

State Geospatial Data Coordination Procedure

Hawaii

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State Geospatial Data Coordination Procedure

Hawaii

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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:

Chris 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 preferred basemap for Flood Insurance Rate Maps (FIRMs) in Hawaii is the same as for all FIRMs nationwide: 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 USGS Digital Orthophoto Quarter Quad imagery are used.

FIRMs in Kauai, American Samoa, and the Commonwealth of the Northern Mariana Islands (CNMI) have utilized Quickbird satellite imagery purchased from DigitalGlobe under a government license that allows the data to be in the public domain. For Hawaii County, Maui County, and Guam, a recent change in the DigitalGlobe licensing structure dictates that the imagery only be shared among the respective local government departments and with the civil government offices of the respective States. The original QuickBird imagery will not be distributed to the public, the military or Department of Defense, or used for any commercial purposes. FEMA will distribute the digital FIRM PNG files to the public on the Map Service Center, along with the other FIRM GIS data layers, but any distribution of the digital data will not include the original imagery files received from DigitalGlobe when the FIRMs become effective. Inquiries for the imagery will be directed to DigitalGlobe or to the local community.

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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 datasets that must be used in a Flood Insurance Study.

Major State Holdings

Orthophotos

Option 1:

Dataset name: EMERGE Statewide Digital Ortho Quarter Quads (DOQQ's)

Data currentness: 1999-2003

Accuracy/Scale: 1:12K

Ground sample resolution: 1 meter false color digital infrared

Horizontal datum: NAD 83

Fee associated? No

Available for redistribution? Yes

Dataset source: NRCS Hawaii

Dataset contact: Pat Shade, NRCS Hawaii, Pat.shade@hi.usda.gov, (808) 541-2600

Notes: USDA/NRCS had contracted with EMERGE to fly the main eight Hawaiian Islands and to process the data to ortho spatial quality. NRCS owns this data, but makes it available to the geospatial community in Hawaii in MrSID format. There are missing tiles in this dataset. About 75-percent of the DOQQ's for the State of Hawaii are covered by EMERGE data.

Option 2:

Dataset name: Hawaii IKONOS Consortium Imagery

Data currentness: 2005

Accuracy/Scale: 1:12K

Ground sample resolution: 1 meter natural color imagery and 4 meter, 4-band multispectral imagery

Horizontal datum: NAD 83

Fee associated? Yes

Available for redistribution? Restricted

Dataset source: Hawaii IKONOS Consortium;

<http://portals.intelesense.net/heritage/interfaces/hic>

Dataset contact: Shannon McElvaney, Hawaii Natural Heritage Program Center for Conservation Research and Training, mcelvane@hawaii.edu, (808) 587-8600

Notes: Imagery for the State in 25km² tiles for the main eight islands. The consortium is a cost-saving effort designed to achieve a consistent statewide imagery dataset. Federal, State, nonprofit, and commercial organizations join the consortium at certain levels of investment and then are given access to all of the available purchased data. The Hawaii Natural Heritage Program is coordinating this effort. They report that as of May 26, 2003, 162 tiles of 771 for the main eight Hawaiian Islands have either been purchased or have been spoken for. Each tile costs \$2,264 including both 1-meter and 4-meter data and all fees and taxes.

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Transportation (roads, railroads, and airports)

Dataset name: Street Centerline from Hawaii Statewide GIS Program

Data currentness: Varies by county

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://geoportal.hawaii.gov/>

Dataset contact: gis@hawaii.gov

Notes: Street centerline data downloadable from the statewide GIS site is a collage of datasets originating from various sources for the different counties of Hawaii.

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 Congressional Districts 1991

Data currentness: 1991

Accuracy/Scale: Unknown

Horizontal datum: NAD 83

Fee associated? No

Available for redistribution? Yes

Dataset source: <https://geoportal.hawaii.gov/>

Dataset contact: gis@hawaii.gov

Notes: Hawaii US Congressional District Boundaries as adopted by the State of Hawaii Reapportionment Commission in 1991.

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

Dataset name: Government Land Ownership

Data currentness: 2017

Accuracy/Scale: Unknown

Horizontal datum: NAD 83

Fee associated? No

Available for redistribution? Yes

Dataset source: <https://geoportal.hawaii.gov/>

Dataset contact: gis@hawaii.gov

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

No coverage available. Hawaii does not have a PLSS system.

