GOOGLE EARTH HACKS FOR APPRAISERS IN A DATA-DRIVEN WORLD

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For: The Northern California Chapter of the Appraisal Institute, Spring Conference 2024

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GOOGLE EARTH BASICS



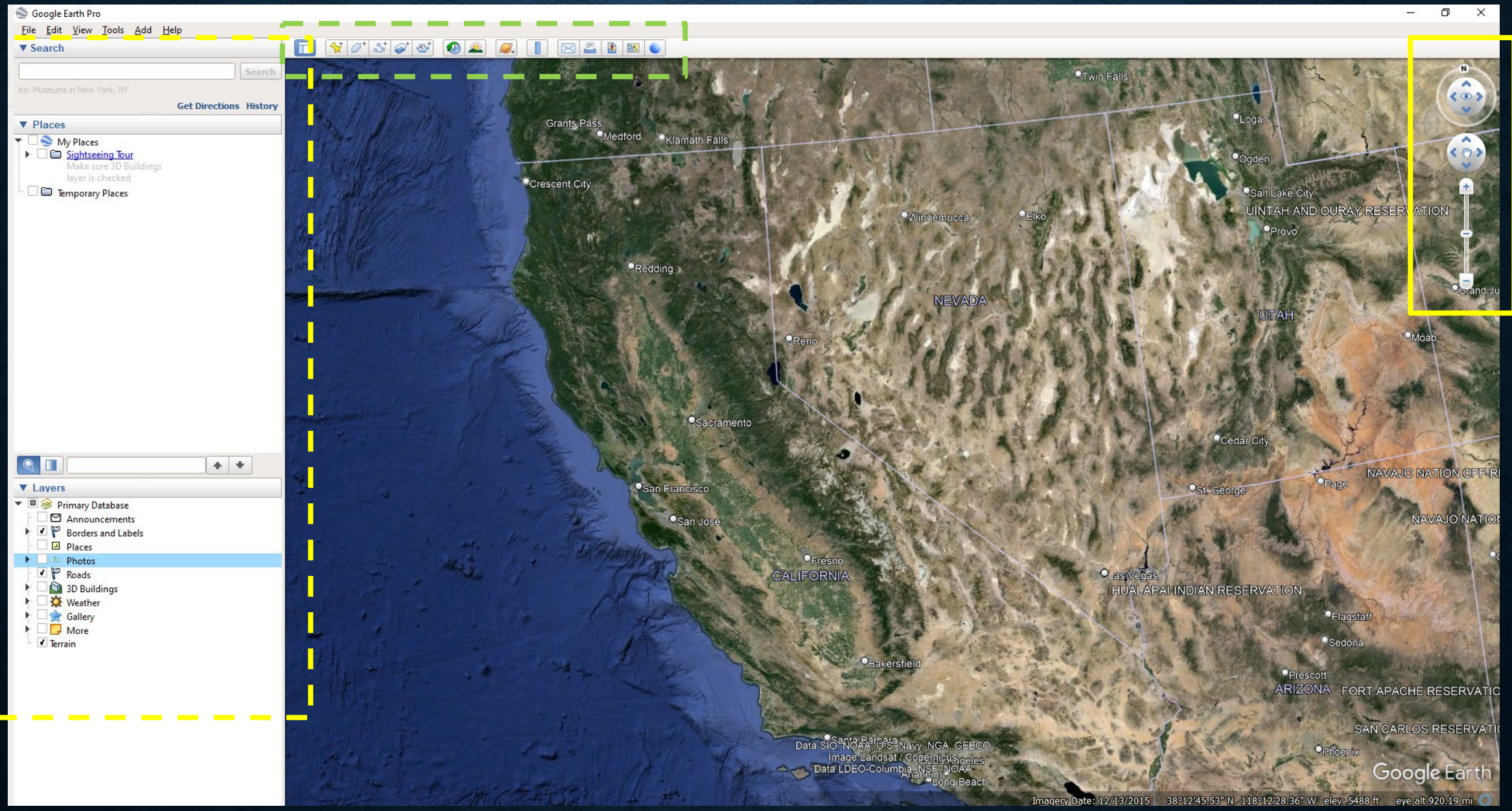
ADVANCED GOOGLE EARTH TOPICS



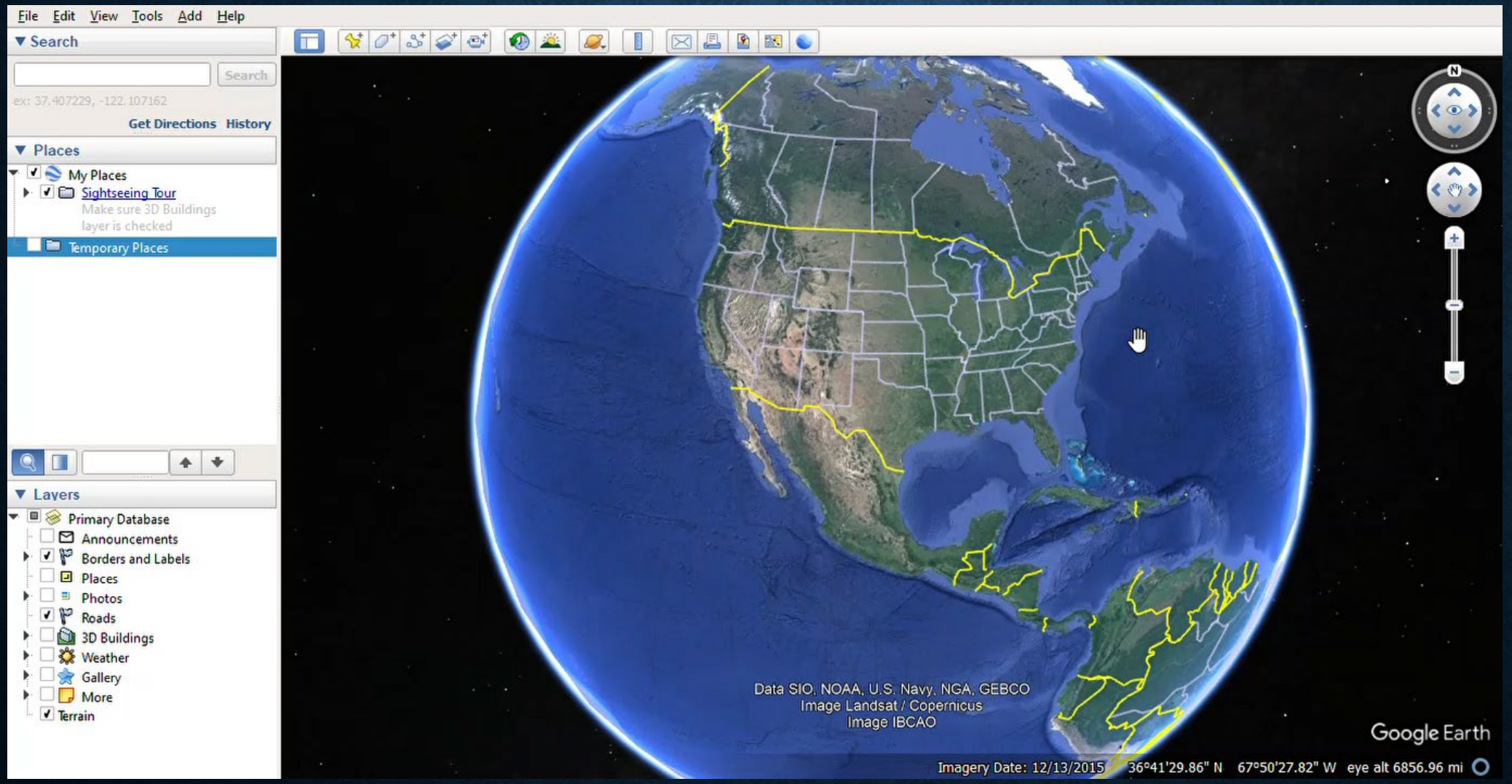
EXPERT GOOGLE EARTH HACKS

GOOGLE EARTH BASICS

GOOGLE EARTH CONTROL PANEL



GENERAL NAVIGATION

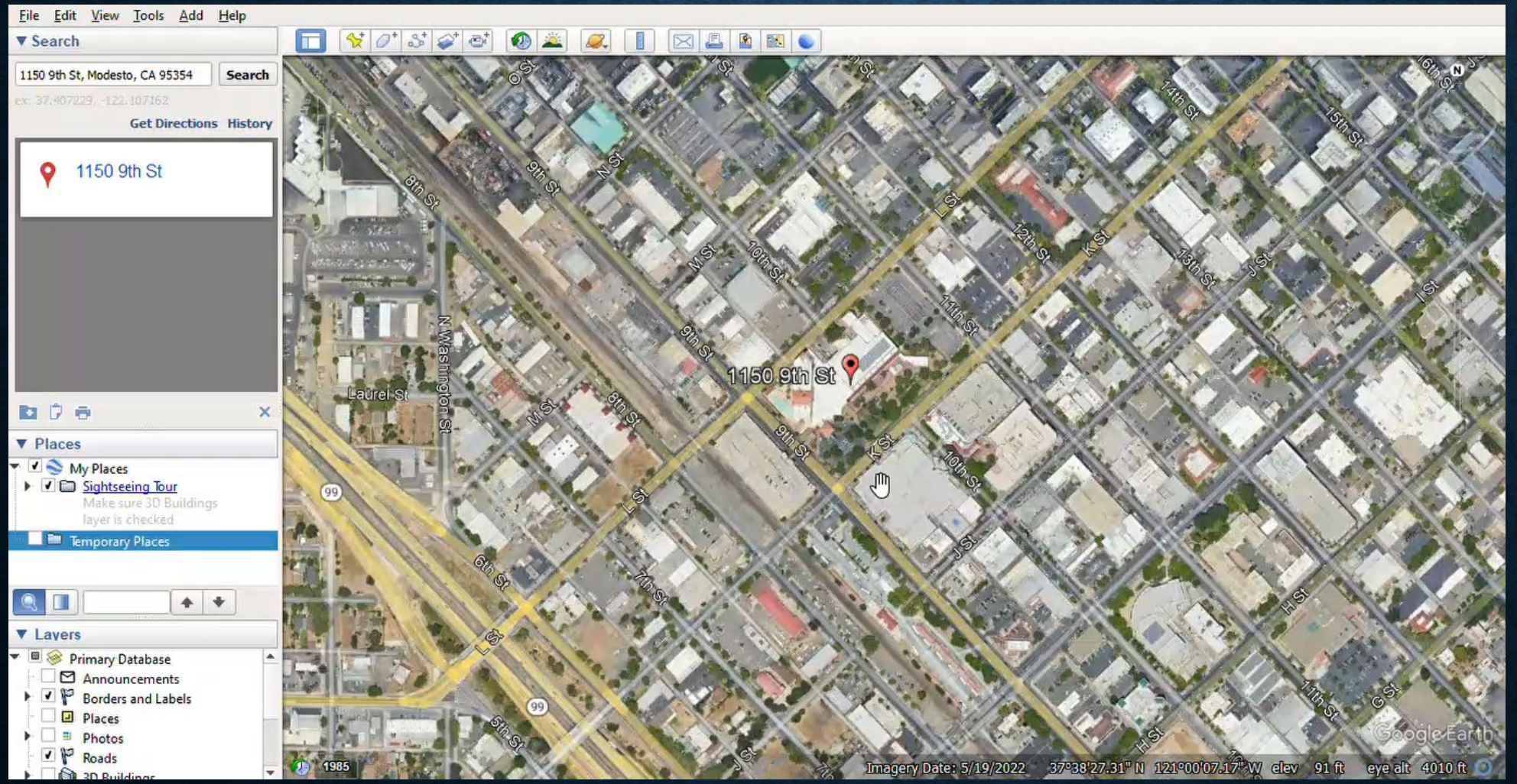


- Click and Drag
- Double Left Click to Zoom In (or scroll wheel on mouse)
- North orient by pressing the "N" button on keyboard

POP QUIZ

If a double left click (on mouse/keyboard) zooms in, what can be used to zoom out?

ANSWER

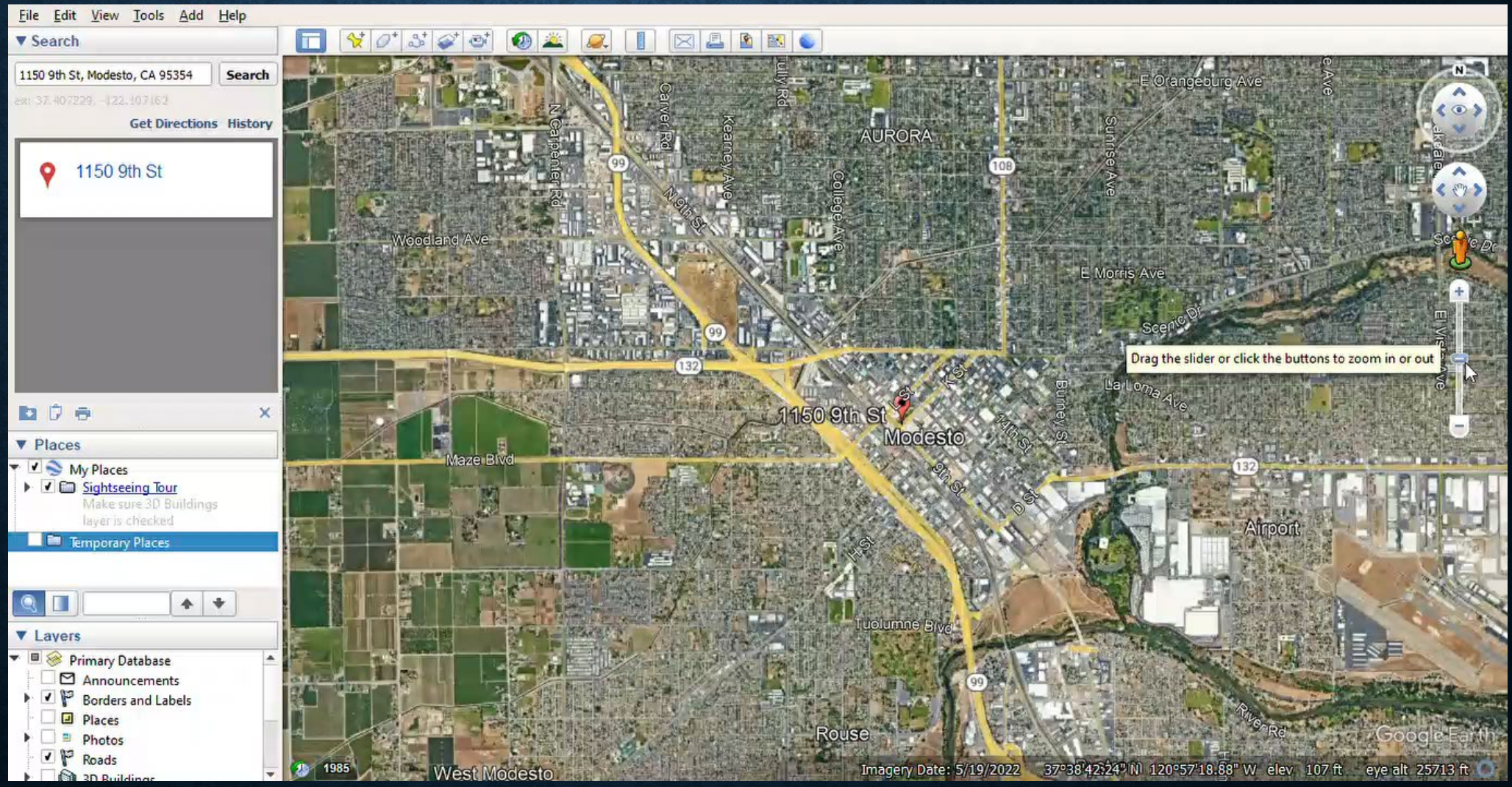


- Double right click



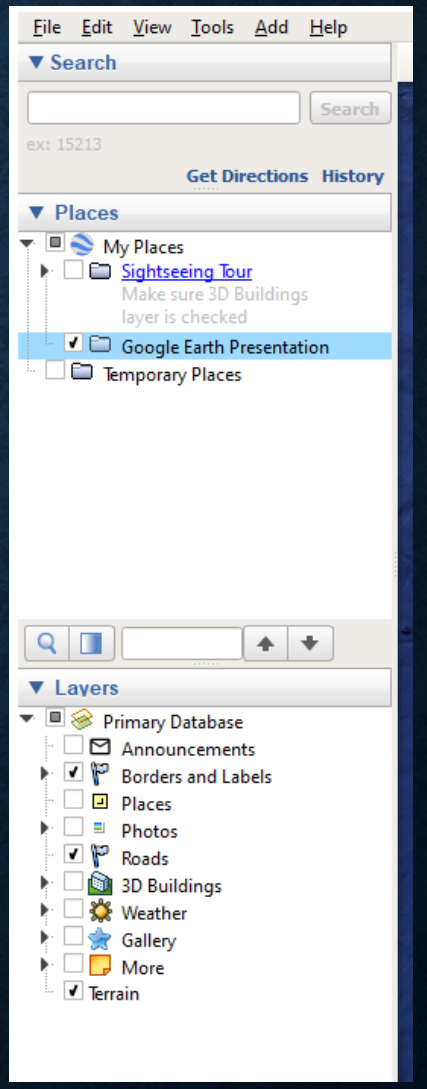
NAVIGATION CONTINUED

Zoom In/Out also with slider tool



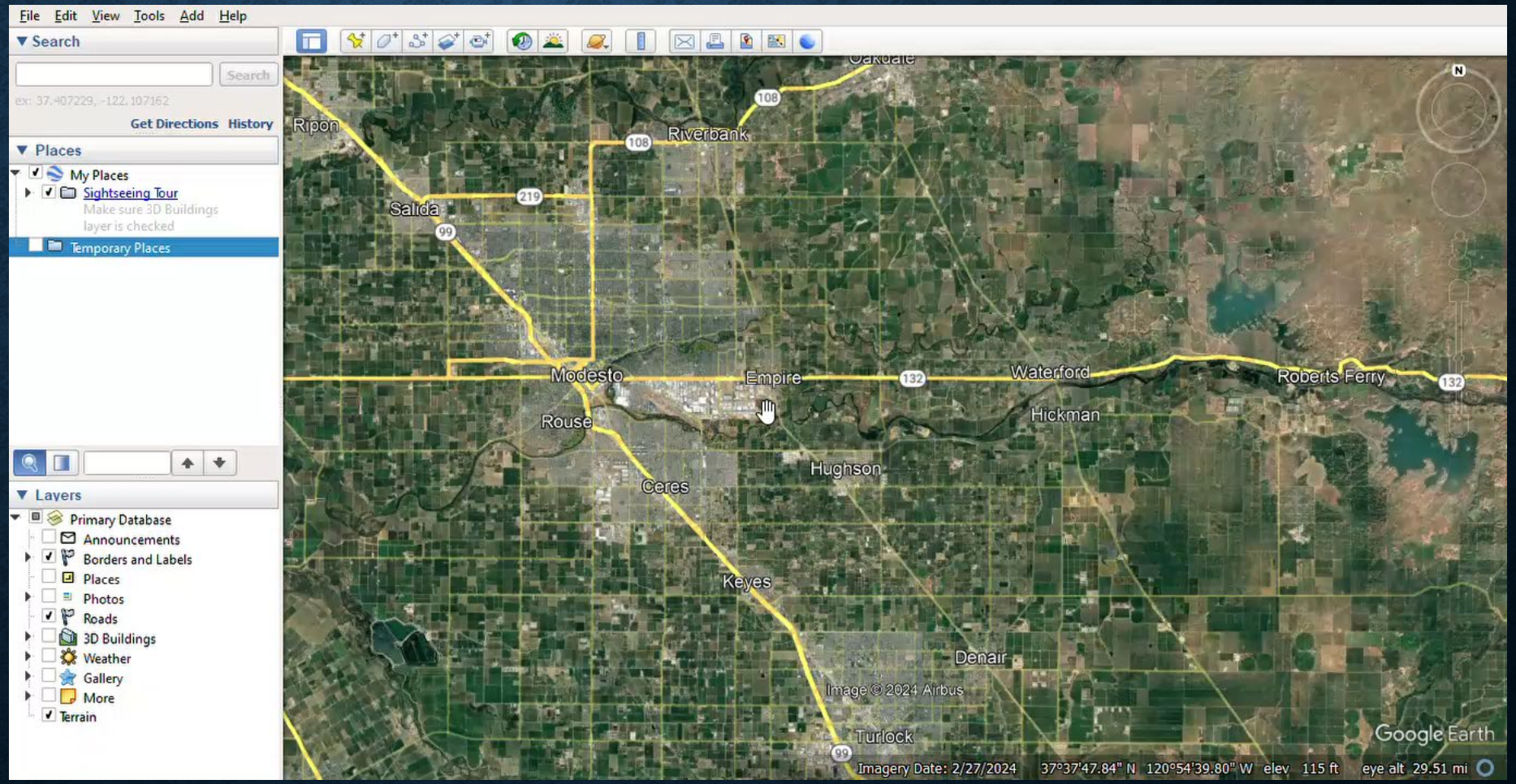
LEFT HAND CONTROL PANEL

- Search Bar
- My Places
  - Remember that you can save your sub-layers under another layer (keep all data for one job together in the same place).
    - Staying organized with your google earth KMZ file is crucial.
- Layers



ADDITIONAL NAVIGATION OPTIONS

- Using the Property Address, Lat & Long, Intersection, or Business Name to search



ZOOM IN/OUT AND ROTATE/ORIENT



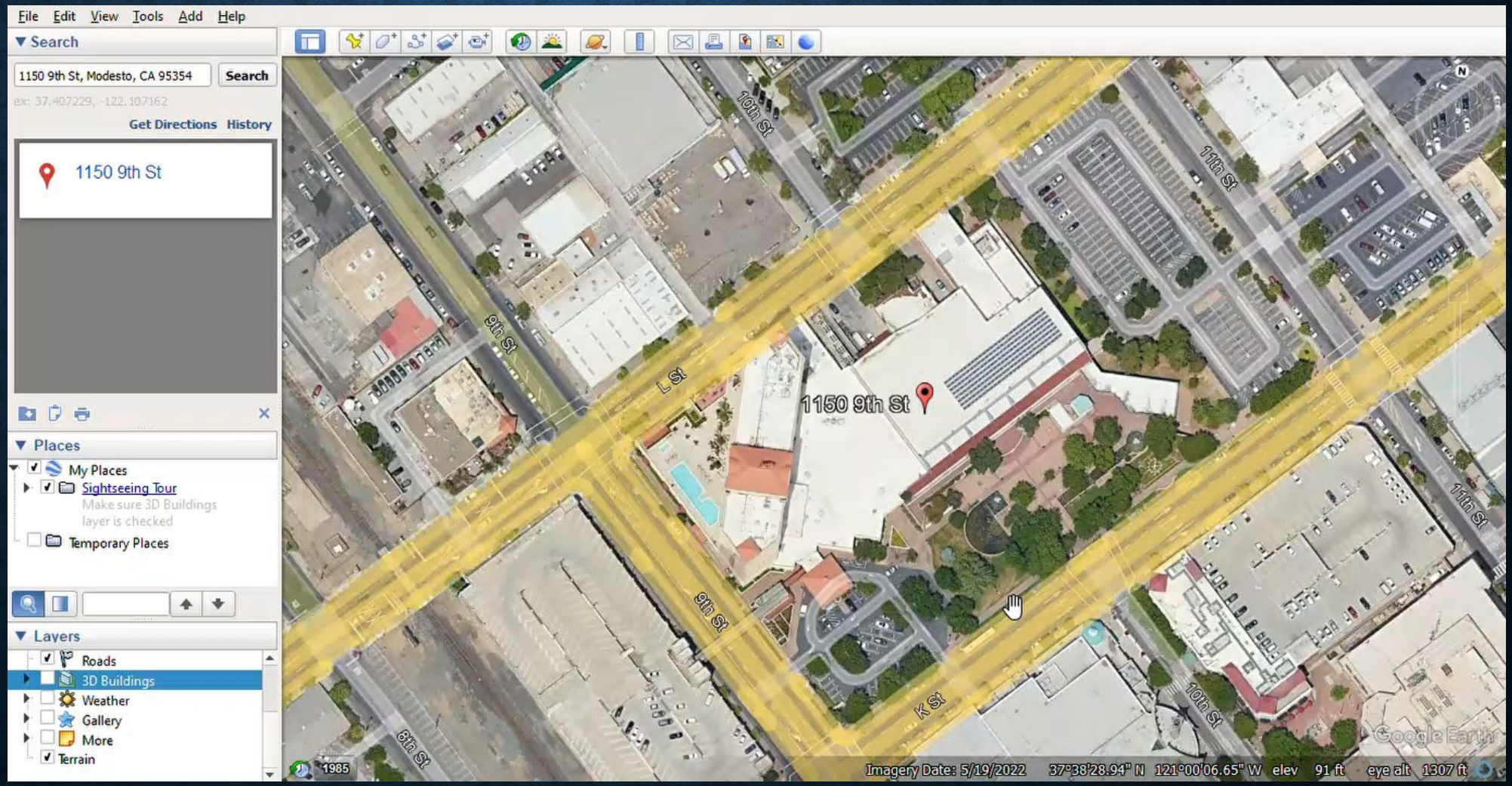
- North/South Orientation
  - "n" key on keyboard will orient north
  - Clockwise Movement – "shift + left arrow"
  - Counterclockwise Movement – "shift + right arrow"
  - Also Change the Angle of View
- Physical Movement (east/west/up/down) on Map
  - "u" key will reset the upward (top-down tilt)
- Zoom in and Zoom Out
  - Or + and – sign on keyboard

