

2019-21 Framework Data Development Program Projects

Statewide Land Use Development Project

Contact Information

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Project abstract

Beginning in 2015, DLCD funded two pilot projects, conducted by the Lane Council of Governments (LCOG), to determine the feasibility of using county assessor data to develop a statewide land use layer for Oregon. The Phase 1 pilot project was a partial success and determined that the methodology tested only works for urban lands; it didn't work well for undeveloped or lightly-developed lands, including rural areas and the urban fringe. Therefore, the Phase 2 pilot project focused on a new methodology that would work well for rural areas; testing the same five counties used in Phase 1.

The Phase 2 project was a success and allowed LCOG to create a plan for statewide implementation. DLCD is now proposing a project that will leverage the work of these pilot projects to build a statewide land use layer. It will be derived primarily from county tax lot data and supplemented with other datasets like parks and public landownership. This proposal requests funds to allow DLCD staff, who reside in federally funded positions, to work on this project.

This project will create a land use workgroup, as part of the Land Use Land Cover Framework Implementation Team (FIT), to provide guidance, review, and feedback as the project progresses. This dataset will enable users to see and study current land uses across the Oregon landscape, as well as measure development trends with future iterations of these data. A stewardship plan will be created for the dataset which will recommend an update frequency.

Oregon Coast Watershed Boundary Dataset (WBD) Lidar Derived Feature Update – Phase 2

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Project abstract

This project will make much needed updates to the Watershed Boundary Dataset (WBD) using high resolution lidar topographic data. Twelve hydrologic subwatersheds in the Oregon Coast and Klamath Basin will be updated in this project. This is phase 2 of an identified long-term plan by the PNWHF to update hydrologic features for Oregon Coast Range and Coastal strip.

In addition to phase 2 WBD updates, we propose to complete phase 1 in the Wilson-Trask-Nestucca and Siletz-Yaquina subwatersheds. This involves creating new linework for 21 subwatersheds and importing those plus 22 previously created subwatersheds into the NHD.

This project will make improvements to a Secondary Framework data element required for the Foundational Framework data elements falling under the Hydrography Theme. This fundamental dataset is used to maintain many other framework elements, but has many areas that are deficient with respect to spatial accuracy. The updates to this dataset have been identified as a priority within the Hydrography FIT. This improved watershed boundary data will be valuable not only for inclusion in the National Hydrography Dataset (NHD) and the USGS National Map data layers, but will also contribute to local water resources planning and management, habitat monitoring and management, flood hazard assessments, and mapping and support of emergency response

efforts, and is used by ODFW, OWRD, BLM, USGS, FEMA, USFS, USACE and numerous other Local, State and Federal agencies.

Our proposed project is leveraged by 1,600 square miles of airborne lidar data scheduled to be collected for the southwestern portion of the state in mid-2019. The US Forest Service is collecting the southern portion of the Rogue River-Siskiyou National Forest through their 2019 3DEP BAA Project, covering the Applegate and Illinois subbasins that border California. The Oregon Lidar Consortium is collecting the majority of the remaining South Coast through a 3DEP Project. This will include the area burned in the Chetco Bar Fire with the exception of a 64 square mile gap in the upper reaches of the Applegate, Illinois and Lower Rogue subbasins. Therefore, we are proposing this relatively small (64 mi²) lidar collection as part of this proposal to fill that gap and thus provide seamless coverage of the entire coastal drainages. Overall, 7 complete subbasins and 5 partial subbasins will have WBD updates because of the integration of lidar data into this proposed project.

Building Footprints Dataset of Oregon

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Project abstract

GIS data of the 2-D representation of a building's outline or "building footprint" is available for many populated areas within the state of Oregon, but currently a statewide dataset does not exist. DOGAMI has manually digitized building footprints for the Oregon Coast and recently has developed and implemented automated building polygonization processes from lidar for several counties. In addition to DOGAMI's building footprint datasets, there are other public entities in the state that also have made building footprint data (e.g. Metro's Regional Land Information System (RLIS), Lane Council of Governments (LCOG), and Jackson County). Despite these high-quality datasets, large portions of the state still do not have coverage. Recently it has become possible to fill in these gaps where no building footprint data previously existed using an open-use dataset from Microsoft (Bing Maps). With some effort this GIS data can be edited to fix errors and bring it to a level of quality that is comparable to the other existing datasets in the state. Compiling the Microsoft building footprints dataset, with DOGAMI's datasets and other public datasets would accomplish the first step towards a statewide dataset of best available building footprint data. DOGAMI proposes to compile their own high-resolution datasets, as well as other public datasets, with an upgraded version of Microsoft's open-use dataset to create a single dataset of best available building footprints for all of Oregon – a product that will be highly beneficial for a variety of reasons. Some of the activities that will be supported include: natural hazard preparedness, emergency planning and response, land use planning and development, asset management, real estate interests, and general cartography. DOGAMI will initiate a dataset of best available building footprints that will act as a baseline from which a FIT Workgroup can further develop. DOGAMI will draw upon the extensive experience of its GIS staff to produce a dataset that will provide a first-time resource for the state. The result of this work will be a statewide building footprints dataset that comprises the "Buildings Element" of the Preparedness Theme.

