

DiamondMaps.com



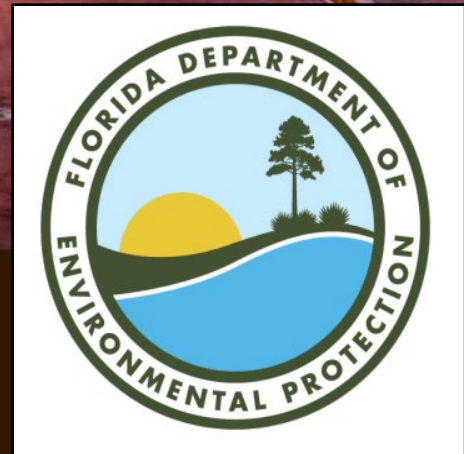
Watch this first!

<https://youtu.be/k1lgblavSaY>

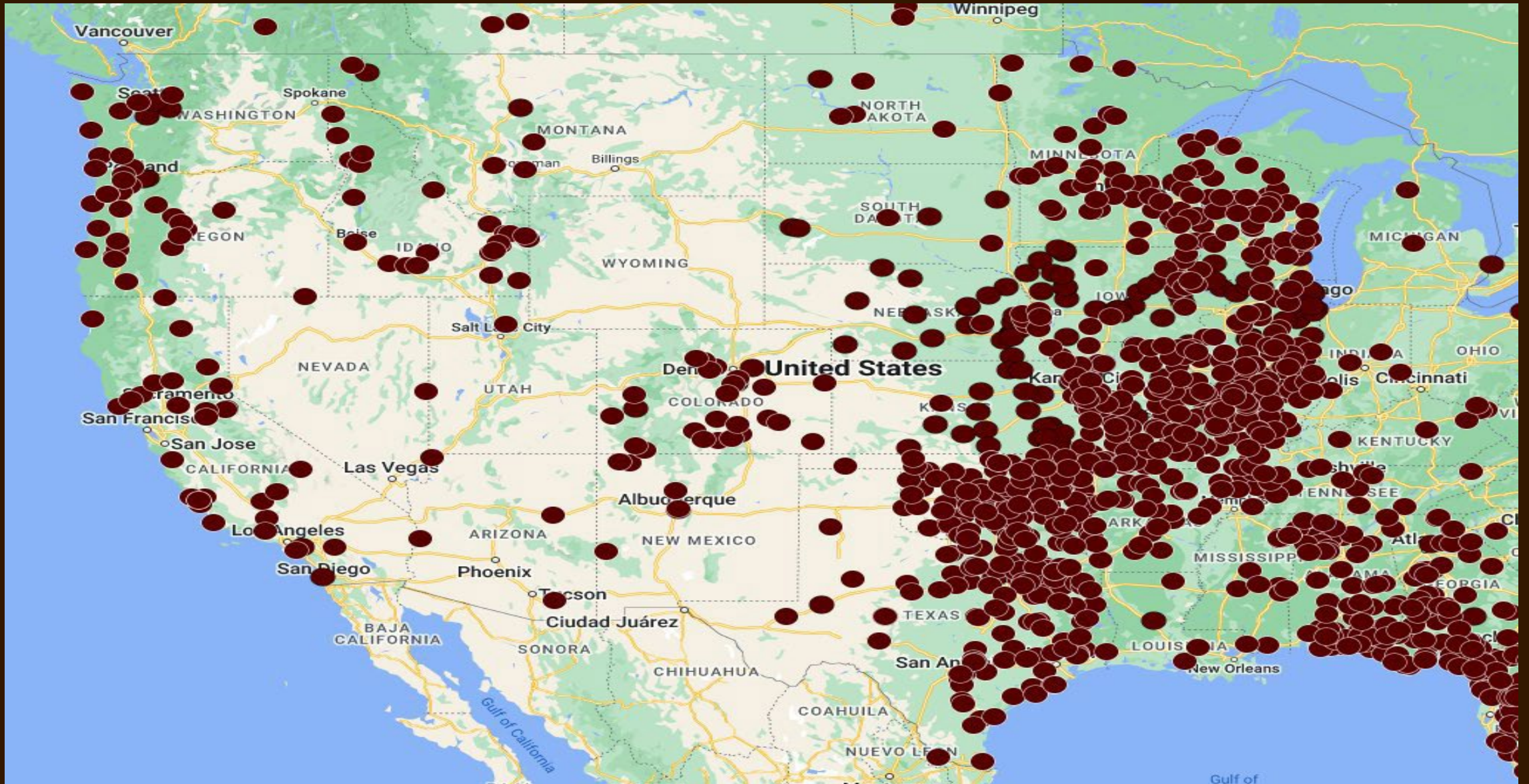


A simple cloud-based GIS for municipalities and rural utilities

Map your own system - Track maintenance - \$20/month



Diamond Maps Coverage Area



Outline

- Point and Click Mapping
- GPS Mapping
- What Can I Do With GIS
- LSLI



Menu Layers Measure Coords Draw Mdan Clear S.I. Stare

Measure Close Distance Area Clear 29.8 feet

Legend

WATER MAINS

- .75" (black line)
- 2" (yellow line)
- 4" (red line)
- 6" (blue line)