CHANGING THE ANGLE OF YOUR VIEW

Make sure the 3D Buildings "Layer" is turned on

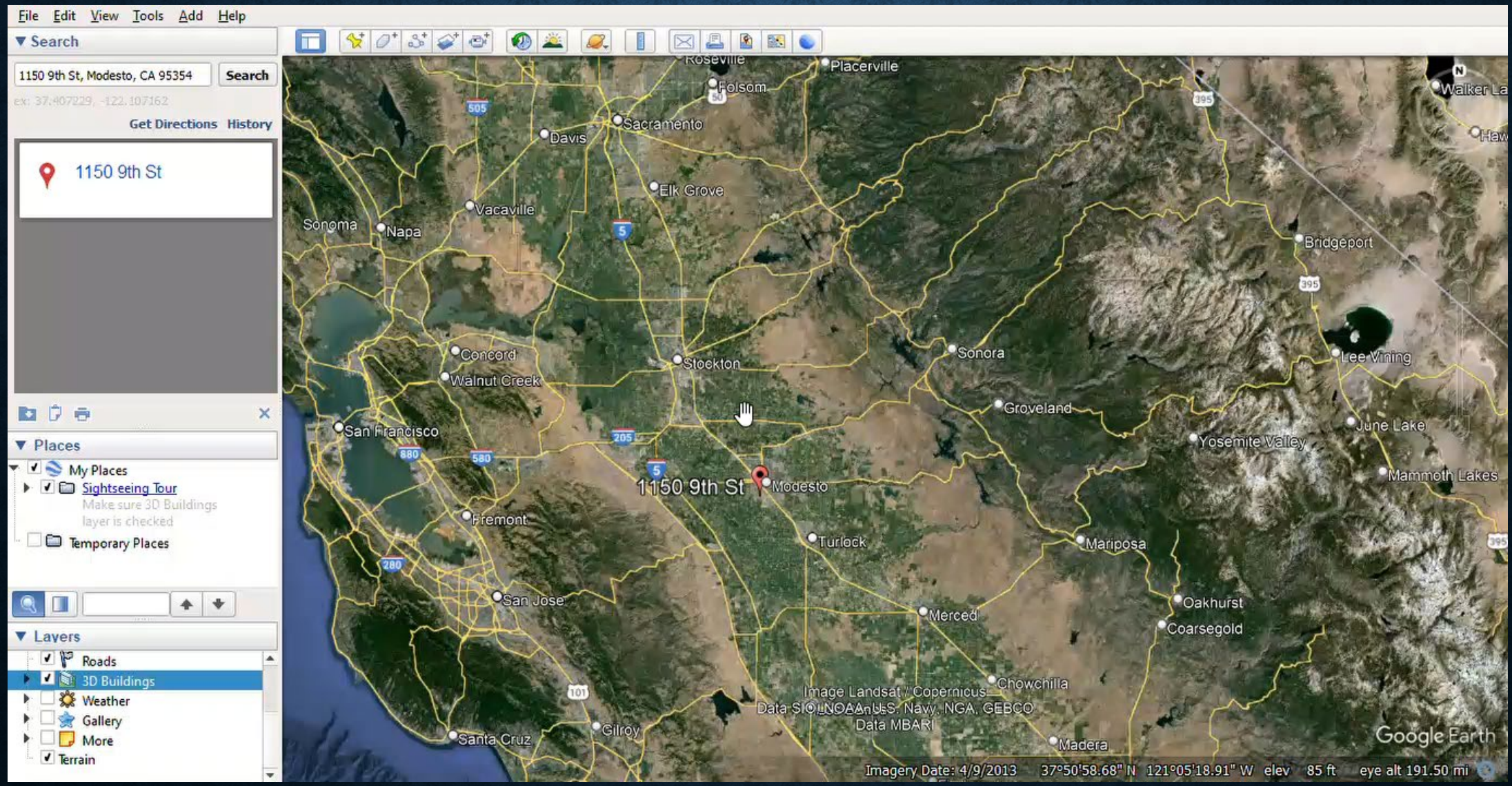
-Click and Drag (eye emblem)

Can pop back up to aerial (overhead) view by pressing the "U" key on keyboard



STREET VIEW TOOL APPEARED

- As you zoom in closer, the gentlemen standing on green disk will appear.



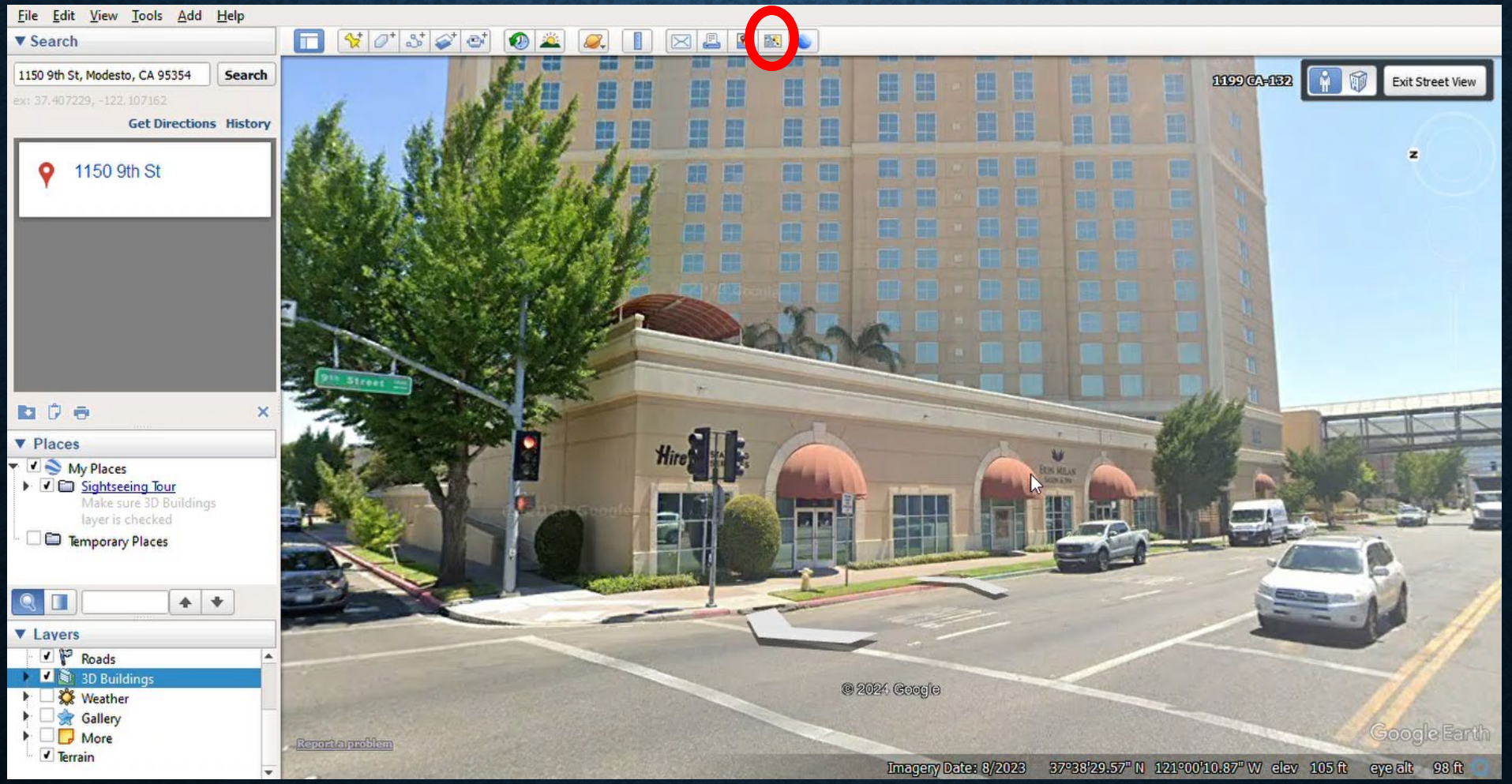
IMAGERY DATES WHILE IN STREET VIEW



- While in the Street View - pay close attention to the date at the bottom central area (Imagery Date).

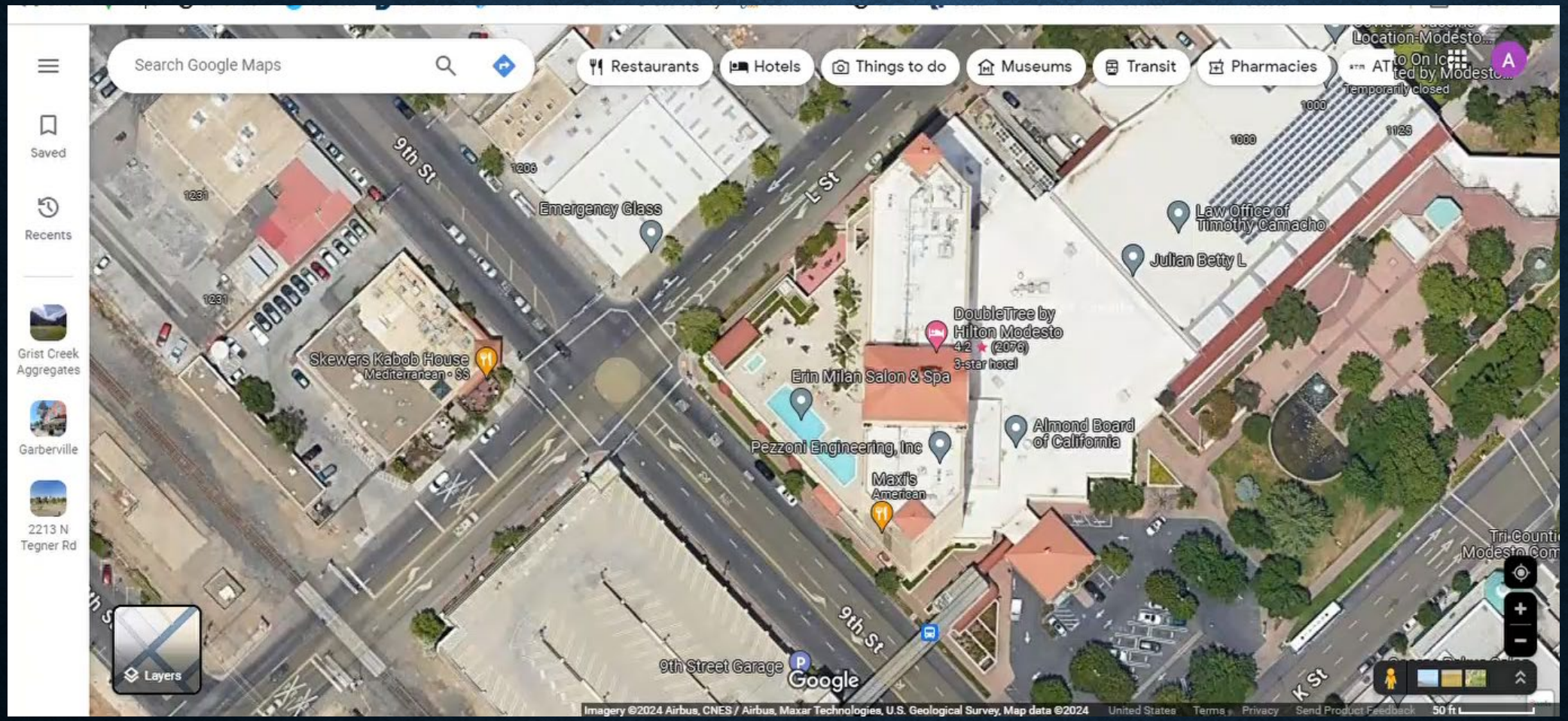
WHAT IF YOU ARE APPRAISING A PROPERTY WITH A RETROSPECTIVE DATE OF VALUE?

Utilize the "View in Google Maps" on the upper Control Deck



Control
+ Alt + M

WHAT IF YOU ARE APPRAISING A PROPERTY WITH A RETROSPECTIVE DATE OF VALUE?



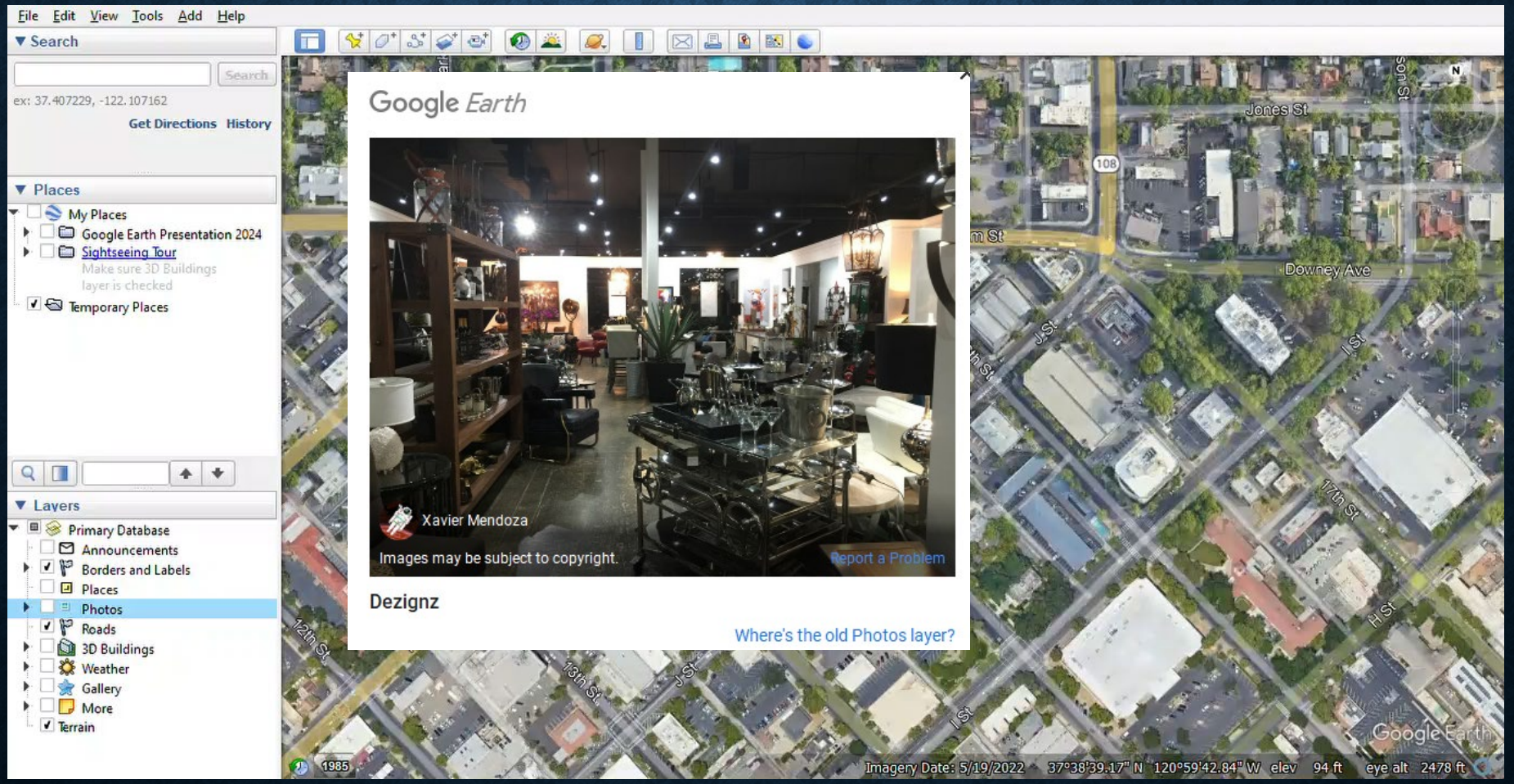
You want to see who was listing the ground floor office space as of April 2012?

GROUP QUESTION

How else can you use the historical street view in your appraisals?

NEED TO SEE INSIDE OF A RENT COMP (THAT YOU WOULD NORMALLY NOT HAVE ACCESS TO)?

- Possibly the Google Earth database has an image of a space that you need to see



ADVANCED TOPICS

UTILIZATION OF TOOLS TO WORK WITH GOOGLE EARTH

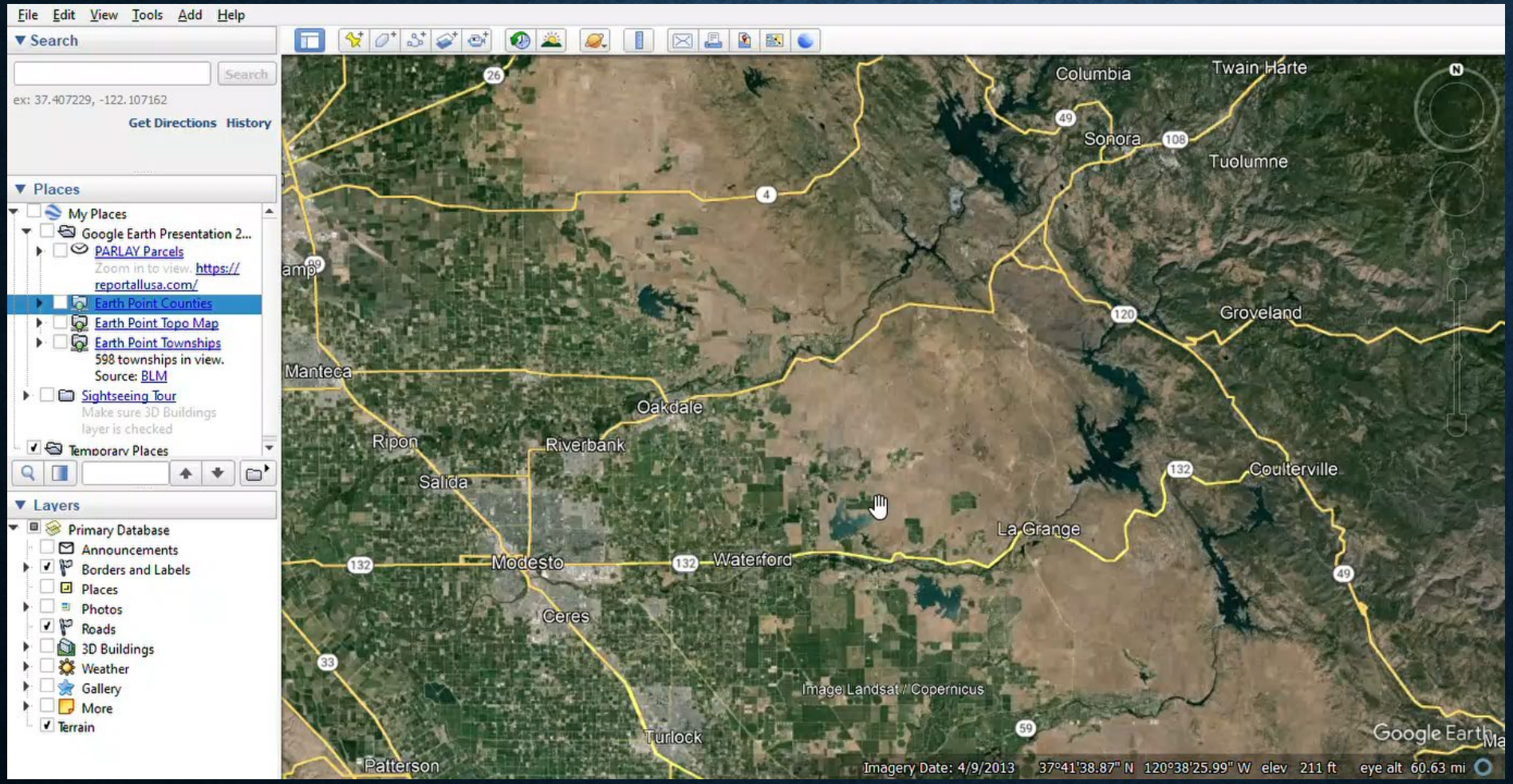
- EarthPoint ($50/Year/1 User)
  - Excel to Google Earth
  - Coordinate Grids
  - Polygon Areas
  - Batch Convert Data
  - Township/Range Grid (search tool)
  - Lat/Long Search
  - Search Legal Description
  - Topo Map
  - County Lines

https://www.earthpoint.us/Default.aspx

- Parlay – 14 Day Free Trial - $99/Quarter - $299/Year
  - Allows you to add an additional layer on Google Earth that has parcel lines, and public records details about properties

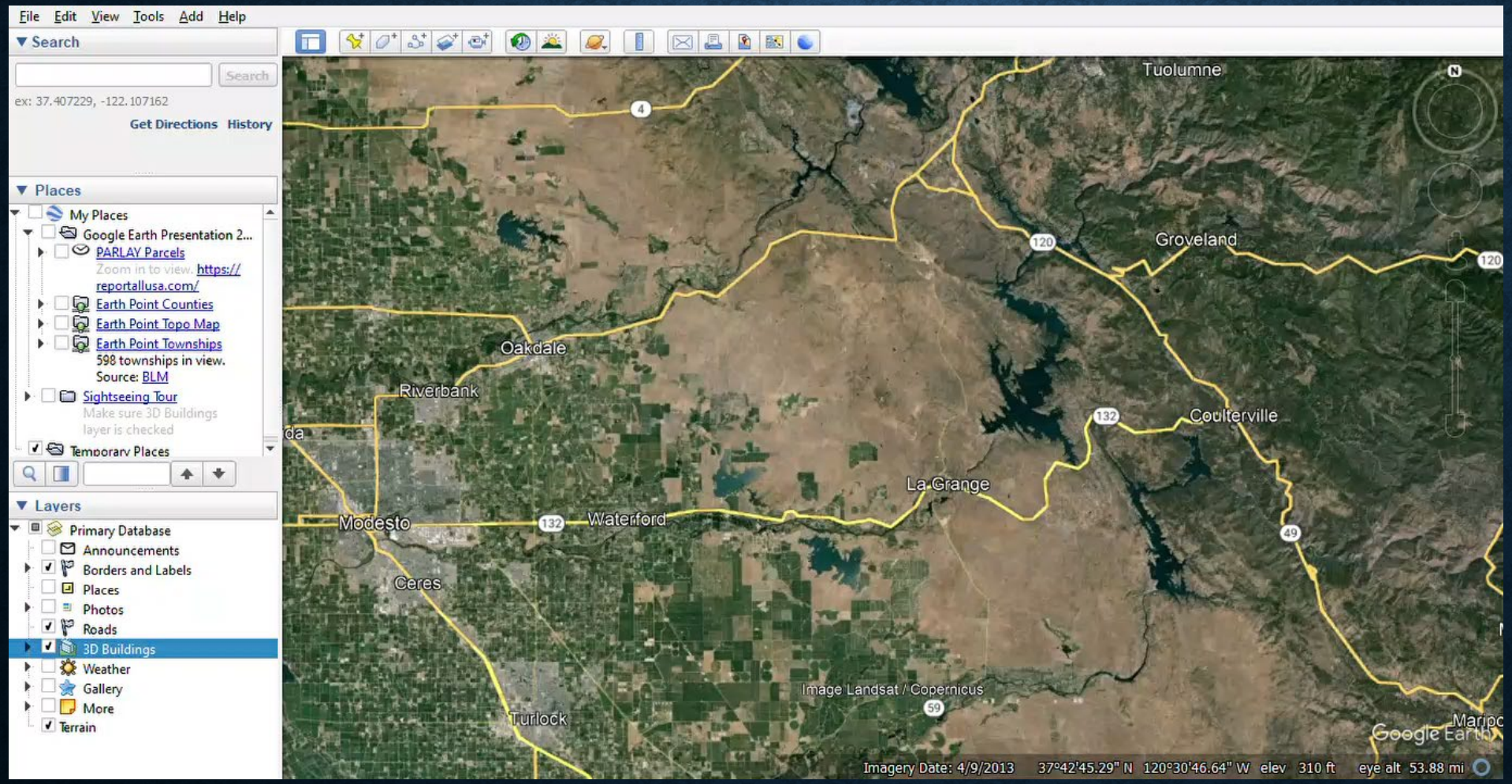
Parlay | ReportAll USA

EARTHPOINT LAYERS



County Layer (Free)

