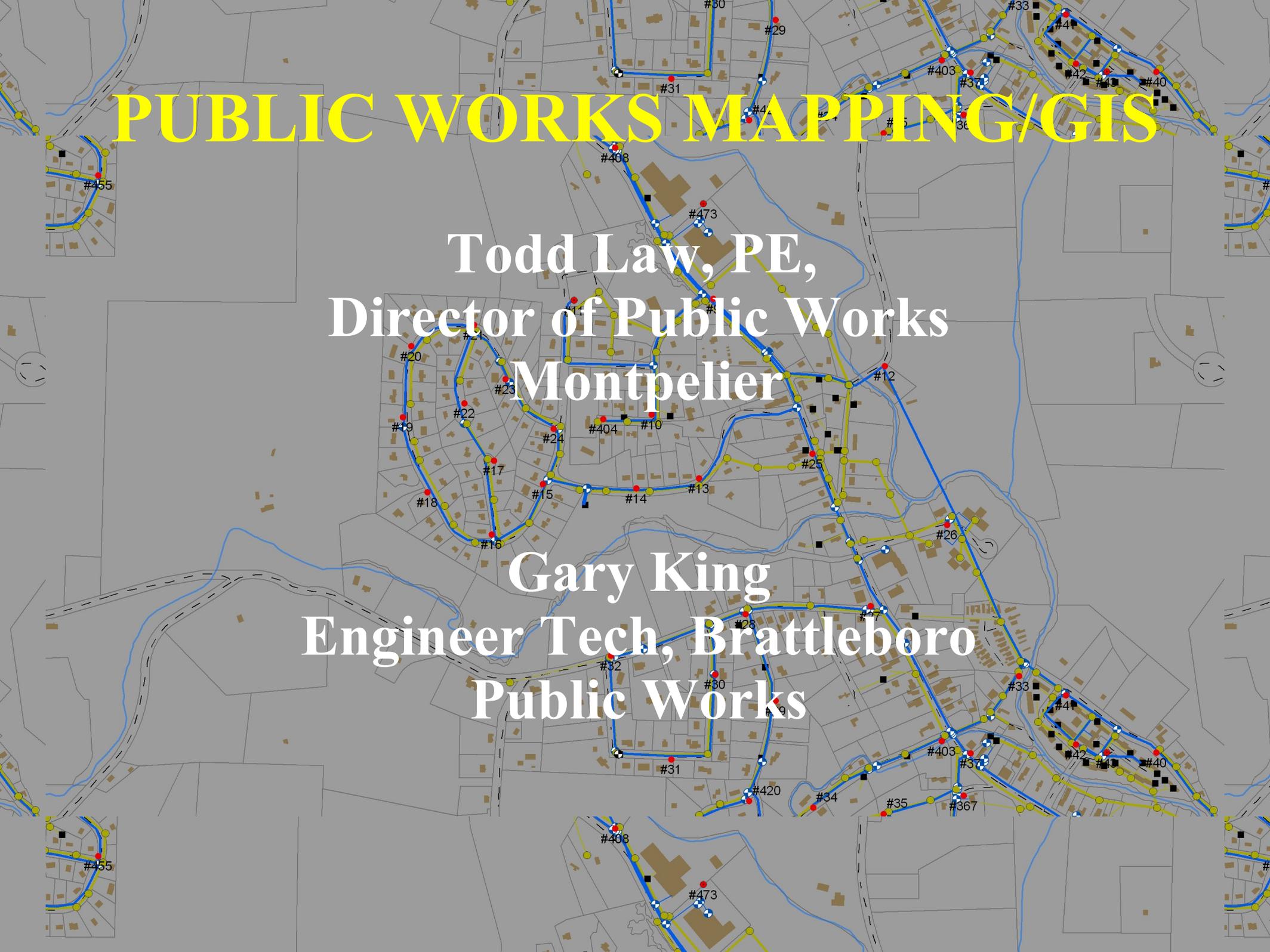


PUBLIC WORKS MAPPING/GIS



Todd Law, PE,
Director of Public Works
Montpelier

Gary King
Engineer Tech, Brattleboro
Public Works

PUBLIC WORKS GIS

Early GIS Mapping hired out
Planning office, Town plan
Parcel mapping for Listers

