



## AGENDA ITEM 8B

**MEETING:** July 19, 2023  
**TO:** Humboldt LAFCo Commissioners  
**FROM:** Krystle Heaney, Clerk/Analyst  
**SUBJECT:** **Proposed Web-Based Boundary Mapping Workplan**  
The Commission will receive an overview of the proposed workplan for developing a web-based mapping program for District boundaries.

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### BACKGROUND

Local Agency Formation Commissions (LAFCOs) are tasked with managing agency boundaries and spheres of influence. Under CKH Act Section 56375, the Commission is responsible for approving, modifying, or disapproving proposals which may include formations, annexations, detachments, dissolutions, and other types of reorganization. It also has the power to review boundaries involved in a proposal with respect to the definiteness and certainty of those boundaries. As such, LAFCo typically holds the most current and accurate boundaries for all cities and special districts within the county.

In the past, boundaries were often maintained as paper figures with attached written boundary descriptions. However, with the advent of Geographic Information Systems (GIS), boundaries are now typically kept in digital format which is easier to display and share with a higher level of accuracy. Many government agencies also maintain online web maps that can be accessed by the public and used to display a range of geographical data including boundaries, land use designations, location of infrastructure, and more. Some example web maps are provided below:

- [Humboldt County Web GIS](#)
- [City of Arcata Public Parcel Finder](#)
- [City of Redding Map Viewer](#)
- [Solano County Regional GIS](#)
- [Municipality of Anchorage GIS](#)

### DISCUSSION

The Commission previously asked staff to research prior annexation records and methods for displaying the information in a way that shows how much land has been annexed over time. This information could be used to convey changes in growth and development over time and inform associated impacts to agricultural and/or other natural resource lands. However, a large majority of annexation records dating back decades exist as scanned paper records and are not in an easily accessible digital format. Digitizing these files into shapefiles for use in GIS will take additional time and effort to ensure accuracy and accessibility.

Staff have discussed possible courses of action moving forward to make LAFCo boundary records more accessible to the public. As a starting point, the current city and special district boundaries and spheres of influence can be shown on a web map. From there, staff can build additional functionality into the map to show types of services, land uses, related documents, prior annexations, and other useful information. Creation and maintenance of this web map will require additional software and staff time, which is still being explored. Based on initial research, a proposed workplan has been drafted and is included as Attachment A.

### **RECOMMENDATION**

Staff recommends the Commission receive and file this report and provide direction to staff as necessary.

### **Attachments**

Attachment A: Web-Based Boundary Mapping Proposed Workplan

## **Proposed Workplan**

### **LAFCo Web-Based Boundary Mapping**

#### **-July 2023-**

#### Task 1 – Obtain Web Platform

In order to host a web-based map for LAFCo, access to an online service will need to be purchased. As part of this task, LAFCo staff will obtain access to ESRI ArcGIS Online and determine the monthly cost for hosting the map. The ESRI platform is well known and widely used by GIS professionals. It typically has robust functionality and built-in tools for analyzing and displaying geographical information.

ESRI uses a credit system for web-based maps. Credits are purchased in advance at a current cost of \$120 per 1,000 credits (12¢ per credit) and used as data is processed through the map. For example, storing a web map uses 1.2 credits per 1 GB of map data stored per month and using a web map to view different locations, zoom in and out, and identify layers uses 10 credits per 1,000 map requests. Staff anticipates that usage of the map will be low at first but will likely increase as functionality is improved and more users, such as agency staff and board/council members, utilize the service for information about their agency.

Once the platform for hosting the web map is set up, staff can begin loading data into the map for viewing online.

#### Task 2 – Prepare Shapefiles and Attribute Data

This task will include reviewing all of the current boundary and sphere of influence shapefiles to ensure the highest level of accuracy. This will include comparing boundary lines to parcel data, tax rate area data, and agency boundary files to identify any discrepancies as necessary. Once any discrepancies are resolved, staff will begin building tables with attribute data that can be linked to the boundary files to provide additional information. Attributes are nonspatial data such as names, service types, formation dates, and so on.

The addition of accurate and meaningful attributes will allow users to click on an agency boundary to see additional information about that agency. This data can also include links to other sources of useful information such as the agency's principal act, website, regulatory information, and more. A list of potential attributes is provided below:

- District Name
- Year Formed
- Services Provided
- Acreage
- Link to Principal Act
- Link to MSR
- Link to Agency Website

#### Task 3 – Create Basic LAFCo Boundary Web Map

Using the web-based platform and finalized shapefiles with attribute data, staff will create a basic web-based map that can be accessed by the public through the Humboldt LAFCo website. This initial map will be limited to agency boundaries and spheres of influence. This initial map will be tested and reviewed prior to adding additional functions.



#### Task 4 – Incorporate Additional Map Functions

After the initial map has been tested and reviewed, staff will work on adding features. This will include layer groupings to show different types of services so that it is easy to display. For example, if someone were to click the fire services grouping, the map would display all agencies (FPDs, CSDs, cities, etc.) that provide fire services.

Additionally, staff will coordinate with other agencies, such as Humboldt County GIS, to link additional useful map layers such as land uses, zoning, coastal boundaries, Williamson Act Preserves, and more. A list of potential layers is provided below:

- Disadvantaged Unincorporated Communities (based on Census data)
- County and City Land Use
- County and City Zoning
- Community Planning Areas
- Coastal Planning Areas
- Urban Limit Lines
- Urban Expansion and/or Development Areas
- Parcels
- Streets
- Coastal Zone Boundary
- Public Lands
- Williamson Act Preserves
- Timber Production Zones
- Prime Agricultural Soils
- Supervisorial Boundaries

#### Task 5 – Develop Annexation Histories

Since annexation histories can be difficult to pull together, staff will initially work on developing histories for each of the county's seven cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad). This will include reviewing LAFCo records, coordinating with cities to fill in information gaps, and digitizing scanned annexation records. This will likely be a multi-year effort.

Based on the complexity of the annexation records, it may be beneficial to create a separate web map for this data. As part of this task, staff will research methods for displaying the data and provide options to the Commission for review and comment. Annexation records may include the following:

- Agency Name
- Year
- Boundary Change Name
- Acres
- Resolution Number
- Board of Equalization Filing Number

This task may also be a good candidate for collaboration with one of the areas colleges. Staff can reach out to College of the Redwoods and/or Cal Poly Humboldt to see if faculty may be interested in presenting this as a potential project to students.