tributaries of the Mississippi River, dissect the county and no lakes are present. Prior to agricultural development, the county was a mix of oak savanna and barrens, tall grass prairie, and big woods vegetation.

Early Paleoindian, Clovis sites identified in the county (21OL0039 and 21OL0044) indicate that the area was inhabited by approximately 12,000 B.P. Evidence of the Archaic and Early Woodland Traditions in the county is sparse, but sites identified along the Zumbro and Root rivers and their tributaries associated with these traditions demonstrate habitation of the county.

People of the Oneota Complex inhabited southeastern Minnesota during the Late Woodland and Protohistoric Periods. The people of the Oneota are believed to have lived in large, permanent to semi-permanent village settlements. While, no village sites have been identified in Olmsted County, Oneota village sites identified in La Crosse, Wisconsin, show evidence of prairie resource exploitation into southeastern Minnesota.

Decedents of the Oneota as well as the Eastern Dakota occupied southeastern Minnesota at the time the first French explorers entered the state in the 17th century. By 1750, the Eastern Dakota were well established in the region with villages along the Mississippi River and its tributaries. Olmsted County was part of the Eastern Dakota lands until the treaty of 1851, when all lands occupied by the Eastern Dakota were ceded to the United States government.

The first European to settle in the area was Hiram Thompson in 1853. Thompson settled along the south fork of the Whitewater River near the Village of Dover, approximately 20 miles west of the City of Rochester. The county was established under the Minnesota territorial government in 1855, with Rochester as the County Seat. It was not officially organized into townships however, until 1858. The county is named for David Olmsted, who served on the first Minnesota Territorial Council and was elected the first Mayor of St. Paul in 1854.

The county did not experience much population growth until the Chicago and North Western Railway constructed the first railroad in the county in 1865. The construction of the railroad signified a changed in agricultural practices in the county. Farmers in the area shifted from subsistence farming to the commercial production of wheat and dairy. By the 1920s, 12 creameries, 3 ice cream factories, and 10 cheese factories were in operational within the county.

Following the Great Tornado of 1883, the Sister of St. Francis collaborated with Doctor William Worrall Mayo and his family to construct a hospital in the City of Rochester. This venture would result in the establishment of the Mayo Clinic, which today is one of the world's leading centers for medical care.

Literature Search

HDR archaeologist Andrew Kurth conducted background research at the Minnesota SHPO and the Minnesota Historical Society (MHS) on June 20 and June 24, 2014. Research gathered included previous cultural resource surveys, previously identified archaeological sites, and previously identified historic properties. In addition, General Land Office (GLO) maps from the 19th century, historic plat maps, and county histories were reviewed.

The Literature Search portion includes a review of the Preferred Route and the Alternate Route, as well as a 1-mile buffer on each route. This 1-mile buffer was used to create the Preferred Route Study Area and the Alternate Route Study Area. The proposed ROW for the two routes is estimated at a total of 100 feet (that is, 50 feet off the center of the pipeline). The 100-foot ROW was used to determine if previously identified resources transect the routes.

As the Preferred Route and the Alternate Route are close to one another, there is a considerable amount of overlap in the data presented. However, as resources within the routes need to be considered separately, previously identified cultural resources investigations, previously identified archaeological sites, and previously identified architectural properties are discussed by both the Preferred Route Study Area and the Alternate Route Study Area.

The GLO map review and the plat map review present a summary of resources that cover both Study Areas. A detailed description of individual resources within each Study Area can be found in Appendix B (Preferred Route Study Area - Plat Map Results) and Appendix C (Alternate Route Study Area - Plat Map Results).

Previous Cultural Resources Investigations – Preferred Route Study Area

The record search identified seven cultural resources surveys within the Preferred Route Study Area (Table 3-1 and Appendix A, Figure 2 A1-D3). These surveys included investigations for natural gas pipelines, a rail line, highway and road projects, and an energy cooperative. Four of the seven previous surveys intersect the Preferred Route.

Table 3–1. Previous Cultural Resources Investigations – Preferred Route Study Area

Report Date	Report Number	Report Title	Author(s)
1995	MULT-95-13*	A Phase I Archaeological Survey of Selected Portions of the Northern Natural Gas Company Rochester Rehab Project Corridor, Dodge, Olmsted, and Steele Counties, Minnesota	Kim C. Breakey and Clark A. Dobbs
1995	MULT-95-18	A Phase I Archaeological Survey of Selected Route Variations on Portions of the Northern Natural Gas Company Rochester Rehab Project Corridor, Dodge and Olmsted Counties, Minnesota	John D. Carter and Clark A. Dobbs
1998	OL-98-01*	Archaeological Investigations at the Proposed TH 63 South Corridor TH 52 to 48th Street SW, Olmsted County, Minnesota	Patrick R. Stewart

Report Date	Report Number	Report Title	Author(s)
2001	OL-01-02*	Supplementary Phase I Cultural Resource Investigations of the Proposed TH63 South Corridor, TH 52 to 48th Street SW, Olmsted County, Minnesota	Vicki L. Twinde and Barbara Kooiman
2007	OL-07-04*	Phase I Cultural Resource Survey for the Olmsted County Road 104/60th Avenue NW Corridor Preservation Study, Olmsted County, Minnesota	Betsy H. Bradley, Laurie S. H. Ollila, Andrew J. Schmidt, and Andrea C. Vermeer
2009	MULT-09-08	Phase I and II Archaeological Investigations of the Minnesota Rehabilitation Segment of the Power River Basin Expansion Project Volume II	Michelle M. Terrell and Andrea C. Vermeer
2012	MULT-13-16	Phase I Archaeological Resources Survey for the People's Energy Cooperative 2013-2016 Work Plan, Olmsted and Wabasha Counties, Minnesota	Peer Halvorsen

*Previous survey intersects the Preferred Route.

Previous Cultural Resources Investigations – Alternate Route Study Area

The cultural resources record search identified six cultural resources surveys within the Alternate Route Study Area (Table 3-2 and Appendix A, Figure 2 A1-D3). These surveys included investigations for natural gas pipelines, a rail line, and highway and road projects. Four of the six previous surveys intersect the Alternate Route.

Table 3–2. Previous Cultural Resources Investigations – Alternate Route Study Area

Report Date	Report Number	Report Title	Author(s)
1995	MULT-95-13*	A Phase I Archaeological Survey of Selected Portions of the Northern Natural Gas Company Rochester Rehab Project Corridor, Dodge, Olmsted, and Steele Counties, Minnesota	Kim C. Breakey and Clark A. Dobbs
1995	MULT-95-18	A Phase I Archaeological Survey of Selected Route Variations on Portions of the Northern Natural Gas Company Rochester Rehab Project Corridor, Dodge and Olmsted Counties, Minnesota	John D. Carter and Clark A. Dobbs
1998	OL-98-01*	Archaeological Investigations at the Proposed TH 63 South Corridor TH 52 to 48th Street SW, Olmsted County, Minnesota	Patrick R. Stewart
2001	OL-01-02*	Supplementary Phase I Cultural Resource Investigations of the Proposed TH63 South Corridor, TH 52 to 48th Street SW, Olmsted County, Minnesota	Vicki L. Twinde and Barbara Kooiman
2007	OL-07-04*	Phase I Cultural Resource Survey for the Olmsted County Road 104/60th Avenue NW Corridor Preservation Study, Olmsted County, Minnesota	Betsy H. Bradley, Laurie S. H. Ollila, Andrew J. Schmidt, and Andrea C. Vermeer
2009	MULT-09-08	Phase I and II Archaeological Investigations of the Minnesota Rehabilitation Segment of the Power River Basin Expansion Project Volume II	Michelle M. Terrell and Andrea C. Vermeer

*Previous survey intersects the Preferred Route.

Previously Recorded Archaeological Sites – Preferred Route Study Area

Minnesota SHPO files revealed one previously identified archaeological site (21OL0023) within the Preferred Route Study Area (Table 3-3 and Appendix A, Figure 2 A1-D3). Site 21OL0023 consists of a single Durst Stemmed projectile point associated with the Prairie Archaic Tradition. The site has not been evaluated for NRHP eligibility and it does not intersect the Preferred Route.

Table 3–3. Previously Identified Archaeological Sites – Preferred Route Study Area

Site Number	Site Type	Township	Range	Section	NRHP Recommendations/ Comments
21OL0023	Precontact Isolated Find – Prairie Archaic Tradition	106N	14W	35	Unevaluated

Previously Recorded Archaeological Sites – Alternate Route Study Area

The file search revealed one previously identified archaeological site (21OL0023) within the Alternate Route Study Area (Table 3-4 and Appendix A, Figure 2 A1-D3). Site 21OL0023 consists of a single Durst Stemmed projectile point associated with the Prairie Archaic Tradition. The site has not been evaluated for NRHP eligibility and it does not intersect the Preferred Route.

Table 3–4. Previously Identified Archaeological Sites – Alternate Route Study Area

Site Number	Site Type	Township	Range	Section	NRHP Recommendations/ Comments
21OL0023	Precontact Isolated Find – Prairie Archaic Tradition	106N	14W	35	Unevaluated

Previously Inventoried Architectural Structures – Preferred Route Study Area

Minnesota SHPO files revealed 13 previously inventoried architectural structures within the Preferred Route Study Area (Table 3-5 and Appendix A, Figure 2 A1-D3). Structures include farmsteads and individual buildings associated with farmsteads or homesteads. None of the previously inventoried architectural structures have been evaluated for NRHP eligibility. In addition, none of the previously inventoried structures intersect the Preferred Route.

Table 3–5. Previously Inventoried Architectural Structures – Preferred Route Study Area

SHPO No.	Property Name	Structure Type	Township	Range	Section	NRHP Status	Comments
OL-CAS-025	Farmstead	Barn	107N 107N	14W 15W	19 24	Unevaluated	Dates from 1870-1940
OL-CAS-026	Farmstead	Farmstead	107N	14W	30	Unevaluated	Dates from 1870-1940
OL-CAS-027	Farmstead	Farmstead	107N	14W	31	Unevaluated	Dates from 1870-1940
OL-CAS-028	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940

SHPO No.	Property Name	Structure Type	Township	Range	Section	NRHP Status	Comments
OL-KAL-014	Farmstead	Farmstead	107N	15W	24	Unevaluated	Dates from 1870-1940
OL-KAL-016	Farmstead	Farmstead	107N	15W	24	Unevaluated	Dates from 1870-1940
OL-KAL-019	Farmstead	Farmstead	107N	15W	25	Unevaluated	Dates from 1870-1940
OL-KAL-020	Farmstead	Farmstead	107N	15W	25	Unevaluated	Dates from 1870-1940
OL-KAL-021	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940
OL-KAL-022	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940
OL-ROT-013	House	Home	106N	14W	23	Unevaluated	Dates from 1950s
OL-ROT-018	Augusta Kemp Farms	Farmstead	106N	14W	22	Unevaluated	Dates from 1870-1940
OL-SLM-009	Farmstead	Farmstead	106N	15W	1	Unevaluated	Dates from 1950s

Previously Inventoried Architectural Structures – Alternate Route Study Area

Minnesota SHPO files revealed 13 previously inventoried architectural structures within the Alternate Route Study Area (Table 3-6 and Appendix A, Figure 2 A1-D3). Structures include farmsteads and individual buildings associated with farmsteads or homesteads. None of the previously inventoried architectural structures have been evaluated for NRHP eligibility. In addition, none of the previously inventoried structures intersect the Alternate Route.

Table 3–6. Previously Inventoried Architectural Structures – Alternate Route Study Area

SHPO No.	Property Name	Structure Type	Township	Range	Section	NRHP Status	Comments
OL-CAS-025	Farmstead	Barn	107N 107N	14W 15W	19 24	Unevaluated	Dates from 1870-1940
OL-CAS-026	Farmstead	Farmstead	107N	14W	30	Unevaluated	Dates from 1870-1940
OL-CAS-027	Farmstead	Farmstead	107N	14W	31	Unevaluated	Dates from 1870-1940
OL-CAS-028	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940
OL-KAL-014	Farmstead	Farmstead	107N	15W	24	Unevaluated	Dates from 1870-1940
OL-KAL-016	Farmstead	Farmstead	107N	15W	24	Unevaluated	Dates from 1870-1940
OL-KAL-019	Farmstead	Farmstead	107N	15W	25	Unevaluated	Dates from 1870-1940
OL-KAL-020	Farmstead	Farmstead	107N	15W	25	Unevaluated	Dates from 1870-1940

SHPO No.	Property Name	Structure Type	Township	Range	Section	NRHP Status	Comments
OL-KAL-021	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940
OL-KAL-022	Farmstead	Farmstead	107N	15W	36	Unevaluated	Dates from 1870-1940
OL-ROT-013	House	Home	106N	14W	23	Unevaluated	Dates from 1950s
OL-ROT-018	Augusta Kemp Farms	Farmstead	106N	14W	22	Unevaluated	Dates from 1870-1940
OL-SLM-009	Farmstead	Farmstead	106N	15W	1	Unevaluated	Dates from 1950s

Historic Map Review – General Land Office Research

Official GLO maps corresponding to the Project area were examined in July 2014. Maps were accessed online through the Bureau of Land Management (BLM) website at http://www.glorecords.blm.gov. GLO survey maps corresponding to the Preferred Route Study Area and Alternate Route Study Area were examined to identify areas with potential for containing historical era cultural resources. Historic archaeological sites may be present in locations where resources have been documented on GLO maps. These maps revealed no evidence of Euro-American settlement at the time of survey (BLM 1854). Natural features, including rivers, streams, and wetlands, are noted on these maps. A large area identified as swamp in Township 106 North, Range 14 West, Sections 27, 28, 32, 33, and 34 is no longer present on the landscape. The watercourses in the Project area do not appear to have been significantly altered since the time of the survey.

Historic Map Review – Plat Map Research

Historic plat maps corresponding to the Project area were examined in July 2014. Maps were accessed online through the University of Minnesota Library website at https://www.lib.umn.edu/borchert/digitized-plat-maps-and-atlases and the MHS website at http://greatriversnetwork.org. Maps from the years 1896 (Geo. A. Ogle & Co.) and 1914 (The Farmer) were examined. These maps portray features associated with the historic development of the Preferred Route Study Area and Alternate Route Study Area. Notable on these maps are the locations of schools, factories, homesteads, quarries, and railways.

The Chicago and Northwestern Railroad is present by 1896 in Sections 35 and 36 Township 107 North, Range 15 West and Section 29, 30, and 31 Township 107 North, Range 14 West. One building, the Olmsted Railroad Station, is identified on the 1896 maps in association with this railroad. An unnamed railroad is present in Sections 24 and 25 Township 106 North, Range 14 West and Section 30 Township 106 North, Range 13 West, on the 1914 maps on the 1914 maps.

Numerous roadways, schoolhouses, and homesteads are located throughout the Preferred Route Study Area and Alternate Route Study Area. Roads in the area tend to follow section lines. A completed description of resources including the locations and descriptions of the structures and railroads can be

found in Appendix B (Preferred Route Study Area - Plat Map Results) and Appendix C (Alternate Route Study Area - Plat Map Results).

Implications for Project Cultural Resource Activities

Precontact Site Potential

The Phase Ia revealed one previously identified archaeological site (21OL0023) within both the Preferred Route Study Area and the Alternate Route Study Area. Site 21OL0023 consists of a single Durst Stemmed projectile point associated with the Prairie Archaic Tradition. The site has not been evaluated for NRHP eligibility and it does not intersect the Preferred Route or the Alternate Route.

Although only one site has been identified within the two Study Areas, the report *2010 Archaeological Reconnaissance Survey of Olmsted County*, Minnesota provides an overview of all precontact sites identified in the County (as of 2010), additional site types that may be encountered, and probable site locations (Constance and Kolb 2011). Information and predictive modeling in the text was compiled using existing Olmsted County site files, pedestrian survey and shovel testing in specific locations throughout the county, the Minnesota Department of Transportation (MnDOT) Mn/Model, and a geomorphological study. Field survey for the Project was not completed within the two Study Areas; however, the information presented in the text provides valuable information regarding potential precontact site types that may be encountered and their probable locations.

Previously recorded precontact archaeological sites within Olmsted County range from the Paleoindian Tradition to the Woodland Tradition. Paleoindian Tradition sites within Olmsted County include a single Clovis point with additional lithic materials (21OL0039), a cache of bifaces and flakes likely associated with Clovis (21OL0044), and an isolated lanceolate point (21OL0043). These three sites are situated on terraces along three different drainages and in proximity to waterway junctions. In addition, geomorphological testing suggests that archaeological deposits may be identified on low terraces, in vertical accretion alluvium on the floodplains, and in organic sediment in wetlands (Constance and Kolb 2011).

Previously identified Archaic Tradition sites within the county are also found along drainages and waterways. Available data suggests that in addition to being proximal to water, Archaic Tradition sites appear to lie within areas that may not have experienced regular prairie fires. These sheltered areas would have supported trees, edible plants, and attracted wildlife; resources that would have provided raw materials and food sources, thereby attracting people. It is suggested that sheltered areas are situated to the east of landforms and waterways and as the wind typically blows from west to east, the landform and/or water would provide a natural firebreak, thereby protecting areas to the east (Constance and Kolb 2011).

The previously recorded Woodland Tradition sites within Olmsted County are also located adjacent to waterways. In similar fashion to the previously recorded Archaic Tradition sites, the previously identified Woodland Tradition sites are near junctions with another stream or creek. Mounds have been recorded within Olmsted County, however, none have been field verified by a qualified archaeologist (Constance and Kolb 2011).

