

# **GIS in Local Governments**

## **A Geographic Information System**

**A system of computer hardware, software and programs which stores, analyzes and displays information about places on the earth's surface. More than 80% of information used by local governments is geographically referenced.**

# **Manual Mapping Problems**

**Redundant update of map information**

**Poor accuracy of mylar tax maps**

**Existing maps at wide variety of scales**

**e.g. Soils maps at  $1'' = 1,320'$**

**tax maps at  $1'' = 300'$ ,  $100'$ ,  $66'$  and  $50'$**

**Map sets covering different areas**

# **Manual Mapping Problems**

**No continuous coordinate system**

**No addresses on tax maps**

**No drainage features on tax maps**

**Map maintenance to maps of different scales**

**No single source of tax information**

# **Initial Base Map layers include:**

**Parcel lines: Parcel boundaries**

**Roadways: pavement edges & centerlines**

**Orthophotos: Distortion free aerial photos**

**2' contours: Elevation lines**

**Rivers, streams and lakes**

**Flood plains: 100 year flood plain (FEMA)**

**Building footprints**

# **Initial Base Map layers include:**

**Subdivisions**

**Soils: Soil Survey Maps**

**Municipal, Township, County boundaries**

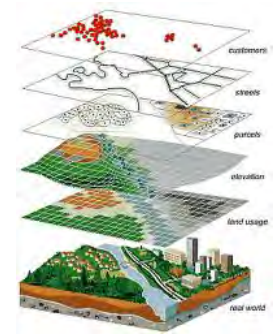
**Census tracts**

**Voting precincts & polling locations**

**Railroad ROW**

**Geodetic control: State plane, NAD '83**

# GIS MAPPING LAYERS



## Planimetrics:

- \_\_\_ AutoCAD
- \_\_\_ Buildings
- \_\_\_ Bridges
- \_\_\_ Centerlines
- \_\_\_ Contours – 2'
- \_\_\_ Contours – 10'
- \_\_\_ Obscured Areas
- \_\_\_ Pavement Edge
- \_\_\_ Railroads
- \_\_\_ Spot Elevations
- \_\_\_ Transmission Towers
- \_\_\_ 2000 GPS Points
- \_\_\_ 1991 Control Survey

## Civil:

- \_\_\_ Census Blocks/Tracts
- \_\_\_ Daycare Centers
- \_\_\_ Hotels
- \_\_\_ Nursing Homes
- \_\_\_ Schools
- \_\_\_ TIGER Streets
- \_\_\_ Zip Codes
- \_\_\_ 2000 Voting Precincts

## Natural Resources:

- \_\_\_ Rivers & Streams
- \_\_\_ Lakes
- \_\_\_ Land Use
- \_\_\_ Parks
- \_\_\_ Open Space Inventory
- \_\_\_ Wetlands (OMI)
- \_\_\_ Watershed Boundaries
- \_\_\_ Sub-Watersheds
- \_\_\_ USGS Hydrography
- \_\_\_ Flood Plains (FEMA)
- \_\_\_ Soils

## Cadastral:

- \_\_\_ County Boundary
- \_\_\_ City/Twp/Vlg Bound.
- \_\_\_ Lot lines
- \_\_\_ Municipal Boundary
- \_\_\_ Old Parcel Lines
- \_\_\_ Original Lot Lines
- \_\_\_ Parcels (2001)
- \_\_\_ Parcels w/Data
- \_\_\_ Range Boundaries
- \_\_\_ Right-of-Ways
- \_\_\_ Subdivisions
- \_\_\_ Township/Range Bound.
- \_\_\_ Tract Boundaries

## Real Estate:

- \_\_\_ Auditors Real Estate File
- \_\_\_ Mainfile/File Layout

## Imagery:

- \_\_\_ MrSid Black & White 6"
- \_\_\_ MrSid Color 1'
- \_\_\_ Black & White
- \_\_\_ Color
- \_\_\_ D.O.Q.Q. (1994)
- \_\_\_ Spot Satellite (10M)
- \_\_\_ SDE Orthophoto

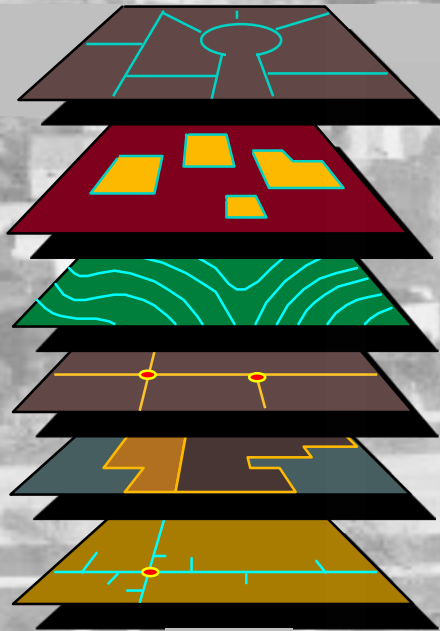
## Other Data:

- \_\_\_ Abandoned Mines
- \_\_\_ Aquifers
- \_\_\_ Arc Explorer 3.1
- \_\_\_ ArcReader
- \_\_\_ Flood Hazard Area
- \_\_\_ Flood Way
- \_\_\_ Index Maps
- \_\_\_ School Districts
- \_\_\_ Tiles
- \_\_\_ Zoning
- \_\_\_ 100 Year Flood Area



# Base Map Foundation

Property Parcels



Buildings

Topography

Road Centerlines

Taxing Jurisdictions

Survey control



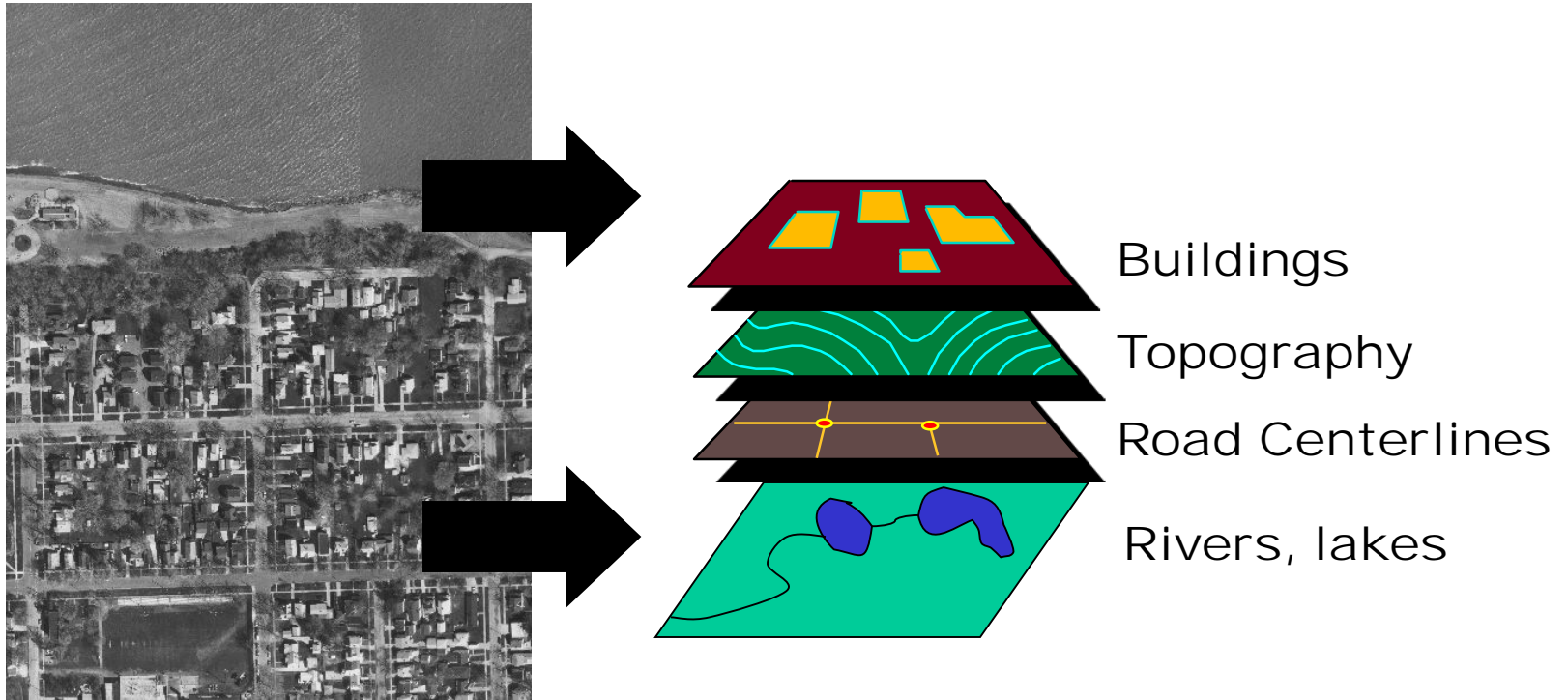
Digital Aerial Photos  
or “Orthophotos”

