GIS Community of Practice Monthly Forum Last Wednesday of the month

Wednesday, February 26th, 2025 1:30 – 2:30 PM



GIS Community of Practice (CoP)

- Welcome to the GIS CoP forum.
- For the best experience, please use your computer to join the meeting.
- Mute your audio.
- Turn off your video unless you're presenting or in active discussion.
- Use the raise hand button or the meeting chat for comments and questions.
- We will begin shortly.

GIS CoP Agenda

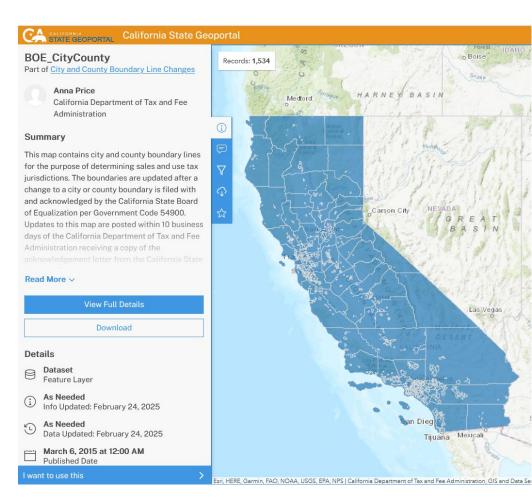
Welcome



- Lothar Petrik, CDT GIO
- o Data Retention Effort
- Main Topics
 - Anna Price (<u>anna.price@cdtfa.ca.gov</u>, CDTFA) & Nick Santos (<u>nick.santos@state.ca.gov</u>, CDT GIS)
 "City and County Boundary Services – and related services"
 - Lothar Petrik (<u>lothar.petrik@state.ca.gov</u>), CDT GIO, GIS
 "Hexagon: Flight Lines and Updates"
 - Carmen Gonsalves (<u>carmen.gonsalves@state.ca.gov</u>, CDT GIS) & Nick Santos
 "Document Links: What are they? Why are they useful?"
 - Updates: Parcel Data Updates, Open Source GIS, Legislative Layers in Geoportal

Announcements

Admin boundaries – How are they created?



	STATE GEOPORTAL	Organizations	Featured Apps	Local G
	C city boundaries			
	All (3223)		Data (2733)	
۳	Filters	Reset	1-12 of 38	

CALIFORNIA California State Geoportal

California City Boundaries and Identifiers

California Department of Technology GIS

California Department of Technology

Summary

PRE-RELEASE: City boundaries along with third party identifiers used to join in external data. Boundaries are from the the California Department of Tax and Fee Administration (CDTFA), which receives updates from Local Agency Formation Commissions and other local authorities. Identifiers are joined in from the US Census Bureau and US Board on Geographic

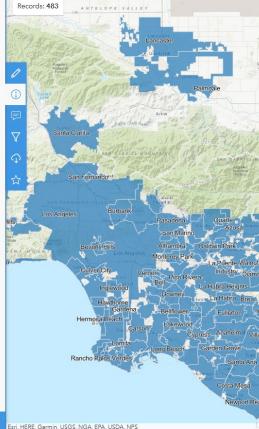
Read More ~

8

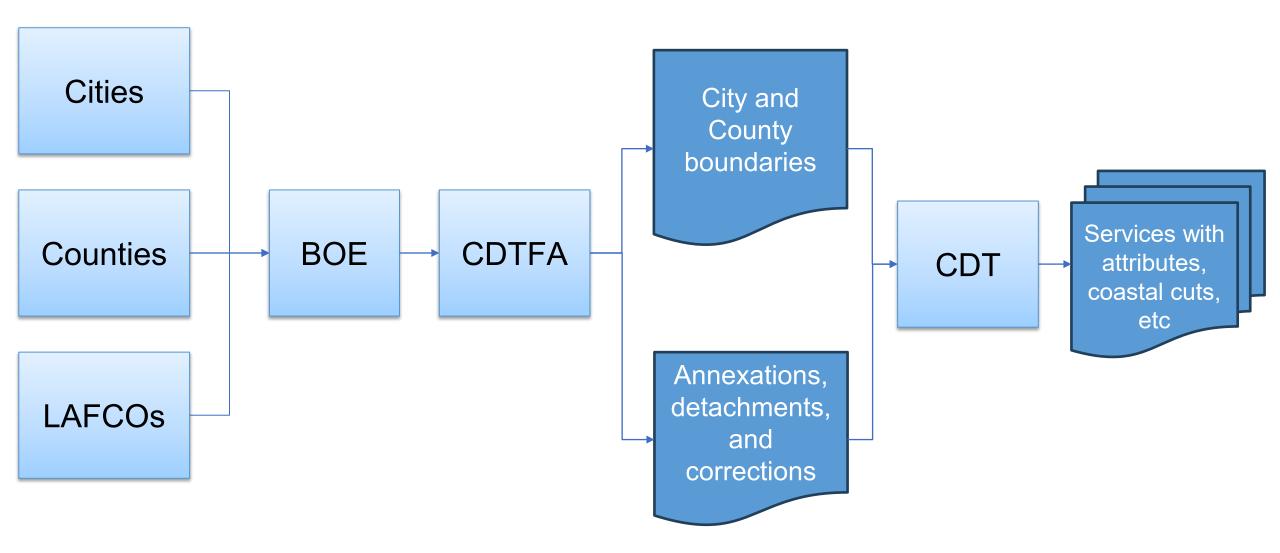
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Download Details Dataset Feature Layer February 25, 2025 Info Updated February 25, 2025 Data Updated September 16, 2024 Published Date



General data flow for administrative boundaries



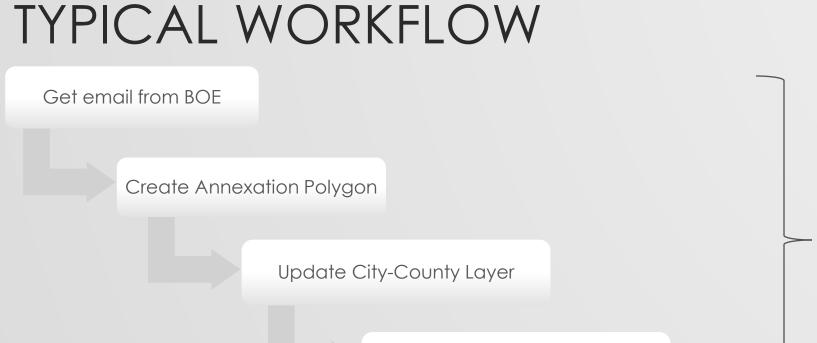
Presented by Anna Marie C. Price California Department of Tax and Fee Administration

BOE_CITYCOUNTY

City and County Boundary Lines maintained by CDTFA

OVERVIEW

- Typical workflow
- Original data (published October 2021)
- Current Modifications



Publish to AGOL

Within 10 business days.

