

Underground Utilities Mapping Project Team (UUMPT)

**Minnesota Society of Professional Surveyors
2022 Annual Conference**

February 24, 2022

Steve Swazee
Chair



For Your Consideration

1. What's the Problem?
2. Underground Utility Mapping Project Team
3. Infrastructure Focus – Pipeline Threats
4. Minnesota Pipes
5. “The Plan”

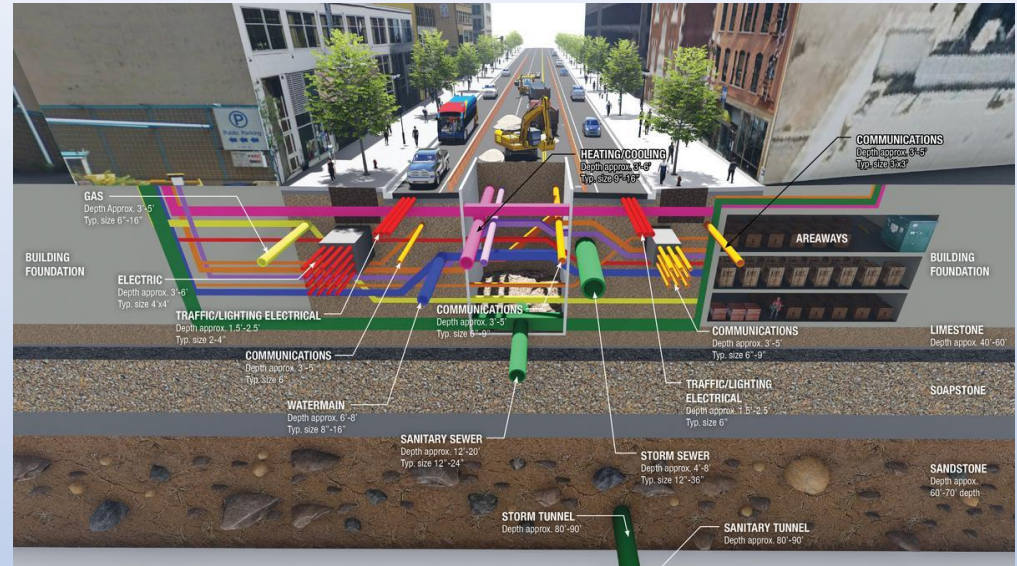
More and More Stuff is Underground



Paul Cory, U.S. DOT

New York City - 1917

- Water
- Wastewater
- Storm sewer
- Heating/Cooling
- Electric
- Telephone
- Gas
- Oil
- Hazardous chemicals
- Street lighting
- Traffic signals
- Cable/Fiber

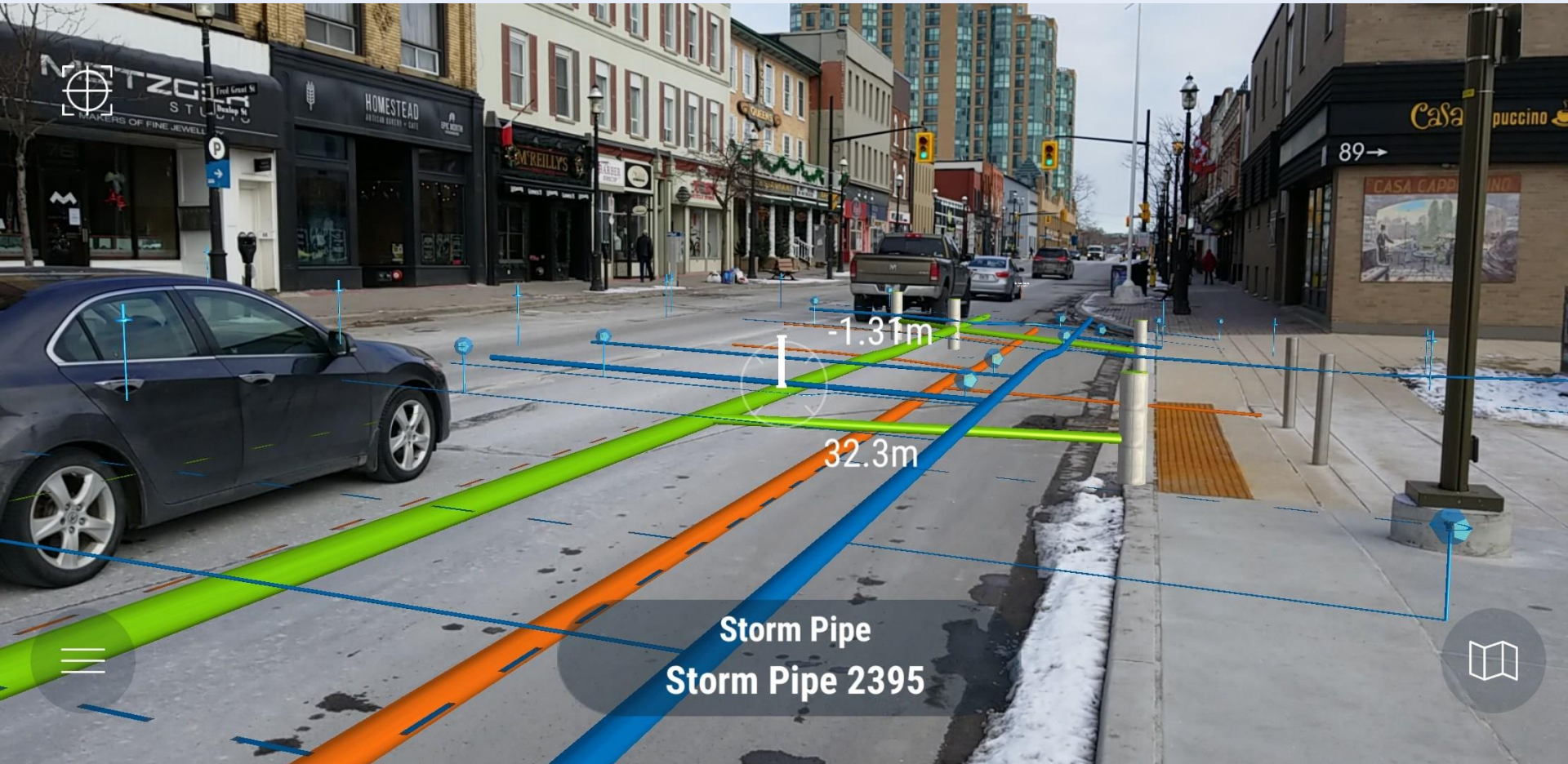


City of Minneapolis

Minneapolis - 2021

- Wood pipe
- Lead pipe
- Clay pipe
- Copper pipe
- Iron/steel pipe
- Plastic pipe

State of the Art?



