1

A COLLABORATIVE EFFORT

A Public – Private Partnership

GSOC
GOPHER STATE ONE CALL

CHAIR
Barbara Cederberg
Operational Control

MINNESOTA
GEOSPATIAL ADVISORY COUNCIL

VICE CHAIR
Steve Swazee
Administrative Control

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MN UMP EXPECTED LONG-TERM OUTCOMES

Generation of high-quality, GPS facility operator maps of underground utilities

Maps of these underground facilities may be viewed by accredited designers, locators, excavators and facility operators in relation to a GSOC ticket request for maps or an excavation ticket, supplementing the existing "Click or Call Before You Dig" processes.

Resulting in:
- Safer excavation
- Increased efficiency and cost reduction of construction projects

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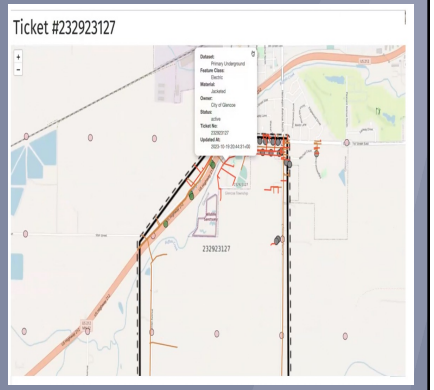
MN UMP SUMMARY

- Technology exists to enable real time viewing of underground utility maps
- GSOC one-call ticket is control for selecting area for viewing maps
- Viewing access and time by users to be limited
- User and facility operator agreements to be in place
- Pilot system completed: October 2022
- Go-forward plan in place



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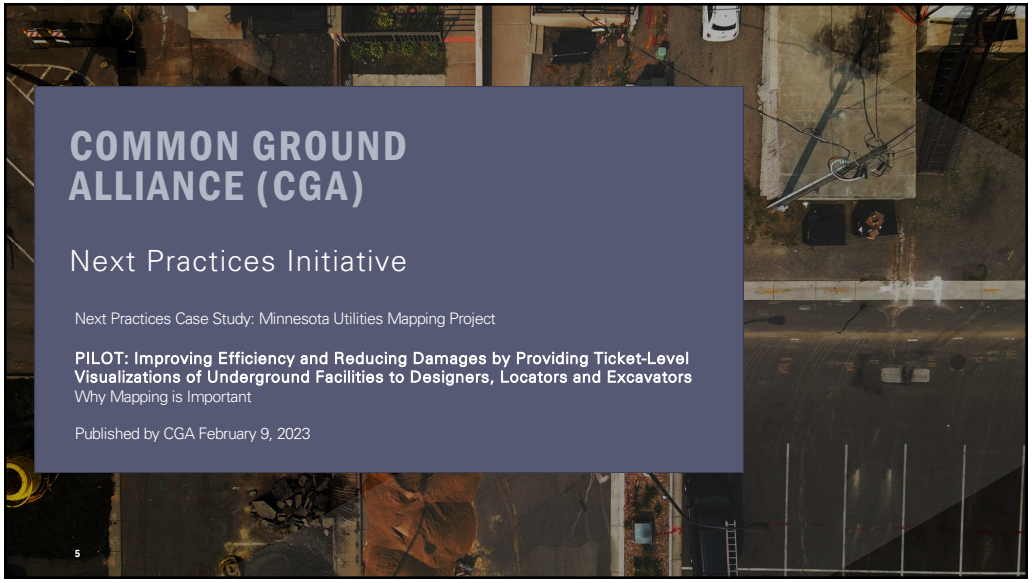

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NEXT PRACTICES CASE STUDY: MINNESOTA UTILITIES MAPPING PROJECT

WHY MAPPING DATA IS IMPORTANT

Despite widespread availability of highly precise mapping technologies and platforms, legacy records of underground utilities are often inaccurate or incomplete, and largely remain siloed away from 811 system end users like designers, locators and excavators. **Bringing damage prevention mapping technology and accessibility to 811 system end users has the potential to reduce dig ins and increase efficiency at every step of the safe excavation process.** Imagine a platform that dynamically displays comprehensive utility map visualizations for the geographic area indicated on an 811 ticket, allowing engineers to plan new projects more efficiently, locators to perform their duties more efficiently and contractors to excavate more safely – all while facility owner/operators maintain security and control over their mapping data.