PUBLIC WORKS GIS

Started with 60 day trial version of Arcmap

I was hooked



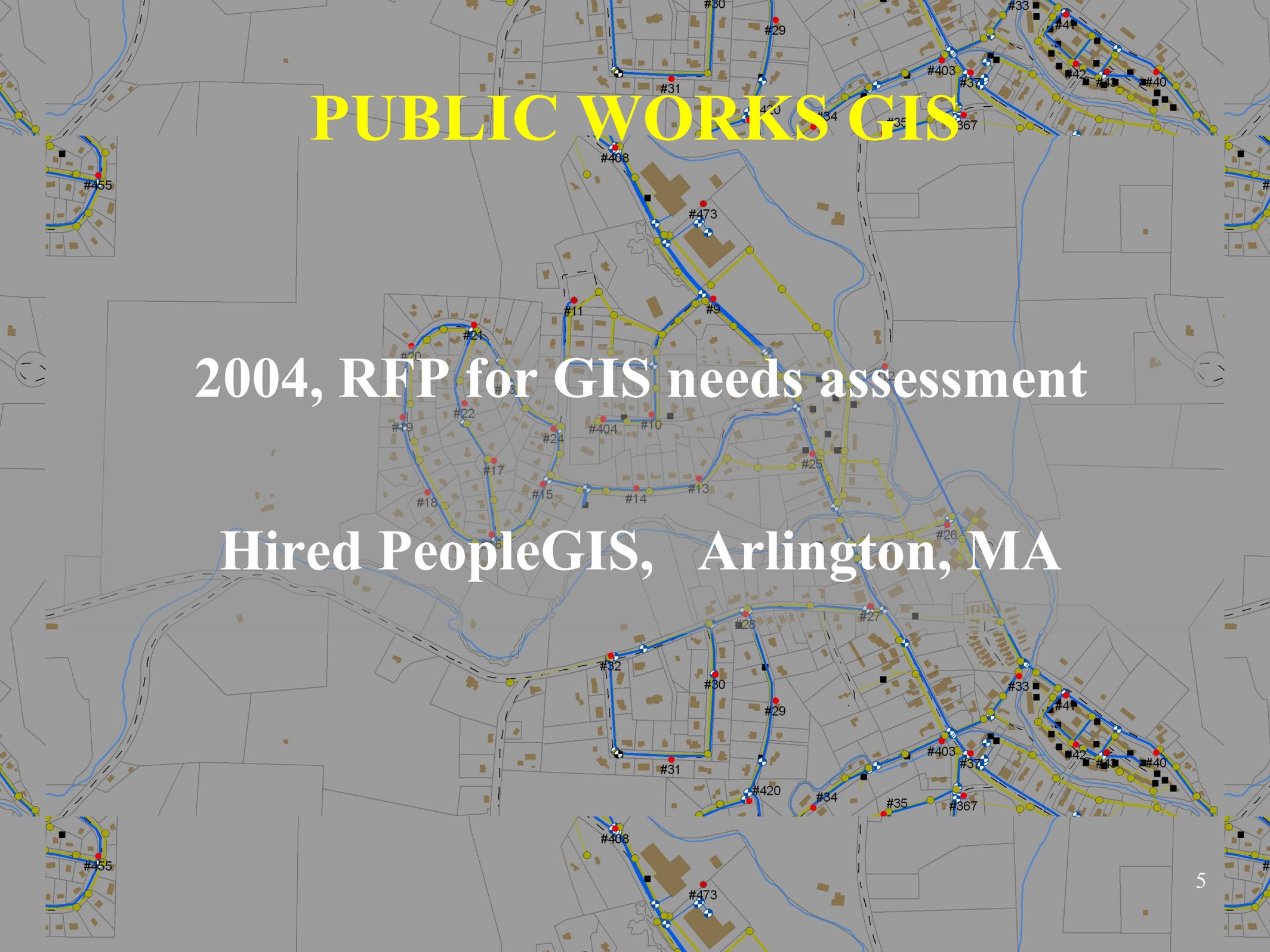
PUBLIC WORKS GIS

GIS COMMITTEE

1 or 2 from departments interested

Meet once per month

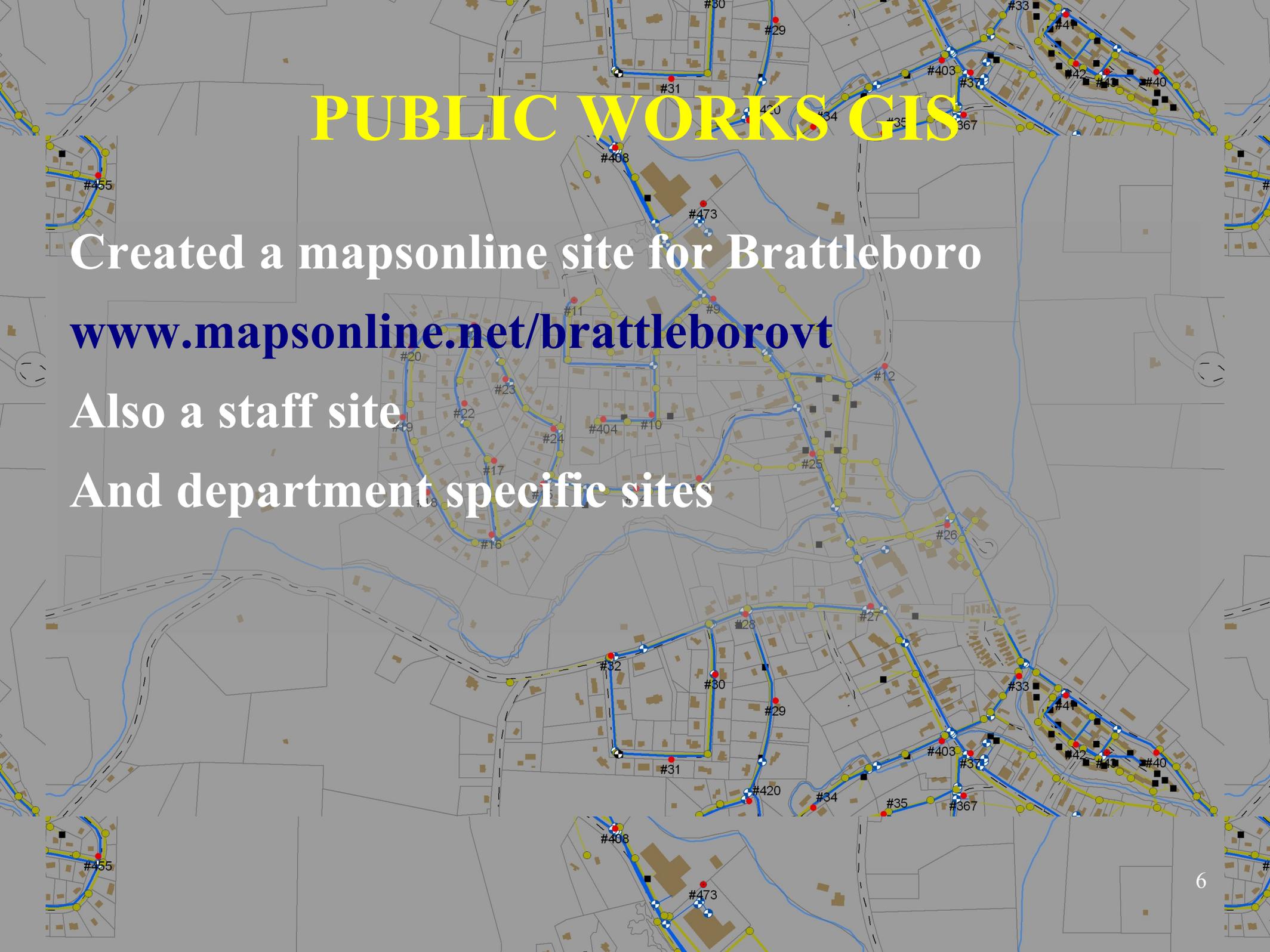
PUBLIC WORKS GIS

A GIS map of a town area, likely Arlington, MA, showing a network of streets and utility lines. The map is overlaid with a grid of numbered points (e.g., #1 through #455) and colored lines (blue, yellow, and red) representing different types of infrastructure or data layers. The map is semi-transparent, allowing the underlying street layout and building footprints to be visible.

