

GIS Data Driven Decisions

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Moorhead Public Service



Data Driven Decisions

- Moorhead Public Service (MPS) GIS
- MPS GIS Value
- Challenges
- Future Endeavors

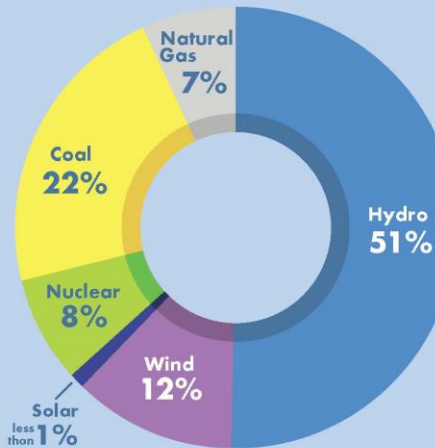


Moorhead Public Service

- Moorhead water of over

CARING FOR THE ENVIRONMENT

2018 RESOURCE MIX FOR MOORHEAD



Moorhead's Power Supply Mix ; and munity

Our diverse mix of power supply resources results in reliable, affordable and environmentally friendly electric service for Moorhead's citizens and businesses.

Renewable resources continue to be added to the mix. A small solar project was added in 2016 and a new hydroelectric project is under construction.

To learn more, call us today at (218) 477-8000.

63% Moorhead's percentage of renewable power supply
71% Moorhead's percentage of carbon-free power supply

HYDROPOWER → Our most reliable renewable resource.

WIND POWER → Available about 35 percent of the time.

SOLAR POWER → Available about 20 percent of the time.

Moorhead Public Service
500 Center Ave Second Floor
PO Box 779
Moorhead, MN 56561



Geographic Information System

- Moorhead Public Service GIS

- *“Geographic Information System (GIS) is a framework for gathering, managing, and analyzing data. It analyzes spatial location and organizes layers of information into visualizations using maps. GIS reveals deeper insights into data such as patterns, relationships, and situations – helping users make smarter informed decisions.” - esri*

- **MPS GIS Vision:**

- MPS’ GIS vision is to add value to MPS electric, water, and administrative divisions by providing authoritative geospatial information to make these operations more efficient and effective.

