GEOG 93 GIS PROJECT

SIERRA COLLEGE

PROFESSOR JENNINGS

MAY 23, 2019

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INTRODUCTION OF THE ISSUE

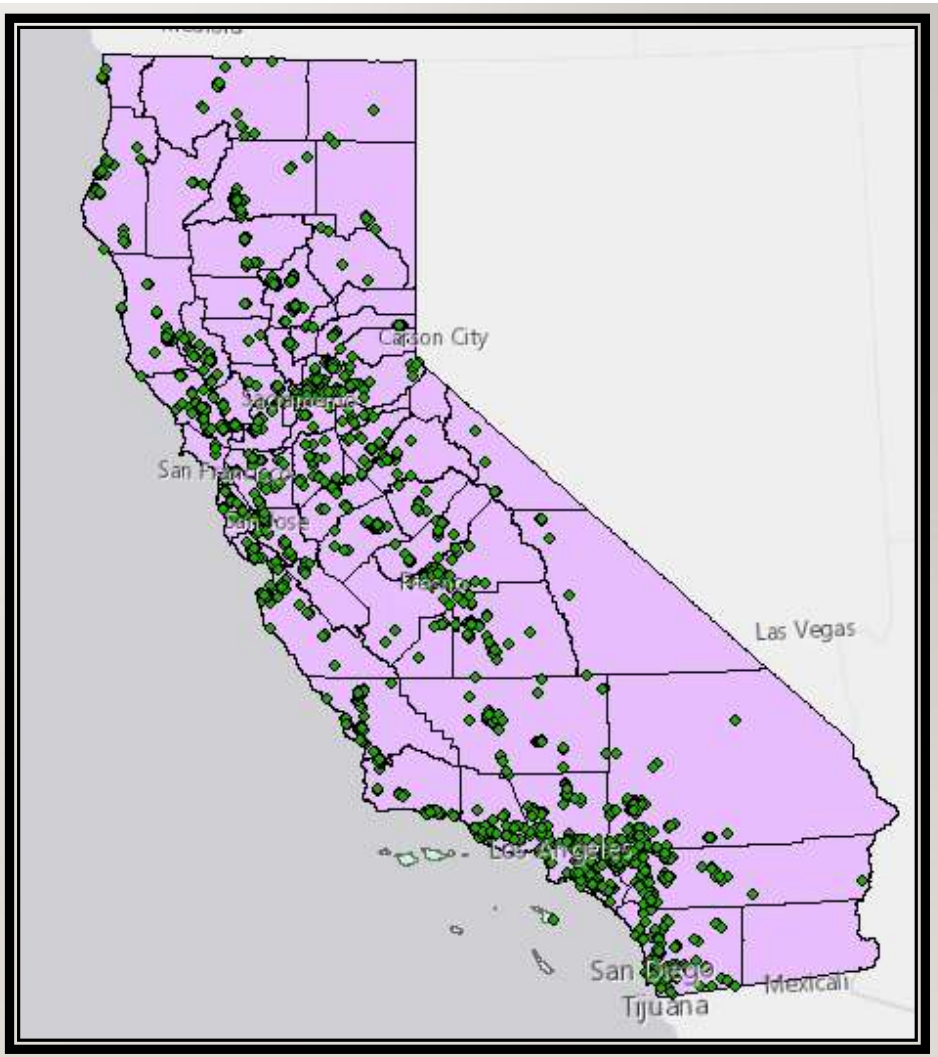
- CAL FIRE has never been able to fully manage financial data electronically and statewide until now.
- FI$CAL, the State's new financial system now makes it possible to generate statewide financial data and draw it down in various formats. This enhances spatial analysis of the same information.
- Opportunity exists now to leverage financial information for far more use than just accounting and financial reporting purposes and paying bills.

GOAL: CONVERT EXISTING FINANCIAL DATA TO MAKE IT FAR MORE USABLE FOR RESPONSE OPERATIONS

- Requires visualizing how data can be used beyond primary purpose.
- Example: strike teams regularly move across the state and need to feed, house and procure from vendors.
  - Bringing on a new vendor enroute creates significant paperwork that now has to be collected in the field and input into the state financial system.
  - Generates hours of work to set up a new vendor supplier, which is on top of the strike team leader's work to feed, house and manage the team enroute.
  - By providing a platform they can reference via mobile devices, the strike team leader can spend less time on paper and more time on operations.