What's the Problem?

Nationwide We Do Not *Comprehensively* Know What's Underground Both the “What” and “Where” Element Are Lacking

- **Result:** Nationwide construction damage to **all types of utilities**
 - 2020 U.S. estimated damage was over \$30 billion
 - Incident hits were steadily increasing until 2020 (1st time in 6 years a drop – due to the COVID pull back on construction)
- Gopher State One Call (GSOC)
 - **Created 1987 after pipeline hit and explosion in Mounds View**
 - 811 or “Call Before You Dig” function for the entire state
- Minnesota considered **one of the best states for damage prevention**
 - **Best guess** is there were 4,542 MN hits in **2020** ([Dirt Report](#))
 - Top category was telecom; 2019 it was natural gas (apx. 2,000 hits)

What's the Problem?

Demand Versus Technology

- Monday, June 22, 2020: GSOC handled **7,000 calls for locates**
 - Must be marked within 48 hours
 - Good for only two weeks
- GIS and GPS tech have been ***rapidly evolving*** since GSOC was created
 - U.S. is well behind Europe in mapping underground infrastructure
 - **Although MN is rated as a top prevention state,** the greater GSOC community knows they need to leverage GIS tech to improve efficiency and safety

Finding What's There?



[Superior Instrument](#)



[GSOC](#)



[GSOC](#)



[Piedmont Locating Services](#)

Some of the Current Issues

1. Technical

1. GSOC does not have a complete mapped view, nor do the utilities
2. Just because data is in a GIS, doesn't mean it's accurate – and some utilities are still using paper
3. Fragmentation inside organizations – water versus waste-water

2. Education

1. No training standards for locators
2. No training standard for equipment operators
- 3. *It is largely unknown that “collaborate, not collect” is possible***

3. Procedures/Standards

1. No standards for capturing, storing or sharing locate data
2. Abandoned and unknown lines are not being reported
3. Liability!

Recognized Problem – BUT What to Do?



“Technology is rapidly changing. Many of the best practices identified in this chapter could be obsolete in the near future. Although the following technologies are now used in other applications, **their use is not widespread in the damage prevention field:**

- Geographic Information System (GIS)
- Global Positioning System (GPS)
- Orthographic and satellite imagery...”

Best Practices Version 18.0, Mapping - Emerging Technologies, Common Ground Alliance

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

A Study on Improving Damage Prevention
Technology

August 2017 Report to Congress – Key Findings:

#3 of 5: ***Improve and implement GPS/GIS technologies in accurately locating and documenting the location of underground facilities.***

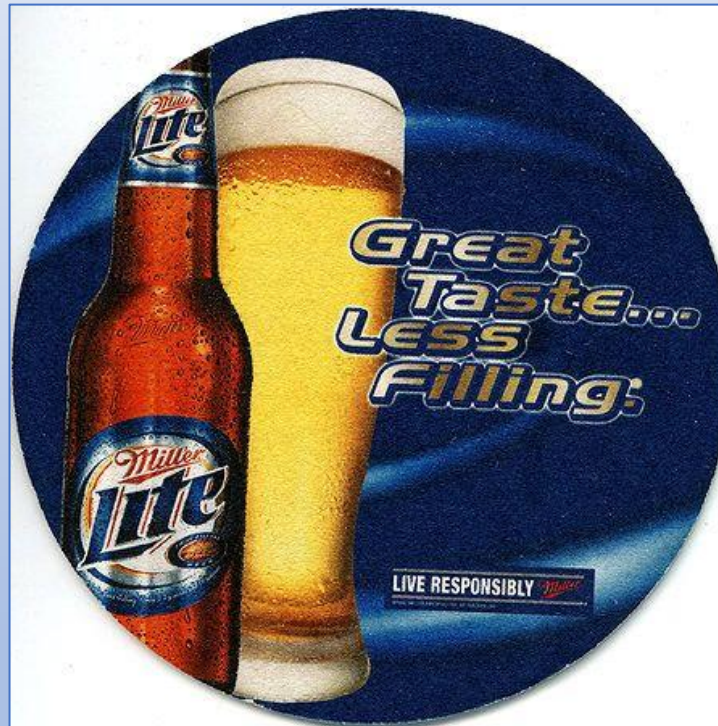


Is This Really a GIS Issue?

Looks More Like an Engineering Issue to Me!

*Engineering
Installation
Standards!*

*(American Society
of Civil Engineers -
ASCE)*



*GIS Data
Management
Standards!*

*(Open Geospatial
Consortium - OGC)*

And it's cold, quenches thirst, makes you feel good, etc.

Underground Utilities Mapping Project Team = Collaborative Effort



=

Chair - Barbara Cederberg
"Operational Control"

