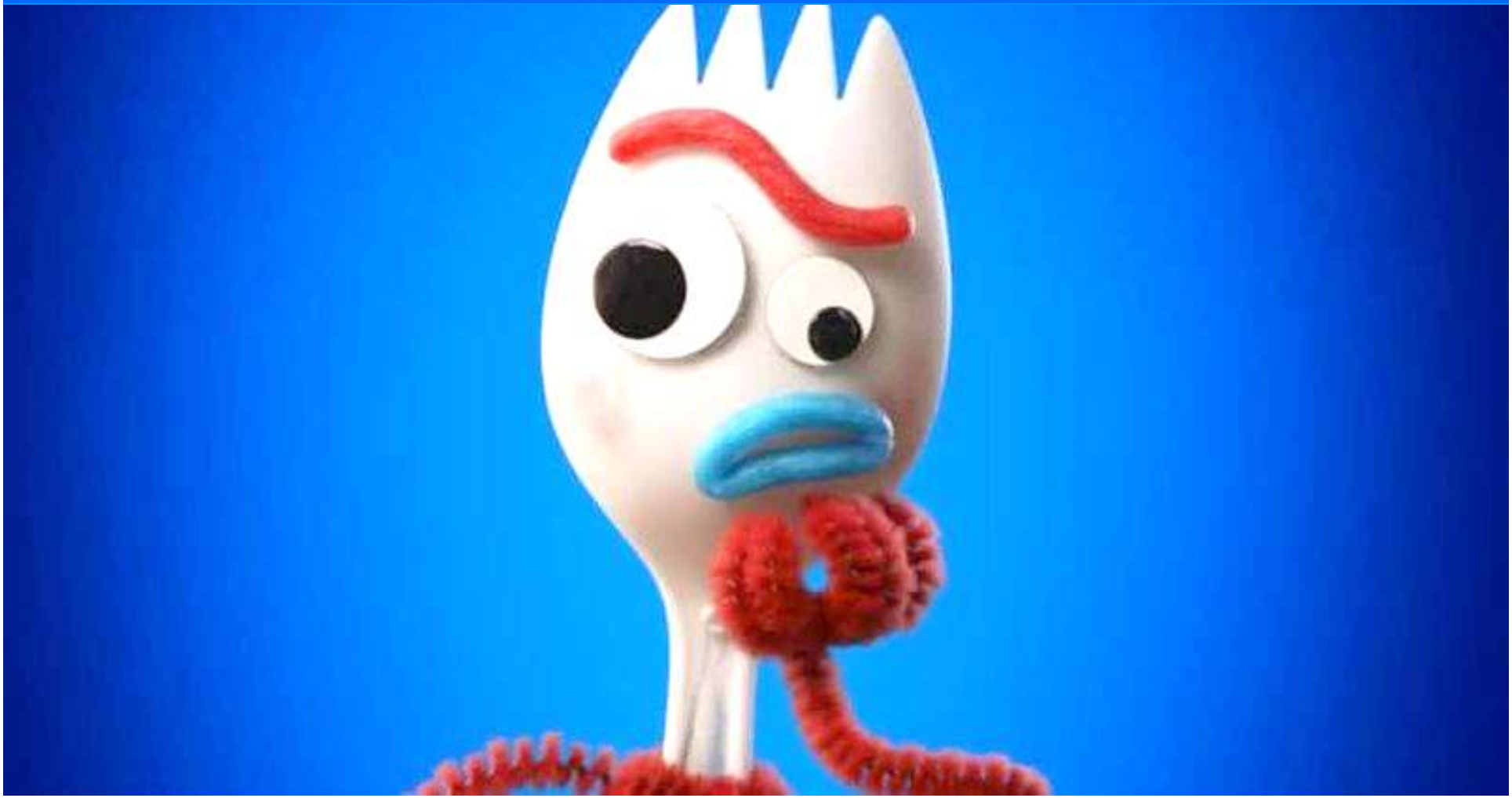
Greene County GIS Office

February 25, 2020 Huddle

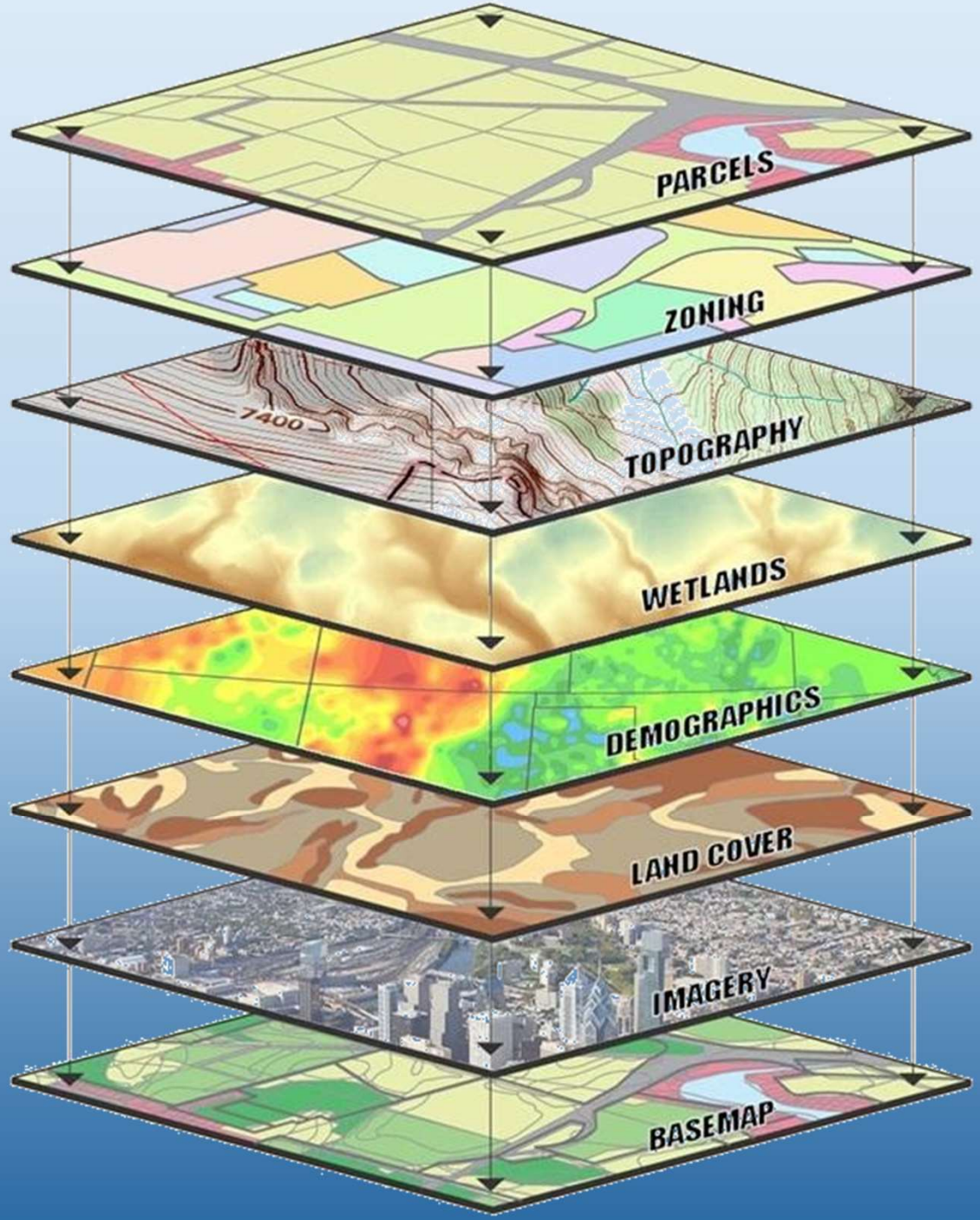
Greene County GIS Office