EXAMPLE: APPROVED RESTAURANT VENDOR DATA

- Captured by tax reporting information required by every vendor doing business with the state from FI$CAL.
- Unfortunately, the data is not perfect. Scrubbing is essential:
  - Protect sensitive information.
  - Capture the right vendor type.
  - Filter out non-mappable data.
  - Geocode it.



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BUSINESS NAME *(As shown on your income tax return)*

SOLE PROPRIETOR, SINGLE MEMBER LLC, INDIVIDUAL *(Name as shown on SSN or ITIN) Last, First, MI*

E-MAIL ADDRESS

MAILING ADDRESS

CITY | **STATE** | **ZIP CODE**

BUSINESS ADDRESS

CITY | **STATE** | **ZIP CODE**

3

PAYEE ENTITY TYPE

CHECK ONE BOX ONLY

ENTER FEDERAL EMPLOYER IDENTIFICATION NUMBER (FEIN): ☐☐ - ☐☐☐☐☐☐☐

☐ **PARTNERSHIP**

☐ **ESTATE OR TRUST**

CORPORATION:

- ◯ **MEDICAL** *(e.g., dentistry, psychotherapy, chiropractic, etc.)*
- ◯ **LEGAL** *(e.g., attorney services)*
- ◯ **EXEMPT** *(nonprofit)*
- ◯ **ALL OTHERS**

ENTER SSN OR ITIN: ☐☐☐ - ☐☐ - ☐☐☐☐

☐ **SOLE PROPRIETOR, INDIVIDUAL, OR SINGLE MEMBER LLC** *(Disregarded Entity)*

Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN) are required by authority of California Revenue and Tax Code sections 18646 and 18661)

NOTE: Payment will not be processed without an accompanying taxpayer identification number.

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PAYEE RESIDENCY STATUS

☐ **CALIFORNIA RESIDENT** - Qualified to do business in California or maintains a permanent place of business in California.

☐ **CALIFORNIA NON RESIDENT** *(see next page for more information)* - Payments to nonresidents for services may be subject to state income tax withholding.

- ◯ No services performed in California.
- ◯ Copy of Franchise Tax Board waiver of state withholding attached.

DATA SCRUBBING – LOTS OF MANUAL WORK

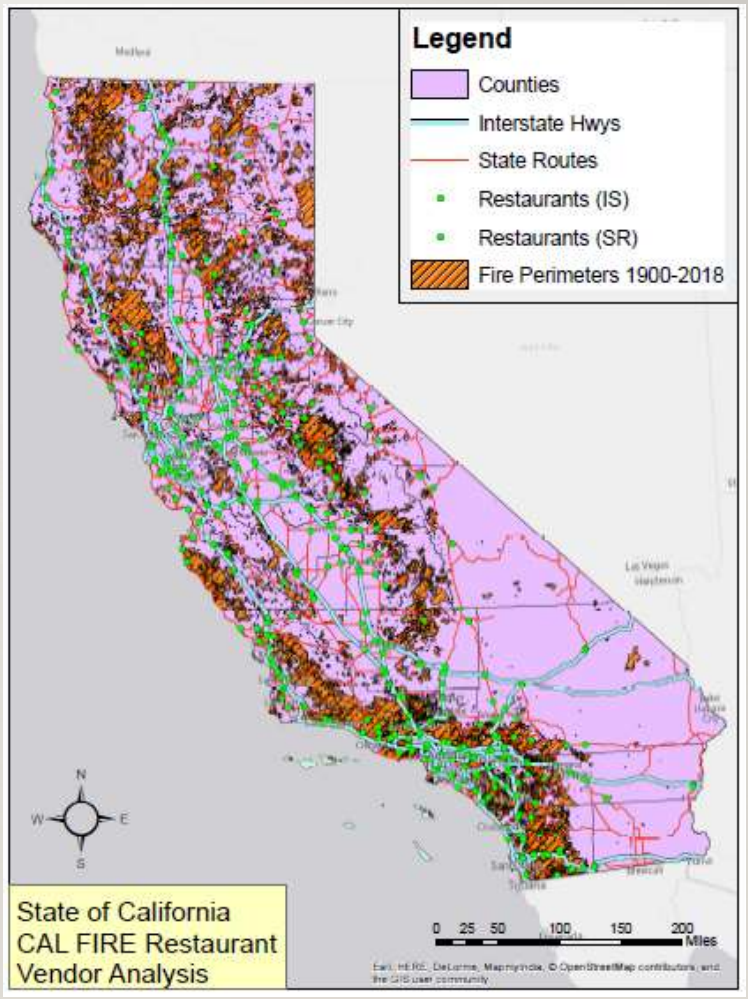
- Three to four weeks of work manually filtering 33,000 records of vendor data to get viable records for conversion just for one vendor type. Final count for restaurants: 695 records.
- Every record must have a regular, physical street address.
- Additional manual filtering by vendor type needed.
- Need geocoding tools in place to complete a GIS-ready conversion.