# Develop Digital Orthophotos

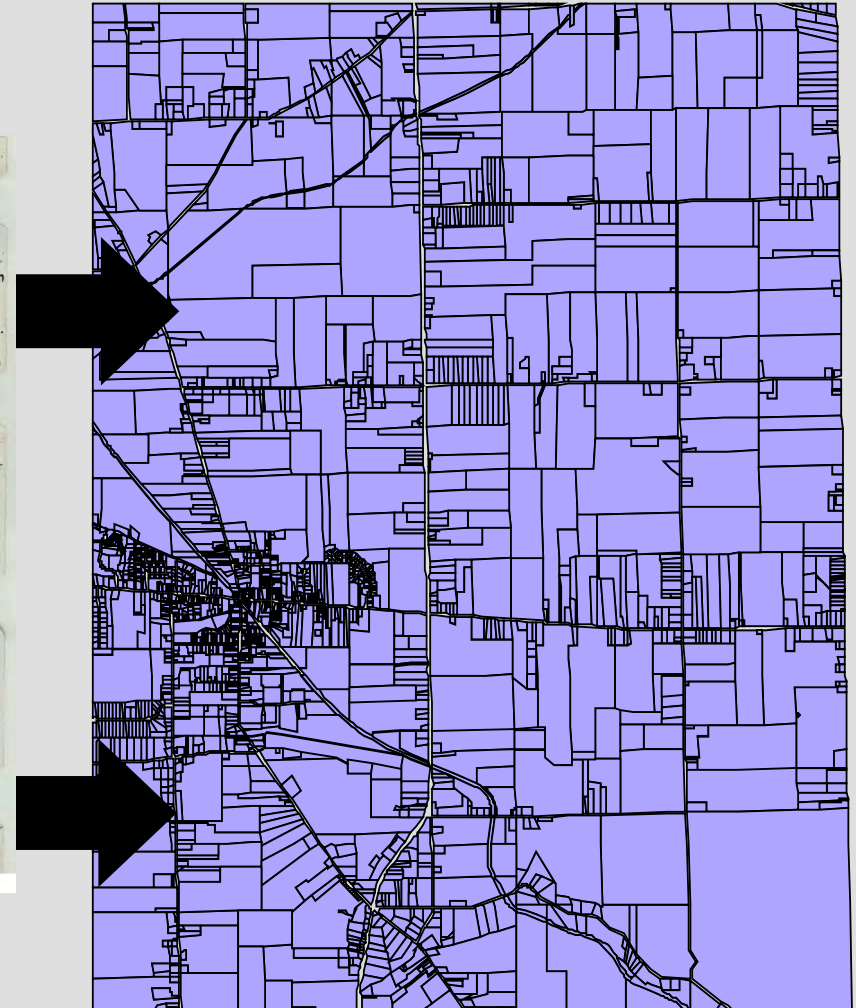
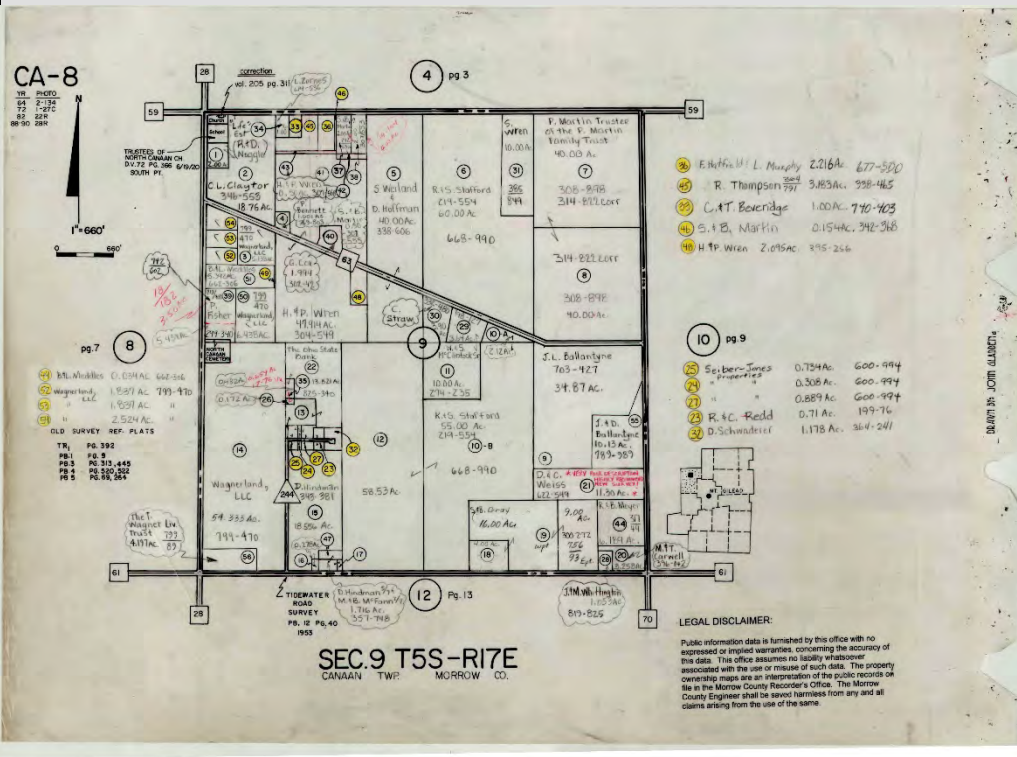




# Planimetric layers from orthophotos



# Tax Map Digitizing



# Departmental Support

## Applications

### **Auditor's Office**

- Pictometry support for appraisers, transfer office
- Daily query of orthophotos, parcels with real estate system info
- GIS buildings vs. tax roll QC
- Tax district mapping
- Digital Tax Map Book Index
- Scanned Plats/Archived Tax Maps online
- Sales Ratio analysis/mapping (under development)
- HouseDIFF change detection service

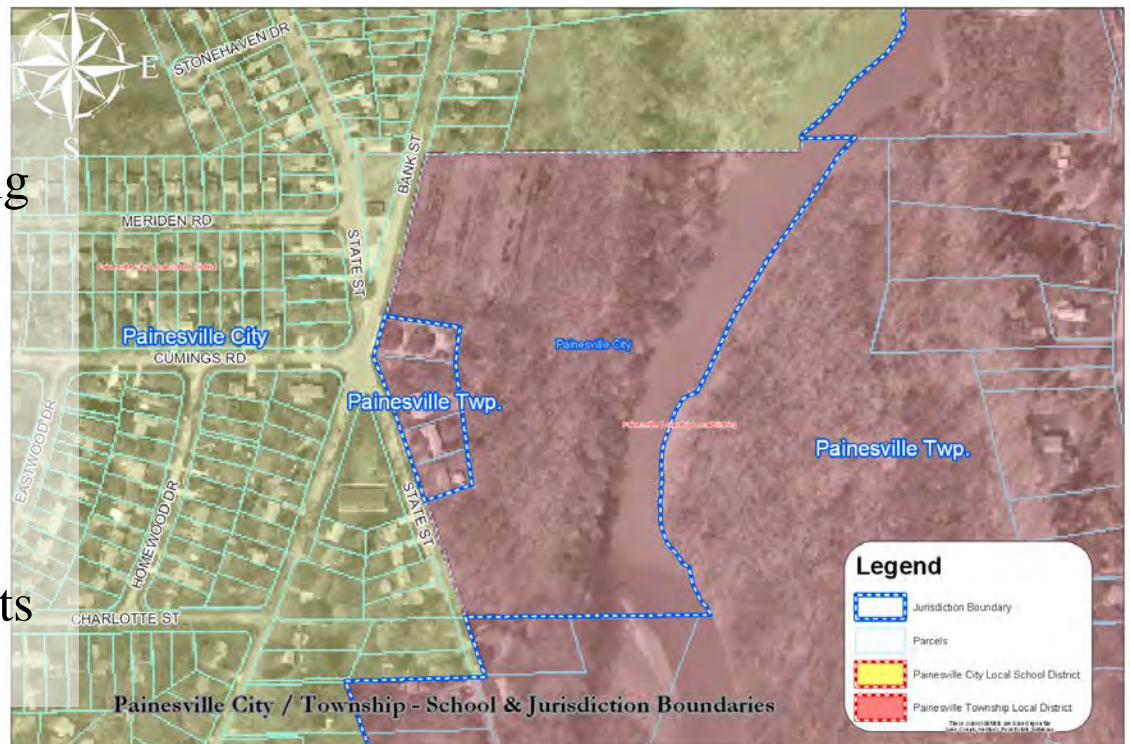
# Departmental Support Applications

## Board of Elections

- Wards/census tracts mapping
- Voting precincts
- Polling locations

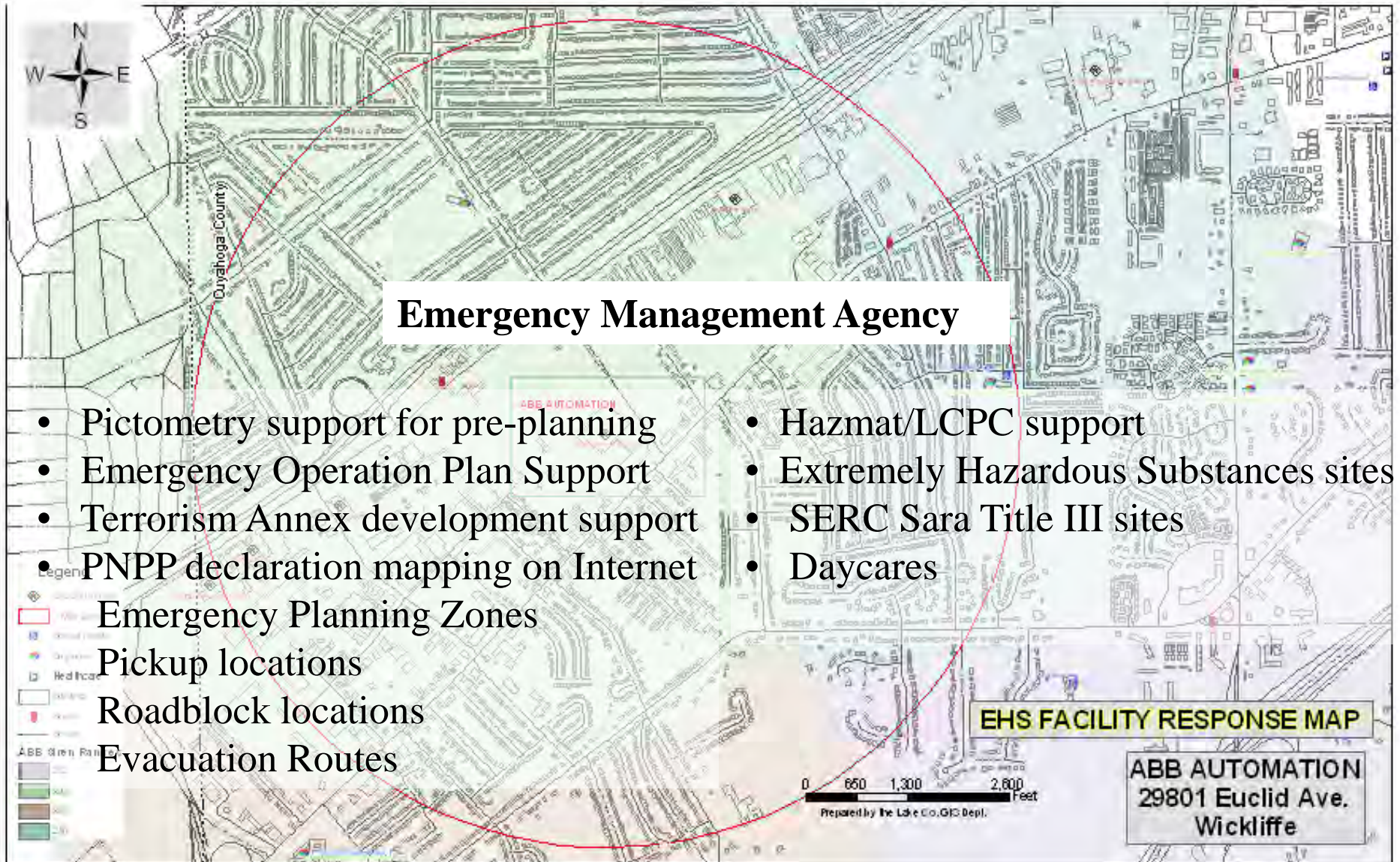
## Building Department

- Pictometry support for inspections and field reports
- Hydric soils mapping





# Departmental Support Applications





# Departmental Support

## Sirens, Daycares and Special Needs Facilities

# Emergency Management Agency

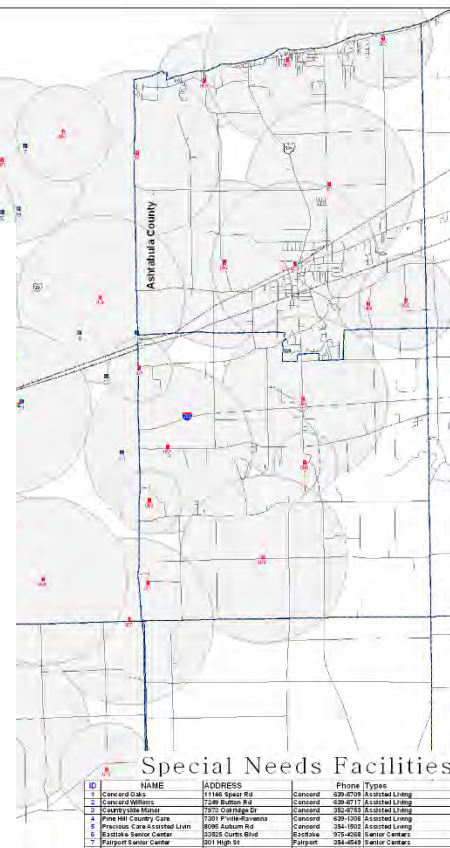
- Hazmat/LCPC support
- Extremely Hazardous Substances sites
- SERC Sara Title III sites
- Feul Stations, groceries, veterinarians
- Healthcare and Special Needs facilities:  
Hospitals, Urgent Care, Clinic/Surgery, Specialty Care,  
Schools, Lodging, Libraries, Pharmacies
- Assisted Living, Senior Centers, Nursing/Rehab, Nursing  
Homes, Drug abuse facilities, Daycares

## Daycare Facilities

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# Emergen

- Hazma
- Extrem
- SERC S
- Feul St
- Health
- Hosp
- School
- Assiste



# Departmental Support Applications

VOL. I - 9

## SUNNY ACRES ALLOTMENT RESUBDIVISION N<sup>o</sup> 1

Being a part of Sublot N<sup>o</sup> 9 and all of Sublots N<sup>o</sup> 10, 11, 12 and 13 of Sunny Acres Allotment as shown recorded in Volume M, Page 97 of Lake County Plat Records and now located in...