Cadastral (parcels)

Dataset name: TMK Parcels from Hawaii Statewide GIS Program

Data currentness: 2019

Accuracy/Scale: Unknown

Horizontal datum: NAD 83

Fee associated? No

Available for redistribution? Yes

Dataset source: <https://geoportal.hawaii.gov/>

Dataset contact: gis@hawaii.gov

Extraterritorial jurisdiction (ETJ) boundaries

No coverage available.

Terrain (elevation)

Dataset name: USGS DEM

Data currentness: Varies

Accuracy/Scale: 1:24K

Vertical datum: NGVD 29

Fee associated? No

Available for redistribution? Yes

Dataset source: <http://ned.usgs.gov/>

Dataset contact: N/A

Notes: 30-meter USGS Digital Elevation Models (DEM) are the only seamless elevation data covering all of Hawaii available in public domain. There are LiDAR or other higher-quality data for specific areas, but these data are not all produced with consistent standards or made publicly available. LiDAR data sets purchased by the Hawaii Office of Planning for the following area: Oahu - Kakaako, Haleiwa, Kahuku; Lanai - entire Island; Maui - Kihei; Big Island - Kona, Kilauea, and Waimea were flown by Airborne 1 and are now public domain. Contact Craig Tasaka (ctasaka@dbedt.hawaii.gov) at the Hawaii Office of Planning for more information.

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

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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	See National Operating Procedure
Jurisdictional boundaries	Hawaii Office of Planning	Jurisdictional boundaries available at the Hawaii Office of Planning GIS portal: http://hawaii.gov/dbedt/gis/adminidlg.htm
Tribal land boundaries	US Census Bureau	US Census Bureau makes available tribal land boundaries data for Hawaii at: http://www.census.gov/geo/www/cob/na2000.html
State lands	Hawaii Office of Planning	Land ownership info available at the Hawaii Office of Planning GIS portal: http://hawaii.gov/dbedt/gis/govown.htm
Federal lands	Hawaii Office of Planning	Land ownership info available at the Hawaii Office of Planning GIS portal: http://hawaii.gov/dbedt/gis/govown.htm
Major roads	Hawaii Office of Planning	Street centerline data downloadable from the statewide GIS site is a collage of datasets originating from various sources for the different counties of Hawaii. Information can be found at http://hawaii.gov/dbedt/gis/download.htm
Streams	USGS	Hawaii Office of Planning serves USGS-maintained National Hydrography Dataset (NHD) for Hawaii at the following location: http://hawaii.gov/dbedt/gis/nhd.htm
Coastal Barrier Resource Areas	United States Fish and wildlife Service (USFWS)	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/contacts/Statecontacts/contacts.asp?page=HI
Topographic/bathymetric data	FEMA Regional Office	FEMA Region IX Geo-index See RSC9 Geospatial Data Coordination Lead
AAL data from HAZUS	National	See National Operating Procedure

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Data	Agency	Location
Coverage areas for known community and Tribal risk assessment data	Hawaii Office of Planning	Hawaii Office of Planning maintains multi-hazard GIS data at its GIS portal, including flood hazard, lava flow, hurricane, fire, tsunami evacuation zones and tsunami wave heights. Information can be found at: http://hawaii.gov/dbedt/gis/download.htm
Status of Hazard Mitigation Plans	Hawaii State Civil Defense	Statewide hazard mitigation plans can be found at the following Hawaii State Civil Defense site: http://www.scd.hawaii.gov/2010_hmp.html
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	County Planning Departments	Hawaii Office of Planning maintains a GIS layer of development plans at: http://hawaii.gov/dbedt/gis/devplan.htm
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	Hawaii Office of Planning	Although there is no direct inventory of primary frontal dunes for the State of Hawaii, the Hawaii Office of Planning maintains a GIS layer of beach erosion sites using archival aerial photography taken from 1955 through 1988. Beach erosion information can be used to assess possible primary frontal dune failure. Information can be found at: http://hawaii.gov/dbedt/gis/beacherosion.htm
Beach nourishment or dune restoration projects	N/A	No statewide coverage
Comparison of stillwater elevations	N/A	No statewide coverage
Available effective study data	National – FEMA	See National Operating Procedure