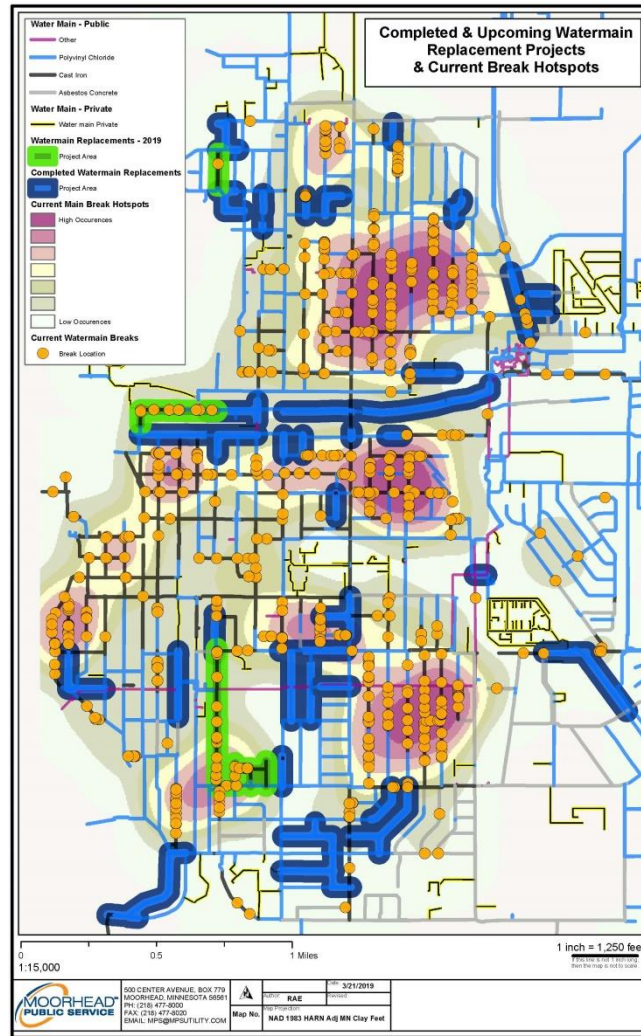


GIS Value

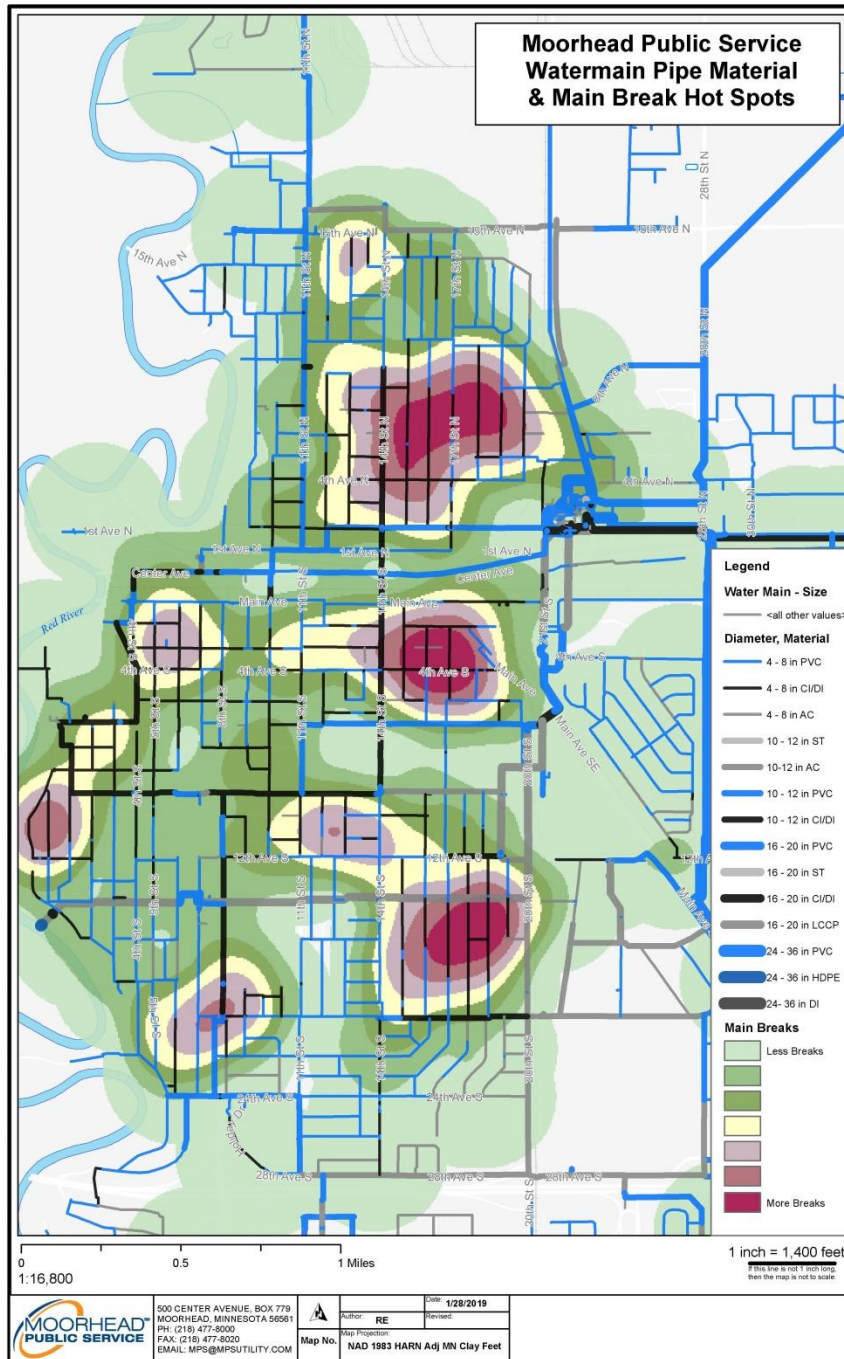
- Value
 - Water
 - Water Asset Management Plan
 - Water Leaks
 - Electric
 - Electric Master Plan
 - Electric Outages & Reliability Projects
 - Admin / Finance
 - AMI
 - Facility Planning
 - MPS GIS Data Analytics Solve Problems