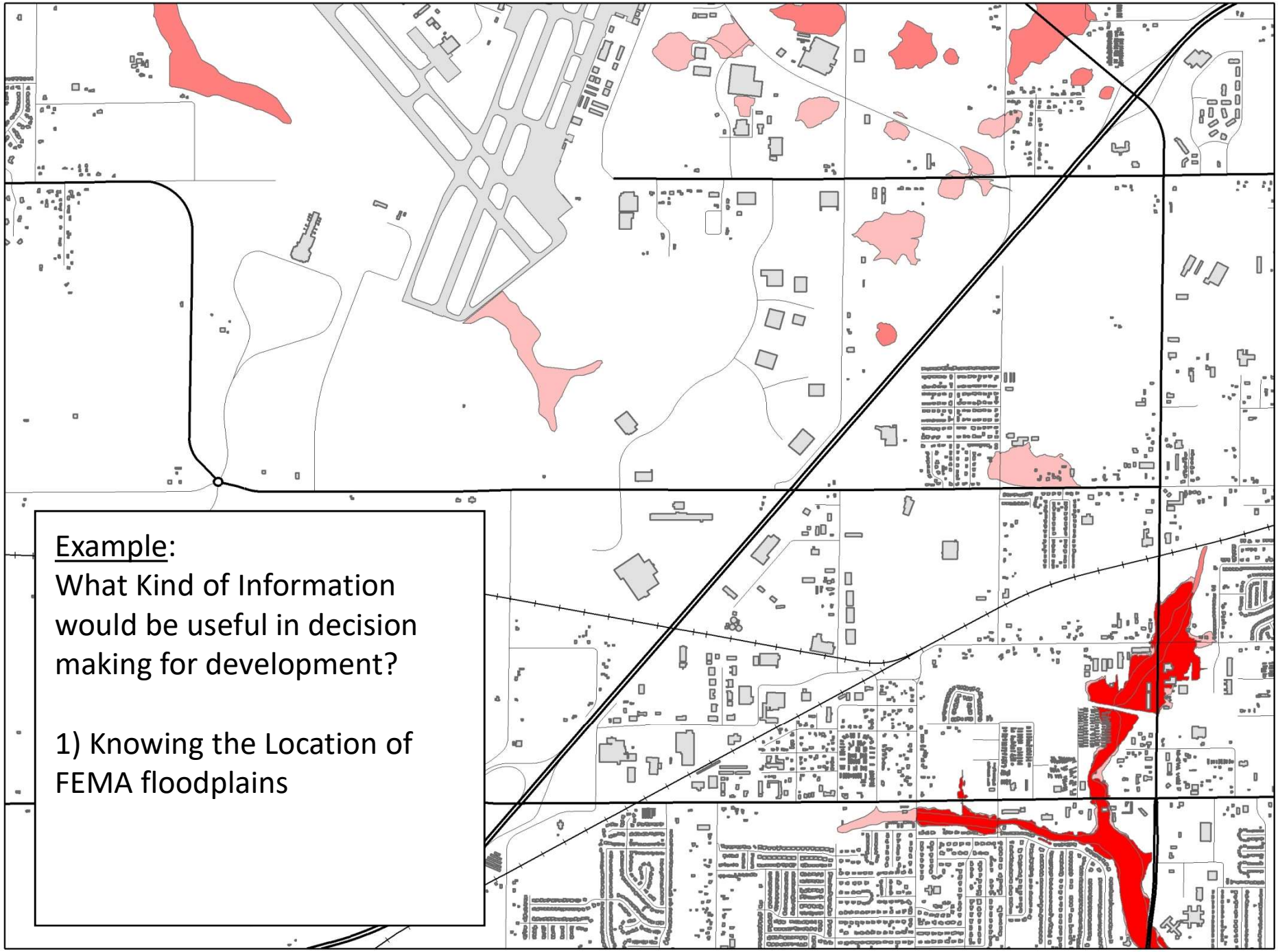
- Geographic Information Systems (I.S.)
- Create / Maintain geographic data for Greene Co

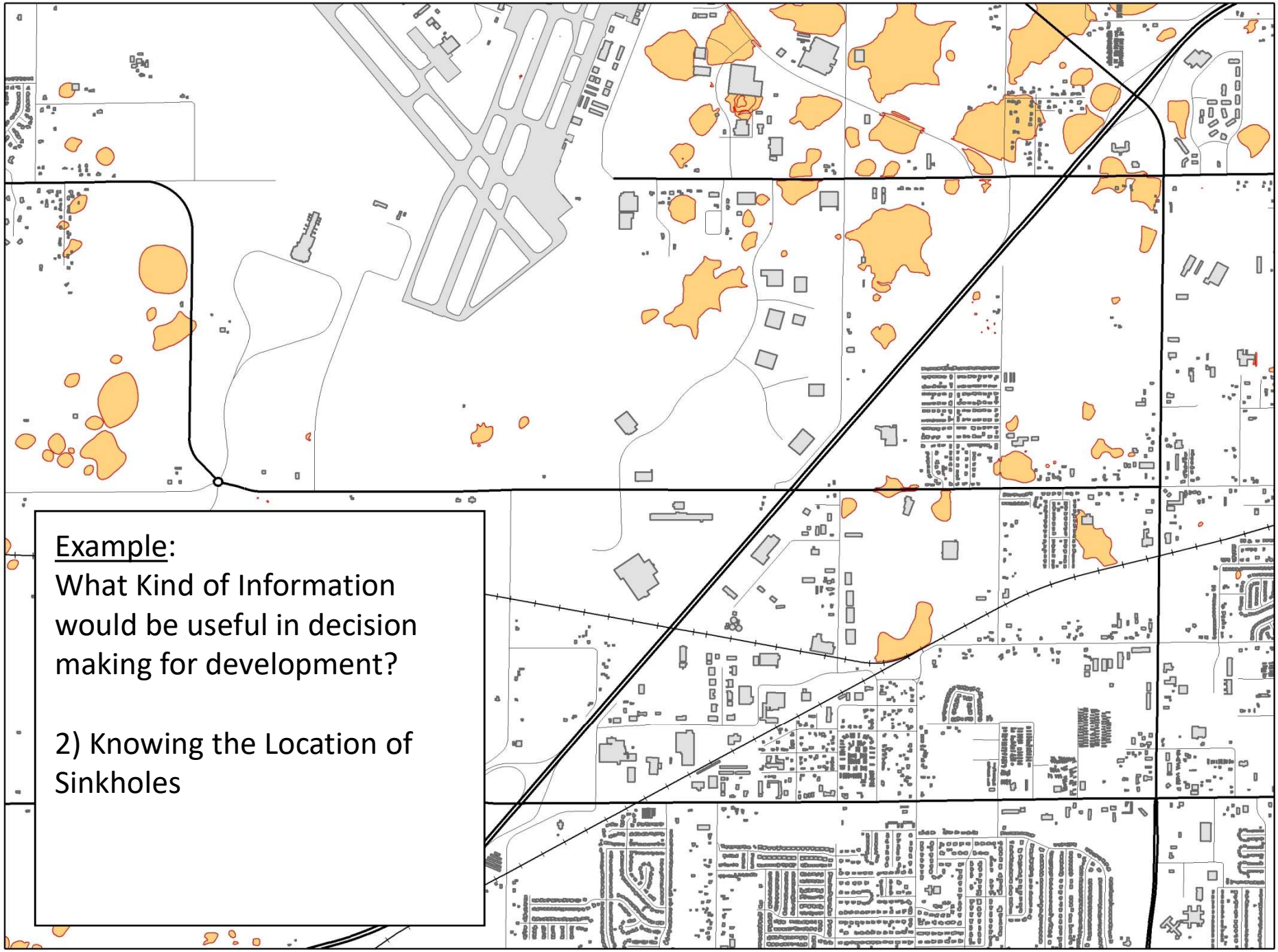
What is GIS?