THE CITY OF MENTOR

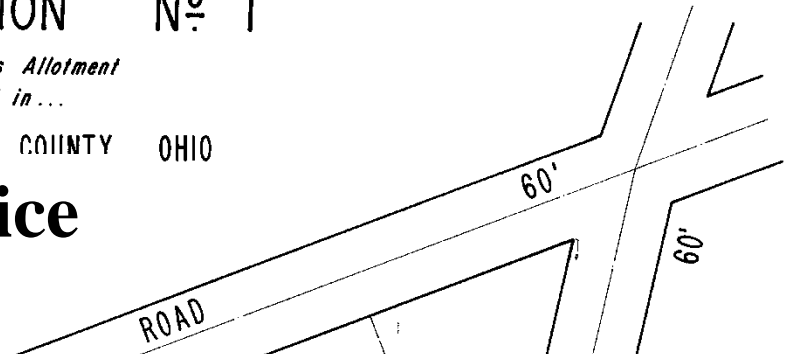
LAKE COUNTY OHIO

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decimal parts  
to the best of

### Engineer's Office

*Richard J. Bilski*  
RICHARD J. BILSKI  
P.E. N<sup>o</sup> 5244

689063

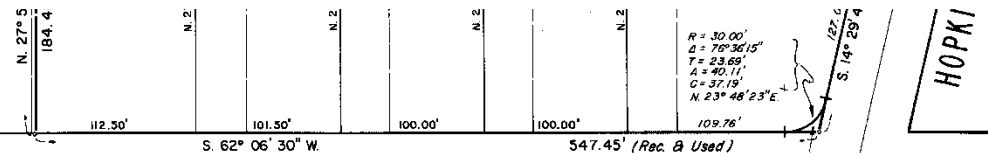


- Pictometry support for preliminary design, surveying, field investigation
- Daily query of orthophotos, parcels with real estate system information
- Route 2 Study mapping (18M project)
- County Motor Vehicle License Tax mapping
- Road Maintenance mapping
- Bridge Inspection Program, bridge locations mapping, deck elevations
- Scanned Plats/Archived Tax Maps online
- Various project specific site mapping (contours, elevations, right-of-ways, etc.)

#### APPROVALS

On this 18<sup>th</sup> day of NOVEMBER, 1980,  
City of Mentor Director of Community Development.

*[Signature]*

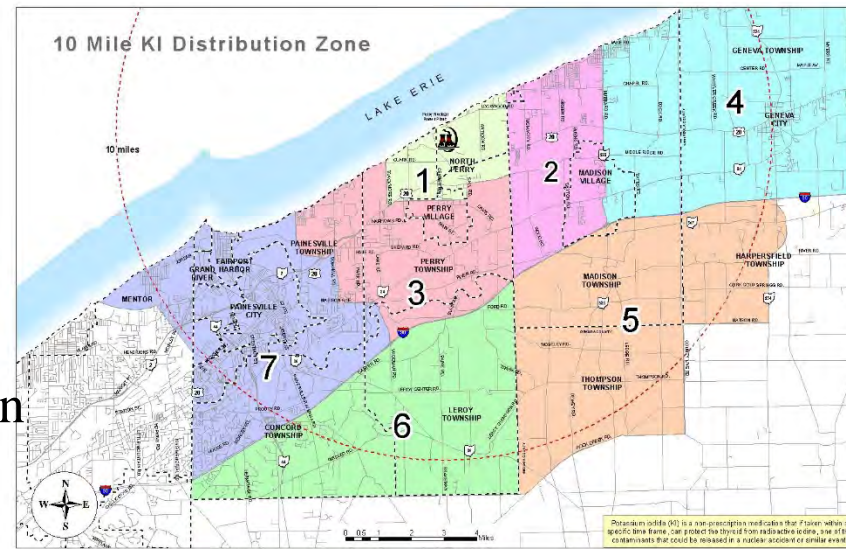


0.002 Ac. Granted to the City of Mentor for

# Applications

# County General Health District

- Rabies incident tracking
- West Nile Virus monitoring
- Septic survey mapping
- Area specific septic sampling mapping
- Countywide population density mapping
- Smallpox vaccination centers determination
- Geo-coding incidents
- KI 10 Mile Zone mapping
- Dog population mapping for rabies planning



# Departmental Support Applications

## **Narcotics Agency**

- Pictometry support for warrant serving, raids

## **Planning Commission**

- Pictometry support for zoning code enforcement, planning, field visits
- Query orthophotos, parcels, soils, subdivisions, etc
- Zoning Map development
- Scanned Plats/Archived Tax Maps online
- Support public queries

## **Prosecutor's Office**

- Presentation exhibits

# Departmental Support

## Applications

### **Sheriff's Office**

- Sexual Offender 1000' notification
- SWAT Team tactical mapping
- Dispatch E911 console GIS
- CAD System mapping
- Police Emergency Service Zones
- Fire Emergency Service Zones
- Dispatch groups/beats
- Special Address Geo-coding
- Pictometry support for emergencies





# Departmental Support

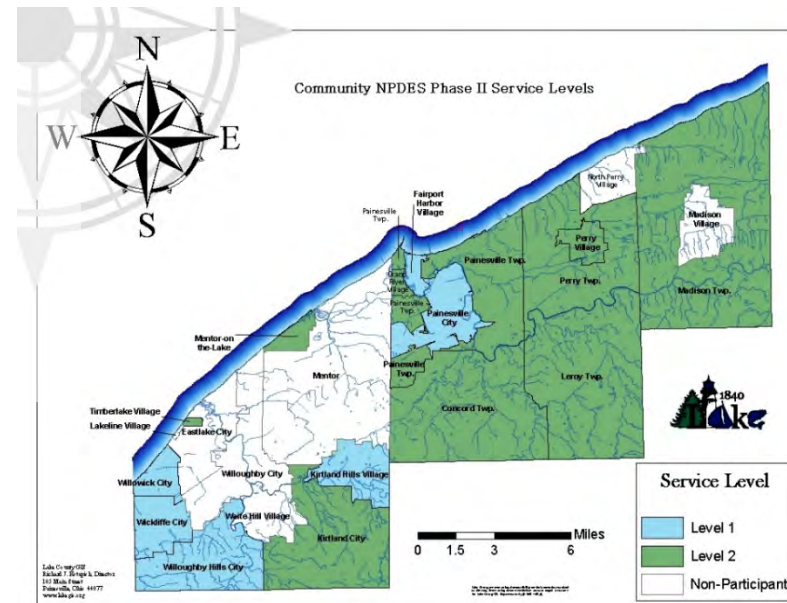
## Applications

### Stormwater Management Agency

- Watershed clipped digital base map files
- Watershed mapping
- Impervious surface calculation
- Impervious surface mapping web site

### Utilities Department

- Query orthophotos, parcels Auditor's data
- Recycling zone pickup day I-net application
- New waterline presentation mapping
- Utility GIS data conversion support