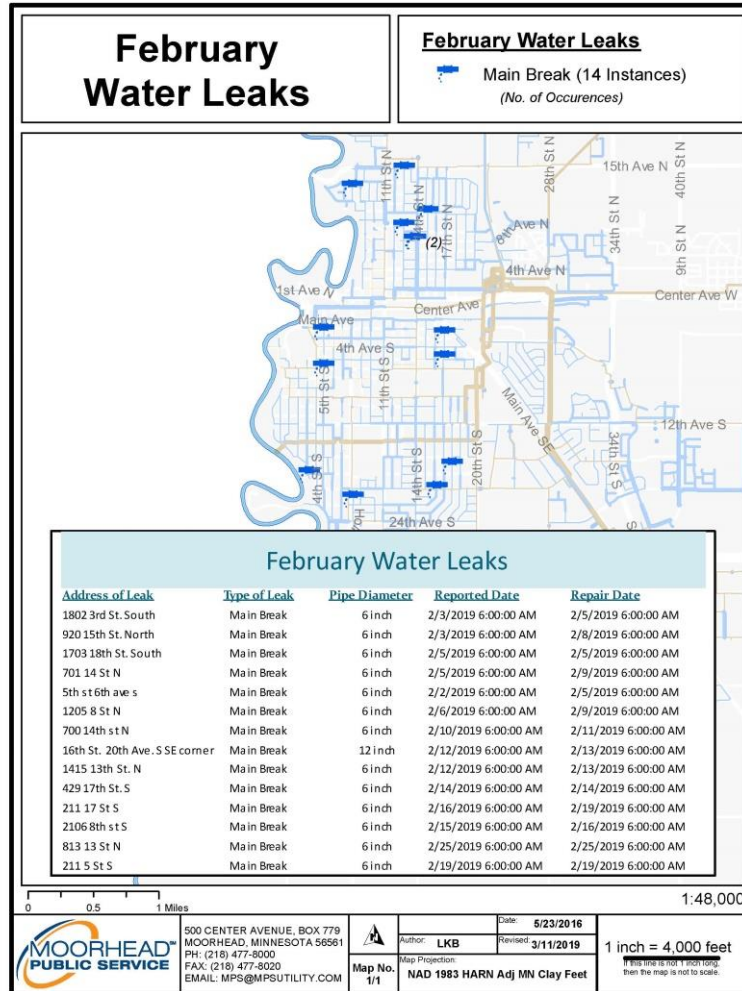
Water Asset Management Plan



Moorhead Public Service Watermain Pipe Material & Main Break Hot Spots



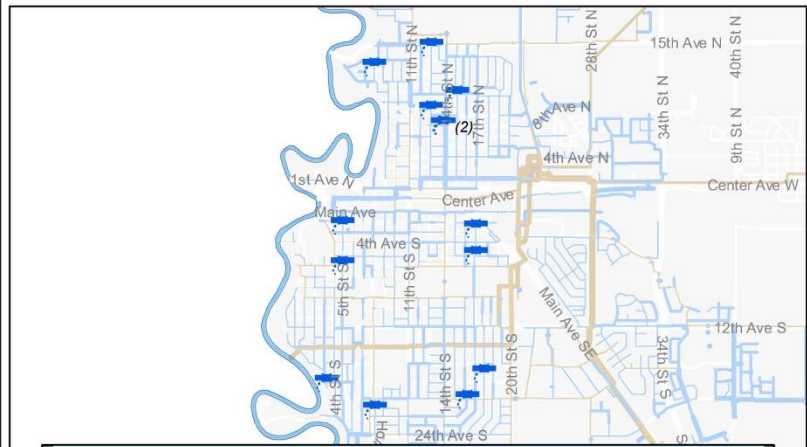
Water Leak Reporting



February Water Leaks

February Water Leaks

■ Main Break (14 Instances)
(No. of Occurrences)



February Water Leaks

Address of Leak	Type of Leak	Pipe Diameter	Reported Date	Repair Date
1802 3rd St. South	Main Break	6 inch	2/3/2019 6:00:00 AM	2/5/2019 6:00:00 AM
920 15th St. North	Main Break	6 inch	2/3/2019 6:00:00 AM	2/8/2019 6:00:00 AM
1703 18th St. South	Main Break	6 inch	2/5/2019 6:00:00 AM	2/5/2019 6:00:00 AM
701 14 St N	Main Break	6 inch	2/5/2019 6:00:00 AM	2/9/2019 6:00:00 AM
5th st 6th ave s	Main Break	6 inch	2/2/2019 6:00:00 AM	2/5/2019 6:00:00 AM
1205 8 St N	Main Break	6 inch	2/6/2019 6:00:00 AM	2/9/2019 6:00:00 AM
700 14th st N	Main Break	6 inch	2/10/2019 6:00:00 AM	2/11/2019 6:00:00 AM
16th St. 20th Ave. SSE corner	Main Break	12 inch	2/12/2019 6:00:00 AM	2/13/2019 6:00:00 AM
1415 13th St. N	Main Break	6 inch	2/12/2019 6:00:00 AM	2/13/2019 6:00:00 AM
429 17th St. S	Main Break	6 inch	2/14/2019 6:00:00 AM	2/14/2019 6:00:00 AM
211 17 St S	Main Break	6 inch	2/16/2019 6:00:00 AM	2/19/2019 6:00:00 AM
2106 8th st S	Main Break	6 inch	2/15/2019 6:00:00 AM	2/16/2019 6:00:00 AM
813 13 St N	Main Break	6 inch	2/25/2019 6:00:00 AM	2/25/2019 6:00:00 AM
211 5 St S	Main Break	6 inch	2/19/2019 6:00:00 AM	2/19/2019 6:00:00 AM

0 0.5 1 Miles 1:48,000

	500 CENTER AVENUE, BOX 779 MOORHEAD, MINNESOTA 56561 PH: (218) 477-8000 FAX: (218) 477-8020 EMAIL: MPS@MPSUTILITY.COM		Date: 5/23/2016 Revised: 3/11/2019
	Map No. 1/1	Map Projection: NAD 1983 HARN Adj MN Clay Feet	1 inch = 4,000 feet <small>If this line is not 1 inch long then the map is not to scale.</small>