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Data	Agency	Location
Orthophotography	Natural Resources Conservation Service	USDA/NRCS had contracted with EMERGE to fly the main eight Hawaiian Islands and to process the data to ortho spatial quality. NRCS owns this data, but makes it available to the geospatial community in Hawaii in MrSID format. There are missing tiles in this dataset. About 75-percent of the DOQQ's for the State of Hawaii are covered by EMERGE data. Contact Pat Shade, NRCS Hawaii, Pat.shade@hi.usda.gov, (808) 541-2600
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	Hawaii Office of Planning	Hawaii Office of Planning serves SSURGO soil data received from USDA Natural Resources Conservation Service, Hawaii, 2007. http://hawaii.gov/dbedt/gis/soils.htm
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
Hydraulic structures: ditches	United States Geological Survey	Hawaii Office of Planning maintains a GIS layer of ditches in the state from USGS DLGs. Lines were extracted from the 1983 DLG hydrography layers. DAR coded lines with the Hawaii Stream Assessment codes and additional attribute data. Ditch Type and Subtype were coded based on USGS hydrography major and minor codes. Information can be found at: http://hawaii.gov/dbedt/gis/ditches.htm
Hydraulic structures: dams	State of Hawaii Department of Land and Natural Resources	The State of Hawaii Department of Land and Natural Resources (DLNR) is responsible for the dam safety program and the approval process for dam inundation mapping. In 2008 and 2009, the DLNR Dam Safety Office completed a hazard assessment of all the dams in the state. Information can be requested from Edwin Matsuda Civil Engineer, edwin.y.matsuda@hawaii.gov
Coastal structures , shoreline structures, manmade embankments, surge conveyance pathways, and shoreline change data	Local	No statewide coverage
Local structure and topographic data from	N/A	No statewide coverage

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Data	Agency	Location
the existing hazard mitigation plans		
Historic inundation areas and High Water Marks	N/A	No statewide coverage
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
Any 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	See National Operating Procedure
Community Rating System class information	National	See National Operating Procedure
Information from other Federal agencies	National	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/

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Data	Agency	Location
Campgrounds, recreational areas, emergency access routes, etc.	National	See National Operating Procedure
Other data	Local	No statewide coverage

Data Distribution Process for State Data

The State distributes a wide variety of data freely by making it available for download online.

<https://geoportal.hawaii.gov/>

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

Hawaii Statewide GIS Program

www.hawaii.gov/dbedt/gis

This website contains a wide variety of GIS data that can be freely downloaded. The data include:

- Physical Features/Basemap Layers
- Political Boundaries/Administrative Layers
- Natural Resource/Environmental Layers
- Hazard Layers
- Coastal/Marine Layers

The State Office of Planning offers a website (<http://hawaii.gov/dbedt/op/>) for the public to download the following maps:

- State Land Use Boundary Maps
- Major Land Owner Maps
- Land Study Bureau Maps
- Agricultural Lands Of Importance To The State Of Hawaii Maps (Alish)

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- Watershed Boundaries Maps
- Reserve Maps

Hawaii Data Clearinghouse

<http://hawaii.wr.usgs.gov/>

The Hawaii Data Clearinghouse website, created and maintained by the USGS, is a gateway to digital data for the Hawaiian Islands. This website is designed to ensure that all interested users (scientists, engineers, resource managers, developers, and the public) have quick and easy access to a wide range of data and GIS products. The primary goals of this clearinghouse are to facilitate the coordination of research, monitoring, and environmental-management activities in Hawaii, and to ensure the widest possible access to data and information resulting from such activities.

City & County of Honolulu, Department of Planning and Permitting Interactive GIS Maps and Data website

<http://gis.hicentral.com/>

This website allows a variety of GIS data for the City and County of Honolulu to be downloaded. The screen shot to the right of the website shows the directory structure for browsing the data that can be downloaded.

This website also links to online map views for parcel and zoning information and economic development purposes.

Maui Shoreline Atlas

<http://www.co.maui.hi.us/index.aspx?NID=865>

Researchers at the University of Hawaii, under contract from Maui County, have developed maps of coastal erosion hazards along Maui's shoreline. The erosion hazard maps depict the average annual erosion rate calculated by linear regression of historical shoreline positions. Past shoreline positions are measured using geo-rectified nautical and topographic sheets from the pre-World War II era, and all available, temporally spaced sets of aerial photographs covering long continuous segments of shoreline, usually flown in stereo, from the post-World War II era. Pre- World War II N- and T-sheets are made available through the Shoreline Data Rescue Program of the National Oceanographic and Atmospheric Administration Coastal Services Center at <http://www.csc.noaa.gov/>.

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?pag=HI>

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Involving State's Geospatial Coordinator in Flood Studies

The RSC has maintained communications with the Hawaii NSGIC representative with regards to updates to the State SOPs and/or topographic inventory.

State Coordination Process for Building Geospatial Partnerships

Statewide GIS Program

<http://geoportal.hawaii.gov/>

The State Office of Planning GIS Program leads a multi-agency effort to establish, promote, and coordinate the use of GIS technology among Hawaii State government agencies.

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>.

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.