State Geospatial Data Coordination Procedure

California

FINAL

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Purpose of the Procedure

Flood Insurance Studies involve searching for geospatial data during Discovery (formerly pre-scoping and scoping) tasks. If needed data are not available, studies might fund the collection of new data and, where applicable, encourage cost sharing among existing organizations. Detailed information about the role geospatial data coordination plays in studies is in the *Geospatial Data Coordination Implementation Guide*, which is available at https://hazards.fema.gov/femaportal/docs/GeoDataImplem_V3.pdf, and in *Scoping Guidelines: Pre-scoping and the Scoping Meeting*, which is available through the Regional Support Center (RSC).

Resources developed through FEMA's geospatial data coordination activities provide information about data and contacts for organizations that have geospatial data that cover large areas (like States) in which many studies are interested. Dead-end searches and cold calls can be avoided by starting with these proven sources of information.

One resource is this Geospatial Data Coordination Procedure. It outlines sources of geospatial data and contact information, preferences for base map data and State geospatial participation in studies, and other useful information for the State.

If you have questions about this procedure or other geospatial data coordination resources, contact the geospatial data coordination lead in your RSC:

Christopher Harrod, Geospatial Data Coordination Lead
Regional Service Center IX
(415) 732 5714
Christopher.Harrod@atkinsglobal.com

Default Flood Hazard Base Map for the State

The default base map for flood hazard maps for the State is recent, black and white, countywide orthophotography data provided by local government to FEMA as public domain data. The resolution must be 1-meter resolution or better. If not available, locally provided vector basemap data or 2009 USDA National Agriculture Imagery Program (NAIP) imagery are used.

Geospatial Data Coverage

Below, you will find links to statewide (and Federal agencies' national) geospatial datasets and information about them. The list is provided to save time when building a list of candidate geospatial datasets available for the study during Discovery activities; it is not a prescription of data sets that must be used in a Flood Insurance Study.

Major State Holdings

Orthophotos
Dataset name: National Agriculture Imagery Program (NAIP) Image
Data currentness: 2018
Accuracy/Scale: 1:12,000
Ground sample resolution: 50-60 cm
Horizontal datum: NAD 83

Fee associated? No
Available for redistribution? Yes
Dataset source: http://datagateway.nrcs.usda.gov/
Dataset contact: gateway@ftc.usda.gov
Notes: NAIP imagery has many uses, and many States participate in NAIP. NAIP is leaf-on imagery and is not cloud-free, so the ground might be obscured. While NAIP (and other such imagery) can be used as base maps, the imagery must be checked to ensure that it provides a clear view of important features on the ground for areas of significance for flooding.

Transportation (roads, railroads, and airports)

Dataset name: US Census Topologically Integrated Geographic Encoding and Referencing (TIGER)/Line files
Data currentness: 2019
Accuracy/Scale: 1:100K
Horizontal datum: NAD 83
Fee associated? No
Available for redistribution? Yes
Are road names part of the dataset? Yes
Dataset source: https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2019.html
Dataset contact: N/A
Notes: The US Census is in the process of realigning TIGER/Line files to improve positional accuracy. New data are published every six months.

Hydrography (rivers, streams, lakes, and shorelines)

Dataset name: NHDPlus High Resolution
Data currentness: 2019
Accuracy/Scale: 1:24k
Horizontal datum: NAD 83
Fee associated? No
Available for redistribution? Yes
Are hydrography names part of the dataset? Yes
Dataset source: https://www.usgs.gov/core-science-systems/ngp/national-hydrography/access-national-hydrography-products
Dataset contact: N/A

Political boundaries (county, municipal)

Dataset name: US Census Topologically Integrated Geographic Encoding and Referencing (TIGER)/Line files (Designated Places)
Data currentness: 2010
Accuracy/Scale: 1:100K
Horizontal datum: NAD 83
Fee associated? No
Available for redistribution? Yes

Dataset source: http://www.census.gov/geo/www/tiger/tgrshp2010/tgrshp2010.html
Dataset contact: geo.tiger@census.gov
Notes: N/A

Publicly owned lands (national, State, and local parks, forests, etc)

Dataset name: Public, Conservation and Trust Lands (PCTL)
Data currentness: 2019
Accuracy/Scale: N/A
Horizontal datum: NAD 83
Fee associated? No
Available for redistribution? Yes
Dataset source: https://gis.data.ca.gov/datasets/CALFIRE-Forestry::california-land-ownership
Dataset contact: CALFIRE
Notes: This dataset is intended to provide a statewide depiction of land ownership in California. It includes lands owned by each federal agency, state agency, local government entities, conservation organizations, and special districts. It does not include lands that are in private ownership.