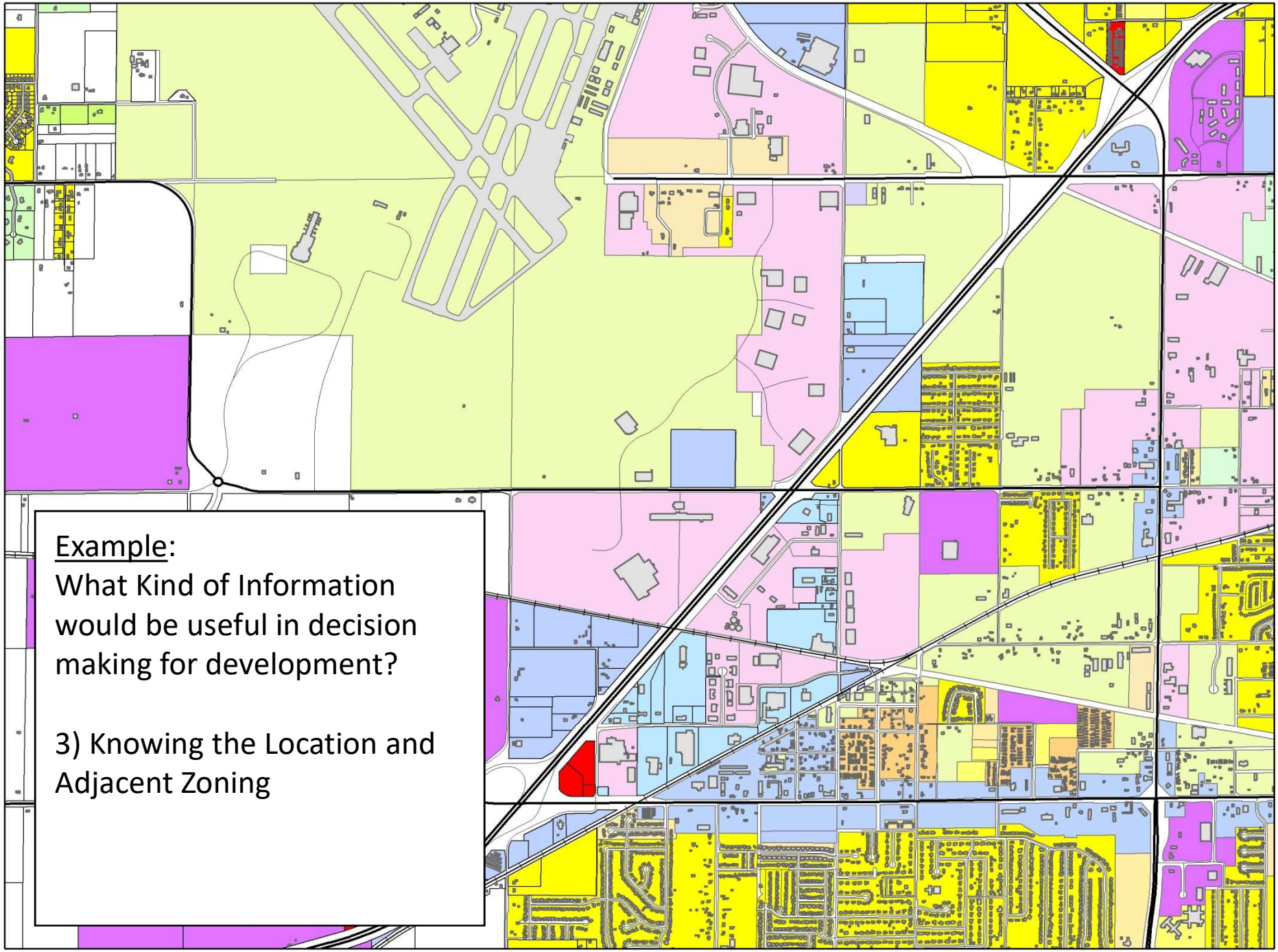


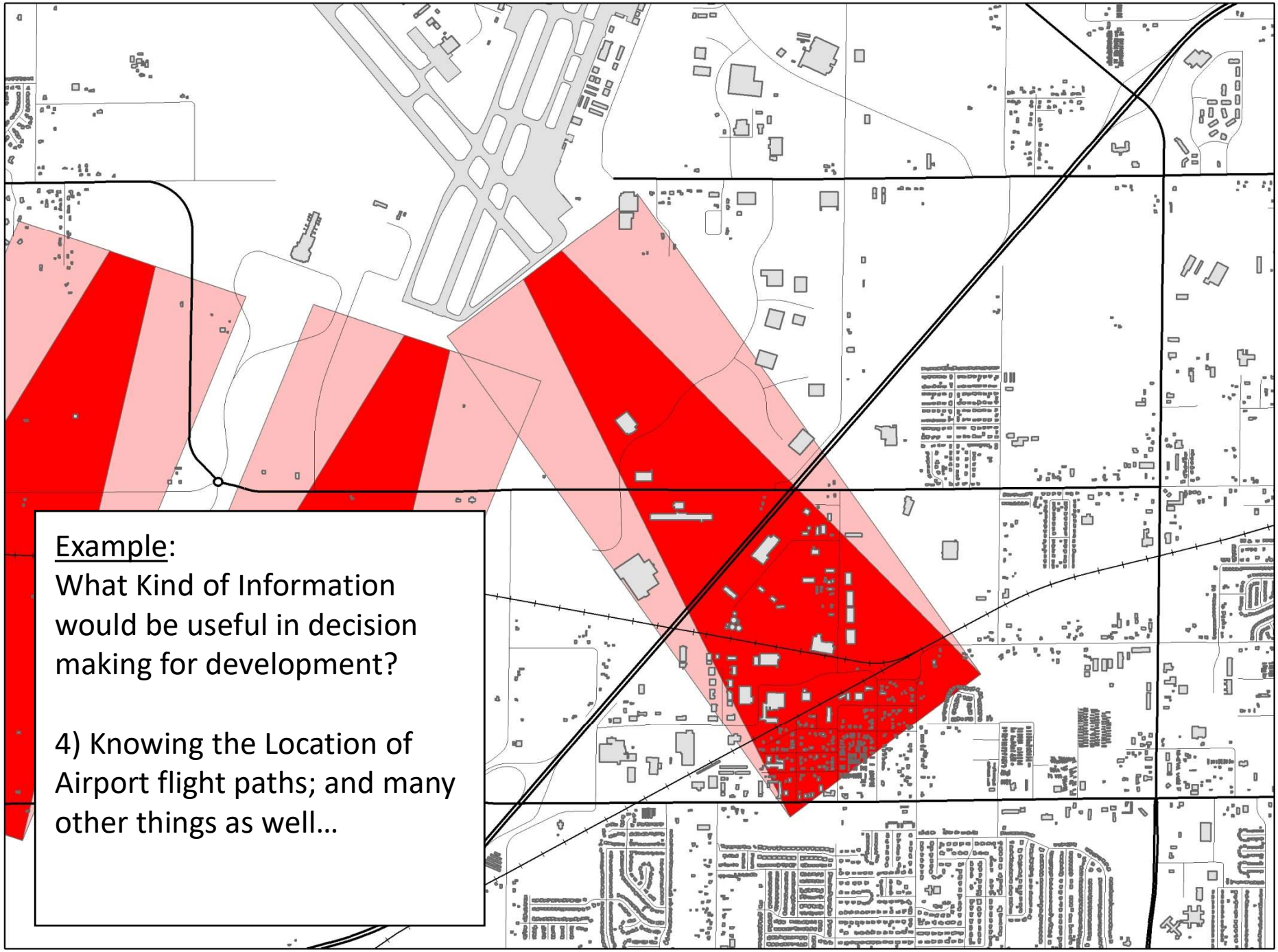
GIS is essentially the ability to map different sets of data that have a geographical component to them; and then be able to view together; and make decisions based on putting all of that information together. Each data set is lined up so that it matches up with other data sets; and you then could look at one location, and get all kinds of information about that location; in one place; and then be able to make decisions based on what you see.




Example:
What Kind of Information would be useful in decision making for development?
1) Knowing the Location of FEMA floodplains

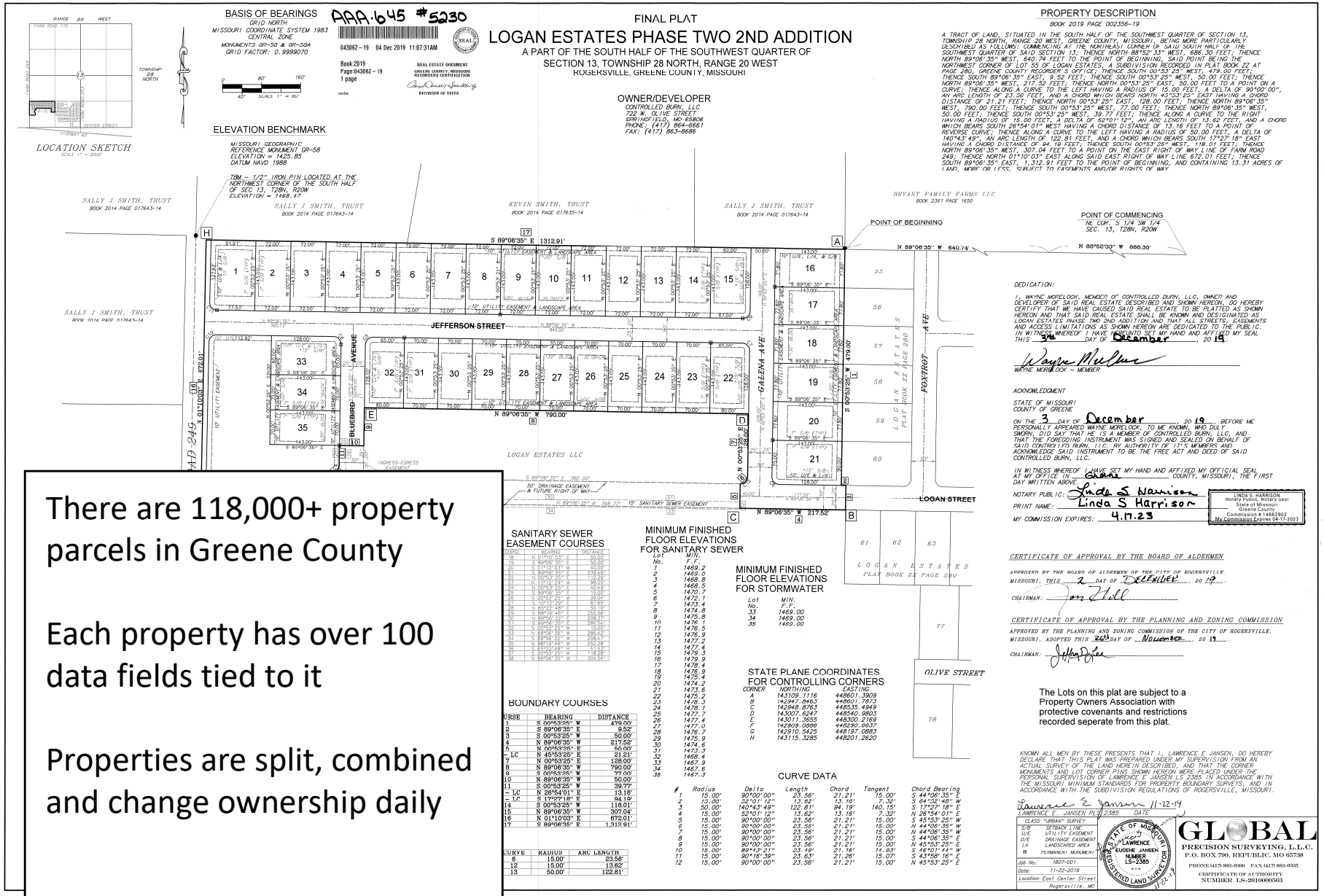

Example:
What Kind of Information would be useful in decision making for development?
2) Knowing the Location of Sinkholes