EARTHPOINT LAYERS

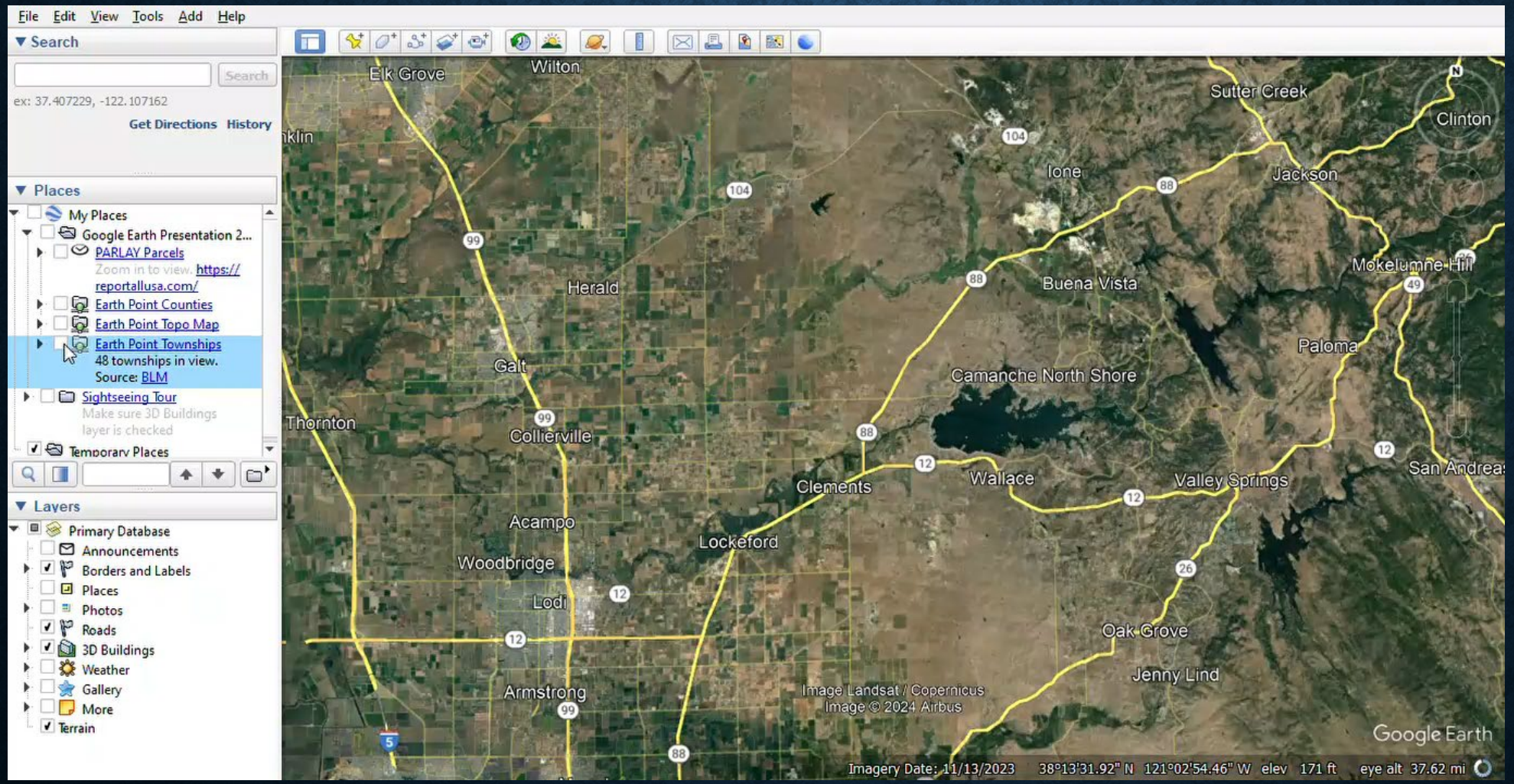


Topography Layer (Free)

GROUP QUESTION

Have you used a topography layer in an appraisal before, and how?

EARTHPOINT LAYERS



Township/Range Layer (Free)

WHAT IF YOU ONLY HAVE TOWNSHIP/RANGE/SECTION?

You can use Earthpoint to locate any property from that Township/Range/Section Legal Description.

Meridian: Mount Diablo

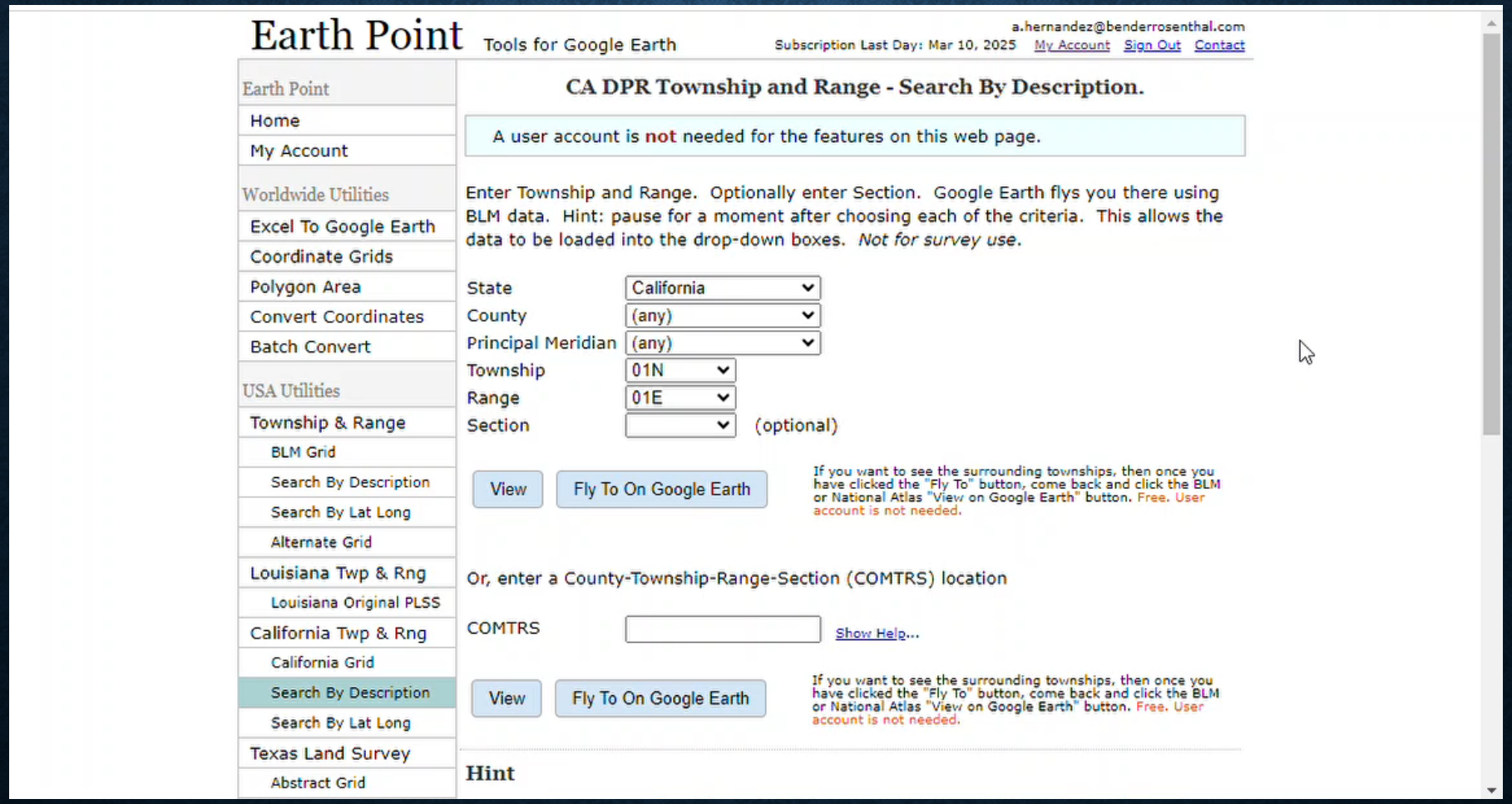
Township: 3S

Range: R9E

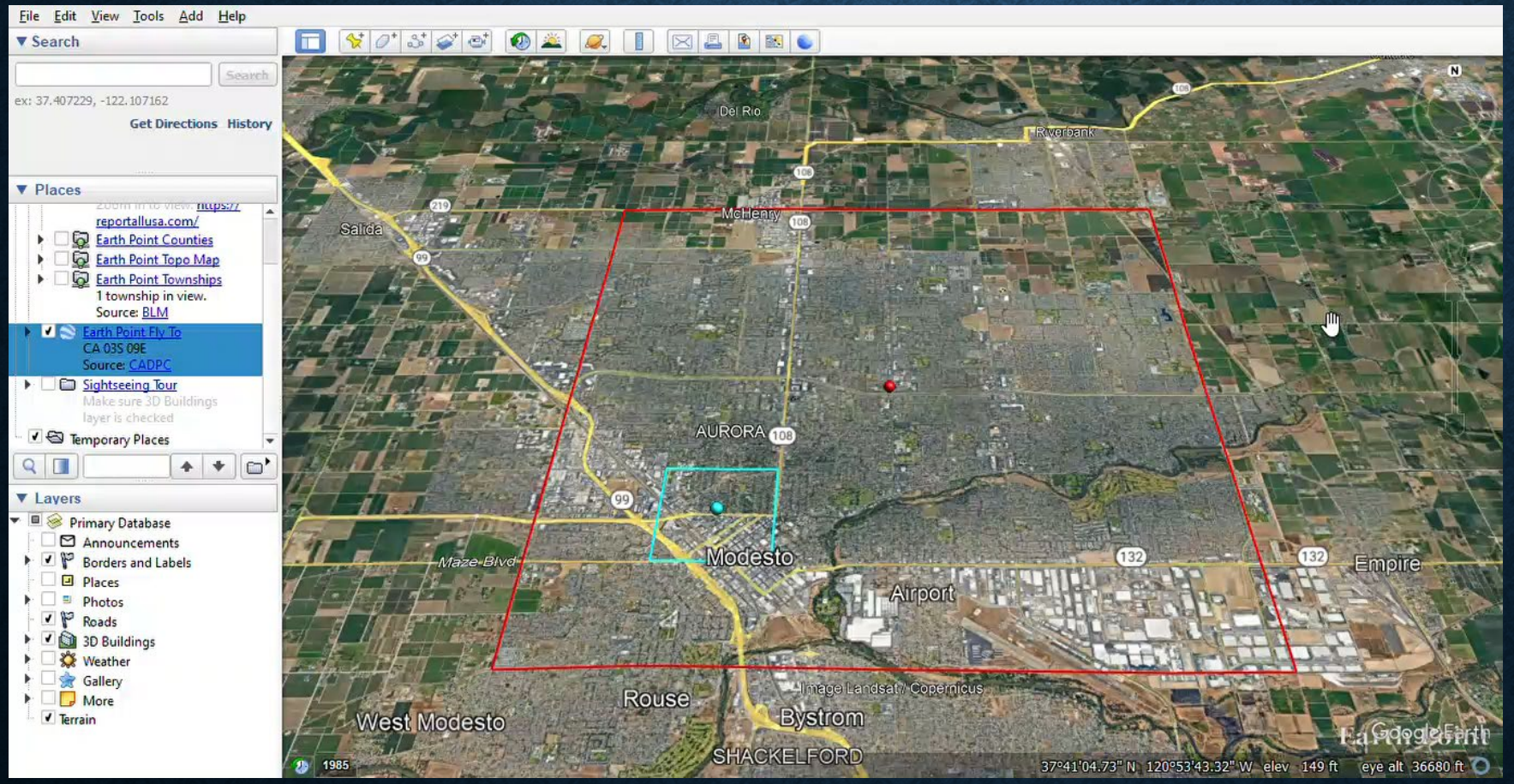
Section: S29

Quarter: SW ¼ of SE 1/4

FLY TO THAT LOCATION USING EARTHPOINT



FLY TO THAT LOCATION USING EARTHPOINT



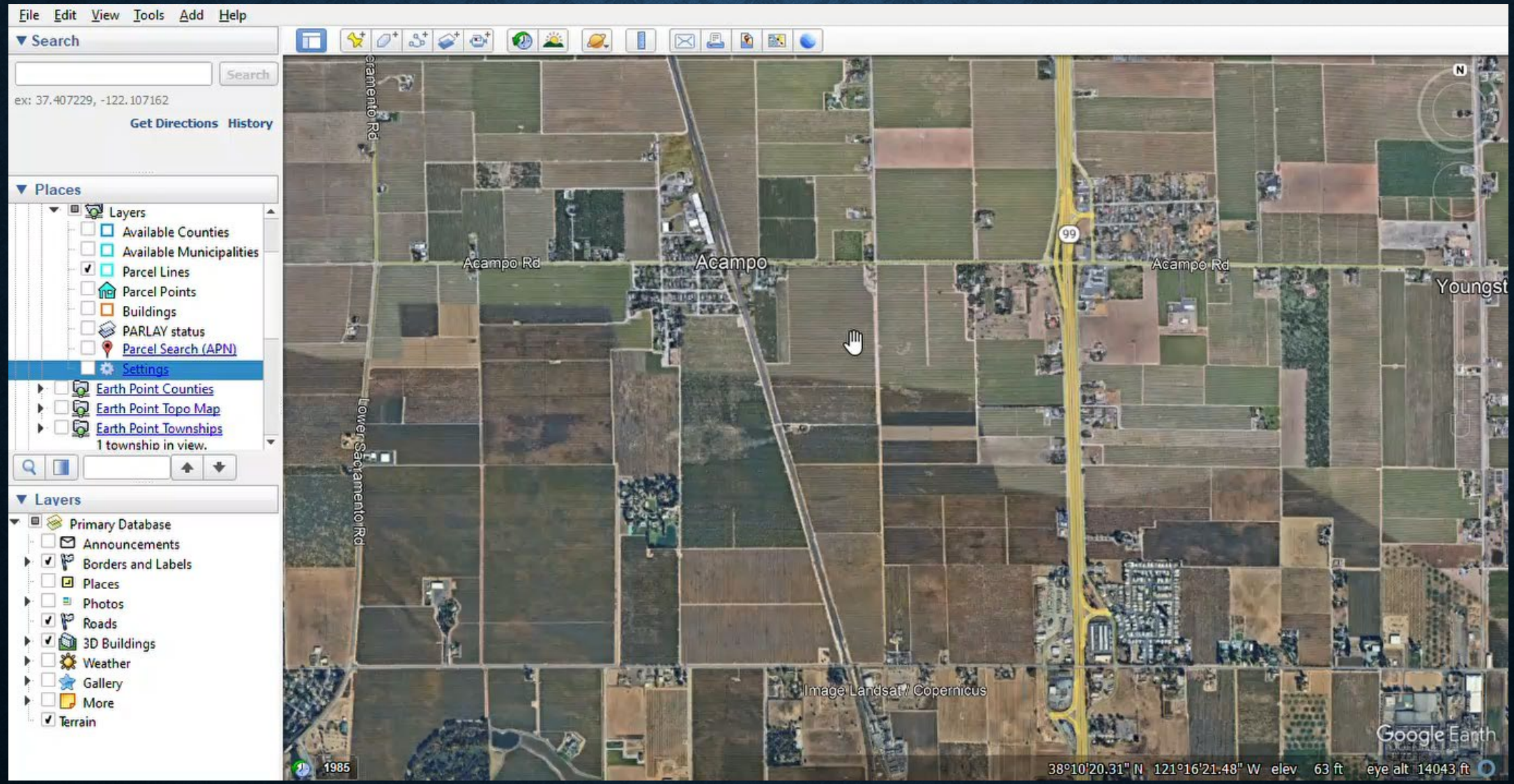
Temporary Layer(KMZ) Imports to Google Earth

Red Box = Township/Range

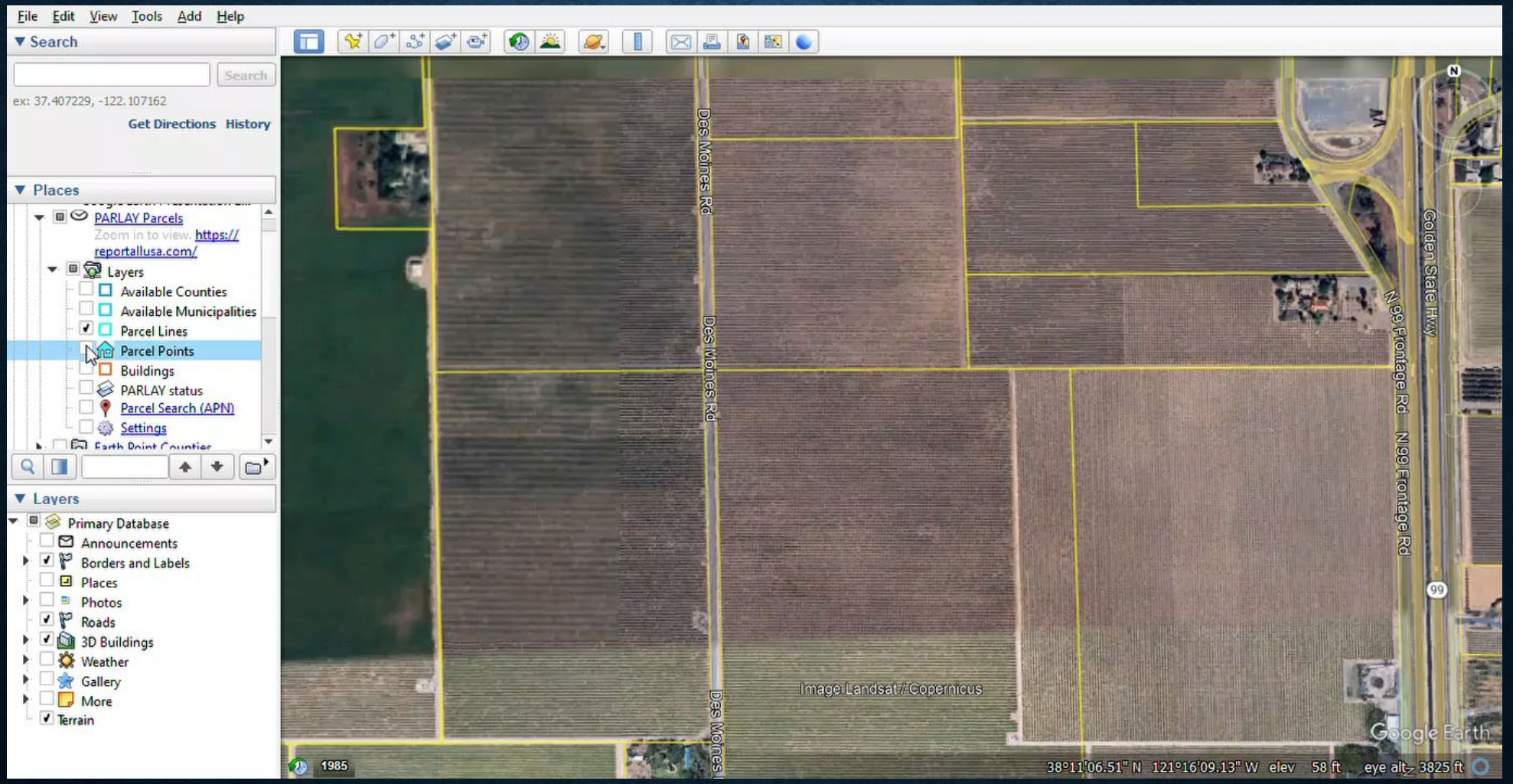
Blue Box = Section

Zooming In……

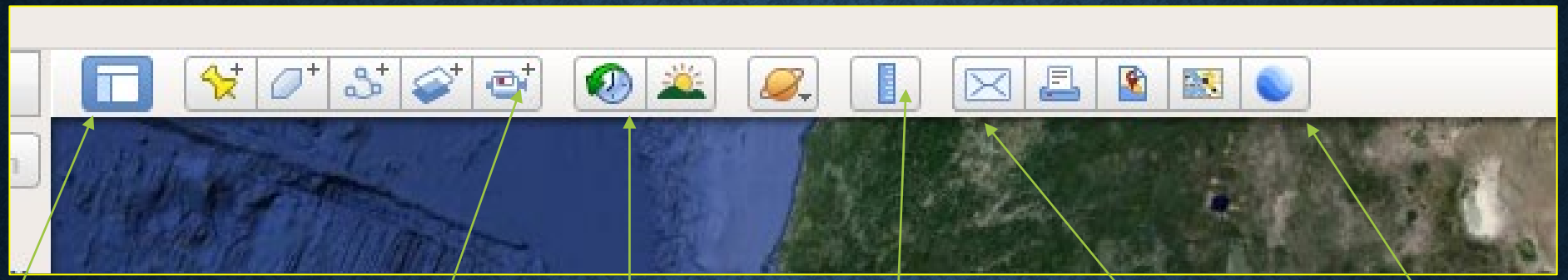
PARLAY LAYERS



PARLAY - PUBLIC RECORDS INFORMATION



UPPER CONTROL DECK

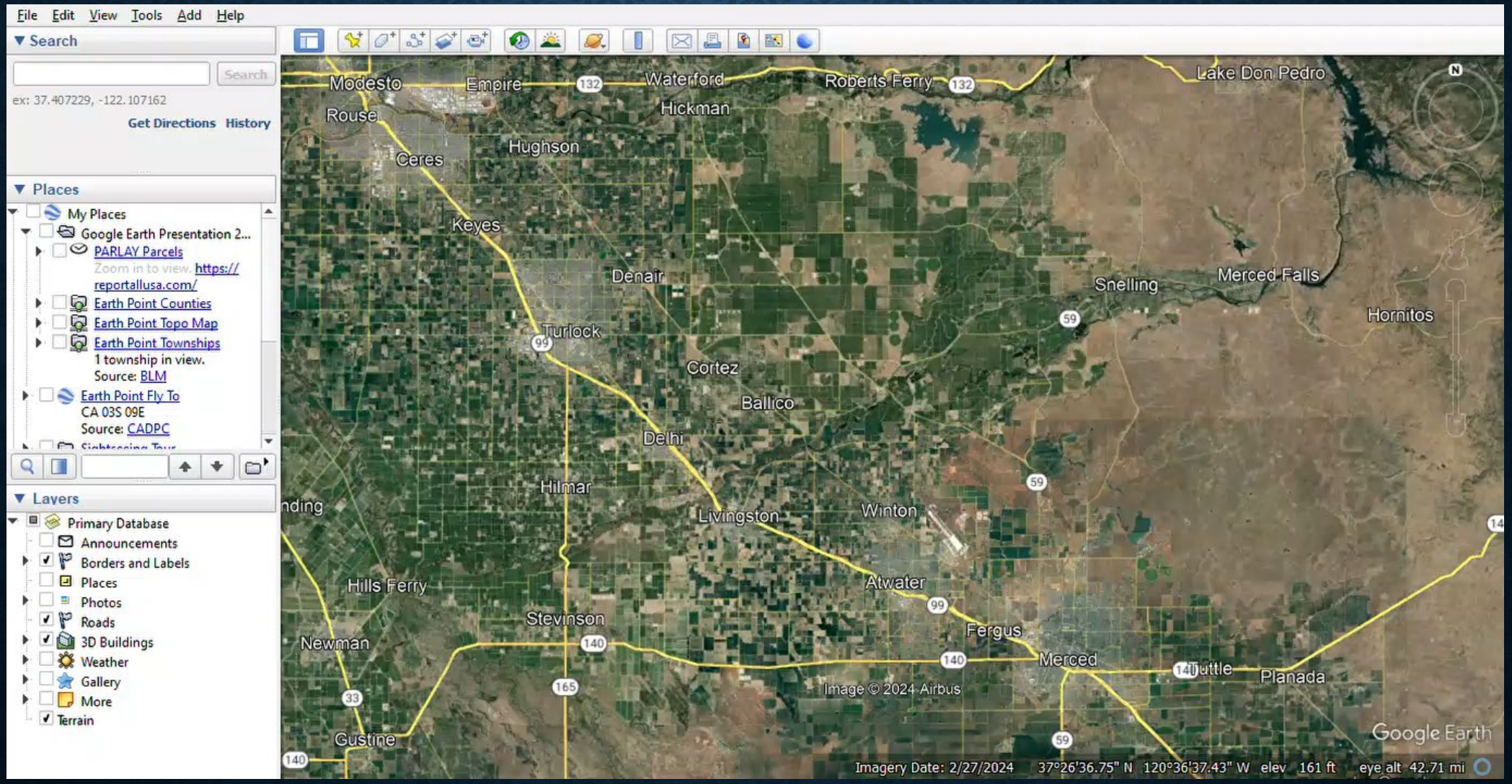


- Hide or show sidebar
- Pin
- Add Polygon
- Add Path
- Add Layer
- Record a Tour