Based on the Olmsted County text, previously identified precontact sites are relatively small and many consist of single artifacts. Artifact counts appear generally low, with no site containing more than 200 artifacts and most having less than 20. This suggests that precontact sites within Olmsted County may be associated with resource procurement and temporary encampment as opposed to long-term habitation. As the Southeast Riverine Archaeological Region contains outcrops of high quality flaking materials, it is not surprising that most raw materials identified at sites in Olmsted County are local. In counties adjacent to Olmsted, large village sites have been identified and recorded suggesting that precontact peoples may have entered the Olmsted County area to retrieve raw materials and resources, but did not necessarily stay to set up long-term habitation areas (Constance and Kolb 2011).

Based on the available data, Paleoindian, Archaic, and/or Woodland traditions sites may be encountered within the Study Areas. Sites types may include lithic scatters and artifact scatters that may be associated with raw material procurement and short-term habitation. Sites in Olmsted County appear to be concentrated along drainages, and as both the Preferred Route and the Alternate Route transect multiple drainages, streams, and rivers, there is a high probability of encountering precontact archeological sites in these areas. In addition, the alluvial settings of these stream and river crossings may be conducive to burying and preserving archaeological deposits, indicating there is potential for encountering deeply buried archaeological sites. Finally, precontact sites may be identified along uplands in areas with steep topography and deeply incised rivers.

Historic Site Potential

The Phase Ia did not reveal any previously recorded historic period archaeological sites. The GLO map review revealed many natural features, but did not reveal any cultural resources. A review of early plat maps (1896 and 1914) identified trails, roads, rail lines, and multiple structures. Structures included individual residences and farmsteads as well as commercial properties, religious facilities, and educational facilities.

Historic archaeological properties tend not to follow the same patterns of distribution as other resources since environmental, engineering, and/or socio-cultural values that restrict other properties do not apply to these properties. In general, these types of properties tend to be located along water, railroad, or road transportation routes. Their documented presence along existing railroad or transportation routes may be coincidental, as this is where most historic resource surveys have been conducted. Historic archaeology properties mainly include abandoned farmsteads, abandoned homes, abandoned businesses, and facilities related to railroads. The time periods represented by these properties may run from the Contact period through the modern industrial development period of the 1940s, 1950s, and 1960s. Although no previously identified historic archaeological sites have been identified and the number of previously identified architectural properties is relatively low, there is a moderate to high potential to encounter historic resources.

Architectural Property Potential

The Phase Ia identified 13 previously inventoried architectural structures. Structures include farmsteads and individual buildings associated with farmsteads and homesteads. None of the previously inventoried

architectural structures have been evaluated for NRHP eligibility and none intersect either the Preferred Route or Alternate Route.

Architectural properties, also known as historic standing buildings and built structures, can be found wherever conditions are suitable (as in the case of houses and homesteads on higher elevation sites and sites suitable for agriculture) or areas where structures were necessary (such as a bridge crossing a river or stream, or a road through a swamp). As such, the abundance of architectural properties can only be broadly described. In general, these types of properties tend to be located in areas that have a built environment already and/or are located adjacent to road, railroad, and water transportation routes. Architectural properties mainly include farmsteads, homes, businesses, civic works, religious works, and industry works. The time periods represented by these properties run from the early Euro-American settlement period through the modern industrial development period.

Recommendations

Resources of particular concern that may be encountered within the Study Areas include:

- Archaeological sites on river terraces, the interfluve between major drainage systems, and near springs and spring fed streams
- Archaeological sites correlated with lithic resource procurement
- Archaeological sites on uplands in areas with steep topography and deeply incised rivers
- Deeply buried archaeological deposits
- Historic sites and/or structures associated with the railroad
- Historic sites and/or structures associated with early settlement of the area
- Historic and/or structures associated with the City of Rochester

HDR recommends developing a Project Area of Potential Effects (APE) that encompasses any areas that will be impacted by Project development. Once an APE is defined, HDR recommends a Phase I archaeological survey and standing structures survey of the APE, along with evaluation of archaeological resources or standing structures receiving impacts, and possible mitigation, if applicable, of significant resources receiving impacts.

In addition, the Study Areas transect several streams and rivers including Cascade, Salem, and Willow creeks and the Zumbro River. The alluvial settings of these stream and river crossings may be conducive to burying and preserving archaeological deposits, indicating there is potential for encountering buried archaeological sites at these locations. Therefore, HDR also recommends a geomorphological assessment of the defined APE be conducted by a qualified geomorphologist to identify portions of the Project with potential for deeply buried archaeological deposits. The geomorphological assessment should be conducted prior to or concurrent with the Phase I archaeological survey.

All work should be conducted in accordance with the SHPO *Manual for Archaeological Projects in Minnesota* (Anfinson 2001) and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (National Park Service 1983).

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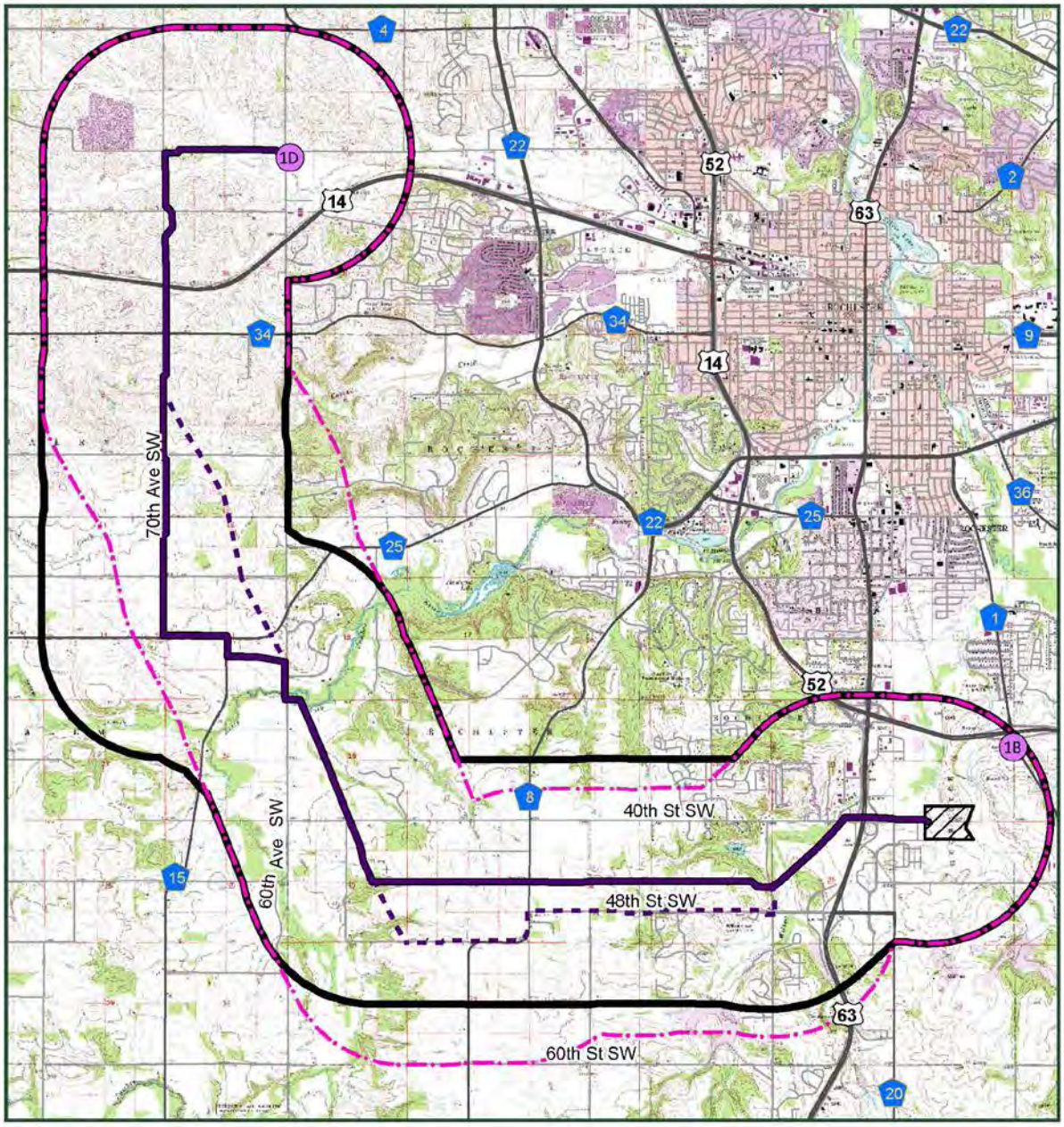
Appendix A. Figures

MINNESOTA ENERGY RESOURCES

Study Area Figure 1



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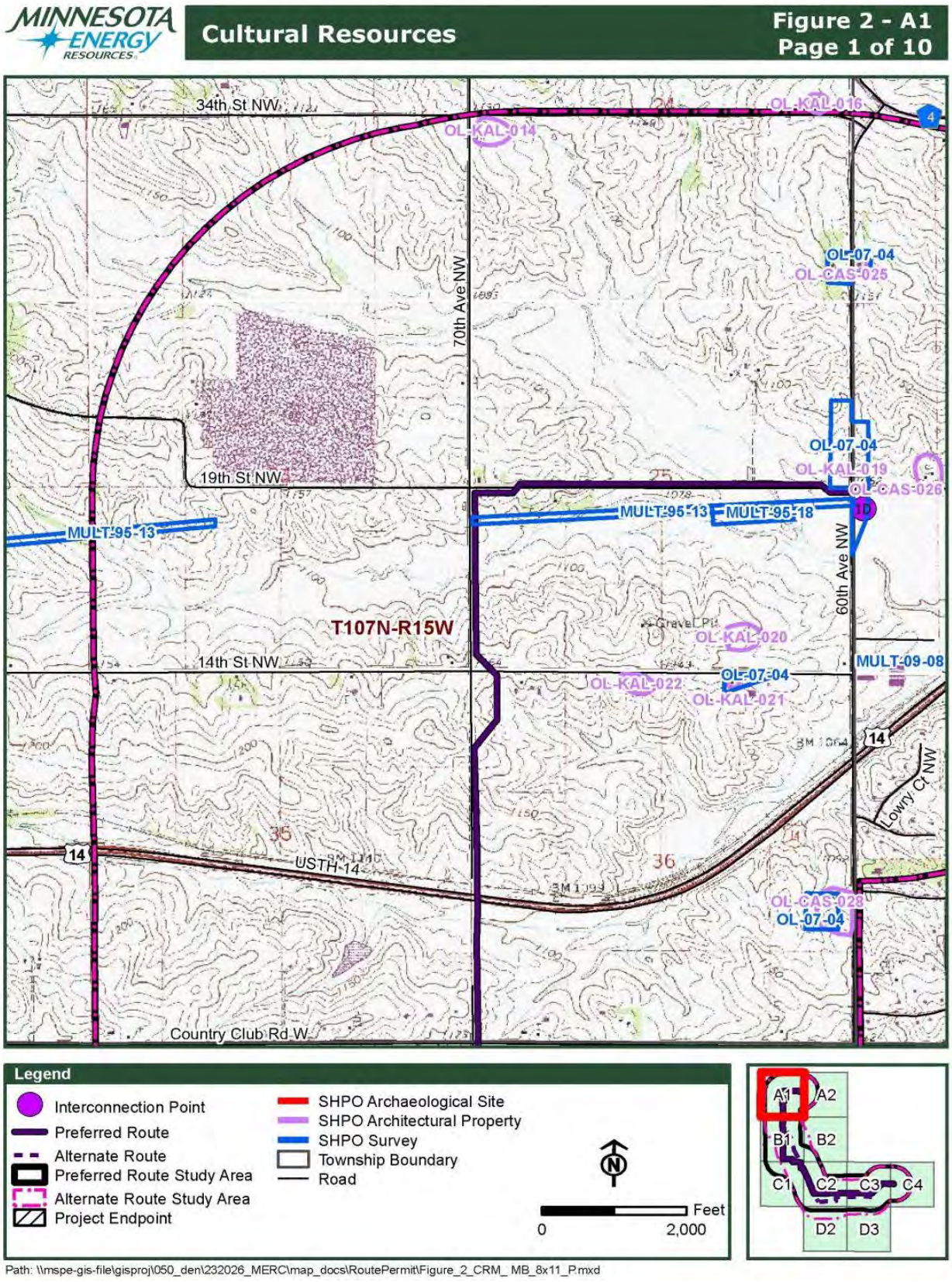
MINNESOTA ENERGY RESOURCES
Cultural Resources
Figure 2 - A1
Page 1 of 10
34th St NW
19th St NW
14th St NW
Country Club Rd W
70th Ave NW
60th Ave NW
Lowry Ct NW
USTH-14
T107N-R15W
OL-KAL-014
OL-KAL-016
OL-07-04
OL-CAS-025
OL-KAL-019
OL-CAS-026
MULT-95-13
MULT-95-18
MULT-09-08
OL-KAL-020
OL-KAL-022
OL-KAL-021
OL-CAS-028
Gravel Pit
Legend
Interconnection Point
Preferred Route
Alternate Route
Preferred Route Study Area
Alternate Route Study Area
Project Endpoint
SHPO Archaeological Site
SHPO Architectural Property
SHPO Survey
Township Boundary
Road
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Feet
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A2
B1
B2
C1
C2
C3
C4
D2
D3
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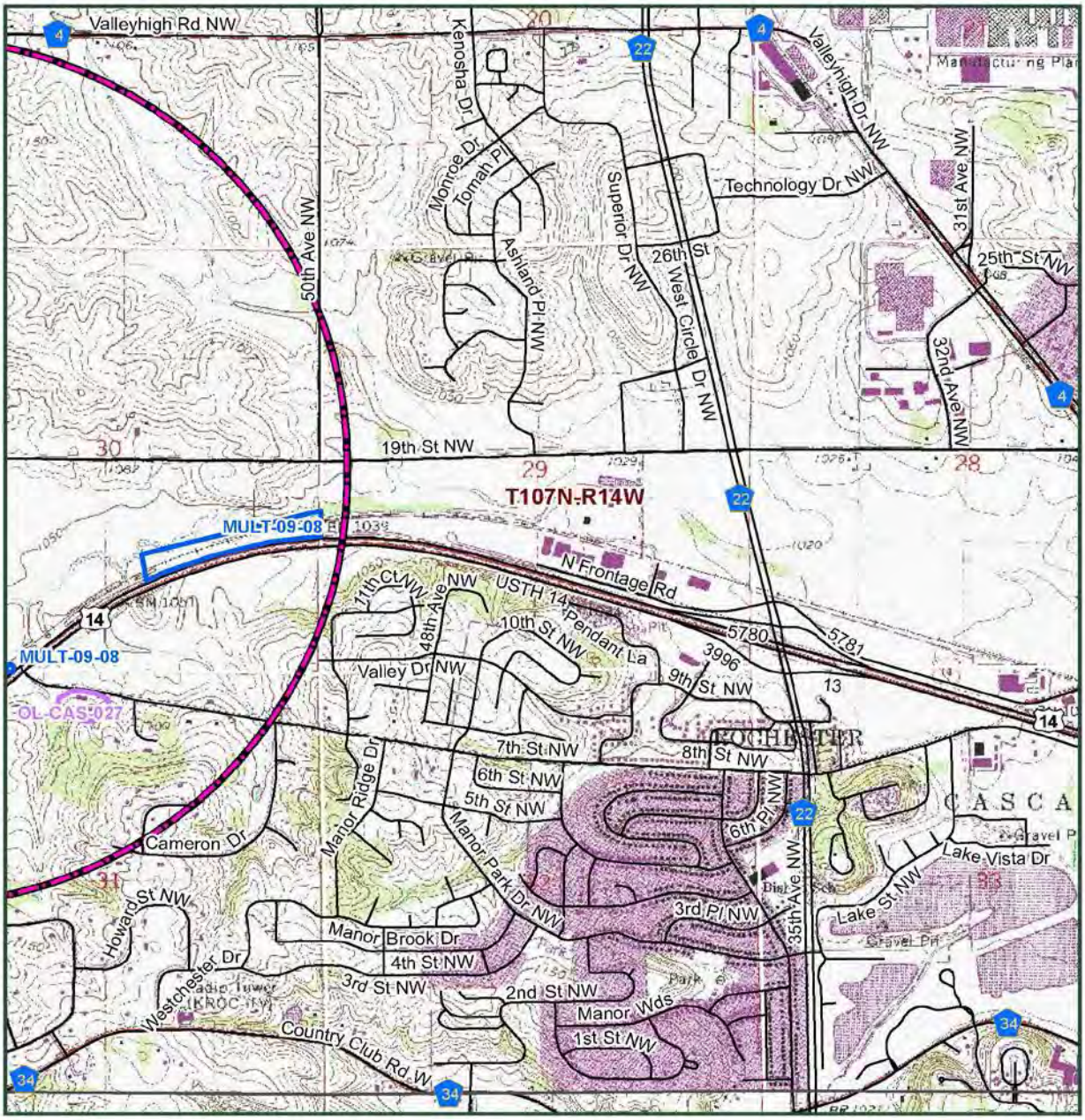
MINNESOTA ENERGY RESOURCES

Cultural Resources

Figure 2 - A2
Page 2 of 10



Legend

- Interconnection Point
- Preferred Route
- Alternate Route
- Preferred Route Study Area
- Alternate Route Study Area
- Project Endpoint
- SHPO Archaeological Site
- SHPO Architectural Property
- SHPO Survey
- Township Boundary
- Road