Example:
What Kind of Information would be useful in decision making for development?
3) Knowing the Location and Adjacent Zoning


Example:
What Kind of Information would be useful in decision making for development?
4) Knowing the Location of Airport flight paths; and many other things as well…

GIS Data

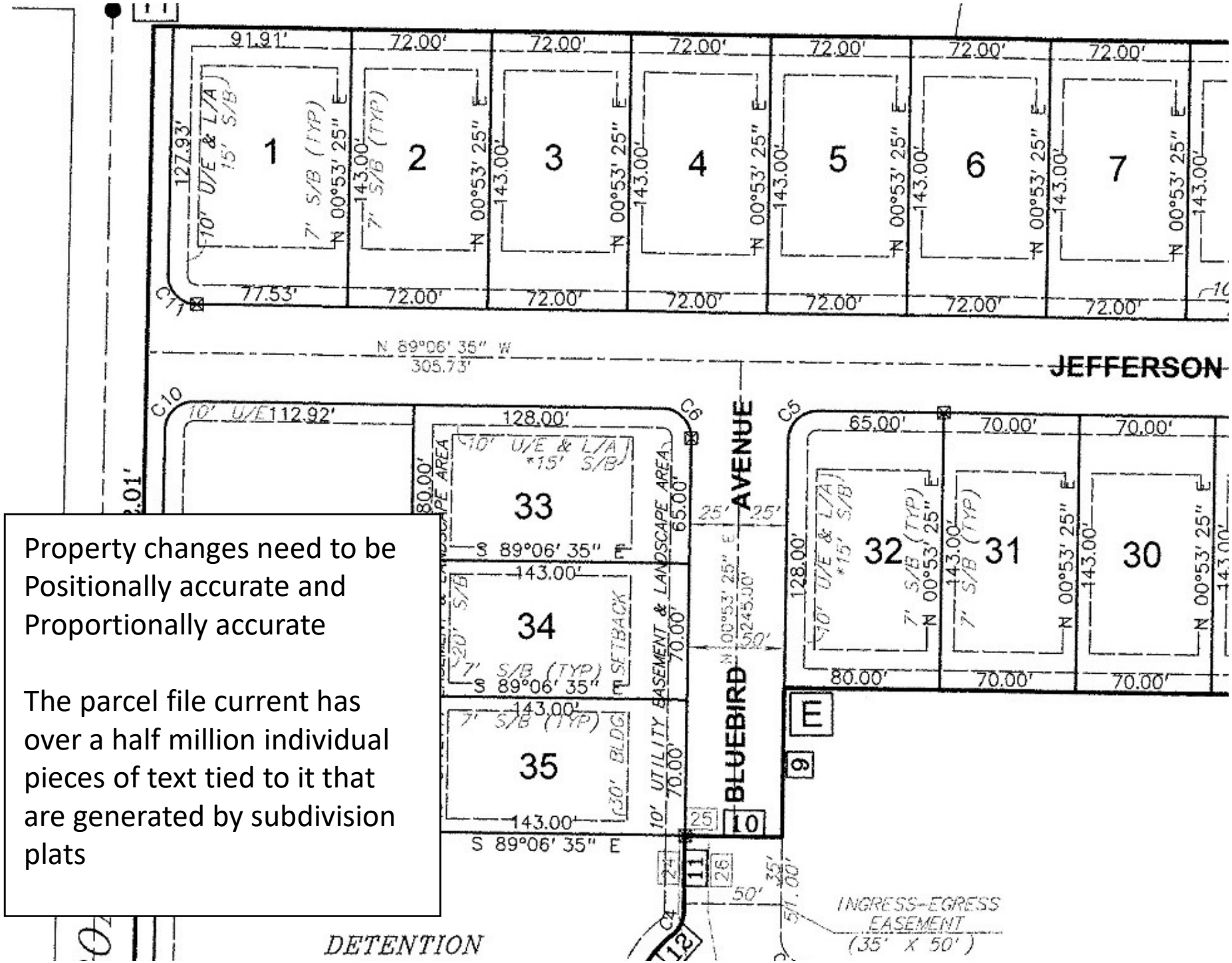
- 200 + Data sets that we have created and maintain
- Constantly developing new data
- Graphical updates as well as Database updates



There are 118,000+ property parcels in Greene County

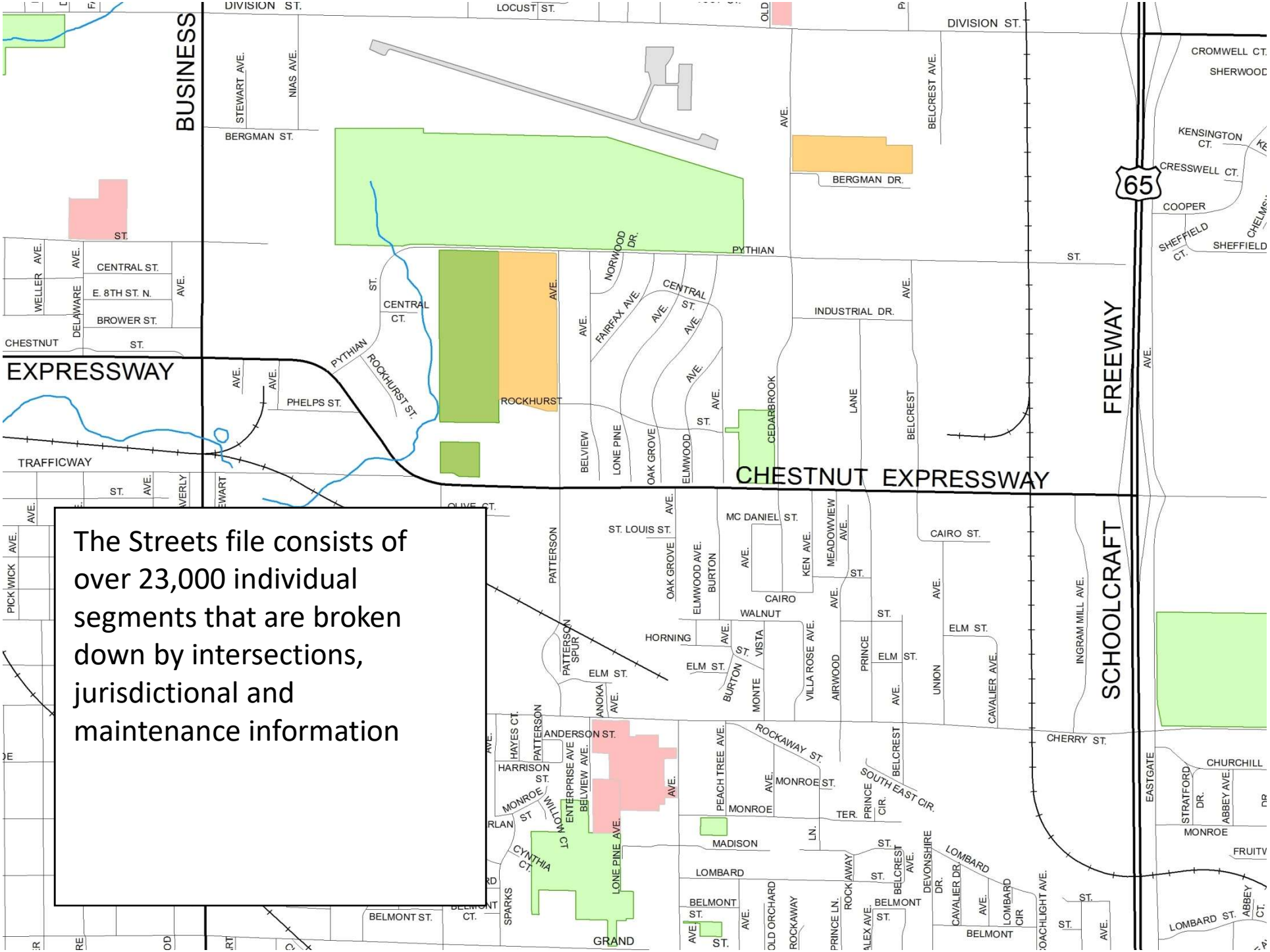
Each property has over 100 data fields tied to it