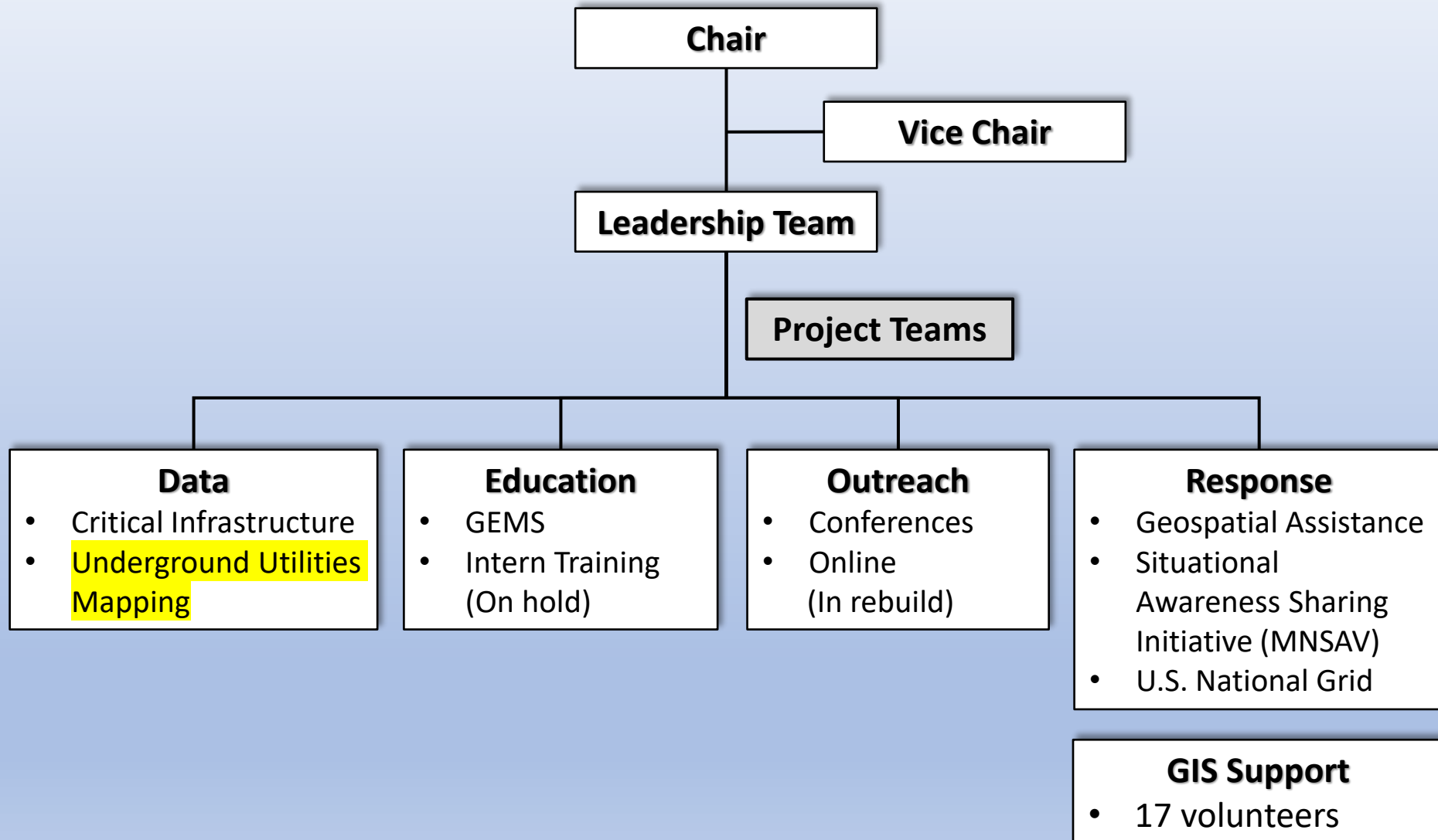


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Vice Chair - Steve Swazee
"Administrative Control"



Emergency Preparedness Committee Structure



Mission Statement

The Underground Utilities Mapping Project Team will work to improve locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross community collaboration which develops best practices and promotes technology solutions.

Some Other Potential Beneficiaries

- MnDOT
- MN Office Pipeline Safety
- MnGeo
- MN construction community

- MDH
- MPCA (CWC)
- MnDNR
- MN business community

Public-Private Collaboration From the Start!

Barbara Cederberg	COO, Gopher State One Call
Steve Swazee	Chair, MGAC EPC; Executive Director, SharedGeo
Adam Worm	GIS Analyst, St Paul Regional Water Services
Andy Berg	Engineering & System Operations, Connexus Energy
Bob Basques*	GIS Systems Developer, City of St. Paul
Brad Anderson	GIS Manager, City of Moorhead
Brandon Keinath	GIS Programmer Analyst, Minnesota Power
Damon Nelton	GIS Manager, Ellingson Companies
Dave Hunstad	Electric Manager, Hutchinson Utility Commission
David Phillips	GIS Project Specialist, Major Projects, Enbridge Inc.
Dean Parker*	General Counsel - GSOC, Hinshaw & Culbertson LLP
Dr. Geoff Zeiss	Owner, Between the Poles
Gerry Sjerven	Environmental Services, ALLETE, Inc.
Joe Rubbelke	Utility Logic
Justin Lutterman	GIS Manager/Address Coordinator, Le Sueur County
Karin Strub*	Media Communications Manager, dp-PRO
Keith Novy	Manager, Damage Prevention Department, Center Point Energy
Keven Maxa	Engineering Supervisor, Austin Utilities
Mike Mendiola	Minnesota Office of Pipeline Safety
Nick Roehrdanz	GIS Manager, Technical Design Services
Justin Larson	Senior Operations Manager, Damage Prevention, Xcel Energy
Scott Landes	President, Infrastructure Resources/Rhino Markers
Travis Beran*	Subsurface Solutions
Troy Schultz	President, Technical Design Services

Four Functional Area Working Groups

- **Facility Operator Utility Mapping** (**Travis Beran**) - Locating, collecting and storing data – Where is that buried stuff?
- **Locate Data Flows & Mgt.** (**Bob Basques**) - Data maintenance and distribution – Telling others where the buried stuff is located
- **Outreach** (**Leadership Team**) - Finding the audience(s)/crafting the message – Creating engagement and improving safety awareness
- **Regulations/Security** (**Dean Parker**) - Restrictions on availability and use of GIS data – Current situation and path forward

The Project Team (25 members – 30 observers) and each working group meet once a month (2 meetings/month/each member)

Infrastructure Focus – Pipeline Threats



1 - Bad Geographic Information System Data

San Bruno, CA

September 9, 2010:

- To meet demand, PG&E boosted psi in Line 132
- Explosion registered as an earthquake
- 8 Dead/499 impacted
- \$600 million in lawsuit settlements
- PUC fine – \$1.6 billion
- Federal/state pending – \$4.0 billion



[Wikipedia](#)

In his justification for boosting pressure, Arnett noted that Hoffman showed him a series of emails from 2009. In one, an engineer cited **“tons of errors in GIS”** in the database related to the San Bruno and other nearby lines. Another engineer’s email that same year concluded: **“We do not trust GIS to be correct”** but added, **“got to trust something, though.”**

Arnett admitted that he only made a **“ cursory review ”** of the GIS database when he authorized the spiking of the line.