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COLLABORATIONS WITH SIMILAR EFFORTS

- Canada - Subsurface Utility Map Data Exchange (SUMDEx)
- Colorado – Limited to DOT right-of-way
- European Underground Damage Prevention (EUDAP) Group (11 nation consortium)
- Montana - Limited to DOT right-of-way
- National Underground Asset Register (UK)

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THE PLAN

THE FUZIONVIEW ENGINE IS OPEN-SOURCE SOFTWARE

- Consists of a set of APIs for the data communications
- The APIs will allow for easy integration into existing notification center systems, allowing for faster ease of adoption

FUTURE FUZIONVIEW SYSTEM ENHANCEMENTS

- FuzionView being built to support 3D visualizations
- Additional features as identified

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MN UMP UPDATE

Prototype system completed – October 2022

Defined next steps for development of commercial platform
- Open source software, API connected to OCC ITIC
- Have initial raise of $125,000.
- SharedGeo received $100,000 PHMSA Grant

Beta test started: MNDOT and WSB

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DEVELOPMENT PLAN AND COSTS OF FUZIONVIEW

1. Develop Core FV Engine
   Ability to pull GSOC Ticket area map data from Facility Operators via WFS service and serve to FuzionView
2. Establish connections with 4-5 key Pioneer Partner Facility Operators
3. View maps, authenticate users, create documentation and prepare for release as open-source software
4. Field Markup and Comment Service - input from field locators/excavators about known or unknown infrastructure located in the field

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KEY TAKEAWAYS

- Software development contract signed on **June 22, 2023** – Eighteen-month clock started. As of September 30, 2023 project is estimated to be **20% complete.**
- Anticipated near-term project checkpoints:
  - **November 2023** – first live test of Design Engineering access to a Facility Operator data base through FuzionView January 2024
  - **December 2023** – first draft of attribute comparison matrix finished January 2024
- Anticipated **April 2024 checkpoints**:
  - **Core FuzionView engine build - release candidate** will be undergoing testing by 'Pioneer Partner' Facility Operators, Design Engineering firms, and One Call Concepts
  - **User Interface testing** will be underway in parallel
  - Onboarding will be proceeding to the extent organizations are willing to voluntarily participate
- On hold pending review of status of April 2024 checkpoints:
  - Field markup capability
  - Development of documentation

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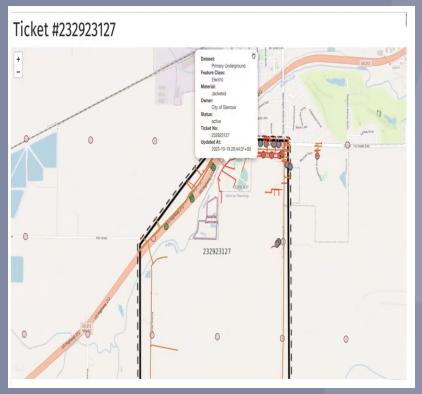
MN UMP Beta Test

- MnDOT and WSB

  Add stakeholders as we progress

Objectives:

- Document questions, learnings and processes
- Develop success metrics
- Utilize and fine tune Agreements
- Develop data for business case