# **Benefits of GIS:**

**Reduction or elimination of redundant activities**

**Efficient map drafting and maintenance**

**Decrease in time needed to find geographic information**

**Labor savings for drafting, collecting, reconciling and using geographically referenced information**

# **Additional benefits include...**

**More accurate and complete Tax Maps**

**More accurate real estate tax assessment**

**Current Agricultural Use Valuation program:**

**Accurate, easy to handle CAUV maps**

**Improved CAUV program administration**

# **What can the Engineer's Office do with GIS?**

## **Tax map maintenance:**

**Maintenance of tax maps**

**Draft new subdivisions, splits & combines**

**Draft new, relocated and widened roads**

**House Bill 158 (262) compliance**

**Confirm parcel closure for transfers, splits,  
combines and subdivisions**

**Recalculate acreage for split parcels**

**Identify and locate specific parcels**



## **The Engineer's Office can also....**

**Provide maps for the public**

**Calculate and assign addresses**

**Custom mapping:**

- Parcel maps displaying tax information**

- Maps for culvert maintenance**

- Parcel maps showing owners, values, addresses**

- Traffic accident incident maps**

- List owners in order along a right-of-way**

**Calculate the value of special highway assessments**

**Generate maps, form letters and mailing lists**

## **Engineering can even:**

**Support preliminary design engineering**

**Link asset inventory to support  
maintenance scheduling**

**Perform plan review**

**Prepare traffic count predictions maps**

**Link engineering drawings for quick  
retrieval**

## **What can the Auditor's Office do with GIS?**

**Identify comparable parcels by grade,  
by owner, by sale price and/or by class**



# **Auditor's appraisal staff will also ...**

**Prepare custom mapping :**

**Prices by square feet**

**Routing maps (routes for appraisers)**

**Parcel maps color coded: market values vs. sales**

**Parcel maps color shaded by price/square foot**

**Parcel maps displaying owners, values and/or addresses**

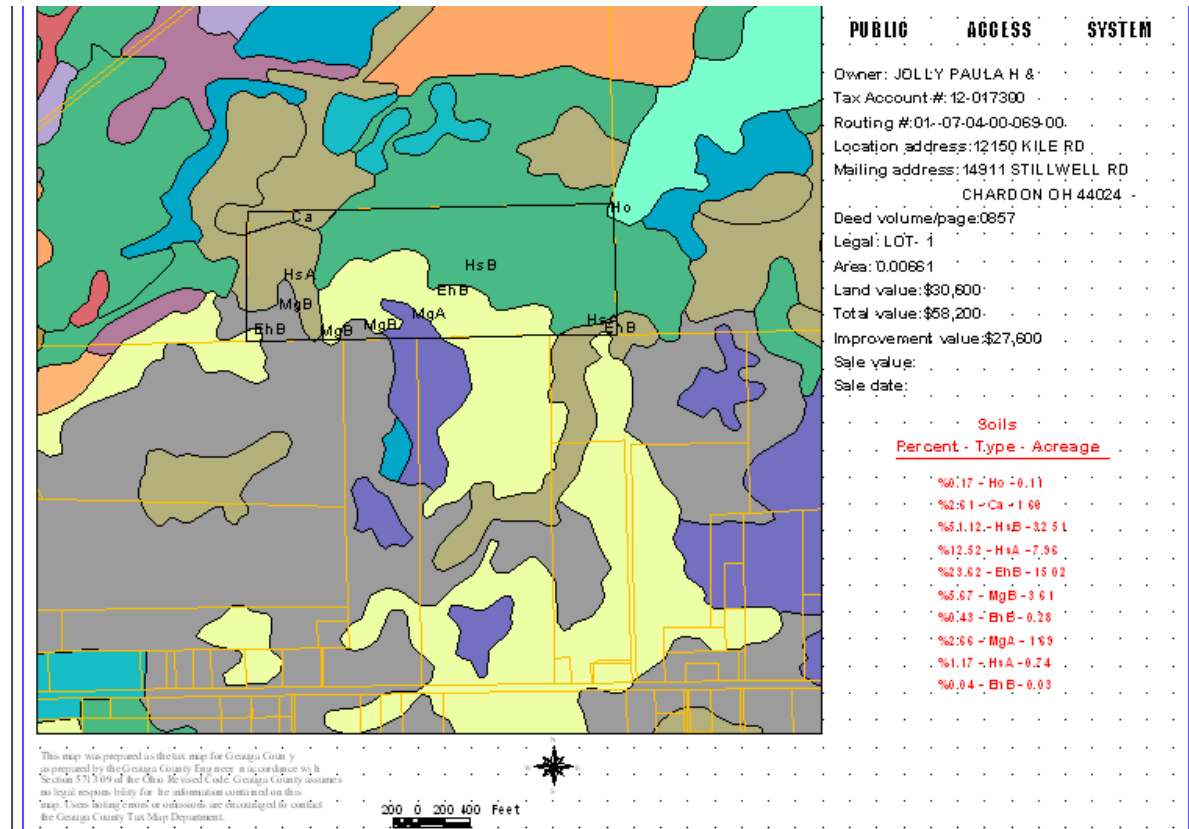
# Currently C.A.U.V. is calculated manually

The **C**urrent **A**gricultural **U**se **V**aluation program gives farmers tax incentives to continue farming their lands. The tax reduction amount is tied to the properties' soil types and the soil's suitability for crop yields.





# GIS automatically calculates the acreage of each soil type within the parcel



# **And the Planning Commission?**

**Update Township zoning maps**

**Update Township land use plans**

**County-wide comprehensive plan**

# **Plot during subdivision review:**

**zoning**

**flood plains**

**soil, wetlands**

**groundwater level**

**existing wells**

**septic systems**

**soil suitability**

# **Incident Response for Public Safety**

- **Provide more detailed map for E-911 system**
- **Develop efficient routes for emergency response**
- **Provide menu-driven interfaces to other departmental databases (e.g., land use, code violations, hydrant pressure, fire protection system permits, HAZMAT)**

**Provide better information on anticipated conditions at scene of incident.**

# **Incident Response for Public Safety**

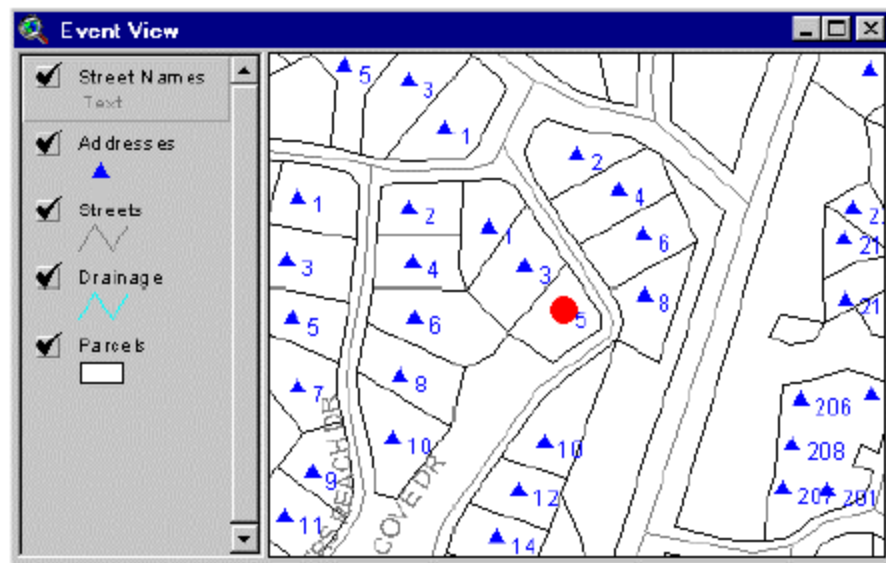
**Interface GIS with report management system to generate electronic “pin” maps and track trends in safety incidents**

## **Benefits**

- Faster, more effective response to emergencies**
- Improve access to and exchange of information about special hazards, hydrant locations, code violations, etc.**
- Better deployment of resources to prevent incidents**

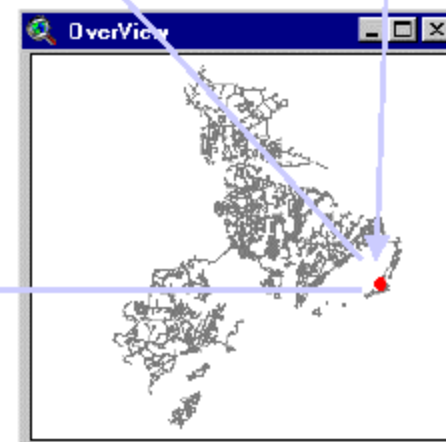


# Incident Response Application - E911 Dispatch

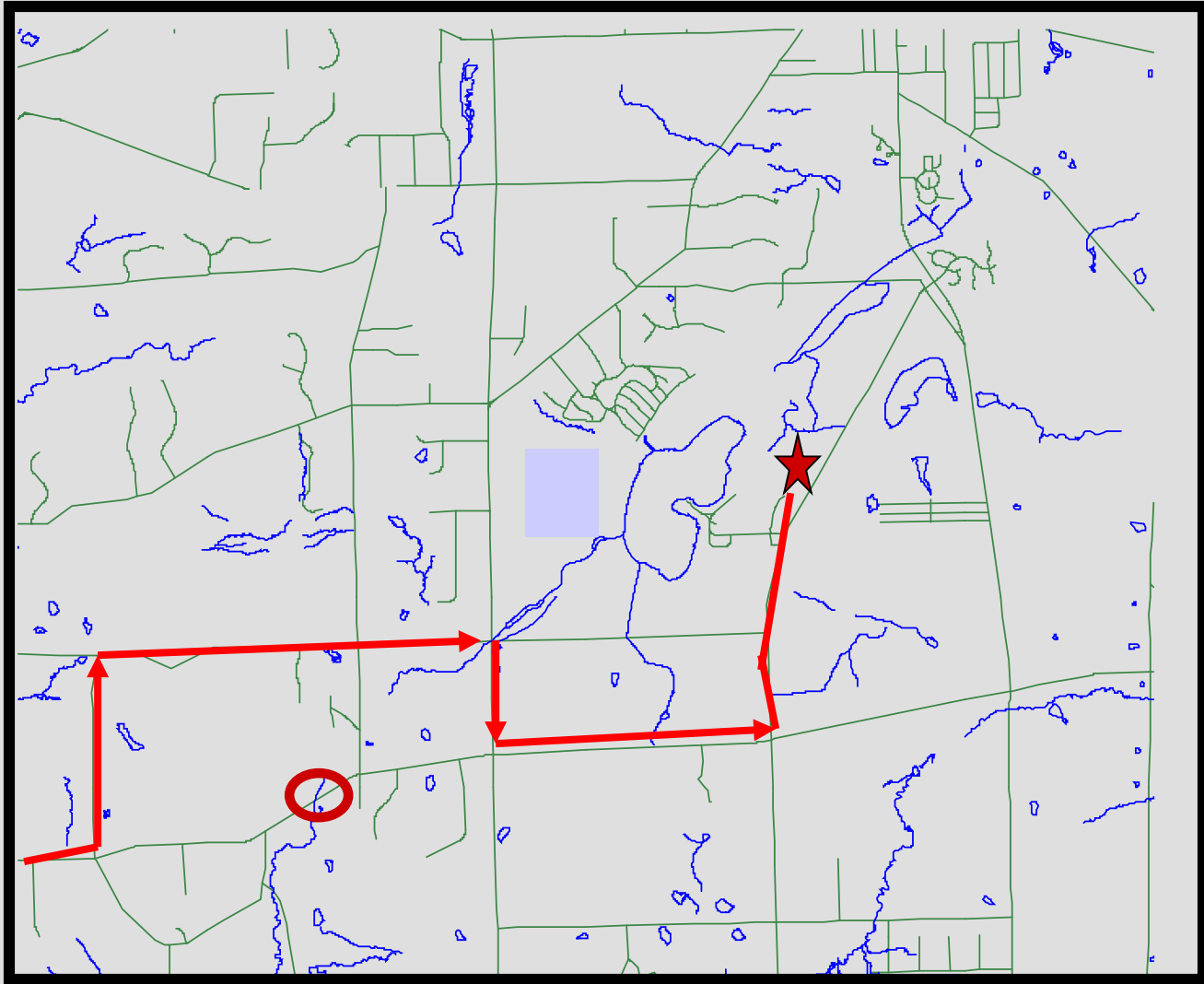


The **New Call** window contains the following fields and buttons:

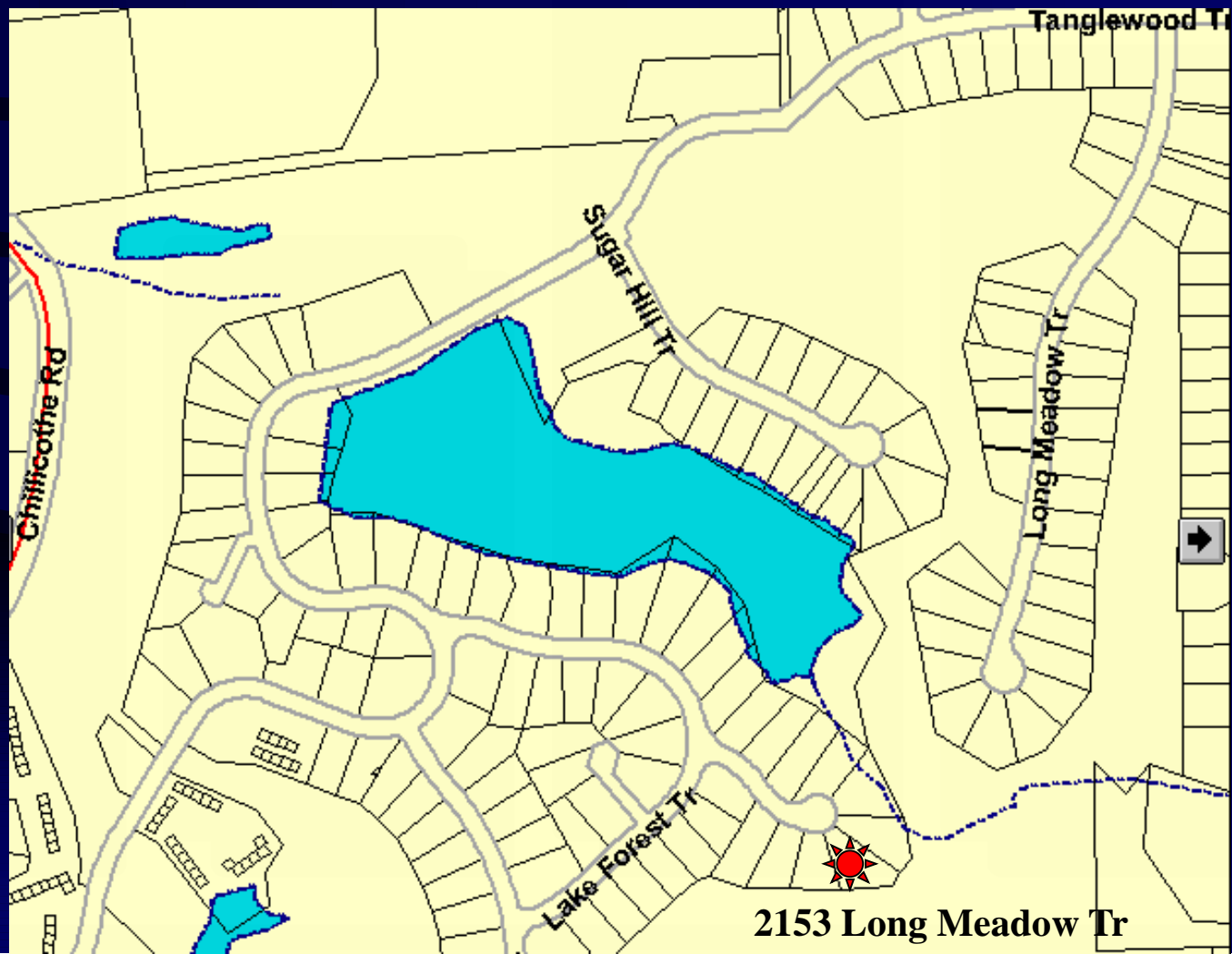
- Active Line:** Line 1 (dropdown menu)
- Phone Number:** 555 (dropdown menu) and 555-5555 (text input)
- Owner Name:** Public, John Q (text input)
- Street Address:** 5 FIDDLERS COVE DR (text input)
- Municipality:** Beaufort (dropdown menu)
- Buttons:** Look Up, Locate New, Locate Same