N

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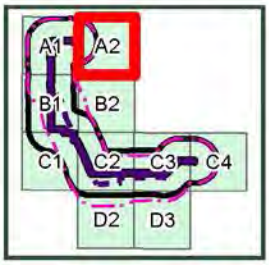

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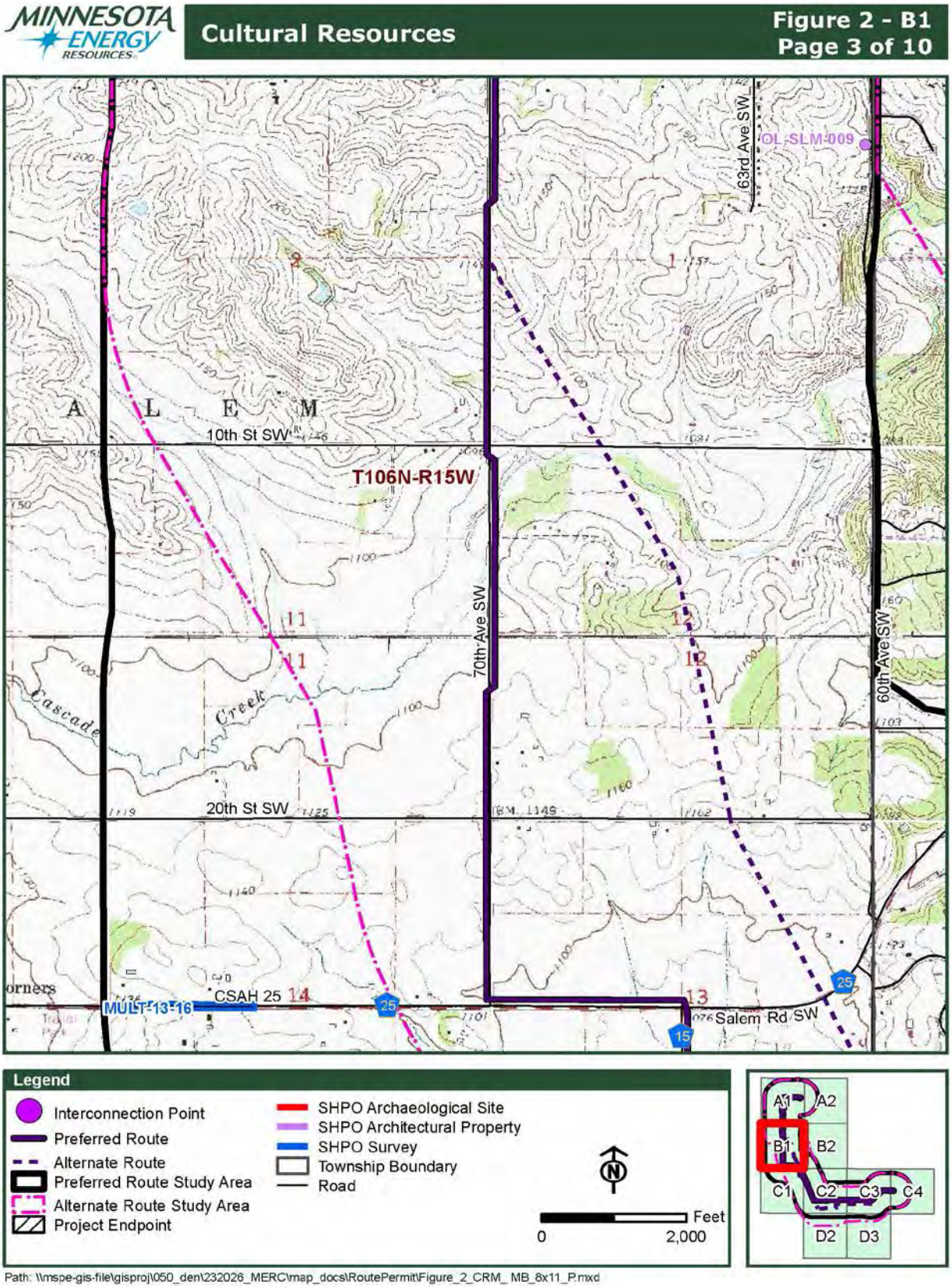
MINNESOTA ENERGY RESOURCES
Cultural Resources
Figure 2 - B1
Page 3 of 10
63rd Ave SW
OL-SLM-009
A L E M
10th St SW
T106N-R15W
70th Ave SW
60th Ave SW
Cascade Creek
20th St SW
CSAH 25
MULT-13-16
Salem Rd SW
Legend
Interconnection Point
Preferred Route
Alternate Route
Preferred Route Study Area
Alternate Route Study Area
Project Endpoint
SHPO Archaeological Site
SHPO Architectural Property
SHPO Survey
Township Boundary
Road
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A1
A2
B1
B2
C1
C2
C3
C4
D2
D3
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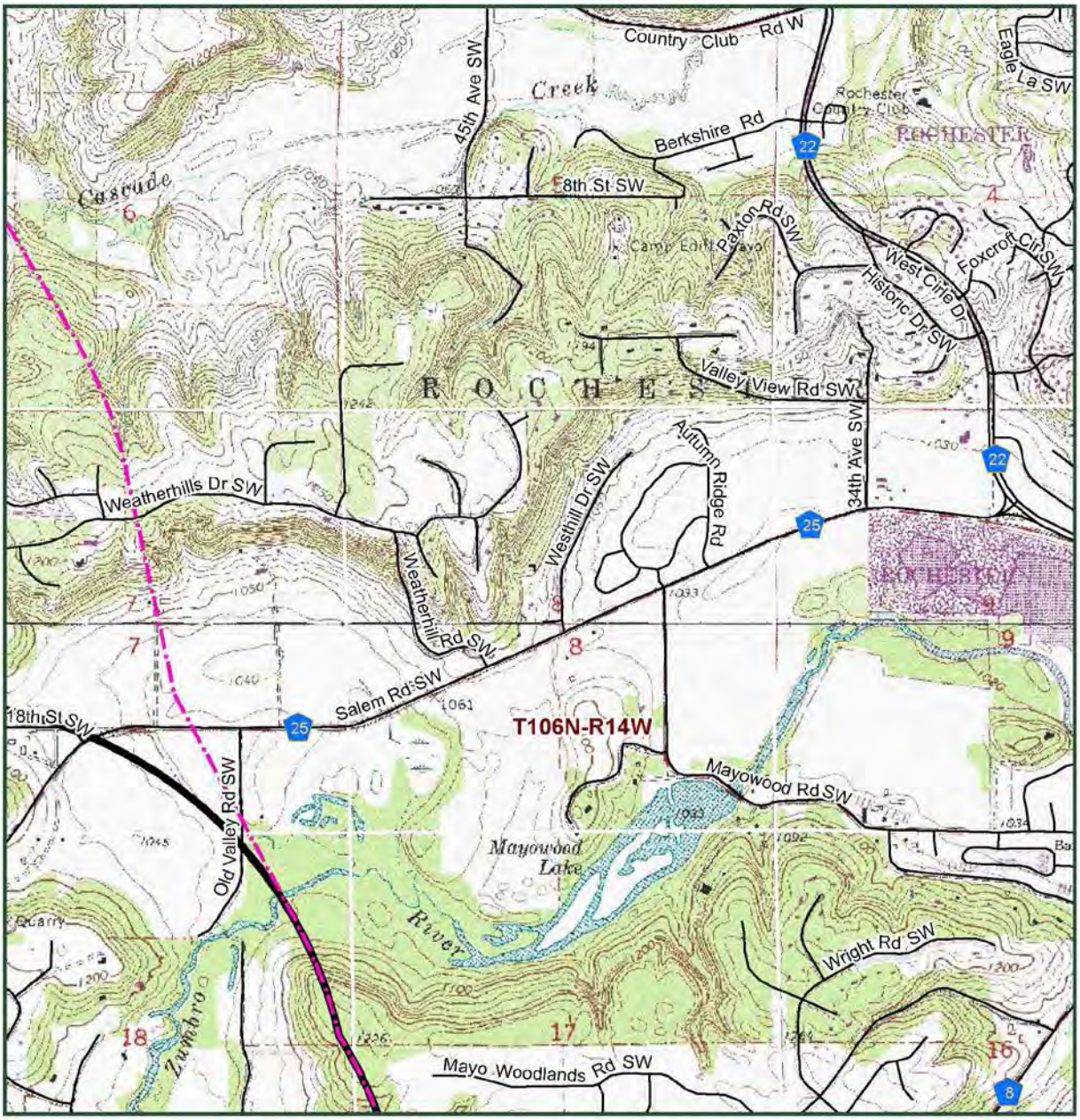
MINNESOTA ENERGY RESOURCES

Cultural Resources

Figure 2 - B2
Page 4 of 10



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MINNESOTA ENERGY RESOURCES

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Figure 2 - C1
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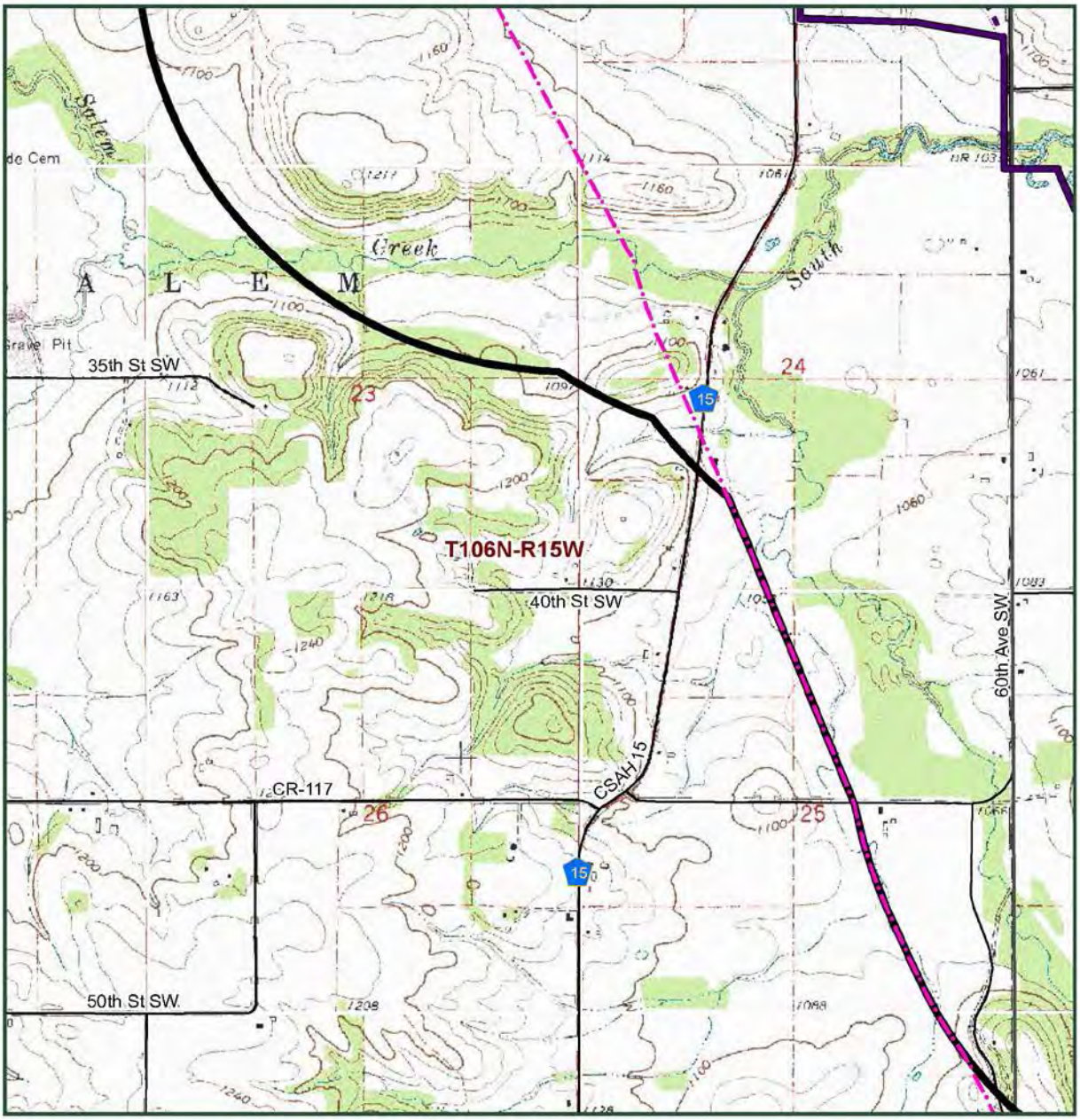

Legend

- Interconnection Point
- Preferred Route
- Alternate Route
- Preferred Route Study Area
- Alternate Route Study Area
- Project Endpoint
- SHPO Archaeological Site
- SHPO Architectural Property
- SHPO Survey
- Township Boundary
- Road

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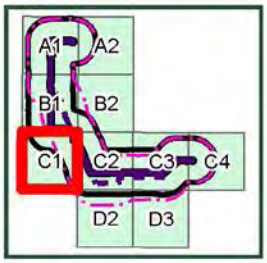