SEWER_MAIN

FORCEO_MAINS

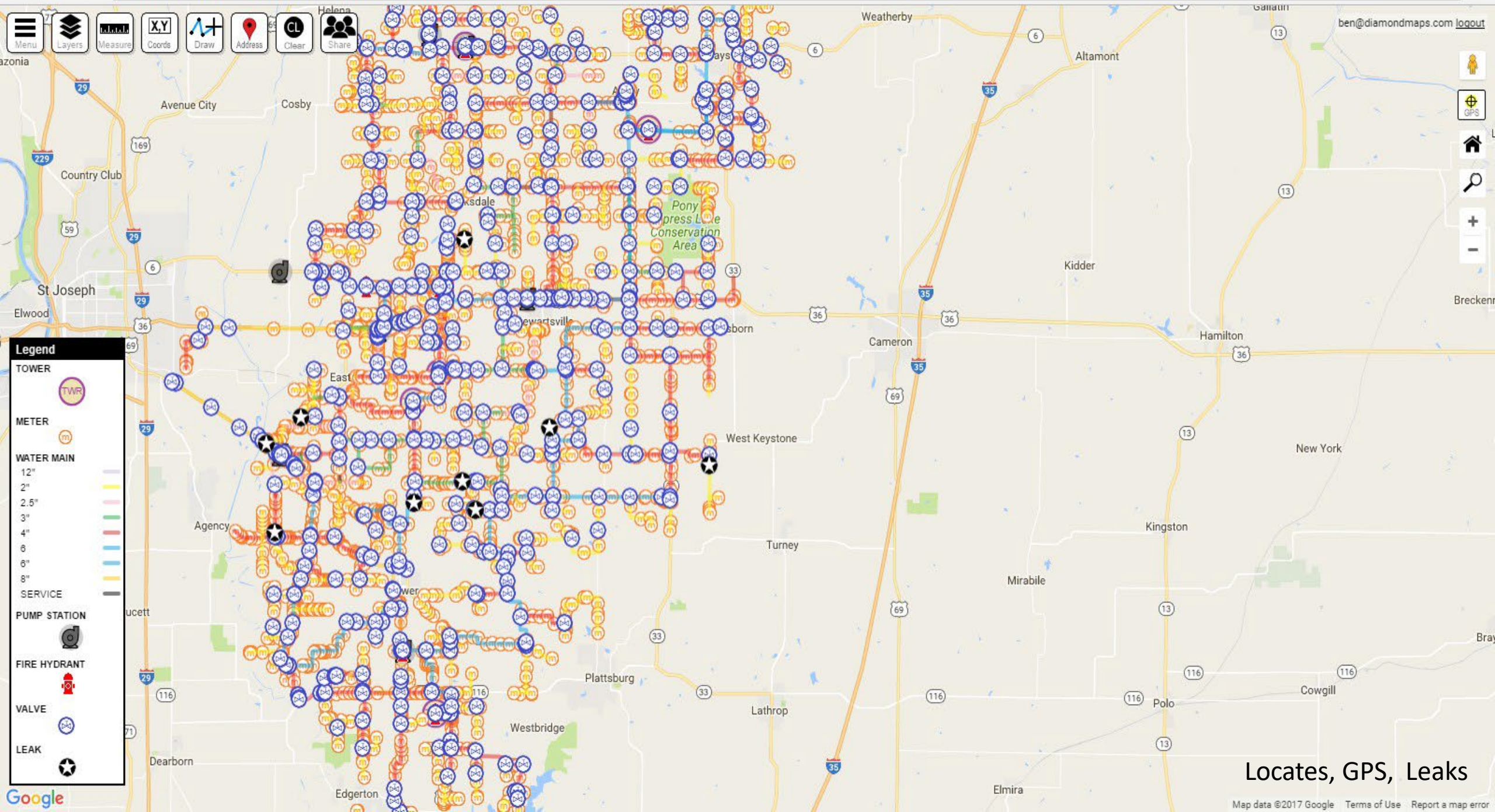
METERS

0

WATER_VALVES

4-





Locates, GPS, Leaks

Menu Layers Measure Coords Draw Address Clear Share

ben@diamondmaps.com [logout](#)

LEAK Layer

Back Close

Browse Search Settings More

Size	Cause	Date
2	Pulled apart	2015
4	Split	2016
8	Split	2016
2	Valve failed	2016
		1899
3"	Main washed c	2016
2" main, 1" ser	service line pul	
2"	Paul Deshon h	
2.5"	pinhole, sleeve	2016
2"	pulled in casing	2017

1 selected Action

LEAK

Close

Id	
Size	2.5"
Cause	pinhole, sleeved
Date	2016-12-02
LINK	
Attachments	Add
Notes	2016-12-02 16:07 jmc6391@gmail.com Map shows as 2" but is really 2.5" pipe

Add/View Notes

GPS Home Search + -

Leak, Notes, Share

Menu Layers Measure Coords Draw Address Clear Share

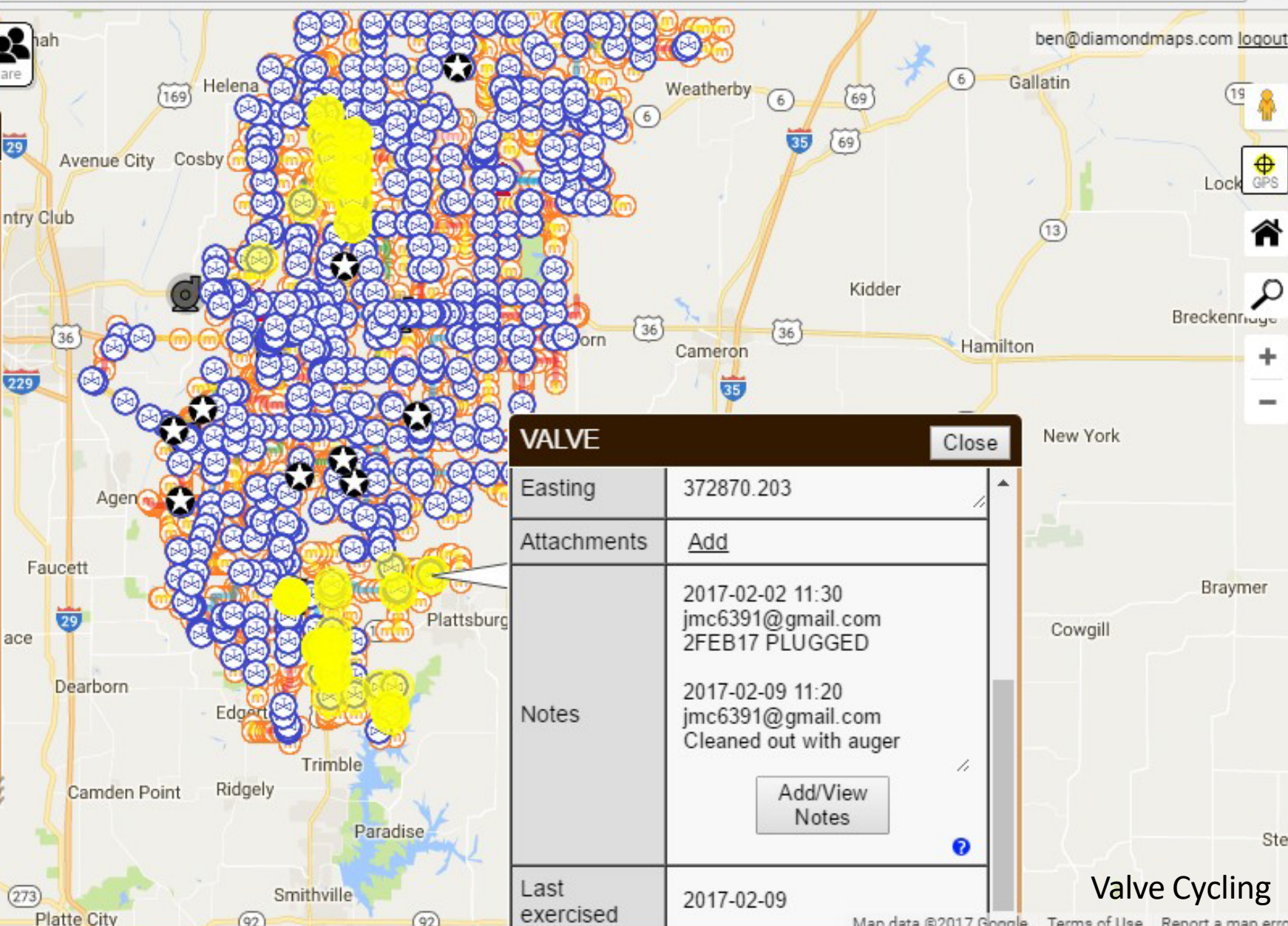
VALVE Layer Back Close

Browse Search Settings More

Search Results For Last exercised > 2010-01-01
91 matches found. [Browse full index](#)

Ftr ID	SIZE	COMMENT	NUM
762	2"		76
763	2"		76
764	6"		76
766	4"		76
767	2"		76
768	2"		76
876	4"		87
889	2"		

1 selected Action

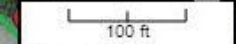


VALVE Close

Easting	372870.203
Attachments	Add
Notes	<p>2017-02-02 11:30 jmc6391@gmail.com 2FEB17 PLUGGED</p> <p>2017-02-09 11:20 jmc6391@gmail.com Cleaned out with auger</p> <p>Add/View Notes</p>
Last exercised	2017-02-09

Valve Cycling

Legend



Water Lines

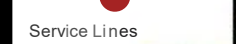
Diameter (blank)

- 4.5
- 2
- 2.5
- 3
- 4
- 5
- 6
- 8
- 10
- 12
- 16

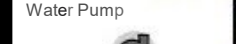
Fire Hydrant



Flush Hydrant



Service Lines



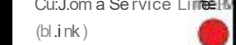
Water Pump



Repairs

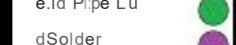


Valve



Materials

Custom Service Line Material (blank)