Properties are split, combined and change ownership daily



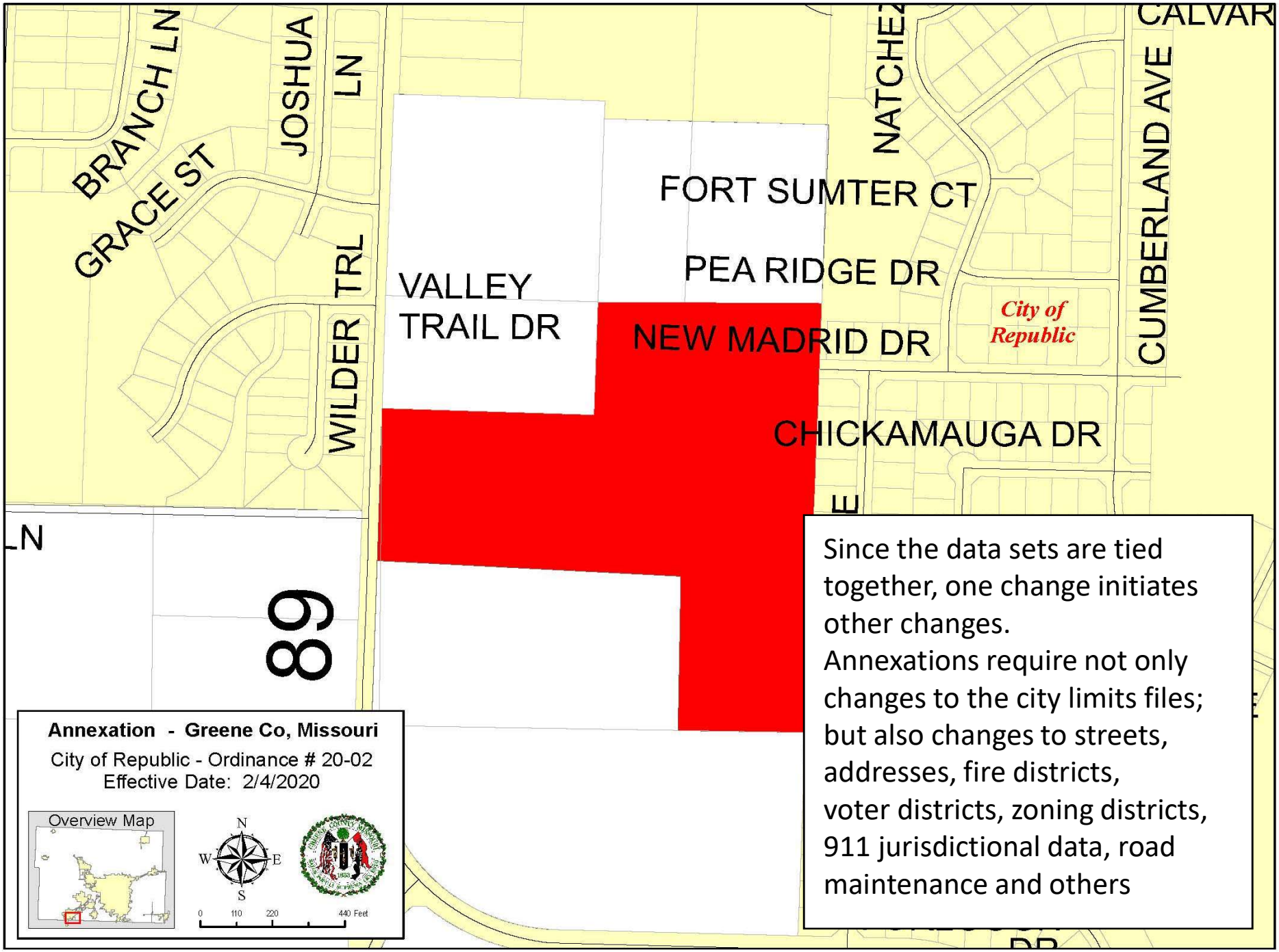
Property changes need to be Positionally accurate and Proportionally accurate

The parcel file current has over a half million individual pieces of text tied to it that are generated by subdivision plats



The Streets file consists of over 23,000 individual segments that are broken down by intersections, jurisdictional and maintenance information

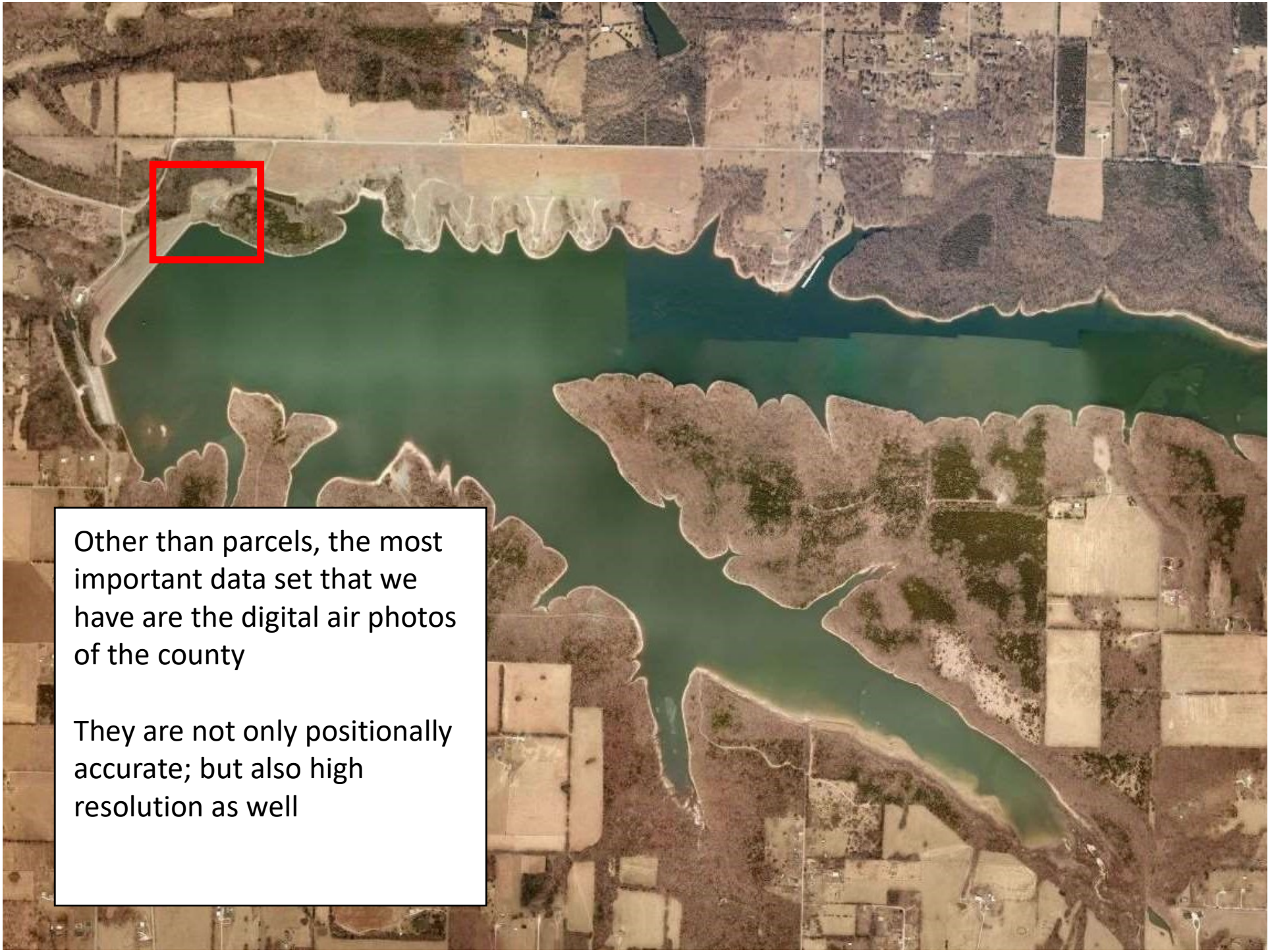
The Address file has over 40,000 individual addresses in unincorporated Greene County; and over 122,00 county wide. Each one containing jurisdictional, current usage and historical information



Since the data sets are tied together, one change initiates other changes.
Annexations require not only changes to the city limits files; but also changes to streets, addresses, fire districts, voter districts, zoning districts, 911 jurisdictional data, road maintenance and others