2 - Construction Hit – Known Pipe



November 13, 2015: 1 Dead, 3 Injured
Bakersfield, CA - Bakersfield.com



October 31, 2016: 1 Dead, 5 Injured
Shelby County, AL - AP



July 10, 2018: 1 Dead, 2 Injured
Sun Prairie, WI - WI State Journal



February 6, 2019: No injuries
Downtown San Francisco, CA - Xpress

3 - Construction Hit – Abandoned Pipe



[The Denver Post](#)

April 17, 2017: Abandoned Collection Pipe Explosion, Firestone, Colorado

- 2 dead, 1 severely injured, \$18.5 million fine, undisclosed settlement
- Pipe damaged when hit two (2) years earlier
- City allowed homes to be build over pipes which were not mapped

4 - Pipeline Structural Failure



[Duluth News Tribune](#)

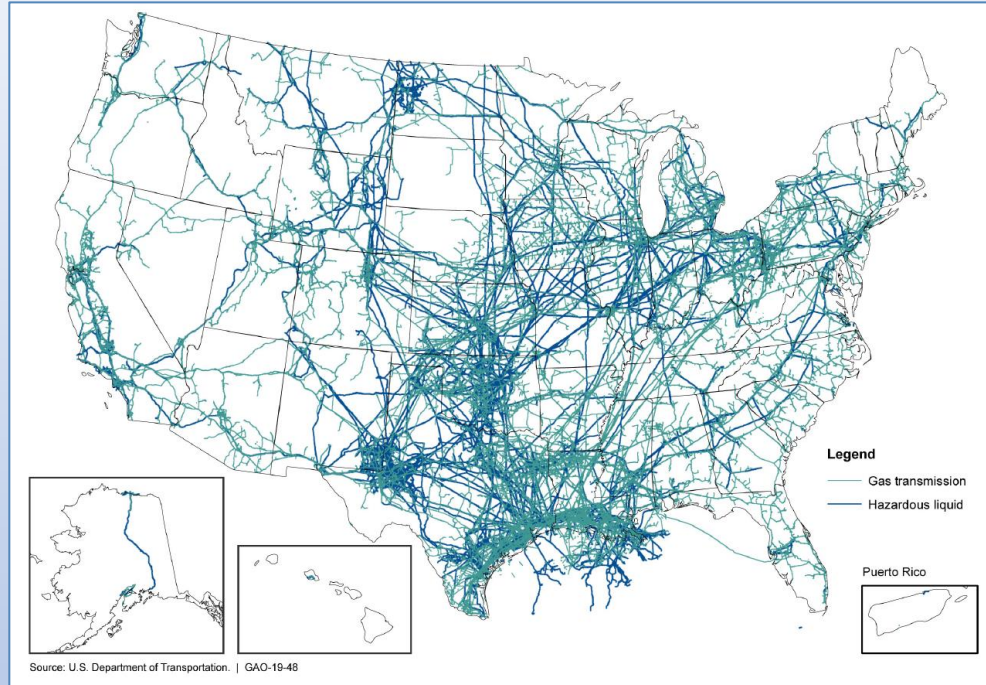
March 3, 1991
Largest inland oil spill in U.S. history
1.7 million gallons of crude
Prairie River
Grand Rapids, MN



[NTSB](#)

July 4, 2002
252,000 gallons of crude
Mississippi River Watershed
Cohasset, MN

Minnesota Petroleum Pipes –Transport



- Production/Collection – Not an issue in Minnesota
- Transport
 - 69,717 miles of interstate gas and liquid pipeline in Minnesota (17th)
 - MN Office of Pipeline Safety has oversight (PHMSA assigned)
 - Cap off/abandoned – locations known and maintained
- Distribution – Wild West legacy pipe – abandoned before 1998?

Minnesota Petroleum Pipes – Incidents

Minnesota natural gas pipeline hits in 2020: 1,652

Pipeline Incidents Caused by Excavation Damage Details - 2005 - Present

Time run: 2/21/2021 2:36:57 PM

Data Source: US DOT Pipeline and Hazardous Materials Safety Administration

Portal Data as of 2/19/2021 11:11:33 PM

STATE: MINNESOTA INCIDENT TYPE: All

State Name	Pipeline Type	Commodity	Incident Occurred Date	Operator ID	Operator Business Name	Location County	Excavator Type	Root Cause	# of Fatalities	# of Injuries	Significant Incident Flag	Total Property Damage
MINNESOTA	GAS DISTRIBUTION	NATURAL GAS	5/11/2020	31636	NORTHERN STATES POWER CO OF MINNESOTA	WASHINGTON	Private Excavator	Locating Practices Not Sufficient	0	0	Yes	1,556,941
MINNESOTA	GAS DISTRIBUTION	NATURAL GAS	11/19/2019	12350	CENTERPOINT ENERGY RESOURCES CORP., DBA CENTERPOINT ENERGY MINNESOTA GAS	STERNS	Private Excavator	Excavation Practices Not Sufficient	0	0	Yes	205,473
MINNESOTA	HAZARDOUS LIQUID	REFINED PP	1/8/2018	22610	MAGELLAN PIPELINE COMPANY, LP	DAKOTA	Private Excavator	Other	0	0	Yes	1,725,314
MINNESOTA	GAS TRANSMISSION	NATURAL GAS	3/14/2016	13750	NORTHERN NATURAL GAS CO	WRIGHT	Unknown Excavator	Previous Damage	0	0	Yes	300,000

Minnesota Petroleum Pipes – Incidents

December 11, 1998, St. Cloud, Minnesota: The Last “BIG ONE”



[St. Cloud Times](#)

4 Dead, 1 Seriously Injured, 10 Minor Injuries, 6 Buildings Destroyed

The Plan: Solutions – Not Problems!

Planning

- Create access and share data for job planning and design

Managing

- Plan for systems that will keep data current
- Deploy technologies that facilitate data sharing, easy connections and translation of existing databases
- Create standards for data accuracy and currency
- Anticipate needing GIS cooperatives for smaller entities
- Select a common base map
- Create a repository of utility data for historic and defunct businesses

Locating

- Enable universal view of data in the field
- Leverage technologies which facilitate upload of collected data
- Develop incentives for reporting unknown/abandoned lines
- End the need for physical white-lining as an outcome of the total effort

Security/Legal

- Ensure access is limited to only those with need and authorization
- Work to achieve voluntary sharing of data
- Develop the legal framework to codify and protect data sharing

The Plan: Grow a Tree!