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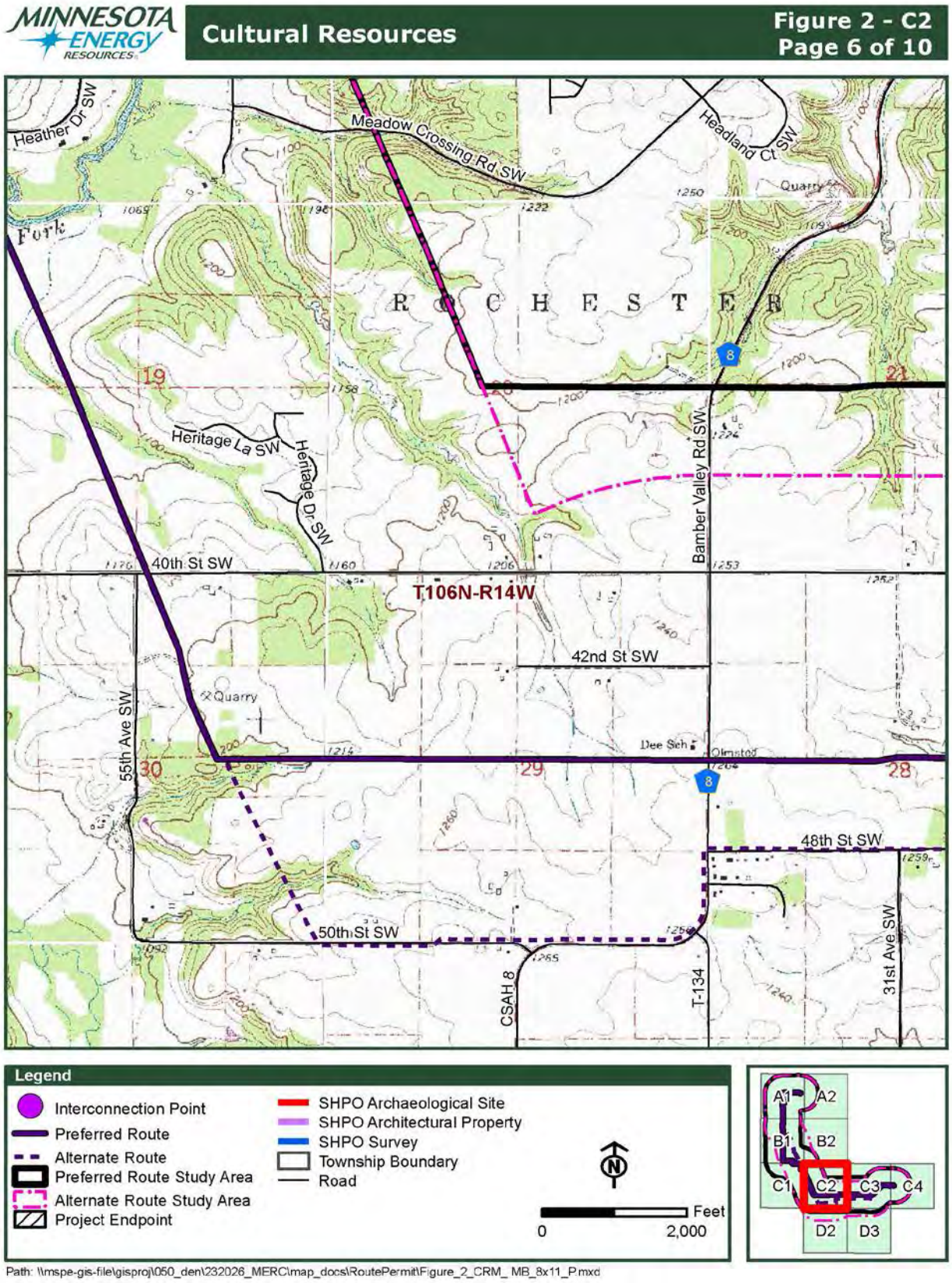
MINNESOTA ENERGY RESOURCES
Cultural Resources
Figure 2 - C2
Page 6 of 10
Heather Dr SW
Meadow Crossing Rd SW
Headland Ct SW
Quarry
Fork
ROCHESTER
19
20
21
Heritage La SW
Heritage Dr SW
Bamber Valley Rd SW
40th St SW
T106N-R14W
42nd St SW
55th Ave SW
Quarry
Dee Sch
Olmsted
30
29
28
48th St SW
50th St SW
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T-134
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Legend
Interconnection Point
Preferred Route
Alternate Route
Preferred Route Study Area
Alternate Route Study Area
Project Endpoint
SHPO Archaeological Site
SHPO Architectural Property
SHPO Survey
Township Boundary
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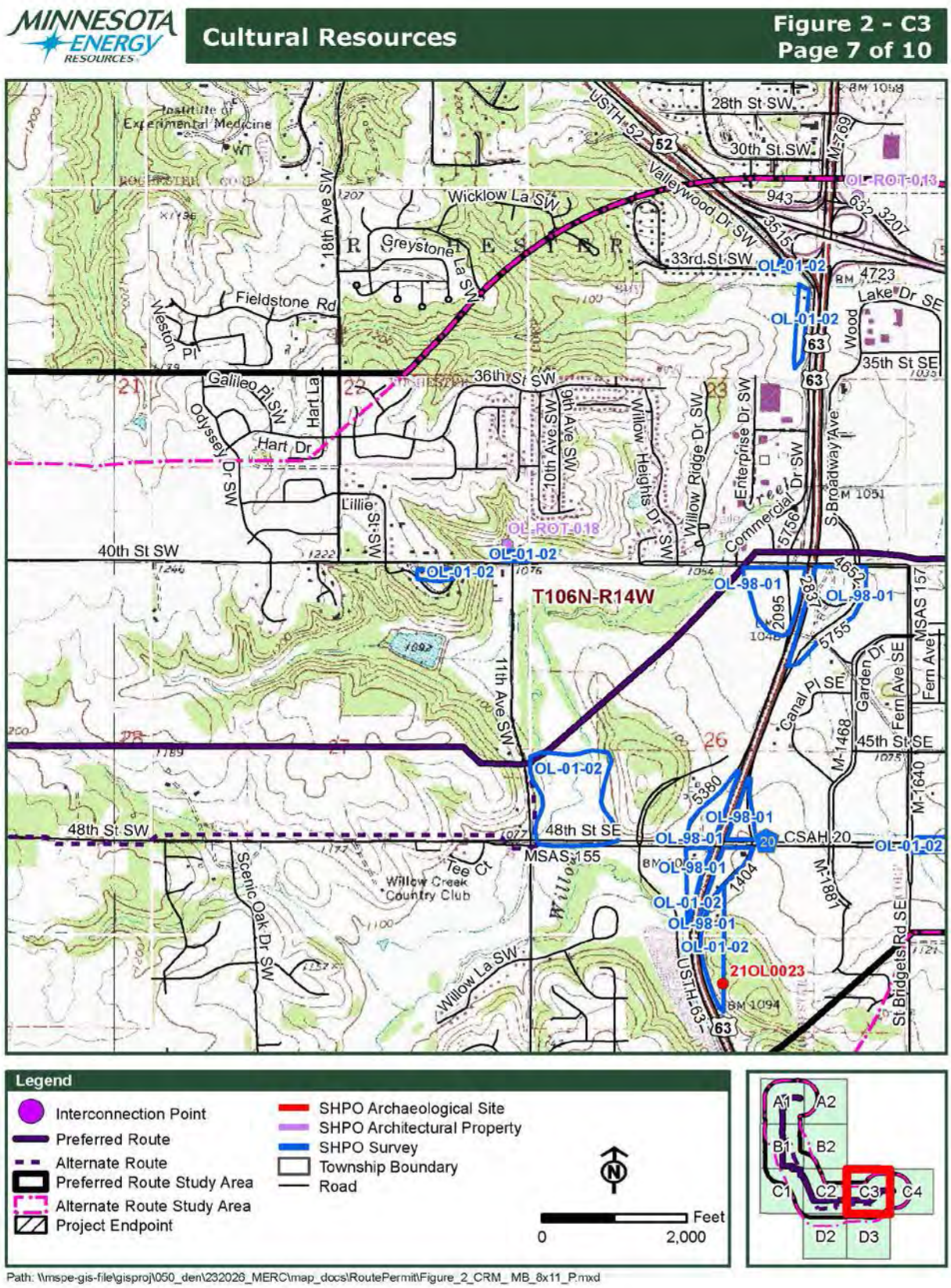
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Cultural Resources
Figure 2 - C3
Page 7 of 10
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OL-98-01
OL-ROT-013
OL-ROT-018
21OL0023
28th St SW
30th St SW
33rd St SW
36th St SW
40th St SW
48th St SW
48th St SE
45th St SE
35th St SE
Lake Dr SE
Valleywood Dr SW
Wicklow La SW
Greystone La SW
Fieldstone Rd
Weston Pl
Galileo Pl SW
Hart Dr
Odyssey Dr SW
Hart La
18th Ave SW
10th Ave SW
9th Ave SW
11th Ave SW
Willow Heights Dr SW
Willow Ridge Dr SW
Enterprise Dr SW
Commercial Dr SW
S Broadway Ave
Lillie St SW
Garden Dr
Fern Ave SE
Canal Pl SE
Scenic Oak Dr SW
Tee Ct
Willow Creek Country Club
Willow La SW
St Bridgets Rd SE
USTH-52
USTH-63
CSAH 20
MSAS 155
MSAS 157
M-769
M-1468
M-1640
M-1881
Institute of Experimental Medicine
Legend
Interconnection Point
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Preferred Route Study Area
Alternate Route Study Area
Project Endpoint
SHPO Archaeological Site
SHPO Architectural Property
SHPO Survey
Township Boundary
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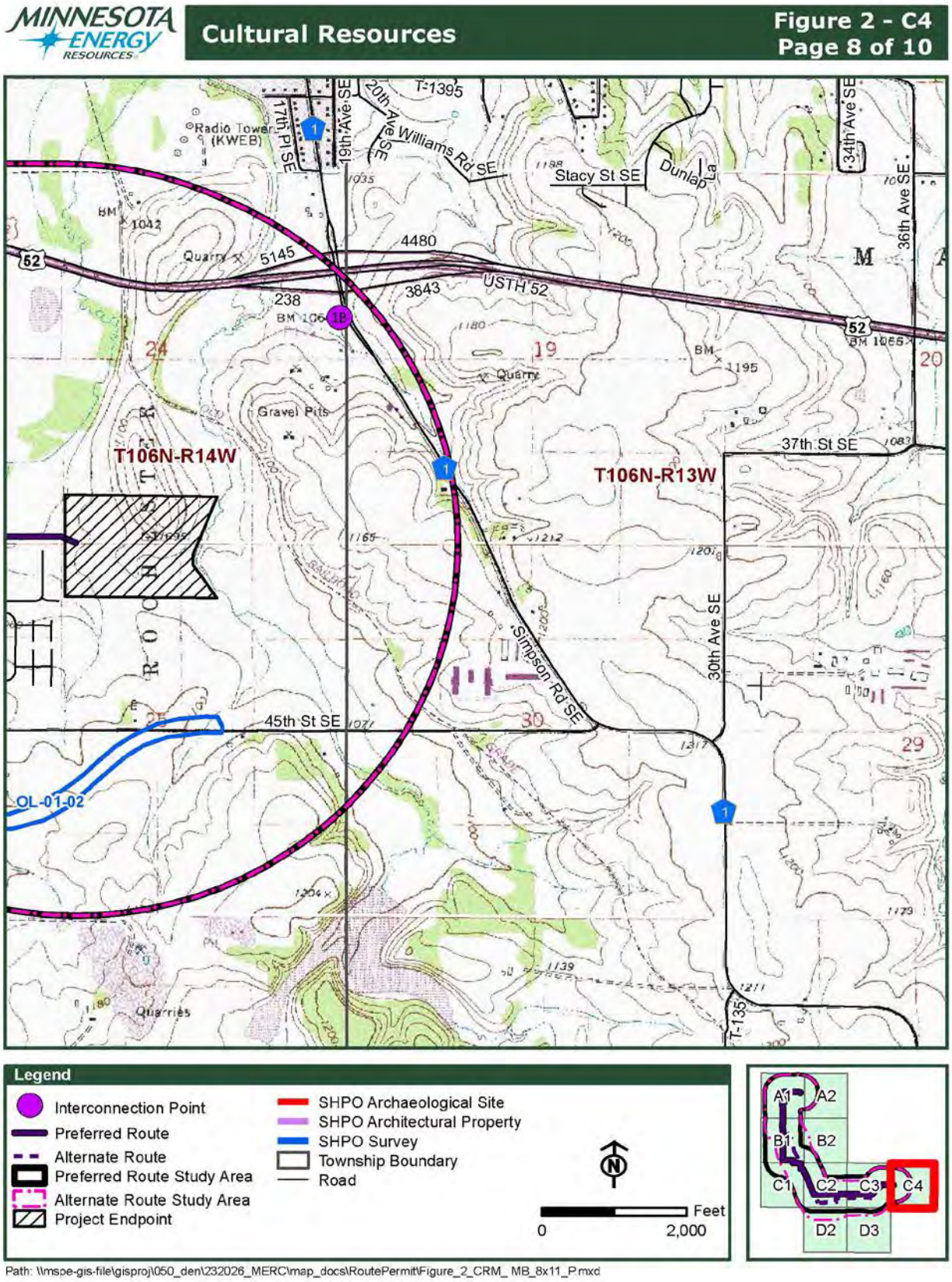

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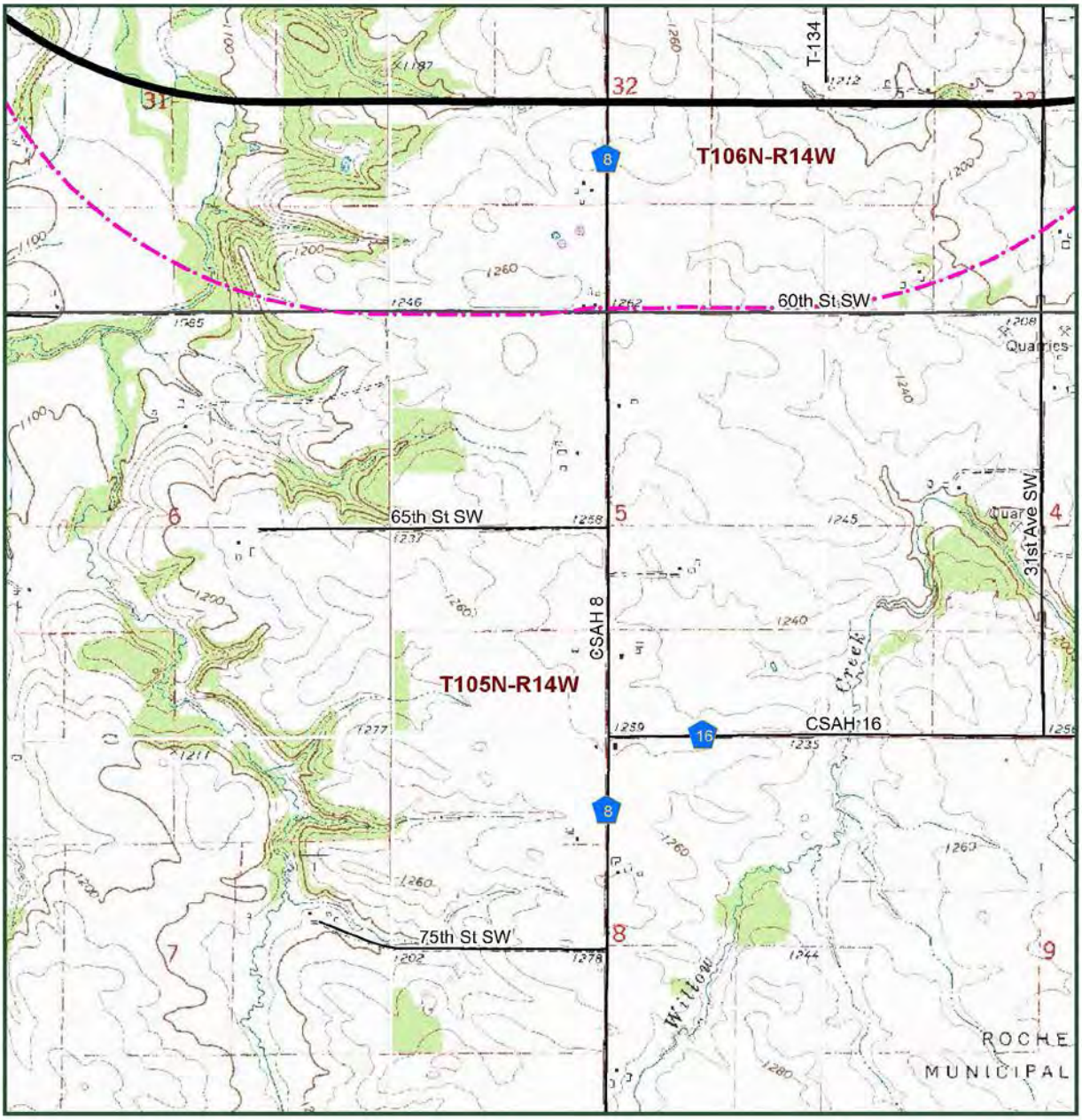
MINNESOTA ENERGY RESOURCES

Cultural Resources

Figure 2 - D2
Page 9 of 10



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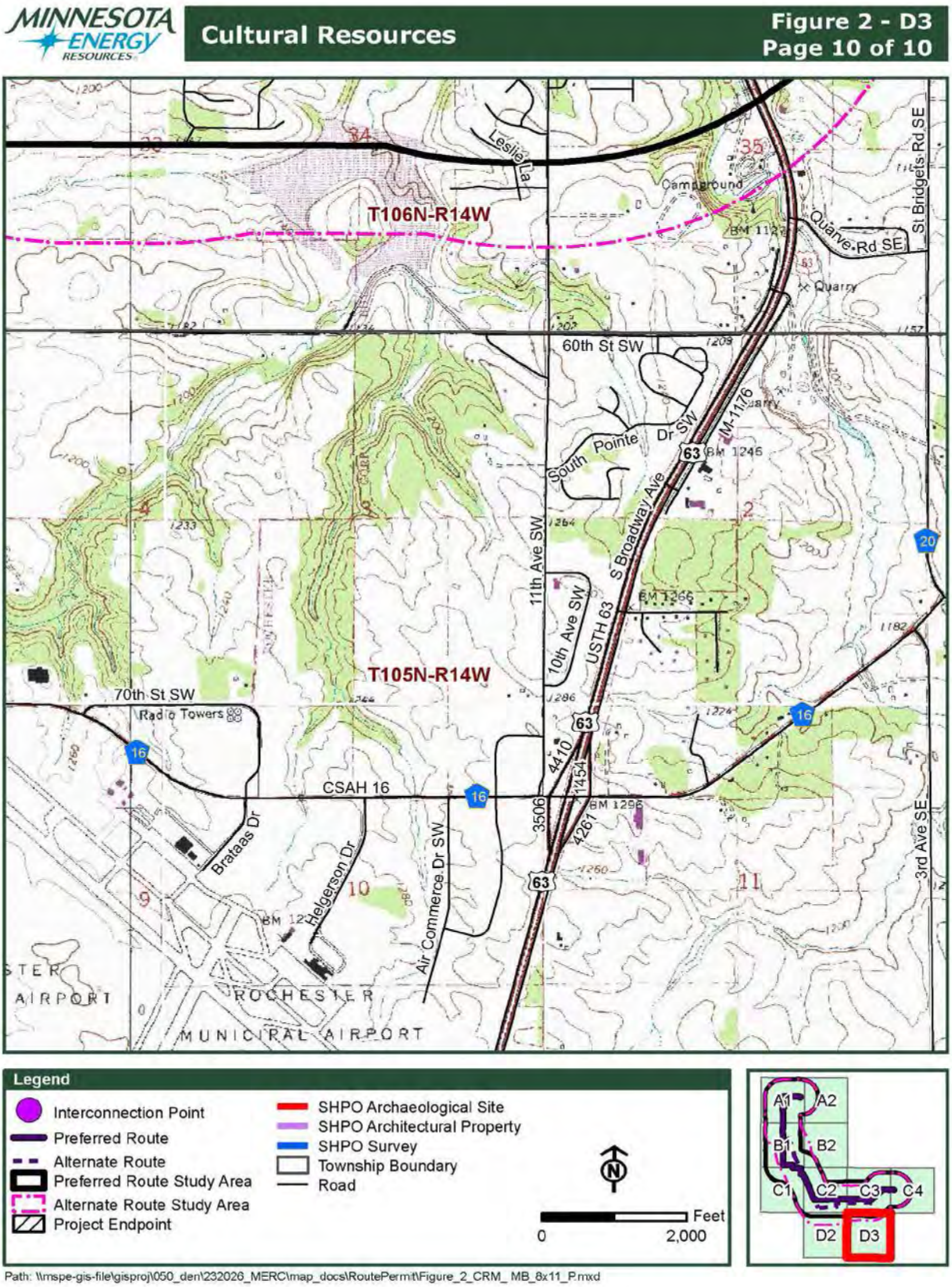
MINNESOTA ENERGY RESOURCES
Cultural Resources
Figure 2 - D3
Page 10 of 10
T106N-R14W
T105N-R14W
Leslie La
Campground
Quarry Rd SE
St Bridgets Rd SE
Quarry
60th St SW
South Pointe Dr SW
M-1176
63
BM 1246
S Broadway Ave
11th Ave SW
10th Ave SW
USTH 63
BM 1266
20
70th St SW
Radio Towers
16
CSAH 16
4410
1454
3506
4261
BM 1296
3rd Ave SE
Brataas Dr
Helgerson Dr
Air Commerce Dr SW
BM 1251
ROCHESTER
MUNICIPAL AIRPORT
Legend
Interconnection Point
Preferred Route
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Preferred Route Study Area
Alternate Route Study Area
Project Endpoint
SHPO Archaeological Site
SHPO Architectural Property
SHPO Survey
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Appendix B. Preferred Route Study Area – Plat Map Results