33037	ZUNIGA	14405 TYLER RD	VALLEY CENTER	CA
33038	ZWEIGLE SEPTIC	5272 SO FRANKWOOD	REEDLEY	CA
33039	ZX AG SOLUTIONS	1275 RD 272	DUCOR	CA
33040	ZX SUPPLY LINE	PO BOX 193	DUCOR	CA

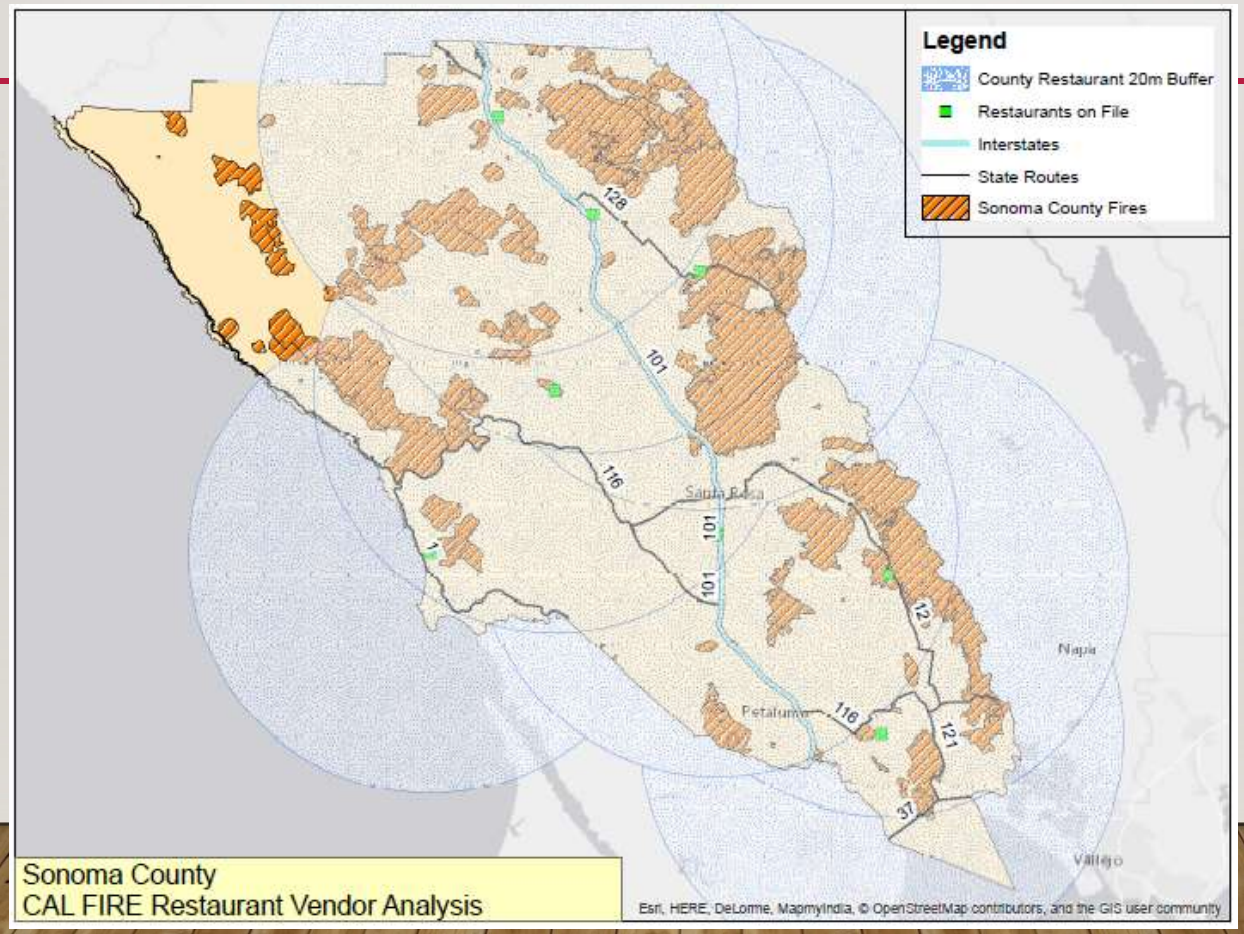
692	0000063363	BURRITO BANDITO	528 ADOBE RD RED BLUFF	REDDING	CA
693	0000063518	BUSTER'S BEACH HOUSE	807 W HARBOR DR	SAN DIEGO	CA
694	0000283069	BUSTER'S SOUTHERN BARBECUE	1207 FOOTHILL BLVD	CALISTOGA	CA
695	0000046301	BW KETTLEMAN CITY INN & SUITES	33410 POWERS DR	KETTLEMANCITY	CA