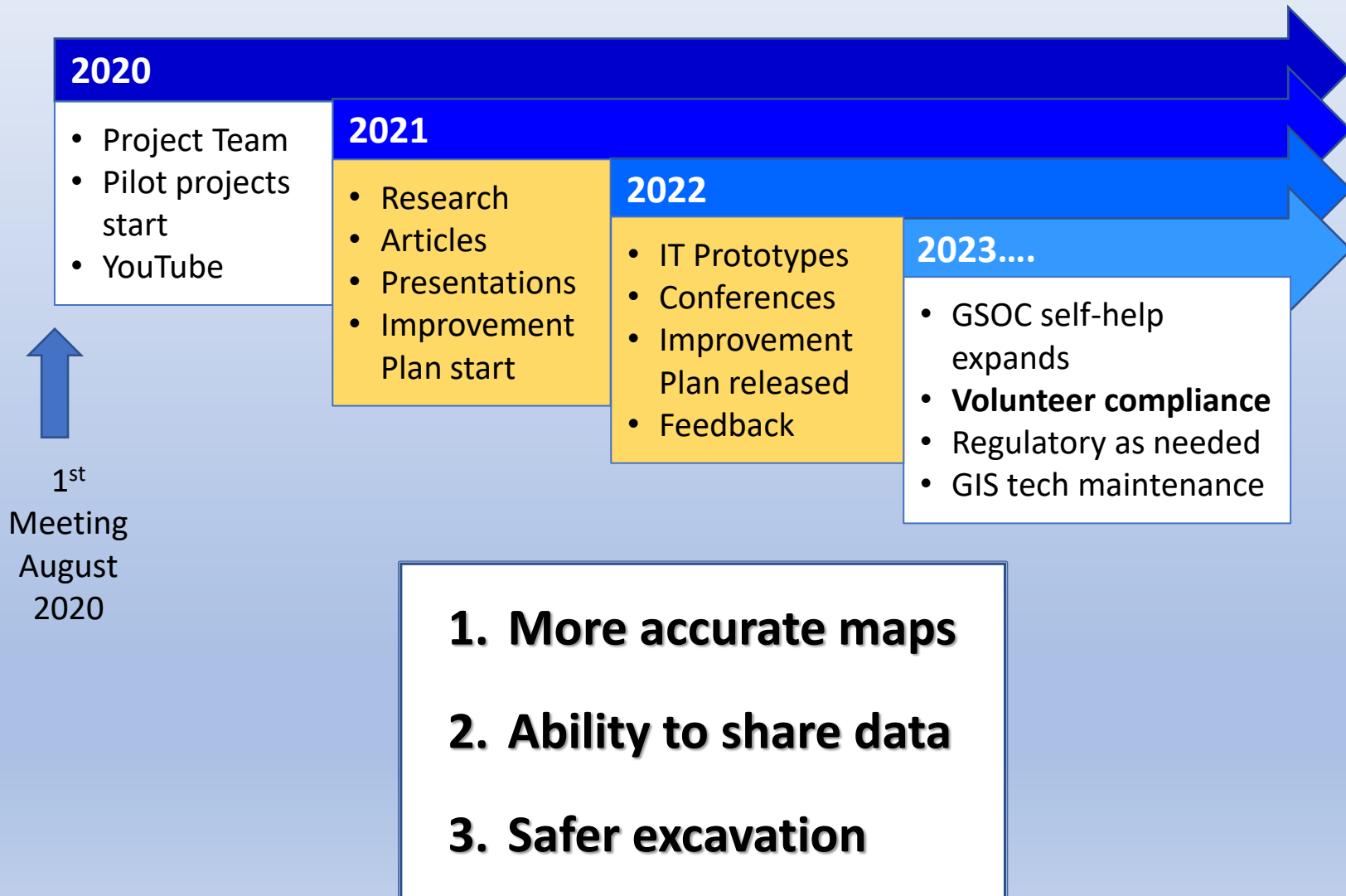
Not This



This

The Plan Going Forward: Action!

First In the Nation: Technology to Go From Reactive to Preventive



The Plan: YouTube

MGAC Emergency Preparedness Committee

HOME VIDEOS PLAYLISTS CHANNELS DISCUSSION ABOUT

Created playlists

- MGAC EPC Project Videos
VIEW FULL PLAYLIST
- Underground Utilities Mapping Project Team Presentations
Updated 3 days ago
VIEW FULL PLAYLIST
- Underground Utilities Mapping Project Team Meetings
Updated 3 days ago
VIEW FULL PLAYLIST
- MGAC EPC Training Presentations and Webinars
VIEW FULL PLAYLIST
- MGAC EPC Quarterly Meetings
VIEW FULL PLAYLIST

Uploads ▶ PLAY ALL

- 2021 0930 4M Analytics Presentation
12 views • 3 days ago
- 2021 0930 UUMPT Meeting Only Recording
5 views • 3 days ago
- 2021 0617 Emergency Management and Machine...
6 views • 3 months ago
- 2021 0617 EPC Meeting Only Recording
5 views • 3 months ago
- 2021 0527 ASCE Utility As Installed Standard...
15 views • 4 months ago

Google: MGAC EPC Youtube

The Plan: Research – U.S.

Other State Regulatory

- **Colorado - August 8, 2018** - [Colorado Revised Statutes 2018, TITLE 9 SAFETY – INDUSTRIAL AND COMMERCIAL](#) (Colorado Call Center Law):
 - Enforcement: Safety Commission,
 - All underground facility owners and operators must be Tier 1 members of the Utility Notification Center of Colorado by 1/1/2021,
 - All new underground facilities – including services - must be electronically locatable when installed, and
 - Subsurface Utility Engineering (SUE) Required Project requirements put in place - CDOT already has a SUE Required Project Process.
- **Montana - May 7, 2019** - [Montana SB 76](#): GPS or as built survey must be filed with MT DOT within 90 days of completion of the utility installation in the Right of Way.

The Plan: Research - International

Overseas Data Sharing, Innovation, Plans

OFFICE OF THE SCOTTISH ROAD WORKS COMMISSIONER

VAULT – FREQUENTLY ASKED QUESTIONS

WHAT IS VAULT?