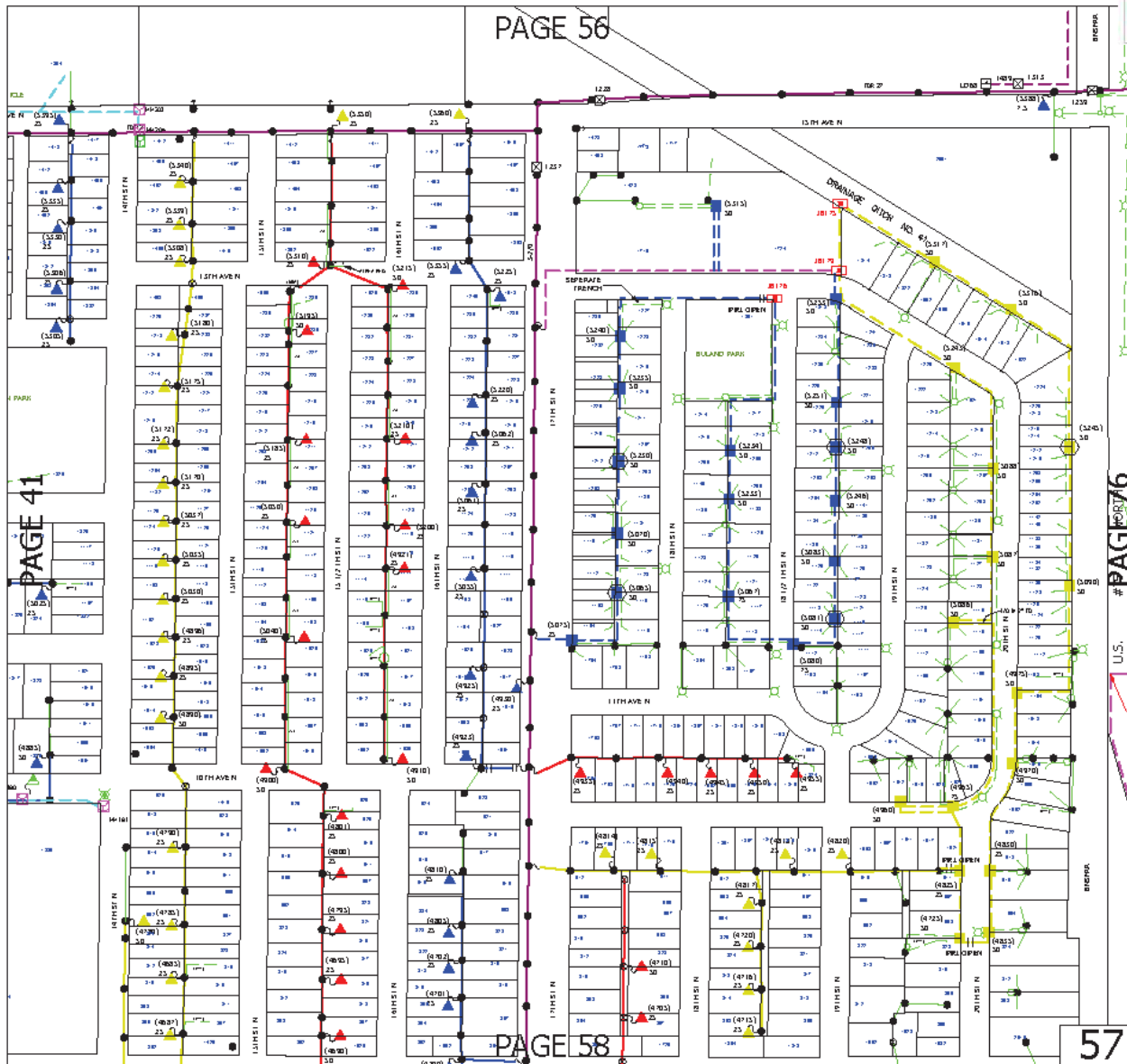
F:\GIS\ArcGIS ArcFM\MXD Documents\Water\WaterLeaks_Data\Edit_Reporting.mxd



Electric Master Plan

- Electric Master Plan
 - Develop Electric Network Model
 - Identified need from previous GIS Master Plan
 - DGR Engineering Review and Development of MPS' 10 Year Electric Master Plan





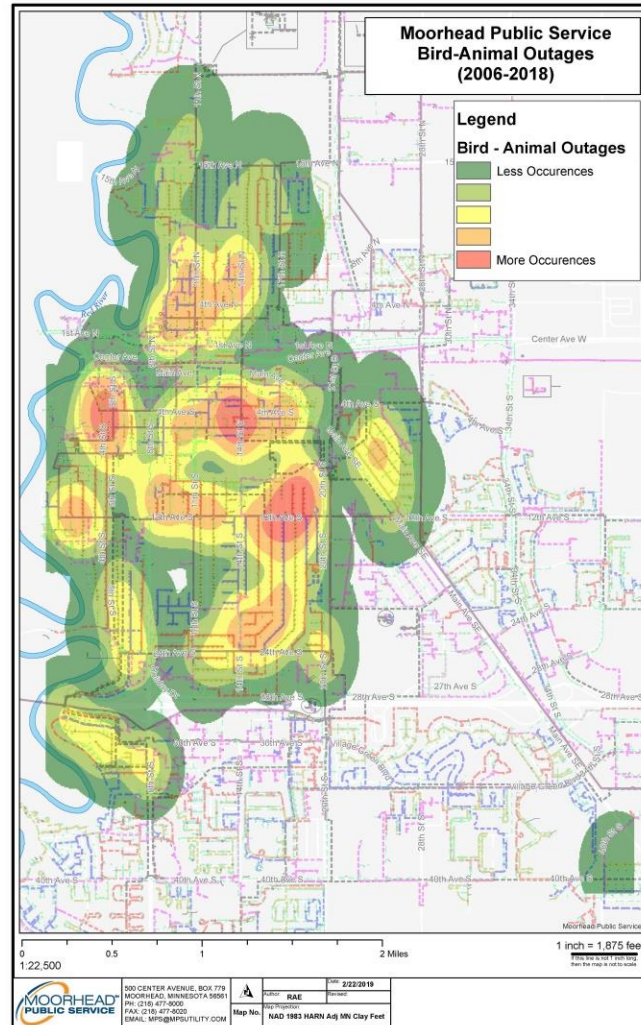
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U.S.