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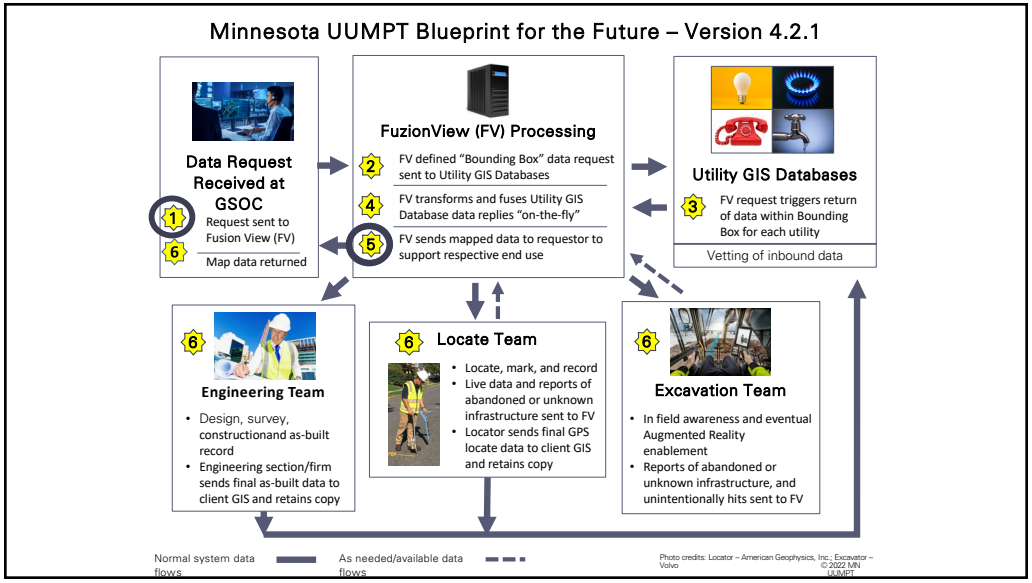

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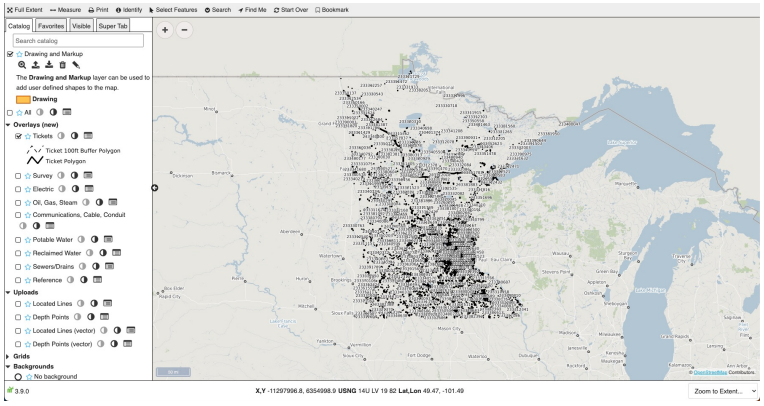
AUGMENTING THE GSOC TICKET . . .



GSOC Tickets for the whole state are being loaded live.

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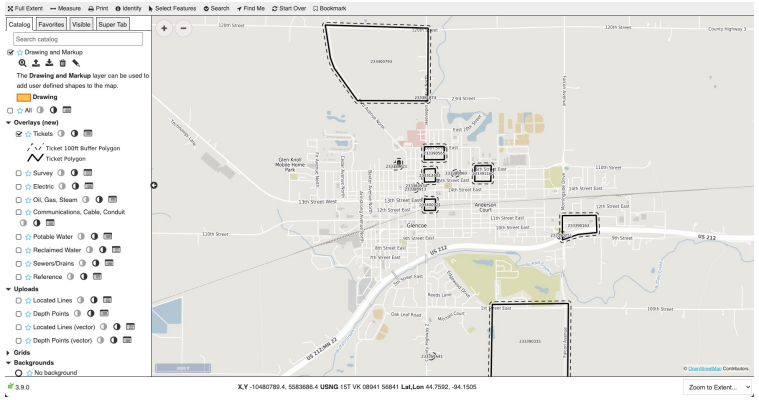
AUGMENTING THE GSOC TICKET . . .



Utilizing a simple Admin interface.

It will also play double duty as the Facility Operator dashboard view.