CAL FIRE tracks lands owned by federal agencies as part of our efforts to maintain fire protection responsibility boundaries, captured as part of our State Responsibility Areas (SRA) dataset. This effort draws on data provided by various federal agencies including USDA Forest Service, BLM, National Park Service, US Fish and Wildlife Service, and Bureau of Indian Affairs. Since SRA lands are matched to county parcel data where appropriate, often federal land boundaries are also adjusted to match parcels, and may not always exactly match the source federal data.

Public land survey system (PLSS) (township and section lines)

Dataset name: Public Land Survey System maintained by Geographic Coordinate Database (GCDB)
Data currentness: 2019
Accuracy/Scale: The Public Land Survey system data are available at a scale of 1:24,000, which is typically used for local analysis and has a horizontal accuracy of +/- 40 feet.
Horizontal datum: NAD 83
Fee associated? No
Available for redistribution? Yes
Dataset source: https://gis.data.ca.gov/datasets/cadoc::public-land-survey-system-plss-sections
Dataset contact: CalGEM
Notes: In support of new permitting workflows associated with anticipated WellSTAR needs, the CalGEM GIS unit extended the existing BLM PLSS Township & Range grid to cover offshore areas with the 3-mile limit of California jurisdiction. The PLSS grid as currently used by CalGEM is a composite of a BLM download (the majority of the data), additions by the DPR, and polygons created by CalGEM to fill in missing areas (the Ranchos, and Offshore areas within the 3-mile limit of California jurisdiction).

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CalGEM is the Geologic Energy Management Division of the California Department of Conservation, formerly the Division of Oil, Gas, and Geothermal Resources (as of January 1, 2020).

Cadastral (parcels)

No statewide coverage available

Notes: There is currently no complete and publicly-available cadastral dataset for California. Cadastral data are maintained by city and county governments. The California Department of Transportation (Caltrans) has been participating in the California GIS Council (CGC) and is currently leading an effort to develop a statewide parcel database. The statewide parcel database is an essential component to the future of transportation planning, land use planning, economic development modeling (as well as many other State, Federal, and local government business needs). All are essential components of the Governor's Strategic Growth Plan.

Extraterritorial jurisdiction (ETJ) boundaries

No statewide coverage available.

Terrain (elevation)

Dataset name: USGS DEM
Data currentness: Varies
Accuracy/Scale: 1:24K for most of the State
Vertical datum: NGVD 29
Fee associated? No
Available for redistribution? Yes
Dataset source: https://earthexplorer.usgs.gov/
Dataset contact: https://answers.usgs.gov/
Notes: USGS Digital Elevation Models (DEM) are the only seamless elevation data covering all of California available in public domain. Many cities and counties have LiDAR or other higher-quality data for specific areas, but these data are not all produced with consistent standards or made publicly available.

Useful Risk MAP Discovery Data Sources

Preliminary information on Discovery data sources is provided in this document to reduce the level of effort needed on each subsequent Discovery data collection effort. Coordination with local community sponsors for additional local data still remains an integral part of Discovery and local data should be used where appropriate.

The National Geospatial Data Coordination Procedure document contains information on data resources available from other Federal agencies (OFAs), including those that FEMA maintains at the national level, and should be used in conjunction with this State Geospatial Data Coordination Procedure document. In addition, FEMA and its contractors have created a geospatial Discovery Data Repository to host data that are not readily

accessible through direct sources such as Web sites or subscription services and/or are not updated on a frequent basis. Instructions for accessing the Discovery Data Repository are provided in the National Geospatial Data Coordination Procedure document.

Table 1 identifies data resources that are available at the regional and State levels, and also if there are no data available other than the national datasets. Resources in this table have been identified as appropriate for Discovery projects and may not represent the best data sources for FIRM production (please see the Preferred Base Map Sources section of this document for geospatial data that meets FIRM production requirements).

