



Department of Geology and Mineral Industries

Regional Solutions Team Participation Plan 2014

HB 4015 (2014) Regional Solutions Program Act

Oregon Department of Geology and Mineral Industries

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Oregon Department of Geology and Mineral Industries

The Oregon Department of Geology and Mineral Industries (DOGAMI) was created in 1937, but actually began in 1911 as the Oregon State Bureau of Mines. DOGAMI has evolved from its early focus on mining and mineral resource assessments to become Oregon's primary source of knowledge and information on our spectacular landscape and how best to interact with it and prepare for the array of natural hazards that accompany the state's remarkable geology. Today we continue the legacy and vision of scientist and scholar Thomas Condon, appointed Oregon's first State Geologist in 1872. That legacy and vision is reflected in our agency mission: PROVIDE EARTH SCIENCE INFORMATION AND REGULATION TO MAKE OREGON SAFE AND PROSPEROUS.

The Agency's function, as defined by Oregon Revised Statutes (ORS Chapter 516), is to serve as the centralized source of geologic information in Oregon for the public and for all levels of government. DOGAMI identifies and quantifies mineral and energy resources and natural hazards and works to reduce the risk of earthquakes, tsunamis, landslides, volcanoes and coastal hazards through a comprehensive and broad-reaching mitigation strategy. We do this by mapping the state's geology using cutting edge science and creating and maintaining geologic data and information, primarily in digital form. Our geologic maps and technical knowledge provide the resources for effective state management of geologic hazards, land use, and mineral, energy and water resources.

Through our Mineral Land Regulation and Reclamation Program, DOGAMI serves as a steward of the state's mineral production while encouraging best practices within the industry. Our goals include environmental protection, conservation, effective site reclamation, and operational guidance regarding other engineering and technical issues.

Mineral Land Regulation and Reclamation

Background

The Mineral Land Regulation and Reclamation (MLRR) Program is a field-oriented regulatory program, working with the industry and the public to minimize impacts of natural resource extraction (chemical process mining, surface mining, oil and gas, and geothermal) and to optimize opportunities for reclamation.

The goal of the program is to prudently regulate mineral, oil and gas and geothermal energy development to protect the environment and people of Oregon.

The program is statewide (except tribal lands) and fee-based, with authority to regulate:

- all upland and underground mining
- the drilling of wells for oil or gas exploration and development
- the drilling of geothermal wells for exploration and development

MLRR has an interagency agreement with the Oregon Department of Environmental Quality to implement the federal Clean Water Act General Stormwater Permit and the State Water Pollution Control Facility Permit at aggregate mine sites.

Our field and aerial photo inspection programs are critical to maintaining compliance and maintaining a positive working relationship with the regulated community. MLRR uses non-regulatory tools such as the annual Reclamation Awards Program to encourage best practices in mining and recognize innovative reclamation of mined land.

Geologic Survey

Background

Pursuant to ORS 516, the purpose of the Geological Survey & Services Program (GS&S) is to help reduce the impact of geologic hazards on the citizens of Oregon, to promote the responsible economic development of mineral and energy resources, to provide geoscientific insight into pressing policy issues such as water resources and climate change, and to provide geoscientific advice and information to a variety of constituencies.

To achieve these objectives, the Program:

- Seeks stakeholder input to prioritize and sequence projects,
- Operates in areas of Oregon where results will be the most beneficial,
- Builds collaborative partnerships with other agencies, counties and communities,
- Integrates strategies and priorities based on statewide plans such as the Integrated Water Resources Strategy and the Oregon Climate Change Adaptation Framework.

The goals of this program are:

- **Earth Science:** Acquire and organize complete and current descriptions of the geologic resources, materials, landforms, processes, and hazards.
- **Natural Hazards:** Reduce risk, damage and loss by acquiring and organizing comprehensive descriptions of natural hazards.
- **Education and Outreach:** Place earth science information in the hands of the right people at the right time to shape decisions on an individual, local, regional, and statewide level.