GIS Data

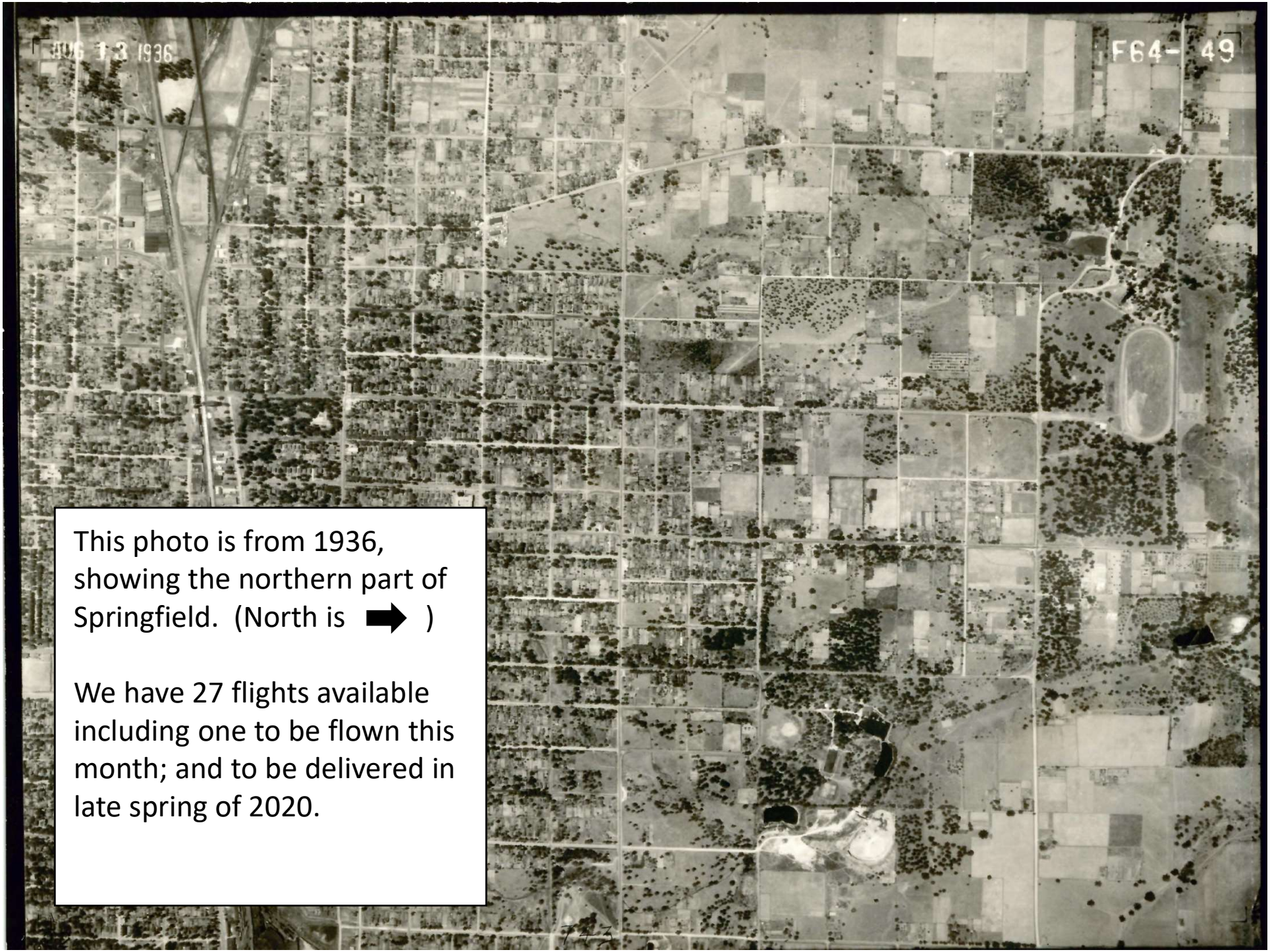
- Addresses
- Zip Codes
- Building Permits
- Zoning Complaints
- Zoning Cases
- Cellular Towers
- Air Photos
- Building Footprints
- Floodplains
- Sinkholes
- Stormwater Drainage
- Caves
- Fault lines
- Mines
- Watersheds
- Bridges
- Lakes & Streams
- Fire Districts
- Polling Locations
- Cemeteries
- Contours
- Voter Districts
- School Districts
- Springs
- Parks
- LiDAR



Other than parcels, the most important data set that we have are the digital air photos of the county

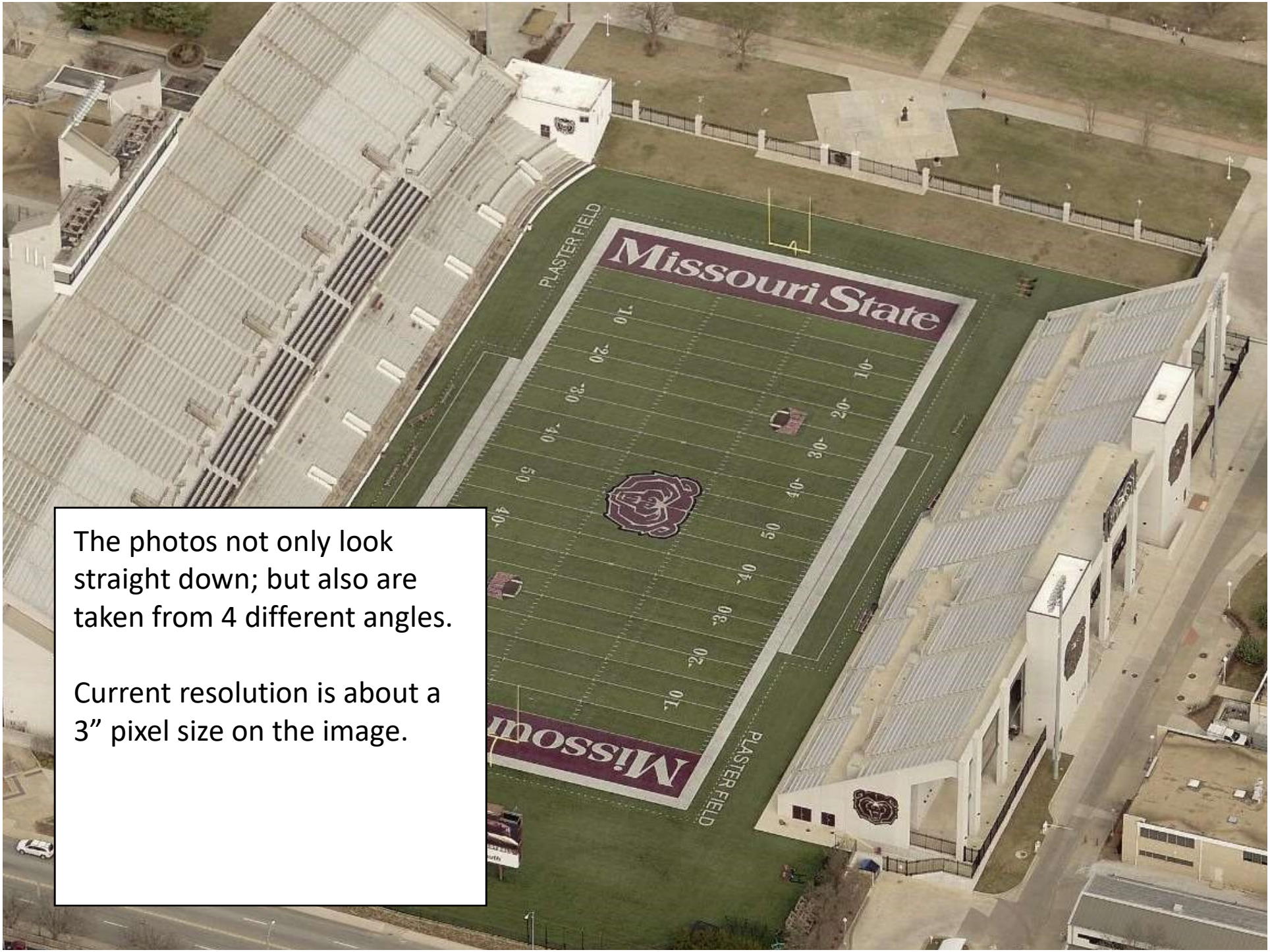
They are not only positionally accurate; but also high resolution as well

This is the red square from the previous photo to show the level of detail they have



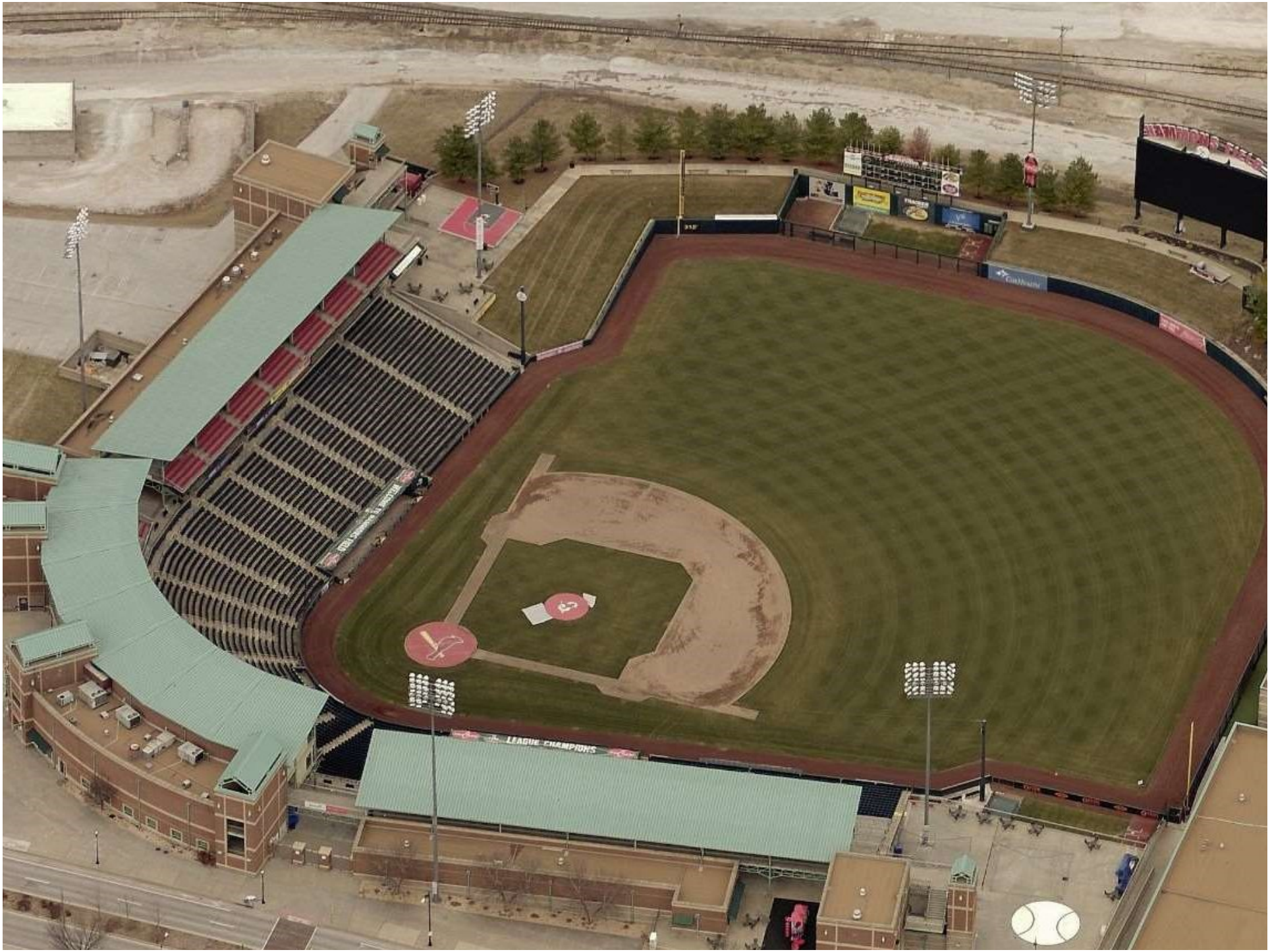
This photo is from 1936, showing the northern part of Springfield. (North is ➡)

We have 27 flights available including one to be flown this month; and to be delivered in late spring of 2020.