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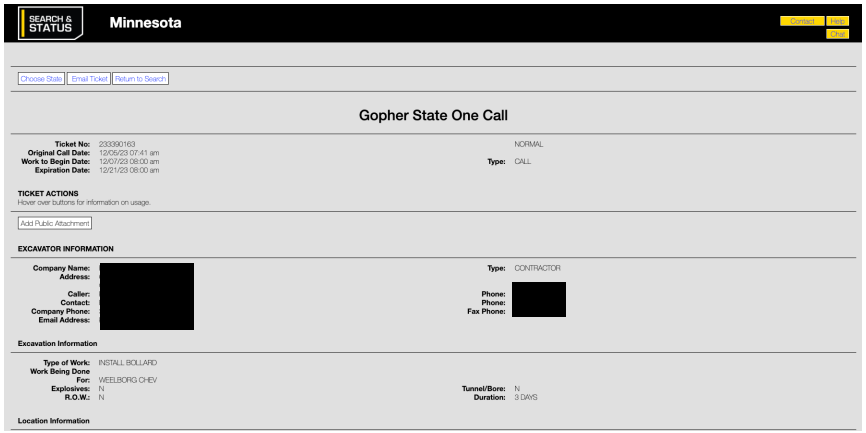

THE GSOC TICKET . . .

The initiating GSOC ticket request is linked into the FuzionView report output . . .

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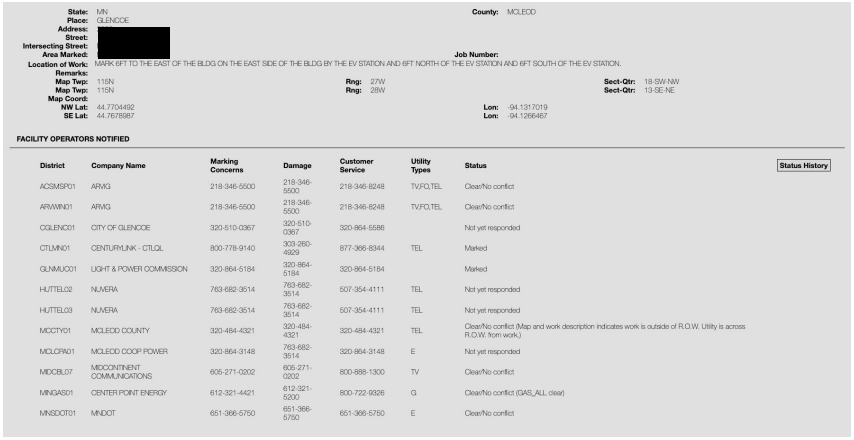

State: MN
Place: GLENCOE
Address:
Street:
Intersecting Street:
Area Marked:
Location of Work: MARK 6FT TO THE EAST OF THE BLDG ON THE EAST SIDE OF THE BLDG BY THE EV STATION AND 6FT NORTH OF THE EV STATION AND 6FT SOUTH OF THE EV STATION.
Remarks:
Map Twp: 115N
Map Twp: 115N
Map Coord:
NW Lat: 44.7704492
SE Lat: 44.7678987
County: MCLEOD
Job Number:
Rng: 27W
Rng: 28W
Sect-Qtr: 18-SW-NW
Sect-Qtr: 13-SE-NE
Lon: -94.1317019
Lon: -94.1266467

FACILITY OPERATORS NOTIFIED

District	Company Name	Marking Concerns	Damage	Customer Service	Utility Types	Status	Status History
ACSMSP01	ARMG	218-346-5500	218-346-5500	218-346-8248	TV,FO,TEL	Clear/No conflict	
ARWMN01	ARMG	218-346-5500	218-346-5500	218-346-8248	TV,FO,TEL	Clear/No conflict	
CGLENC01	CITY OF GLENCOE	320-510-0367	320-510-0367	320-864-5586		Not yet responded	
CTLMIN01	CENTURYLINK - CTLQL	800-778-9140	303-260-4929	877-366-8344	TEL	Marked	
GLNMUC01	LIGHT & POWER COMMISSION	320-864-5184	320-864-5184	320-864-5184		Marked	
HUTTEL02	NUVERA	763-682-3514	763-682-3514	507-354-4111	TEL	Not yet responded	
HUTTEL03	NUVERA	763-682-3514	763-682-3514	507-354-4111	TEL	Not yet responded	
MCCTY01	MCLEOD COUNTY	320-484-4321	320-484-4321	320-484-4321	TEL	Clear/No conflict (Map and work description indicates work is outside of R.O.W. Utility is across R.O.W. from work.)	
MCLCPA01	MCLEOD COOP POWER	320-864-3148	763-682-3514	320-864-3148	E	Not yet responded	
MDCBL07	MIDCONTINENT COMMUNICATIONS	605-271-0202	605-271-0202	800-888-1300	TV	Clear/No conflict	
MNGAS01	CENTER POINT ENERGY	612-321-4421	612-321-5200	800-722-9326	G	Clear/No conflict (GAS_ALL clear)	
MNSDOT01	MNDOT	651-366-5750	651-366-5750	651-366-5750	E	Clear/No conflict	