The GS&S Program administers the Oregon Lidar Consortium. This consortium collects and disseminates lidar elevation data and products statewide. Lidar derived digital elevation data are now the backbone of our geologic and hazards mapping. Additionally state and local governments and businesses use this high definition mapping for a range of cost saving purposes, from estimating timber harvest and identifying endangered species habitat to performing land use planning and locating curb lines along roads. Approximately 25% of the GS&S Program budget is associated with the collection of lidar data.

The GS&S Program is dependent on federal grants and other fund revenue for approximately 70% of its non-lidar budget. The program does not receive any continuing grant funds from federal programs. We apply for federal grant funds or submit proposals to funding partners for project revenue every year.

Many grants are for one-time projects, such as landslide mapping in a particular area. We do not administer any grant programs for the state.

The GS&S program has the expertise to provide a variety of services and consultation to Oregonians. Services include:

- Developing landslide inventories and identifying areas with landslide susceptibility
- Characterizing earthquake hazards and developing mitigation tools
- Mapping tsunami inundation zones and designing evacuation routes
- Mapping mineral and geothermal resource potential
- Identifying abandoned mines, mine adits, and other historical mine hazards
- Working with organizations and communities to estimate risks to structures, roads, and utilities from geologic hazards
- Modeling flood zones and determining base flood elevations

Regional Solutions Teams

DOGAMI plays a key role in the success of Oregon communities as they strive for sound and long term economic growth. For rural communities, natural resources are an important part of their economies and could be more so in some cases. The work DOGAMI performs with its Federal, State and local partners helps identify natural resource potential, whether it is geothermal power, water resources, or potential mine lands. As the State's mining regulator, DOGAMI works with mine owners and local governments to ensure mines operate with minimal environmental and social impacts.

The long-term sustainability of communities depends on knowing, preparing for, and surviving natural hazards. DOGAMI is the state agency responsible for developing these natural hazard data and information. Although we just completed a multi-year project to develop earthquake and tsunami inundation models and maps for the entire Oregon coast using lidar data, there is much more applied research and outreach required to prevent loss of life and to enhance the resilience of coastal communities. Outreach includes working with communities to locate essential facilities in safe zones and assisting with evacuation planning. In addition, work is needed to ensure that lifeline routes to the coast remain open after a disaster. DOGAMI is a key partner in this work. These needs, and many others, are identified in the Oregon Resilience Plan and should be a priority for the Regional Solutions Teams.

Presently DOGAMI personnel serve on several Regional Solution Teams or provide technical support to other regional solution issues. Where DOGAMI can partner with ongoing regional solutions priorities and team efforts is outlined below. We assume there will be other regional issues that our expertise, information, and data could or should be incorporated into the decisions and work.

Full partnerships with Regional Solution Teams where applicable will require some amount of dedicated funds for staff and subject matter experts. We estimate partial funding for the following permanent FTE and programs for a total of 1.1 FTE/biennium would be required to implement our plan.

DOGAMI Regional Solutions Team contacts are DOGAMI Assistant Director Geologic Survey and Services Program or DOGAMI Assistant Director Mineral Land Regulation and Reclamation Program. Once contacted DOGAMI management will determine the subject matter expertise and project work necessary to participate with the team.

AD Geologic Survey and Services Program – 971.673.1541 or 971.673.1555 (Portland Office)

AD Mineral Land Regulation and Reclamation Program – 541.967.2053 or 541.967.2040 (Albany Office)

Oregon Lidar Data Acquisition Program	0.15 FTE ISS6 (Lidar Program Coordinator) \$183,657	\$27,549 (GF)	Ex.: Coordinating Oregon Lidar Consortium for RS prioritized data collection Areas of Interest and development of GIS layers and tools for decision making.
Flooding Hazards Assessment Program (backfill of existing positions)	0.15 FTE ISS6 (Flood Hazards Coordinator) + ISS4 \$320,706	\$48,106 (GF)	Ex.: Working with communities to rectify errors with FEMA’s Base Flood Elevations through the Letter of Map Amendment process.
Landslide Hazards Mitigation Program (backfill of existing positions)	0.15 FTE NRS4 (Landslide Geologist) + GEO2 + ISS3 \$240,430	\$36,065 (GF)	Ex.: Assess priority communities for landslide hazards that RS Teams have identified for sustainable development.
Seismic Hazards Mitigation Program (backfill of existing positions)	0.15 FTE NRS4 (Earthquake Engineer) + PA3 \$416,440	\$62,466 (GF)	Ex.: Working with communities to implement OR Resilience Plan including transportation corridors, infrastructure and industrial lands.
Energy and Mineral Resources Program New position to be shared between DOGAMI/RS	0.50 FTE GEO4 (Mineral Resource Geologist)	\$90,884 (GF)	Work with Eastern and Southern RST to assess mineral and geothermal resource potential for mineral and energy extraction industry.