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
Olmsted	107N	15W	24	NW¼, NW¼, SW¼	1896 and 1914	Structure, Henry Postier Estate
Olmsted	107N	15W	24	SE¼, SE¼, SE¼	1896 and 1914	Structure, G.W. Waldron Property
Olmsted	107N	15W	25	SE¼, NW¼, NE¼	1896 and 1914	Structure, Joseph Grahm Sr. Property
Olmsted	107N	15W	25	NW¼, NW¼, SW¼	1914	Structure
Olmsted	107N	15W	25	NE¼,NW¼, SW¼	1896	Homestead, Mrs. C.A. Woodward
Olmsted	107N	15W	25	SE¼, SE¼, NE¼	1896 and 1914	Structure, John E. Finn Property
Olmsted	107N	15W	25	SE¼, SW¼, SE¼	1896 and 1914	Structure, G.A. Postier Property
Olmsted	107N	15W	25	SE¼, SE¼, SE¼	1896 and 1914	Schoolhouse No. 58
Olmsted	107N	15W	26	NW¼, SE¼, NW¼	1896	Structure, Isaac Johnson Property
Olmsted	107N	15W	26	NE¼, SE¼, NE¼	1896	Structure, Joseph Graham Sr. Property
Olmsted	107N	15W	26	SE¼, SE¼, SE¼	1896	Structure, Robert Pett Property
Olmsted	107N	15W	35	NW¼, NW¼, NW¼	1896 and 1914	Structure, Richard Dean Property
Olmsted	107N	15W	35	NE¼, NE¼, NW¼	1896 and 1914	Structure, H. Waldron Estate
Olmsted	107N	15W	35	NE¼, NW¼, NE¼	1896 and 1914	Structure, Robert Pett Property
Olmsted	107N	15W	35	SW¼, SW¼, SW¼,	1896 and 1914	Structure, Phoebe Parish
Olmsted	107N	15W	35	SE¼, SW¼, SW¼	1896 and 1914	Structure, Pal Conway Property
Olmsted	107N	15W	35	SE¼, SE¼, SE¼	1896 and 1914	Structure Robert Hall Property
Olmsted	107N	15W	36	NW¼, NW¼, NW¼	1896 and 1914	Structure, Robert Pett Property
Olmsted	107N	15W	36	NE¼, NE¼, NW¼	1896 and 1914	Homestead, Mary E. Waldron
Olmsted	107N	15W	36	NE¼, NW¼, NE¼	1896 and 1914	Structure, Jas Bender Property
Olmsted	107N	15W	36	NE¼, SE¼, NE¼	1896	Olmsted Railroad Station
Olmsted	107N	15W	36	NE¼, NE¼, SE¼	1986,1914	Structure, John McGovern Property
Olmsted	107N	15W	36	SE¼, SW, SW¼	1896 and 1914	Structure, N.C. Christiansen Property
Olmsted	107N	15W	36	SE¼, SE¼, SW¼	1896 and 1914	Structure, Daniel Fallen
Olmsted	107N	15W	35-36	See Feature/Location	1896 and 1914	*Chicago & Northwestern Railroad, Extends east—

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
				Description		west through the middle of Sections 35. The railroad continues west—northeast through Section 36
Olmsted	107N	14W	29-31	See Feature/Location Description	1896 and 1914	Chicago & Northwestern Railroad, Extends northeast—southwest through the NW¼ of Section 31 and continues through the SW¼ and SE¼ of Section 30 before running east through Section 29
Olmsted	107N	14W	30	SE¼, NE¼, NE¼	1896 and 1914	Homestead, L.W. Wright
Olmsted	107N	14W	30	SW¼, SW¼, NW¼	1896 and 1914	Cheese Factory
Olmsted	107N	14W	30	SE¼, SW¼, NW¼	1896 and 1914	Structure, A. Anderson Property
Olmsted	107N	14W	30	SW¼, SW¼, NE¼	1896 and 1914	Structure, John Wardlow Property
Olmsted	107N	14W	31	NE¼, NE¼, NW¼	1896 and 1914	Homestead, William Becker
Olmsted	107N	14W	31	SW¼, NE¼, NE¼	1896	Homestead, Mary Ewaldron
Olmsted	106N	15W	1	NE¼, NW¼, NW¼	1896 and 1914	Structure, Bernard Heaton Property
Olmsted	106N	15W	1	NE¼, NE¼, NW¼	1896 and 1914	Structure, Michael Dilworth Property
Olmsted	106N	15W	1	SE¼, SE¼, NE¼	1896 and 1914	Structure, D. Keeler Property
Olmsted	106N	15W	1	SW¼, SW¼, NE¼	1896 and 1914	Structure, Joseph Heaton Property
Olmsted	106N	15W	1	SE¼, SE¼, SW¼	1896 and 1914	Homestead, Thomas McGovern
Olmsted	106N	15W	2	NE¼, NW¼, NW¼	1896	Structure John Conway Property
Olmsted	106N	15W	2	NE¼, NE¼, NW¼	1896 and 1914	Structure, David Fallen Property
Olmsted	106N	15W	2	SW¼, NE¼, NE¼	1896 and 1914	Structure, W&A Hennessy Property
Olmsted	106N	15W	2	SW¼, SE¼, NE¼	1896 and 1914	Structure, J.P. Adamson Property
Olmsted	106N	15W	2	SE¼, SE¼, SW¼	1896 and 1914	Structure, James Mahoney Property
Olmsted	106N	15W	2	SE¼, SE¼, SE¼	1896 and 1914	*Structure, James Montague Property
Olmsted	106N	15W	11	SW¼, NW¼, NW¼	1896 and 1914	Structure, Thomas Donovan Property
Olmsted	106N	15W	11	NE¼, NW¼, NE¼	1896 and	Structure, C. Connelly

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	Property
Olmsted	106N	15W	11	NE¼, SW¼, SW¼	1896 and 1914	Structure, Anton Johnson Property
Olmsted	106N	15W	11	SW¼, SE¼, SW¼	1896 and 1914	Structure, James Bryan Property
Olmsted	106N	15W	12	NW¼, NW¼, NW¼	1896 and 1914	Schoolhouse No. 26
Olmsted	106N	15W	12	NE¼, SE¼, NW¼	1896 and 1914	Structure, James McGovern Property
Olmsted	106N	15W	12	SE¼, NE¼, NE¼	1896 and 1914	Structure, W.P. Brooks Property
Olmsted	106N	15W	12	NW¼, SE¼, NE¼	1896 and 1914	Hans P. Christianson
Olmsted	106N	15W	12	NW¼, SW¼, SW¼	1896 and 1914	Structure, Thomas Donovan Property
Olmsted	106N	15W	12	SE¼, SW¼, SE¼	1896 and 1914	Structure, John Lulzi Property
Olmsted	106N	15W	13	NE¼, SE¼, NW¼	1896, 1914	Structure, Mary Knusel Property
Olmsted	106N	15W	13	NW¼, NE¼, SE¼	1896 and 1914	Structure, Otto Zander Property
Olmsted	106N	15W	13	SW¼, SE¼, SE¼	1896 and 1914	Homestead, Fred Erike
Olmsted	106N	15W	14	NW¼, SW¼, NW¼	1914	Structure
Olmsted	106N	15W	14	SW¼, SE¼, NW¼	1914	Structure
Olmsted	106N	15W	14	SW¼, SE¼, NE¼	1896 and 1914	Structure, Anton Lulzi Property
Olmsted	106N	15W	14	NW¼, NE¼, SW¼	1896	Homestead, Jens Hensen Property
Olmsted	106N	15W	14	NW¼, NW¼, SE¼	1896 and 1914	Structure, Sarah Smith Property
Olmsted	106N	15W	14	SE¼, NW¼, SW¼	1896 and 1914	Homestead, H.C. Nelson-1896; R.M. Fuller-1914
Olmsted	106N	15W	14	NE¼, NE¼, SE¼	1896 and 1914	Structure, Mary Knusel Property
Olmsted	106N	15W	24	NW¼, SE¼, NW¼	1896 and 1914	Structure, Z. Holt Estate
Olmsted	106N	15W	24	SE¼, SW¼, NE¼	1896 and 1914	Structure, James Lyons Property
Olmsted	106N	15W	24	SE¼, NE¼, SE¼	1896 and 1914	Structure, John Donovan Property
Olmsted	106N	15W	24	SE¼, SE¼, SW¼	1914	Structure
Olmsted	106N	14W	7	NW¼, SE¼, SW¼	1896 and 1914	Structure, Michael Bannon Property
Olmsted	106N	14W	7	SE¼, SE¼, SW¼	1914	Structure
Olmsted	106N	14W	18	SE¼, SE¼, NW¼	1896 and 1914	Structure, O. McCumber Property

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
Olmsted	106N	14W	18	SW¼, SE¼, NE¼	1896 and 1914	Structure, J.W.Langton Property
Olmsted	106N	14W	18	SW¼, SW¼, SE¼	1896 and 1914	Structure
Olmsted	106N	14W	19	NW¼, SW¼, NW¼	1896 and 1914	Structure, Hannah O'Maley Property
Olmsted	106N	14W	20	NW¼, NW¼, SW¼	1896 and 1914	Structure, Michael Marren Property
Olmsted	106N	14W	20	SE¼, SE¼, SW¼	1896 and 1914	Structure, Michael Marren Property
Olmsted	106N	14W	20	SE¼, SW¼, SE¼	1914	Structure, John Coleman Property
Olmsted	106N	14W	21	NE¼, SE¼, SW¼	1896 and 1914	Structure, Bridget Dolan Property
Olmsted	106N	14W	22	SE¼, NW¼, SW¼	1896 and 1914	Structure, Thos Kelly Property
Olmsted	106N	14W	22	SW¼, SW¼, SW¼	1914	Structure
Olmsted	106N	14W	22	SE¼, SE¼, SE¼	1896 and 1914	Structure, Augusta Kemp Property
Olmsted	106N	14W	23	NE¼, SE¼, SW¼ SE¼, SE¼, SW¼	1896 and 1914	Willow Quarry
Olmsted	106N	14W	23	SW¼, NE¼, SE¼	1896 and 1914	Homestead, A. Lovejoy
Olmsted	106N	14W	24	SE¼, NW¼, SW¼	1896 and 1914	Structure, Thos Feeney Property
Olmsted	106N	14W	24	NE¼, NE¼, SE¼	1896 and 1914	Structure, Martha Finch Property
Olmsted	106N	14W	25	SE¼, SE¼, NW¼	1896 and 1914	Structure, T. Mackey Property
Olmsted	106N	14W	25	NE¼, NW¼, SE¼	1896 and 1914	*Structure, Emil Theal Property
Olmsted	106N	14W	25	SW¼, NW¼, SW¼	1896 and 1914	*Structure, Susan C. Schmid Property
Olmsted	106N	14W	25	SW¼, SW¼, SW¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	26	NW¼, NE¼, NW¼	1896 and 1914	Homestead, B.E. Pickeit
Olmsted	106N	14W	26	NE¼, NE¼, SW¼	1896 and 1914	Structure, Patrick Convey
Olmsted	106N	14W	26	NW¼, SW¼, SW¼	1896 and 1914	Structure, Thomas Ryan
Olmsted	106N	14W	27	NE¼, NE¼, SE¼	1896 and 1914	Structure, P.M. Tolbart Estate
Olmsted	106N	14W	27	NE¼, SW¼, SW¼	1896 and 1914	Homestead, Irwin W. Tolbert
Olmsted	106N	14W	27	NW¼, SW¼, SE¼	1896 and 1914	Structure, Irwin W. Tolbert Property
Olmsted	106N	14W	28	SE¼, SE¼, NW¼	1896 and	Homestead, Martin Purcell

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	
Olmsted	106N	14W	28	NE¼, NE¼, SW¼	1896 and 1914	Structure, Jon Dee Property
Olmsted	106N	14W	28	NW¼, SE¼, SW¼	1896 and 1914	Homestead, Catharine Egan
Olmsted	106N	14W	28	NW¼, SW¼, SE¼	1896 and 1914	Structure, Michael Dee Property
Olmsted	106N	14W	29	NE¼, NW¼, NW¼	1896 and 1914	Structure, P. Hannaghan Property
Olmsted	106N	14W	29	NW¼, NE¼, NE¼	1896 and 1914	Structure, Barney Clark Property
Olmsted	106N	14W	29	SE¼, SE¼, NE¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	29	SE¼, NW¼, SE¼	1896 and 1914	Structure, Thos Coleman Property
Olmsted	106N	14W	29	SE¼, SW¼, SW¼	1896 and 1914	Structure, John C. Fogarty Property
Olmsted	106N	14W	29	SE¼, SE¼, SW¼	1896 and 1914	Structure, Jas Coleman Property
Olmsted	106N	14W	30	SW¼, NW¼, NW¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	30	NE¼, NW¼, NW¼	1896, 1914	Structure, Svend Hatton Property
Olmsted	106N	14W	30	NE¼, NW¼, NE¼	1896 and 1914	Structure, Jas Lynaugh Property
Olmsted	106N	14W	30	SW¼, SW¼, NW¼	1896 and 1914	Structure, Emma Peck Property
Olmsted	106N	14W	30	NW¼, NE¼, SW¼	1896 and 1914	Structure, William Rose Property
Olmsted	106N	14W	30	NE¼, SW¼, SW¼	1896 and 1914	Structure, E. Fitzpatrick Property
Olmsted	106N	14W	30	SE¼, SW¼, SE¼	1896 and 1914	Structure, Geo H. Haven Property
Olmsted	106N	14W	31	NW¼, NW¼, NE¼	1896 and 1914	Structure, John Riley Property
Olmsted	106N	14W	31	NE¼, NE¼, NE¼	1896 and 1914	Structure, John T. Sheldon Property
Olmsted	106N	14W	32	NW¼, SE¼, NE¼	1896 and 1914	Structure, Patrick Norton Property
Olmsted	106N	14W	32	SE¼, SE¼, NE¼	1896 and 1914	Structure, Jas Tierney Property
Olmsted	106N	14W	33	SE¼, SW¼, NW¼	1896 and 1914	Structure, T. Coleman Property
Olmsted	106N	14W	34	NW¼, NE¼, NE¼	1896 and 1914	Structure, James Carr Property
Olmsted	106N	14W	34	SE¼, SE¼, NW¼	1896 and 1914	Structure, J. Mahoney Property
Olmsted	106N	14W	35	SW¼, SE¼, NW¼	1896 and	Structure, Margrat Ryan

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	Property
Olmsted	106N	14W	24-25	See Feature/Location Description	1914	An unnamed railroad, Extends northwest—southeast through the SE¼ of Section 24 and continues though the northeast corner of Section 25
Olmsted	106N	13W	30-32	See Feature/Location Description	1914	*An unnamed railroad, Extends northwest—southeast through the middle of Section 30 and continues through the northeast corner of Section 31 and the northwest corner of Section 32
Olmsted	106N	13W	19	SE¼, NW¼, SW¼	1896 and 1914	Homestead, J.A. Kennedy Property
Olmsted	106N	13W	19	SE¼, NW¼, SW¼	1896	Spring east of J.A. Kennedy Homestead

Appendix C. Alternate Route Study Area - Plat Map Results

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
Olmsted	107N	15W	24	NW¼, NW¼, SW¼	1896 and 1914	Structure, Henry Postier Estate
Olmsted	107N	15W	24	SE¼, SE¼, SE¼	1896 and 1914	Structure, G.W. Waldron Property
Olmsted	107N	15W	25	SE¼, NW¼, NE¼	1896 and 1914	Structure, Joseph Grahm Sr. Property
Olmsted	107N	15W	25	NW¼, NW¼, SW¼	1914	Structure
Olmsted	107N	15W	25	NE¼, NW¼, SW¼	1896	Homestead, Mrs. C.A. Woodward
Olmsted	107N	15W	25	SE¼, SE¼, NE¼	1896 and 1914	Structure, John E. Finn Property
Olmsted	107N	15W	25	SE¼, SW¼, SE¼	1896 and 1914	Structure, G.A. Postier Property
Olmsted	107N	15W	25	SE¼, SE¼, SE¼	1896 and 1914	Schoolhouse No. 58
Olmsted	107N	15W	26	NW¼, SE¼, NW¼	1896	Structure, Isaac Johnson Property
Olmsted	107N	15W	26	NE¼, SE¼, NE¼	1896	Structure, Joseph Graham Sr. Property
Olmsted	107N	15W	26	SE¼, SE¼, SE¼	1896	Structure, Robert Pett Property
Olmsted	107N	15W	35	NW¼, NW¼, NW¼	1896 and 1914	Structure, Richard Dean Property
Olmsted	107N	15W	35	NE¼, NE¼, NW¼	1896 and 1914	Structure, H. Waldron Estate
Olmsted	107N	15W	35	NE¼, NW¼, NE¼	1896 and 1914	Structure, Robert Pett Property
Olmsted	107N	15W	35	SW¼, SW¼, SW¼	1896 and 1914	Structure, Phoebe Parish
Olmsted	107N	15W	35	SE¼, SW¼, SW¼	1896 and 1914	Structure, Pal Conway Property
Olmsted	107N	15W	35	SE¼, SE¼, SE¼	1896 and 1914	Structure Robert Hall Property
Olmsted	107N	15W	36	NW¼, NW¼, NW¼	1896 and 1914	Structure, Robert Pett Property
Olmsted	107N	15W	36	NE¼, NE¼, NW¼	1896 and 1914	Homestead, Mary E. Waldron
Olmsted	107N	15W	36	NE¼, NW¼, NE¼	1896 and 1914	Structure, Jas Bender Property
Olmsted	107N	15W	36	NE¼, SE¼, NE¼	1896	Olmsted Railroad Station
Olmsted	107N	15W	36	NE¼, NE¼, SE¼	1986,1914	Structure, John McGovern Property
Olmsted	107N	15W	36	SE¼, SW, SW¼	1896 and 1914	Structure, N.C. Christiansen Property
Olmsted	107N	15W	36	SE¼, SE¼, SW¼	1896 and 1914	Structure, Daniel Fallen
Olmsted	107N	15W	35-36	See Feature/Location	1896 and 1914	*Chicago & Northwestern Railroad, Extends east—