# Safety forces can dispatch fastest routes



# 911 can direct link to map, displaying incident location



## **Display other information for dispatchers**

**Aerial photos, contour elevations and streams**

**Identify abutting property owners or those within radius**

**Shortest route to caller**

**Wet and dry hydrants, gas lines and electrical facilities**

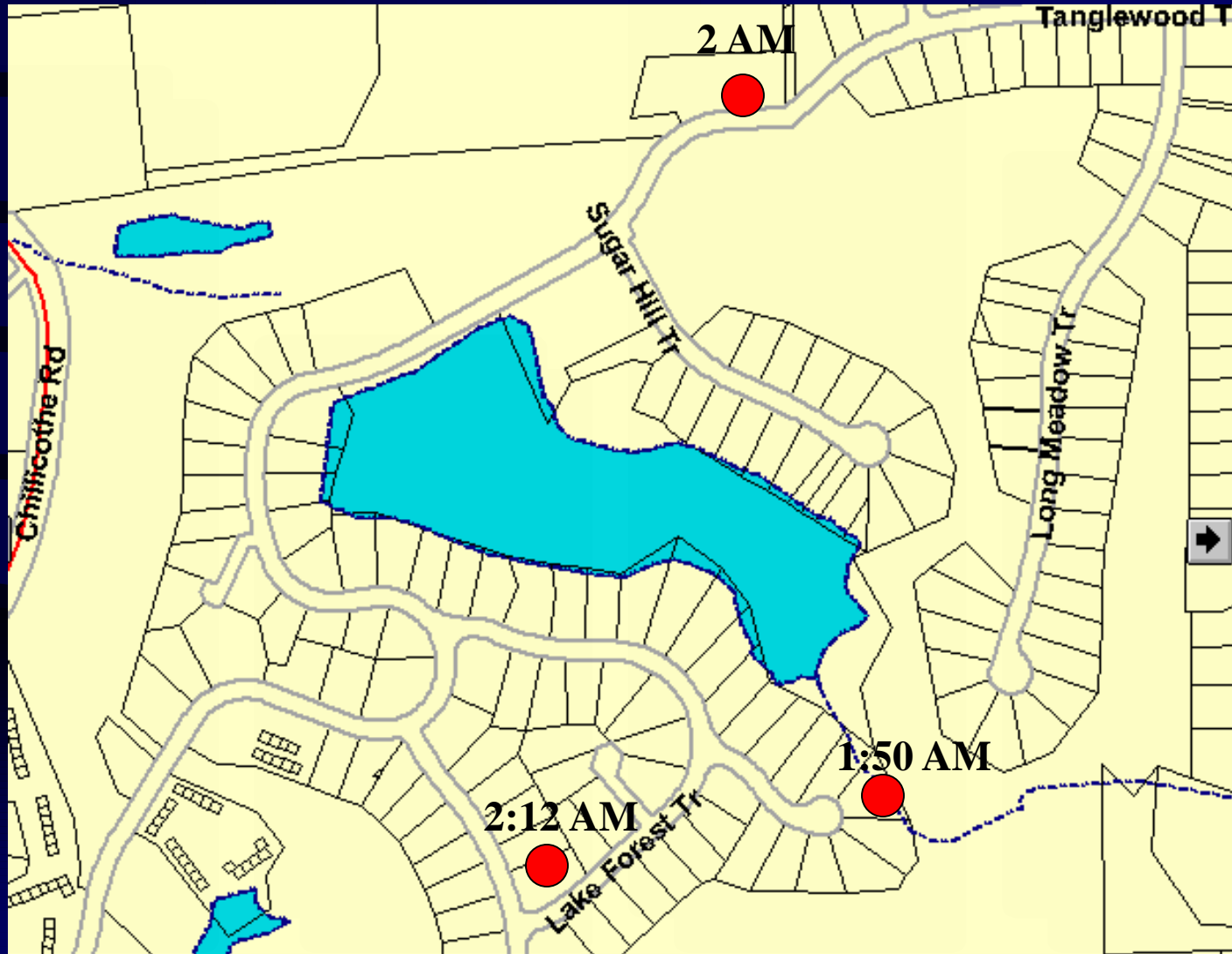
**Residence/resident history, medical data**