2004, RFP for GIS needs assessment

Hired PeopleGIS, Arlington, MA

PUBLIC WORKS GIS



Created a maponline site for Brattleboro

www.maponline.net/brattleborovt

Also a staff site

And department specific sites

PUBLIC WORKS GIS

Cartographic Assoc., Littleton, NH

Parcel mapping and Created building foot print



PUBLIC WORKS GIS

2005, Contracted for gps locating
with CAI

Water, Hydrants & valves

Sewer manholes

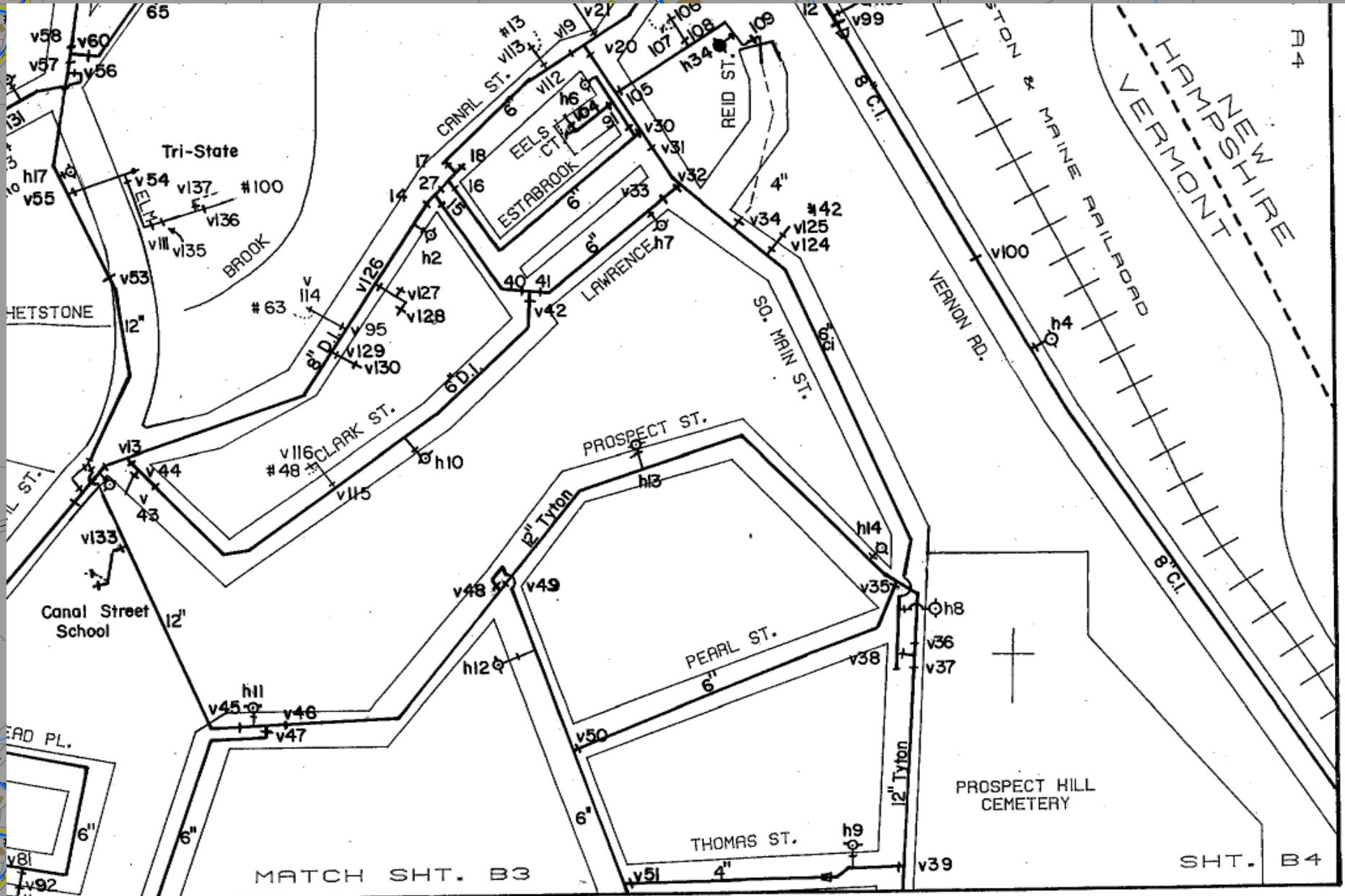
Drainage structures & culverts



PUBLIC WORKS GIS

Attributes collected only for drainage
Labeled water and sewer structures with
existing ID numbers

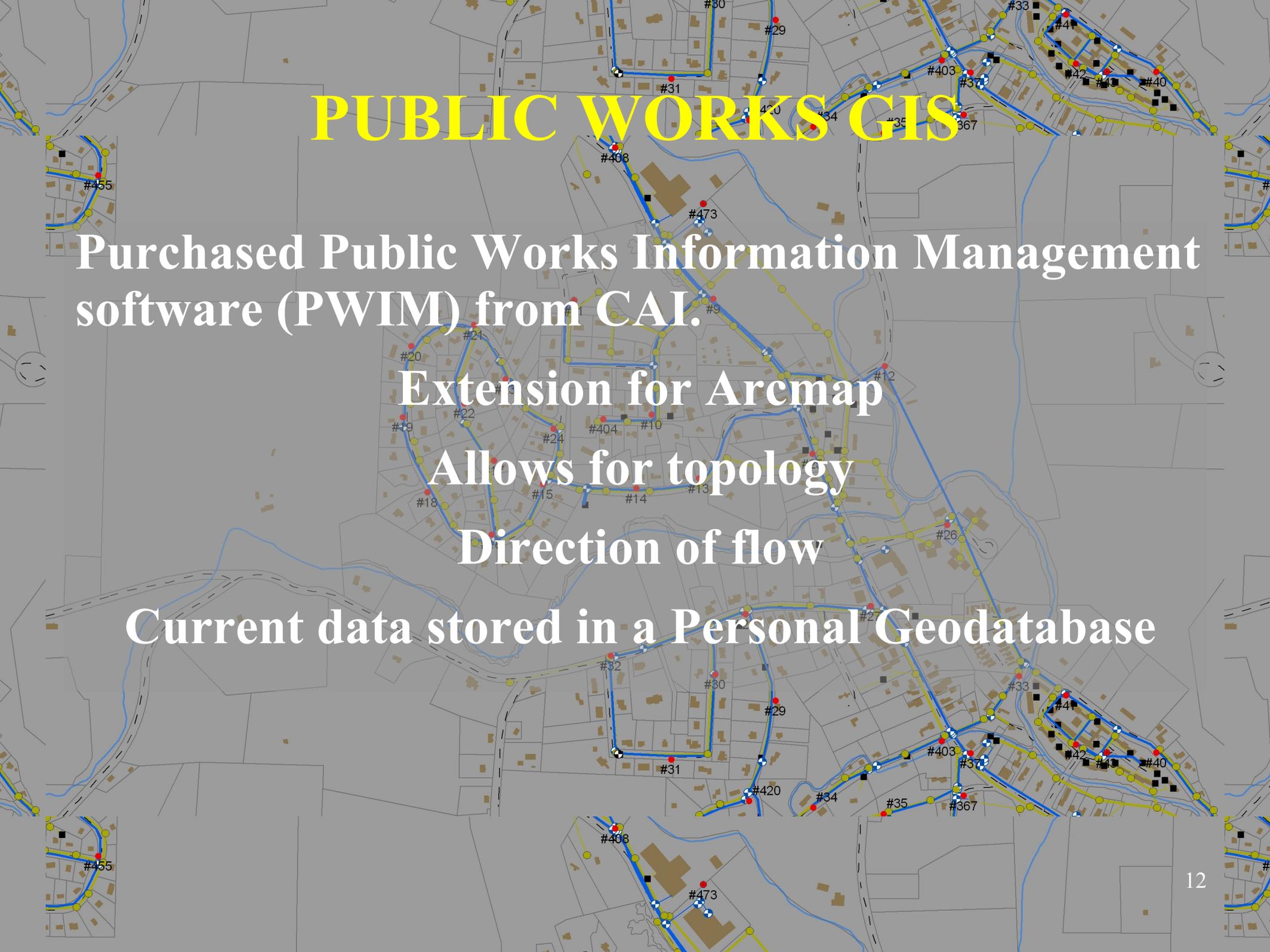
PUBLIC WORKS GIS



PUBLIC WORKS GIS

Purchased 2 copies of ESRI Arcmap

Public Works Dept.
Planning office



PUBLIC WORKS GIS

Purchased Public Works Information Management software (PWIM) from CAI.