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
				Description		west through the middle of Sections 35. The railroad continues west—northeast through Section 36
Olmsted	107N	14W	29-31	See Feature/Location Description	1896 and 1914	Chicago & Northwestern Railroad, Extends northeast—southwest through the NW¼ of Section 31 and continues through the SW¼ and SE¼ of Section 30 before running east through Section 29
Olmsted	107N	14W	30	SE¼, NE¼, NE¼	1896 and 1914	Homestead, L.W. Wright
Olmsted	107N	14W	30	SW¼, SW¼, NW¼	1896 and 1914	Cheese Factory
Olmsted	107N	14W	30	SE¼, SW¼, NW¼	1896 and 1914	Structure, A. Anderson Property
Olmsted	107N	14W	30	SW¼, SW¼, NE¼	1896 and 1914	Structure, John Wardlow Property
Olmsted	107N	14W	31	NE¼, NE¼, NW¼	1896 and 1914	Homestead, William Becker
Olmsted	107N	14W	31	SW¼, NE¼, NE¼	1896	Homestead, Mary Ewaldron
Olmsted	106N	15W	1	NE¼, NW¼, NW¼	1896 and 1914	Structure, Bernard Heaton Property
Olmsted	106N	15W	1	NE¼, NE¼, NW¼	1896 and 1914	Structure, Michael Dilworth Property
Olmsted	106N	15W	1	SE¼, SE¼, NE¼	1896 and 1914	Structure, D. Keeler Property
Olmsted	106N	15W	1	SW¼, SW¼, NE¼	1896 and 1914	Structure, Joseph Heaton Property
Olmsted	106N	15W	1	SE¼, SE¼, SW¼	1896 and 1914	Homestead, Thomas McGovern
Olmsted	106N	15W	2	NE¼, NW¼, NW¼	1896	Structure John Conway Property
Olmsted	106N	15W	2	NE¼, NE¼, NW¼	1896 and 1914	Structure, David Fallen Property
Olmsted	106N	15W	2	SW¼, NE¼, NE¼	1896 and 1914	Structure, W&A Hennessy Property
Olmsted	106N	15W	2	SW¼, SE¼, NE¼	1896 and 1914	Structure, J.P. Adamson Property
Olmsted	106N	15W	2	SE¼, SE¼, SW¼	1896 and 1914	Structure, James Mahoney Property
Olmsted	106N	15W	2	SE¼, SE¼, SE¼	1896 and 1914	Structure, James Montague Property
Olmsted	106N	15W	11	NE¼, NW¼, NE¼	1896 and 1914	Structure, C. Connelly Property
Olmsted	106N	15W	12	NW¼, NW¼, NW¼	1896 and	Schoolhouse No. 26

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	
Olmsted	106N	15W	12	NE¼, SE¼, NW¼	1896 and 1914	*Structure, James McGovern Property
Olmsted	106N	15W	12	SE¼, NE¼, NE¼	1896 and 1914	Structure, W.P. Brooks Property
Olmsted	106N	15W	12	NW¼, SE¼, NE¼	1896 and 1914	Hans P. Christianson
Olmsted	106N	15W	12	NW¼, SW¼, SW¼	1896 and 1914	Structure, Thomas Donovan Property
Olmsted	106N	15W	12	SE¼, SW¼, SE¼	1896 and 1914	Structure, John Lulzi Property
Olmsted	106N	15W	13	NE¼, SE¼, NW¼	1896, 1914	Structure, Mary Knusel Property
Olmsted	106N	15W	13	NW¼, NE¼, SE¼	1896 and 1914	Structure, Otto Zander Property
Olmsted	106N	15W	13	SW¼, SE¼, SE¼	1896 and 1914	Homestead, Fred Erike
Olmsted	106N	15W	14	SW¼, SE¼, NE¼	1896 and 1914	Structure, Anton Lulzi Property
Olmsted	106N	15W	14	NE¼, NE¼, SE¼	1896 and 1914	Structure, Mary Knusel Property
Olmsted	106N	15W	24	NW¼, SE¼, NW¼	1896 and 1914	Structure, Z. Holt Estate
Olmsted	106N	15W	24	SE¼, SW¼, NE¼	1896 and 1914	Structure, James Lyons Property
Olmsted	106N	15W	24	SE¼, NE¼, SE¼	1896 and 1914	Structure, John Donovan Property
Olmsted	106N	15W	24	SE¼, SE¼, SW¼	1914	Structure
Olmsted	106N	14W	7	NW¼, SE¼, SW¼	1896 and 1914	Structure, Michael Bannon Property
Olmsted	106N	14W	7	SE¼, NE¼, SW¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	7	SE¼, SE¼, SW¼	1914	Structure
Olmsted	106N	14W	18	SE¼, SE¼, NW¼	1896 and 1914	Structure, O. McCumber Property
Olmsted	106N	14W	18	SW¼, SE¼, NE¼	1896 and 1914	Structure, J.W.Langton Property
Olmsted	106N	14W	18	SW¼, SW¼, SE¼	1896 and 1914	Structure
Olmsted	106N	14W	19	NW¼, SW¼, NW¼	1896 and 1914	Structure, Hannah O'Maley Property
Olmsted	106N	14W	20	NW¼, NW¼, SW¼	1896 and 1914	Structure, Michael Marren Property
Olmsted	106N	14W	20	SE¼, SE¼, SW¼	1896 and 1914	Structure, Michael Marren Property
Olmsted	106N	14W	20	SE¼, SW¼, SE¼	1914	Structure, John Coleman Property
Olmsted	106N	14W	21	NE¼, SE¼, SW¼	1896 and	Structure, Bridget Dolan

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	Property
Olmsted	106N	14W	22	SW¼, SW¼, SW¼	1914	Structure
Olmsted	106N	14W	22	SE¼, SE¼, SE¼	1896 and 1914	Structure, Augusta Kemp Property
Olmsted	106N	14W	23	NE¼, SE¼, SW¼ SE¼, SE¼, SW¼	1896 and 1914	Willow Quarry
Olmsted	106N	14W	23	SW¼, NE¼, SE¼	1896 and 1914	Homestead, A. Lovejoy
Olmsted	106N	14W	24	SE¼, NW¼, SW¼	1896 and 1914	Structure, Thos Feeney Property
Olmsted	106N	14W	24	NE¼, NE¼, SE¼	1896 and 1914	Structure, Martha Finch Property
Olmsted	106N	14W	25	SE¼, SE¼, NW¼	1896 and 1914	Structure, T. Mackey Property
Olmsted	106N	14W	25	NE¼, NW¼, SE¼	1896 and 1914	*Structure, Emil Theal Property
Olmsted	106N	14W	25	SW¼, NW¼, SW¼	1896 and 1914	*Structure, Susan C. Schmid Property
Olmsted	106N	14W	25	SW¼, SW¼, SW¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	26	NW¼, NE¼, NW¼	1896 and 1914	Homestead, B.E. Pickeit
Olmsted	106N	14W	26	NE¼, NE¼, SW¼	1896 and 1914	Structure, Patrick Convey
Olmsted	106N	14W	26	NW¼, SW¼, SW¼	1896 and 1914	Structure, Thomas Ryan
Olmsted	106N	14W	27	NE¼, NE¼, SE¼	1896 and 1914	Structure, P.M. Tolbart Estate
Olmsted	106N	14W	27	NE¼, SW¼, SW¼	1896 and 1914	Homestead, Irwin W. Tolbert
Olmsted	106N	14W	27	NW¼, SW¼, SE¼	1896 and 1914	Structure, Irwin W. Tolbert Property
Olmsted	106N	14W	28	SE¼, SE¼, NW¼	1896 and 1914	Homestead, Martin Purcell
Olmsted	106N	14W	28	NE¼, NE¼, SW¼	1896 and 1914	Structure, Jon Dee Property
Olmsted	106N	14W	28	NW¼, SE¼, SW¼	1896 and 1914	Homestead, Catharine Egan
Olmsted	106N	14W	28	NW¼, SW¼, SE¼	1896 and 1914	Structure, Michael Dee Property
Olmsted	106N	14W	29	NE¼, NW¼, NW¼	1896 and 1914	Structure, P. Hannaghan Property
Olmsted	106N	14W	29	NW¼, NE¼, NE¼	1896 and 1914	Structure, Barney Clark Property
Olmsted	106N	14W	29	SE¼, SE¼, NE¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	29	SE¼, NW¼, SE¼	1896 and 1914	Structure, Thos Coleman Property

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
Olmsted	106N	14W	29	SE¼, SW¼, SW¼	1896 and 1914	Structure, John C. Fogarty Property
Olmsted	106N	14W	29	SE¼, SE¼, SW¼	1896 and 1914	Structure, Jas Coleman Property
Olmsted	106N	14W	30	SW¼, NW¼, NW¼	1896 and 1914	Schoolhouse
Olmsted	106N	14W	30	NE¼, NW¼, NW¼	1896, 1914	Structure, Svend Hatton Property
Olmsted	106N	14W	30	NE¼, NW¼, NE¼	1896 and 1914	Structure, Jas Lynaugh Property
Olmsted	106N	14W	30	SW¼, SW¼, NW¼	1896 and 1914	Structure, Emma Peck Property
Olmsted	106N	14W	30	NW¼, NE¼, SW¼	1896 and 1914	Structure, William Rose Property
Olmsted	106N	14W	30	NE¼, SW¼, SW¼	1896 and 1914	Structure, E. Fitzpatrick Property
Olmsted	106N	14W	30	SE¼, SW¼, SE¼	1896 and 1914	Structure, Geo H. Haven Property
Olmsted	106N	14W	31	NW¼, NW¼, NE¼	1896 and 1914	Structure, John Riley Property
Olmsted	106N	14W	31	NE¼, NE¼, NE¼	1896 and 1914	Structure, John T. Sheldon Property
Olmsted	106N	14W	32	NW¼, SE¼, NE¼	1896 and 1914	Structure, Patrick Norton Property
Olmsted	106N	14W	32	SE¼, SE¼, NE¼	1896 and 1914	Structure, Jas Tierney Property
Olmsted	106N	14W	33	SE¼, SW¼, NW¼	1896 and 1914	Structure, T. Coleman Property
Olmsted	106N	14W	34	NW¼, NE¼, NE¼	1896 and 1914	Structure, James Carr Property
Olmsted	106N	14W	34	SE¼, SE¼, NW¼	1896 and 1914	Structure, J. Mahoney Property
Olmsted	106N	14W	35	SW¼, SE¼, NW¼	1896 and 1914	Structure, Margrat Ryan Property
Olmsted	106N	14W	24-25	See Feature/Location Description	1914	An unnamed railroad, Extends northwest—southeast through the SE¼ of Section 24 and continues though the northeast corner of Section 25
Olmsted	106N	13W	30-32	See Feature/Location Description	1914	*An unnamed railroad, Extends northwest—southeast through the middle of Section 30 and continues through the northeast corner of Section 31 and the northwest corner of Section 32
Olmsted	106N	13W	19	SE¼, NW¼, SW¼	1896 and	Homestead, J.A. Kennedy

County	Township	Range	Section	QQQS	Survey Date	Feature/Location
					1914	Property
Olmsted	106N	13W	19	SE¼, NW¼, SW¼	1896	Spring east of J.A. Kennedy Homestead

Appendix E Draft Agricultural Mitigation Plan

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MINNESOTA ENERGY RESOURCES CORPORATION

ROCHESTER NATURAL GAS PIPELINE PROJECT, OLMSTED COUNTY, MINNESOTA

DRAFT AGRICULTURAL MITIGATION PLAN

Prepared For:

Minnesota Energy Resources Corporation
1995 Rahncliff Court, Suite 200
Eagan, MN 55122-3401

Prepared By:

701 Xenia Avenue South
Minneapolis, MN 55416

September 2015

Contents

APPENDICES

DRAFT

Definitions

Agricultural Land	Land that is actively managed for agricultural purposes, including: cropland, hayland, or pasture; silvicultural activities (i.e., tree farms); and land in government set-aside programs such as Conservation Reserve Program and Conservation Reserve Enhancement Program. Agricultural Land may also include land that is otherwise fallow but would likely be cultivated within 5 years of Project completion.
Agricultural Monitor	On-site third-party monitor retained and funded by MERC, but providing direct reports to the Minnesota Department of Agriculture and/or Trade, and Consumer Protection and responsible for auditing MERC's compliance with provisions of this Plan.
ATWS	Additional Temporary Workspace.
BMP	Best Management Practices.
CFR	Code of Federal Regulations
Commission	Minnesota Public Utilities Commission
Cropland	Land actively managed for growing row crops, small grains, or hay.
Easement	The agreement(s) and/or interest in privately owned Agricultural Land held by MERC by virtue of which it has the right to construct and operate the Project together with such other rights and obligations as may be set forth in such agreement.
Environmental Inspector	On-site inspector retained by MERC to verify compliance with requirements of this Plan and other environmental requirements during construction of the Project.
Final Cleanup	Pipeline construction activity that occurs after backfill but before restoration of fences and required reseeding. Final Cleanup activities include: replacing Topsoil, removal of construction debris, removal of excess rock, decompaction of soil as required, final grading, and installation of permanent erosion control structures.
Landowner	Person(s) holding legal title to Agricultural Land on the Project route from whom MERC is seeking, or has obtained, a temporary or permanent Easement. The term Landowner shall include any person(s) authorized in writing by the actual Landowner to make decisions regarding the mitigation or restoration of agricultural impacts to such Landowner's property.

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MDA	Minnesota Department of Agriculture
MERC	Minnesota Energy Resources Company
Non-Agricultural Land	Any land that is not Agricultural Land as defined above.
Person	An individual or entity, including any partnership, corporation, association, joint stock company, trust, joint venture, limited liability company, unincorporated organization, or governmental entity (or any department, agency, or political subdivision thereof).
Plan	Agricultural Mitigation Plan
Planned Tile	Locations where the proposed Tile installation is made known in writing to MERC by the Landowner either: 1) within 60 days after the signing of an Easement; or 2) before the issuance of a Route Permit to MERC; whichever is sooner.
Right-of-way	The land included in permanent and temporary Easements that MERC possess for the purpose of constructing and operating the Project.
Route Permit	Route permit issued by the Commission.
Spoil Storage Side	Non-working side of the construction Right-of-way where ditch spoil and temporary Topsoil are stored (as needed).
Tenant	Any person, other than the Landowner, lawfully residing on or in possession or control of the land that makes up the right-of-way as defined in this Plan.
Tile	Subsurface drainage systems and their aboveground appurtenances.
Topsoil	The uppermost horizon (layer) of the soil, typically with the darkest color and highest content of organic matter and nutrients.
Trench Crown	The placement of subsoil and Topsoil in the trench to a finished elevation somewhat above the surrounding ground surface to account for post-construction settling of soil returned to the trench.
TWS	Temporary Workspace
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation

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Purpose and Applicability

This Agricultural Mitigation Plan (Plan) was developed by Minnesota Energy Resources Company (MERC) and is based on a recent agricultural mitigation plan template provided by the Minnesota Department of Agriculture (MDA). MERC has applied for a Pipeline Route Permit (PRP) from the Minnesota Public Utilities Commission (Commission) for the Project, and has included this Plan as supplemental information supporting the application. Through the Commission public notice and review processes associated with the applications, other agencies (including the MDA), local authorities, Landowners, Tenants, and other stakeholders are able to review and provide comments on the Plan. This Plan will be incorporated by reference into the Route Permit issued by the Commission for the Project. Once finalized, this Plan may also be incorporated by reference into other federal, state, and local permits issued for the Project.

The objective of the Plan is to identify measures that MERC will implement to avoid, mitigate, or provide compensation for negative agricultural impacts that may result from pipeline construction. The construction standards described in this document apply only to construction activities occurring partially or wholly on privately owned Agricultural Land.

General Provisions

All mitigation measures are subject to change by Landowners, provided such changes are negotiated in advance of construction and acceptable to MERC. If any provision of this Plan is held to be unenforceable, no other provision will be affected by that holding, and the remainder of the Plan will be interpreted as if it did not contain the unenforceable provision.

MERC will consider any federal, state, and local permit, including a Route Permit, issued for the Project to be the controlling authority. To the extent a mitigation measure contemplated by this Plan is determined to be unenforceable in the future due to requirements of other permits issued for the Project, MERC will inform the MDA and the regulatory authority that issued the permit that made a mitigation measure unenforceable of the conflict and will develop reasonable alternative measures. MERC will implement the mitigation measures and Best Management Practices (BMPs) described in this Plan to the extent they do not conflict with the requirements of federal and state rules and regulations, and permits and approvals obtained by MERC. Certain provisions of this Plan require MERC to consult and/or reach agreement with the Landowner of a property. MERC will engage in a good faith effort to secure the agreement. Tenants will not be consulted except where a Landowner has designated in writing that a Tenant has decision making authority on their behalf.