Galvanized



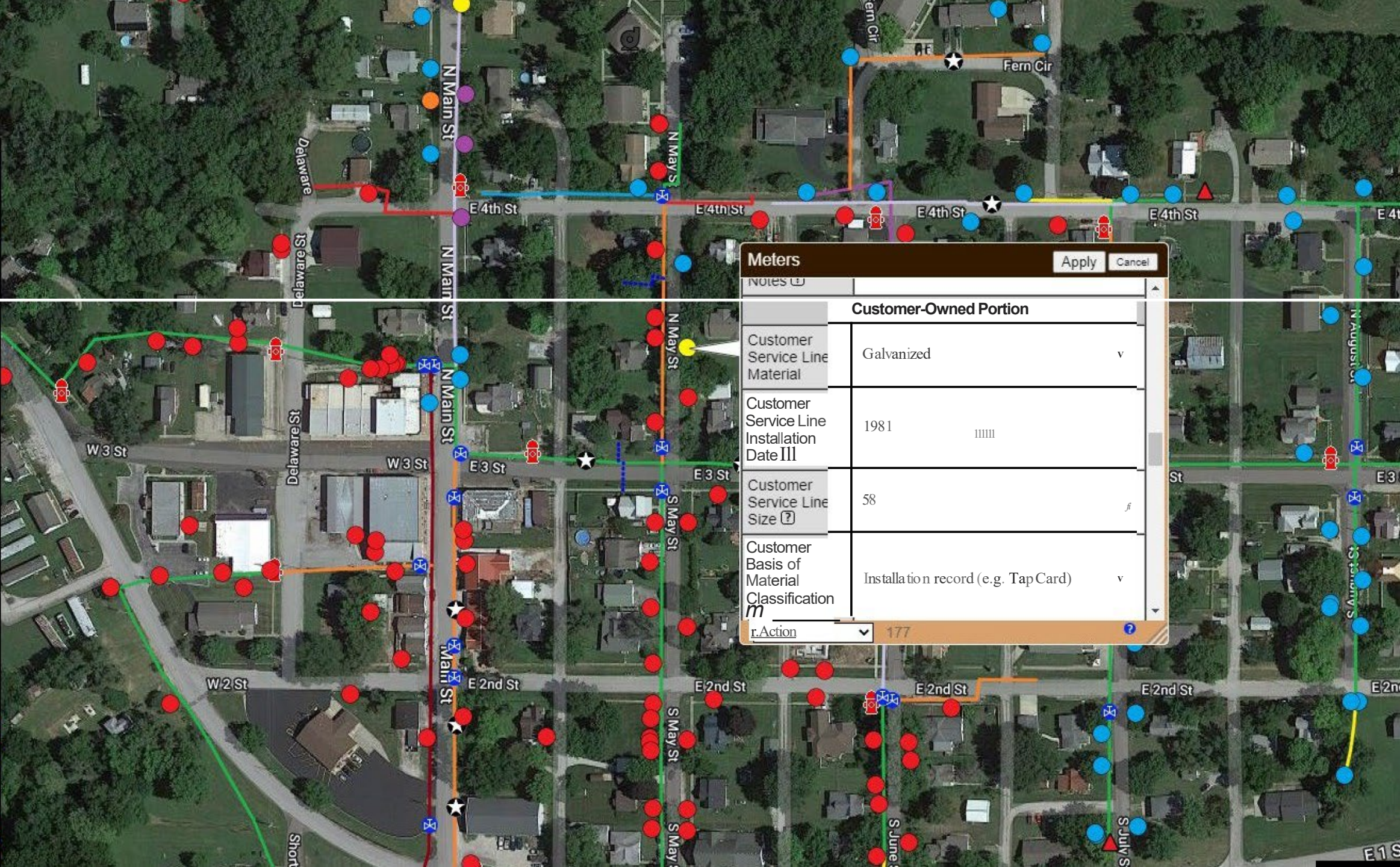
LudFittings

Lead Pipe

Solder

Non-Lead

Unknown



Meters Apply Cancel

NOTES

Customer-Owned Portion	
Customer Service Line Material	Galvanized v
Customer Service Line Installation Date III	1981 IIIIIII
Customer Service Line Size ?	58 f
Customer Basis of Material Classification	Installation record (e.g. Tap Card) v
Cr.Action	177 ?

Menu
Layers
Measure
Coords
Draw
Address
Clear
Share

GPS
Home
Search
+
-

Water Lines		Close
Diameter	6"	
Material	Cast Iron	/,
Type	Distribution	/,
Location		/,
Attachments	Add	

Legend

100 ft

Hydrants

Misc.Pts.

Water Lines

- 7"
- 2"
- 3"