The Community Apparatus Data Vault system (Vault for short) is layer of information included in the Scottish Road Works Register (SRWR). The SRWR has long allowed for making requests for information on the location of underground apparatus which may affect works (using Plant Information Requests). Historically this information was provided using a combination of proprietary systems such as maps sent by email, access to websites, distributing CDs containing data or printed paper plans. Vault is intended to centralise this information, adding apparatus information alongside details of where works are taking place.

Built on the foundations of the UK Government funded VISTA project, Vault allows the display of information from disparate GIS systems on one screen at the same time. A set of pre-agreed transformations are applied to the supplied data, resulting in a map using common colour coding, symbols and terminology.

WHAT APPARATUS IS SHOWN ON VAULT?

All the major undertakers in Scotland, as well as the majority of the roads authorities have now supplied data to Vault, with the only notable exception being the larger telecoms organisations. A report is available on the register which lists organisations which have supplied up to date information to Vault. Organisations that have yet to supply data are strongly encouraged to do so.

DO I STILL NEED TO CONTACT OWNERS OF APPARATUS BEFORE EXCAVATING?

Yes. While every measure is taken to ensure the information is accurate, at this stage the information on Vault should only be used as an indication that apparatus may be present at a particular location. A lack of apparatus shown on the map does not mean there is no apparatus in the ground. It is still recommended that assurance is sought that the information shown in Vault is accurate before excavation takes place.

WHY SHOULD I PROVIDE MY DATA TO VAULT?

Before an excavation takes place it is essential the workers on site have accurate and up to date information about what lies beneath the surface. It is a requirement under Health and Safety regulations (HSG 47) to share this information to help prevent injury to operatives and costly damage/disruption to services. Vault is a very simple and effective way to help provide this information. It can protect operatives from injury and your asset from being damaged.

WHO HAS ACCESS TO THE INFORMATION SHOWN ON VAULT?

The information shown on Vault is only available to users of the Scottish Road Works Register and the Scottish Road Works Commissioner has restricted access to the register to the roads authorities and undertakers working in Scotland. Data will not be shared with any third parties without the express prior permission of those that have supplied the data.

WHAT DATA SHOULD I SUPPLY?

Any data you hold electronically on the location of your apparatus, be it existing apparatus, apparatus now

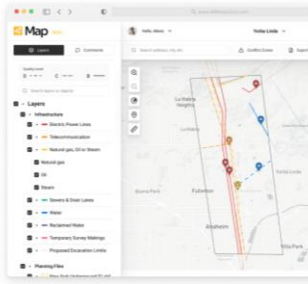
[Vault](#)

**Vault
(Scotland)**

Map Producing accurate subsurface mappings of your utilities

Giving you everything you need to cut costs, save time, and avoid
incidents – at scale.

[Read more](#)



[4M Analytics](#)

**4M Analytics
(Israel)**



National Underground Asset Register technical report

Providing insight, evidence and recommendations
for the management of a NUAR




Restricted

**NUAR
(UK High Commission)**

The Plan: Presentations/Articles


- Clean Water Council Policy Committee: Online, February 26, 2021
- Common Ground Alliance Conference: Orlando, October 13, 2021
- MN GIS/LIS: Online, October 29, 2021
- Minnesota Society of Professional Surveyors: Alexandria, February 24, 2022
- Global Excavation Safety Conference: Phoenix, March 3, 2022



2021 SPECIAL EDITION: LOCATE

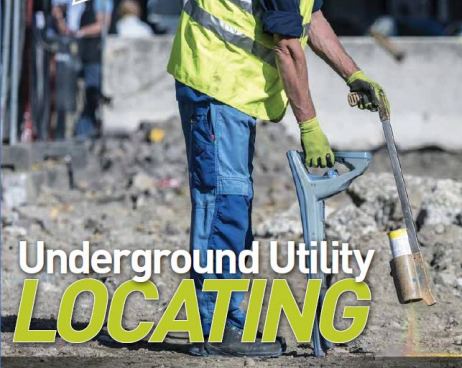
dp-PRO

Saving Lives Through Education



EXCAVATION SAFETY ALLIANCE

EST. 1986



Underground Utility LOCATING

// Subsurface Mapping

// Facility Mapping Data

// Utilities Mapping Project Team

PLUS:

GLOBAL LOCATE MASTERS

FIRST AMENDMENT AUDITS

GIS AND MUNICIPAL UTILITIES

ISSUESPOTLIGHT

LOCATE 2021

Minnesota Underground Utilities Mapping Project Team

FACILITY OPERATOR UTILITY MAPPING

Trevi Bevan

Scott Anderson

Andy Berg

Hawthorne Bjorback

Tom DeWitte

Elizabeth Hamilton

Brandon Kelnath

Karen Masa

Damon Nelson

Joe Rubbiche

LOCATE DATA FLOWS AND MANAGEMENT

Brad Anderson

Dana Bailey

Bob Baques

Adam Franco

Dave Hunsat

Scott Matson

Keith Nery

Nick Ruchalski

Paul Teicher

Adam Worm

REGULATIONS AND SECURITY

Anne Benoff

Dean Parker

Justin Lettermann

Mike Mendolia

David Phillips

Geop Stevens

OUTREACH

Valerie Mandross

Brad Henry

Justin Larson

Scott Landes

Jeanne Pampert

Troy Schultz

Geoff Zeiss

The Minnesota Underground Utilities Mapping Project Team (UUMPT), within the Minnesota Geospatial Advisory Council Emergency Preparedness Committee (EPCL), was formed in August 2020. The UUMPT works to increase locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross-community collaboration to develop best practices and promote technology solutions.

Chaired by Barbara Cederberg, COO of Greater State One Call, and Steve Seaton, Chair of EPCL, the UUMPT is broken into smaller work groups: Facility Operator Utility Mapping, Locate Data Flows and Management, Outreach, and Regulations and Security. Initial response to the project was exceptional as committee members represent a broad range of community stakeholders.

The work groups are actively researching resources to deliver a Best Practices document to the industry. Areas being developed include how to lower operational costs for stakeholders, improved operational safety for utility operators and construction teams, advancement of geospatial technologies with a corresponding improvement in policy and procedures, and increased resiliency of Minnesota's underground infrastructure. It is anticipated the project team may have a considerable life span and could potentially evolve into a self-standing body.