RESULTS: STATEWIDE DATA CREATES LEVERAGE OPPORTUNITIES

- See Map B PDF Example of combined data.

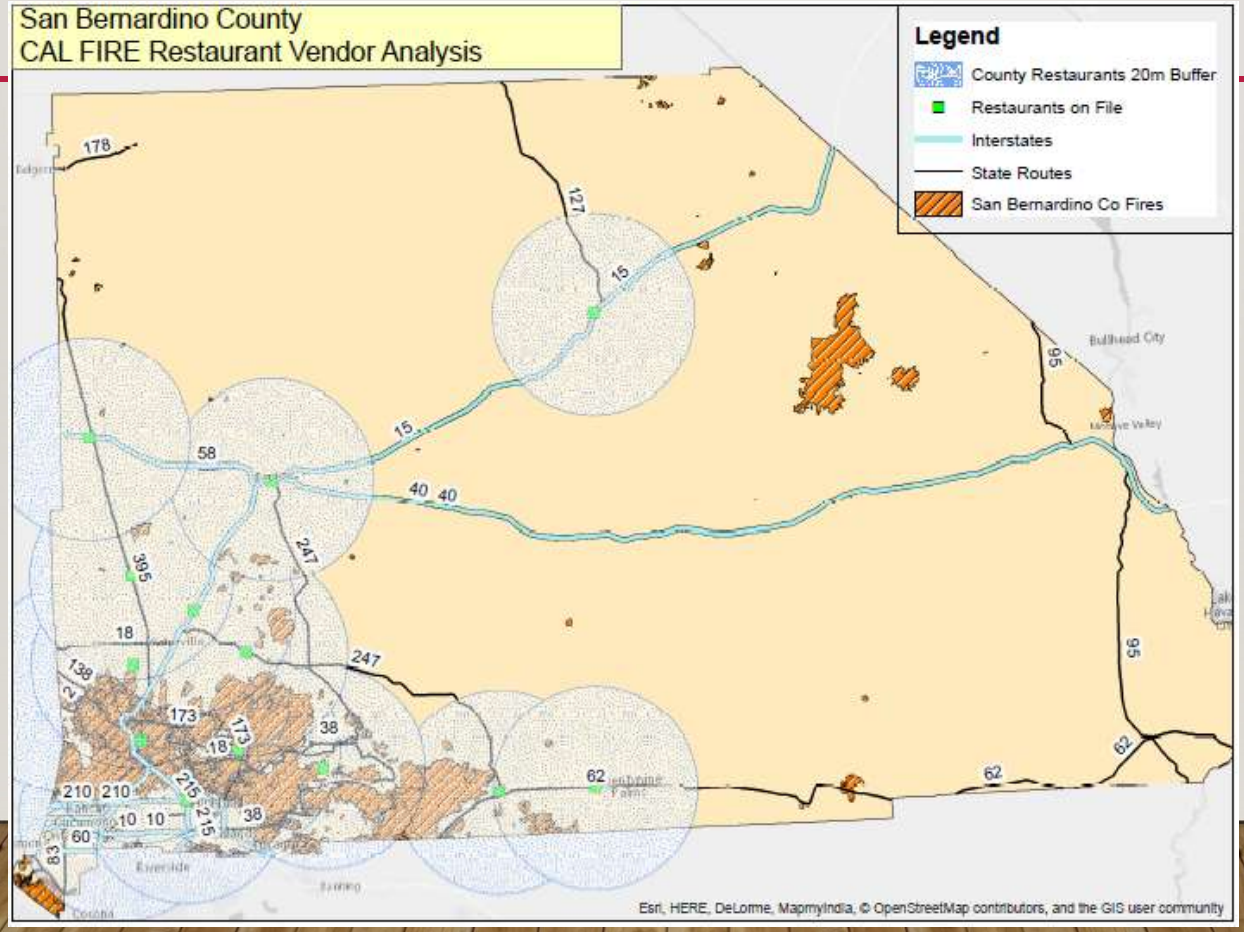


EXAMPLE: SONOMA COUNTY



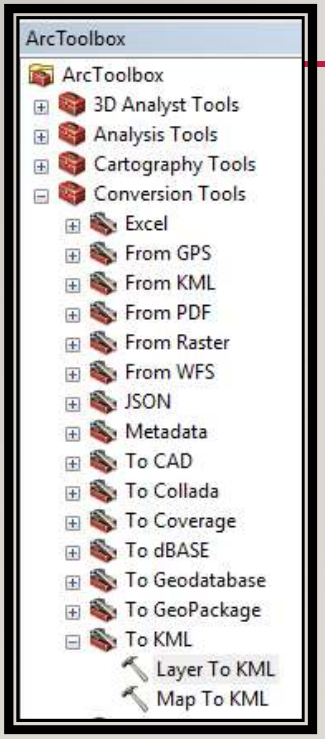
Map C county example of absence analysis.