Oregon Earthquake Database

Contact information:

Project abstract

Oregon is vulnerable to many natural hazards including earthquakes. In order to help Oregonians prepare for and recovery quickly from the next major

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earthquake, we must make high quality earthquake datasets easy to access and up-to-date. As part of the 2013 Oregon Resilience Plan, DOGAMI assembled a statewide dataset describing ground motion and potential ground deformation resulting from a Magnitude 9 Cascadia Subduction Zone (CSZ) earthquake. Recent and ongoing geologic mapping updates offer valuable information that can improve the information on the earthquake hazard, but such updates have not been processed or incorporated into a statewide earthquake database. This project proposes to create an updated, statewide earthquake database using most current geologic mapping by 1) compiling recent co-seismic geohazard mapping updates; 2) combining the updates with aseismic model of a CSZ earthquake and a United States Geological Survey probabilistic model to produce updated ground motion and potential ground deformation data; and 3) establishing tools and methods that facilitate future geologic mapping updates into a maintainable database. The final earthquake database will include three statewide, compiled coseismic geohazard feature class datasets and twenty raster datasets. The development and publication of these standardized datasets will provide an important service to the emergency managers, planners, and technical consultants throughout Oregon by providing them with the best available information to make key earthquake risk mitigation decisions.

***Oregon Statewide Tsunami
Geodatabase Compilation***

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Project abstract

Between 2010 and 2013, DOGAMI completed modeling and mapping the next generation of tsunami evacuation maps for the coast of Oregon. These data are presently used to guide tsunami wayfinding signage along major highways (e.g. Highway 101) and in coastal communities to facilitate evacuation, the establishment of new critical facilities, for evacuation modeling, and for maritime preparation and guidance. The data that form the foundation of these efforts are presently stored in a complicated file storage system that due to inconsistencies over multiple separate publications, are characterized by partial or incomplete raster products, ascii point files, and shapefiles that are partially complete, all of which are not easily accessible let alone transferable to others. The objective of this project is to integrate these disparate tsunami datasets (e.g. earthquake source parameters, inundation zones, runup elevations, flow depths, tsunami current velocities, momentum flux, critical and essential facilities etc.) into a suite of standardized tsunami products stored in ESRI geodatabases. An open-file-report describing the data will accompany the geodatabases, along with the creation of a GIS tsunami data standard, required for such datasets to be formally recognized as an official GEO dataset. These data reflect important legacy datasets as well as newer datasets presently under development, which are periodically requested and used by consulting companies (e.g. for construction of critical and essential facilities), universities (e.g. for evaluating vertical evacuation, and agent-based tsunami evacuation modeling), and state agencies (e.g. for assessing tsunami effects around bridges). The development of a suite of standardized tsunami geodatabase products will make it considerably easier to share important geohazard information, which will assist local and county emergency managers, emergency responders, resource managers and technical consultants.

**Oregon Spatial Data Library and
Imagery Explorer Integration**

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Project abstract

This project proposes to integrate the Oregon Spatial Data Library (OSDL) and Oregon Imagery Explorer (OIE) front-ends so that spatial data and imagery can be accessed from one public site. Currently, users have to go to two different sites depending on the type of data they need to find and access framework data. The OSDL is the primary public data clearinghouse for framework data as well as other geospatial data. The OSDL currently supports the ability to create custom data extractions for vector and some raster-based framework datasets. In the OSDL, imagery is displayed as individual records with links to service urls only; downloads are not supported. The Oregon Imagery Explorer (OIE) is a simple web map viewer application that allows users to view and compare Oregon NAIP imagery from 1995-2017. The OIE used to support custom data extractions allowing users to choose custom areas, output formats and projections. The ability to clip, zip, and ship imagery data is a desired functionality for users who are not able to readily stream the data through services or require local copies of the data for advanced geo-processing and analysis. The integration of the two sites into one consolidated site will be informed by online surveys with users and framework data developers. We propose keeping the OSDL as the front-end to access framework data, and to merge the existing OIE map viewer functionality into the OSDL such that users can extract imagery from a new and improved Oregon Framework Data Download tool.

**Oregon Geology Data Schema
Migration**

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Project abstract

The Oregon Geologic Data Compilation (OGDC) and the Oregon Geologic Data Standard (OGDS) were developed by state and federal government geologists, and members of the Geosciences Framework Implementation Team (FIT), over a decade ago. In 2009, the Oregon Department of Geology and Mineral Industries (DOGAMI) successfully completed statewide, geospatial datasets of geologic map units, faults, folds, and the compiled data's map extents from traditional geologic maps. Later that year, the U.S. Geological Survey (USGS) released a separate geologic mapping database schema for its National Cooperative Geologic Mapping Program (NCGMP). An updated release of the new Geologic Map Schema, or GeMS, is in technical review and is being implemented broadly. As a requirement for new geologic mapping projects that are in part funded by the NCGMP, DOGAMI began utilizing the new schema for mapping projects in 2016. In the 2017-19 biennium funds were received to convert the existing OGDC to the new GeMS format. This proposal will pick up where the previous request completed.