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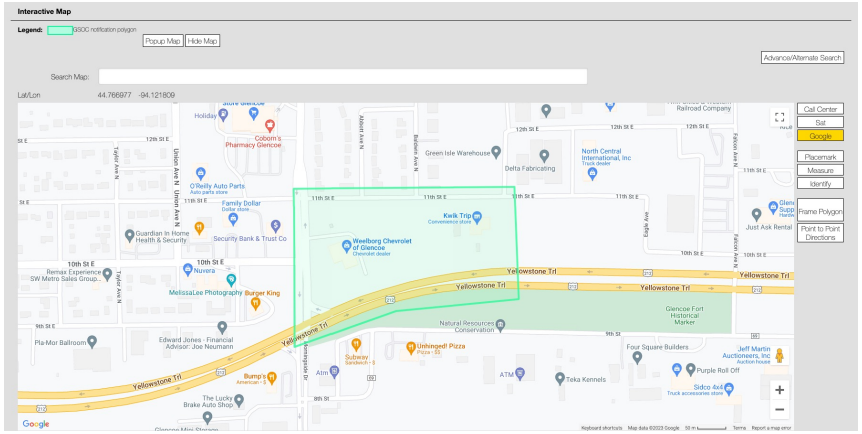

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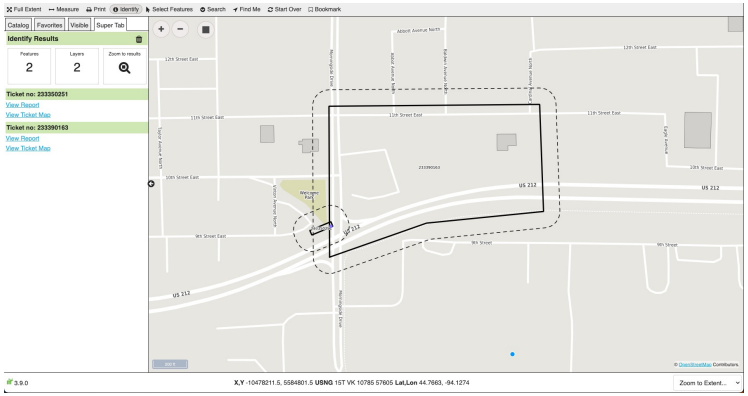

Old and new reports are both being populated from the same API services.

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AUGMENTING THE GSOC TICKET . . . All API driven from the FuzionView Engine.

Ticket Number: 233390163

View GSOC Ticket

Composite map, all layers

Reference

- City of Glencoe
  - Streetlight: 13
  - Work Orders: 9
- MnDOT
  - 2017 Lightpoles: 4
  - SIG Signal Systems: 1

Owner (Infra description)

Request Polygon Location Map (WMS)