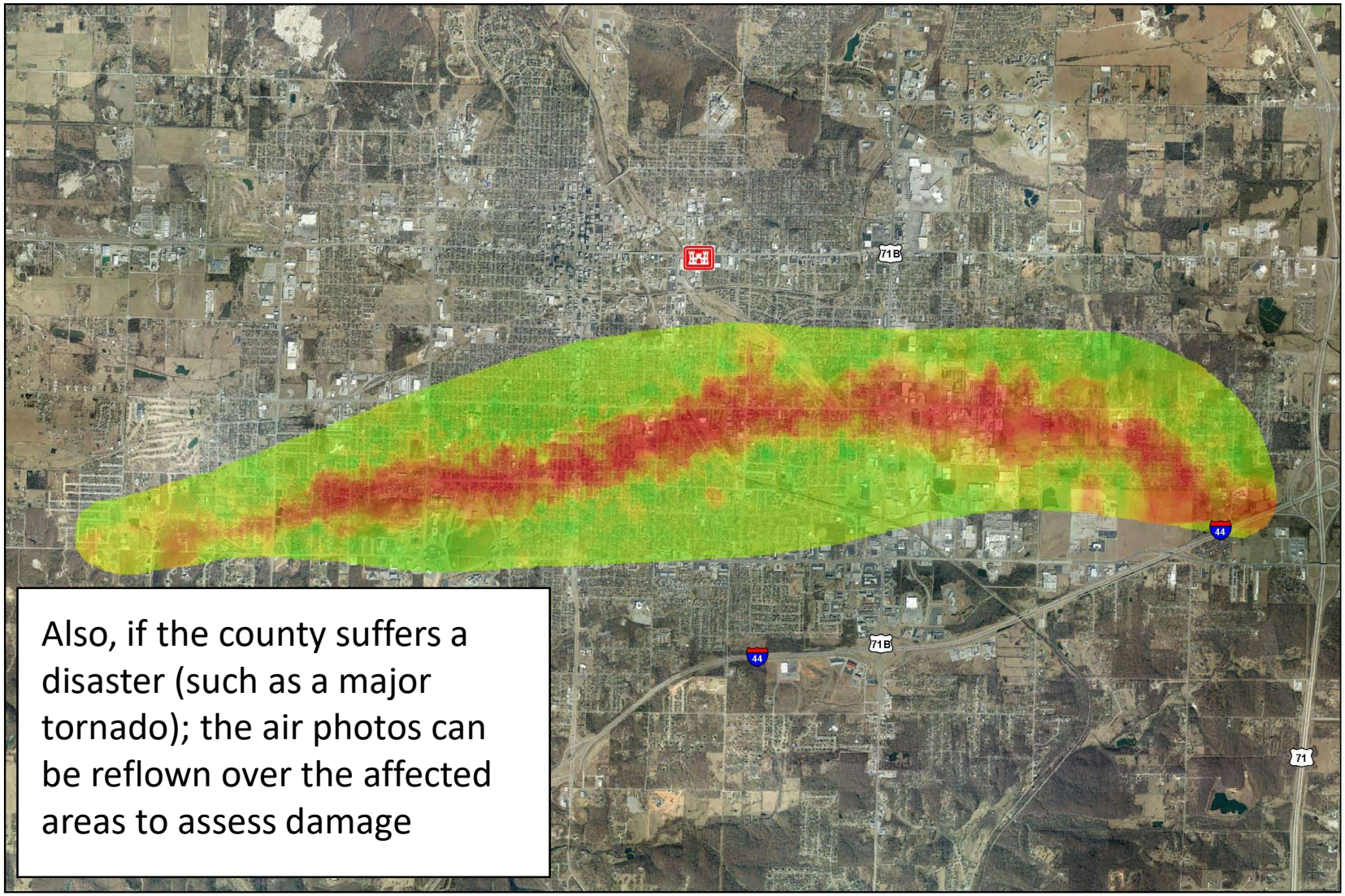
The photos not only look straight down; but also are taken from 4 different angles.

Current resolution is about a 3” pixel size on the image.


LEAGUE CHAMPIONS

Building outlines are generated from the air photos, and then compared to previous flights where outlines were generated; giving us the ability to see what has changed; either new construction or demolished structures

JOPLIN MISSOURI TORNADO PATH IMPACTED AREA



Also, if the county suffers a disaster (such as a major tornado); the air photos can be reflown over the affected areas to assess damage

Legend

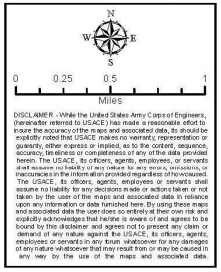
USACE - RFO

Structure Damage

Catastrophic Damage

Moderate Damage

Location Map



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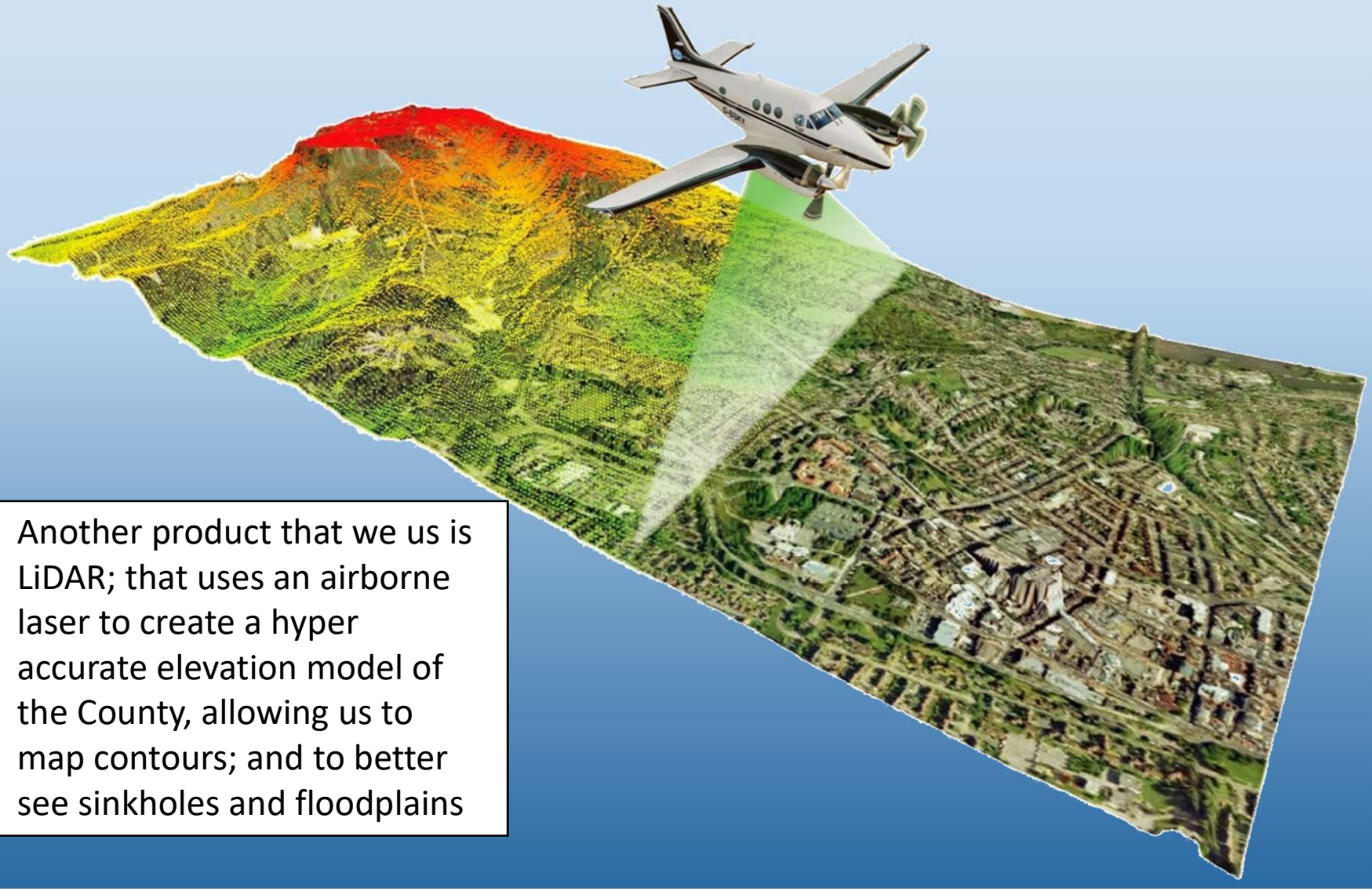
LiDAR - Light Detection and Ranging