EMAIL FROM BOE

CITY ANNEXATIONS				
Schwarting, Ricard	3	← Reply	🥌 Reply All	\rightarrow Forward \cdots
To OSchwarting, Ricard				Fri 2/14/2025 10:14 AM
Cc 💿 Price, Anna Marie; 🕓 Carter, Jennifer				
№ 10-2026-001-CITY.pdf ✓ 04-2026-001 CITY.pdf № 1 MB ✓ 2 MB	~			

Please find attached City Boundary Changes filed with Tax Area Services Section:

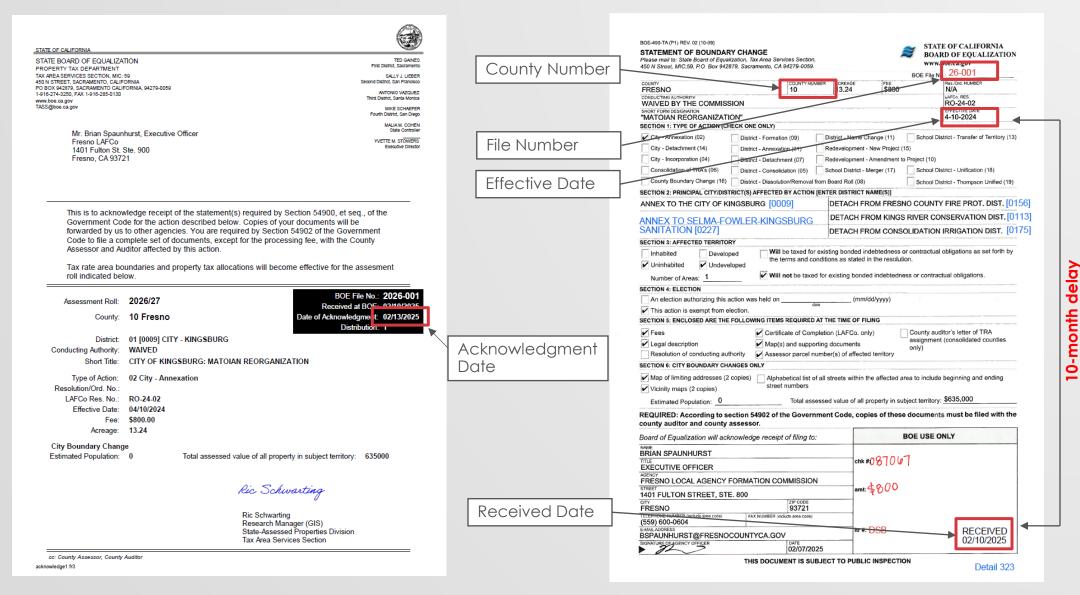


Ric Schwarting, Research Data Supervisor State Assessed Properties Division / Tax Area Services Section 1-916-274-3261 Office 1-916-639-0040 Cell Ricard.Schwarting@boe.ca.gov TASS@BOE.CA.GOV

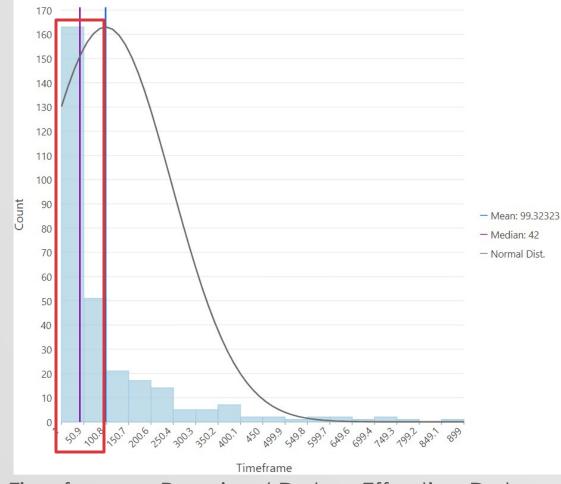
- City changes only.
- No county boundary change notifications
- No boundary correction notifications.

BOE Acknowledgement Letter

Statement of Boundary Change



DISTRIBUTION OF TIMEFRAME



Additional 10 business days for CDTFA to get notification from BOE and update maps.

730 annexations/ detachments in past 10 years.

Average of 73 per year (63 for 2025).



Geographic Description

ATTACHMENT "A"

GEOGRAPHIC DESCRIPTION

MATOIAN REORGANIZATION

ANNEXATION TO THE CITY OF KINGSBURG AND THE SELMA-KINGBURG-FOWLER COUNTY SANITATION DISTRICT, DETACTMENT FROM THE FRESNO COUNTY FIRE PROTECTION DISTRICT, THE KINGS RIVER CONSERVATION DISTRICT, AND THE CONSOLIDATED IRRIGATION DISTRICT.

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 16 SOUTH, RANGE 22 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS DESCRIBED IN DEED DOCUMENT No. 2015-0040268 OFFICIAL RECORDS FRESNO COUNTY, AND AS SHOWN ON RECORD OF SURVEY RECORDED IN BOOK 67 OF RECORD OF SURVEYS AT PAGE 57 FRESNO COUNTY RECORDS, DESCRIBED AS FOLLOWS:

BEGINNING [1] AT THE NORTHWEST CORNER OF PARCEL "B" OF PARCEL MAP No. 63 RECORDED IN BOOK 66 OF PARCEL MAPS AT PAGE 1 FRESNO COUNTY RECORDS, ALSO BEING ON THE WESTERLY RIGHT OF WAY OF STATE ROUTE 99, ON EXISTING CITY LIMITS;

THENCE [2] SOUTH 00°02'10" WEST, ALONG THE WEST LINE OF SAID PARCEL "B"ALSO BEING THE EXISTING CITY LIMITS, A DISTANCE OF 574.62' TO A POINT ON THE NORTH LINE OF TRACT 5177 RECORDED IN VOLUME 69 OF PLATS AT PAGES 91-94 FRESNO COUNTY RECORDS;

THENCE [3] NORTH 89°58'53" WEST, ALONG SAID NORTH LINE OF TRACT 5177, A DISTANCE OF 643.44';

THENCE [4] NORTH 00°00'39" EAST LEAVING EXISTING CITY LIMITS, A DISTANCE OF 1126.98';

THENCE [5] NORTH 00°00'28" EAST, A DISTANCE OF 92.32' TO A POINT ON THE WESTERLY RIGHT OF WAY OF STATE ROUTE 99;

THENCE [6] SOUTH 45°33'43" EAST, ALONG SAID WESTERLY RIGHT OF WAY OF STATE ROUTE 99 TO THE EXISTING CITY LIMITS, A DISTANCE OF 26.23' TO THE BEGINNING OF A NON-TANGENT CURVE;

THENCE [7] CONTINUING ALONG SAID WESTERLY RIGHT OF WAY OF STATE ROUTE 99 ALONG SAID NON-TANGENT CURVE BEING CONCAVE TO THE SOUTHWEST, HAVING A RADIUS OF 25088.00' WITH A RADIAL BEARING NORTH 44*46'51" EAST, THROUGH A CENTRAL ANGLE OF 01*05'37", A DISTANCE OF 478.89';

THENCE [8] CONTINUING SOUTH 45°13'09" EAST ALONG SAID WESTERLY RIGHT OF WAY OF STATE ROUTE 99, A DISTANCE OF 405.98' TO THE POINT OF BEGINNING.

