

State Geospatial Data Coordination Procedure

California

FINAL

October 2017



FEMA

State Geospatial Data Coordination Procedure

California

Table of Contents

Table of Contents	1
Purpose of the Procedure.....	2
Default Flood Hazard Base Map for the State.....	2
Geospatial Data Coverage	2
Major State Holdings	2
Orthophotos	2
Transportation (roads, railroads, and airports)	3
Hydrography (rivers, streams, lakes, and shorelines).....	3
Political boundaries (county, municipal).....	3
Publicly owned lands (national, State, and local parks, forests, etc).....	4
Public land survey system (PLSS) (township and section lines).....	4
Cadastral (parcels)	4
Extraterritorial jurisdiction (ETJ) boundaries.....	5
Terrain (elevation).....	5
Useful Risk MAP Discovery Data Sources.....	5
Table 1. Discovery Data Resources	6
Data Distribution Process for State Data.....	10
Federal Nationwide Geospatial Data Holdings	10
Finding and Accessing Other Existing Geospatial Data	10
Clearinghouses and Inventories for the State.....	11
National Digital Orthophoto Program (NDOP) and National Digital Elevation Program (NDEP) Tracking Systems	11
TED Query Tool	12
Working with People.....	12
Useful State and Federal Contacts	12
Involving State’s Geospatial Coordinator in Flood Studies.....	12
State Coordination Process for Building Geospatial Partnerships.....	12
Finding Local Geospatial Contacts	12
Provide Feedback on This Procedure	13

State Geospatial Data Coordination Procedure

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:

Kevin Gabelman, Geospatial Data Coordination Lead
Regional Service Center IX
(415) 671-7188
Kevin.Gabelman@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: 2010
Accuracy/Scale: 1:12,000
Ground sample resolution: 1 meter
Horizontal datum: NAD 83

State Geospatial Data Coordination Procedure

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: 2010

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: <http://www.census.gov/geo/www/tiger/tgrshp2010/tgrshp2010.html>

Dataset contact: <http://www.census.gov/geo/www/tiger/tgrshp2010/tgrshp2010.html> and <http://www.nd.gov/gis/mapsdata/data/extractdata/>

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: USGS-maintained National Hydrography Dataset (NHD) for California

Data currentness: 2010

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: <http://nhd.usgs.gov/>

Dataset contact: <http://nhd.usgs.gov/> and <http://www.nd.gov/gis/mapsdata/data/extractdata/>

Notes: 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

State Geospatial Data Coordination Procedure

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: 2008

Accuracy/Scale: 1:100K

Horizontal datum: NAD 83

Fee associated? No

Available for redistribution? Yes

Dataset source: <http://www.atlas.ca.gov/download.html#/casil/planning/landOwnership>

Dataset contact: <https://projects.atlas.ca.gov/users/qjhart/>

Notes: A 1:100,000 polygon features class representing public, conservation, and trust land (PCTL) ownership in the State of California. Developed for the California Resources Agency's Legacy Project, this dataset depicts ownership features as submitted by major public, trust, and non-profit groups in the State. PCTL05_2 is an update to the Legacy Project's PCTL05_1, PCTL04_1, and PCTL03_1 geographic datasets, which were built on a prior effort by the USBR to map public lands. Contributors to past datasets were contacted with requests for any updated lands. The changes to PCTL05_2 involved fixing a misalignment of the California Department of Parks and Recreation data that occurred in the development of PCTL05_1

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

Dataset name: Public Land Survey System maintained by Geographic Coordinate Database (GCDB)

Data currentness: 2000

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: <http://www.geocommunicator.gov/>

Dataset contact: Bill Twenhofel, GCDB Manager, phone (916) 978-4343

Notes: N/A

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,

State Geospatial Data Coordination Procedure

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: <http://projects.atlas.ca.gov/projects/ned>

Dataset contact: <https://projects.atlas.ca.gov/users/qjhart/>

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).

State Geospatial Data Coordination Procedure

Table 1. Discovery Data Resources

Data	Agency	Location
Watershed boundaries	National – USGS	See National Operating Procedure
Jurisdictional boundaries	Cal Atlas	Cal Atlas maintains administrative boundaries for the State of California at: http://atlas.ca.gov/download.html
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 FEMA's Regional Service Centers (RSC). Contact information for each RSC is available at the following website: https://hazards.fema.gov/femaportal/docs/RSC%20Contact%20Information.pdf
Topographic/bathymetric data	FEAMA Region IX	FEMA Region IX Geo-index
AAL data from HAZUS	National Only	See National Operating Procedure
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://sites.google.com/site/myplancalifornia

State Geospatial Data Coordination Procedure

Data	Agency	Location
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	http://atlas.ca.gov/download.html
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 http://landcover.usgs.gov/
Locations of ongoing or updated stream studies	FEMA Regional Office	RSC9 Geospatial Data Coordination Lead
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
Beach nourishment or dune restoration projects	CalAtlas	CalAtlas maintains data that describe coastal sediment concerns along the coast of California. It is produced by the Coastal Sediment Management Workgroup. Beach nourishment sites can be accessed here: http://atlas.resources.ca.gov/ArcGIS/rest/services/Environment/CSMW/MapServer/4
Comparison of stillwater elevations	Local	No statewide coverage
Available effective	National – FEMA	See National Operating Procedure

State Geospatial Data Coordination Procedure

Data	Agency	Location
study data		
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	Local	Soil data for CA can be downloaded from the Soil Information for Environmental Modeling and Ecosystem Management at the following location: http://www.soilinfo.psu.edu/index.cgi?soil_data&index.html
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: http://www.dot.ca.gov/hq/structur/strmaint/historic.htm
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/hq/oppd/index.htm
Hydraulic structures: dams	CalEMA	CalEMA maintains a state inventory of dams that is separate but related to the National Inventory of Dams. Information requests can be made to: James Nordstrom: james.nordstrom@calema.ca.gov, Enterprise Geospatial Systems Analyst California Emergency Management Agency GIS Unit
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

State Geospatial Data Coordination Procedure

Data	Agency	Location
Local structure and topographic data from the existing hazard mitigation plans	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://sites.google.com/site/myplancalifornia
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	Local	No statewide coverage

State Geospatial Data Coordination Procedure

Data	Agency	Location
mitigation plans		
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
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://hazards.fema.gov/femaportal/docs/ProgFacts.pdf>.

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

State Geospatial Data Coordination Procedure

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 Digital Orthophoto Program (NDOP) and National Digital Elevation Program (NDEP) Tracking Systems

These systems allow the search of orthophoto and elevation project information entered by Federal and other organizations. The NDOP system can be accessed at <http://www.ndop.gov>, and follow the link "Project Tracking." The NDEP system can be accessed at <http://www.ndep.gov>, and follow the link "Project Tracking."

State Geospatial Data Coordination Procedure

TED Query Tool

This tool provides access to information about Federal, State, and local government agency and private sector data holdings gathered by the Census Bureau. It is available through the geospatial data coordination lead at the RSC.

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 <http://www.statelocalgov.net>.

County GIS Contacts:

State Geospatial Data Coordination Procedure

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 Francisco 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.