- Historical Imagery
- Time of Day View
- Earth View/Star View/Moon View
- Measure Tool

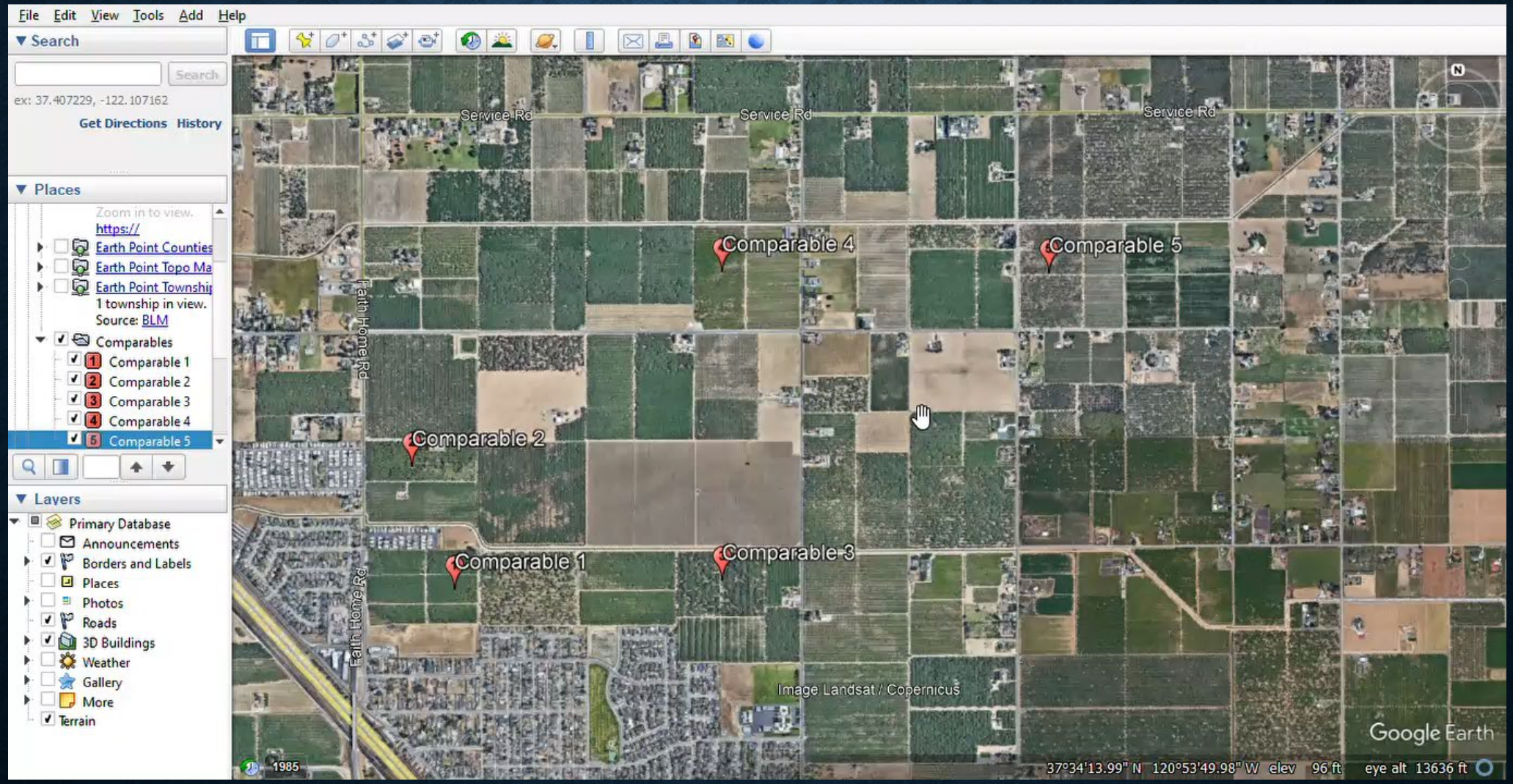
- Email
- Print
- Save Image
- View in Google Maps
- View in Google Earth on Web

HIDE/SHOW SIDEBAR

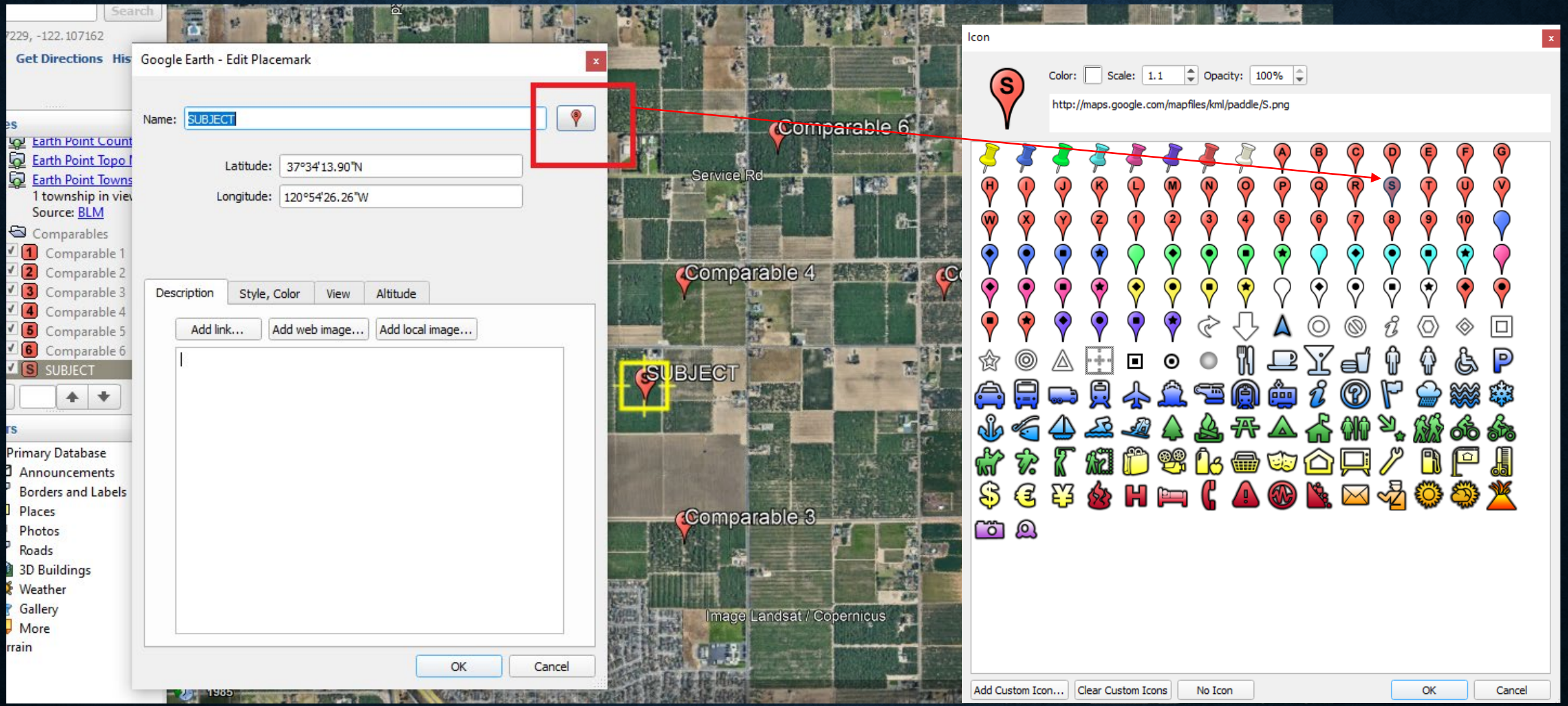


PINS

Can be used to make a comp map (pin emblem can be changed)

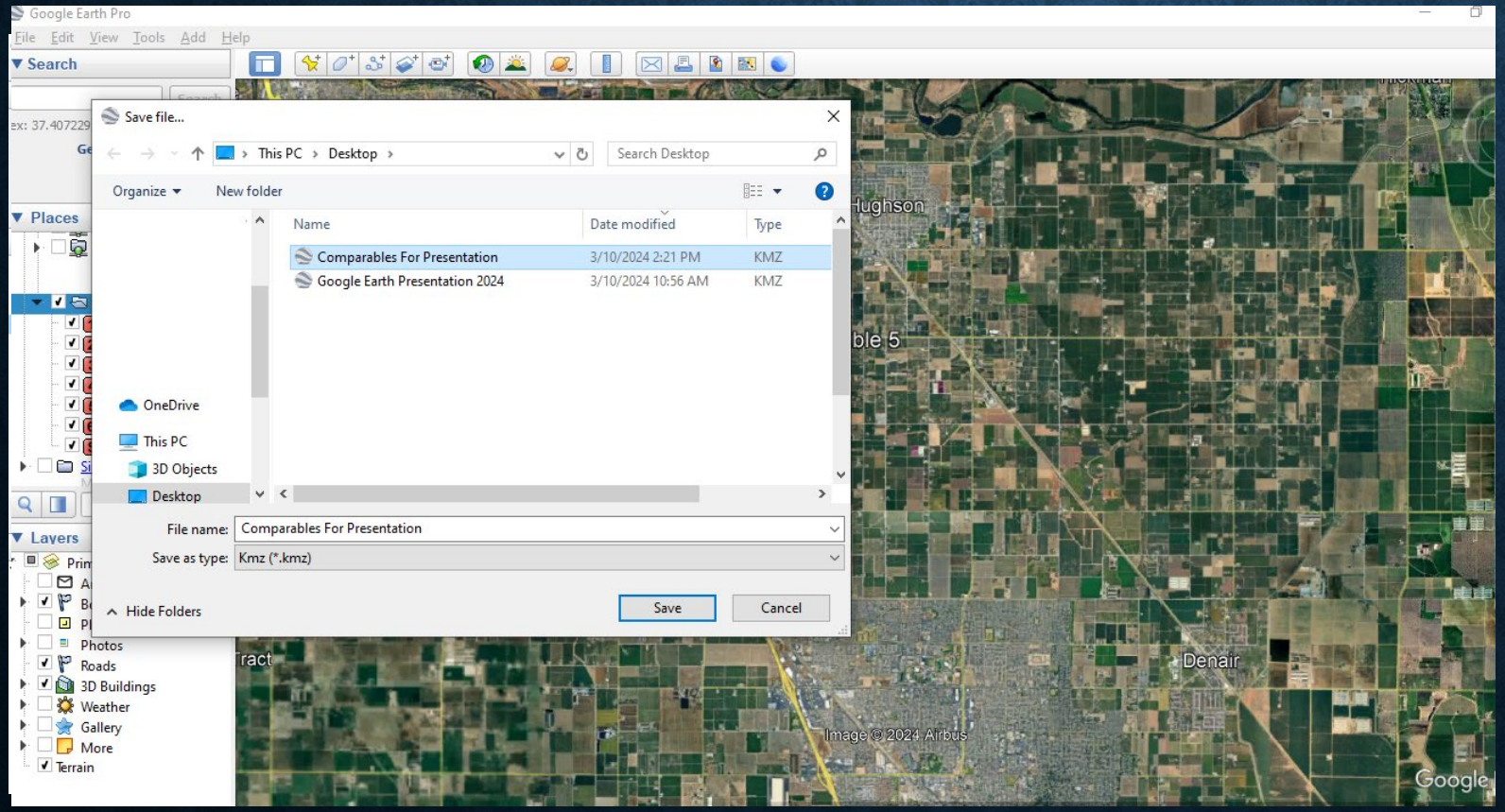


PINS (CHANGE EMBLEM TYPE)



USING THIS DATA FOR DRIVING DIRECTIONS ON INSPECTIONS

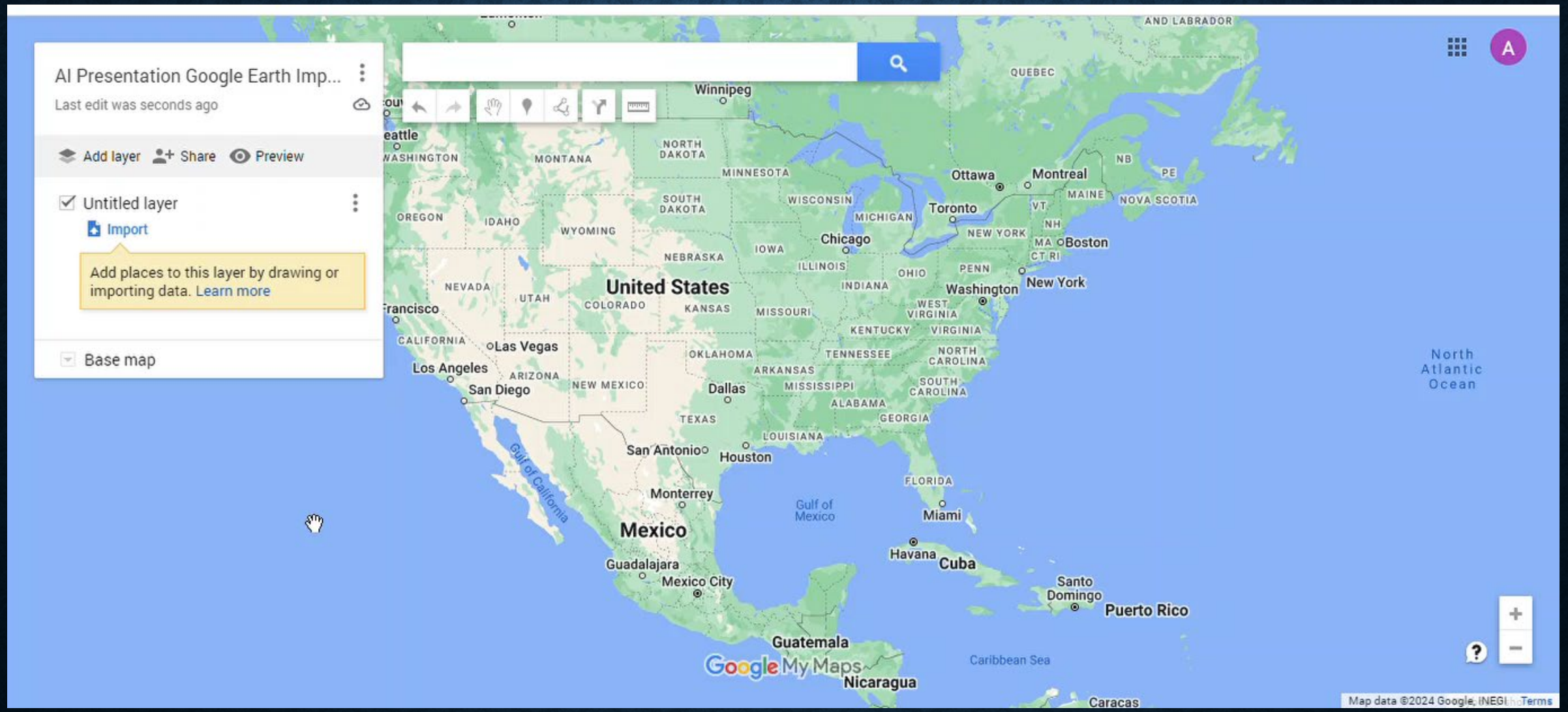
Google Earth can interface with Google Maps (we will now take the google earth KMZ of the comparables, and import it into Google Maps).



Save Comparable Folder – Save As:

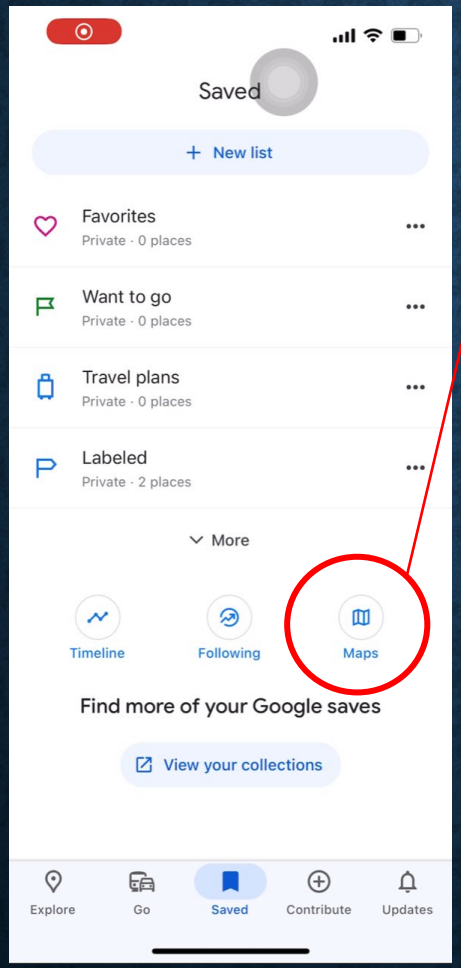
KMZ File to Your Desired File Location

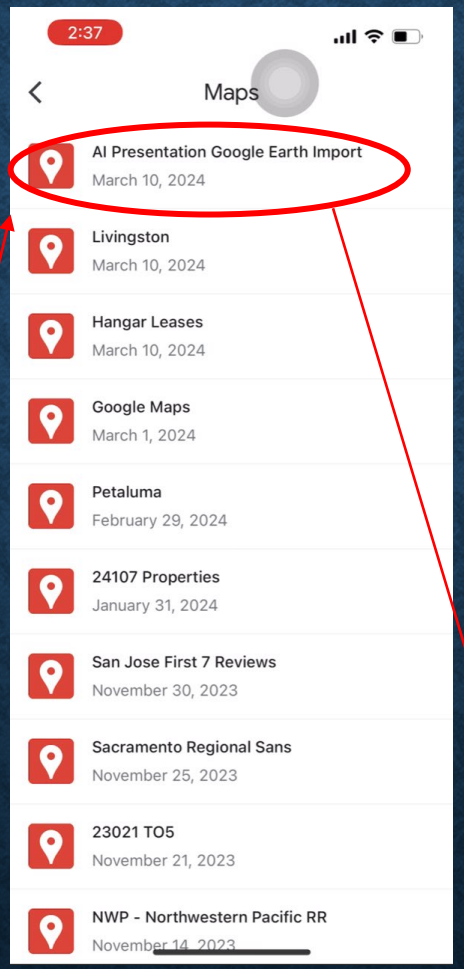
OPEN UP GOOGLE MAPS AND CREATE NEW MAP

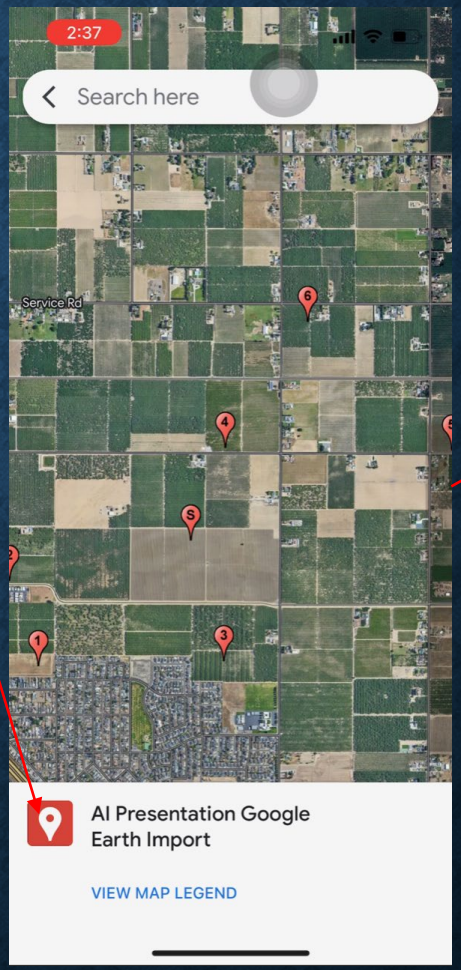


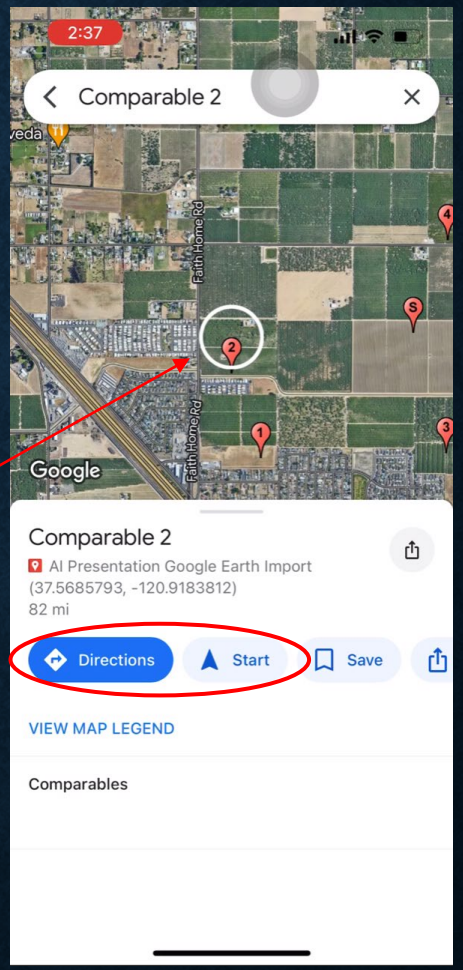
OPEN UP THE GOOGLE MAPS APP ON YOUR CELL PHONE

All Data will be available in the Google Maps App and will allow you to get directions after clicking on which comp you would like to drive to.