Communication, Cable, Conduit

- City of Glencoe
  - Copper - CenturyLink: 40
  - Fiber - CenturyLink: 17

Sewers, Drains

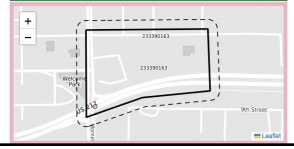
- MnDOT
  - Structures: 9

Electric

- City of Glencoe
  - Primary Underground: 16
  - Secondary Underground: 22

Survey

- McLeod County
  - Monuments: 1



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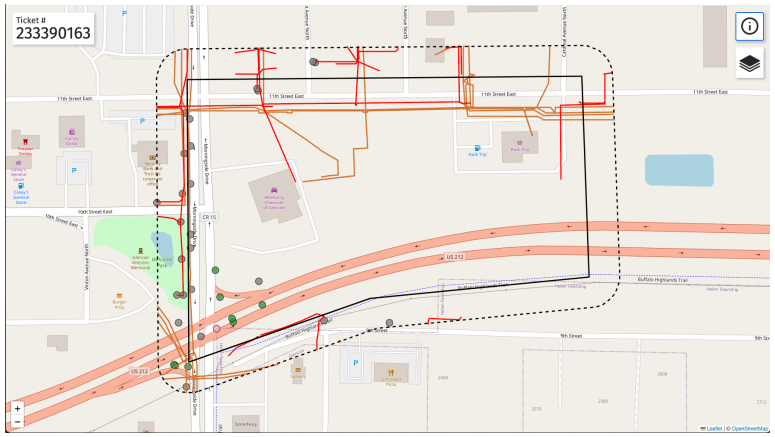

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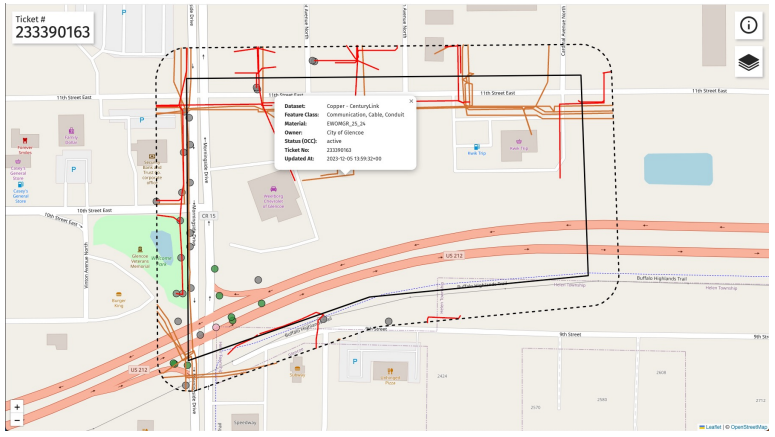

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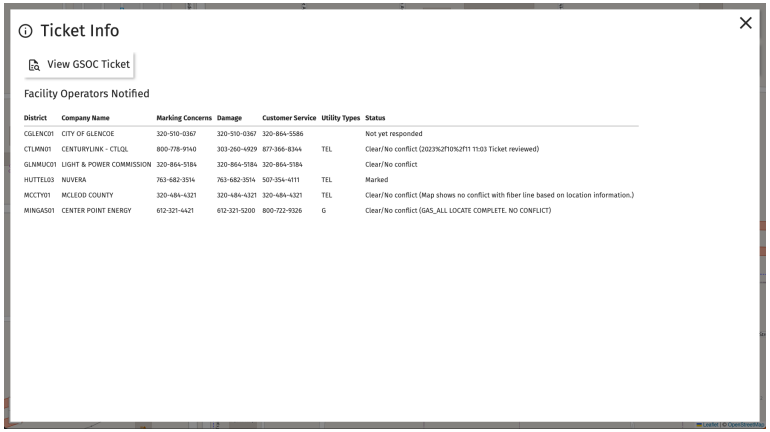

THE FUZIONVIEW TICKET . . .

Ticket Information View

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THE FUZIONVIEW TICKET . . .

Ticket Information View

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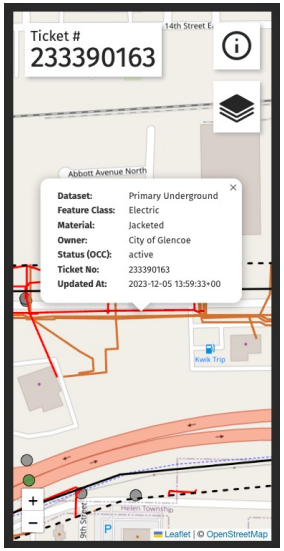
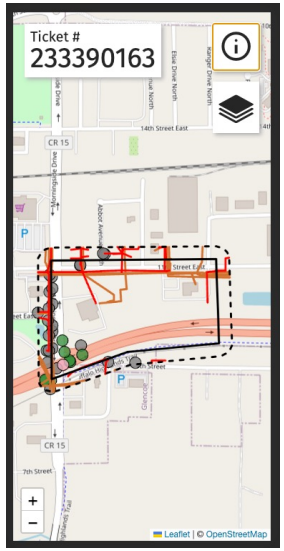
MOBILE FIRST DEVELOPMENT