EXAMPLE: SAN BERNARDINO COUNTY

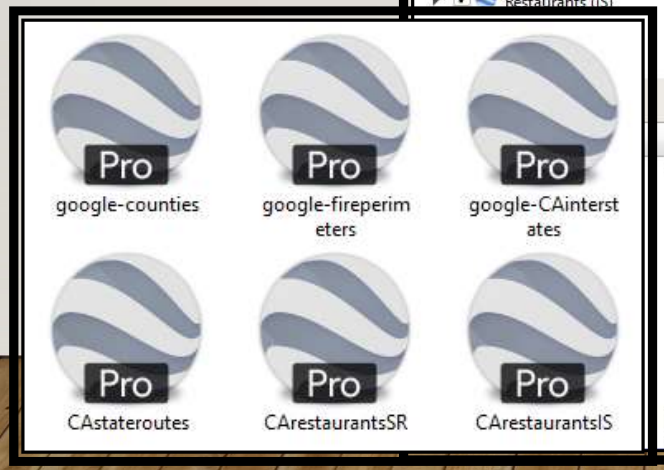


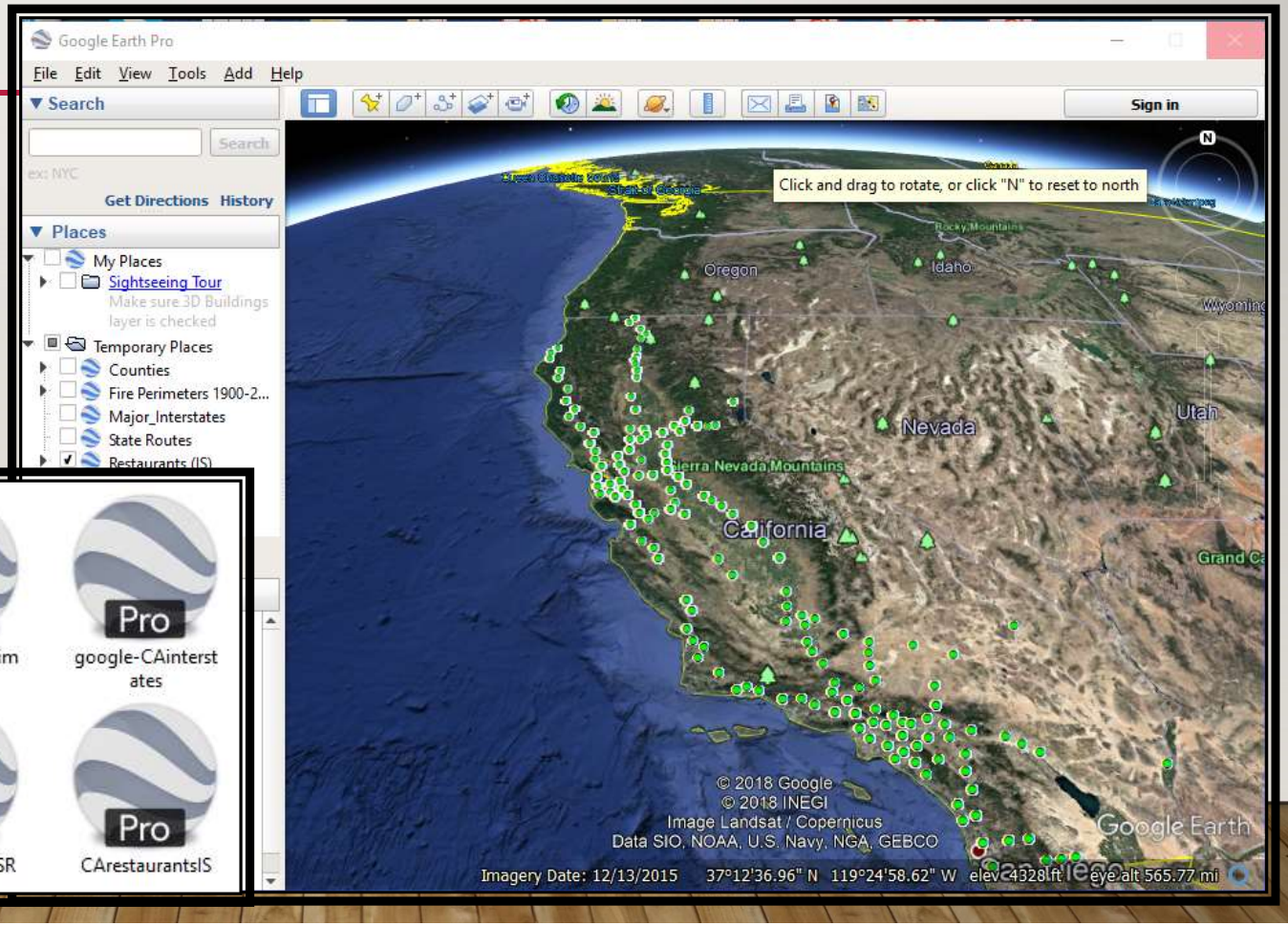
Map D county example of absence analysis.