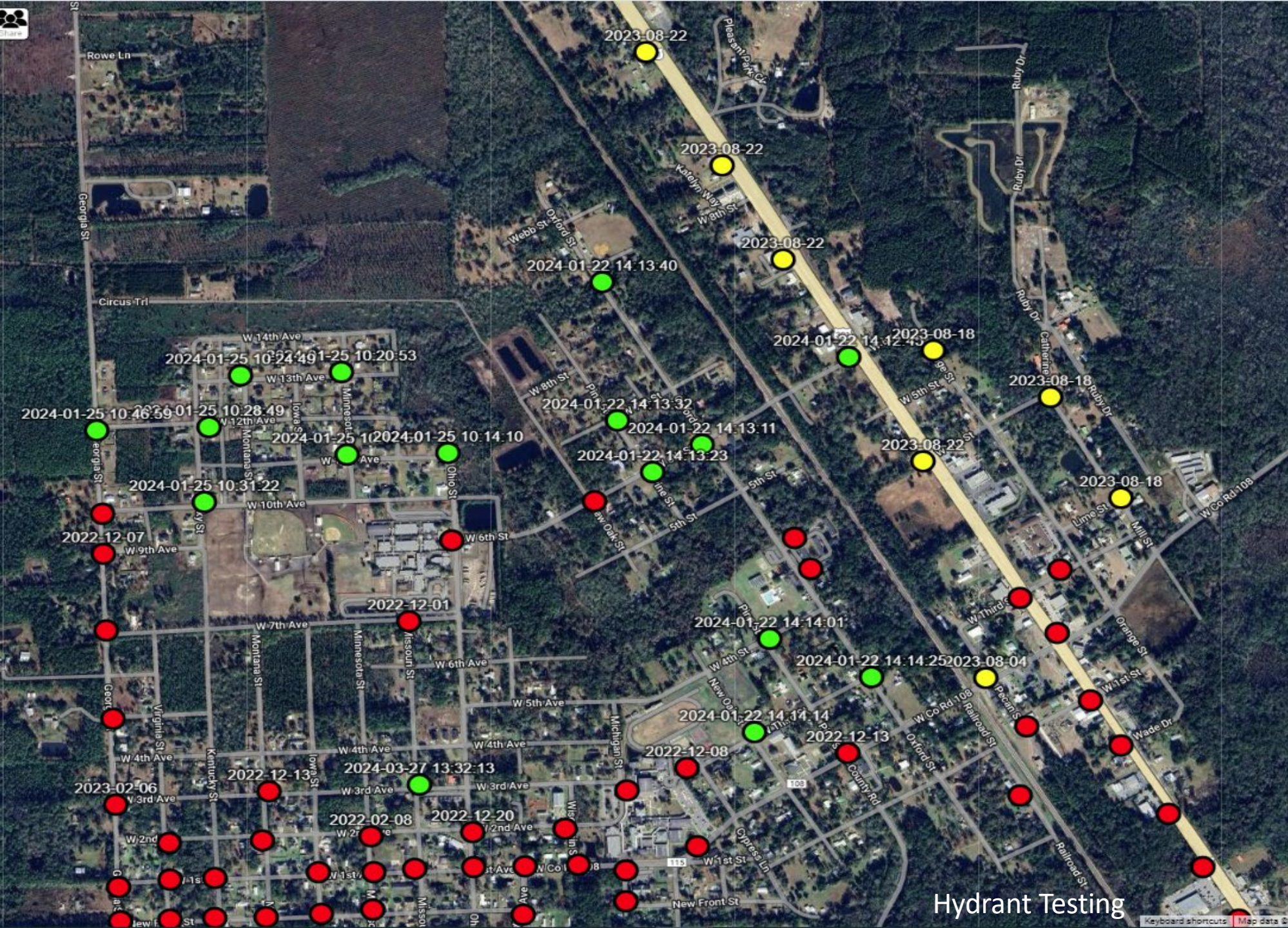
Buford Bay

Legend

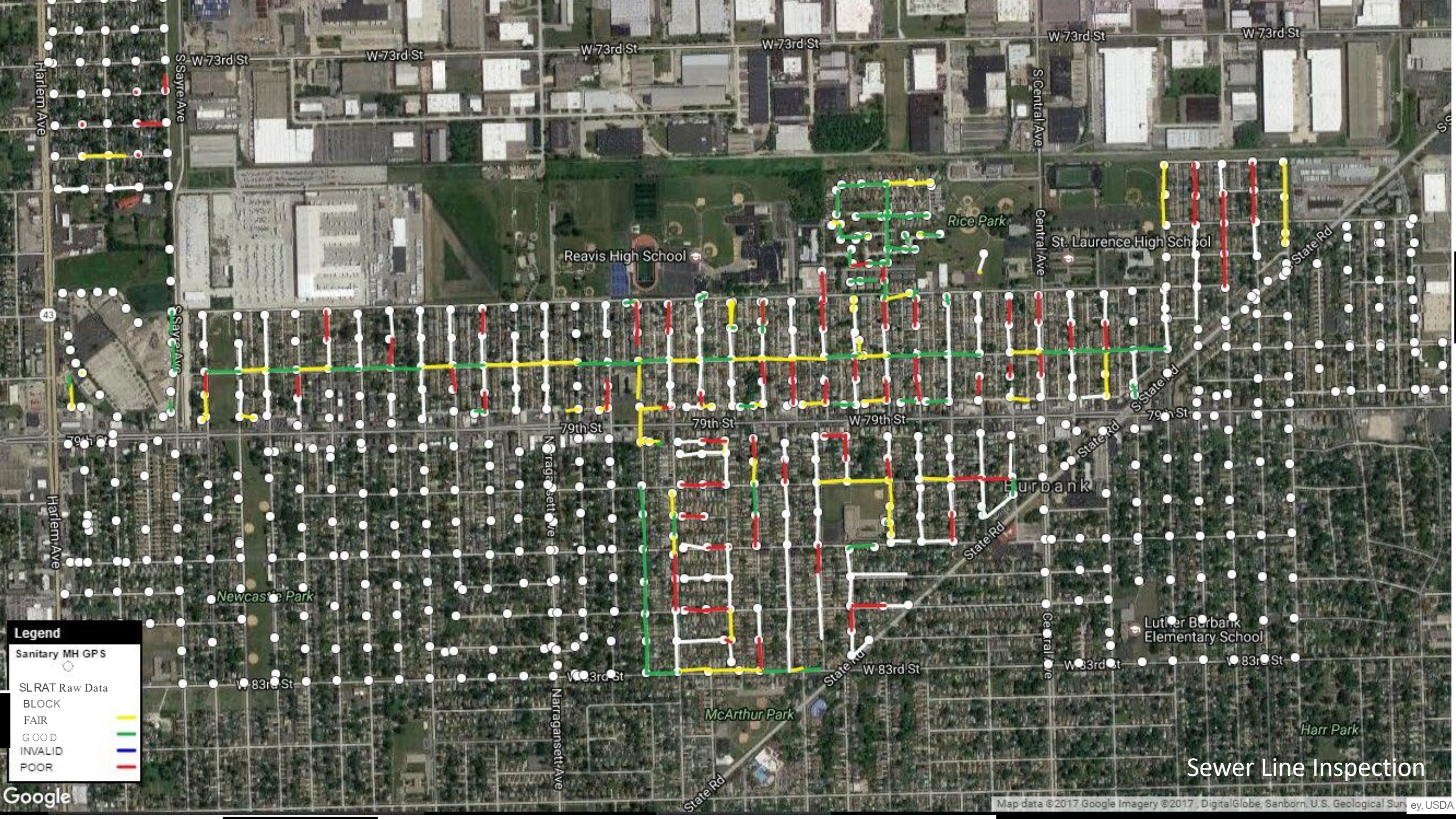
500 ft

Hydrant
Years since Date last fly

- 0.0+
- 0.5+
- 1.0+



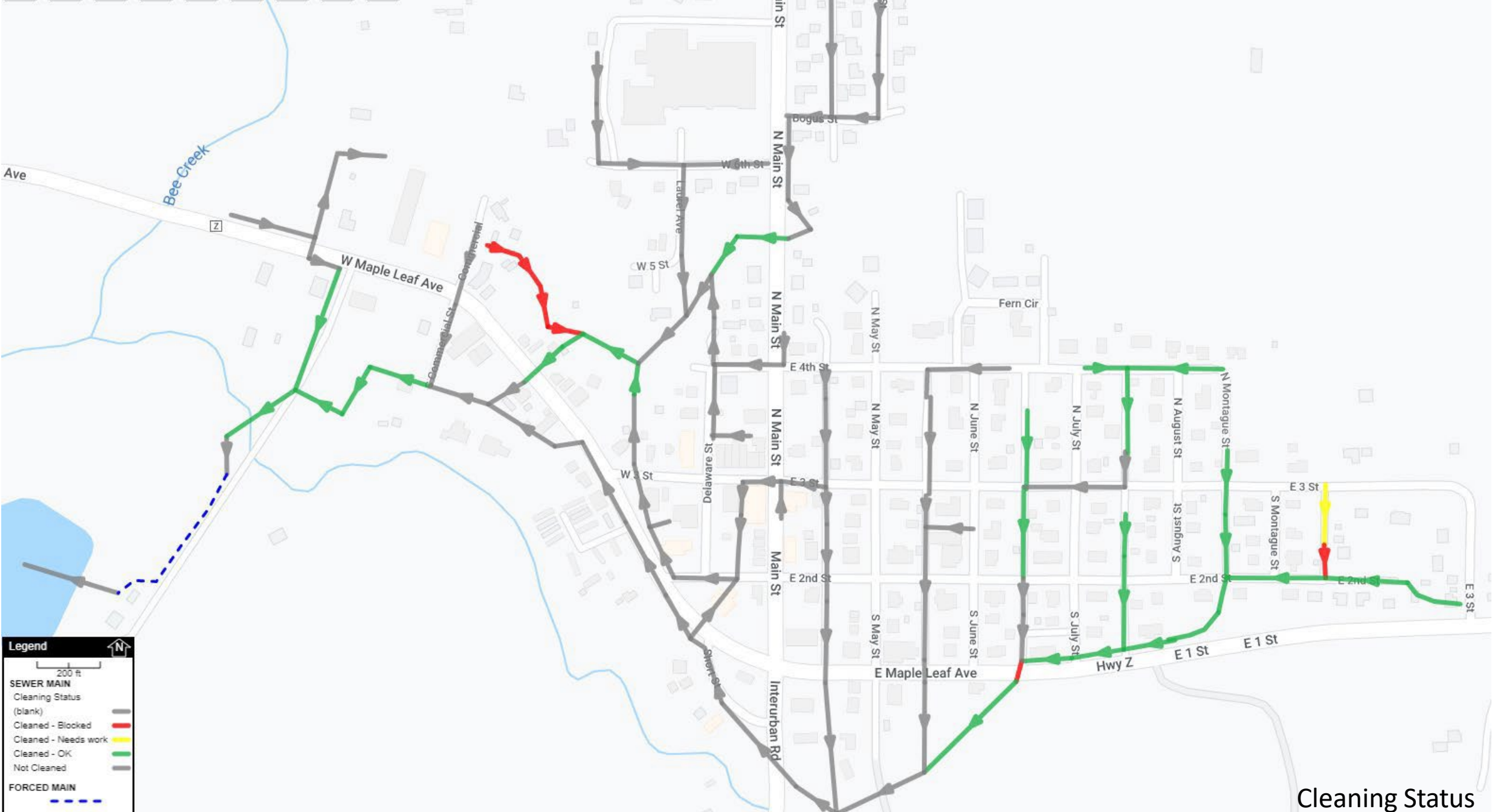
Hydrant Testing



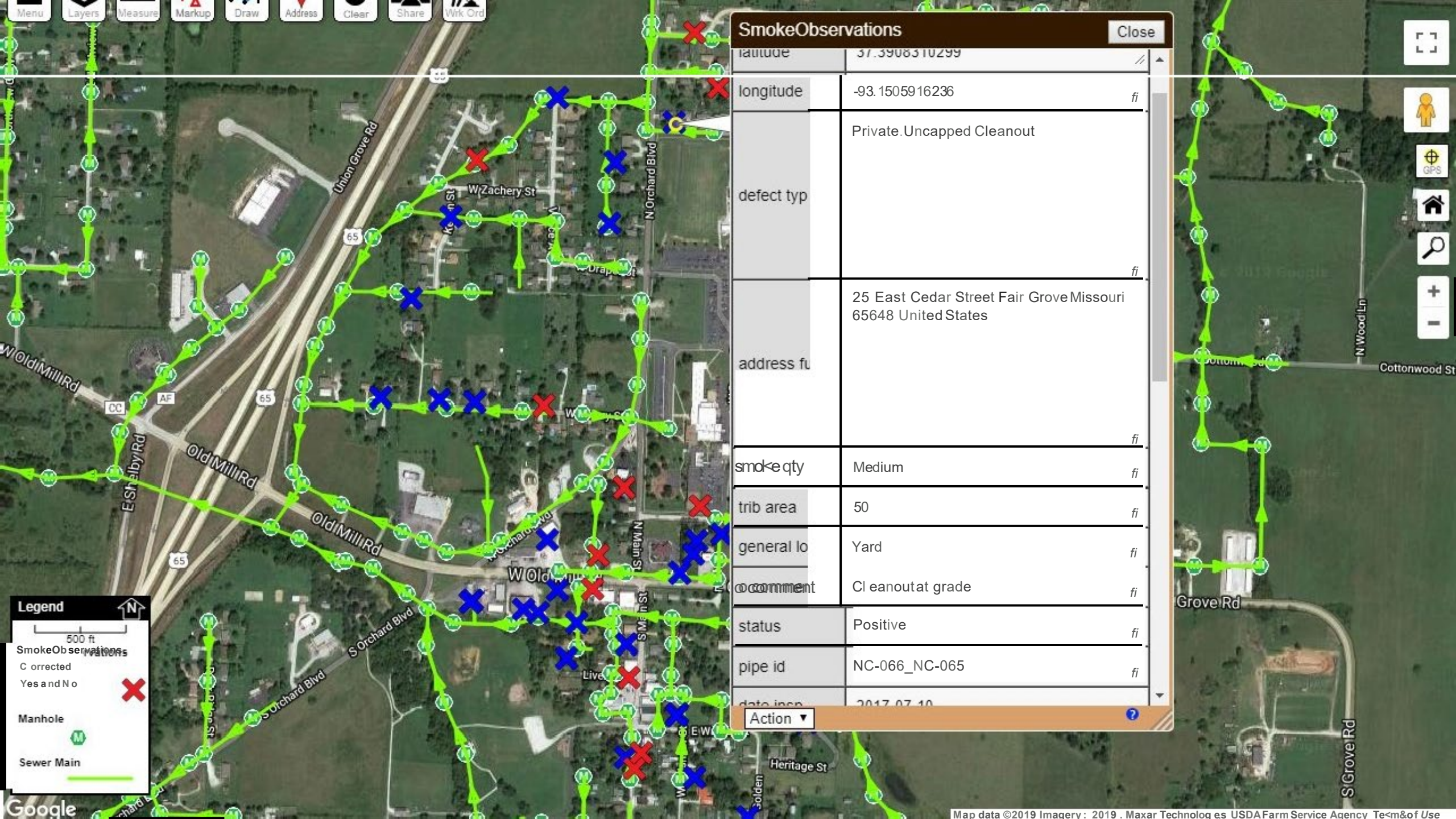
Legend

- Sanitary MH GPS
- SLRAT Raw Data
- BLOCK
- FAIR
- GOOD
- INVALID
- POOR

Sewer Line Inspection



Cleaning Status



SmokeObservations Close

latitude	37.3908310299	fi