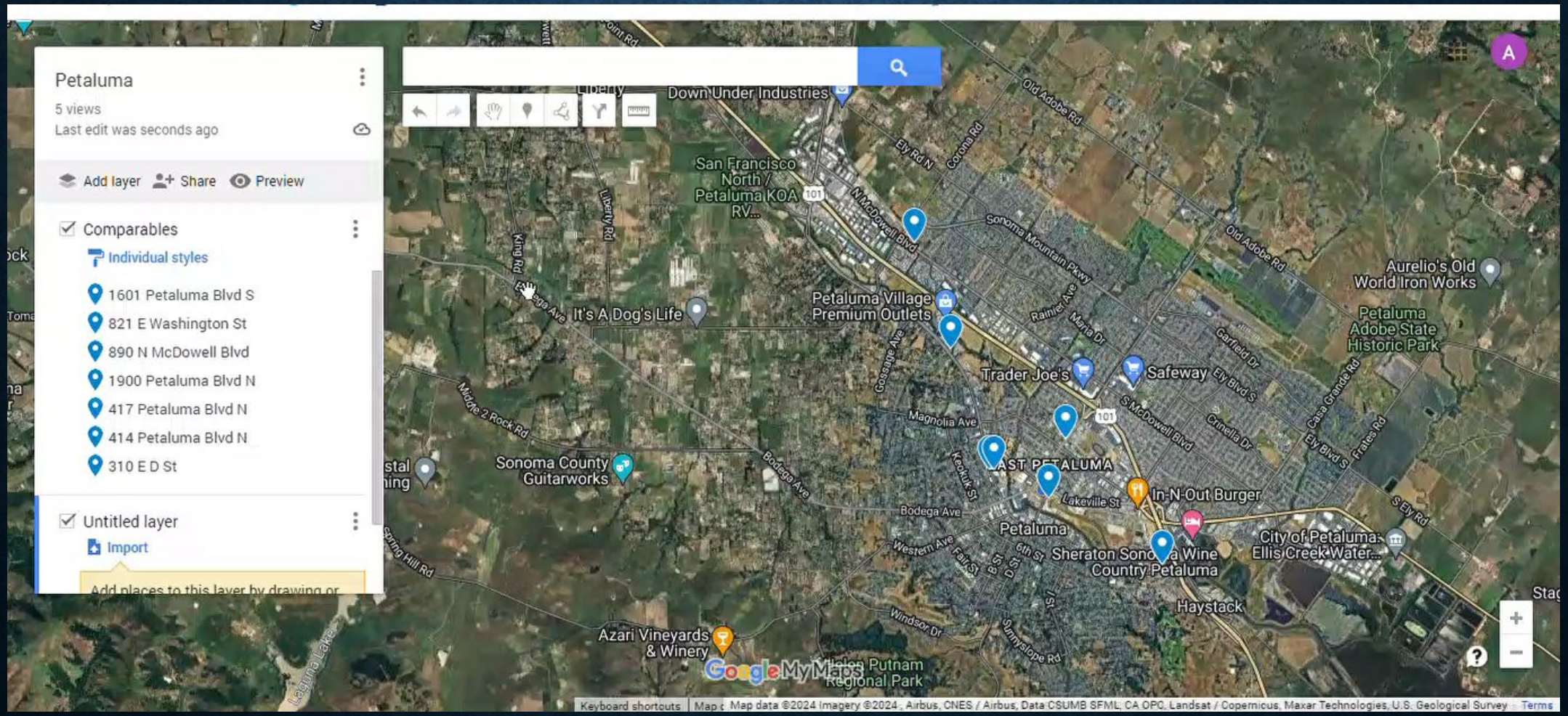
Now you know how to use the data from your comp map for driving directions on property inspections!

GROUP QUESTION

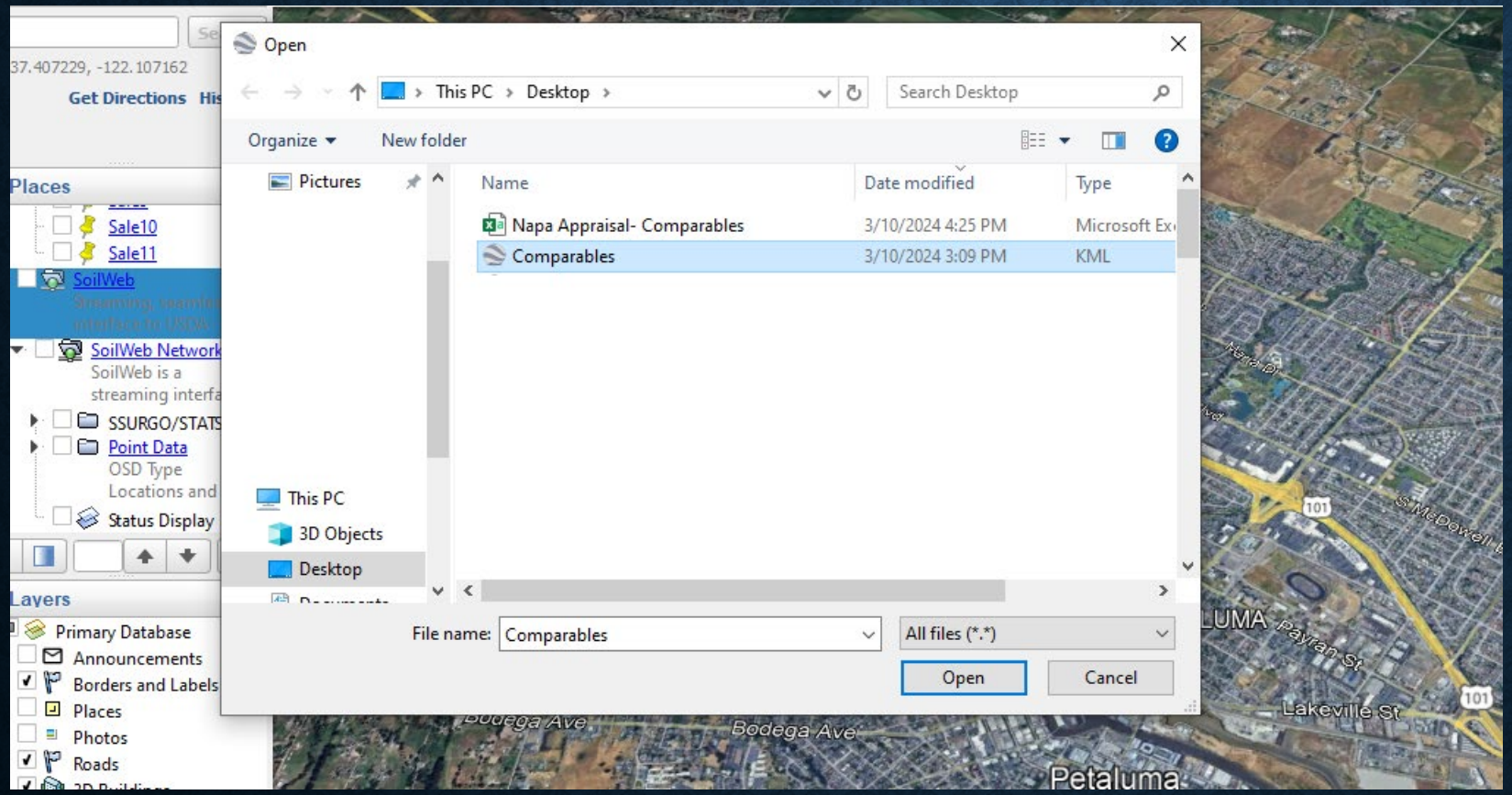
Who will likely use this on their next inspection?

THIS ALSO WORKS THE OTHER WAY AROUND

- If you compiled a list on Google Maps, and want to export it from Maps to Google Earth, you can download a KML of the Data!

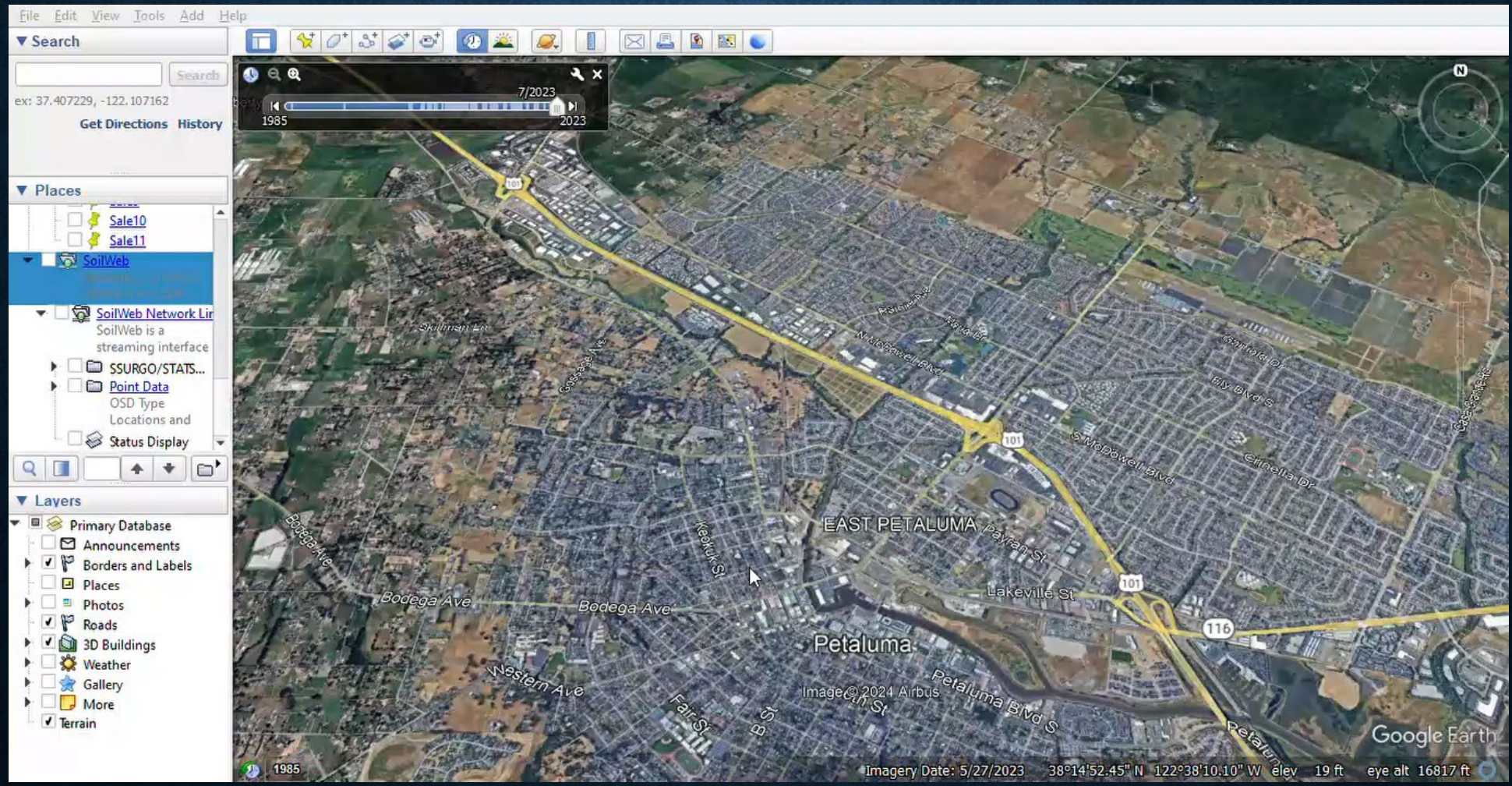


THIS ALSO WORKS THE OTHER WAY AROUND – CONTINUED…..

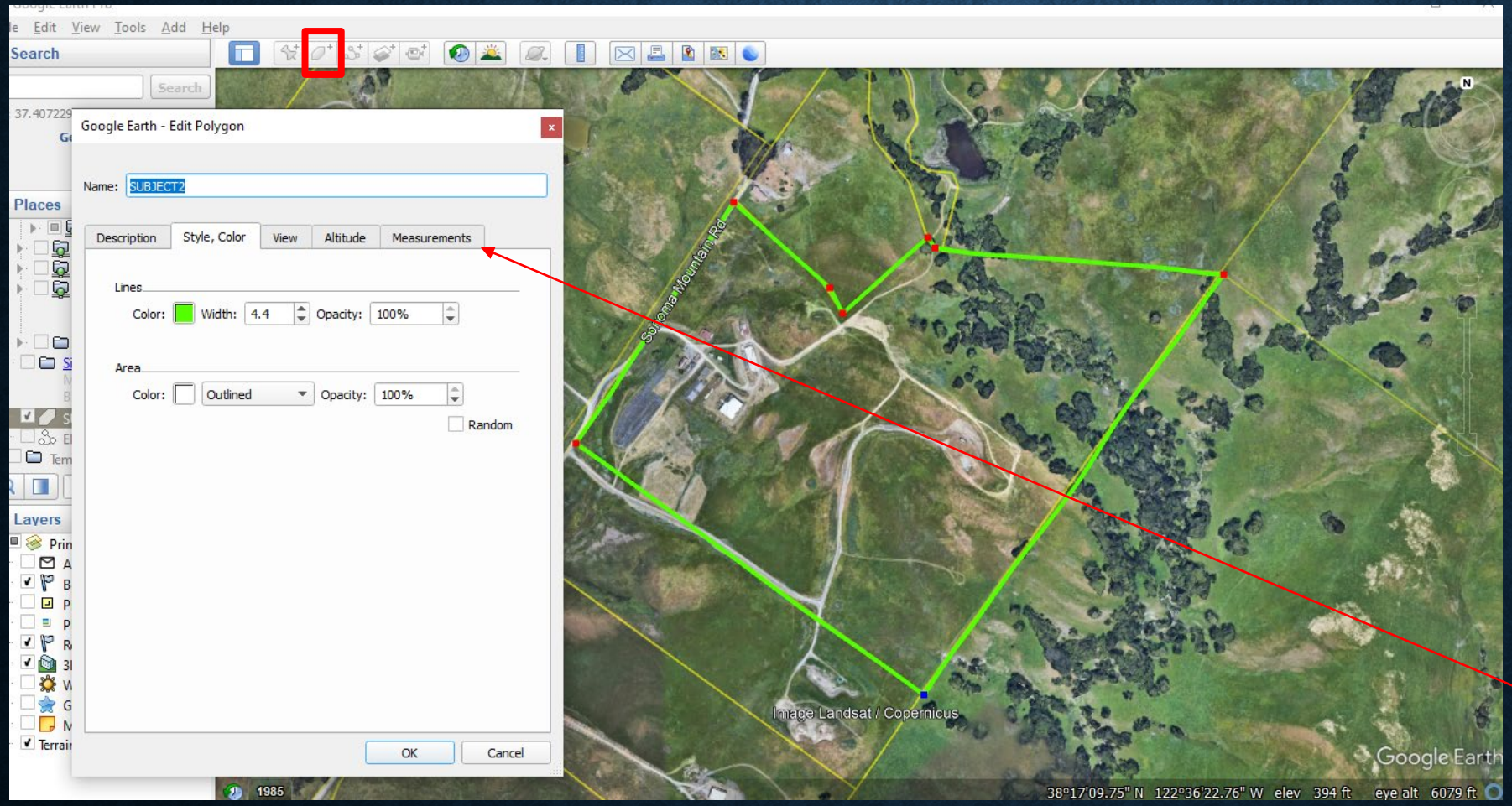


- Import
- The file (however you named it)
- The press Open

THIS ALSO WORKS THE OTHER WAY AROUND – CONTINUED…..



POLYGON TOOL



Can be used for:

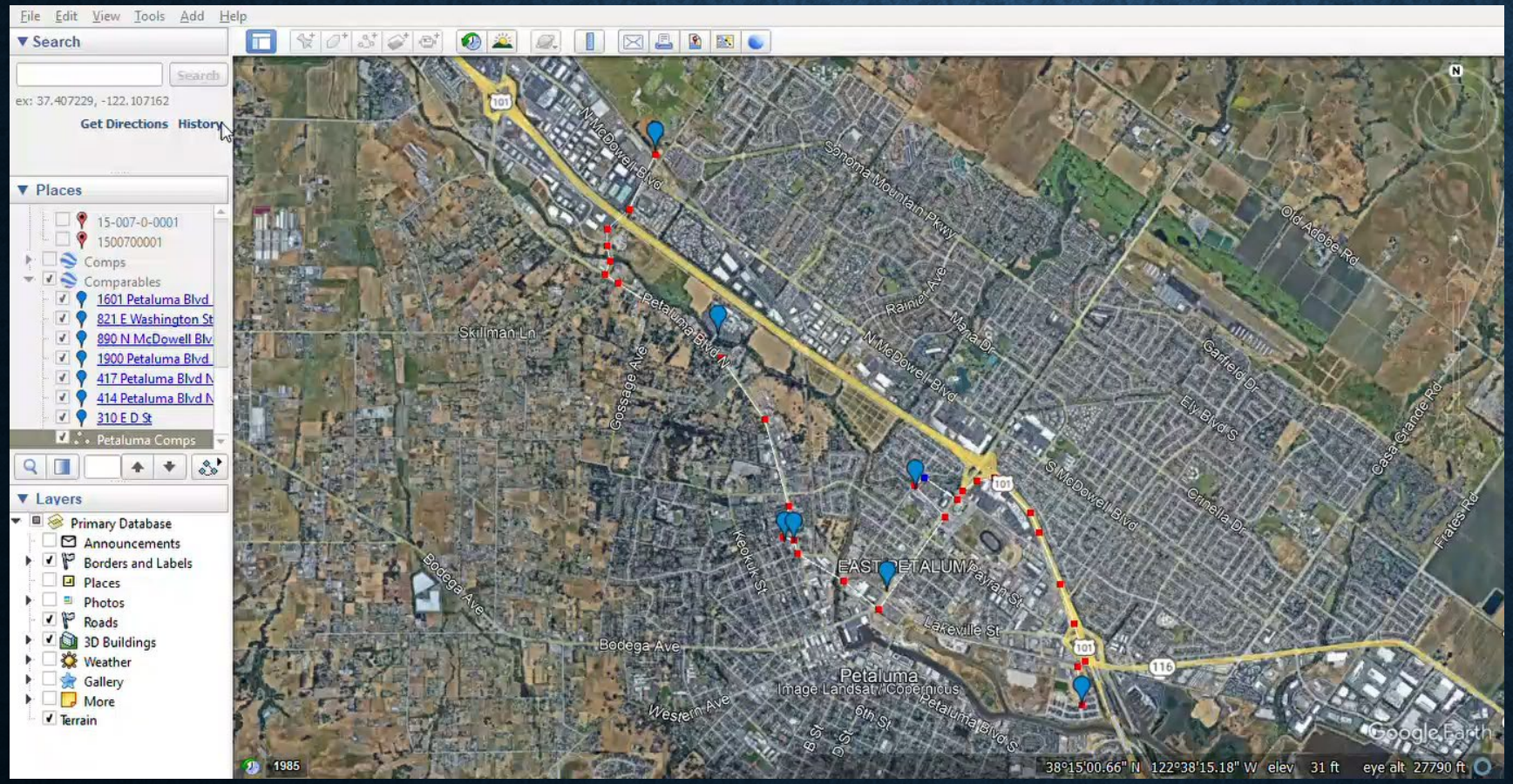
1) Creating parcel boundaries
2) Creating block/planting maps
3) Showing or separating properties in a way to show a separate "zone of value" area from another
4) Measuring/Cross Checking Size

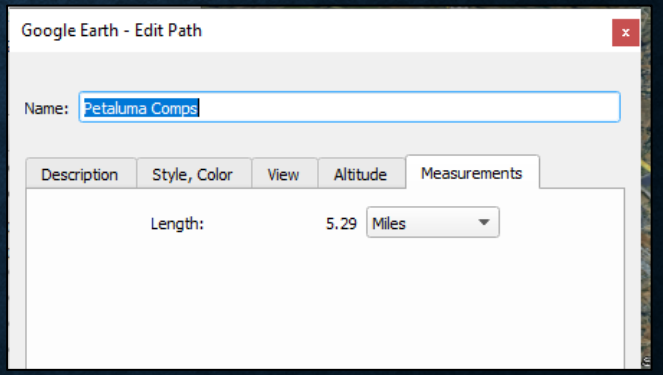
GROUP QUESTION

How have you used the polygon tool before?

PATH TOOL

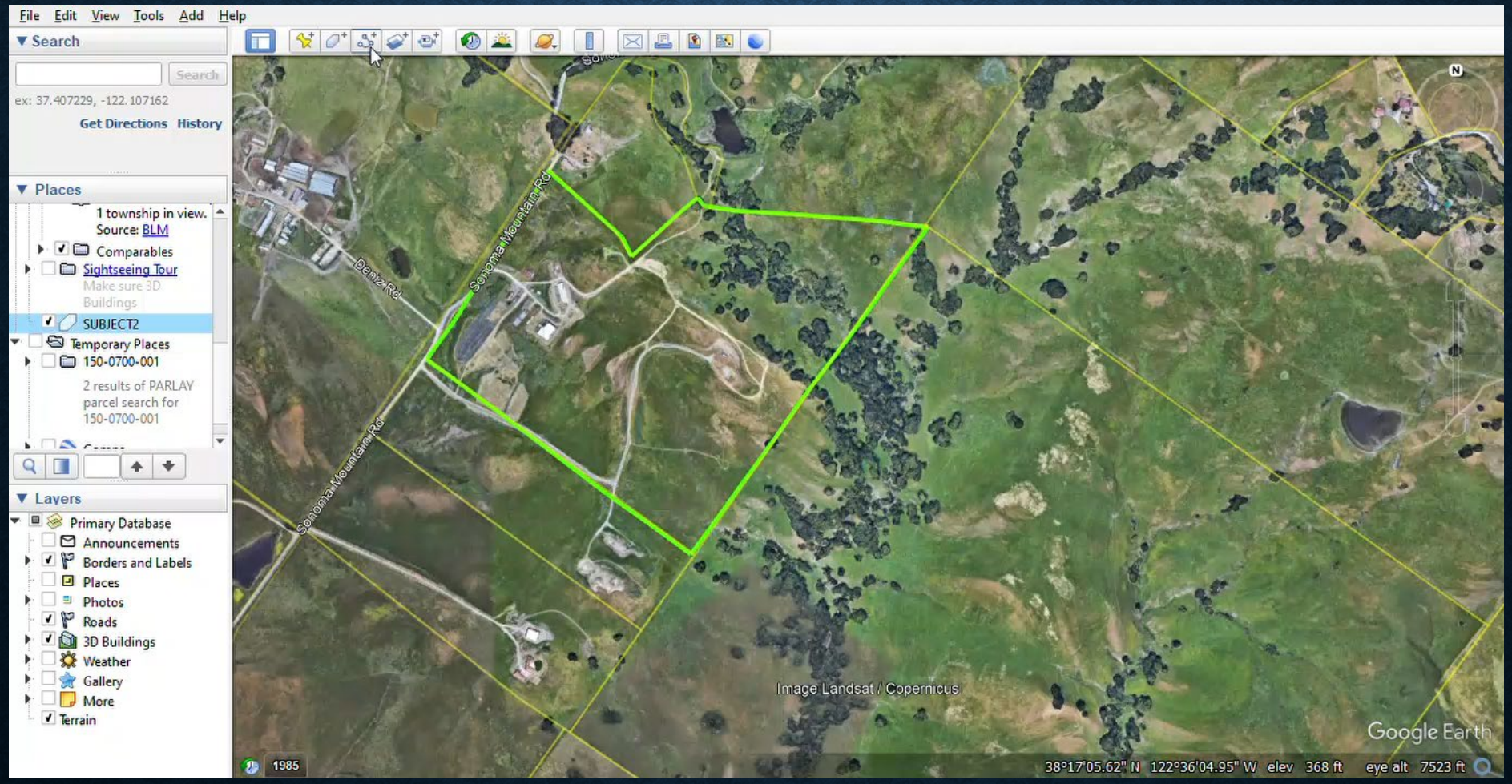
- This can also be utilized to see how many miles you will be driving on Comp Inspections.