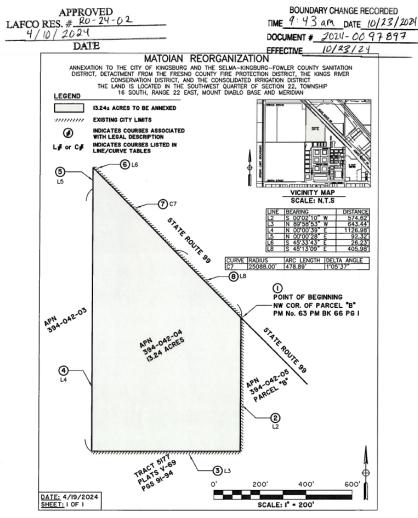
CONTAINING AN AREA OF 13.24 ACRES, MORE OR LESS.

For assessment purposes only. This description of land is not a legal property description as defined in the Subdivision Map Act and may not be used as the basis for an offer for sale of the land described

BOUNDARY CHANGE RECORDED TIME <u>9 934M</u> DATE 10/23/2024 DOCUMENT <u># 2029 - 0097897</u> EFFECTIVE 10/23/2024

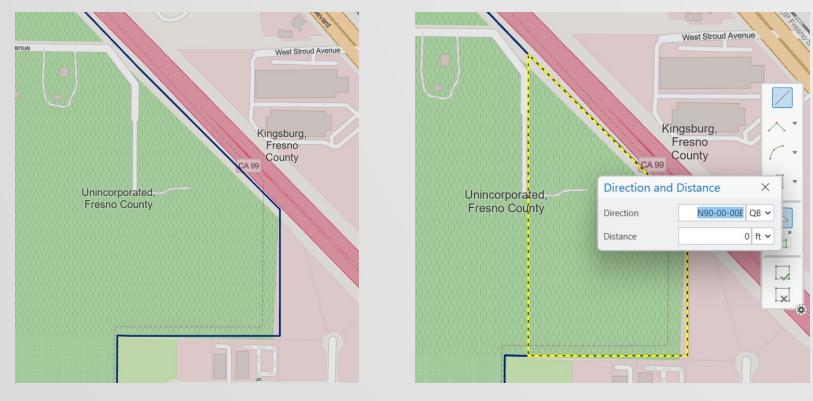
ULS Job No. 2024-01-MATOIAN

Map of Change Area



Detail 323

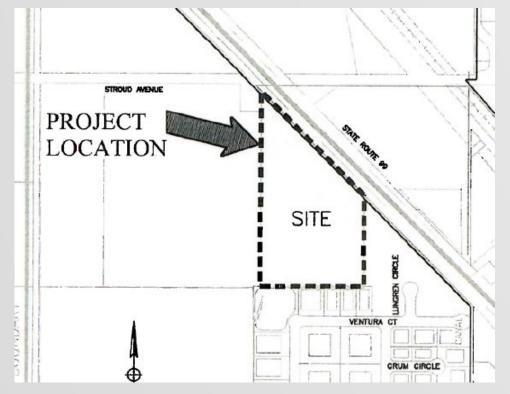
CREATE ANNEXATION POLYGON



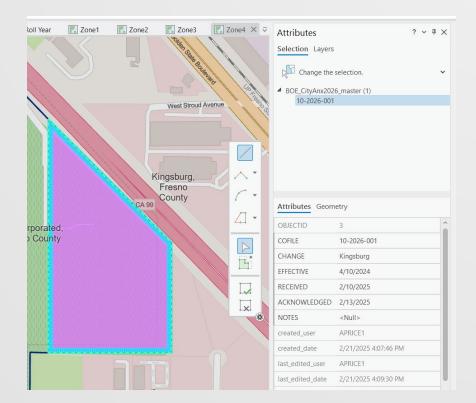
Locate Area

Digitize/COGO Boundary

CREATE ANNEXATION POLYGON



Verify Alignment



Draw Annexation Polygon Enter Attributes

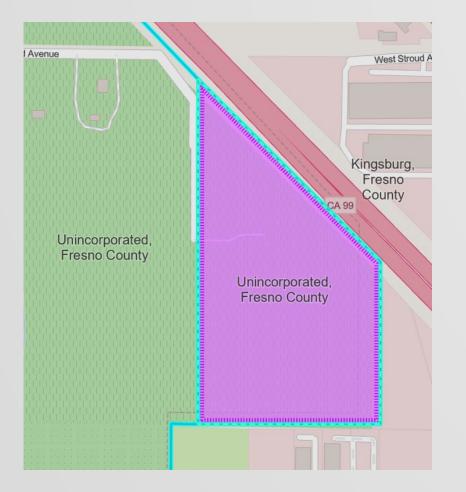
ANNEXATION POLYGONS

- City boundary changes filed with the BOE for property tax purposes.
- County boundary changes filed with the BOE for property tax purposes, no notifications sent.
- Includes information used in the BOE/CDTFA process:
 - County Number and BOE File Number
 - Effective Date of Annexation
 - Date Received at BOE
 - BOE Acknowledgement Date

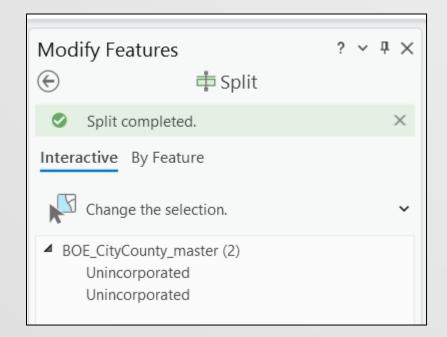


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	County
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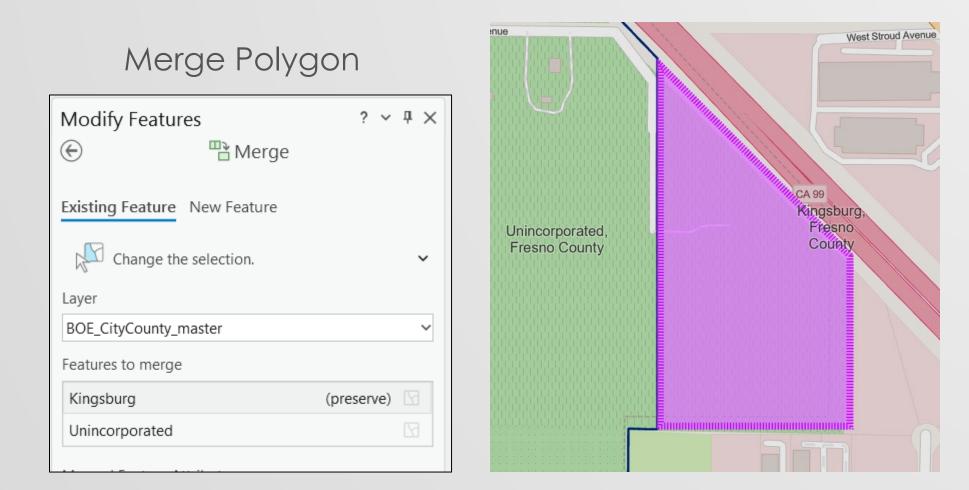
UPDATE CITY-COUNTY LAYER