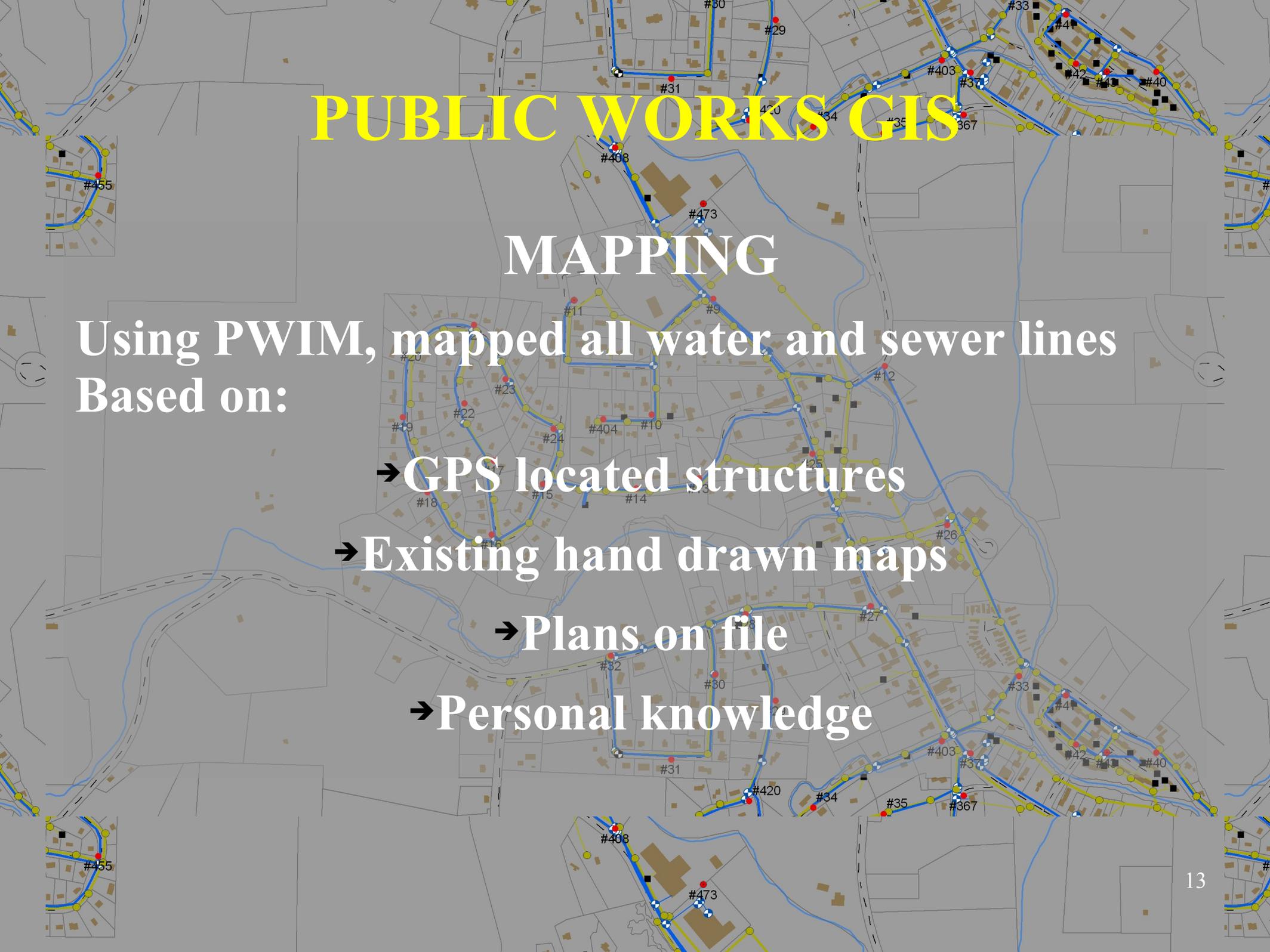
Extension for Arcmap

Allows for topology

Direction of flow

Current data stored in a Personal Geodatabase

PUBLIC WORKS GIS



MAPPING

Using PWIM, mapped all water and sewer lines
Based on:

- GPS located structures
- Existing hand drawn maps
- Plans on file
- Personal knowledge