Table 1. Discovery Data Resources

Data	Agency	Location
Watershed boundaries	National – USGS	See National Operating Procedure
Jurisdictional boundaries	Cal Atlas	https://data.ca.gov/dataset/ca-geographic-boundaries
Tribal land boundaries	National	See National Operating Procedure
State lands	National	See National Operating Procedure
Federal lands	National	See National Operating Procedure
Major roads	National	See National Operating Procedure
Streams	National	See National Operating Procedure
Coastal Barrier Resource Areas	National	See National Operating Procedure
Coordinated Needs Management Strategy	National	CNMS data is available by request from each of FEMAs Regional Service Centers (RSC). Contact information for each RSC is available at the following website: https://hazards.fema.gov/contacts/Statecontacts/contacts.asp?page=CA
Topographic/ bathymetric data	FEAMA Region IX	FEMA Region IX Geo-index
AAL data from HAZUS	National Only	See National Operating Procedure

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Data	Agency	Location
Coverage areas for known community and Tribal risk assessment data	California Emergency Management Agency (CalEMA)	CalEMA maintains MyPlan with the goal of facilitating city, county, special district, and state user access to federal- and state-produced raster and vector-based GIS data for use in creating maps suitable for preparing, upgrading and reviewing Local Hazard Mitigation Plans (LHMPs), General Plan Safety Elements, Local Coastal Plans (LCPs), and hazard mitigation projects. Phase 1 development will focus on providing access to existing online hazards, risk, and vulnerability maps at a single web location for use in local planning by the end of 2010. Data can be accessed at: http://myplan.calema.ca.gov
Status of Hazard Mitigation Plans	California Emergency Management Agency (CalEMA)	Statewide hazard mitigation plans can be found at the following CalEMA site: http://hazardmitigation.calema.ca.gov/plan/state_multi-hazard_mitigation_plan_shmp; Local mitigation plans that have been approved can be accessed at the following site: http://hazardmitigation.calema.ca.gov/approved_local_hazard_mitigation_plans
Flood control data	National	See National Operating Procedure
Locations of stream gages	National – USGS	See National Operating Procedure
Past flood claims and repetitive loss properties	National	See National Operating Procedure
Locations of clusters of Letters of Map Change	National – FEMA	See National Operating Procedure
Known flooding issues beyond effective FIRMs and the Coordinated Needs Management Strategy database	FEMA Regional Office	Region IX keeps track of known flooding issues beyond FIRMs and CNMS through a "flood issue ad hoc requests" list maintained by the RSC9 Geospatial Data Coordination Lead
Areas of planned development, high growth, or other natural land changes	Cal Atlas	https://data.ca.gov/dataset/ca-geographic-boundaries
Areas of land use change datasets	National – USGS	The USGS Land Cover Institute (LCI) provides access to a wide variety of land use change and land cover data sets including the National Land Cover Dataset (NLCD). Data sets can be downloaded from the USGS at https://www.usgs.gov/centers/wgsc/science/california-land-change-projections?qt-science_center_objects=0#qt-science_center_objects
Locations of ongoing or updated stream studies	FEMA Regional Office	RSC9 Geospatial Data Coordination Lead

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Data	Agency	Location
Locations of wave and tide gauges	National – NOAA	See National Operating Procedure
Locations of wind gauges	National – NOAA	See National Operating Procedure
Primary frontal dune	Local	No statewide coverage
Comparison of stillwater elevations	Local	No statewide coverage
Available effective study data	National – FEMA	See National Operating Procedure
Orthophotography	National	See National Operating Procedure
Proposed discussion areas, problem areas, areas of proposed mitigation projects	FEMA Regional Office	RSC9 Geospatial Data Coordination Lead maintains records of problem areas based on Region's communications with local communities and logs them as CNMS "ad hoc" requests
Land use and soil information	USDA	https://databasin.org/datasets/1ff4328039f948529c33e7e71bb9b5fc
Reference points to locate areas with flooding issues	FEMA Regional Office	RSC9 Geospatial Data Coordination Lead maintains records of known flooding issues on Region's communications with local communities and logs them as CNMS "ad hoc" requests
Hydraulic structures: bridges	National	See National Operating Procedure or links to National Inventory of Bridges; Caltrans (CA DOT) has maintained a separate state historic bridge inventory which can be accessed here: https://gis.data.ca.gov/datasets/b57bbb540b7e4de7a33b71e276cf4a28_0
Hydraulic structures: culverts	Caltrans	Caltrans Culvert Inventory is maintained by Caltrans Division of Design and in general not released for public uses. Information request could be made to the Caltrans Division of Design here: http://www.dot.ca.gov/
Hydraulic structures: dams	CAL DWR	https://hub.arcgis.com/datasets/98a09bec89c84681ae1701a2eb62f599_0