MERC will retain qualified contractors to implement mitigation measures; however, MERC may negotiate with Landowners to implement the mitigation measures that Landowners wish to perform themselves.

MERC will employ an Environmental Inspector whose role is to verify compliance with the requirements of this Plan and other environmental requirements during construction of the pipeline. The Environmental Inspector will be employed by and report to MERC, and will be a part of MERC's environmental inspection team.

The Environmental Inspector will:

- Be a full-time member of MERC's environmental inspection team

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- Provide construction personnel with training on provisions of this Plan before construction begins;
- Provide construction personnel with field training on specific topics, such as protocols for Topsoil stripping;
- Observe construction activities on Agricultural Land on a continual basis;
- Be responsible for verifying MERC's compliance with provisions of this Plan and other environmental requirements during construction;
- Work collaboratively with MERC inspectors, right-of-way agents, and the Agricultural Monitor in achieving compliance with this Plan;
- Document instances of noncompliance and work with construction personnel to identify and implement appropriate corrective actions as needed; and
- Have the authority to stop construction activities that are determined to be out of compliance with the provisions of this Plan.

In addition to the Environmental Inspector, an Agricultural Monitor will also inspect construction work on Agricultural Lands. The Agricultural Monitor will be retained and funded by MERC, but will function as an independent third-party inspector providing direct reports to the MDA, and will be responsible for auditing MERC's compliance with the provisions of this Plan. MERC will provide resumes of candidates who meet the qualifications of an Agricultural Monitor for review and final selection by the MDA.

The Agricultural Monitor will not be a member of MERC's environmental inspection team. The Agricultural Monitor will not have the authority to direct construction activities or manage MERC employees or contractors. The Agricultural Monitor will work through MERC's Environmental Inspector and MDA if compliance issues are identified. The Agricultural Monitor will have full access to Agricultural Land crossed by the Project and will have the option to attend meetings where construction on Agricultural Land is discussed. Specific duties of the Agricultural Monitor will include:

- Participate in preconstruction training activities sponsored by MERC;
- Monitor construction and restoration activities on Agricultural Land for compliance with provisions of this Plan;
- Report instances of noncompliance to MERC's Environmental Inspector;
- Prepare regular compliance reports and submit them to the MDA;
- Act as a liaison between Landowners and the MDA when necessary and requested by the Landowner;
- Serve as a resource to investigate complaints at the direction of the MDA and to explain any proposed changes to this Plan during construction; and
- Maintain a written log of communications from Landowners regarding compliance with this Plan as well as report Landowner complaints to MERC's Environmental Inspector or right-of-way representative.

Both the Environmental Inspector and Agricultural Monitor will have a bachelor's degree in agronomy, soil science, natural resources, or equivalent work experience. In addition, the

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Environmental Inspector and Agricultural Monitor will have demonstrated practical experience with pipeline construction and restoration on Agricultural Land.

MERC will provide each Landowner with a telephone number and address that can be used to contact MERC, during and following construction, regarding the agricultural mitigation work that is performed on their property or other construction-related matters. If the contact information changes following construction, MERC will provide the Landowner with updated contact information. MERC will respond to Landowner telephone calls and correspondence within a reasonable time.

Mitigation measures identified by MERC pursuant to this Plan, unless otherwise specified in this Plan or in an Easement or other agreement with an individual Landowner, will be initiated within forty-five (45) days following completion of Final Cleanup on an affected property, weather permitting or unless otherwise delayed at the request of the Landowner. If implementation of mitigation measures requires additional time, MERC will make temporary repairs, as needed, to minimize the risk of additional property damage or interference with the Landowner's access to or use of the property.

Mitigation Measures

1. Right-of-Way Width

   Prior to construction, MERC will establish the right-of-way width for construction and temporary workspace (TWS) on Agricultural Lands based on prior project experience, engineering and construction requirements or best practices, and safety needs. The construction limits will be shown on alignment sheet drawings provided to the construction contractor, Environmental Inspector, Agricultural Monitor, and regulatory authorities.

   A. The typical construction workspace will be governed by the Route Permit and other Project permits, but will typically consist of a 100-foot-temporary construction right-of-way which would include 50 feet of permanent right-of-way and 50 feet of temporary workspace. The TWS will be used during construction for soil storage and operation of equipment and vehicles along the entire length of the pipeline. At certain areas where the pipeline crosses natural geographic or larger man-made features such as roads, railroads, streams, or wetland crossings, where horizontal directional drilling may be necessary, a defined area of additional temporary workspace (ATWS) will be required on each side of the feature.

   B. The construction boundaries of ATWS will be staked prior to the work at each location.

   C. If the area of the ATWS is not sufficient to perform the work and implement BMPs, MERC will refrain from construction in that area until an adequate work area is available and approved. MERC will discuss the need for ATWS with the construction contractor, construction inspection team, Environmental Inspector, Agricultural Monitor, and the Landowner, and will not use any additional workspace until approved by the Landowner, Agricultural Monitor, and regulatory authorities, as applicable.

2. Pipeline Depth of Cover

   A. Except for aboveground facilities, such as valves, and except as otherwise stated in this Plan, the pipeline will be buried with the following depths of cover on Agricultural Land:

1) The pipeline will be constructed at a depth of at least 4.5 (54 inches) feet below the surface in accordance with the Olmsted County Zoning ordinance. This also meets the minimum depth of cover of 30 inches as required by U.S. Department of Transportation (DOT) regulations in 49 CFR Part 195.248. Section 216G.07 of the Minnesota Statutes further requires a minimum depth of cover of 54 inches unless waived by the Landowner. However, MERC will ask Landowners to waive the 54-inch-deep minimum cover requirement, as allowed by Minn. Stat. § 216G.07.

2) Where existing or planned Tile systems are present, the pipeline will be installed at a depth that will achieve at least a 12-inch-wide separation between the pipeline and overlying Tiles as described in Section 2.C. of this Plan.

B. MERC will construct the pipeline under existing non-abandoned Tile and Planned Tile within six (6) feet of the surface, unless the Landowner determines otherwise in writing. MERC may install the pipeline over Tile buried deeper than six (6) feet. If the Landowner plans to install a new Tile system, the Landowner must provide to MERC plans drawn by a qualified professional with experience in Tile design and installation. In determining the proper depth of the pipeline, MERC will accommodate the depth and grade needed for both existing and Planned Tile to function properly. MERC will not change the grade of existing Tile to accommodate the pipeline without the Landowner's advance written consent.

C. A minimum of twelve (12) inches of separation will be maintained between the pipeline and Tile unless the Landowner agrees in writing to a lesser separation. If unforeseen physical conditions are discovered during construction that prevents minimum separation, the Landowner will be informed of the situation prior to the installation of the pipeline over the Tile. If a good faith effort is made and the Landowner is unavailable, the Agricultural Monitor will be informed and construction will continue.

3. Winter Construction

MERC intends on avoiding construction in Agricultural Lands in the winter season. However, to protect the productivity of Agricultural Lands in the event that winter construction is unavoidable as a result of weather, permit acquisition, or any other unforeseen delays, the following mitigation measures are proposed:

A. *Minimize Topsoil Stripping in frozen conditions.* Frozen conditions can preclude effective Topsoil stripping. When soil is frozen to a depth greater than the depth of the Topsoil, Topsoil cannot be efficiently stripped from the subsoil. If Topsoil stripping must proceed under these conditions, it will only be removed from the area of the trench. A ripper will be used to break up the frozen Topsoil over the trenchline and a backhoe will remove the Topsoil layer and store the material in a separate pile. The ripper will extend to the depth of Topsoil to twelve (12) inches.

B. *Minimize Final Clean-up activities in frozen conditions*. Frozen conditions can preclude effective Topsoil replacement, removal of construction debris, removal of excess rock, decompaction of soil as required, final grading, and installation of permanent erosion control structures. If seasonal or other weather conditions preclude Final Clean-up activities, the trench and temporary workspace areas will be backfilled, stabilized, and temporary erosion control measures will be installed until

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restoration can be completed. If Topsoil/spoil piles remain throughout the winter, the Topsoil/spoil piles will be stabilized by an application of mulch and a tackifier or other methods approved by the regulatory authority. To prevent subsidence, backfill operations will resume when the ground is thawed and the subsoil will be compacted (as needed) prior to Final Clean-up activities. The construction contractor must monitor these areas until final restoration is complete.

C. Topsoil Stripping and Final Clean-up activities proposed in Agricultural Lands in frozen conditions in Minnesota will be discussed with the MDA, respectively prior to commencement of these activities.

4. Temporary Erosion and Sediment Control

   Temporary erosion and sediment controls will be implemented as required.

5. Topsoil Stripping, Trenching, Soil Storage, and Replacement

   A. Full and partial Topsoil stripping methods are similar except for the area where the Topsoil is removed. With full Topsoil stripping, the Topsoil is removed from the entire working side (traffic lane, trench spoil storage, and trench area) of the right-of-way. Under partial Topsoil stripping, the Topsoil will not be removed from under the Topsoil storage piles. Topsoil will also be removed and segregated in other areas, such as bore pits at road and railroad crossings, where the footprint may be larger and/or irregularly shaped. Topsoil is typically stored on the outer most edge of the working side of the construction right-of-way, however, MERC may also store Topsoil on the spoil storage side of the construction workspace where there are workspace constraints.

      MERC will use the following Topsoil segregation methods during construction of the Project on Agricultural lands. The method selected will be dependent on specific Landowner approvals or agreements, field conditions, regulatory authority or permit requirements and/or other factors.

      1) Modified Ditch-Plus-Spoil-Side Method – This method involves stripping Topsoil horizon from the spoil storage area, the pipeline trench, and the primary portion of the travel lane.

      2) Full Right-of-Way Method – This method involves stripping Topsoil from the entire width of the construction right-of-way. This method typically results in less soil mixing between Topsoil and subsoil caused by equipment rutting over areas where Topsoil was not stripped. A larger volume of Topsoil will be generated using this method and, consequently, may warrant the need for Topsoil to also be stored on both sides of the construction right-of-way.

      3) Trenchline-Only Method – This method involves removing Topsoil from over the proposed trench only, and may be used where MERC determines that the width of the construction right-of-way is insufficient for storing Topsoil and maintaining a sufficient width to perform construction activities and allow equipment to pass.

   B. The maximum depth of Topsoil stripping will be twelve (12) inches unless otherwise agreed to with MDA. The Environmental Inspector will observe Topsoil operations so that appropriate depths are removed.

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C. Equipment operators will be trained to discriminate between Topsoil and subsoil based on obvious color changes. In locations where the Topsoil/subsoil color changes are not easily distinguishable or variable, the Agricultural Inspector will determine the depth.

D. Before removing Topsoil during wet soil conditions, the Environmental Inspector will assess whether the moisture content in the surface horizon is suitable for grading. If the soil is considered too wet to segregate, stripping may be postponed. Based on the Environmental Inspector's recommendation, MERC may allow Topsoil removal in areas where soils are persistently wet.

E. MERC may also remove Topsoil from ATWS as dictated by site-specific conditions and Landowner agreements. Topsoil will be removed in all cut and fill areas prior to grading.

F. In specific areas of deep Topsoil and as determined in consultation between the Environmental Inspector and/or the Agricultural Monitor, the modified ditch-plus-spoil method will be used. However, the area requiring Topsoil stripping may be adjusted from the modified ditch-plus-spoil method where the Agricultural Inspector determines that such modification is necessary for safety or would be more protective of the soil resource. The adjusted method may include trenchline-only Topsoil segregation, such as in instances where Topsoil is removed under frozen conditions (i.e., winter construction). In all cases where modifications are proposed, approval from MERC, the MDA, or other regulatory authority may be required.

G. If the Agricultural Monitor and the Environmental Inspector cannot agree on the proposed adjustment in the Topsoil segregation method, the Agricultural Monitor will document the objection and provide documentation to the MDA and MERC.

H. Trench spoil will be placed in a stockpile that is separate from Topsoil. MERC will maintain a minimum one (1)-foot-wide separation or place a barrier between Topsoil and subsoil piles to avoid mixing. In areas where the Topsoil has not been stripped from the subsoil storage area, subsoil can be stored on a thick layer of mulch or another physical barrier that identifies and protects the unstripped Topsoil.

I. Backfilling will follow lowering the pipe into the trench. During trench backfilling, subsoil material will be replaced first, followed by Topsoil. To prevent subsidence, subsoil will be backfilled and compacted. Compaction by operating construction equipment along the trench is acceptable.

J. Rock excavated from the trench may be included with backfill provided the rock content of the pre-construction soils is not significantly increased. In the event excess rock cannot be returned to the trench without substantially increasing pre-existing rock content, rocks will be considered construction debris and removed (see Section 8 of this Plan).

K. Replacing Topsoil will be initiated within fourteen (14) days after backfilling the trench. If seasonal or other weather conditions prevent compliance with this timeframe, temporary erosion control measures must be implemented and maintained until conditions allow completion of cleanup. Topsoil will be replaced across the stripped area as near as practicable to its original depth. A Trench Crown over the trenchline is permissible to offset potential settling. Following placement of the subsoil crown, Topsoil would be uniformly returned across the stripped area. The

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height of the crown will generally be equal to, or less than, twelve (12) inches at the center. Breaks in the crown may be cut to accommodate overland water flow across the right-of-way.

6. Repair of Damaged and Adversely Affected Tile

   If Tile is damaged during installation of the pipeline, the Tile will be repaired in a manner that restores operating condition. If Tile lines immediately adjacent to the construction area are adversely affected by the pipeline installation, MERC will restore the Tile, including the relocation, reconfiguration, or replacement of the Tile. The affected Landowner may settle with MERC for payment to repair, relocate, reconfigure, or replace the damaged Tile. In the event the Landowner chooses to perform the repair, relocation, reconfiguration, or replacement of the damaged Tile, MERC will not be responsible for correcting Tile repairs after completion of the pipeline and the Landowner's repairs. MERC is only responsible for correcting Tile repairs if the repairs were made by MERC or its agents or designees.

   Prior to pipeline installation, MERC will contact Landowners to determine if Tile systems will be affected. Tile systems that will be damaged, cut, or removed during construction will be marked by placing a highly visible flag at the edge of the construction right-of-way directly over the Tile lines. These markers will not be removed until the Tile has been permanently repaired and approved and accepted by the Landowner, or the Agricultural Monitor.

   The pipeline trench shall provide a minimum of twelve (12) inches of clearance, where practicable, between the pipe and drainage Tiles. In most situations, the pipe will be installed under the drainage Tile; however, where drain Tiles are deeper than six (6) feet MERC may elect to install the pipe above the Tile lines.

   MERC will ensure that the construction contractor repairs damaged Tile in a manner consistent with industry-accepted methods. At the Landowner's request and with MERC's approval, local contractors may perform the repair, replacement, or reconfiguration of the Tiles damaged or cut during pipeline construction.

   Where damaged Tile is repaired by MERC, the following procedures will apply:

   A. Before completing permanent repairs, Tiles will be examined on both sides of the trench for their entire length within the work area to check for damage by construction equipment. If Tiles are found to be damaged, they will be repaired to preconstruction conditions.

   B. Tiles will be repaired with material of the same or better quality as that which was damaged.

   C. Filter-covered drain Tiles will be replaced with filter-covered drain Tiles.

   D. If the Tile is clay, ceramic, or concrete, any connection made with new material must be made with commercially available connectors, wrapped in plastic, or sealed with Sakrete to prevent soil intrusion.

   E. If water is flowing through a damaged Tile, temporary repairs will be promptly completed and maintained until permanent repairs can be made.

   F. Where Tiles are damaged or severed by the pipeline trench, repairs will be made according to the following procedures:

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1) Where Tiles are severed by the pipeline trench, double-walled drain Tile pipe, or its equivalent material, will be used for Tile repairs.

2) Within the trench, one and one-half (1.5) inch river gravel, four (4) inch crushed stone, sandbags, bags of Sakrete (or an equivalent), or poured concrete will be backfilled under Tiles, as needed, to provide support and prevent settling. Concrete blocks are also acceptable forms of support as are protective pads on the pipeline.

3) The support member will be of sufficient strength to support loads expected from normal farming practices (i.e., loads up to a ten (10) ton point load) on the surface directly above the repaired Tile.

4) The support member will extend a minimum of two (2) feet into the soil on both sides of the trench and will be installed in a manner that will prevent it from overturning. If the repairs involve clay Tile, the support member will extend to the first Tile joint beyond the minimum two (2) -foot-wide distance.

5) There will be a minimum clearance as required by Section 2.C. of this Plan.

6) The grade of the Tile will not be changed.

G. MERC will initiate efforts to complete permanent Tile repairs within a reasonable timeframe after Final Cleanup, weather and soil conditions permitting.

H. Following completion of the final cleanup, MERC will be responsible for correcting repairs to Tile that fail, but only if MERC or its agents or designees made the initial repairs. MERC will not be responsible for Tile repairs that MERC has paid the Landowner to perform.

I. Any necessary modifications to the configuration of existing Tile systems must be consistent with the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, and Minnesota Wetland Conservation Act restrictions, and other regulatory authorities on wetland drainage.