FACILITY OPERATOR UTILITY MAPPING WORK GROUP

led by Trevi Bevan, President of Subsurface Solutions, the Facility Operator Utility Mapping work group meets equipment manufacturers and app developers to demonstrate their solutions during monthly large group calls. Each demonstration is posted on YouTube. The goal of this work group is to demonstrate how different solutions work while encouraging utility operators to consider how they can increase the accuracy of their mapping technologies designed to make utility mapping more cost effective and easier to use.

It's important to understand what information one wants and where to get it. The Facility Operator Utility Mapping work group meets equipment manufacturers and app developers to demonstrate their solutions during monthly large group calls. Each demonstration is posted on YouTube. The goal of this work group is to demonstrate how different solutions work while encouraging utility operators to consider how they can increase the accuracy of their maps and ultimately reduce damages.

LOCATE DATA FLOWS AND MANAGEMENT WORK GROUP

led by Brad Anderson, GIS Manager with the City of Moorhead, the Locate Data Flow and Management work group is beginning a detailed mapping of the existing process flow of data acquisition and maintenance workflows to ensure assets are as accurate and complete as possible for utility locating.

As this project moves forward, the work group

UNDERGROUND UTILITY LOCATING

“The UUMPT works to increase locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross-community collaboration to develop best practices and promote technology solutions.”

will research existing data exchange standards and existing new technologies around the country that provide 3D visualization of underground utilities prior to excavation.

The Locate Data Flows and Management Work Group is working toward developing a best practices model for sharing this data with utility locators in the field with the goal of reducing damage to Minnesota's underground infrastructure and, just as importantly, improving safety for workers and the public.

OUTREACH WORK GROUP

led by Valerie Mandross, Event Planner with Infrastructure Resources, the Outreach Work Group is developing communications, grand toward large and small excavating companies,

design engineers, and facility operators to educate and build awareness toward damage and liability reduction. This work group looks forward to sharing success stories through case studies submitted to industry publications like dp-PRO, and social media groups.

REGULATIONS AND SECURITY WORK GROUP

led by Dean Parker, Partner at Hinchman & Culbertson LLP, the Regulations and Security Work Group is researching regulatory limitations and requirements for GIS data sharing. The work group will also research guidelines and best practices to allow for safe and secure sharing of GIS data. The work group is performing a detailed analysis of existing regulations and practices concerning the secure sharing of GIS data,

as well as communicating with industry professionals to gain a better understanding of existing security practices. The work group will look to the information it has gathered in preparing suggested guidelines to support development and implementation of best practices by the other work groups.

The work group is working toward guidelines that will help ensure that sensitive GIS data is shared only with stakeholders who are authorized to use the information and that the information will only be used for an authorized purpose.

If you would like to learn more on the progress of the UUMPT, visit the MSAAC Emergency Preparedness Committee page on YouTube: youtube.com/mnstate/c12h4e1_20210714t4y6

More colors are just better.



Full-color, custom shapes, and enhanced UV protection used to cost extra, at Rhino they're standard.

RHINO ARMOR

RhinoMarkers.com

The Plan: Legal/Security - Create Support

- Ongoing discussions with Europe and Canada
- Clean Water Council: October 18, 2021
- MGAC: December 1, 2021
- Association of Minnesota Counties (Environment & Natural Resources Policy Committee): December 6, 2021
- Multiple data sharing agreements in draft

Policy Statement Draft/Approved

Minnesota Underground Utilities Mapping Project

28 July 2021/18 October 2021

Policy Statement

To create an accurate inventory of Minnesota's underground utility infrastructure, the Clean Water Council (CWC) recommends that the State of Minnesota develop an accurate map of all underground utilities installed in the state and require Minnesota's public and private sectors to support sharing of necessary data in a secure and confidential manner.

The underground utility infrastructure mapping project supports the Clean Water Council's efforts to reduce the risk to drinkable, fishable, and swimmable water.

Problem

Damage to Minnesota's underground utilities can disrupt critical water infrastructure (drinking water and wastewater) and contaminate groundwater and surface water. In addition, without accurate mapping, public safety is a concern, especially when work is being done near petroleum and hazardous materials pipelines.

Damage most often results from data that is incomplete, inaccurate, or only exists on paper. This limits the ability of public and private entities from sharing data and ensuring its accuracy over time.

Examples of utilities that require accurate mapping include, but are not limited to:

- Drinking water supply pipes
- Wastewater pipes
- Stormwater pipes and stormwater storage
- Petroleum pipelines
- Hazardous materials pipelines
- Telecom infrastructure, and
- Abandoned infrastructure that could transport aquatic invasive species.

Much of this data is held by the private sector, and therefore is not in the public sector's possession. It is imperative that the sharing of data can be accomplished in a secure and confidential manner.

Solution

Improving the accuracy of Minnesota's underground utility maps will reduce these risks. Gopher State One Call (GSOC) and the Minnesota Geospatial Advisory Council Emergency Preparedness Committee (EPC) have formed the Underground Utility Mapping Project Team (UUMPT) to address this issue.

The mapping project works to improve locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross-community collaboration that develops best practices and promotes technology solutions.

With security and confidentiality being critical, the efforts will include protection of data from competitive intrusion and security threats using appropriate procedures and advancements in geospatial technology that facilitate sharing of data via secure and limited access.

The Plan: Locator Live Data Feed Pilot Project

Ticket information

Ticket number 212093750
Original call date 07/28/21 02:58 pm
Work to begin date 07/30/21 03:00 pm
Expiration date 08/13/21 03:00 pm
Type NORMAL CALL
Past work start Y
Locked Y
Past due time Y

Excavator information

Company name GOPHER STATE ONE CALL
Address 123 TEST AVE
WEST ST PAUL, MN 55118
Company phone 651-681-5705
Caller JILL HAYES
Phone 333-333-3333
Contact JILL HAYES
Contact phone 222-222-2222
Email address jillhayes@occinc.com

Excavation information

Type of work TEST

Search place or address

Search

Hide district polygons Expand map



Lat/lon: 44.774787 / -94.156152



Type:
Location:
Date_Install:

All properties

16th St E

16th St E

Elliott Ave N

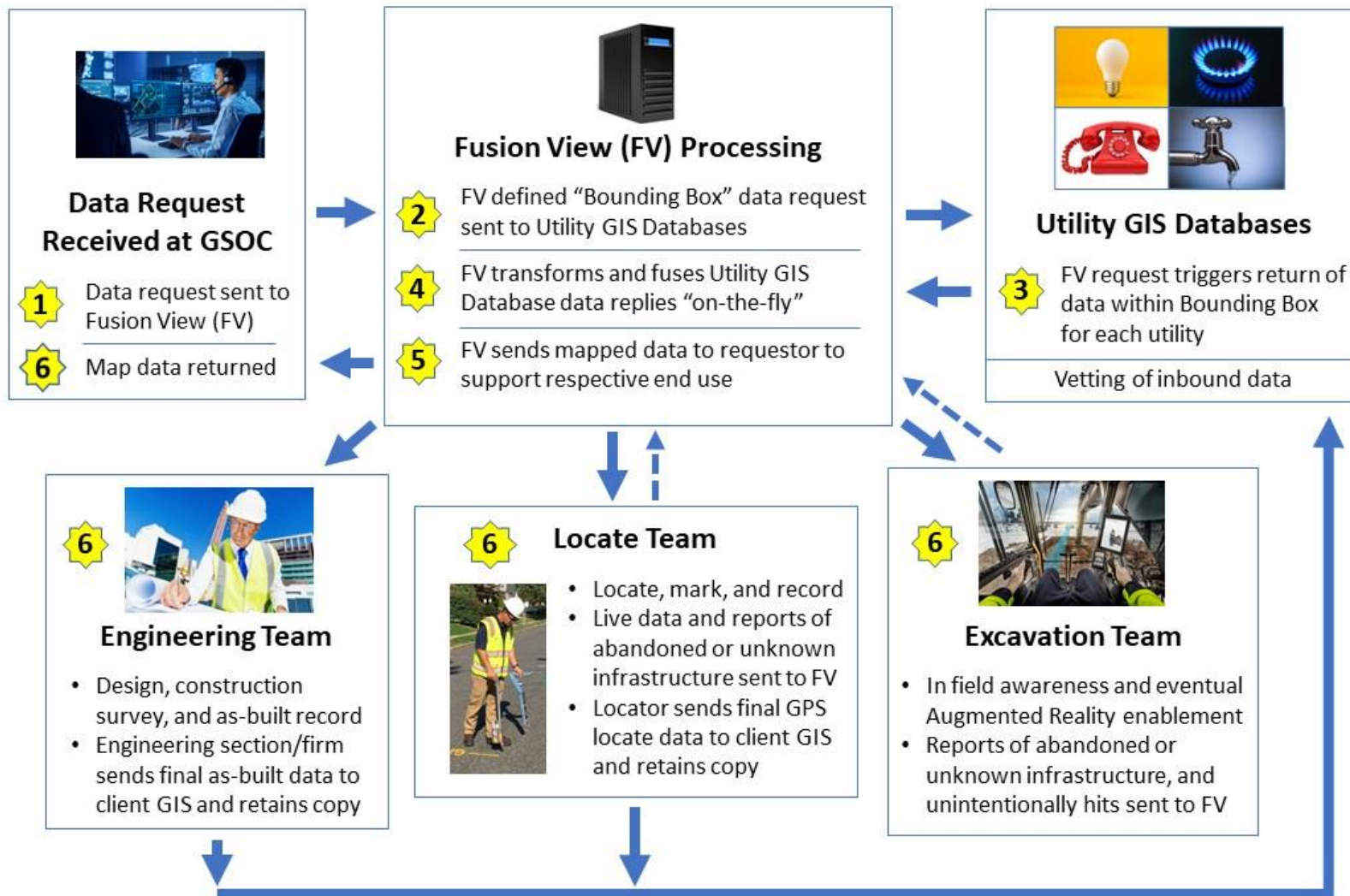
Elliott Ave N

Google

Keyboard shortcuts Map data ©2021 5 m Terms of Use Report a map error

The Plan: IT Prototype #1-3

Minnesota UUMPT Blueprint for the Future – Version 4.2.1



The Plan: Prototype #1 – Glencoe, MN

GeoMoose

Full Extent Measure Print Identify Select Features Search Find Me Start Over Bookmark

Catalog Favorites Visible Super Tab

☒ Drawing and Markup

The Drawing and Markup layer can be used to add user defined shapes to the map.

☒ Drawing

Overlays

☒ Survey Monuments

- City of Saint Paul
- Anoka County
- Washington County
- St. Louis County
- Ramsey County
- Mcleod County

☒ Electric-Cables-Conduit-Lighting

- Electric Line - Secondary Underground
- Electric Line - Primary Underground

☒ Comm-Alarm-Signal-Cables-Conduit

- Fiber
- Copper

☒ Sewers-Drains

- MNDOT HYD Structures - Points
- MNDOT Pipe End Sections - Points
- MNDOT Pipes - Lines

☒ Reference

- MNDOT SIG Signal Systems
- MNDOT SIG Signal Components
- MNDOT Lightpoles - points

Grids

Backgrounds

© OpenStreetMap Contributors

3.8.0

X,Y -10483817.1, 5581712.2 USNG 15T VK 06768 55472 Lat,Lon 44.7466, -94.1777

Zoom to Extent...

The Rocket **IS** Going to Blow Up on the Launch Pad!



[NASA](#)



[Space News](#)



[space.com](#)



[Taipei Times](#)

The Plan: UUMPT Improvement Plan

Minnesota Underground Utilities Mapping Project Team Improvement Plan

St. Paul, Minnesota

August XX, 2022

MINNESOTA
UNDERGROUND UTILITIES
MAPPING PROJECT TEAM
IMPROVEMENT PLAN
AUGUST XX, 2022

Tech - Where We Can Go With Good Data



[Volvo](#)

Leveraging emerging tech: AR, 3D, precision GPS
The technology is there, it's a matter of will (and money)

Final Thought: Return on Investment

What's the value of:

- A life?
- Disruption to commerce?
 - Slowed construction?
- Damage to the environment?
- Exposure to another “Big One”?

We need to be working toward the aviation standard –

Zero Accident Rate

Learn More (mgacepc.net)

- Next UUMPT – February 24, 1:00 pm CT

Questions?

Steve Swazee

Chair

MGAC Emergency Preparedness Committee

chair@mgacepc.org