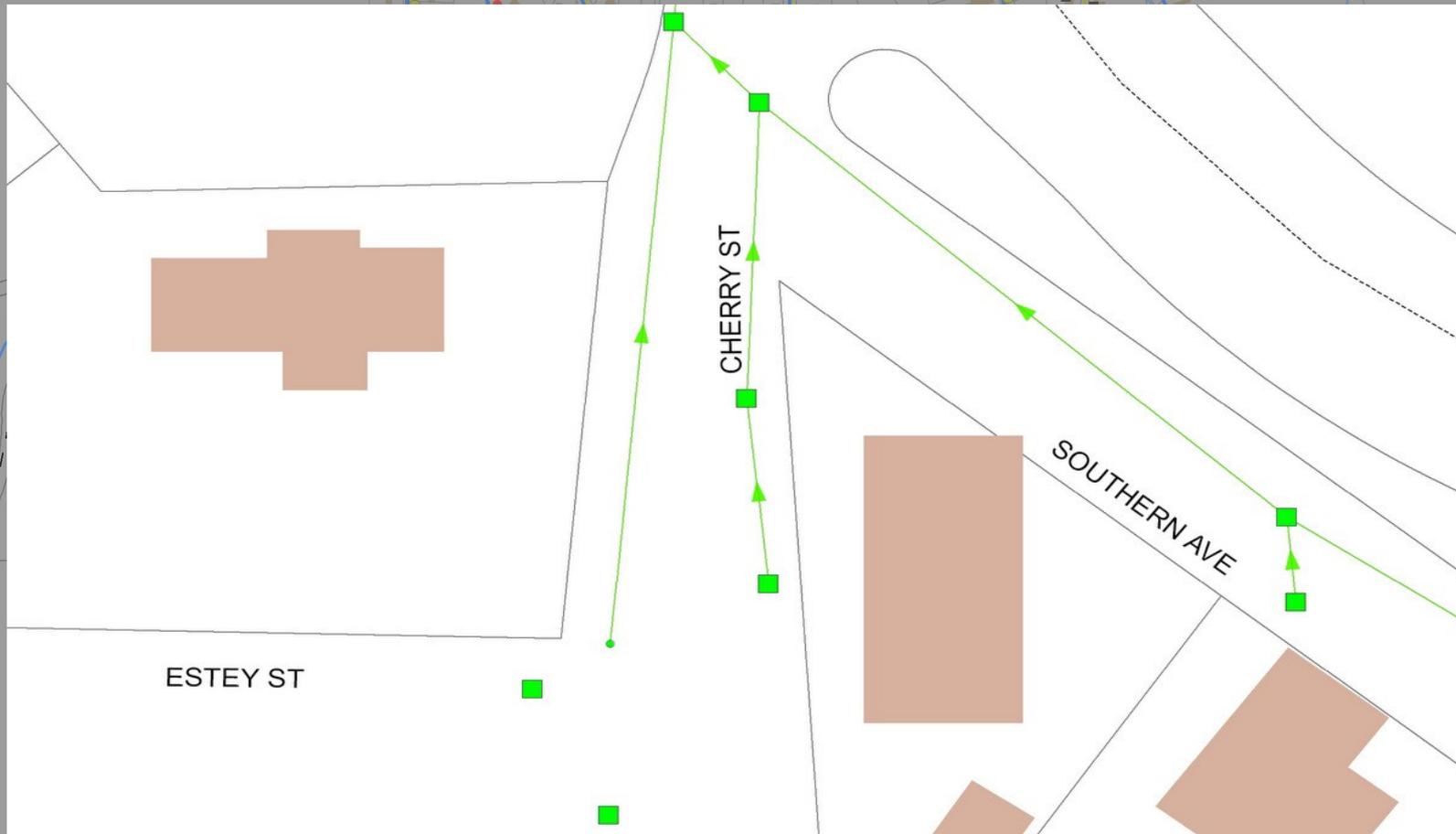
PUBLIC WORKS GIS

Drainage mapping

Culverts mapped with GPS, Done
Collected size, material, condition,
& flow direction

PUBLIC WORKS GIS

In Town drainage
An on going project
Data difficult to collect



PUBLIC WORKS GIS

Drainage

We have:

618

Culverts

1851

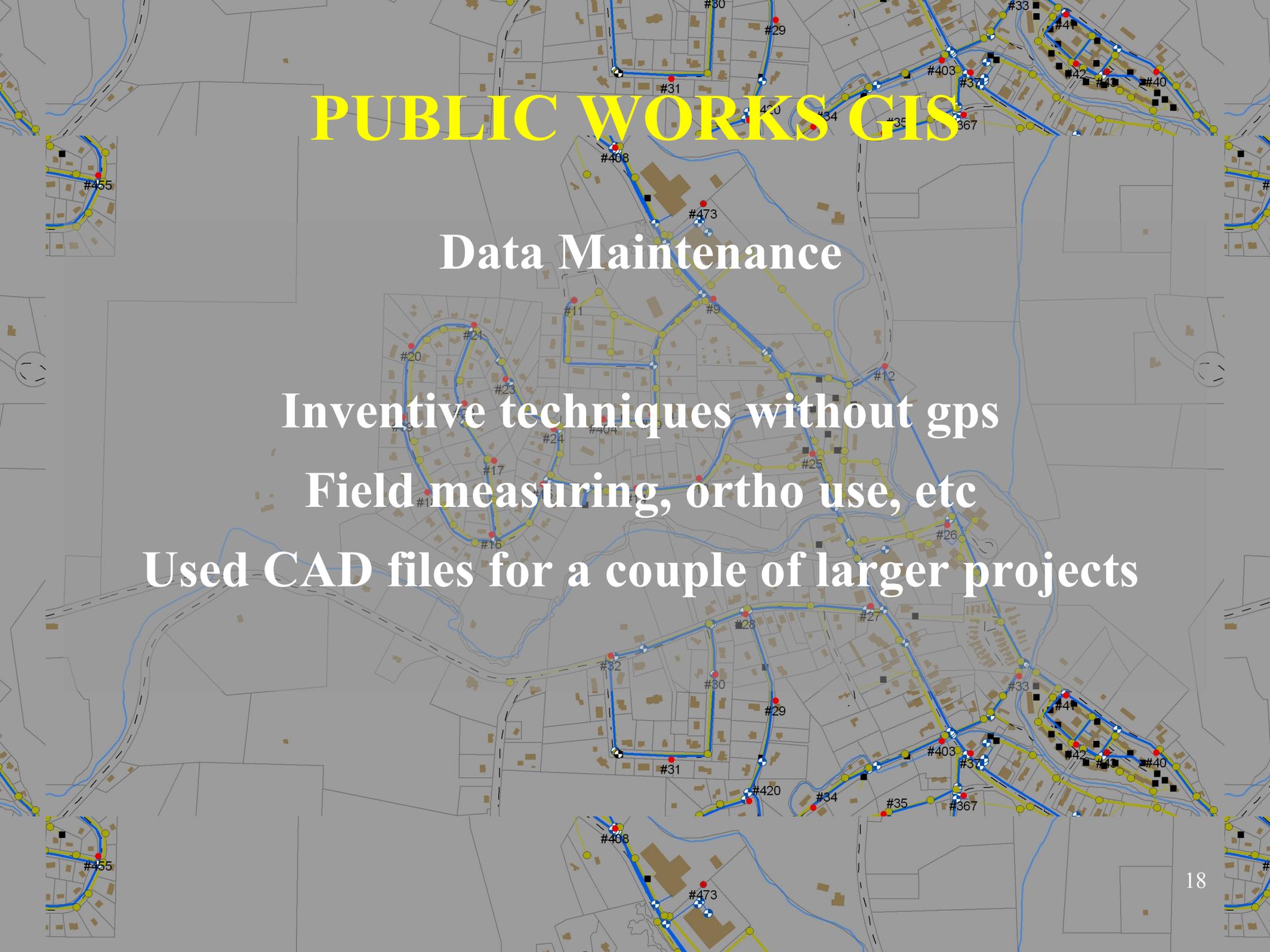
Drop inlets

105

Drain manholes



PUBLIC WORKS GIS

The background is a GIS map of a residential area. It features a network of streets and utility lines. Numerous points are marked on the map with small colored circles (red, blue, yellow, black) and labeled with numbers such as #20, #21, #23, #24, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #36, #37, #38, #39, #40, #41, #42, #43, #44, #45, #46, #47, #48, #49, #50, #51, #52, #53, #54, #55, #56, #57, #58, #59, #60, #61, #62, #63, #64, #65, #66, #67, #68, #69, #70, #71, #72, #73, #74, #75, #76, #77, #78, #79, #80, #81, #82, #83, #84, #85, #86, #87, #88, #89, #90, #91, #92, #93, #94, #95, #96, #97, #98, #99, #100. The map also shows building footprints, a river, and a road.