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Data	Agency	Location
Coastal structures , shoreline structures, manmade embankments, surge conveyance pathways, and shoreline change data	CalAtlas	CalAtlas has links to a UC Santa Cruz-maintained GIS inventory of man-made coastal structures that have the potential to retain sandy beach area in California. This information can be accessed here: http://atlas.resources.ca.gov/ArcGIS/rest/services/Environment/CSMW/MapServer/63
Historic inundation areas and High Water Marks	California Department of Water Resources	Although a comprehensive database of historic high water marks does not exist for the State of CA, the CA Department of Water Resources maintains a levee database (known as the CLD) that stores information about high water marks from historic flooding related to levee failures. Information about the CLD can be accessed here: http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/levee_database.cfm
Clusters or locations of Individual Assistance/Public Assistance grants and locations of grant projects completed, planned, or underway	National	See National Operating Procedure
Locations of projects and structures completed or planned for FEMA Hazard Mitigation Assistance grant programs or mitigation funds from other agencies or entities, such as the Small Business Administration	National	See National Operating Procedure
Other information on FEMA grants, as described in G&S Appendix I	National	See National Operating Procedure
Data deficiencies identified in hazard mitigation plans	Local	No statewide coverage
Information from FloodSmart on market penetration	National	See National Operating Procedure
Community Assistance Visits / Community Assistance Contacts	National Only	See National Operating Procedure
Community Rating System class information	National Only	See National Operating Procedure

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Data	Agency	Location
Information from other Federal agencies	National Only	See National Operating Procedure
Information from State agencies	N/A	No statewide coverage
Current community plans, ordinances, or programs to alleviate flooding or manage stormwater	Local	No statewide coverage
Other known hazards	Local	No statewide coverage
Information on active disasters	FEMA Regional Office	http://www.fema.gov/about/regions/regionix/
Campgrounds, recreational areas, emergency access routes, etc.	National	See National Operating Procedure
Other data	Local	No statewide coverage

Data Distribution Process for State Data

One example of a State agency policy for cataloging environmental data is the Resources Agency Data Cataloging and Sharing Policy posted at http://ceres.ca.gov/Environ_Data_BIOS_MC_2005-06-06.pdf.

Federal Nationwide Geospatial Data Holdings

Information about nationwide holdings and of Federal agencies' programs is available from the Mapping Information Platform website at https://www.usgs.gov/core-science-systems/national-geospatial-program/national-map.

Finding and Accessing Other Existing Geospatial Data

Below, you will find information about, and links to, ways of searching for additional geospatial data available for the State. These capabilities can be useful for finding geospatial data other than the statewide and Federal data listed above, including those of special governments, counties and parishes, municipalities, tribes, universities, and other organizations.

Clearinghouses and Inventories for the State

Cal-Atlas
http://atlas.ca.gov/download.html
The Cal-Atlas site facilitates the coordinated and sustainable development, maintenance, licensing and sharing of geospatial data and web map services by California government agencies, partners and stakeholders. California government agencies work with the California GIS Council, regional GIS collaborative and the broader California GIS community to define

the data architecture, systems, standards, agreements, and processes for a fully integrated and effective California Spatial Data Infrastructure.

California Environmental Information Catalog
http://gis.ca.gov/catalog/
The California Resources Agency maintains a statewide metadata clearinghouse for geospatial data. This resource is called the California Environmental Information Catalog (CEIC) and is accessible at the link above. The online directory is used for reporting and Discovery of information resources for California. Participants include cities, counties, utilities, State and Federal agencies, private businesses, and academic institutions that have spatial and other types of data resources. The Catalog has been developed through a collaborative effort with the California Geographic Information Association, California Environmental Resources Evaluation System (CERES) Program, and the Federal Geographic Data Committee.