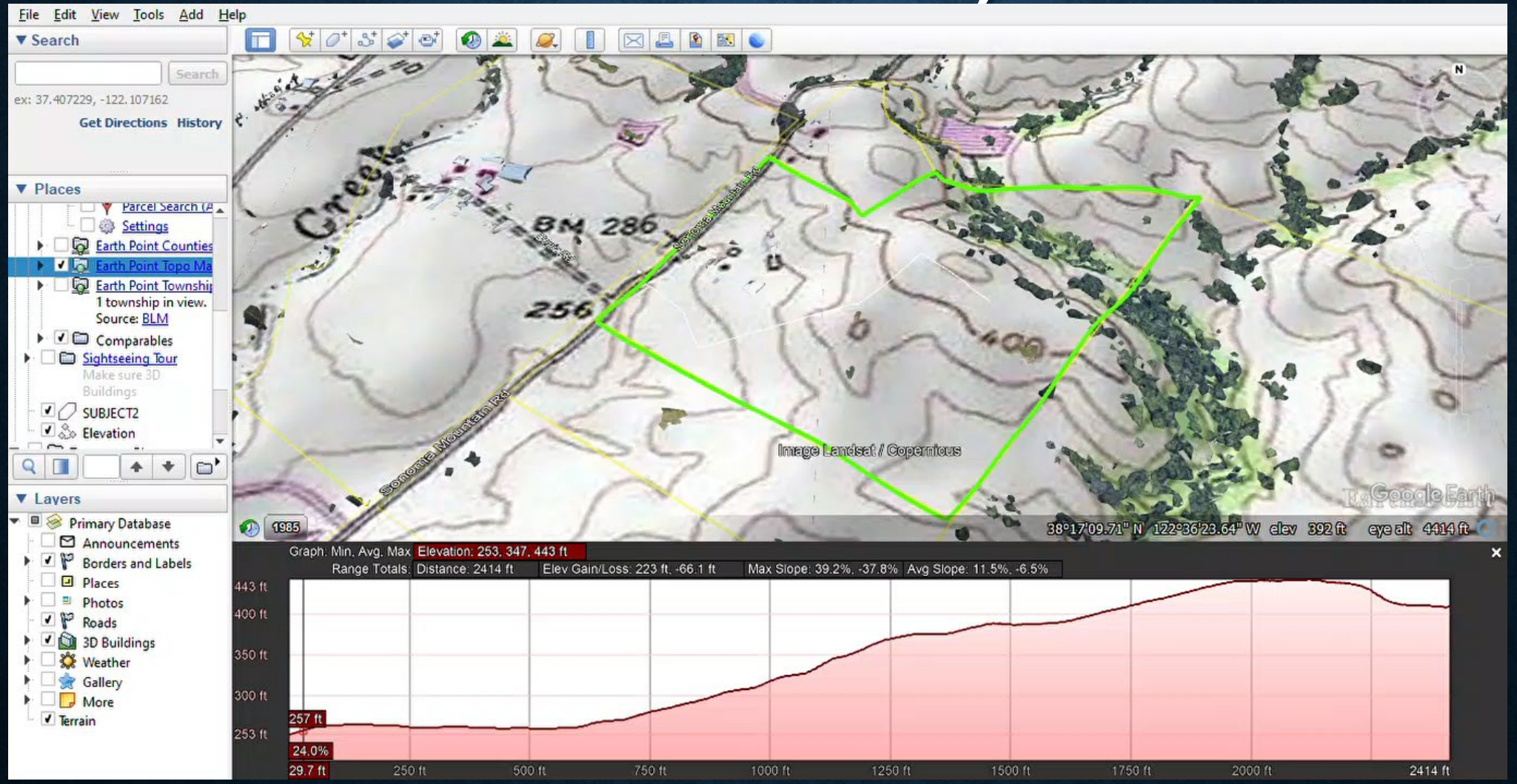


PATHS EXPANDED

- Topography (elevation) profiles can be completed



DOUBLING UP (CHECKING PATH WITH EARTHPOINT TOPO MAP)



POP QUIZ!

- In the Past Exhibit, how many separate layers were we using?

ANSWER

- Parcel Layer (from Parlay)
- Topography Layer (from Earthpoint)
- A Separate Polygon (showing parcel boundary in green)
- Path Showing Elevations
  - FOUR TOTAL INTERCONNECTED LAYERS

IMAGE OVERLAY TOOL (R/W APPRAISAL EXAMPLE)

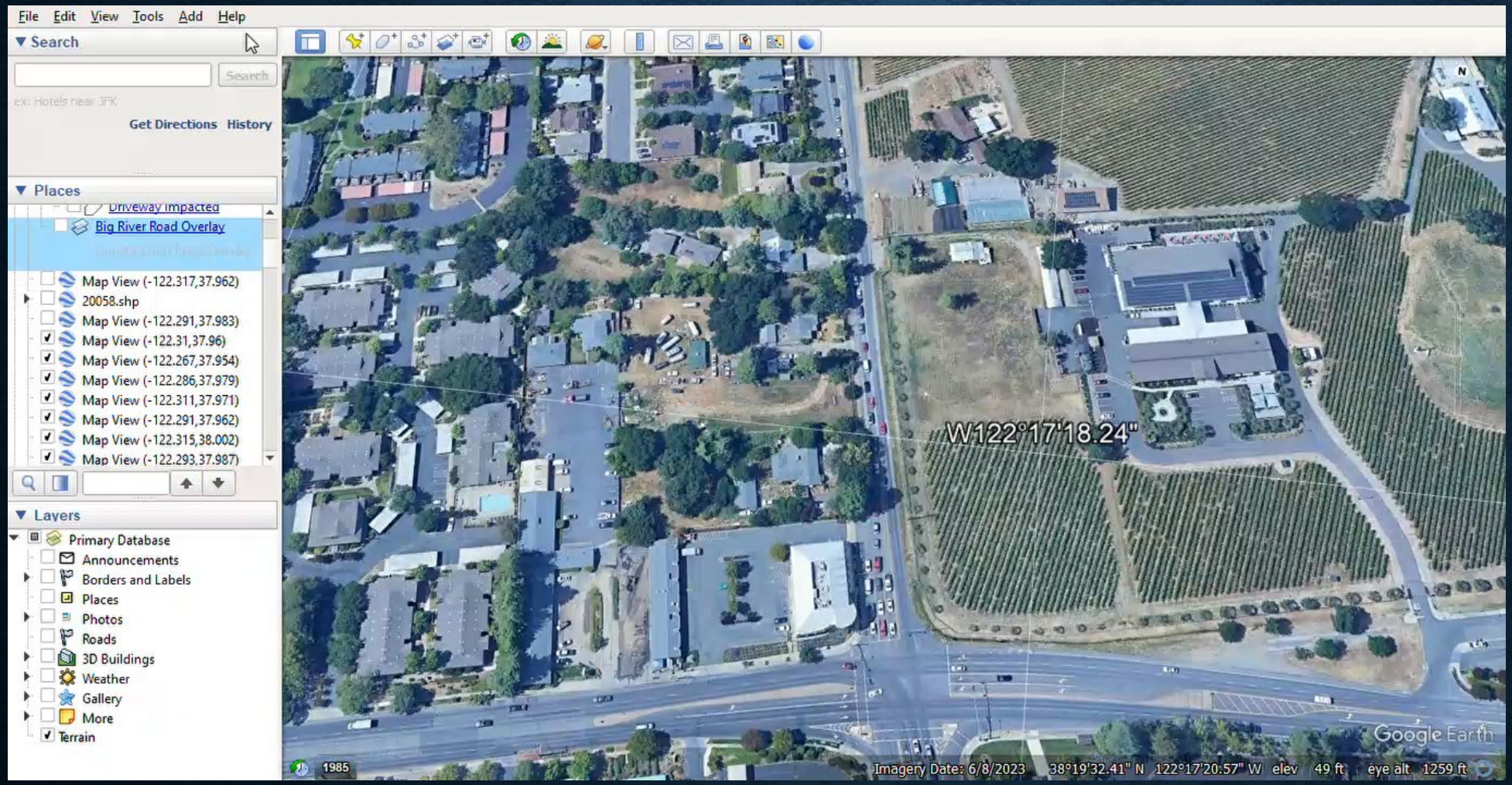
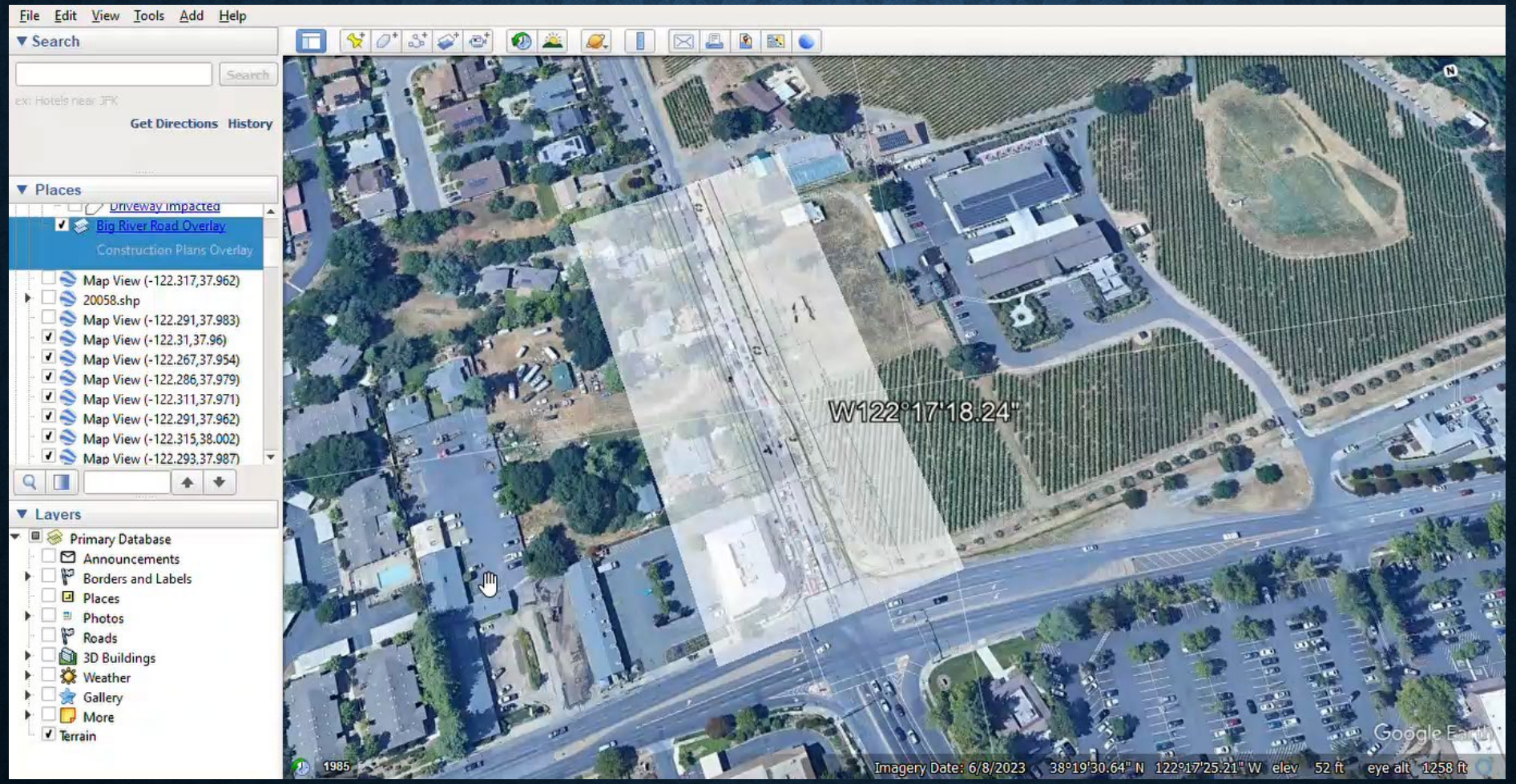


Image must be in a format that is importable (not PDF). PNG format works just fine!

As long as there is a point of reference on the image, it can be aligned on google earth!

IMAGE OVERLAY TOOL (R/W APPRAISAL EXAMPLE)

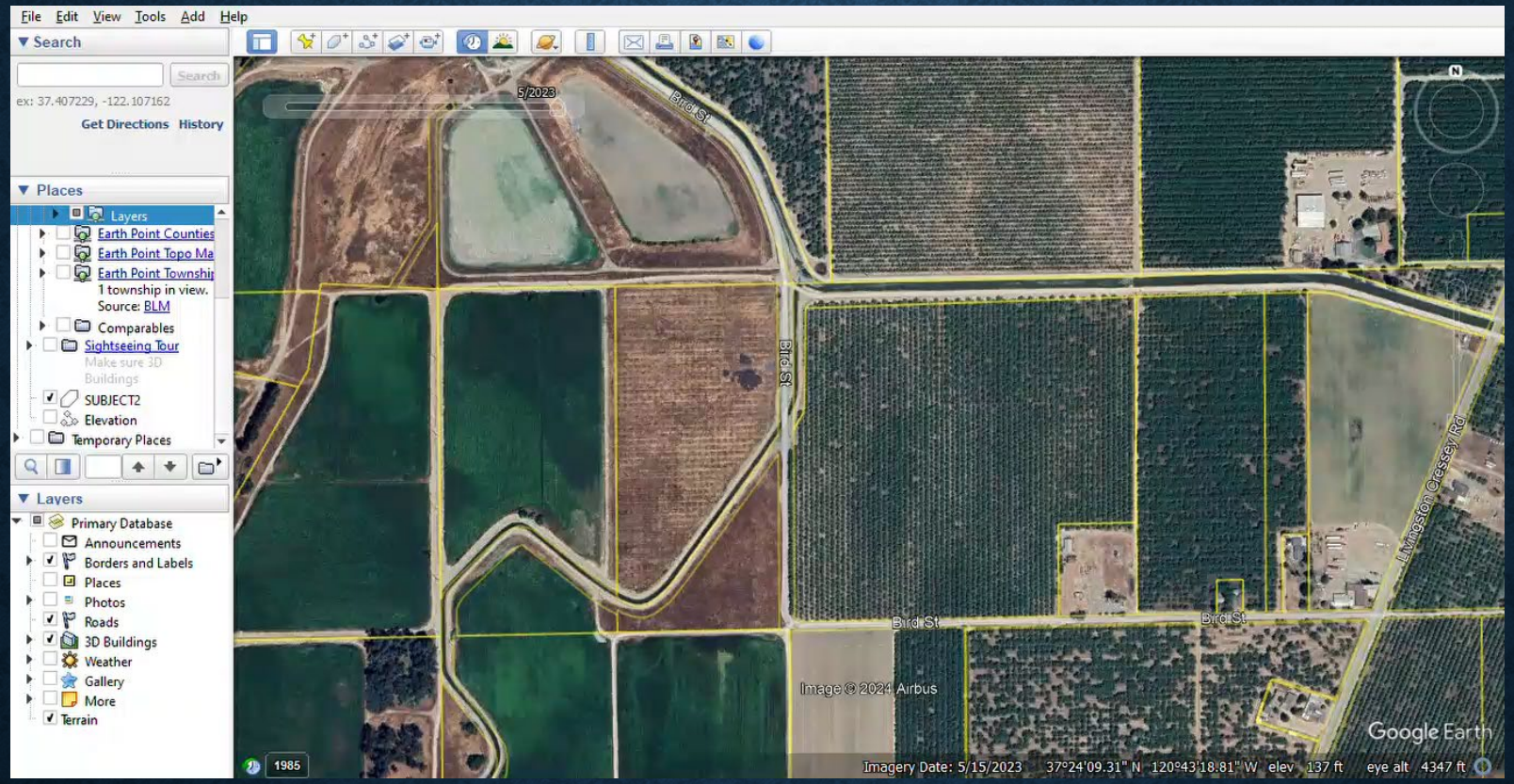


GROUP QUESTION

How have you used the image overlay tool before?

For what type of an appraisal?

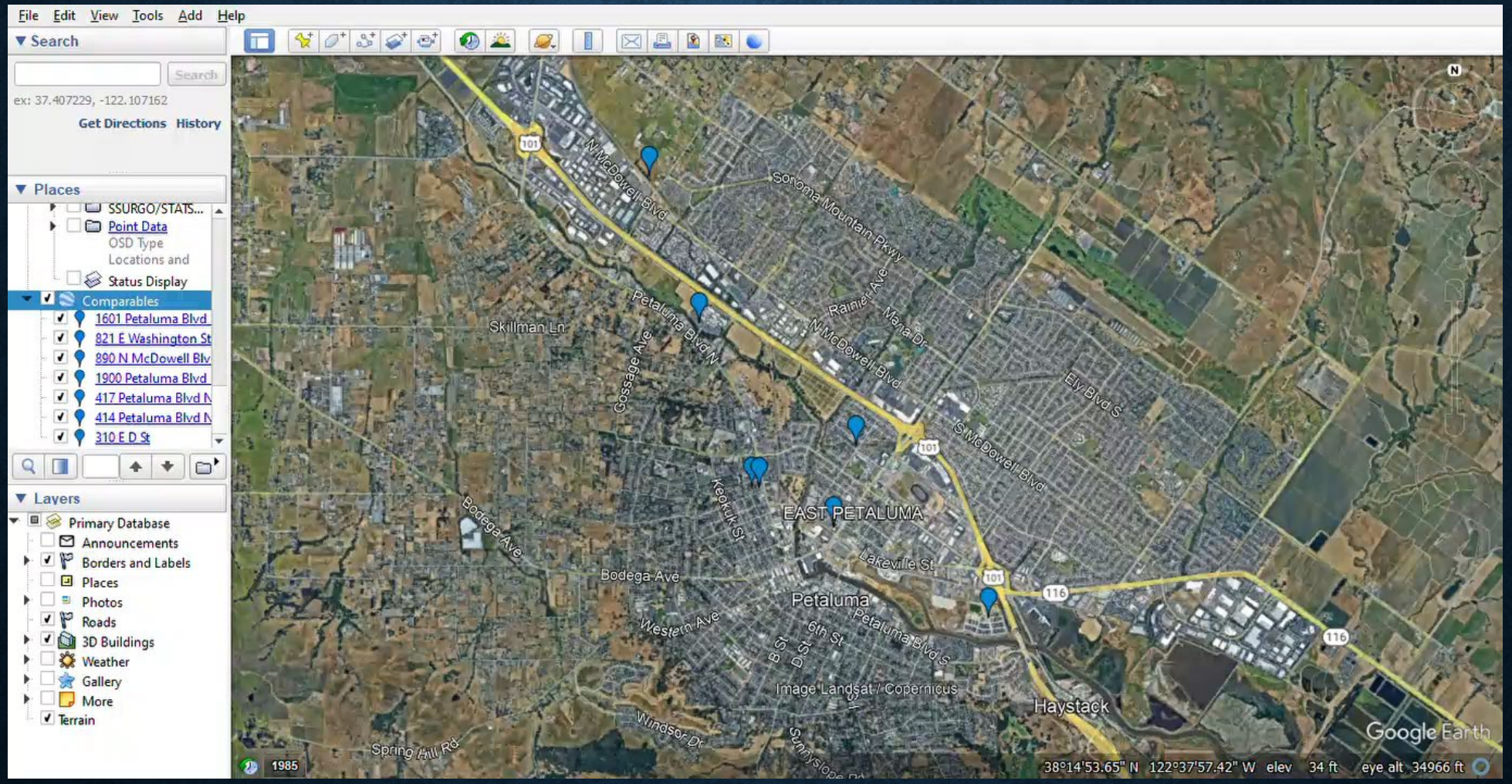
HISTORICAL IMAGERY TOOL



Can be used to check any implied dedication areas (an item needed to be included on any reports being reviewed by DGS).

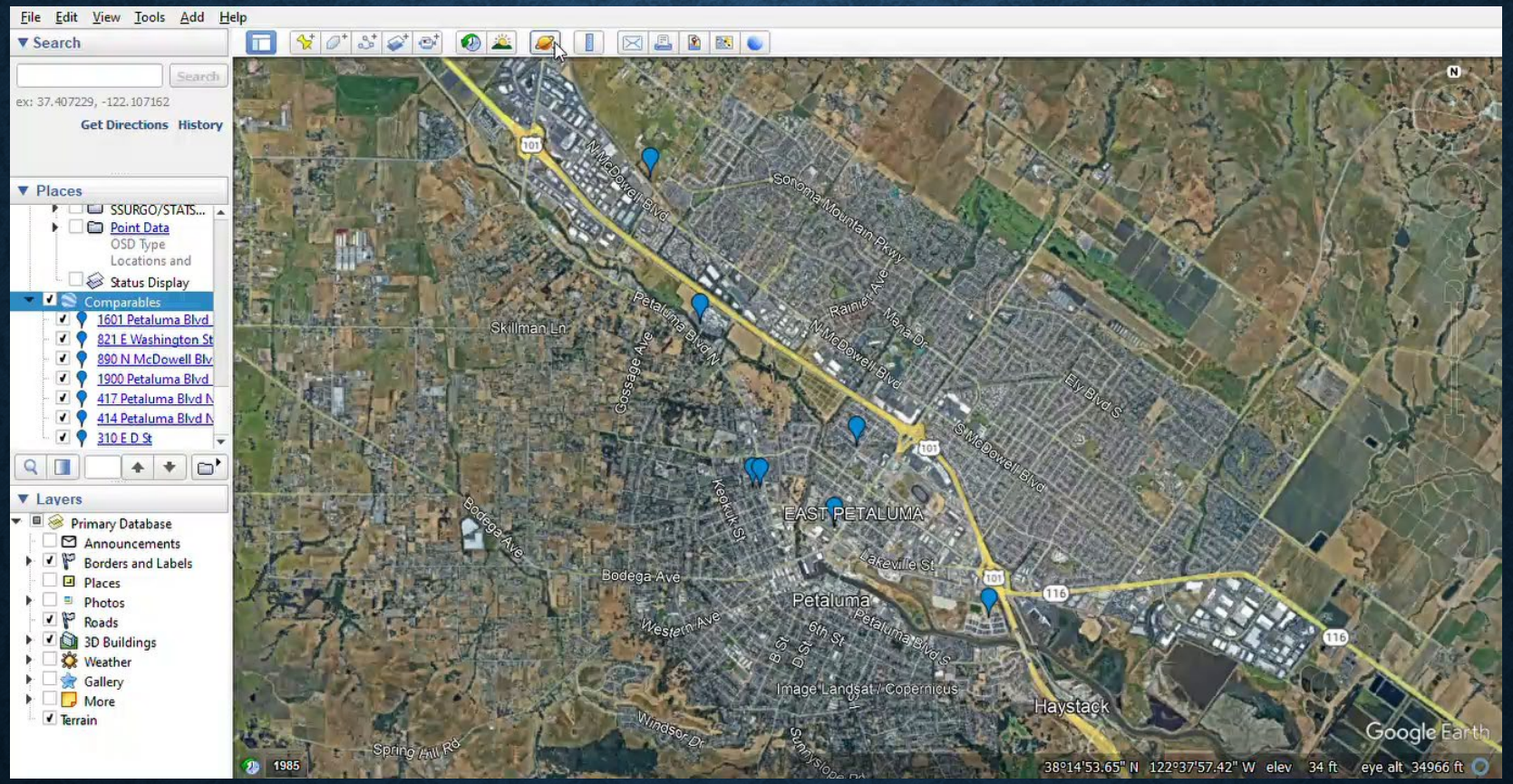
Possibly also can be used to see prior property details

SUNLIGHT TOOL



Changes the presentation of time on your google earth map

PLANET CHANGE TOOL

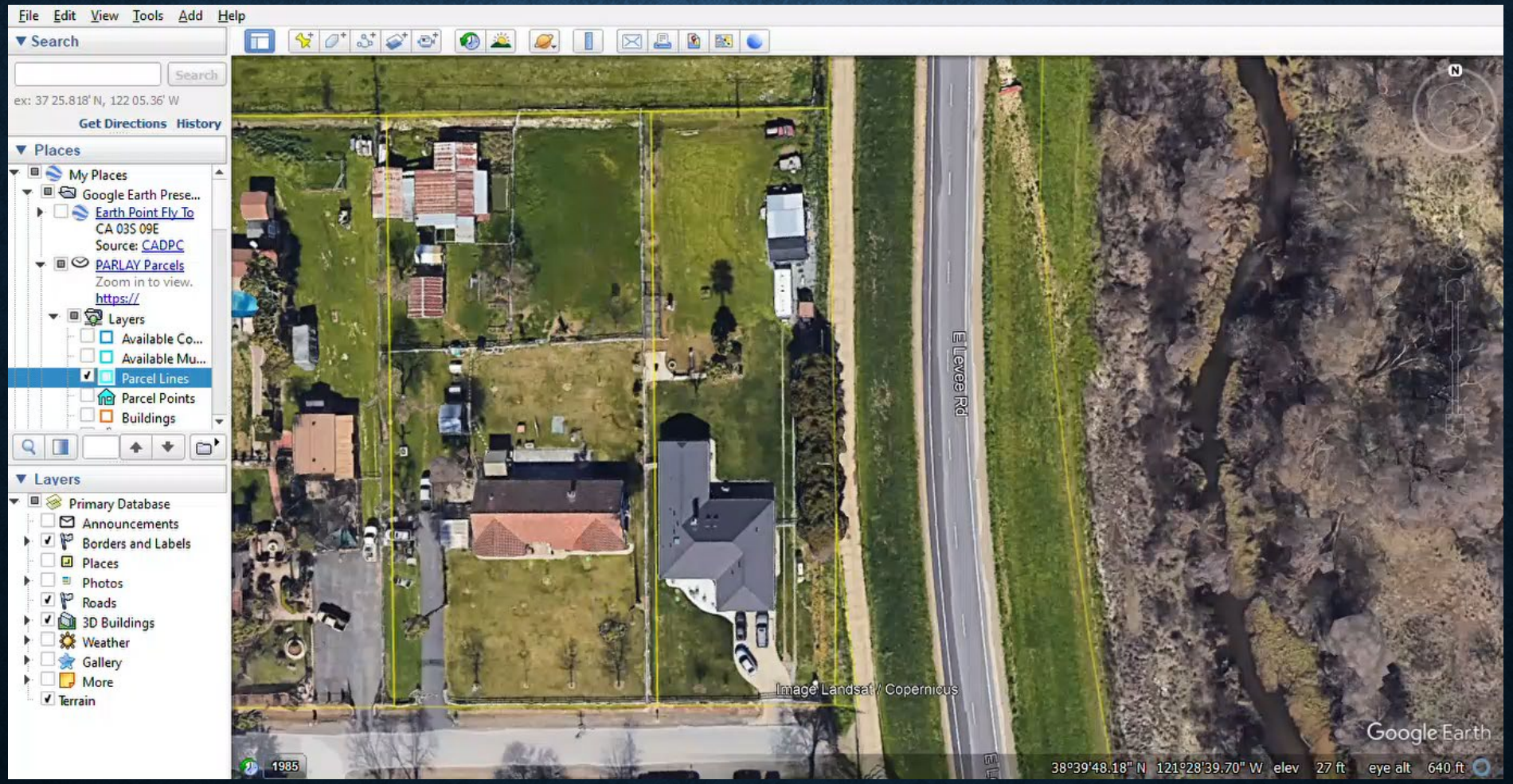


Hopefully, you aren't mapping out any comps on Mars!