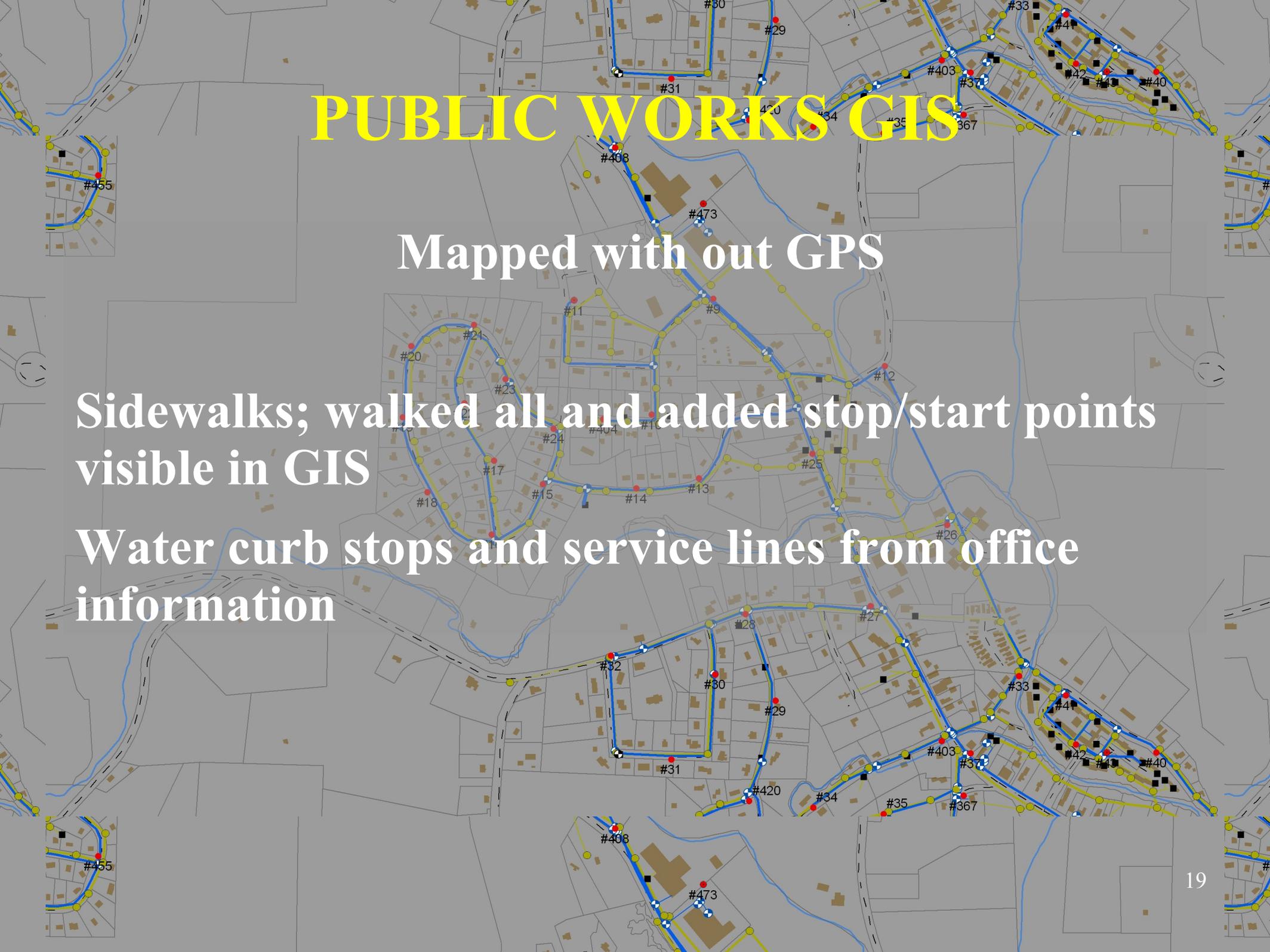
Data Maintenance

Inventive techniques without gps

Field measuring, ortho use, etc

Used CAD files for a couple of larger projects

PUBLIC WORKS GIS



Mapped with out GPS

Sidewalks; walked all and added stop/start points visible in GIS

Water curb stops and service lines from office information

PUBLIC WORKS GIS

Accuracy

A big concern early on
Less so over time with experience

PUBLIC WORKS GIS

2010 GPS Purchase

Trimble GeoXT

External antenna

Terrasync and Pathfinder software

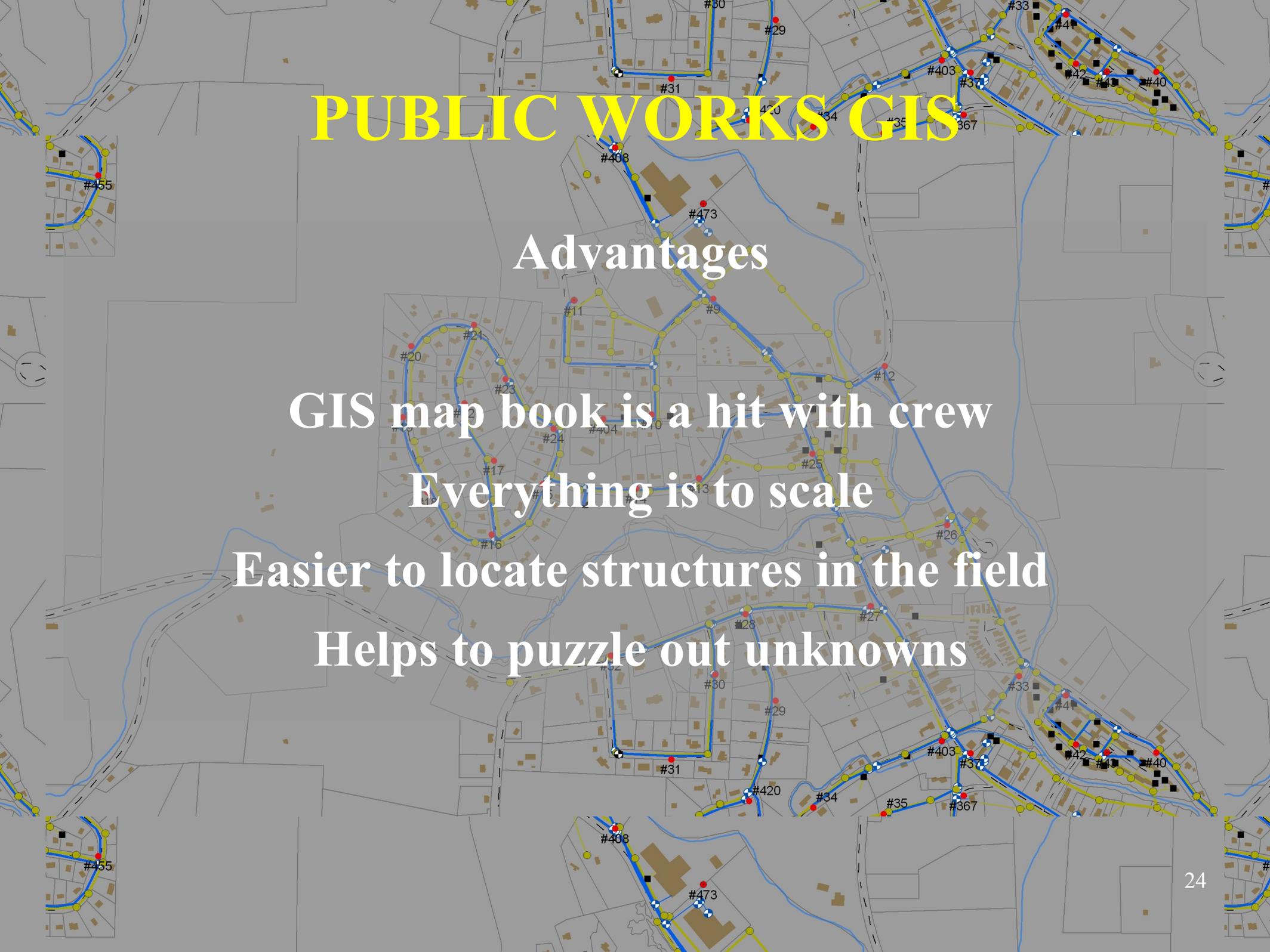
PUBLIC WORKS GIS

Map book

3 years ago produced map book direct from
Arcmap, first with DsMapBook then data driven
pages

Replaces hand drawn maps

PUBLIC WORKS GIS

A GIS map of a residential area. The map shows a network of streets and utility lines. Numerous points are marked with numbers, such as #20, #21, #23, #24, #17, #16, #11, #9, #12, #13, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #367, #403, #37, #42, #43, #40, #473, #408, and #455. The points are connected by lines in various colors, including blue, yellow, and red. The map also shows buildings, trees, and a river.