Electric Outage and Reliability Project Support

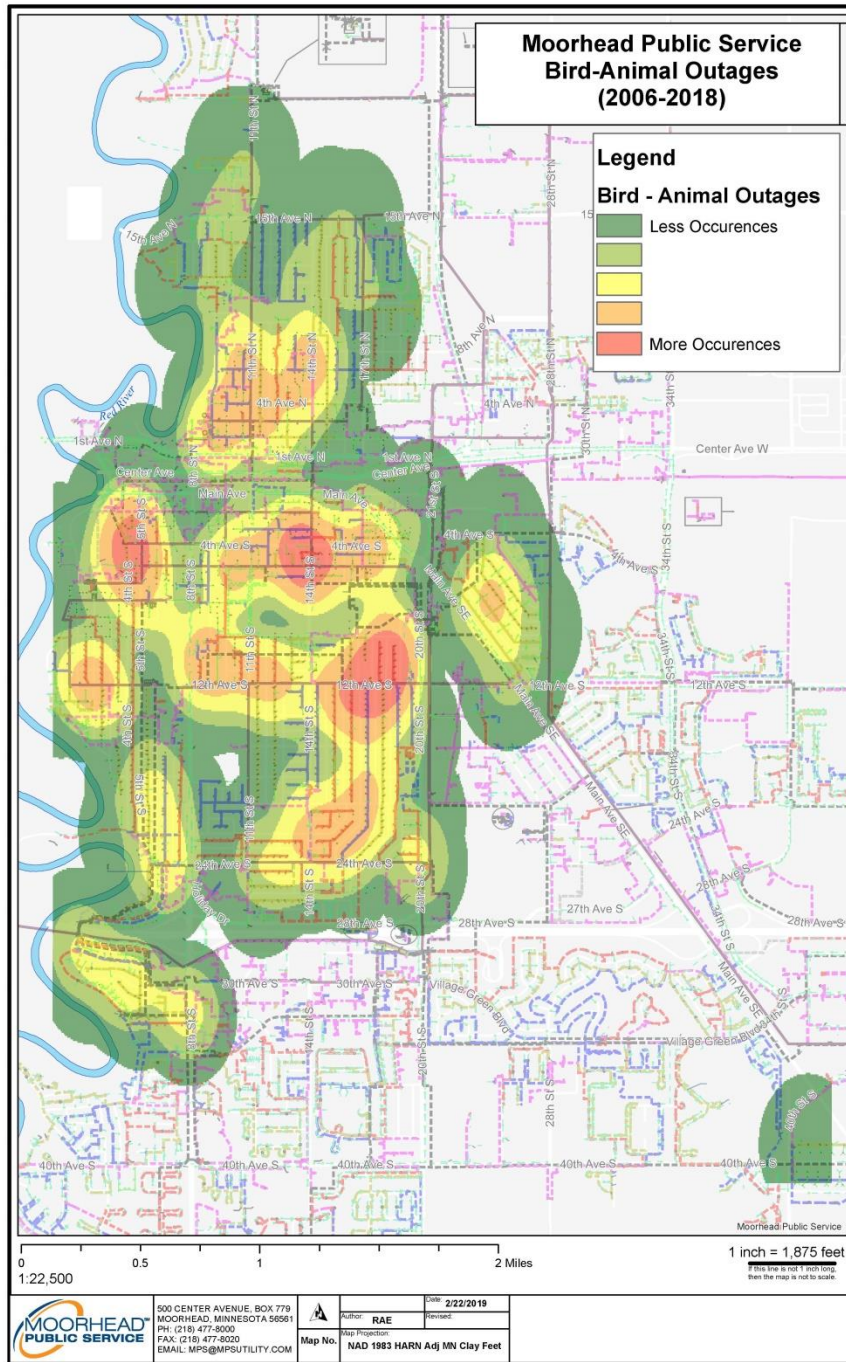


Moorhead Public Service Bird-Animal Outages (2006-2018)