Split the City-county Polygon



UPDATE CITY-COUNTY LAYER



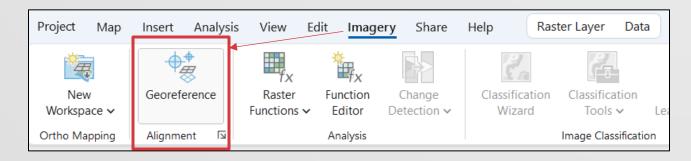
COMPLEX AREAS

Internet search:

- County Assessor Parcels
- City maps
- LAFCO maps

Data type:

- PDF georeference image
- GIS data download, if allowed
- GIS data screenshot and georeference image



PUBLISH TO ARCGIS ONLINE

		Open in Map	Verview
	City and County Boundary Line Changes	0	verview 🔻
Search Analyzer Results	\equiv ArcGIS	Q	Sign In
General Configuration Content Messages			
Overwrite City and County Boundary Line	Changes web layer		
Overwrite Web Layer	? ~ # ×		



This map contains city and county boundary lines for the purpose of determining sales and use tax jurisdictions. The boundaries are updated after a change to a city or county boundary is filed with and acknowledged by the California State Board of Equalization per Government Code 54900. Updates to this map are posted within 10 business days of the California Department of Tax and Fee Administration receiving a copy of the acknowledgement letter from the California State Board of Equalization.

Open in Scene Viewer

Open in ArcGIS Desktop

V

Metadata

Feature layer by Anna.Price@cdtfa.ca.gov_CDTFA

Item created: Oct 20, 2021 Item updated: Feb 24, 2025 View count: 22,445

ORIGINAL DATA

AutoCAD

Ink-on-paper maps

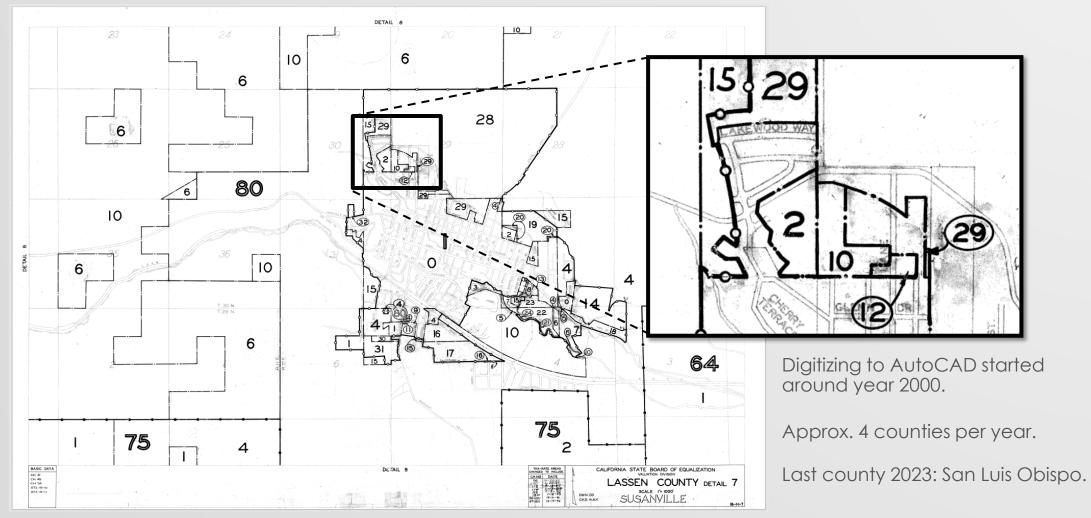
Extract city lines from AutoCAD

Convert to GIS polygons

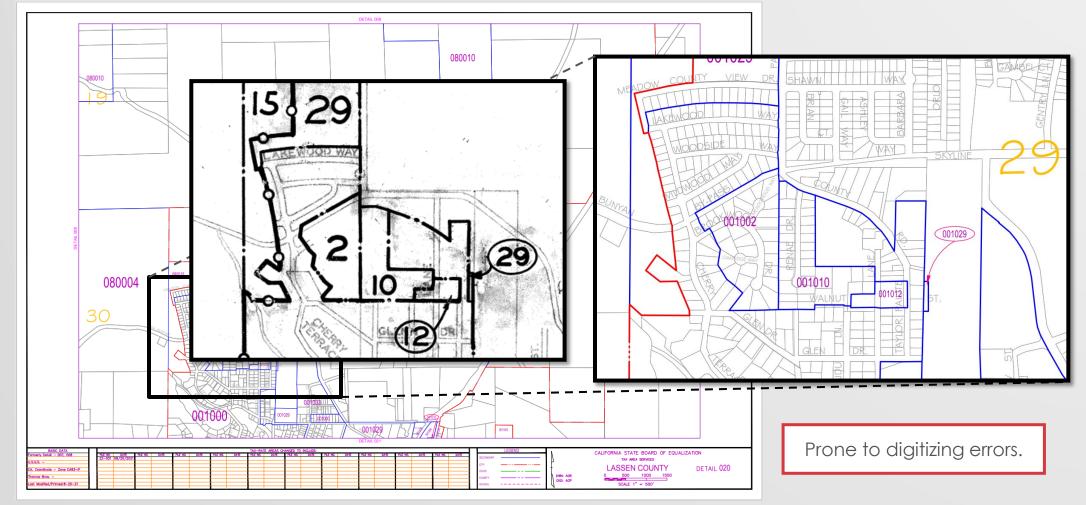
County boundary

ORIGINAL DATA

Ink on paper. No parcel detail.