Advantages

GIS map book is a hit with crew

Everything is to scale

Easier to locate structures in the field

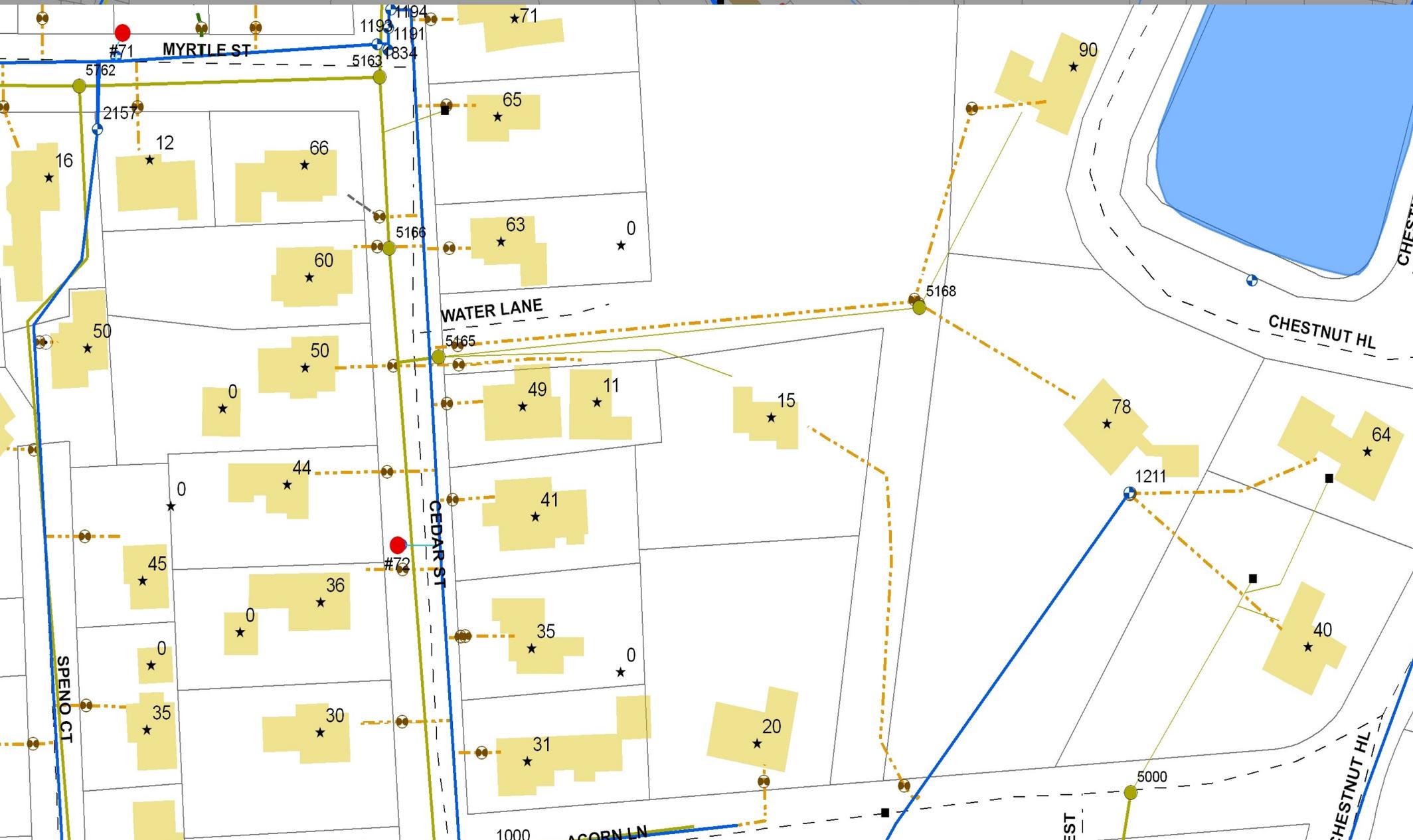
Helps to puzzle out unknowns

PUBLIC WORKS GIS

Putting pieces of data together



PUBLIC WORKS GIS



PUBLIC WORKS GIS



Highway and related mapping

Sidewalks: condition & plow routes

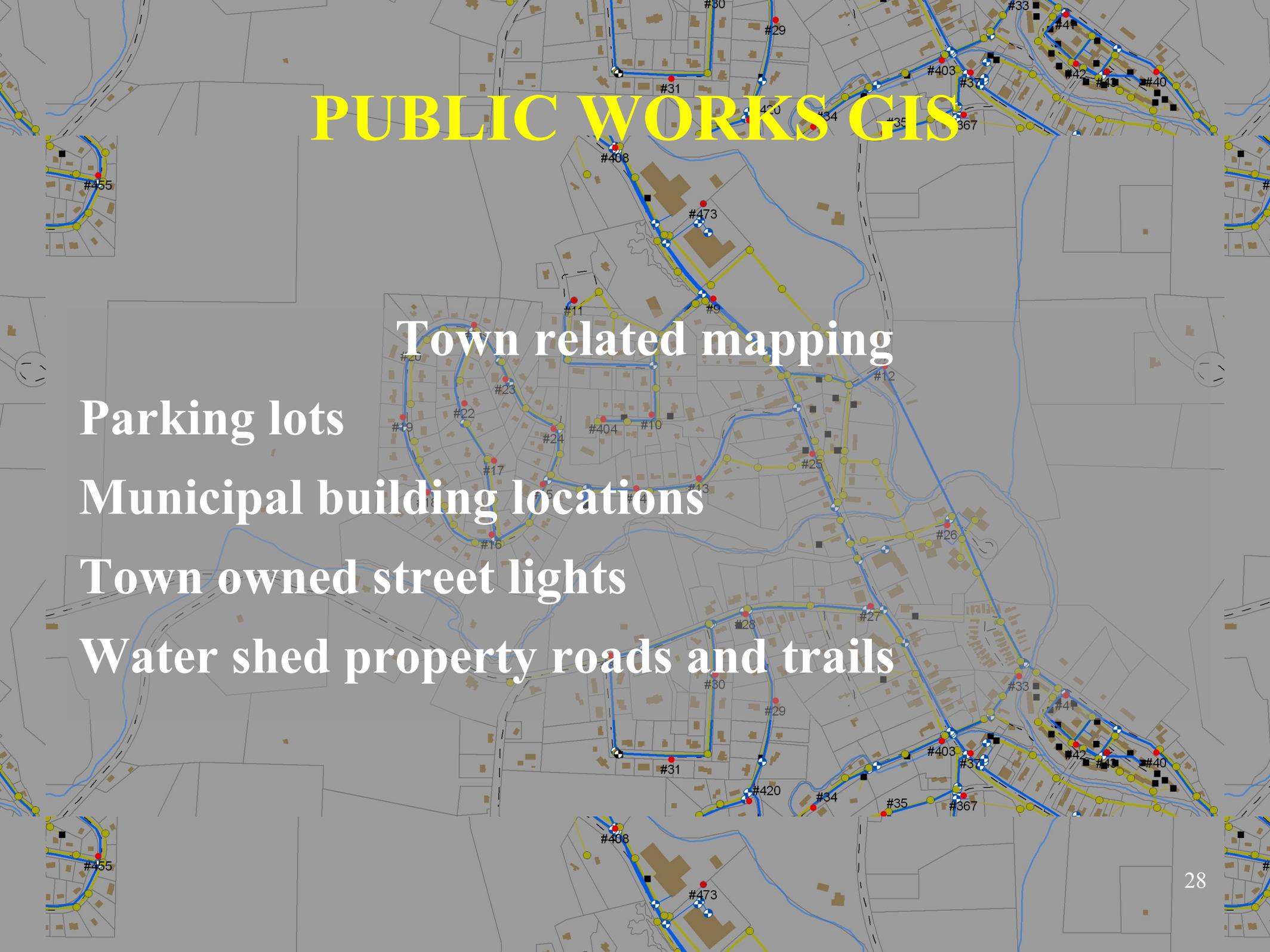
Town Roads, Pavement condition (RSMS)