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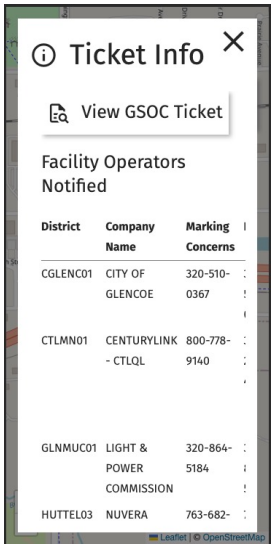
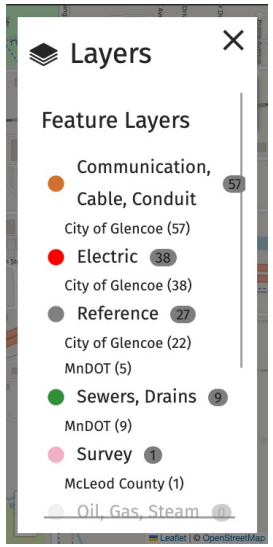
MOBILE FIRST DEVELOPMENT





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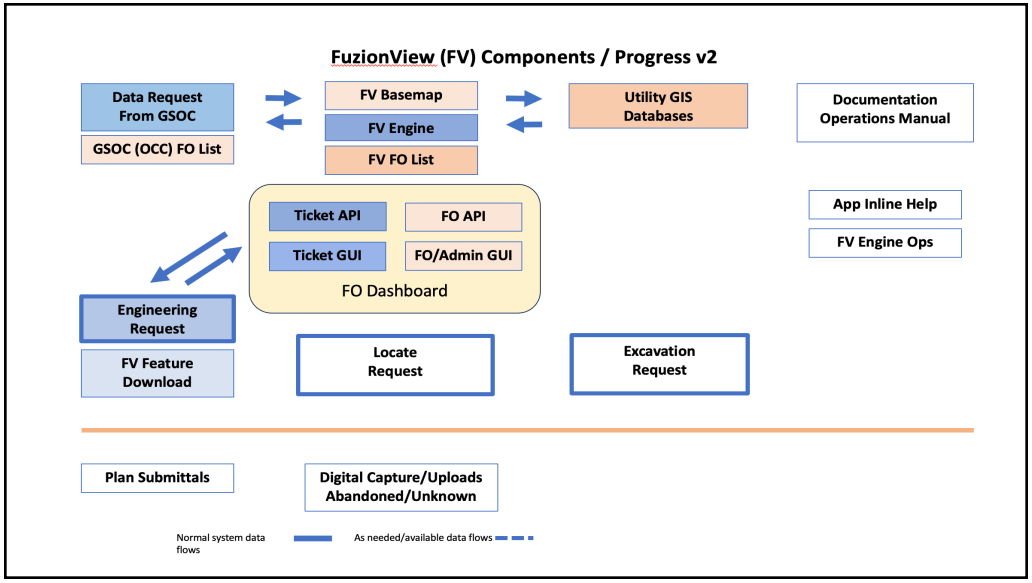

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UPCOMING DEVELOPMENT ITEMS

- Facility Operator API and dashboard viewer
- New, simpler, admin viewer
- FuzionView account settings FORM.
- Ticket Viewer enhancements, view scale, north arrow, "you are here" control, aerial photo backgrounds, ticket metadata.
- Map feature styling and pick highlighting
- Map feature scaling at zoomed in views.
- Addition of more "Reference" layer information related to restricted digging and access, like Railroad ROWs, EPA restricted locations, controlled plantings, etc.
- In App documentation and operations manual development.