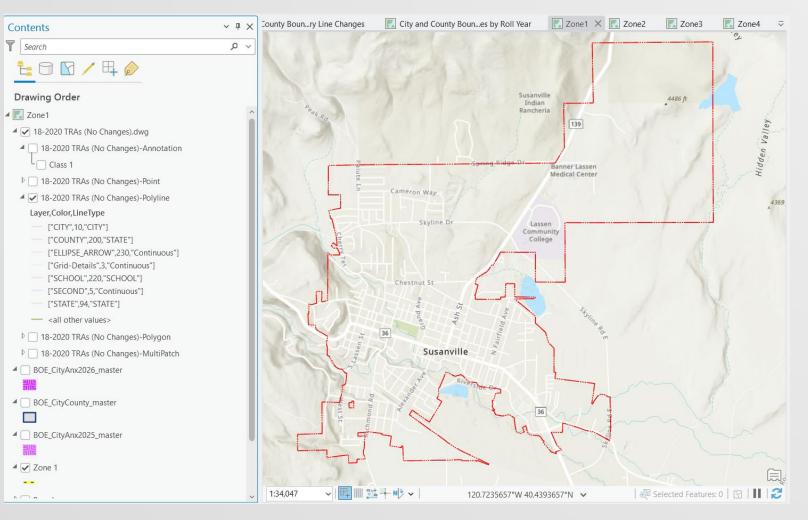


ORIGINAL DATA AutoCAD. Parcel background from counties.

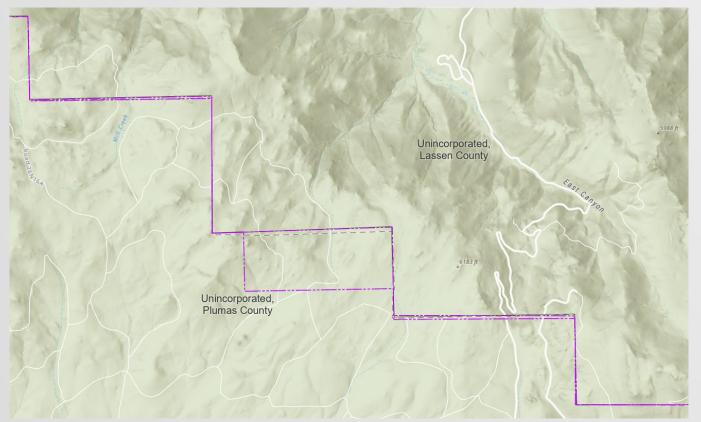


ORIGINAL DATA

Extract city lines from AutoCAD. Trace new polygons in ArcGIS.

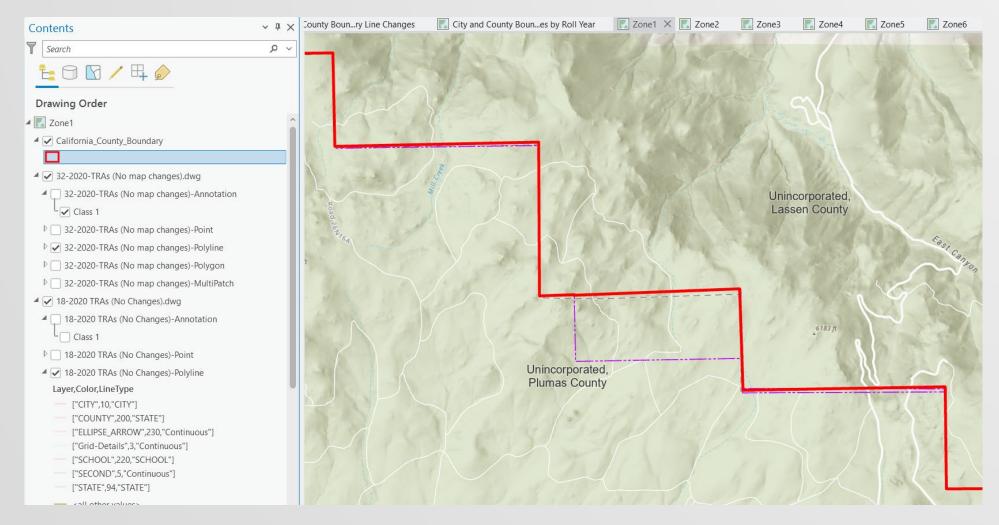


ORIGINAL DATA County Boundaries from BOE data. Overlap and alignment issues.



CDTFA: unincorporated areas w/o overlap of city areas.

ORIGINAL DATA County boundary from <u>data.ca.gov</u>.



ORIGINAL DATA

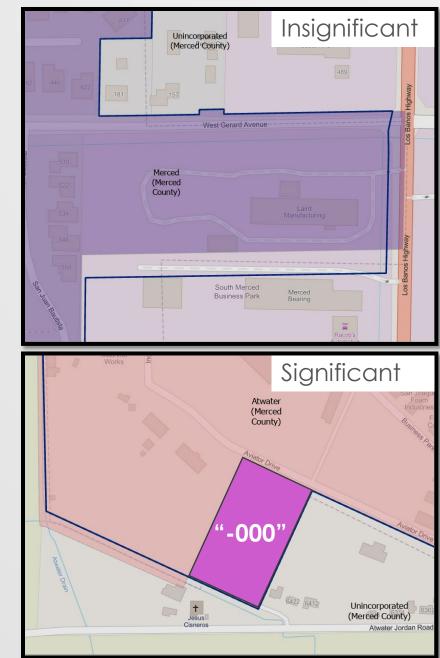
- Discrepancies:
 - Paper-to-digital conversion.
 - No notification on corrections or county boundary changes.
 - County, LAFCO, State data differences.

DATA UPDATES

- Delays:
 - Average delay of 100 days.
 - CDTFA process requires BOE notification.

CURRENT MODIFICATIONS

- April 1, 2024 until complete.
- Update linework to match local data.
 - May include changes not yet filed with BOE.
- Notify BOE when discrepancies are found.
- Boundary Corrections are added to Annexation Polygons when:
 - Affected area is significant.
- What is "Significant?"
 - Entire parcel, or majority of parcel.
 - Large portions of highway.
 - Change of "island" areas to match Local data.



BOUNDARY CORRECTIONS EXPECTED

- Started updates in late June 2024 (8 months to date).
 slow process to weed through significant/insignificant areas.
- Updated 17 counties.
 - mostly focused on counties with many cities.
 - 326 out of 541 multipart polygons statewide.
- 127 "significant" areas.
 - some not very significant, early in update process.
- 41 counties remaining.
 - 215 multipart polygons statewide.
- Ability to find errors is dependent on county having publicly available boundaries.

This concludes the presentation.

BOE_CITYCOUNTY

City and County Boundary Lines Maintained by CDTFA



Goals of the CDT layer

- Recognition that many of you are doing the same or similar processing, with substantial staff time, based on CDTFA's data layer
- The primary goal is to create one source with all the critical attributes and modifications so you can configure and use it as is, or nearly
- Proposed by Emma Lyons (CalTrans) and initial work by Liana Huang (now at Cannabis), Carmen Gonsalves, and Lothar Petrik.