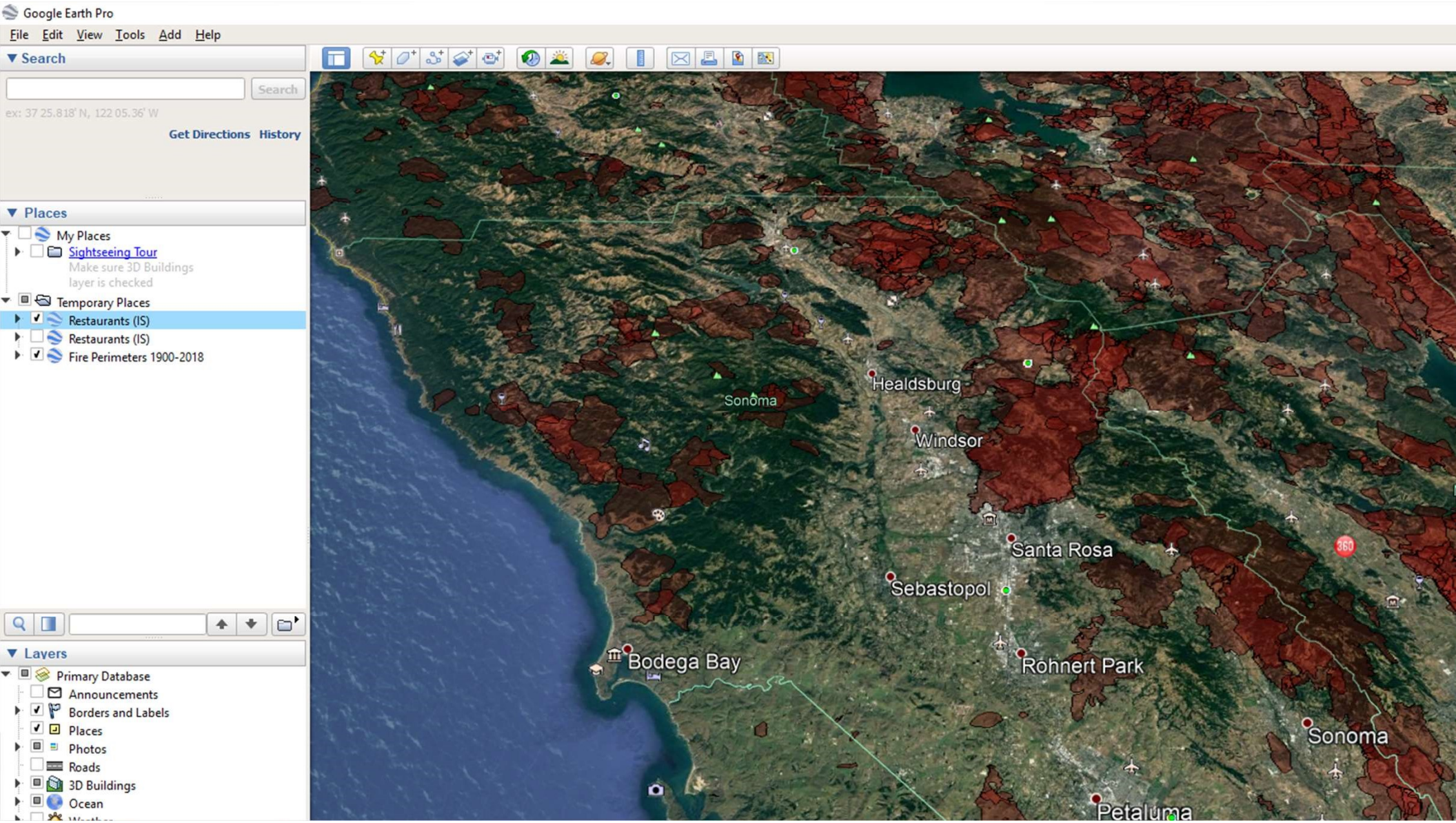
MOBILE STEP: CONVERT TO GOOGLE EARTH FOR EASY IN-FIELD ACCESS ON THE ROAD



Conversion to .KML files in ArcMap software.






Google Earth Pro
File Edit View Tools Add Help
Search
Search
ex: 37 25.818' N, 122 05.36' W
Get Directions History
Places
My Places
Sightseeing Tour
Make sure 3D Buildings layer is checked
Temporary Places
Restaurants (IS)
Restaurants (IS)
Fire Perimeters 1900-2018
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Sonoma
Healdsburg
Windsor
Santa Rosa
Sebastopol
Bodega Bay
Rohnert Park
Sonoma
Petaluma
360

GEOPROCESSING TOOLS USED

- Geocoding target finance records.
- Clip tool for constraining data to geographic parameters.
- Intersect tool for combining vendor records to specific traffic/transportation routes.
- Conversion of data layers to .KML format and processing in Google Earth.
- Google Earth mobile access distribution to users.

ORGANIZATIONAL LIMITATIONS NOTED

- Need access to geocoding tools to process large amounts of data regularly.
- Need dedicated staff time to scrub the data to prepare it for GIS usage.
- Need faster computers and processing tools to crunch the Google-related data.
- Need software training to understand how to use the various tools adequately on a regular basis.
- Need to regularly update the data as vendor information from FI$CAL is statewide to all departments and sees frequent updating. So information for end product can go stale quickly.

REFERENCES

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- Staff, "Fire Perimeters Version 18_1," CAL FIRE, State of California, 2012. Website accessed May 2, 2019: http://frap.fire.ca.gov/data/frapgisdata-sw-fireperimeters_download
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- Staff, "TIGER/Line Shapefile, 2016, nation, U.S., Primary Roads National Shapefile," Data.gov, . Website accessed May 20, 2019: https://catalog.data.gov/dataset?metadata_type=geospatial&_metadata_type_limit=0&q=%22Interstate%20Highways%22
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