longitude	-93.1505916236	fi
defect typ	Private, Uncapped Cleanout	fi
address fu	25 East Cedar Street Fair Grove Missouri 65648 United States	fi
smoke qty	Medium	fi
trib area	50	fi
general lo	Yard	fi
comment	Cleanout at grade	fi
status	Positive	fi
pipe id	NC-066_NC-065	fi
date insp	2017-07-10	

Action ?

Legend

500 ft

SmokeObservations

- C corrected
- Yes and No X

Manhole M

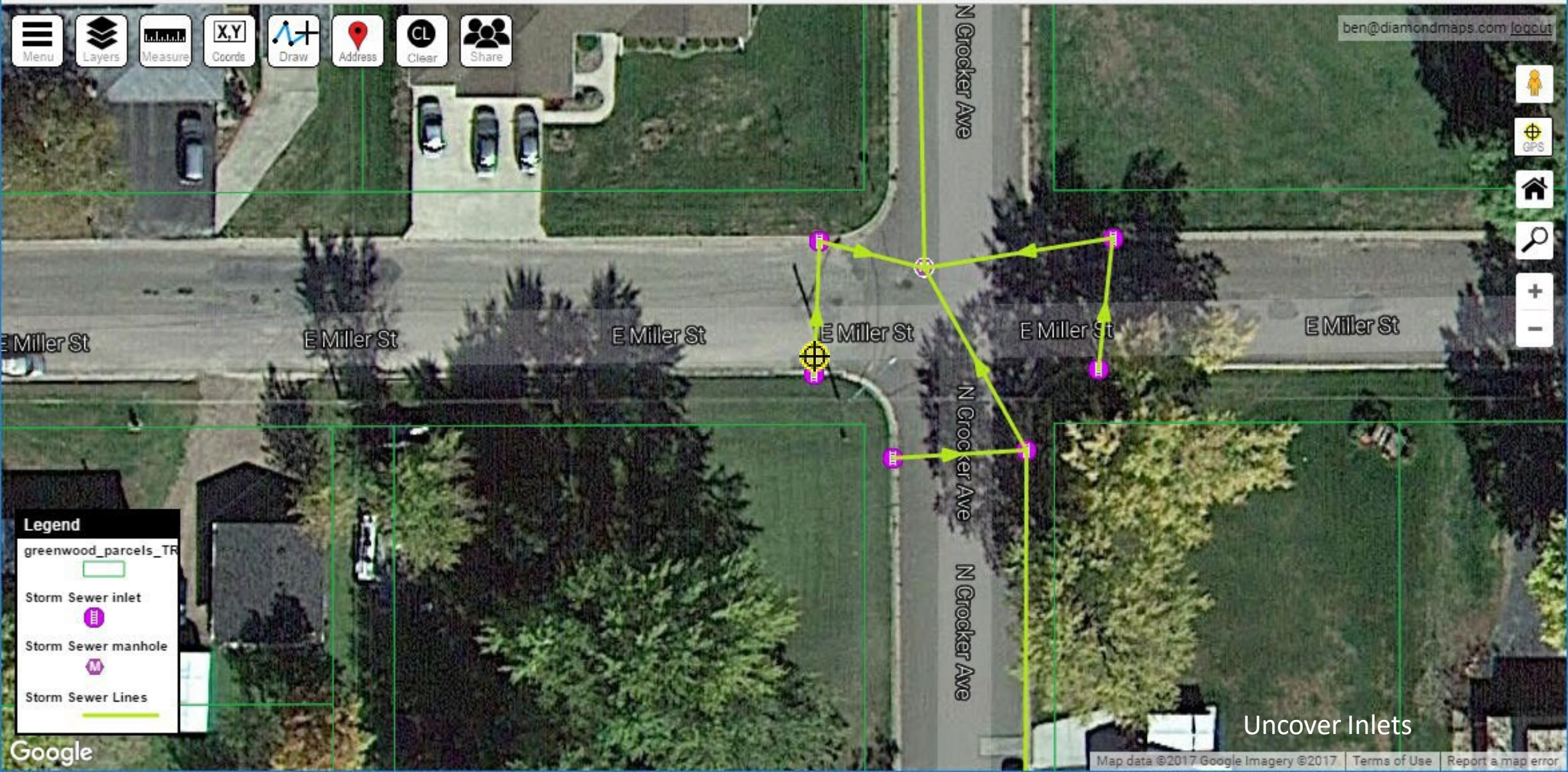
Sewer Main —

Map navigation controls:

- Full Screen
- Person icon
- GPS
- Home
- Search
- Zoom In (+)
- Zoom Out (-)

Menu Layers Measure Coords Draw Address Clear Share

GPS Home Search + -



Legend

- greenwood_parcels_TR
- Storm Sewer inlet
- Storm Sewer manhole
- Storm Sewer Lines

Uncover Inlets

Legend

100 ft

- winona_water_meters
- Water Valves
- winona_water_meters
- winona_valves
- winona_fire_hydrants
- winona_man_holes
- Sewer Lift Stations
- BacT Sites



Bac T / LCR Sample Sites



Legend

100 ft

- Curb Stops
- Water Valves
- Water Mains
- Size
- 2
- 4
- 4" Whispering Wind Ln
- 6
- 8
- 10
- 12
- 14
- Water Main Repair

Google





FILLMORE IRRIGATION COMPANY
ADDRESS INFORMATION

Name Cuevas Address 1498 ~~1486~~ Old Telegraph Rd.

Domestic N

Number of Meters 1 Size of meter(s) 3/4

Serial Number(s) 29513995 Badger (9-05)

Location: west of mailboxes, 12'8" from fog line of Old Telegraph Rd.

Irrigation Y N Off domestic line Y N

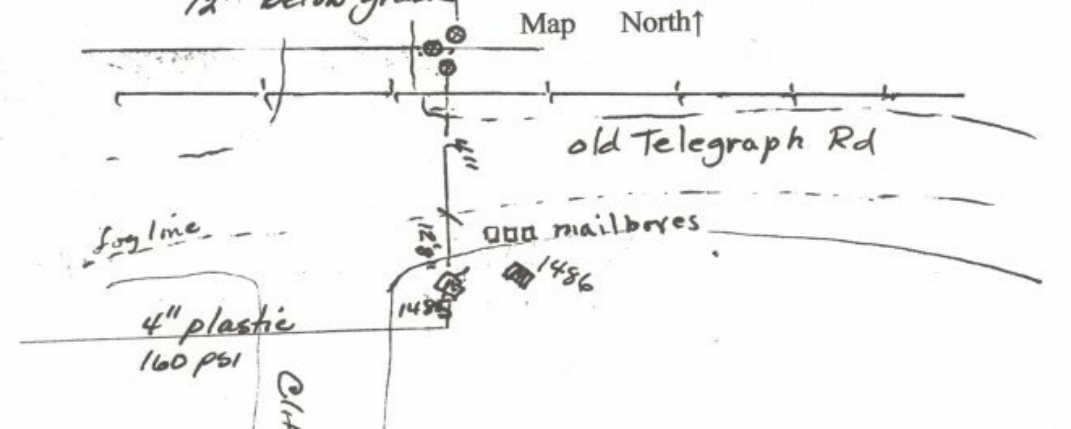
Orchard Y N Greenhouse Y N Tree Nursery Y N Row Crops Y N

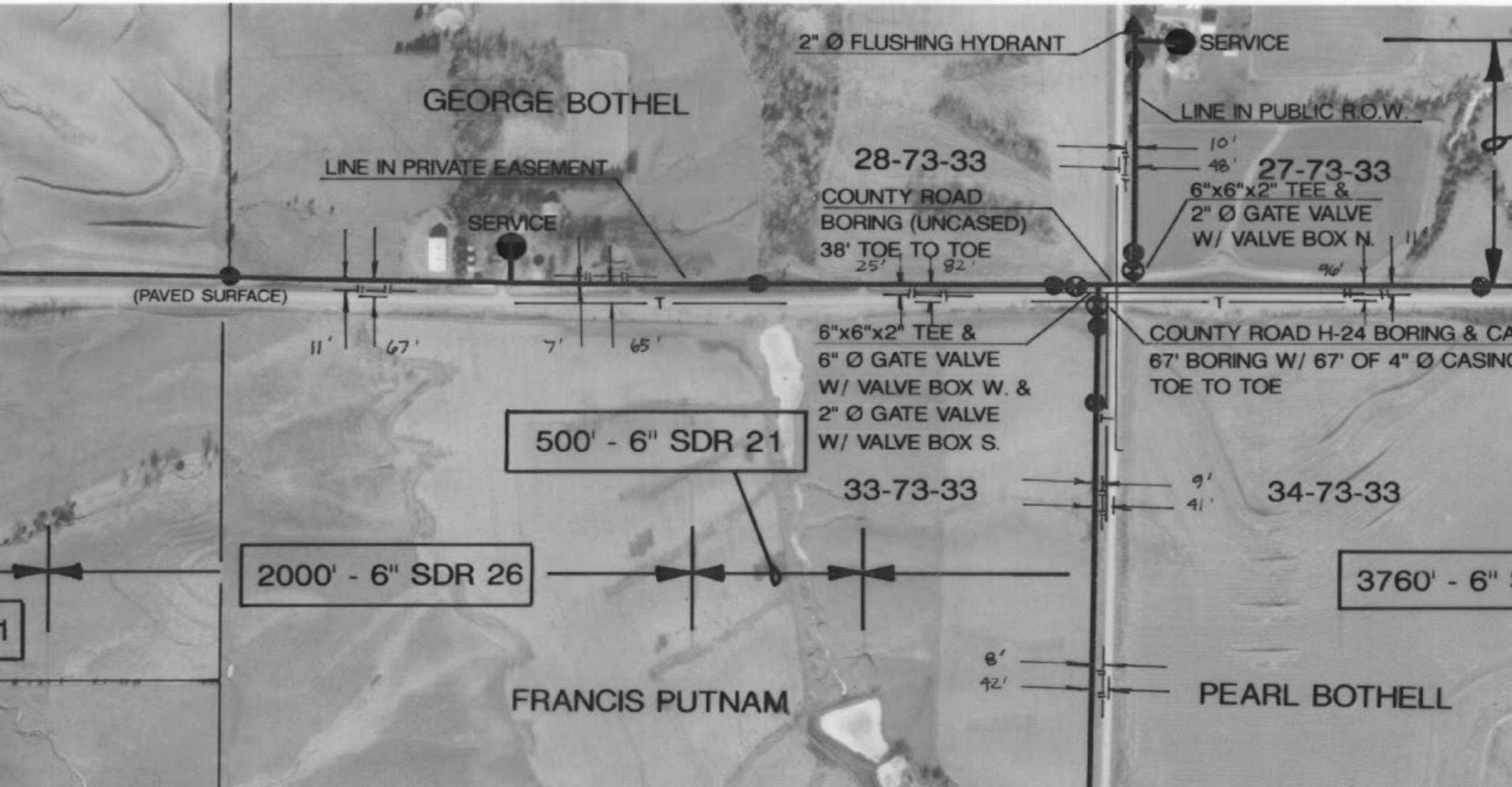
Acreage: _____ Parcel Size _____ # of shares _____