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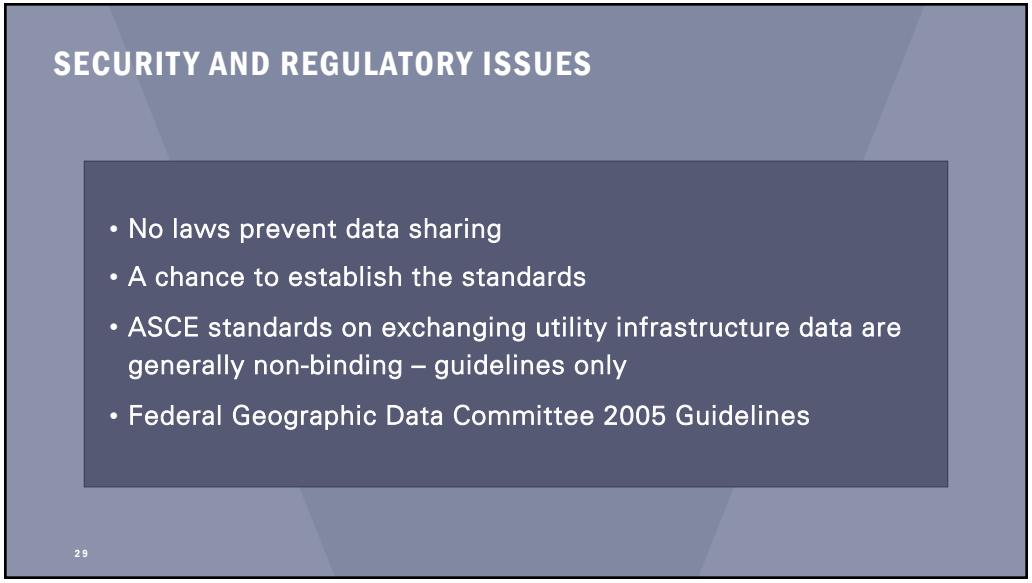
SECURITY AND REGULATORY ISSUES
• No laws prevent data sharing
• A chance to establish the standards
• ASCE standards on exchanging utility infrastructure data are generally non-binding – guidelines only
• Federal Geographic Data Committee 2005 Guidelines
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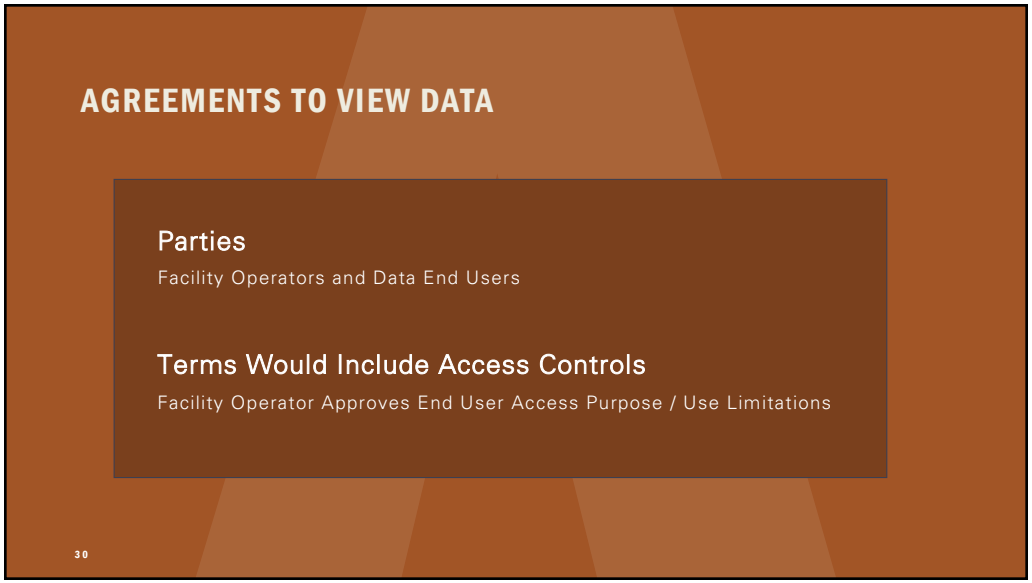
AGREEMENTS TO VIEW DATA
Parties
Facility Operators and Data End Users
Terms Would Include Access Controls
Facility Operator Approves End User Access Purpose / Use Limitations
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THANK YOU
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Bob Basques
bbasques@sharedgeo.org
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