CASE STUDY: USING THE MEASUREMENT TOOL IN RIGHT OF WAY

- Say we didn't get access to inspect the property with the owner, and we had to view the property from the Public Right of Way (roadway).
- We know the project will impact 10 feet inward onto the site from the eastern parcel boundary.

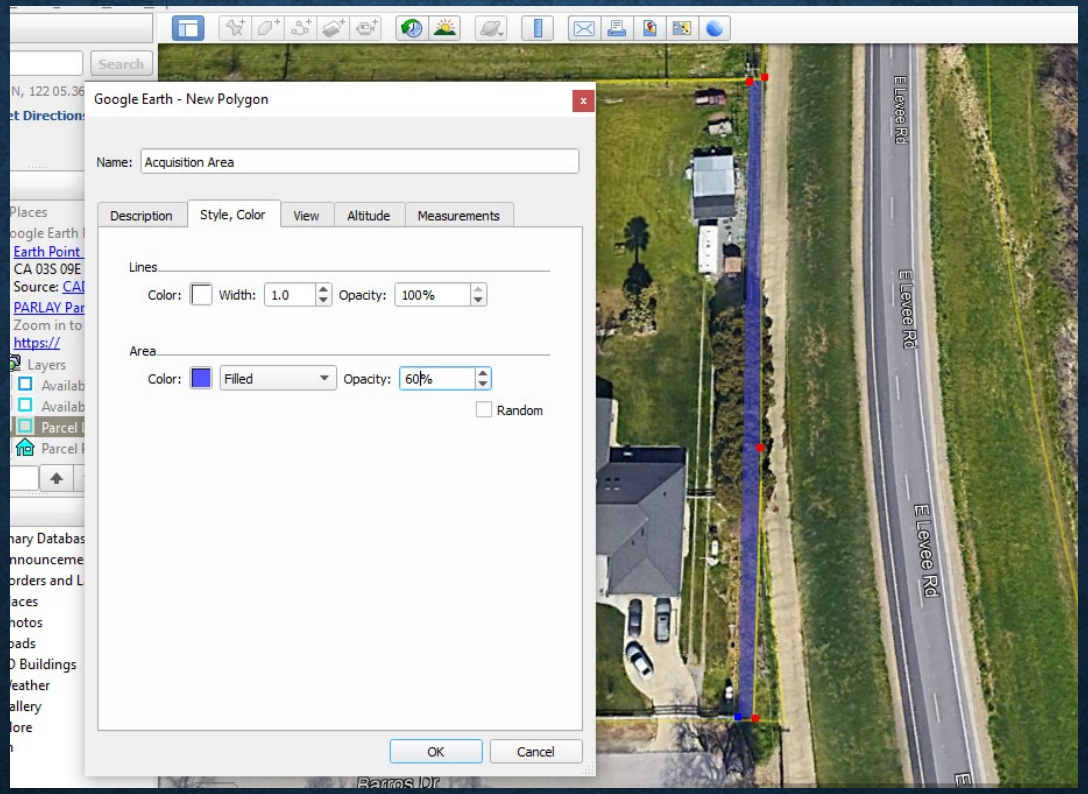
CASE STUDY: USING THE MEASUREMENT TOOL IN RIGHT OF WAY



GROUP QUESTION

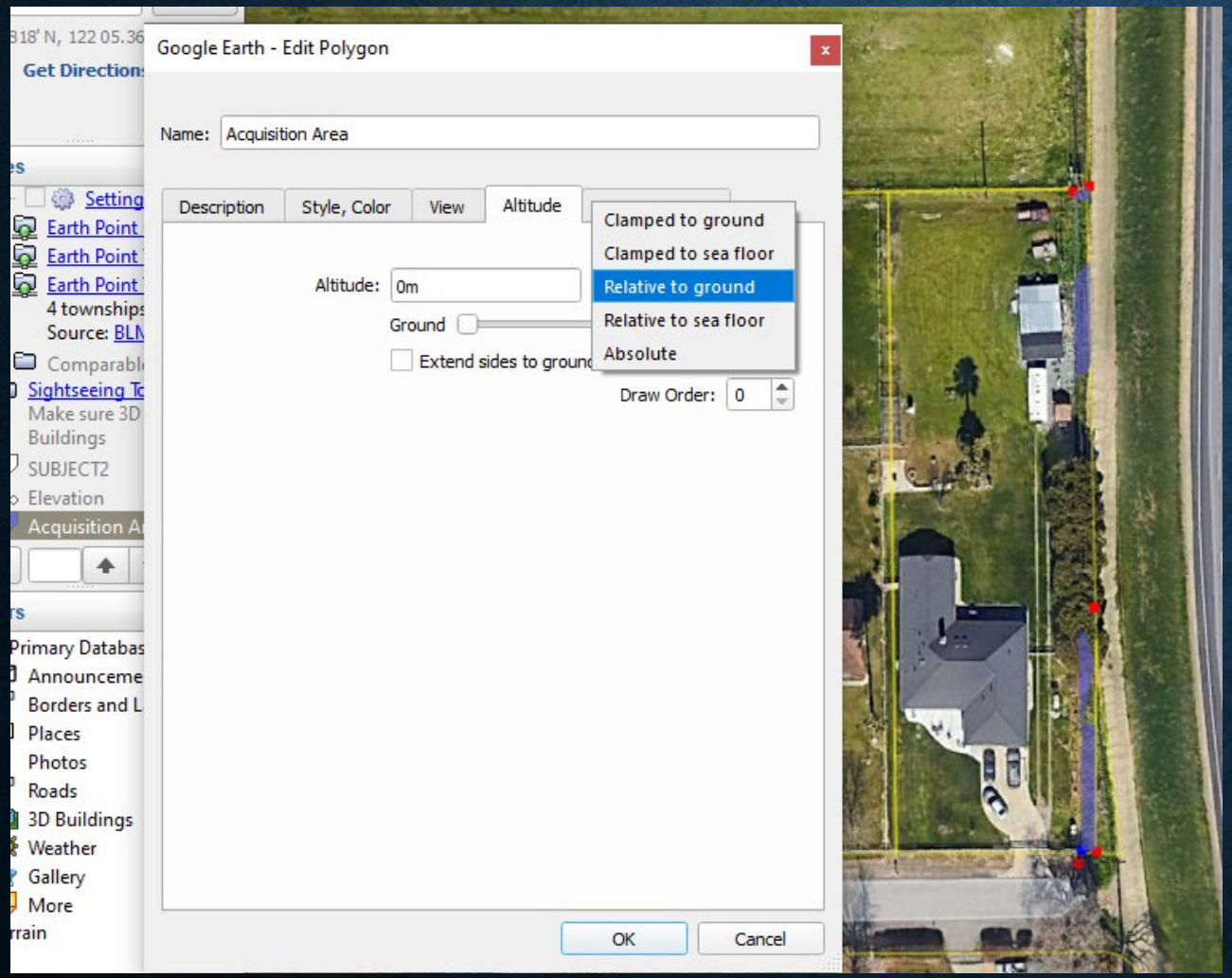
What else did you guys see in that 10 foot area?

USE OF THE POLYGON TOOL AND MEASURING TOOL TOGETHER



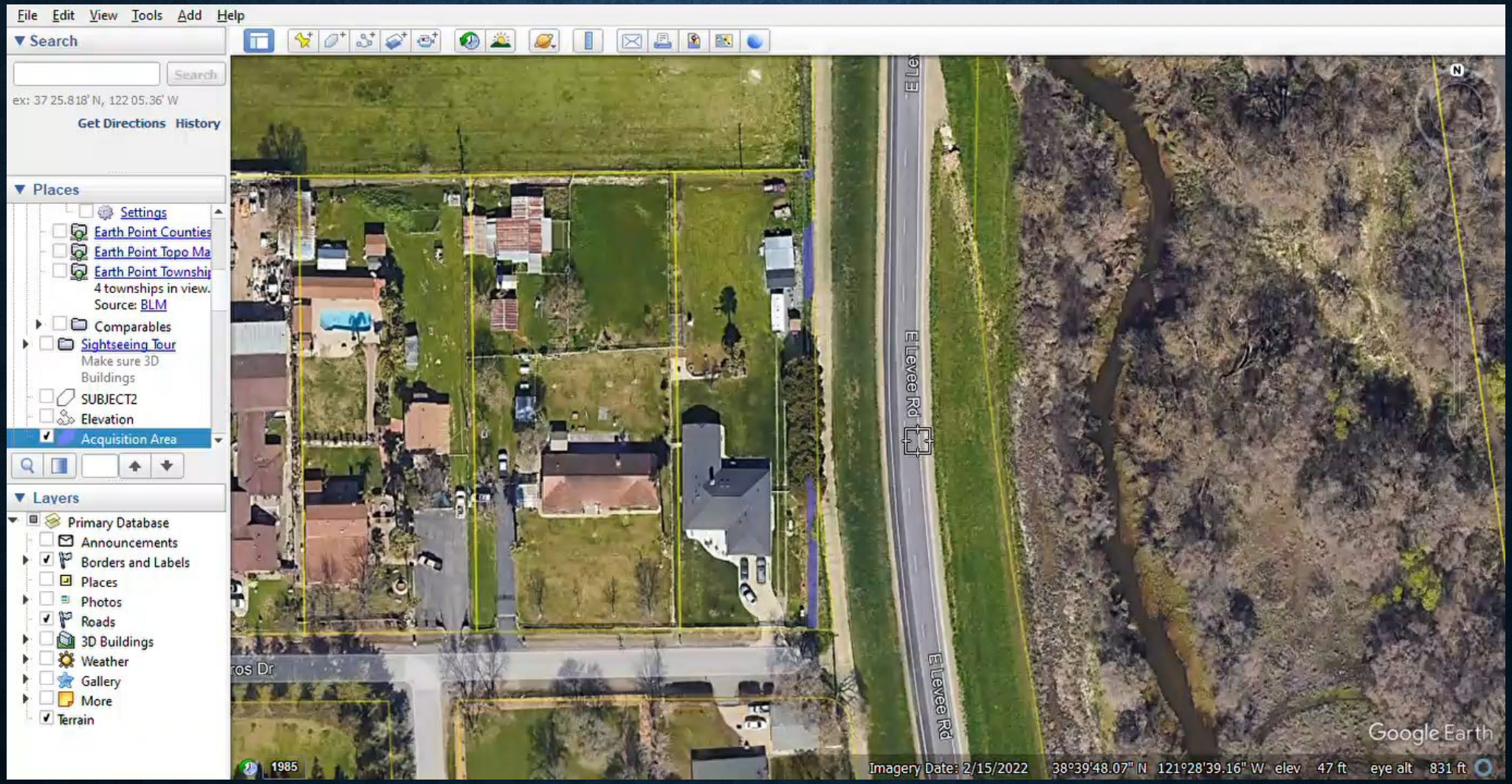
- Once measuring the 10 foot boundary of acquisition area, you can make that into a polygon. Adjust color/style as you see fit.

USE OF THE POLYGON TOOL AND MEASURING TOOL TOGETHER

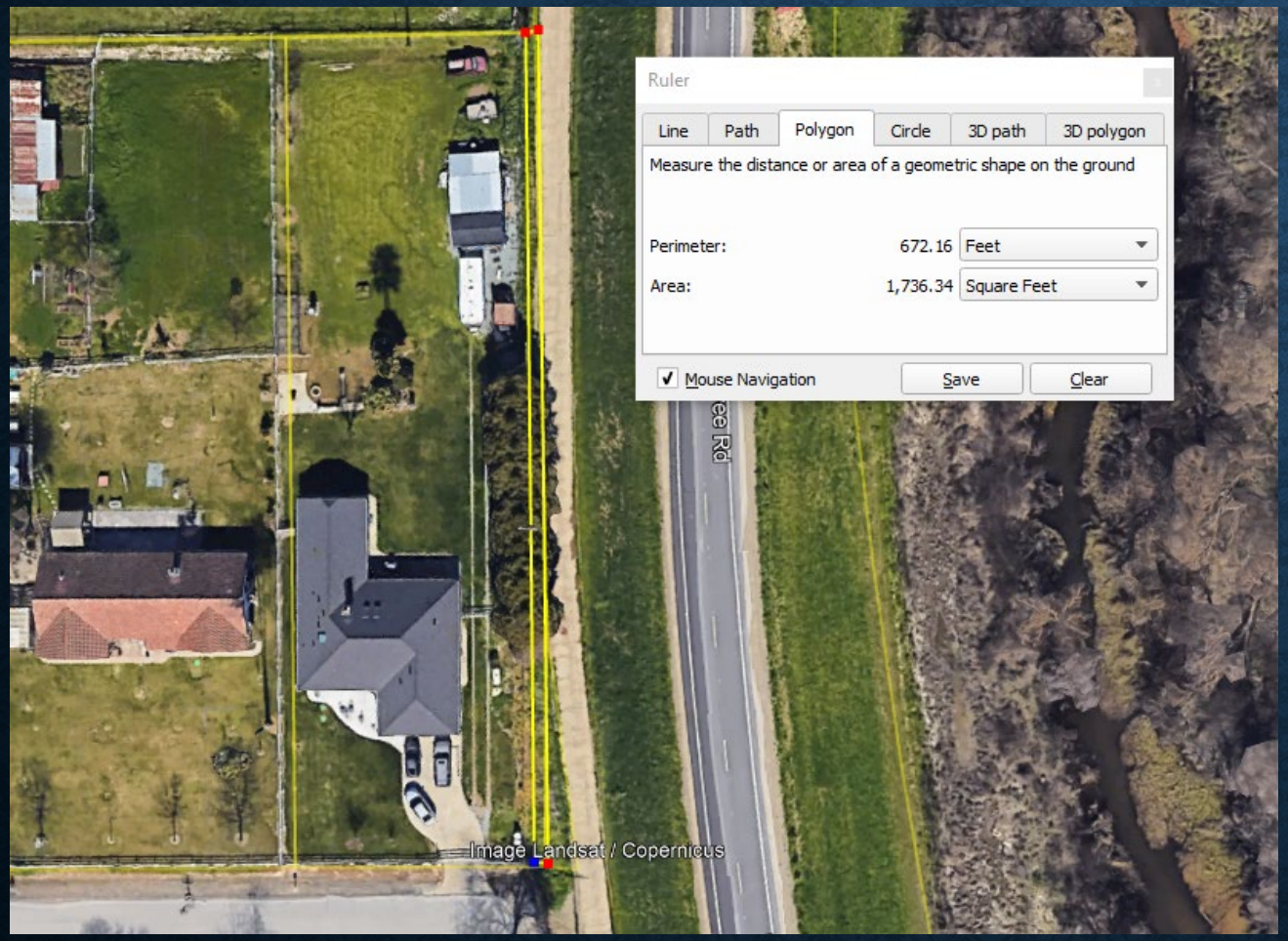


Adjust altitude to be relative to ground

NOW PUT IT ALL TOGETHER



ANSWER



- Vegetation
- Trees (root system)
- A perimeter fence
- Possibly the edge of the concrete paving

MORE WAYS TO USE THE MEASURE TOOL

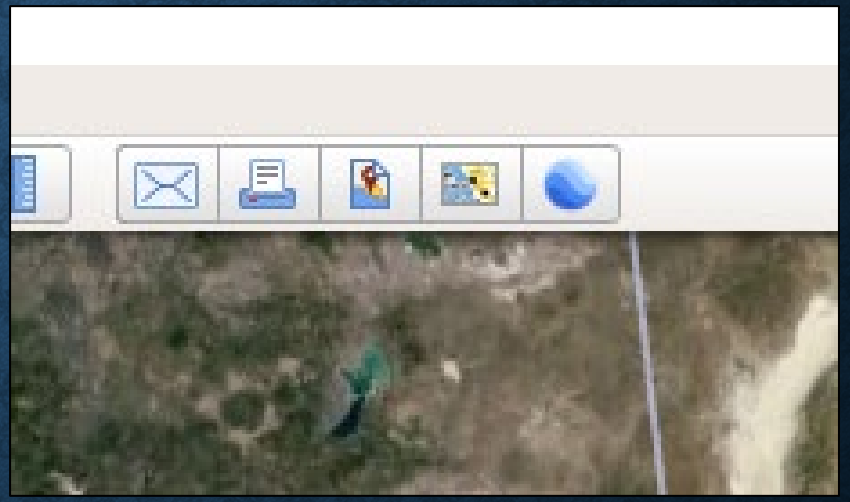
- Measure turn row spacing
- Measure tree spacing
- Measure out-buildings
- Measure how far an improvement will be from the acquisition area (possibly if there is a roadway expansion- the front door of an SFR will now be within 15 feet from the roadway).

GROUP QUESTION

How have you used the measure tool in your appraisals?

FINAL TOOLS ALONG THE UPPER TOOLBOX

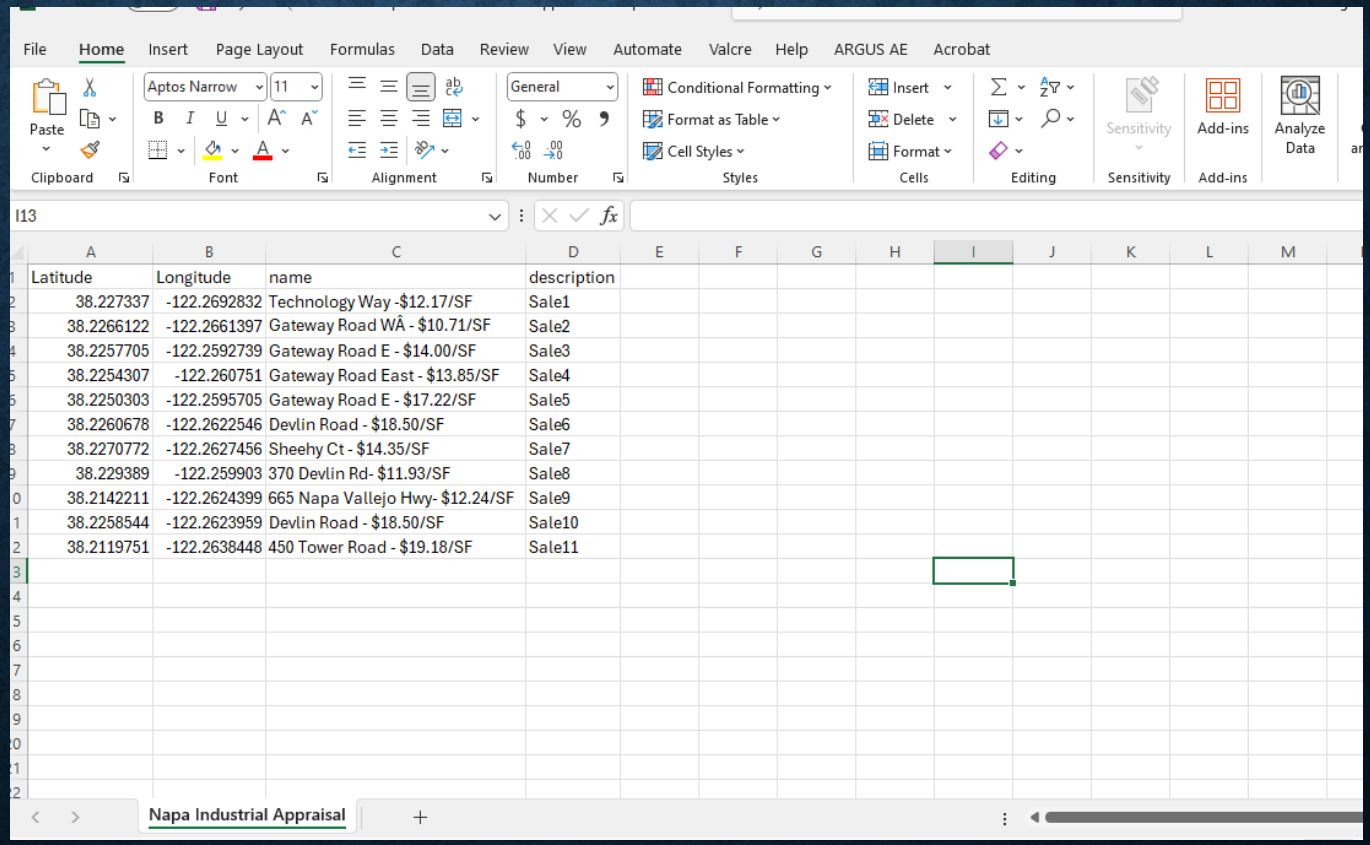
- Email
- Print
- Save Image
- View in Google Maps
- View in Google Earth (Web)



EXPERT GOOGLE EARTH TOPICS

IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH

- First, prep your sales in a spreadsheet and make sure that you have Lat and Long shown for the sales



File Home Insert Page Layout Formulas Data Review View Automate Valcre Help ARGUS AE Acrobat

Paste Clipboard Aptos Narrow 11 Font Alignment General Number Conditional Formatting Format as Table Cell Styles Styles Insert Delete Format Cells Editing Sensitivity Add-ins Analyze Data