RP - Backflow Y N Size _____ Location _____

Line size _____ Main supply size 4" Closest shut-off meter

Shut-off location corp stop on main, at rear of meter box - 12" below grade





What To Map

Water Distribution

- Valves
- Mains
- Meters
- Curb Stops
- Service Lines
- Fire Hydrants
- Hydrant Valves
- Flush Valves
- Pumps
- Wells
- Storage Tanks
- PRV's
- Leaks
- Locate Points

Sewer Collection

- Manholes
- Gravity Mains
- Lift Stations
- Forced Mains
- Laterals
- Drainage Basins

Storm Water

- Manholes
- Lines
- Inlets
- Outfalls
- Ditches
- Retention Areas

Not Just for Water and Sewer Assets

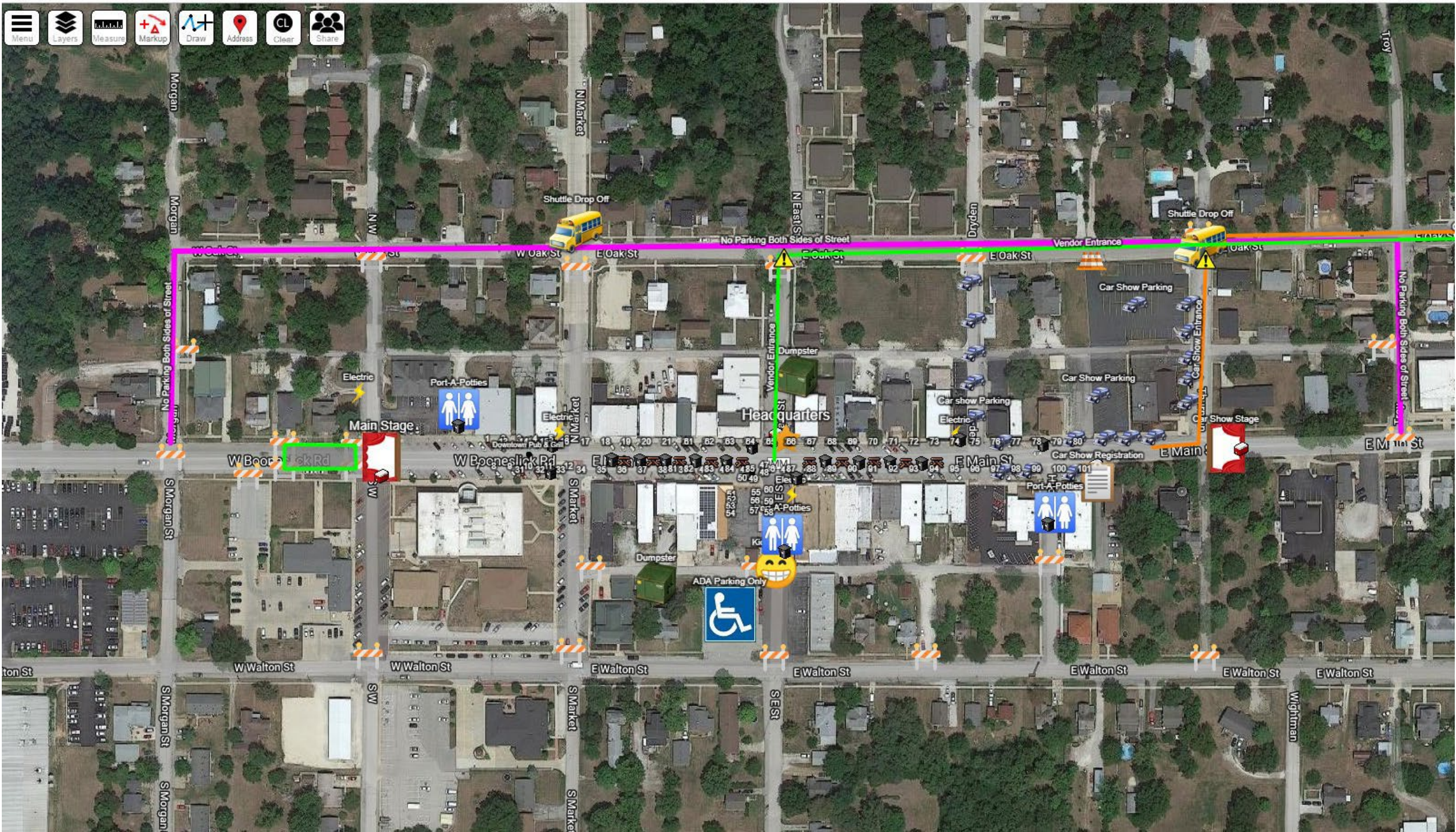
- Parks Department - Festivals
- Cemetery
- Sanitation Routes
- Other Local Utility Providers – Gas, Electric, Stormwater

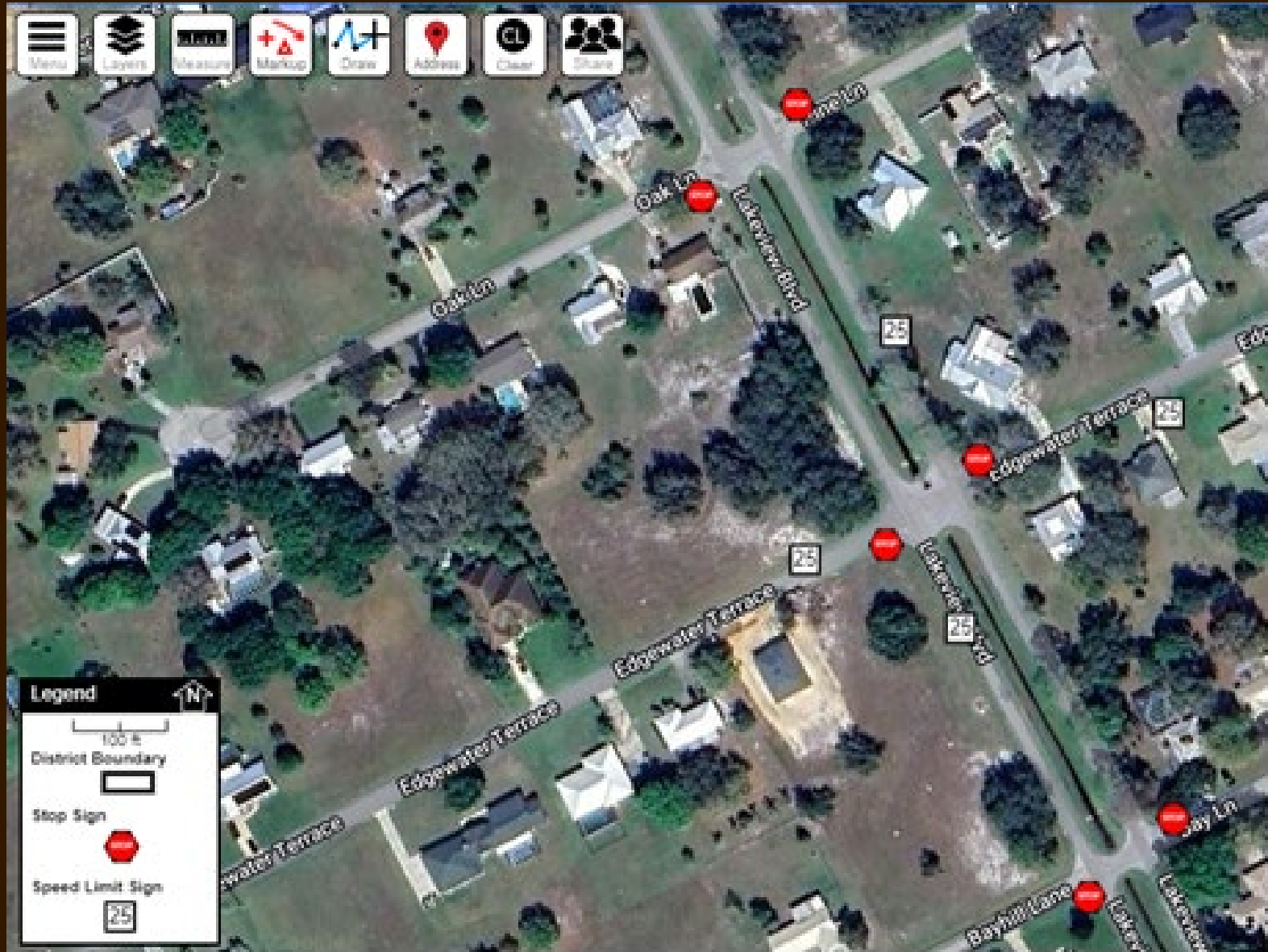
Fully Customizable Fields for any other Application