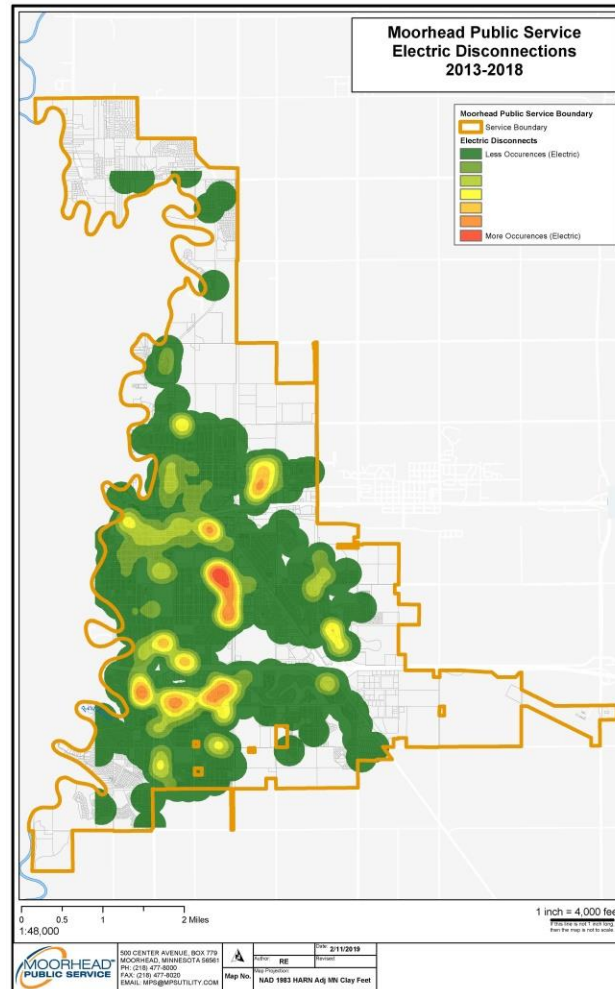
Legend

Bird - Animal Outages

- Less Occurrences
-
-
-
- More Occurrences



Advanced Metering Infrastructure (AMI) Project Support



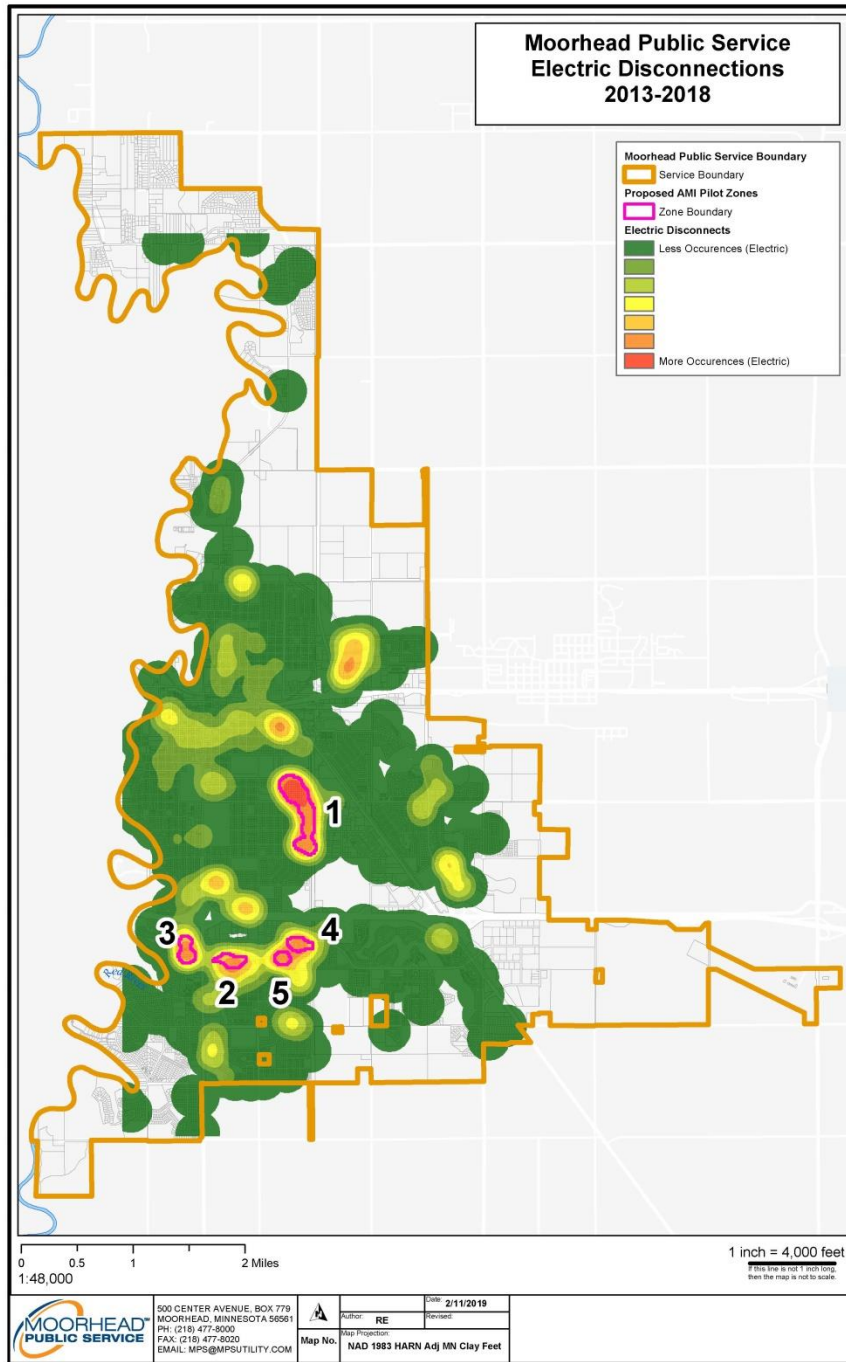
Moorhead Public Service Electric Disconnections 2013-2018