City and County Boundaries – the family

- Core services
 - City boundaries
 - County boundaries (today)
 - Merged boundaries (this week)
 - Unincorporated area boundaries (this week)
 - California boundary (later this year)
 - Each of these is available with and without coastal buffers
- Census designated places (updated annually)
- California Cartographic Coastal line/polygon

Key features

- Stable service URLs data updated in place frequently
- Coastal cut options extensive work into separating buffers
- Increasing update cadence to keep up with Anna's geometry edits
- Attached Census names/IDs, GNIS names/IDs, and polygon areas
- Served in EPSG 3310, CA Teale Albers (meters) CRS
- Offline capable ready for Esri Field Maps use
- Exports allowed
- Simple rendering and labeling configured for instant use

Service Schema

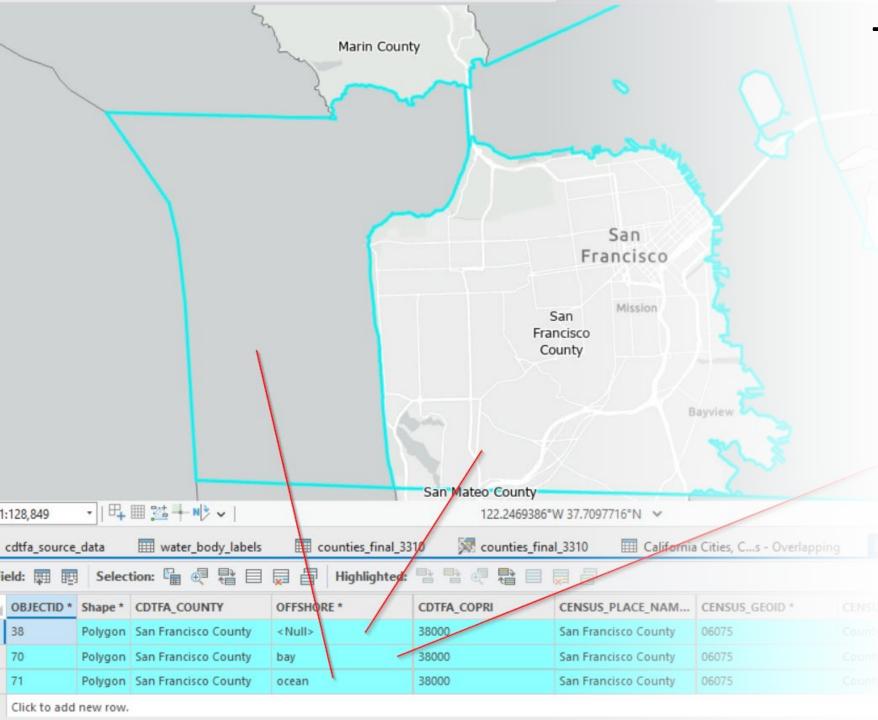
- Identifiers pulled fresh with every update – include new releases and corrections from Census and GNIS
- Schema stable this week currently finalizing an update to this schema

Field Name	Туре
OBJECTID	ObjectID
CDTFA_COPRI	String
CDTFA_CITY	String Not on counties
CDTFA_COUNTY	String
CENSUS_PLACE_NAME	String
CENSUS_GEOID	String
CENSUS_PLACE_TYPE	String
GNIS_PLACE_NAME	String
GNIS_ID	Integer
CDT_CITY_ABBR	String Not on counties
CDT_COUNTY_ABBR	String
PRIMARY_DOMAIN	String Not yet populated
CENSUS_POPULATION	Integer Not yet populated
CDT_NAME_SHORT	String
OFFSHORE	String
AREA_SQMI	Double
GlobalID	GlobalID Not stable – only for offline support

The coastal cut

- Why? Because many of you were doing it and for many displays, the coastal buffers don't help, even if they are the legal boundaries.
- Adapted a coastline from high resolution NOAA coastline data – closed off estuaries and other tidal areas, many harbors. Removed seawalls.
 Ignored offshore rocks with *perimeters* less than 1km (except in Farallon & Channel Islands)





The coastal cut

- Aim to give you choice of with/without coastal buffers. Dual service model. To reconstruct, simply dissolve on the identifier fields.
- Complex sliver detection and removal method. Could be imperfect as data changes. Please report issues you find.
- We key the buffer by whether it's off the coast or in the bay so you can choose which buffers to include in your own outputs with a simple filter.
- SF County is a pain and has **all** of the edge cases.

Timeline and what's next

- Finish upgrades of existing services this week
- Launching new unincorporated areas service, also this week
- Processing of boundary change services to add attributes
- Public roadmap and issue tracker with additional changes and enhancements
- Further metadata improvements and structure, public dataset listing and explanation of coastal cuts.
- Full automation allowing for predictable update cadence

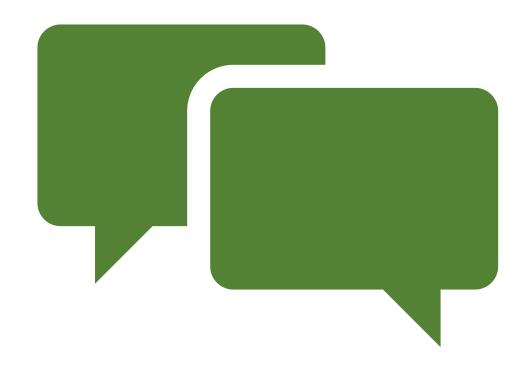
Links

<u>CDTFA City and County Boundary Service</u>

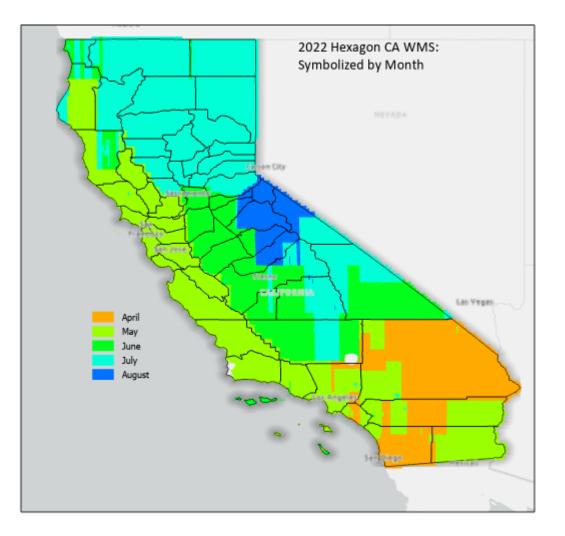
- <u>CDTFA Annexations and Corrections 2026</u> (annual layers available)
- <u>City Boundaries</u>
- <u>County Boundaries</u>
- <u>Current status page for service deployment</u> this will move to GitHub in the near future
- Links to additional services included in the city and county service metadata

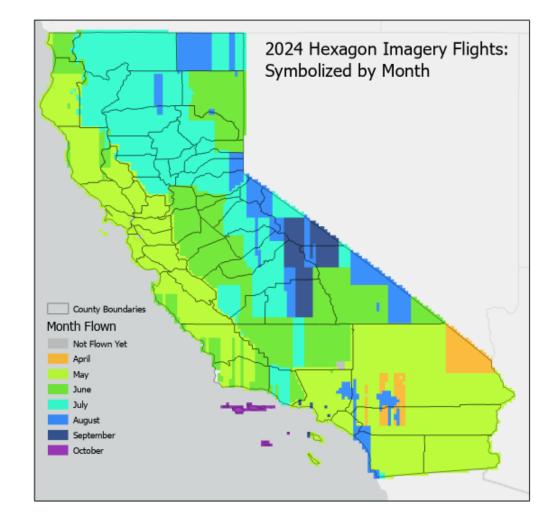
City and County Boundaries

- Feedback? Questions or suggestions?
- What other cross-departmental foundational datasets are you spending time processing?