Another product that we us is LiDAR; that uses an airborne laser to create a hyper accurate elevation model of the County, allowing us to map contours; and to better see sinkholes and floodplains

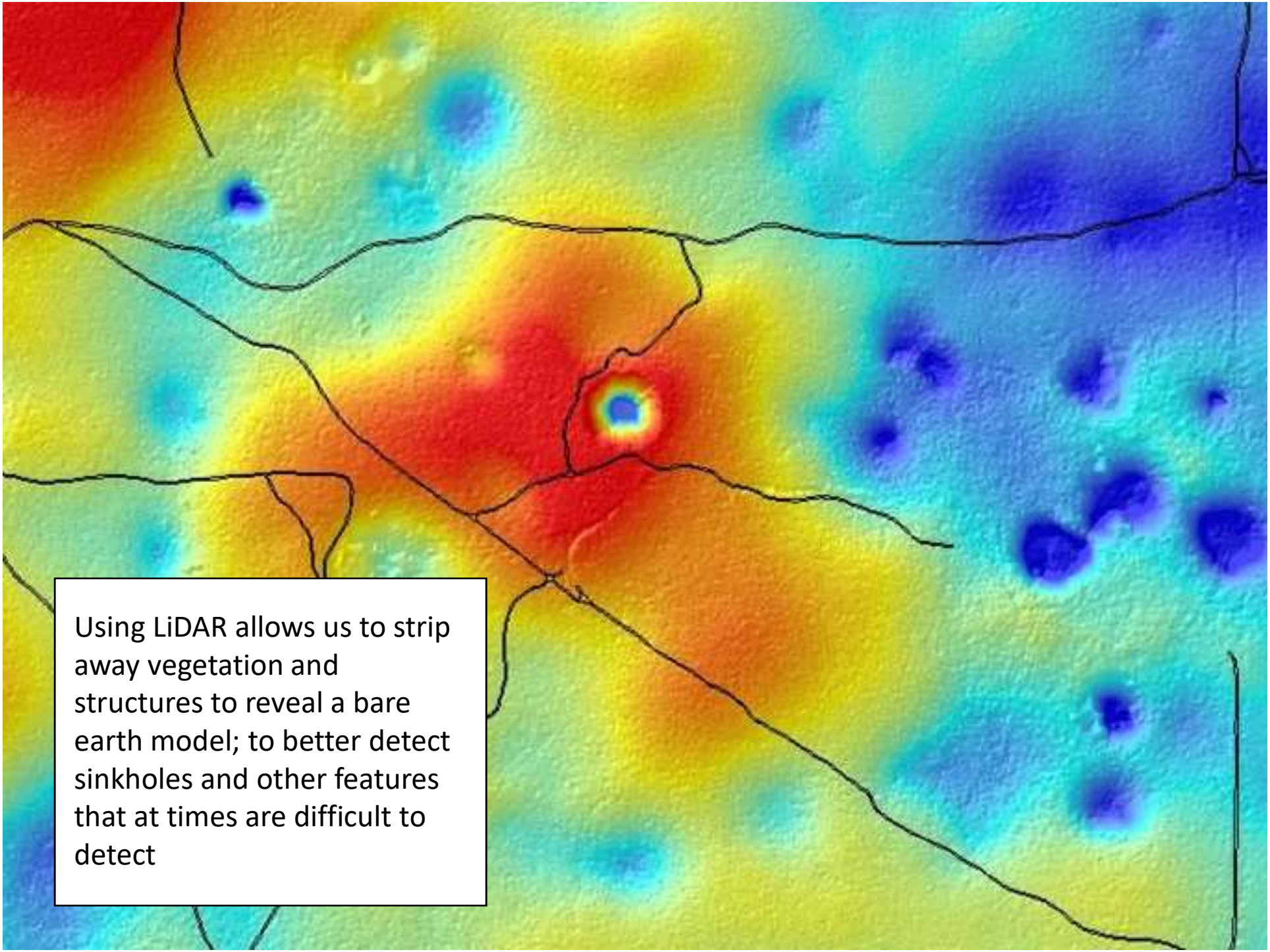
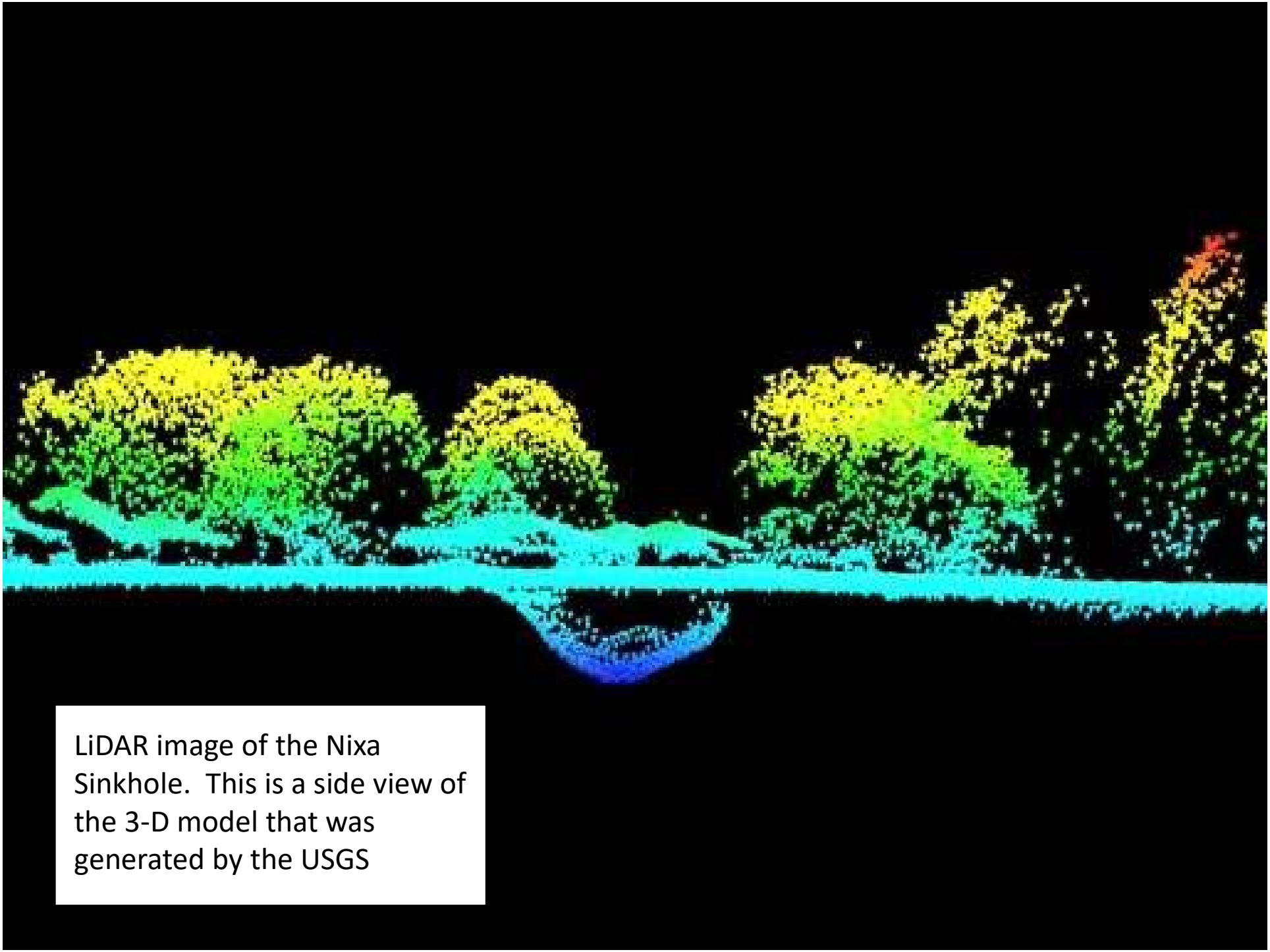

Using LiDAR allows us to strip away vegetation and structures to reveal a bare earth model; to better detect sinkholes and other features that at times are difficult to detect

Photo from the Nixa Sinkhole collapse in 2006



LiDAR image of the Nixa Sinkhole. This is a side view of the 3-D model that was generated by the USGS

Current Projects

- 2020 Census
- B.A.S. - B.V.P. - L.U.C.A. - M.A.F. - N.C.
- Redeliniation of Census blocks and tracts
- Redistricting of political boundaries
- Changes in representation and funding

Looking toward the Future

- Keeping up with Technology
- Trying to anticipate Technology
- Transitioning to remote access

Greene County GIS Office

Questions?