Moorhead Public Service Boundary
 Service Boundary

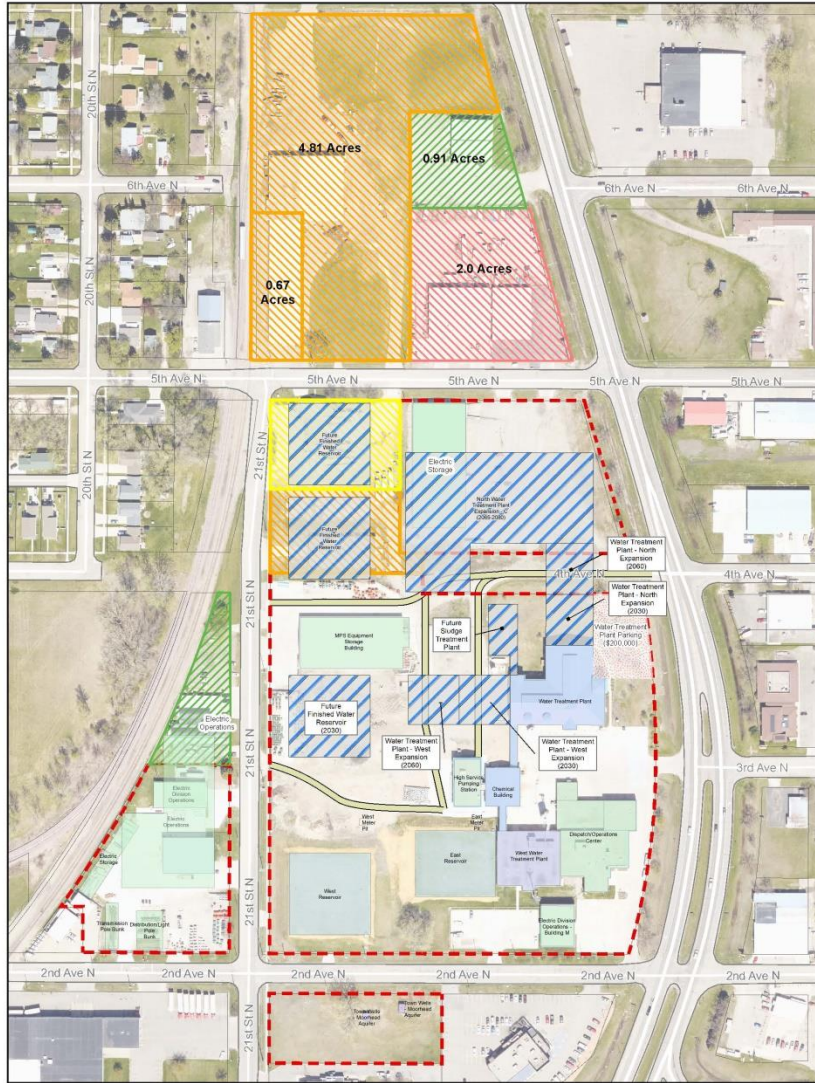
Proposed AMI Pilot Zones
 Zone Boundary

Electric Disconnects

- Less Occurrences (Electric)
- More Occurrences (Electric)



**MPS North Campus
Electric Dispatch / Operations Center**



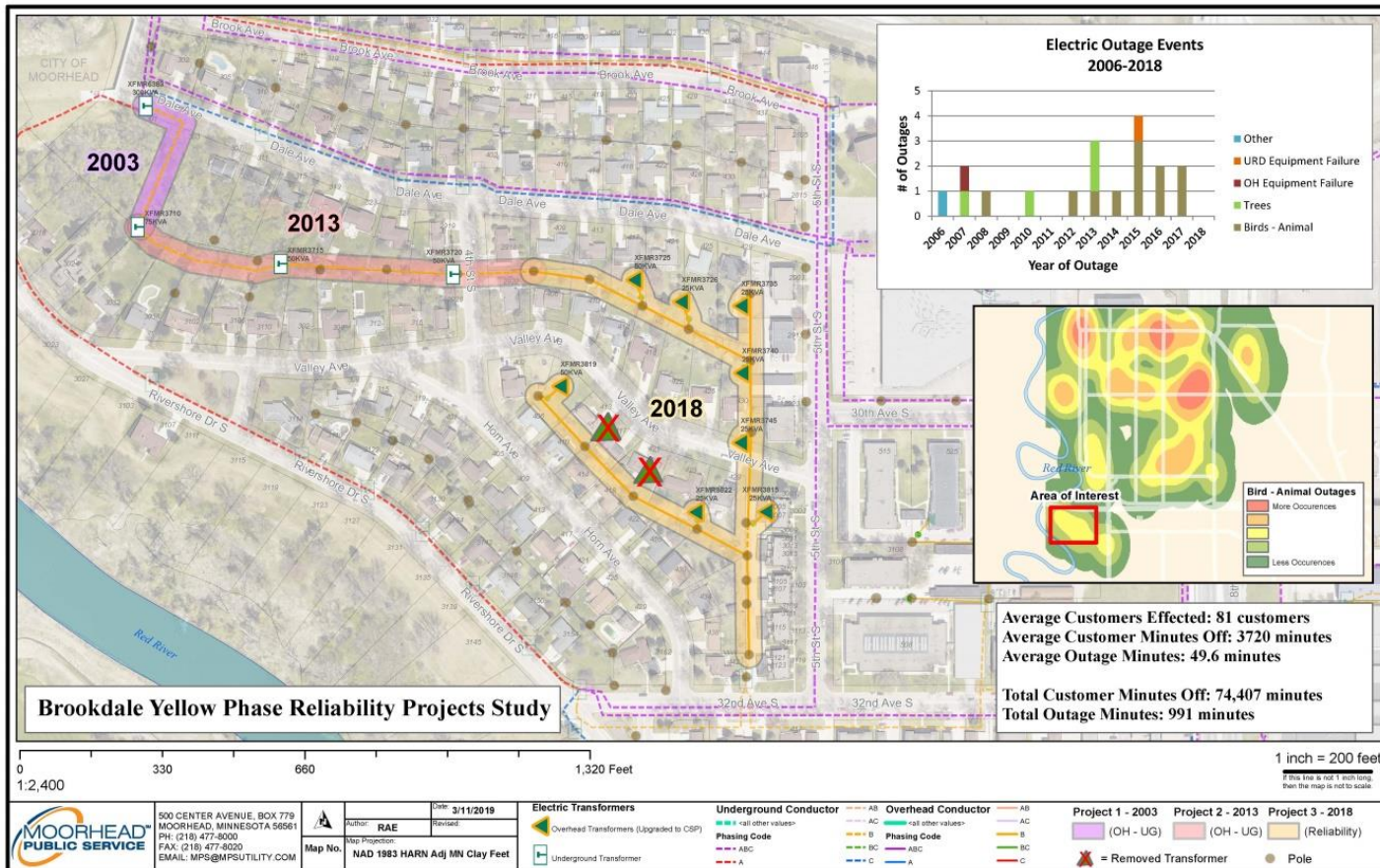
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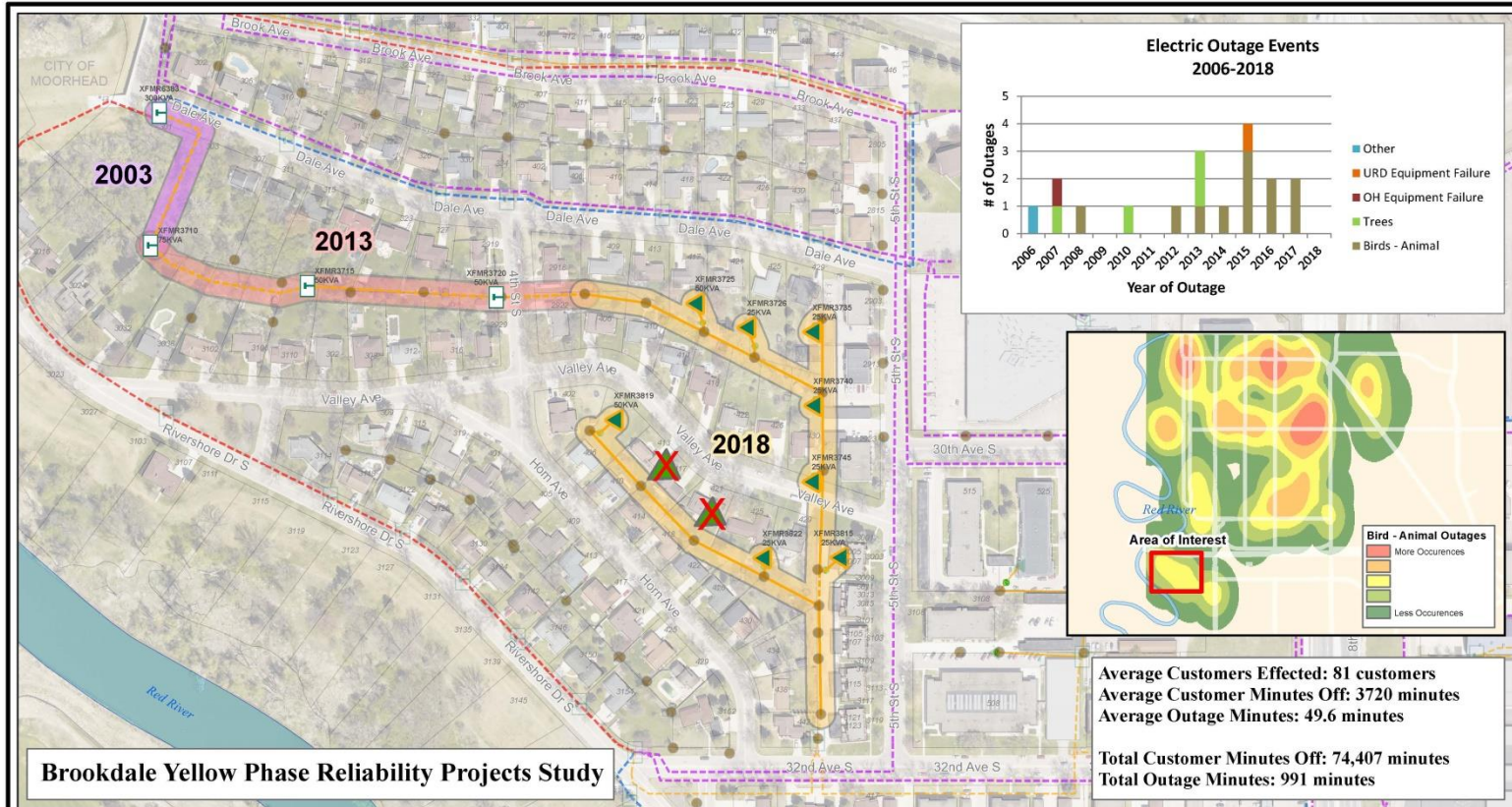
Date: 3/14/2017
Author: MTC
Revised: 1/18/2019
Map No.: /
Map Projection: NAD 1983 HARN Adj MN Clay Feet