The image shows a mobile GIS application interface. At the top, there is a toolbar with icons for Menu, Layers, Measure, Markup, Draw, Address, Clear, Share, and Wk Ord. Below the toolbar is a 'New Layer' dialog box with a 'Back' and 'Close' button in the top right corner. The dialog box contains the following fields and controls:

- Action:** A dropdown menu currently set to 'Create New Layer'.
- Type of Layer:** An empty text input field with a 'Pick' button to its right.
- Name of Layer:** An empty text input field.
- Who Can Edit This Layer:** A text field showing 'Patrick.Dan ... +4 others' and a three-dot menu icon to its right.
- Create:** A large black button at the bottom center of the dialog box.

The background is a satellite map showing a residential area with streets labeled 'Montana St' and 'Minnesota St'.





GIS Software

Desktop GIS Software

- ArcMap by ESRI
- QGIS Free
- Google Earth Pro Free

Cloud Based GIS

- ArcGIS Online
- Diamond Maps
- Google's "My Maps"

Free



What kind of GPS should I buy?

Accuracy	Example	Price
+/- 1 foot	Trimble Geo 7X	\$9,000
	Eos Arrow Gold	\$8,000
	Trimble R2	\$5,800
+/- 3 feet	Trimble R1	\$2,500
	Eos Arrow 100	\$2,900
	Juniper Geode	\$1,800
+/- 6 feet	Bad Elf	\$600
		\$1,200
+/- ? Feet	Visual Point and Click	\$0
+/- 15 feet	Phone-grade GPS	\$0 +
	Garmin 66	

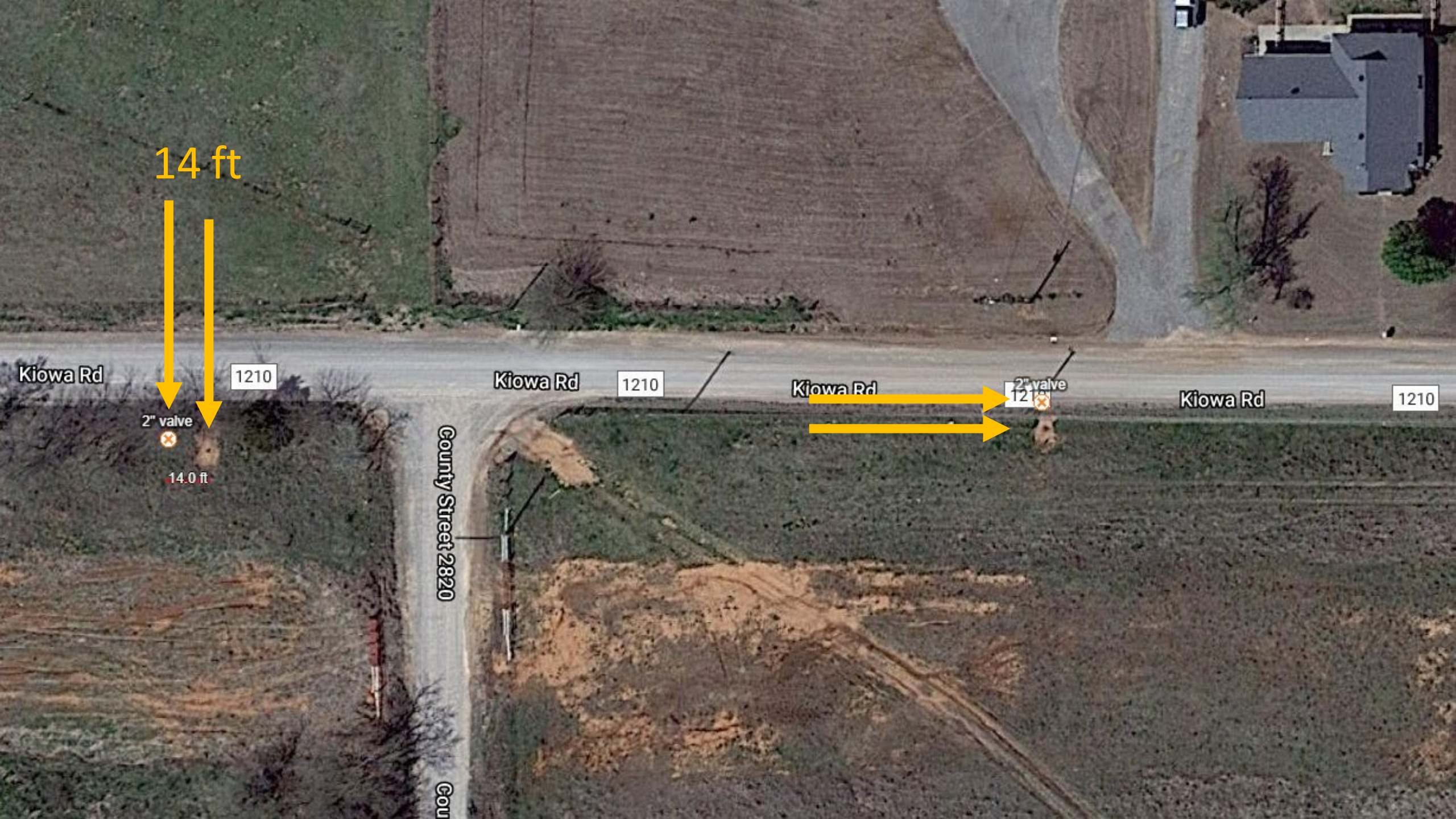
What kind of GPS

Accuracy	Example
+/- 1 foot	Trimble Geo 7X Eos Arrow Gold Trimble R2
+/- 3 feet	Trimble R1 Eos Arrow 100 Juniper Geode
+/- 6 feet	Bad Elf
+/- ? Feet	Visual Point and Click
+/- 15 feet	Phone-grade GPS Garmin 66



\$0

\$0 +



14 ft

Kiowa Rd

1210

Kiowa Rd

1210

Kiowa Rd

2" valve
1210

Kiowa Rd

1210

2" valve

14.0 ft

County Street 2820

County Street 2820

FRWA Sparkfun Bundle Includes:

Sparkfun GPS Unit with Charging Chords

Galaxy Tablet A7 Lite – Offline Unit

Telescoping Pole – Heavy Duty

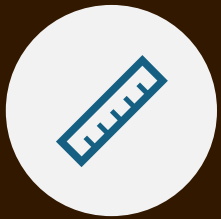
Leveling Tool and Tablet Clip for the Pole



Field Mapping Demonstration



Additional Features in Diamond Maps



MEASURING



MARK UP
TOOL



ASSET
MANAGEMENT



SHARE MAP



WORK
ORDERS

Final Notes On Field Mapping

1. Record only what you observe in the field. Fill in other details back at the office
2. Finding things is 90% of the work.
3. Bring someone out of retirement if necessary.
4. Map any helpful points such as fence crossings, and 90's.

Any Questions?



For Further Questions or Additional Information Please Contact:

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(386) 916-1232

Thank you to Ben Hill, with Diamond Maps, for use of DM Slides.

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