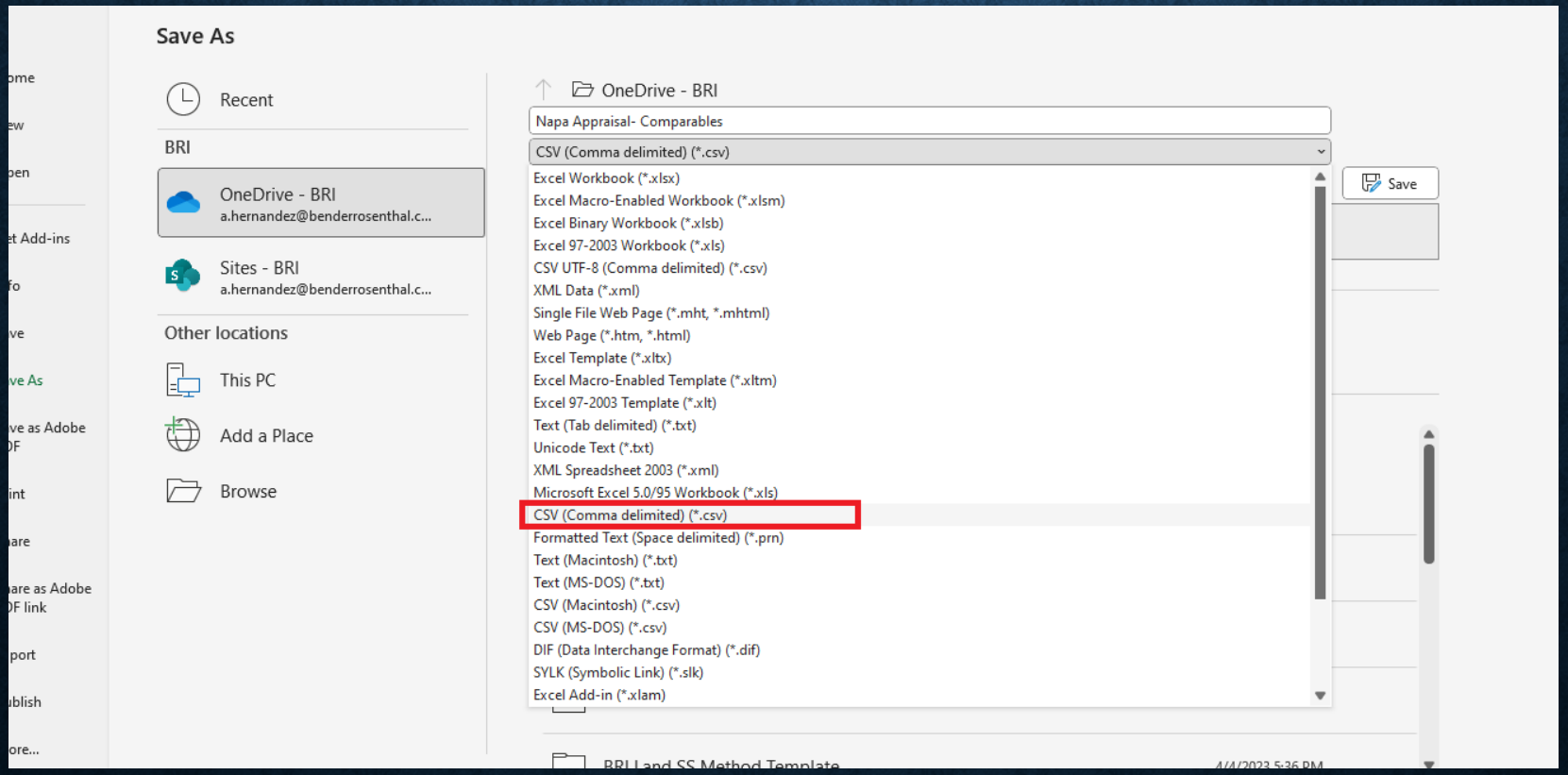
I13

	A	B	C	D
1	Latitude	Longitude	name	description
2	38.227337	-122.2692832	Technology Way -$12.17/SF	Sale1
3	38.2266122	-122.2661397	Gateway Road WÂ - $10.71/SF	Sale2
4	38.2257705	-122.2592739	Gateway Road E - $14.00/SF	Sale3
5	38.2254307	-122.260751	Gateway Road East - $13.85/SF	Sale4
6	38.2250303	-122.2595705	Gateway Road E - $17.22/SF	Sale5
7	38.2260678	-122.2622546	Devlin Road - $18.50/SF	Sale6
8	38.2270772	-122.2627456	Sheehy Ct - $14.35/SF	Sale7
9	38.229389	-122.259903	370 Devlin Rd- $11.93/SF	Sale8
10	38.2142211	-122.2624399	665 Napa Vallejo Hwy- $12.24/SF	Sale9
11	38.2258544	-122.2623959	Devlin Road - $18.50/SF	Sale10
12	38.2119751	-122.2638448	450 Tower Road - $19.18/SF	Sale11

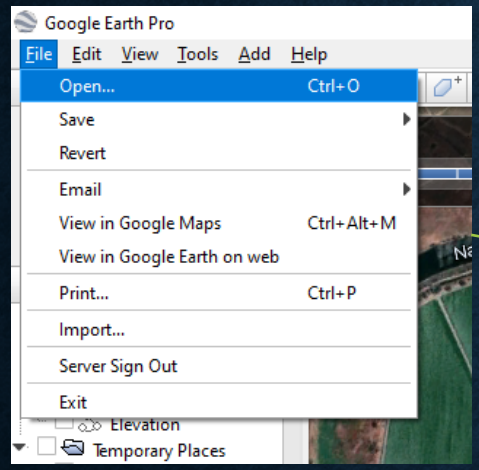
Napa Industrial Appraisal

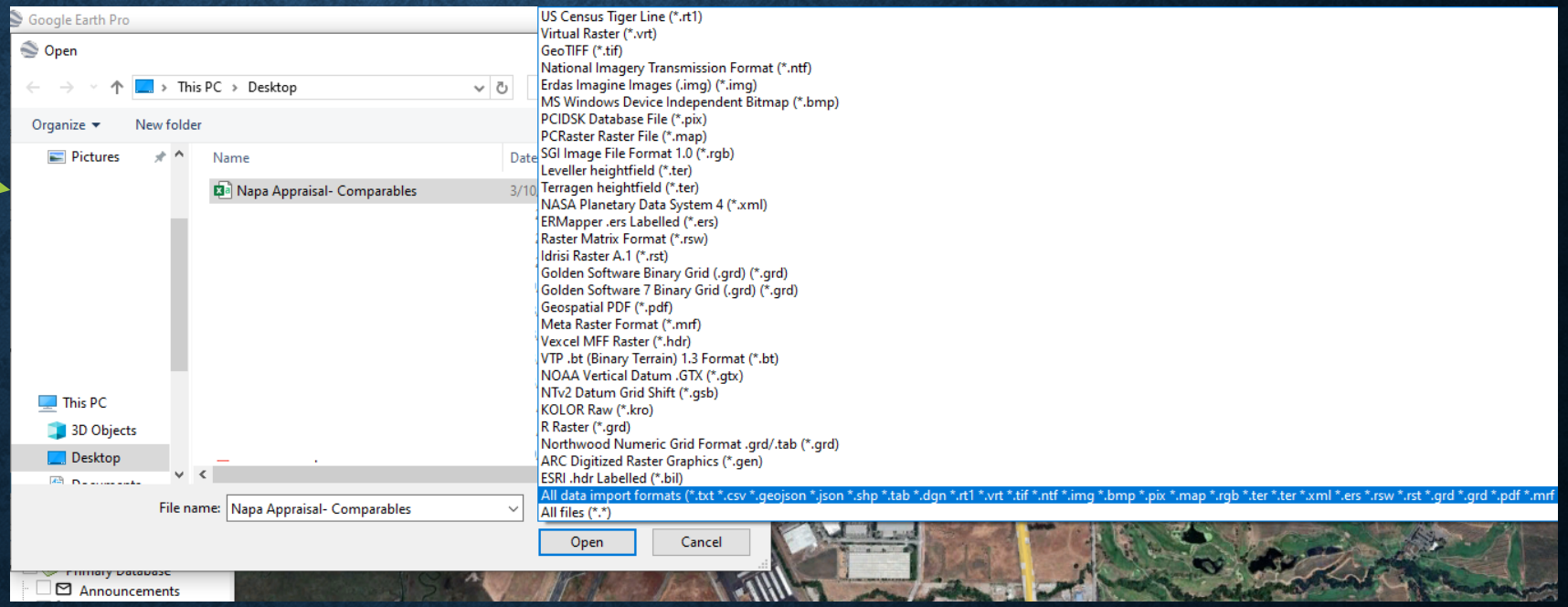
IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH

- Next, save the excel as a .CSV (this is very important!)



IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH

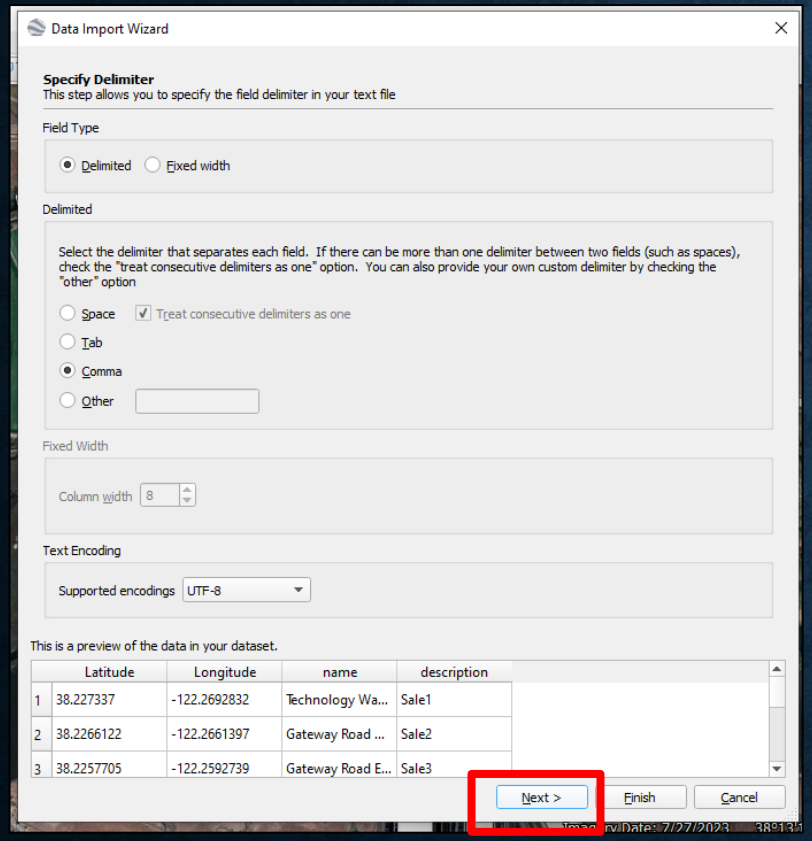




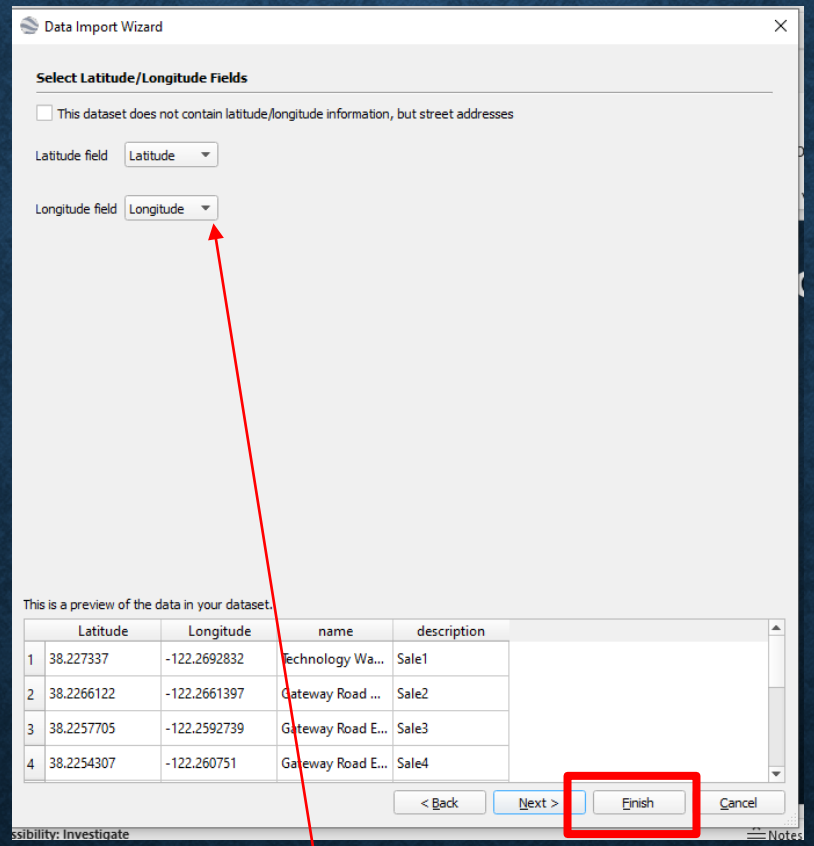
All data import format

If you don’t see your CSV in the location that you saved it, this is likely what is wrong

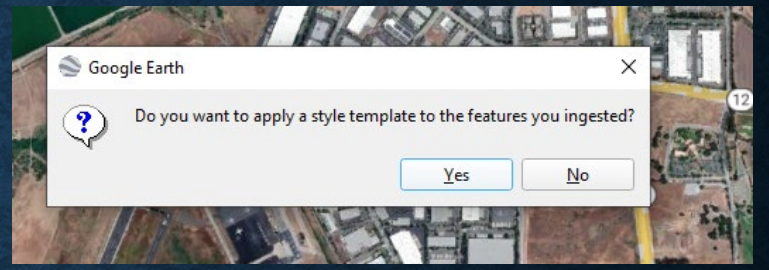
IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH



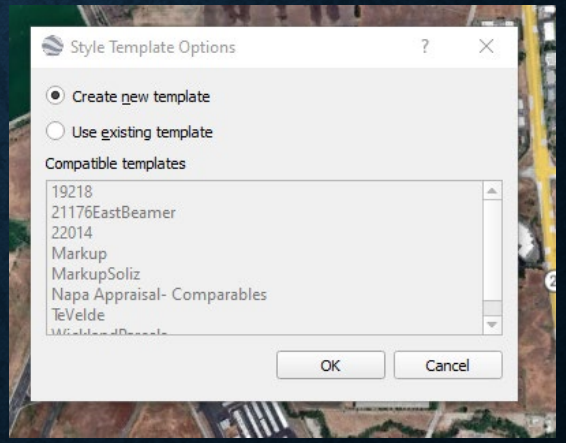
Once CSV is loaded, data import wizard will open



Select the column names where you have placed your Lat and Long

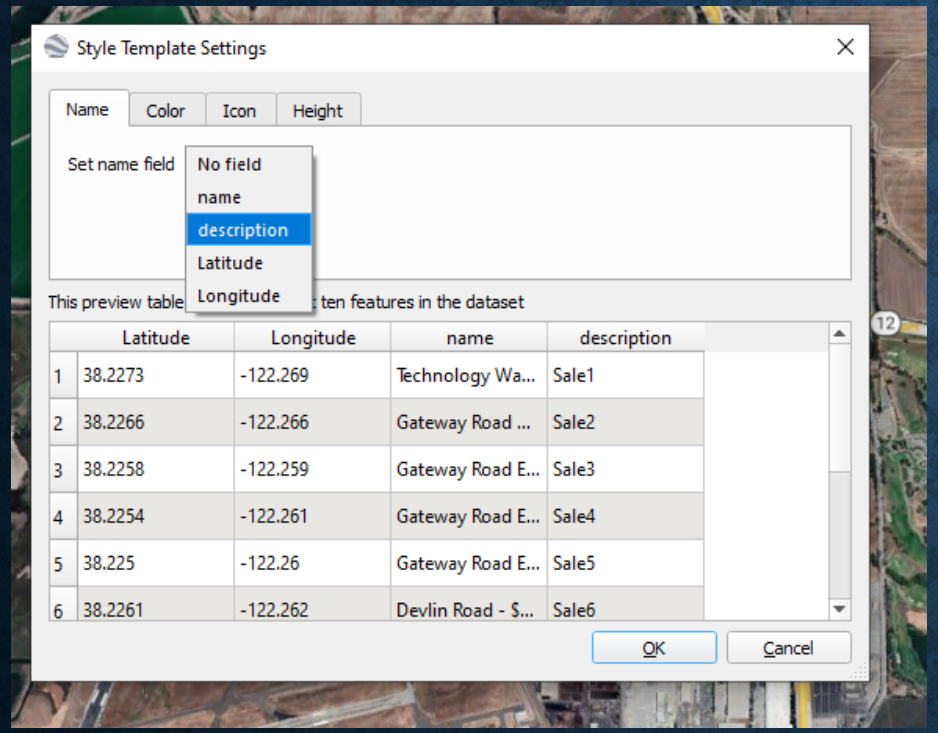


You will be asked if you want to apply a style, click yes.

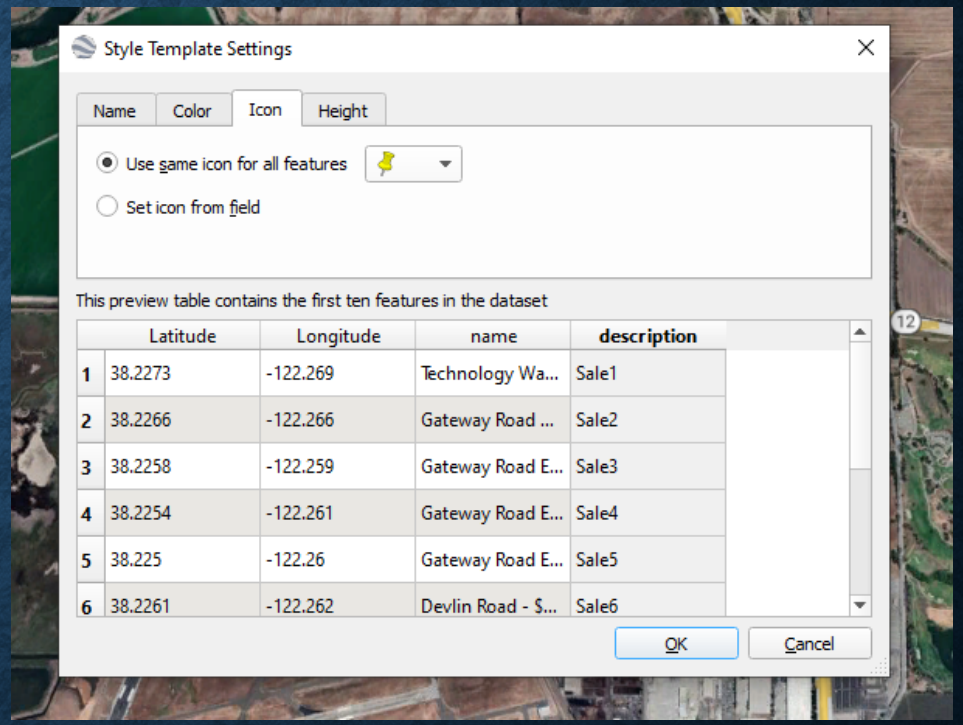


Style template options, click "Create New Template" and OK

IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH



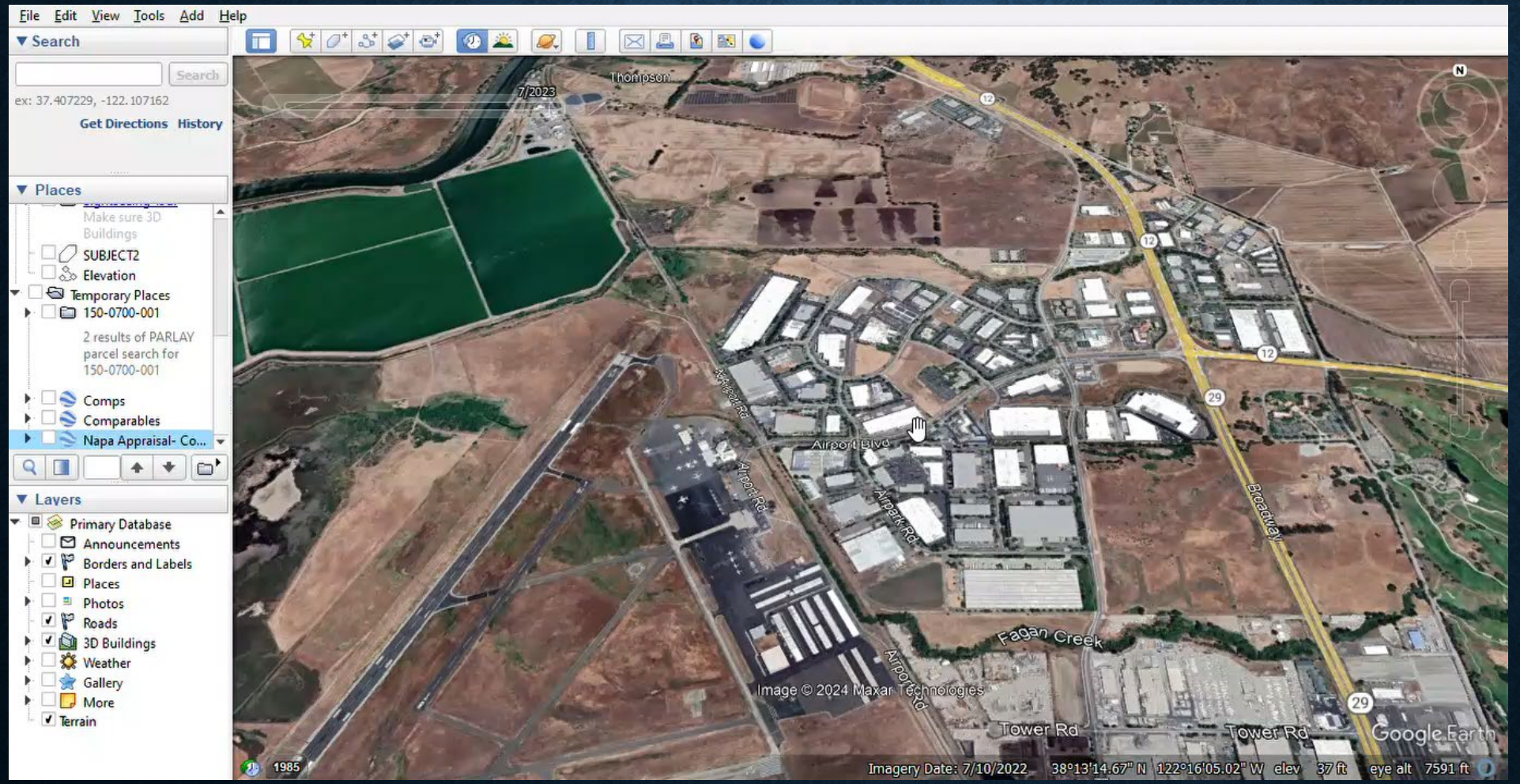
I like the field name to be the "description"



Select your Icon Type, make your choice, then press OK

A separate screen will pop out requesting you to save this new "style template"- press Save

IMPORTING DATA FROM AN EXCEL TO GOOGLE EARTH



Finaly, turn on the layer and observe your great mapping skills!

EXPERT LAYERS AVAILABLE

a. Topography Map Imports
    a. https://www.earthpoint.us/topomap.aspx
b. County Lines
    a. https://www.earthpoint.us/Counties.aspx
c. Township/Range/Section
    a. https://www.earthpoint.us/TownshipsCalifornia.aspx
d. FEMA Flood Map Import
    a. https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload
e. Alquist-Priolo Earthquake Fault Zoning Act (1972) and the Seismic Hazards Mapping Act (1990) direct the State Geologist to delineate regulatory "Zones of Required Investigation"
    a. Download from https://data.ca.gov/dataset/cgs-information-warehouse-regulatory-maps/resource/97c4359d-f436-4c54-944f-a75e83f0f13e
f. WellSTAR: Oil and Gas Wells
    a. https://data.ca.gov/organization/california-department-of-conservation?page=1
g. CA Rail Network (maybe you're working on some Rails to Trails assignments)
    a. https://data.ca.gov/dataset/california-rail-network/resource/84796902-b134-4aa6-9785-f1866ab3533d
h. Zoning Maps (If it is an ARCGIS system, it can be Exported as KML)
    a. Also allows for parcel lines to be imported for some counties (without Parlay
i. Water Districts Maps (Thanks Matt Atwood!)
    a. https://gis.data.ca.gov/datasets/45d26a15b96346f1816d8fe187f8570d_0/about
j. Soils Maps (Thanks Matt Atwood!)
    a. https://casoilresource.lawr.ucdavis.edu/soil_web/kml/SoilWeb.kmz

KEYBOARD SHORTCUTS

Action	Shortcut (Windows & Linux)	Shortcut (Mac)
Move left	**Left arrow**	**Left arrow**
Move right	**Right arrow**	**Right arrow**
Move up	**Up arrow**	**Up arrow**
Move down	**Down arrow**	**Down arrow**
Rotate clockwise	**Shift** + **Left arrow**	**Shift** + **Left arrow**
Rotate counter-clockwise	**Shift** + **Right arrow**	**Shift** + **Right arrow**
Tilt up	**Shift** then click and drag down	**Shift** + **Down arrow**
Tilt down	**Shift** + **Up arrow** **Shift** then click and drag up	**Shift** + **Up arrow**
See first-person perspective	**Ctrl** then click and drag	⌘ then click and drag
Zoom in	+	+
Zoom out	-	-
Zoom plus automatic tilt	Right-click and drag up or down	**Ctrl** then click and drag up or down
Stop current motion	**Spacebar**	**Spacebar**
Reset to north-up view	**n**	**n**
Reset to top-down tilt	**u**	**u**
Center Earth	**r**	**r**
Show/hide Overview window	**Ctrl** + **m**	⌥⇧⌘ + **m**

COMPLEXITIES WITH LAYERS

- Flowage Easement Assignment and Use Possibilities
  - The flowage easement was going to be on any portion of the site that was below 200 feet elevation
    - Layers used:
      1) FEMA Layer
      2) Topo Layer
      3) Path showing parcel elevations
      4) Parcel Layer
      5) Polygon Layer for size
         1) Mapping of Comps (and showing this information on each sale as well)

GROUP QUESTION

How many layers have you used before (and in what type of an assignment)?

THANK YOU FOR YOUR TIME!

Any questions you might have, feel free to ask!

Now- go have fun with Google Earth!

Ángela Hernández, MAI, AI-GRS, R/W-AC
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