1 inch = 167 feet
if this line is not 1 inch long,
then the map is not to scale.



GIS Data Analytics Solves Problems





0 1,2,400 330 660 1,320 Feet

1 inch = 200 feet
If this line is not 1 inch long, then the map is not to scale.

	530 CENTER AVENUE, BOX 779 MOORHEAD, MINNESOTA 56561 PH: (218) 477-8000 FAX: (218) 477-9020 EMAIL: MPS@MPSUTILITY.COM	Author: RAE Date: 3/11/2019 Revised:	Electric Transformers Overhead Transformers (Upgraded to CSP) Underground Transformer	Underground Conductor AB - call other values AC - call other values Phasing Code A B C	Overhead Conductor AB AC Phasing Code A B C	Project 1 - 2003 (OH - UG) Project 2 - 2013 (OH - UG) Project 3 - 2018 (Reliability) = Removed Transformer Pole
		Map No. NAD 1983 HARN Adj MN Clay Feet				

Challenges

- Challenges

- Data

- Mapmaker

- Value

- Location Intelligence

- **Location intelligence** (LI) is the process of deriving meaningful insight from geospatial data to solve problems.

- Business Intelligence

- **Business intelligence** (BI) is a technology-driven process of transforming data into meaningful and useful information to assist in making informed data-driven business decisions.



MPS GIS Review

- Moorhead Public Service GIS Vision
 - MPS' GIS vision is to add value to MPS electric, water, and administrative divisions by providing authoritative geospatial information to make these operations more efficient and effective.

- Review
 - Water (WAMP, Water Leaks Reporting)
 - Electric (Electric Master Plan, Outage Reporting)
 - Admin / Finance (AMI, Facility Planning)
 - GIS Data Analytics Solves Problems



MPS GIS – To Infinity & Beyond

- Future Endeavors
 - Business Intelligence Integrations
 - SCADA / GIS
 - CIS
 - CMMS



Questions??

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