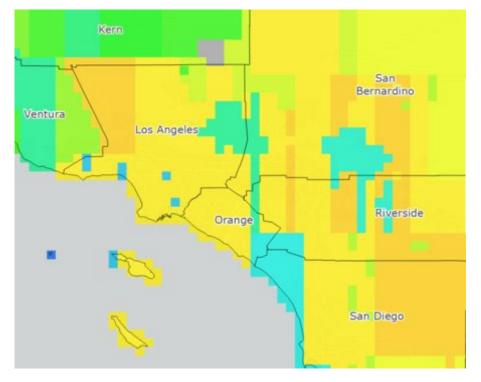


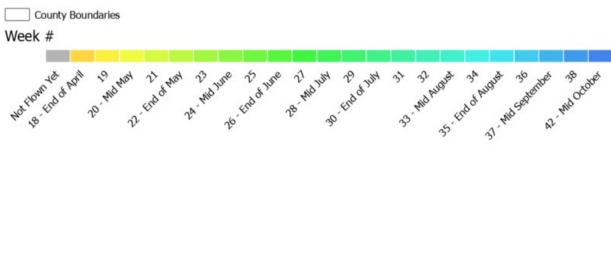
Hexagon Flight Lines and Updates



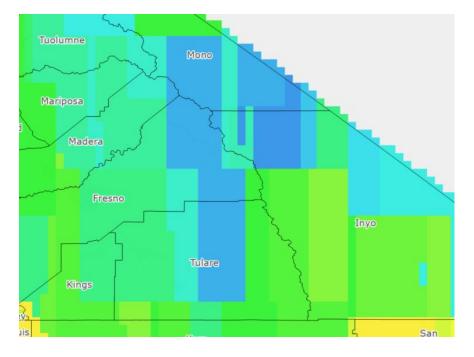


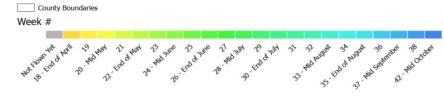
LA Metro

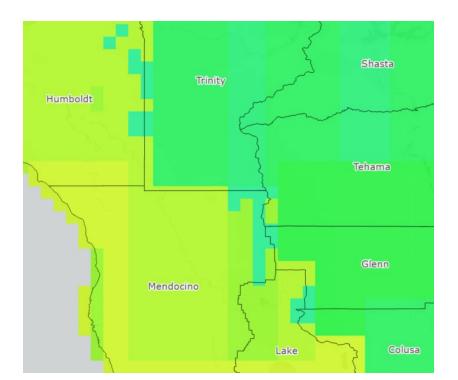




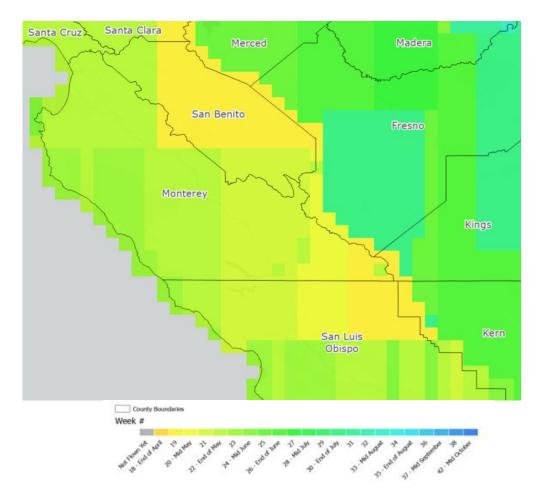
Southern Sierra

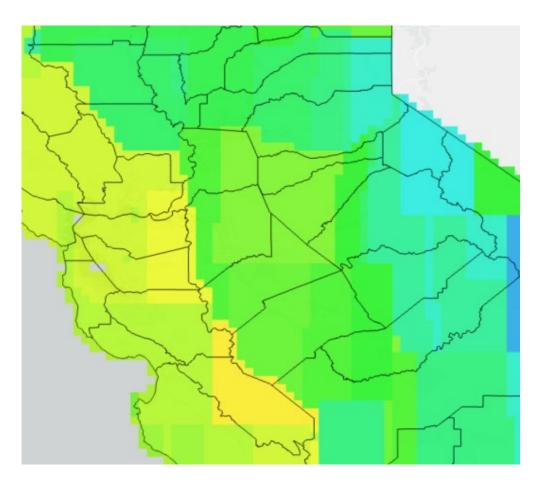






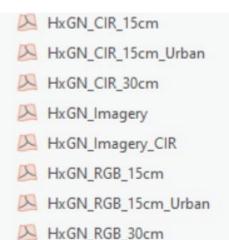
Central Coast





Imagery Services

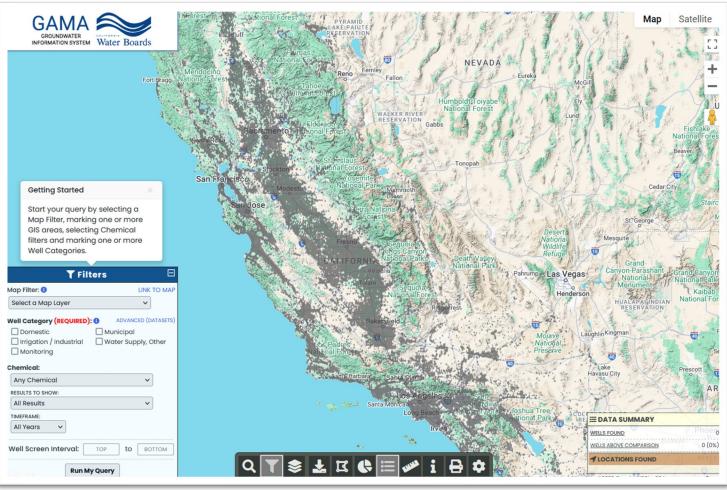
- Single WMTS service for the most recent RGB collect
- WMS services labeled by year, bands, resolution, geography
- Migration Path



4 🔶 H	Hexagon Content Program - Web Map Service
4 🏽	HxGN Content Program
	KGN_2017_CIR_15cm_Urban_CA
	Karage Market Ma
	Karrier HxGN_2018_CIR_15cm_Urban_CA
	KGN_2018_CIR_30cm_CA
	😕 HxGN_2018_RGB_15cm_Urban_CA
	KGN_2018_RGB_30cm_CA
	KGN_2020_CIR_15cm_Urban_CA
	KGN_2020_CIR_30cm_CA
	😕 HxGN_2020_RGB_15cm_Urban_CA
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	KGN_2022_CIR_15cm_CA
	KGN_2022_RGB_15cm_CA
	KGN_2024_CIR_15cm_CA
	KGN_2024_RGB_15cm_CA
Tress	

Adding applications as document links to Geoportal

- Longstanding custom applications that don't have a clear ArcGIS item to share to the geoportal
- Custom interactive webpages and applications made with other technologies
- Login-required or dataset listings that can't easily be integrated into ArcGIS. (e.g. CNDDB)
- Relevant state data sources from external partners. (e.g. community colleges)



The Groundwater Ambient Monitoring Assessment (GAMA) Program

How to add and share a document link:

Home	Gallery	Мар	Scene	Note	
Conten	t				
+ New item		🔡 Create app	Q Search All n		
Folders		É	Title	1-32 of 3.	