**PSAP boundaries**

**Hospital locations**

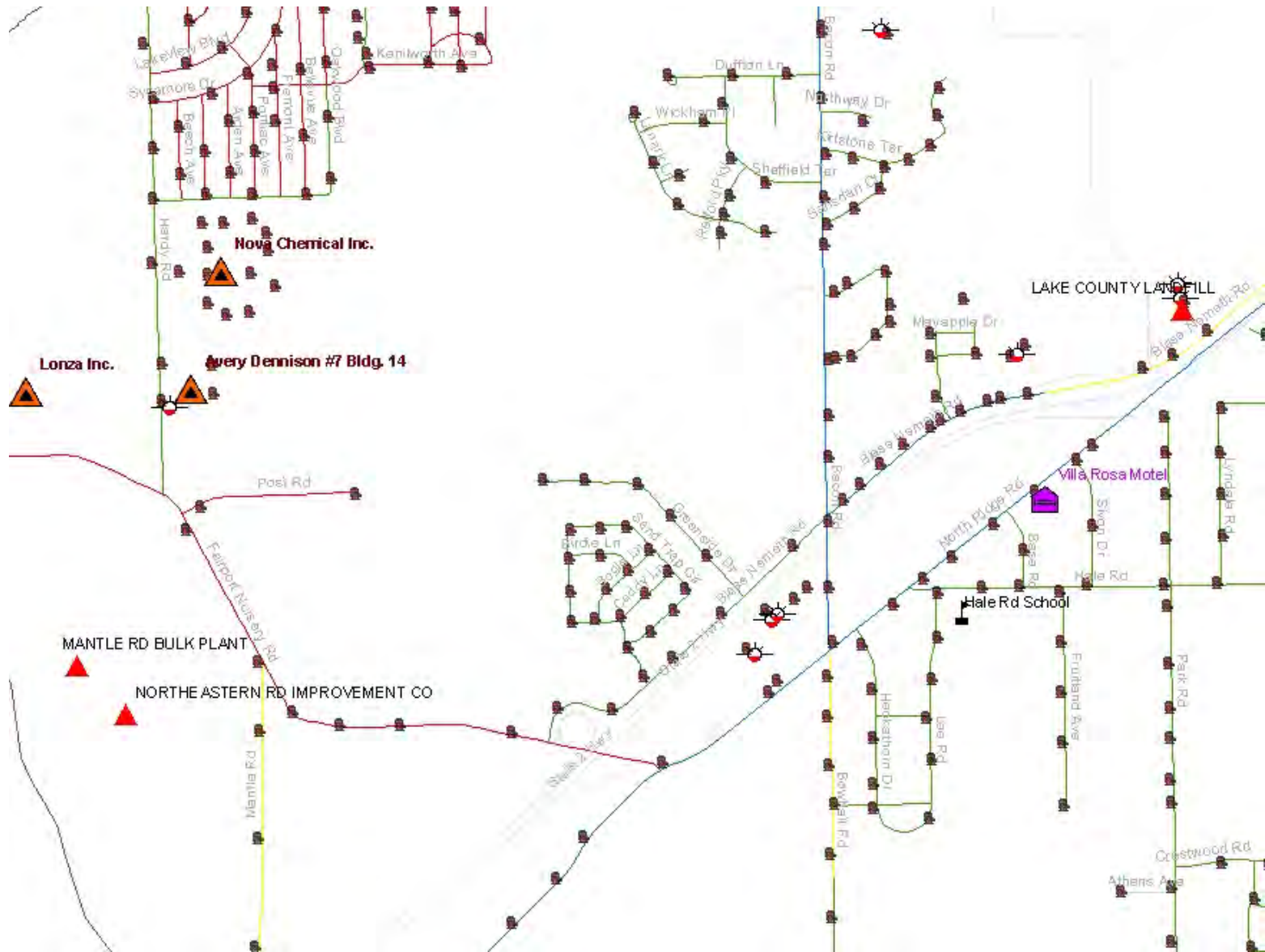
# Link with crime report databases

## PIN MAPPING

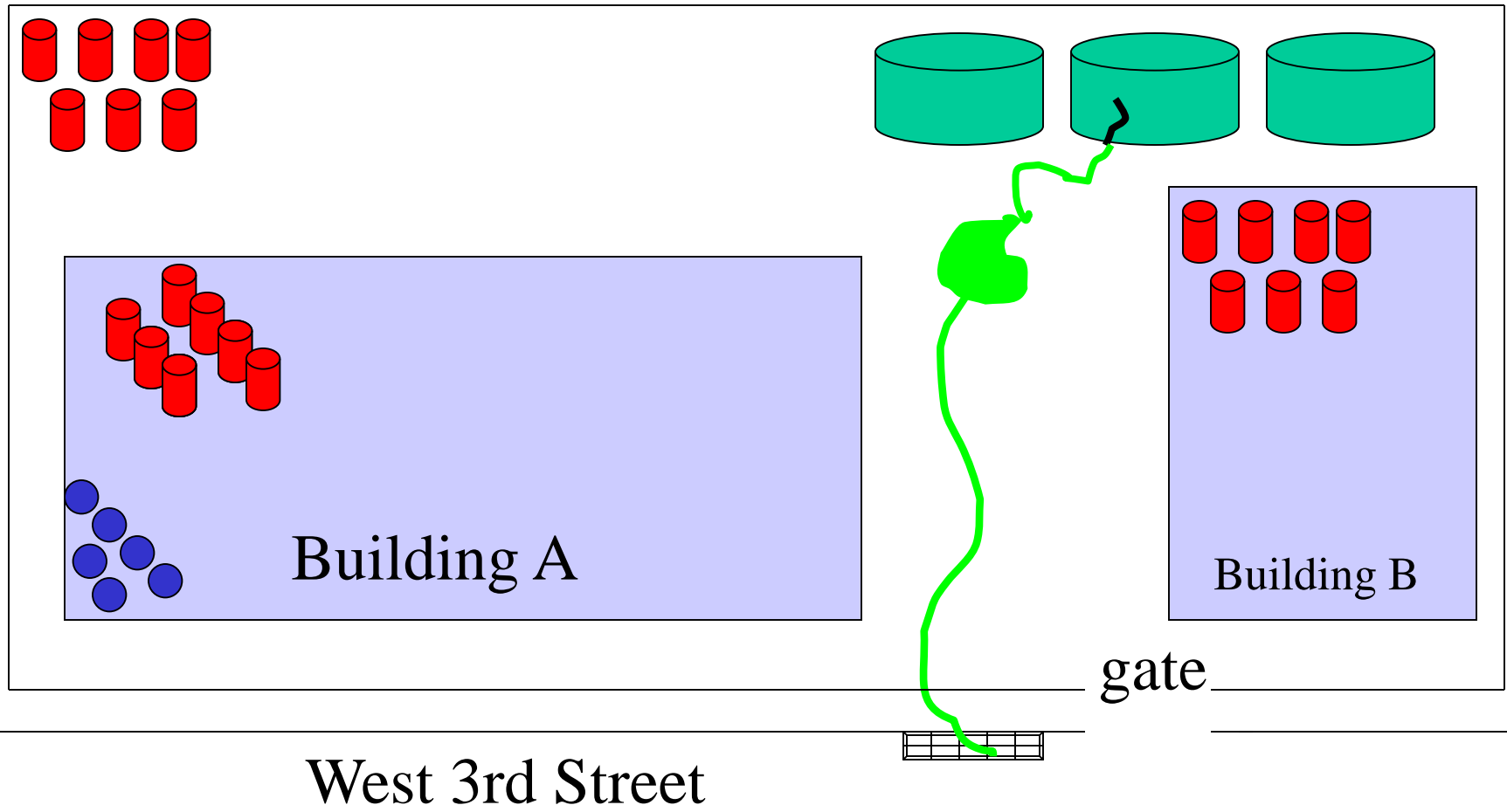




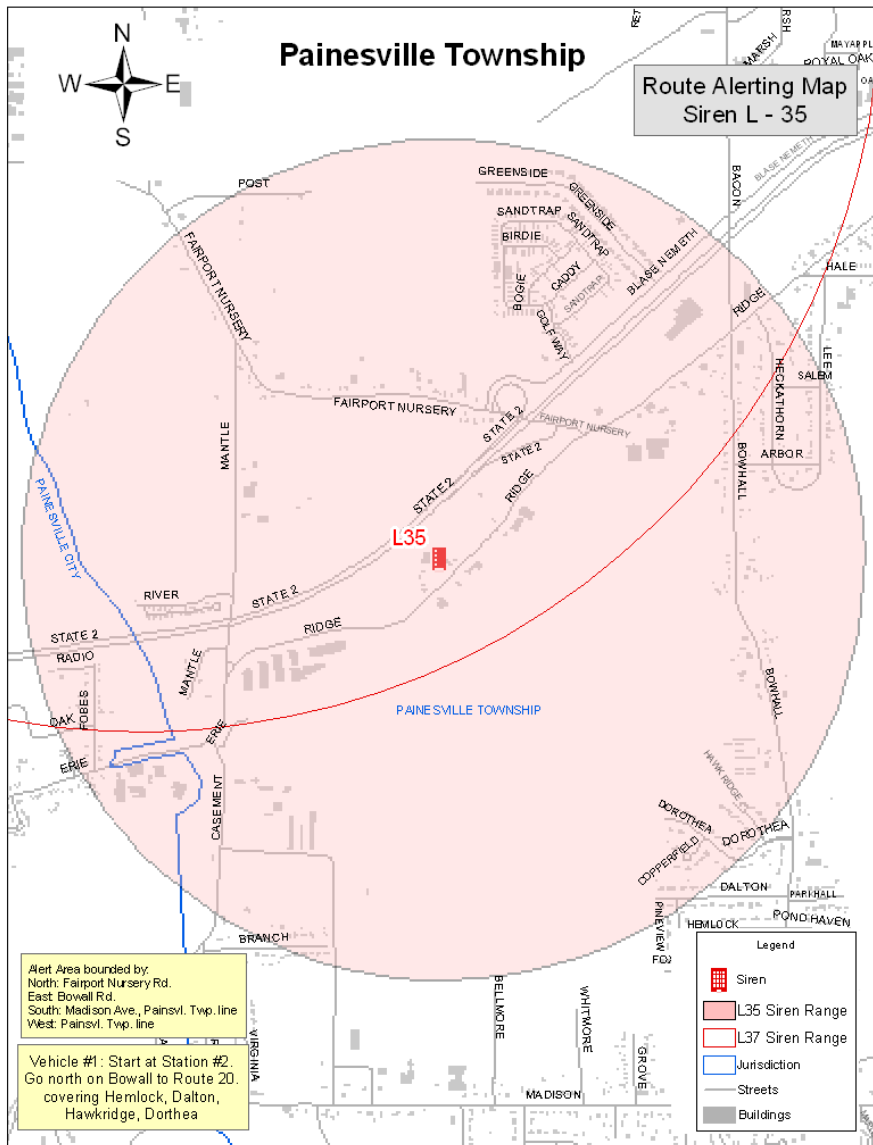
# Fire departments can have updated wet and dry hydrant locations with capacities



# Hazardous materials teams can have toxic and flammable barrels mapped



Toxic Generation Inc.

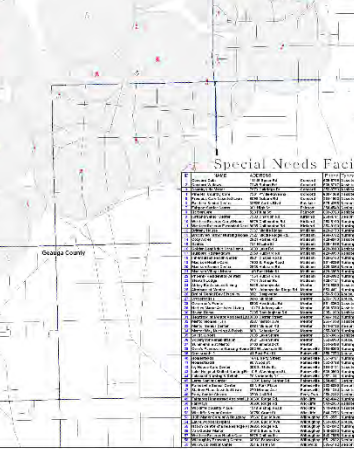
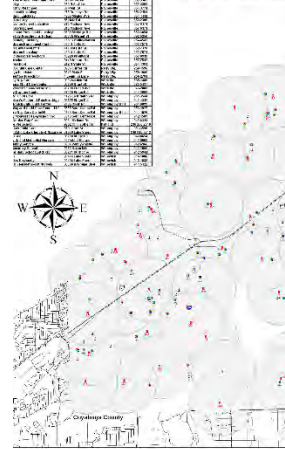