CERES GeoFinder
http://casil.ucdavis.edu/cgi-bin/gb/geofinder
GeoFinder is a tool that helps find and retrieve geographic and environmental data from the California Resources Agency, its constituent departments, and other partner organizations. GeoFinder lets users drill down through a map of California using predefined geographies like zip code, watershed, bioregion, county, urban area, or by place name. Once an area of interest is identified, the user can easily locate and retrieve digital orthophoto quads and scanned USGS map sheets for the area. A user can also ask for a list (by quad only) of rare species and natural communities inventoried by Fish and Game's Natural Diversity Data Base. GeoFinder also lets users easily crosswalk between these geographies.

CNRA Atlas/Map Server

http://atlas.resources.ca.gov/

The purpose of this site is to provide map services for departments, boards and commissions within the Natural Resources Agency, and also to make some of these services available to the public

National Elevation Dataset (NED) and 3D Elevation Program (3DEP)

These systems allow the search of orthophoto and elevation project information entered by Federal and other organizations. The NEP system can be accessed at https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/ngce/elevation/. The 3DEP system can be accessed at https://www.usgs.gov/core-science-systems/ngp/3dep.

Working with People

Useful State and Federal Contacts

The main contacts for the State's geospatial activities and Federal agencies' representatives in the State are available on the Mapping Information Platform website at https://hazards.fema.gov/contacts/statecontacts/contacts.asp?page=CA

Involving State's Geospatial Coordinator in Flood Studies

The GIS staff in the California Resources Agency has a working relationship with the State Department of Water Resources (DWR). DWR is a Resources Agency constituent

department, which is the agency responsible for floodplain management activities in the State. DWR staff has participated in the CMCC, as documented below.

DWR coordinates with FEMA Region IX, the Sacramento District of the U.S. Army Corps of Engineers and local floodplain administrators on NFIP mapping and floodplain management issues.

State Coordination Process for Building Geospatial Partnerships

California GIS Council
http://gis.ca.gov/council/

The California GIS Council (CGC), made up of representatives from local, tribal, State, and Federal government agencies, and the private sector, was formed to collaborate on the planning, implementation and maintenance of a California GIS infrastructure. The term infrastructure is used to encompass systems, organizational programs, policy, standards, procedures, and any other factors that affect the ability of member organizations to jointly develop or acquire, share, and maintain spatial data adequate to their needs.

A key element of the CGC is the formation and participation of local collaboratives (e.g., Regional GIS Councils). Composed of representatives of county, city, and tribal governments, resource conservation and other special districts, private and public utilities, local colleges and universities, and private sector organizations, these regional collaboratives are essential to council success.

Finding Local Geospatial Contacts

Local contacts, including those from special government districts (for example, a regional planning commission); counties, parishes, or equivalent governments; tribes, municipal governments; and other organizations (for example, local universities) also have geospatial data that can help a Flood Insurance Study. Contact information is available from the FEMA archives and government link portals such as https://hazards.fema.gov/contacts/statecontacts.

There are many sources for identifying the primary GIS contact for a specific county in California. These include:

- County websites. Most counties that utilize GIS have the contact information for the primary GIS contact posted on the county website.
- Regional GIS Councils/Collaboratives. In California, there are several Regional GIS Councils and/or Regional GIS collaborative groups that have formed to coordinate data sharing and partnerships. When a mapping partner initiates a FEMA study/mapping project in a new county, they can contact the Regional GIS Council or collaborative group for that county for information and the current GIS contact. A listing of Regional GIS collaboratives and contact information is available at http://www.cio.ca.gov/wiki/CAGISCouncil.ashx
- A listing of GIS contacts in the San Francsico Bay Area is available at http://www.baama.org/Resources/Documents/survey/survey_contacts.pdf
- County GIS contacts can be provided by contacting either the State GIS contacts provided below or the FEMA RSC 9 contact is available at https://hazards.fema.gov/contacts/Statecontacts/contacts.asp?page=CA.

Provide Feedback on This Procedure

If you find information in this Procedure or in other FEMA or State resources that are outdated, please contact the geospatial data coordination lead in the RSC. Please provide the correct information, if you know it. Use the contact information for the lead listed in the section *Purpose of the Procedure*. The lead will use your feedback to update and redistribute this Procedure.