New item	
URL 2	
Туре	
Select layer type	
ArcGIS Server web service An ArcGIS Server web service represents a GIS resource–such as a map or image client apps such as Map Viewer.	-that is locate
Create a link to an online document referenced with a URL.	
ึ่า GeoJSON	

- 1) To add a Document Link to your Content, access the New Item button on the upper left side of the page. Select URL
- 2) Fill in the URL and select Document for layer type.
- 3) Fill out the initial metadata info and Save.

New item		
URL 3		
https://www.waterboards.ca.gov/gama		
Title		
The Groundwater Ambient Monitoring Assessment (GAMA) Program		
Folder		
යා carmen.gonsalves_california		\sim
Categories		
Environment × Assign categories	×	\sim
Tags		
GAMA × Graoundwater × Water × Assessment × Add tags	×	\sim
Summary		
The Groundwater Ambient Monitoring and Assessment (GAMA) Program is California's comprehensive groundwater quality monitoring program	n that was	
created by the State Water Resources Control Board (State Water Board) in 2000. It was later expanded by Assembly Bill 599 - the Groundwater G	Quality	-
Back	Cancel	Save

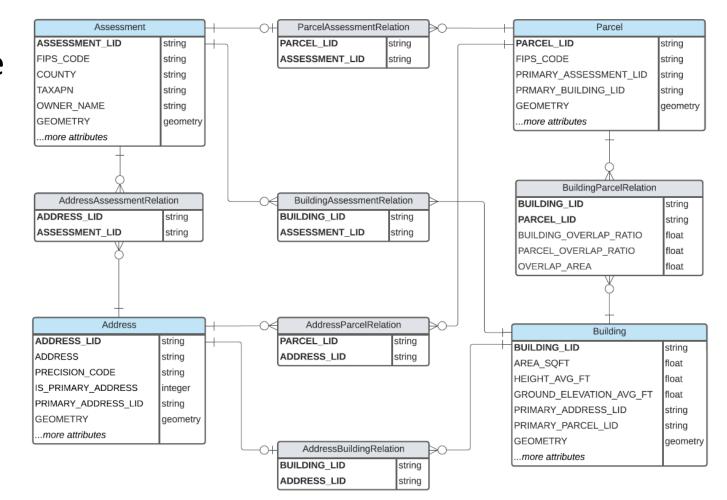
What does a Document Link look like?

Home Gallery M	lap Scene Notebook Groups Content Organization Q	â 🗰 🎯 Carmen Gonsa								
The Groundwater Amb	pient Monitoring Assessment (GAMA) Program 🥒	Overview Usage	Settings							
Edit thumbnail	The GAMA Groundwater Information System integrates and displays water quality data from various sources on an interactive Google-based map (coordinate system: WGS 1984)*. Analytical tools and reporting features help users assess groundwater quality and obtain groundwater related information in California. Document Link by CDT_GIS Item created: Feb 20, 2025 Item updated: Feb 21, 2025 View count: 3	Open Share Metadata		A EOPORTAL Organ	nizations Featu	ured Apps Local Gov G	at Involved Resources -		Q New	🕶 Д. 🏈 Carmen s
Regional Water Boards, Department of Water Resources, Department of Pesticide Regulations, U.S. Geological Survey, and Lawrence Livermore National Laboratory, University of CA and CA State University, and cooperation with local water agencies and well owners.		Low P Top Improvement: Add terr Details Size: 1 KB ID: 46967faddba043168a7412200c288	2	Q GAMA All (15) Data (12) D Filters Reset 1-1 of 1			Documents (2)	ocuments (2) Apps & Maps (1) Relevance - C. 88 13		
Description from the GAMA Program webpage. https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/		***	<u>></u>	Location	~ 0	& Document				
 Document Links in AGOL look like any other item and you can add more Metadata. 				Q. Find address or place Results: 1 Stramento Stramento Francisco Fresno Cos Ange Cos Ange Filter as map moves Type	Las Vegas	CDT_GIS The GAMA Groundwater sources on an interactive Type: Document Link	nbient Monitoring Assessn nformation System integrates ar Google-based map (coordinate s Date mbient, Monitoring, Assessm Cate;	nd displays water quali system: WGS 1984)*. Ar updated: 2/21/2025	ity data from various nalytical tools and	to top

When shared with the appropriate • group in AGOL the Document Link becomes searchable in the Geoportal.

Parcel, Building Footprints, Address Points

- Bulk data release in March to subscribers
- Feature service release in April
- API access, 1M calls
- Vision seats,2,500



• Entity Relationship Diagram: <u>https://lightbox.document360.io/docs/smartfabric-core-and-professional-erd</u>

Open Source GIS

- No CDT policy restriction on Open Source software/OS GIS
- QGIS varying degrees departmental access
 - Some departments allow direct load onto GIS Laptops
 - Others have a stable release in an approved company portal of apps
 - At least one dep. controls the version and the plug-ins vetted
- Future GIS CoP will highlight use of OS GIS
 - Ability to write to a Multi-user Geodatabase
 - Relationships, i.e. one-many, etc
 - Easy export to Google Map or Earth or non-GIS users
 - License-free field data visibility, QField

Legislative Layers in Geoportal

Senate: has been added to the Geoportal.

Assembly: has been added to the Geoportal.

Congress: has been added to the Geoportal.

□ Board of Equalization – coming soon from BOE staff!

Next Month

- Other people talking!
- Presentations for upcoming months from CARB and ??

Conferences:

- <u>CalGIS 2025</u> Monday, April 14 – Wednesday, April 16, 2025
- <u>California Geographical Society Annual Conference Stanislaus</u> Friday, April 25 – Sunday, April 27, 2025
- <u>ESRI GIS Conference</u> Monday, July 14 – Friday, July 18, 2025
- State GIS Day Meeting and Celebration Exact Date TBD, 3rd week in November, Sacramento, CA

Thank you

Next GIS CoP Monthly Forum

Wednesday, March 26th , 2025

Questions or comments send to: gio@state.ca.gov