**Daycare Facilities**

Name	Address	City	County	Phone	Website
ABC Daycare	123 Main St	Painesville	Cuyahoga	513-1234	www.abcdays.com
123 Daycare	456 Elm St	Painesville	Cuyahoga	513-5678	www.123days.com
456 Daycare	789 Oak St	Painesville	Cuyahoga	513-9012	www.456days.com
789 Daycare	101 Pine St	Painesville	Cuyahoga	513-3456	www.789days.com
101 Daycare	202 Maple St	Painesville	Cuyahoga	513-7890	www.101days.com
202 Daycare	303 Birch St	Painesville	Cuyahoga	513-2345	www.202days.com
303 Daycare	404 Cedar St	Painesville	Cuyahoga	513-6789	www.303days.com
404 Daycare	505 Spruce St	Painesville	Cuyahoga	513-0123	www.404days.com
505 Daycare	606 Fir St	Painesville	Cuyahoga	513-4567	www.505days.com
606 Daycare	707 Willow St	Painesville	Cuyahoga	513-8901	www.606days.com
707 Daycare	808 Ash St	Painesville	Cuyahoga	513-2345	www.707days.com
808 Daycare	909 Hickory St	Painesville	Cuyahoga	513-6789	www.808days.com
909 Daycare	1010 Walnut St	Painesville	Cuyahoga	513-0123	www.909days.com
1010 Daycare	1111 Cherry St	Painesville	Cuyahoga	513-4567	www.1010days.com
1111 Daycare	1212 Peach St	Painesville	Cuyahoga	513-8901	www.1111days.com
1212 Daycare	1313 Plum St	Painesville	Cuyahoga	513-2345	www.1212days.com
1313 Daycare	1414 Apple St	Painesville	Cuyahoga	513-6789	www.1313days.com
1414 Daycare	1515 Orange St	Painesville	Cuyahoga	513-0123	www.1414days.com
1515 Daycare	1616 Lemon St	Painesville	Cuyahoga	513-4567	www.1515days.com
1616 Daycare	1717 Lime St	Painesville	Cuyahoga	513-8901	www.1616days.com
1717 Daycare	1818 Coconut St	Painesville	Cuyahoga	513-2345	www.1717days.com
1818 Daycare	1919 Pineapple St	Painesville	Cuyahoga	513-6789	www.1818days.com
1919 Daycare	2020 Strawberry St	Painesville	Cuyahoga	513-0123	www.1919days.com
2020 Daycare	2121 Blueberry St	Painesville	Cuyahoga	513-4567	www.2020days.com
2121 Daycare	2222 Raspberry St	Painesville	Cuyahoga	513-8901	www.2121days.com
2222 Daycare	2323 Blackberry St	Painesville	Cuyahoga	513-2345	www.2222days.com
2323 Daycare	2424 Elderberry St	Painesville	Cuyahoga	513-6789	www.2323days.com
2424 Daycare	2525 Mulberry St	Painesville	Cuyahoga	513-0123	www.2424days.com
2525 Daycare	2626 Fig St	Painesville	Cuyahoga	513-4567	www.2525days.com
2626 Daycare	2727 Kiwi St	Painesville	Cuyahoga	513-8901	www.2626days.com
2727 Daycare	2828 Mango St	Painesville	Cuyahoga	513-2345	www.2727days.com
2828 Daycare	2929 Papaya St	Painesville	Cuyahoga	513-6789	www.2828days.com
2929 Daycare	3030 Guava St	Painesville	Cuyahoga	513-0123	www.2929days.com
3030 Daycare	3131 Passionfruit St	Painesville	Cuyahoga	513-4567	www.3030days.com
3131 Daycare	3232 Dragonfruit St	Painesville	Cuyahoga	513-8901	www.3131days.com
3232 Daycare	3333 Jackfruit St	Painesville	Cuyahoga	513-2345	www.3232days.com
3333 Daycare	3434 Rambutan St	Painesville	Cuyahoga	513-6789	www.3333days.com
3434 Daycare	3535 Lychee St	Painesville	Cuyahoga	513-0123	www.3434days.com
3535 Daycare	3636 Custard Apple St	Painesville	Cuyahoga	513-4567	www.3535days.com
3636 Daycare	3737 Breadfruit St	Painesville	Cuyahoga	513-8901	www.3636days.com
3737 Daycare	3838 Starfruit St	Painesville	Cuyahoga	513-2345	www.3737days.com
3838 Daycare	3939 Lemon-lime St	Painesville	Cuyahoga	513-6789	www.3838days.com
3939 Daycare	4040 Grapefruit St	Painesville	Cuyahoga	513-0123	www.3939days.com
4040 Daycare	4141 Tangerine St	Painesville	Cuyahoga	513-4567	www.4040days.com
4141 Daycare	4242 Orange St	Painesville	Cuyahoga	513-8901	www.4141days.com
4242 Daycare	4343 Peach St	Painesville	Cuyahoga	513-2345	www.4242days.com
4343 Daycare	4444 Plum St	Painesville	Cuyahoga	513-6789	www.4343days.com
4444 Daycare	4545 Apple St	Painesville	Cuyahoga	513-0123	www.4444days.com
4545 Daycare	4646 Cherry St	Painesville	Cuyahoga	513-4567	www.4545days.com
4646 Daycare	4747 Strawberry St	Painesville	Cuyahoga	513-8901	www.4646days.com
4747 Daycare	4848 Blueberry St	Painesville	Cuyahoga	513-2345	www.4747days.com
4848 Daycare	4949 Raspberry St	Painesville	Cuyahoga	513-6789	www.4848days.com
4949 Daycare	5050 Blackberry St	Painesville	Cuyahoga	513-0123	www.4949days.com
5050 Daycare	5151 Elderberry St	Painesville	Cuyahoga	513-4567	www.5050days.com
5151 Daycare	5252 Mulberry St	Painesville	Cuyahoga	513-8901	www.5151days.com
5252 Daycare	5353 Fig St	Painesville	Cuyahoga	513-2345	www.5252days.com
5353 Daycare	5454 Kiwi St	Painesville	Cuyahoga	513-6789	www.5353days.com
5454 Daycare	5555 Mango St	Painesville	Cuyahoga	513-0123	www.5454days.com
5555 Daycare	5656 Papaya St	Painesville	Cuyahoga	513-4567	www.5555days.com
5656 Daycare	5757 Guava St	Painesville	Cuyahoga	513-8901	www.5656days.com
5757 Daycare	5858 Passionfruit St	Painesville	Cuyahoga	513-2345	www.5757days.com
5858 Daycare	5959 Dragonfruit St	Painesville	Cuyahoga	513-6789	www.5858days.com
5959 Daycare	6060 Jackfruit St	Painesville	Cuyahoga	513-0123	www.5959days.com
6060 Daycare	6161 Rambutan St	Painesville	Cuyahoga	513-4567	www.6060days.com
6161 Daycare	6262 Lychee St	Painesville	Cuyahoga	513-8901	www.6161days.com
6262 Daycare	6363 Custard Apple St	Painesville	Cuyahoga	513-2345	www.6262days.com
6363 Daycare	6464 Breadfruit St	Painesville	Cuyahoga	513-6789	www.6363days.com
6464 Daycare	6565 Starfruit St	Painesville	Cuyahoga	513-0123	www.6464days.com
6565 Daycare	6666 Lemon-lime St	Painesville	Cuyahoga	513-4567	www.6565days.com
6666 Daycare	6767 Grapefruit St	Painesville	Cuyahoga	513-8901	www.6666days.com
6767 Daycare	6868 Tangerine St	Painesville	Cuyahoga	513-2345	www.6767days.com
6868 Daycare	6969 Orange St	Painesville	Cuyahoga	513-6789	www.6868days.com
6969 Daycare	7070 Peach St	Painesville	Cuyahoga	513-0123	www.6969days.com
7070 Daycare	7171 Plum St	Painesville	Cuyahoga	513-4567	www.7070days.com
7171 Daycare	7272 Apple St	Painesville	Cuyahoga	513-8901	www.7171days.com
7272 Daycare	7373 Cherry St	Painesville	Cuyahoga	513-2345	www.7272days.com
7373 Daycare	7474 Strawberry St	Painesville	Cuyahoga	513-6789	www.7373days.com
7474 Daycare	7575 Blueberry St	Painesville	Cuyahoga	513-0123	www.7474days.com
7575 Daycare	7676 Raspberry St	Painesville	Cuyahoga	513-4567	www.7575days.com
7676 Daycare	7777 Blackberry St	Painesville	Cuyahoga	513-8901	www.7676days.com
7777 Daycare	7878 Elderberry St	Painesville	Cuyahoga	513-2345	www.7777days.com
7878 Daycare	7979 Mulberry St	Painesville	Cuyahoga	513-6789	www.7878days.com
7979 Daycare	8080 Fig St	Painesville	Cuyahoga	513-0123	www.7979days.com
8080 Daycare	8181 Kiwi St	Painesville	Cuyahoga	513-4567	www.8080days.com
8181 Daycare	8282 Mango St	Painesville	Cuyahoga	513-8901	www.8181days.com
8282 Daycare	8383 Papaya St	Painesville	Cuyahoga	513-2345	www.8282days.com
8383 Daycare	8484 Guava St	Painesville	Cuyahoga	513-6789	www.8383days.com
8484 Daycare	8585 Passionfruit St	Painesville	Cuyahoga	513-0123	www.8484days.com
8585 Daycare	8686 Dragonfruit St	Painesville	Cuyahoga	513-4567	www.8585days.com
8686 Daycare	8787 Jackfruit St	Painesville	Cuyahoga	513-8901	www.8686days.com
8787 Daycare	8888 Rambutan St	Painesville	Cuyahoga	513-2345	www.8787days.com
8888 Daycare	8989 Lychee St	Painesville	Cuyahoga	513-6789	www.8888days.com
8989 Daycare	9090 Custard Apple St	Painesville	Cuyahoga	513-0123	www.8989days.com
9090 Daycare	9191 Breadfruit St	Painesville	Cuyahoga	513-4567	www.9090days.com
9191 Daycare	9292 Starfruit St	Painesville	Cuyahoga	513-8901	www.9191days.com
9292 Daycare	9393 Lemon-lime St	Painesville	Cuyahoga	513-2345	www.9292days.com
9393 Daycare	9494 Grapefruit St	Painesville	Cuyahoga	513-6789	www.9393days.com
9494 Daycare	9595 Tangerine St	Painesville	Cuyahoga	513-0123	www.9494days.com
9595 Daycare	9696 Orange St	Painesville	Cuyahoga	513-4567	www.9595days.com
9696 Daycare	9797 Peach St	Painesville	Cuyahoga	513-8901	www.9696days.com
9797 Daycare	9898 Plum St	Painesville	Cuyahoga	513-2345	www.9797days.com
9898 Daycare	9999 Apple St	Painesville	Cuyahoga	513-6789	www.9898days.com




## Sirens, Daycares and Special Needs Facilities
















These maps are for First Responders' use in identifying local populations, including daycares, special needs , etc. that are at risk within the potential plume zone for Extremely Hazardous Substance (EHS) facilities

## EHS FACILITY RESPONSE MAP

### Legend

-  EHS 2003 Filers
-  1 Mile Zone
-  Special Needs
-  Daycares
-  Healthcare
-  Buildings
-  Streets
- ABB Siren Ranges**
-  202
-  203
-  205
-  210

0 650 1,300 2,600 Feet

Prepared by the Lake Co. GIS Dept.