7. Agricultural Drainage Ditches

Where the pipeline route crosses agricultural drainage ditches that are operated by the Landowner, pipeline will be installed at a depth that is sufficient to allow for ongoing maintenance of the ditch. After the pipeline is installed, the ditch will be restored to its preconstruction contours with erosion controls as needed. Ditches that are operated and maintained by a public entity will be crossed in accordance with applicable permits.

8. Rock Removal

The following conditions will apply on Agricultural Land:

A. If trenching, blasting, or boring operations are required in bedrock, suitable precautions will be taken to minimize the potential for rocks to become mixed with the backfill.

B. After the construction right-of-way has been decompacted as required in Section 10 of this Plan and the Topsoil replaced, MERC will remove rocks from the surface of the entire construction area so that the size, density, and distribution of rock on the right-of-way is similar to that on adjacent off-right-of-way areas. MERC will consult with the Landowner to identify suitable rock disposal locations on the construction right-of-

way, or the rocks will be removed for disposal at another approved disposal location. Written authorization from the Landowner is required for disposal on the Landowner's property. Rock disposal will comply with any federal, state, or local regulations involving fill and disposal of construction debris.

9. Removal of Construction Debris

   Construction-related debris, material, and litter will be removed from the Landowner's property at MERC's expense. The Landowner or land-managing agency may approve leaving specific materials onsite that may provide for beneficial uses for stabilization or habitat restoration.

10. Compaction, Rutting, and Soil Restoration

    A. In an effort to minimize soil compaction prior to trenching activities, MERC will, where practical, transport pipe joints (i.e., stringing trucks) as closely as possible along the pipeline centerline.

    B. After construction, compaction of the subsoil will be alleviated on cropland using deep-tillage equipment, as needed. Decompaction of the topsoil, if necessary, will be performed during favorable soil conditions. If the Environmental Inspector and/or Agricultural Monitor determine that the soil is too wet, decompaction will be delayed until the subsoil is friable/tillable in the top eighteen (18) inches.

    C. Deep subsoil ripping in cropland will occur in all traffic and work areas of the pipeline right-of-way where there was full right-of-way Topsoil stripping, unless the Environmental Inspector determines compaction has not occurred. This includes ATWS.

    D. Subsoil ripping equipment may include v-rippers, chisel plows, or equivalents.

    E. If the Landowner makes a written claim for damages related to soil compaction greater than that of immediately adjacent Agricultural Land owned by the Landowner but unaffected by pipeline construction, MERC will retain a Professional Licensed Soil Scientist, or an appropriately qualified professional engineer. The Professional Soil Scientist or engineer will perform a survey of the construction right-of-way, ATWS, and adjacent unaffected land owned by the Landowner for soil compaction using field equipment such as a soil penetrometer. In addition, where there are row crops, samples will be taken in the middle of the row, but not in rows where the drive wheels of farm equipment normally travel. Copies of the results of the survey will be provided to the Landowners making such claim within thirty (30) days of completion of the soil survey. These surveys for soil compaction will be completed at MERC's expense.

    F. MERC will restore rutted land as near as practical to its preconstruction condition.

    G. MERC will compensate Landowners, as appropriate, for damages caused by MERC during Project construction. Damages will be paid for the cost of soil restoration on the construction right-of-way and ATWS to the extent such restoration work is not performed by MERC.

    H. In the event of a dispute between the Landowner and MERC regarding what areas need to be deep tilled (i.e., ripped) or chiseled, or the depth at which compacted areas should be ripped or chiseled, MERC will determine the appropriate actions based on the Agricultural Monitor's opinion.

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11. Fertilization and Liming

    Fertilizers and lime will be applied based on Landowner requirements.

12. Land Leveling

    Following completion of the Project, MERC will restore the construction work areas as practicable to the original preconstruction contours. If uneven settling occurs or surface drainage problems develop as a result of pipeline construction, MERC will provide additional land leveling services within forty-five (45) days of receiving a Landowner's written notice, weather and soil conditions permitting. Alternatively, MERC will negotiate with the Landowner for reasonable compensation in lieu of restoration.

13. Prevention of Soil Erosion

    MERC will install permanent erosion control devices during restoration to prevent erosion.

14. Repair of Damaged Soil Conservation Practices

    Soil conservation practices (e.g., terraces, grassed waterways) that are damaged by pipeline construction will be restored to their preconstruction condition.

15. Interference with Irrigation Systems

    A. If it is feasible and mutually acceptable to MERC and the Landowner, temporary measures will be implemented to allow an irrigation system to continue to operate across land on which the pipeline is being constructed.

    B. If the pipeline right-of-way and/or ATWS interfere with an operational (or soon-to-be operational) spray irrigation system, MERC will inform the Landowner of the need to take the Irrigation system out of service. MERC and the Landowner will agree upon an acceptable amount of time the irrigation system may be out of service. If MERC and the Landowner are unable to agree on the amount of time within ten (10) days of MERC informing the Landowner of the need to take the irrigation system out of service, construction will proceed and the Landowner will be asked to take the irrigation system out of service.

    C. If, as a result of pipeline construction, interruption of an irrigation system results in crop damages, either on the right-of-way or off-right-of-way, compensation of Landowners will be determined as described in Section 21 of this Plan.

16. Ingress and Egress

    Prior to pipeline construction, MERC will identify the means of entering and exiting the right-of-way should access to the right-of-way not be practical or feasible from adjacent tracts or from public highway or railroad rights-of-way, consistent with MERC's Easement rights. Temporary access ramps may be constructed using locally obtained Topsoil as needed to facilitate the movement of equipment between public highways and the right-of-way.

17. Temporary Roads

    A. If public roads do not provide sufficient access, MERC will attempt to use existing farms roads for access to and from the right-of-way, subject to approval from the Landowner or MERC's Easement rights. If MERC needs to construct a new temporary access road across Agricultural Land, the location will be made in collaboration with the Landowner. Temporary roads that are needed during construction will be located

to minimize impacts on the landowner's or tenant's use of the agricultural land. If temporary roads in Agricultural Lands require gravel stabilization, geotextile construction fabric will be placed beneath the rock to add stability and to provide a distinctive barrier between the rock and soil surface. During restoration of the right-of-way, temporary access roads will be removed or restored to preconstruction conditions, except as described in Section 17.C of this Plan.

B. Temporary roads will be designed so as not to impede drainage and will be constructed to minimize soil erosion.

C. Following construction, new temporary roads may be left intact through mutual agreement of the Landowner and MERC unless otherwise restricted by federal, state, or local regulations.

D. If the temporary roads are to be removed, the Agricultural Land on which the temporary roads are constructed will be returned to its previous use and restored to a condition equivalent to what existed prior to construction. Restoration techniques for temporary roads will be similar to those used in restoring the Project right-of-way (e.g., decompaction).

18. Weed Control

MERC will provide weed control at its aboveground facility sites (i.e.valve sites, pump stations) to avoid the spread of weeds onto adjacent Agricultural Land during operation of the Project. Weed control spraying, will be conducted in accordance with applicable regulatory authorities.

19. Pumping of Water from Open Trenches

A. MERC will follow the steps outlined in Section 7852.2800 Subparts 1C and 1D of the Route Permit Application submitted to the Commission.

B. When dewatering trenches, MERC will discharge the water in a manner that will minimize damaging adjacent Agricultural Land, crops, and/or pasture. Such damages may include, but are not limited to, inundation of crops for more than twenty-four (24) hours and deposition of sediment in cropland and drainage ditches. If water-related damage during discharge from trenches results in a loss of yield, compensation of Landowners will be determined as described in Section 21 of this Plan.

C. Discharge of water will be conducted in accordance federal and state regulations, and permit conditions.

20. Construction in Wet Conditions

Should the Agricultural Monitor determine that continued construction in wet conditions could result in damage to soil structure and compromise future cropland productivity, the Agricultural Monitor may request MERC's Environmental Inspector to temporarily halt the activity on a Landowner's property until the Agricultural Monitor and Environmental Inspector consult with MERC's Construction Manager. Should MERC elect to continue construction activities over the objection of the Agricultural Monitor, MERC will retain a Professional Licensed Soil Scientist or an appropriately qualified Professional Engineer licensed by the State of Minnesota, at its own expense, to perform a survey of the construction right-of-way, ATWS, and adjacent unaffected land owned by the Landowner for soil compaction, prior to final restoration and using the procedures described above.

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21. Procedures for Determining Construction-Related Damages

    A. MERC will negotiate in good faith with Landowners who assert claims for construction related damages. The procedure for resolution of these claims will be in accordance with the terms of the Easements.

    B. Negotiations between MERC and any affected Landowner will be voluntary in nature and no party is obligated to follow a specific procedure or method for computing the amount of loss for which compensation is sought or paid, except as otherwise specifically provided in the Easements. In the event a Landowner should decide not to accept compensation offered by MERC, the compensation offered is only an offer to settle, and the offer shall not be introduced in any proceeding brought by the Landowner to establish the amount of damages MERC must pay. In the event that MERC and a Landowner are unable to reach an agreement on the amount of compensation, any such Landowner may seek further recourse as provided in the Easement.

22. Advance Notice of Access to Private Property

    A. MERC or its agents will provide the Landowner with a minimum of twenty-four (24) hours' notice before accessing his/her property for construction, in addition to any regulatory notifications.

    B. Prior notice will consist of personal or telephone contact, whereby the Landowner is informed of MERC's intent to access the land. If the Landowner cannot be reached in person or by telephone, MERC will mail or hand-deliver to the Landowner's home a dated, written notice of MERC's intent. The Landowner need not acknowledge receipt of the written notice before MERC enters the property.

23. Indemnification

    Indemnification obligations relating to the pipeline installation covered by this Plan shall be determined in accordance with the terms of the Easements and applicable law.

24. Tile Repair Following Pipeline Installation

    If, after pipeline installation, the Landowner must make repairs to the Tile system within the right-of-way, or plans to install a new Tile system, the Landowner must obtain Applicant approval of the work plan prior to commencing any activities within the right-of-way. MERC may impose such requirements and limitations on the work as necessary to protect the safety and integrity of MERC's facilities. The Landowner will be responsible for contacting 811 or the local one call center prior to any excavation near the pipeline and complying with all necessary requirements imposed by MERC to protect the safety and integrity of MERC's facilities.

    MERC will, at its own expense, follow the procedures below.

    An Applicant representative will be present while the excavation work is being performed, but will not perform the excavation work. If the pipeline is above the Tile system, MERC will be responsible for reasonable extra costs incurred by the Landowner to excavate and expose the pipeline in accordance with MERC's requirements for protection of the pipeline.

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Appendix A
Mitigation Measures for Organic Agricultural Land

Introduction

This appendix identifies mitigation measures that apply specifically to farms that are Certified Organic or farms in Minnesota that are in active transition to become Certified Organic, and is intended to address the unique management and certification requirements of these operations. All protections provided in the Plan must also be applied to Organic Agricultural Land in addition to the provisions of this appendix.

The provisions of this appendix will apply to Organic Agricultural Land for which the Landowner has provided to MERC a true, correct, and current version of the Organic System Plan within sixty (60) days after the signing of the Easement for such land or sixty (60) days after the issuance of a PRP to MERC by the Commission, whichever is sooner. In the event the Easement is signed later than sixty (60) days after the issuance of the PRP, the provisions of this appendix are applicable when the Organic System Plan is provided to MERC at the time of the signing of the Easement. In instances where MERC is in possession of the Easement prior to submitting its Route Permit application to the Commission, the Landowner must provide the Organic System Plan to MERC no later than sixty days after the issuance of the PRP. MERC recognizes that Organic Agricultural Land is a unique feature of the landscape and will treat this land with the same level of care as other sensitive environmental features.

Definitions

Unless otherwise provided to the contrary in this appendix, capitalized terms used in this appendix shall have the meanings provided below and in the Plan. In the event of a conflict between this appendix and the Plan with respect to definitions, the definition provided in this appendix will prevail but only to the extent such conflicting terms are used in this appendix. The definition provided for the defined words used herein shall apply to all forms of the words.

Apply	To intentionally or inadvertently spread or distribute any substance onto the exposed surface of the soil.
Certified Organic	As defined by the National Organic Program Standards, 7 C.F.R. Part 205.100 and 7 C.F.R. Part 205.101.
Certifying Agent	As defined by the National Organic Program Standards, 7 C.F.R. Part 205.2.
Decertified	Loss of Organic Certification. Decertification
Organic Agricultural Land	Farms or portions thereof described in 7 C.F.R. Parts 205.100, 205.101, and 205.202.
Organic System Plan	As defined by the National Organic Program Standards, 7 C.F.R. Part 205.2.
Prohibited Substance	As defined by the National Organic Program Standards, 7 C.F.R. Parts 205.600 through 205.605 using the criteria provided in 7 United States Code (U.S.C.) 6517 and 7 USC 6518.

Organic System Plan

MERC recognizes the importance of the individualized Organic System Plan to the Organic Certification process. MERC will work with the Landowner, the Landowner's Certifying Agent, and/or a USDA-approved organic consultant to identify site-specific construction practices and develop an organic construction plan that will minimize the potential for Decertification as a result of construction activities. MERC also recognizes that Organic System Plans are proprietary in nature and confidentiality will be respected.

Prohibited Substances

MERC will avoid the application of Prohibited Substances onto Organic Agricultural Land. No herbicides, pesticides, fertilizers, or seed will be applied unless requested and approved by the Landowner. Likewise, no refueling, fuel, or lubricant storage or routine equipment maintenance will be allowed on Organic Agricultural Land. Equipment will be checked prior to entry to make sure that fuel, hydraulic, and lubrication systems are in good working order before working on Organic Agricultural Land. If Prohibited Substances are used on land adjacent to Organic Agricultural Land, these substances will be used in such a way as to prevent them from entering Organic Agricultural Land.

Soil Handling

Topsoil and subsoil layers that are removed during construction will be stored separately and replaced in the proper sequence after the pipeline is installed. Unless otherwise specified in the site-specific plan described above, MERC will not use this soil for other purposes, including creating access ramps at road crossings. No Topsoil or subsoil (other than incidental amounts) may be removed from Organic Agricultural Land. Likewise, Organic Agricultural Land will not be used for storage of soil from non-Organic Agricultural Land.

Erosion Control

On Organic Agricultural Land, MERC will, to the extent feasible, implement erosion control methods consistent with the Landowner's Organic System Plan. On land adjacent to Organic Agricultural Land, MERC's erosion control procedures will be designed so that sediment from adjacent non-Organic Agricultural Land will not flow along the right-of-way and be deposited on Organic Agricultural Land. Treated lumber will not be used in erosion control measures on Organic Agricultural Land.

Water in Trenches

During construction, MERC will leave an earthen plug in the trench at the boundary of Organic Agricultural Land to prevent trench water from adjacent land from flowing into the trench on Organic Agricultural Land. Likewise, MERC will not allow trench water from adjacent land to be pumped onto Organic Agricultural Land.

Weed Control

On Organic Agricultural Land, MERC will, to the extent feasible, implement weed control methods consistent with the Landowner's Organic System Plan. Prohibited Substances will not be used for weed control on Organic Agricultural Land. In addition, MERC will not use Prohibited

Substances for weed control on land adjacent to Organic Agricultural Land in such a way as to allow these materials to drift onto Organic Agricultural Land.

Mitigation of Natural Resources Impacts

MERC will not use Organic Agricultural Land for the purpose of required compensatory mitigation of impacts on natural resources such as wetlands or woodlands unless approved by the Landowner.

Monitoring

In addition to the responsibilities of the Agricultural Monitor described in the Plan, the following will apply:

- The Agricultural Monitor or a trained Organic Inspector (trained through a USDA-approved Organic Inspection Program and retained by MERC) will routinely monitor construction and restoration activities on Organic Agricultural Land for compliance with the provisions of this appendix and will document activities that could result in decertification. A trained Organic Inspector will be used if the Agricultural Monitor has not already been trained through a USDA-approved Organic Inspection Program; and
- Instances of noncompliance will be documented according to USDA-approved protocol consistent with the Landowner's Organic System Plan, and will be made available to the MDA, the Landowner, the Landowner's Certifying Agent, and to MERC.

If the Agricultural Monitor is responsible for routinely monitoring activities on Organic Agricultural Land, he or she will have been trained in such activities by the International Organic Inspectors Association, at MERC's expense if necessary.

Compensation for Construction Damages

The settlement of damages will be based on crop yield and/or crop quality determination and the need for additional restoration measures, and will proceed in accordance with the terms of the Easement. Unless the Landowner of Organic Agricultural Land and MERC agree otherwise, at MERC's expense, a mutually agreed upon professional agronomist will make crop yield determinations, and the MDA Fruit and Vegetable Inspection Unit will make crop quality determinations. If the crop yield and/or crop quality determinations indicate the need for soil testing, the testing will be conducted by a commercial laboratory that is properly certified to conduct the necessary tests and is mutually agreeable to MERC and the Landowner. Fieldwork for soil testing will be conducted by a Professional Soil Scientist or Professional Engineer licensed by the State of Minnesota. MERC will be responsible for the cost of sampling, testing, and additional restoration activities, if needed. Landowners may elect to settle damages with MERC in advance of construction on a mutually acceptable basis or to settle after construction based on a mutually agreeable determination of actual damages.

Compensation for Damages Due to Decertification

Should any portion of Organic Agricultural Land be Decertified as a result of construction activities, the settlement of damages will be based on the difference between revenue generated from the land affected before Decertification and after Decertification, for the entire period of time the land is Decertified, so long as a good faith effort is made by the Landowner to regain certification.