Retaining walls, **GOOGLE MAP**

Road plow routes

Culverts, drainage, & bridges

PUBLIC WORKS GIS



Town related mapping

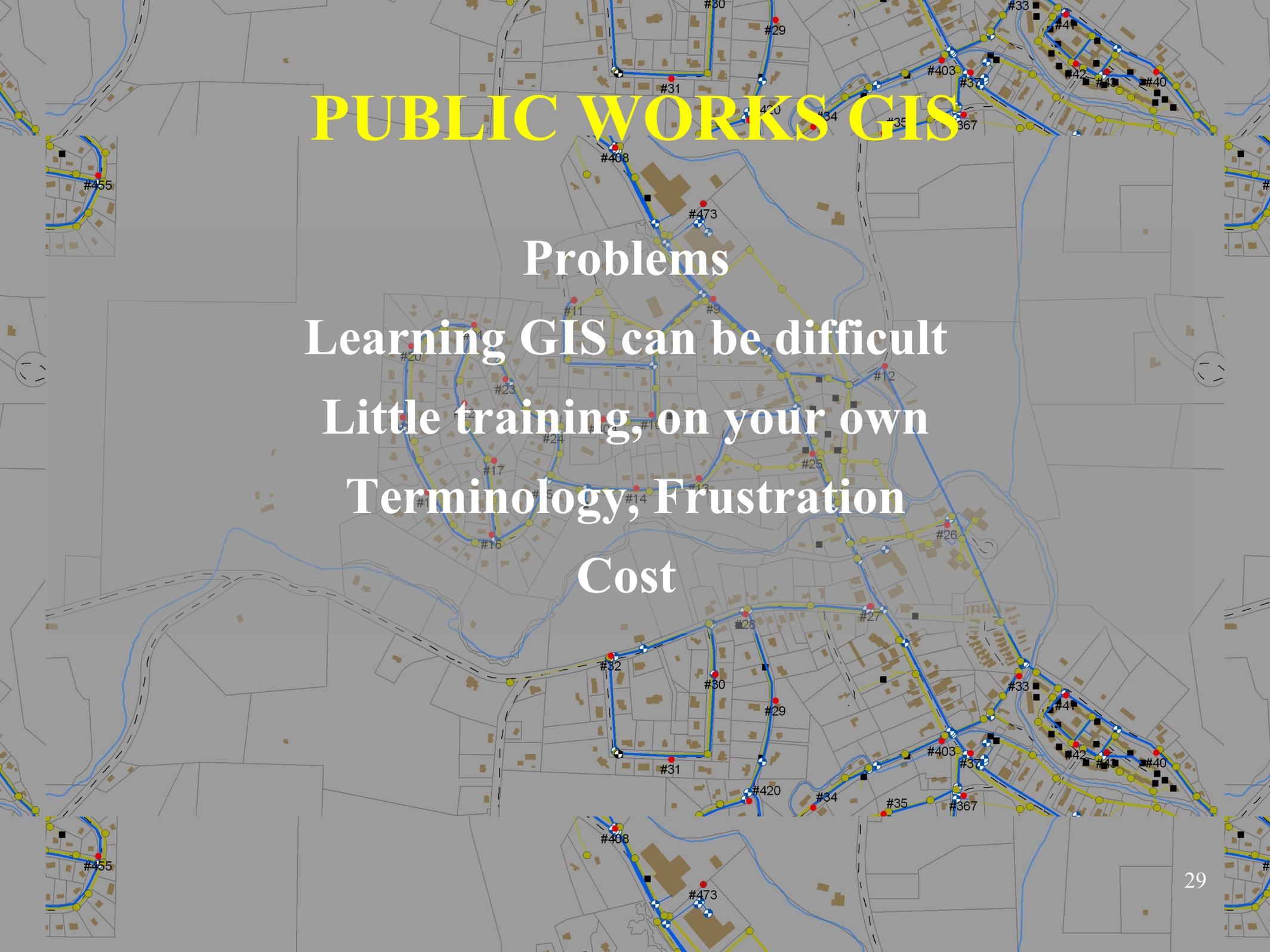
Parking lots

Municipal building locations

Town owned street lights

Water shed property roads and trails

PUBLIC WORKS GIS

A GIS map showing a network of streets and utility lines. The map is overlaid with a semi-transparent grey box containing text. The map features a complex network of blue and yellow lines representing utility lines, with numerous numbered points (e.g., #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #36, #37, #38, #39, #40, #41, #42, #43, #44, #45, #46, #47, #48, #49, #50, #51, #52, #53, #54, #55, #56, #57, #58, #59, #60, #61, #62, #63, #64, #65, #66, #67, #68, #69, #70, #71, #72, #73, #74, #75, #76, #77, #78, #79, #80, #81, #82, #83, #84, #85, #86, #87, #88, #89, #90, #91, #92, #93, #94, #95, #96, #97, #98, #99, #100) scattered across the network. The background is a light grey map showing street layouts and building footprints.

Problems

Learning GIS can be difficult

Little training, on your own

Terminology, Frustration

Cost

PUBLIC WORKS GIS

PDF MAPS

<http://www.brattleboro.org/>

<http://homepages.sover.net/~brattdpw/>

PUBLIC WORKS GIS

Thank You

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Todd Law, TLaw@montpelier-vt.org,