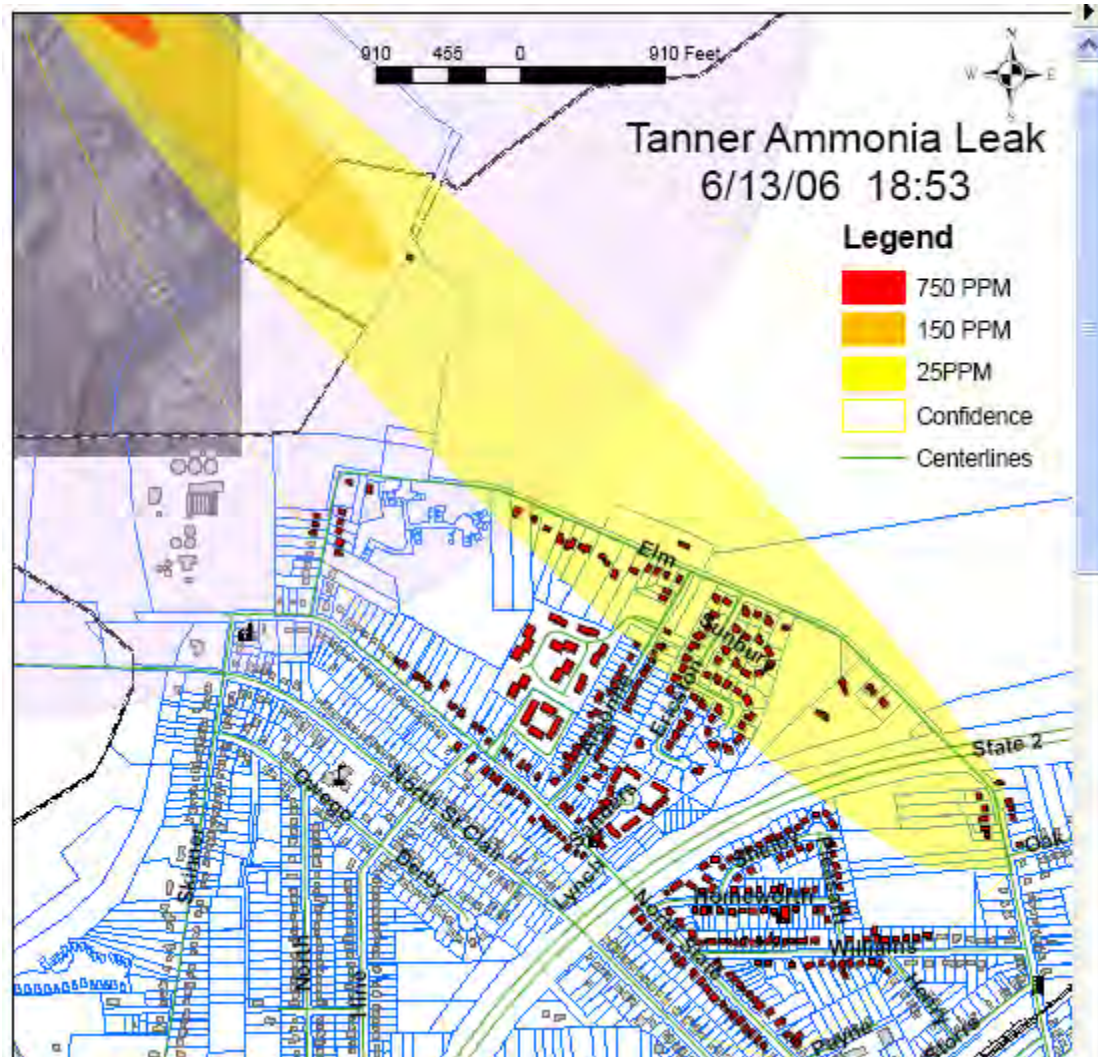


- Sulfuric Acid

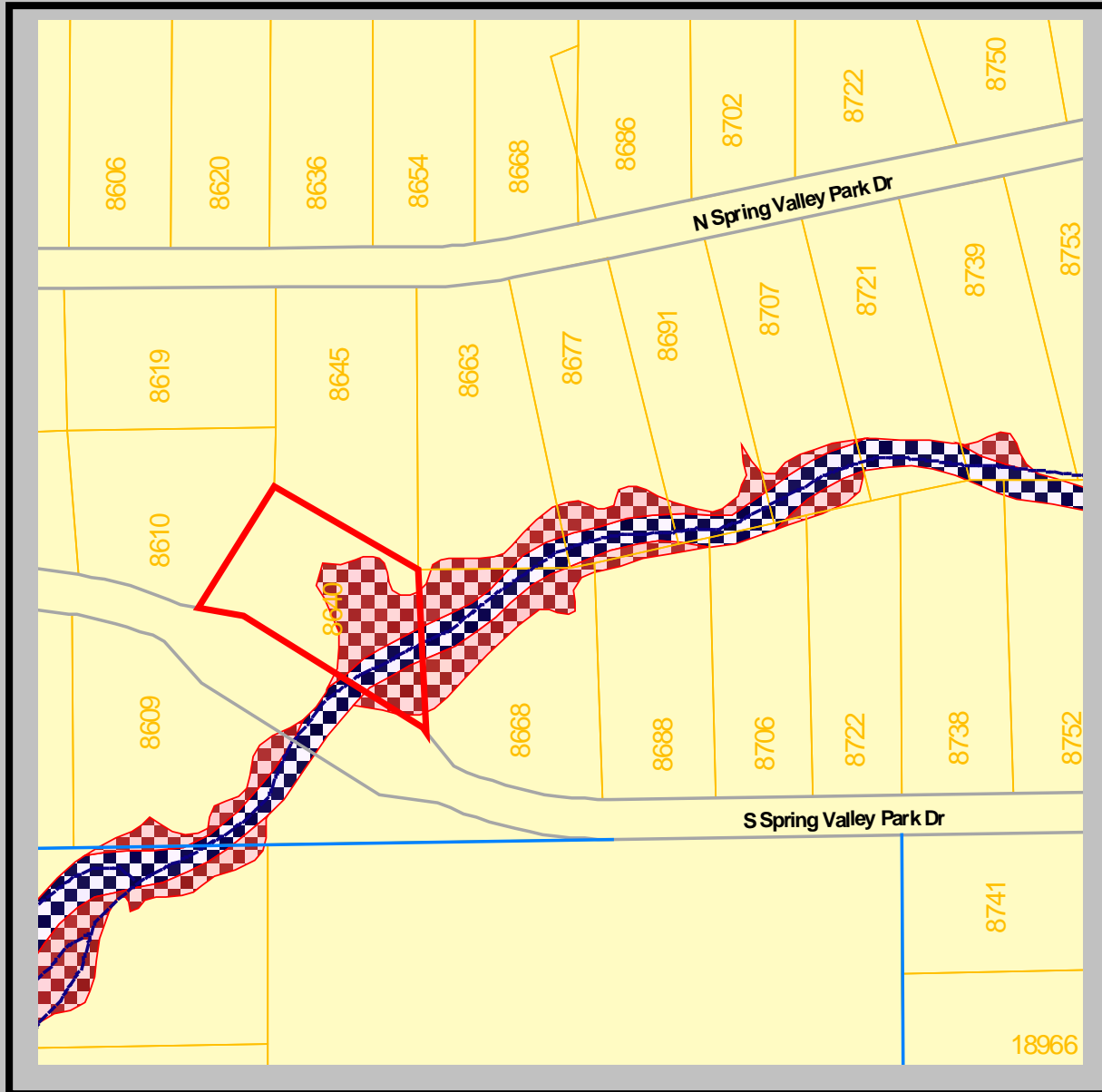
**ABB AUTOMATION**  
**29801 Euclid Ave.**  
**Wickliffe**



# Hazardous materials teams can have toxic plumes and at-risk populations mapped

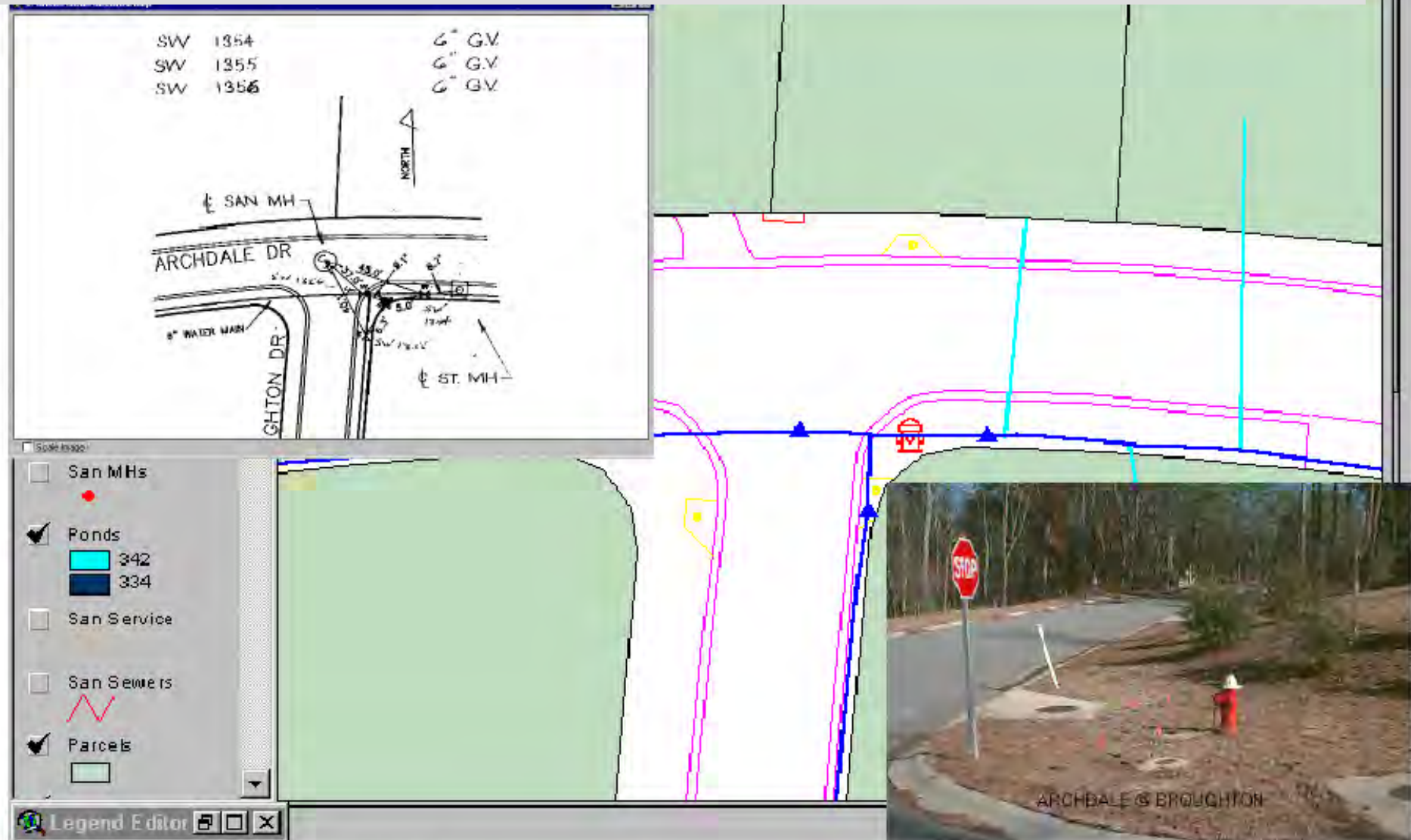


**The Building Department can quickly find a property which falls within the flood plain**

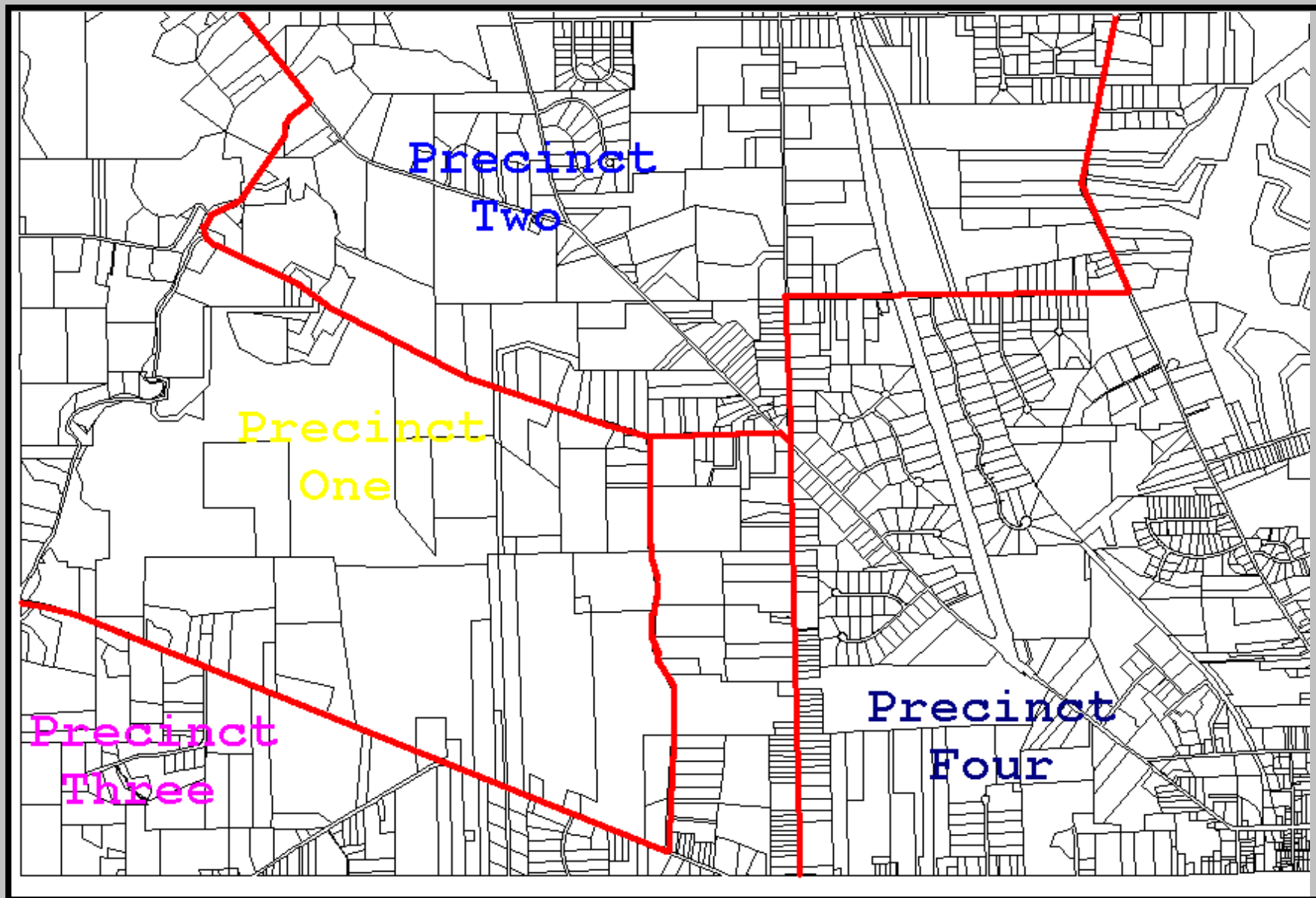




Field crews can manage infrastructure maintenance or replacement, accessing scanned notes, digital pictures and GIS layers at the same time.



# The Board of Elections can re-district voting precincts



**THE END!**