North Coast Region (Clatsop, Tillamook and Columbia counties)

- Promote and sustain healthy communities through retention, diversification and expansion of the economic base. Job creation is paramount with the goal of expanding the region’s economic base while being responsible stewards of the region’s natural resources.

- DOGAMI can partner with communities to identify natural resources available for exploration and development.
- DOGAMI can partner with communities to identify natural hazards so planners can ensure development is sustainable, even after a natural disaster.
- Sustain and grow NW Oregon’s businesses in areas such as marine based industry, tourism, small manufacturing, forest products, agriculture, and aviation.
 - DOGAMI can partner with communities to identify geologic and other natural features that have a tourism potential.
 - DOGAMI can develop watershed level GIS layers and tools to assist with decision making for sustainable industry.
- Encourage innovation, business incubation, and the manufacturing of new product technologies. Assist business start-ups and entrepreneurs. Encourage the creation of quality flex-space.
- Improve the readiness of industrial land by addressing wetlands, transportation access, infrastructure, and other impediments on prime industrial land in the region. Work to increase the number of sites that have building-ready status.
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
 - DOGAMI can partner with communities to review potential industrial sites and support infrastructure for geologic hazards and recommend mitigation strategies.
- Review, streamline, and address regulatory and permitting impediments to economic development.
 - DOGAMI will continue to work with other state regulatory agencies to identify streamlining the regulation of mining while guaranteeing no loss of oversight.
- Work with rural communities to plan, coordinate, fund, and install needed infrastructure.
 - DOGAMI works with partners to ensure they have the information necessary to ensure that new infrastructure is located in a manner to minimize impacts from natural hazards and disasters. We provide review and comment for EFSC permitted energy facilities regarding geologic hazards and resource potential.
- Bring regional support to ongoing Oregon Solutions projects.

- DOGAMI is an agency with a statewide focus. Our geologists, engineers and professionals have detailed knowledge of all areas of the state and can bring local knowledge to projects as it applies to earth science and natural hazards.

Mid-Valley Region (Marion, Polk and Yamhill counties)

Primary Goal: Become a center for Agri-business innovation and agri-tourism

- Promote regional workforce development opportunities
- Increase business capital for existing and emerging businesses
- Explore passenger and freight rail opportunities
- Expand agri-tourism opportunities which highlight local produce, viticulture/winery operations, and visitor hospitality amenities
 - DOGAMI to partner with communities to identify geologic and other natural features that have a tourism potential. For example, the terroirs of the Willamette Valley are based on the geologic processes that formed the hills and the valley.
- Enhance programs that encourage business retention and expansion
- Engage in local government infrastructure assessments
 - DOGAMI can partner with communities to identify natural hazards so planners can ensure development is sustainable, even after a natural disaster.

South Valley (Benton, Lane, Lincoln and Linn counties)

- Support rapid rail route selection
 - DOGAMI can partner with planners to identify natural hazards so they can ensure the rail route is sited optimally to minimize impacts during a natural disaster.
- Increase number of certified industrial sites (i.e. Goshen)
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- Develop South Willamette Valley Research Corridor leveraging academic, government and business resources (RAIN)
- Strengthen workforce development programs, opportunities and infrastructure

- Explore wetlands permit streamlining
 - DOGAMI could be a valuable partner in identifying new uses for lidar and the tools and techniques we have developed to simplify and expedite decision making.
- Support local government infrastructure assessments
 - DOGAMI can partner with communities to identify natural hazards so planners can ensure development is sustainable, even after a natural disaster.

South Coast: Umpqua (Coos, Curry and Douglas counties)

- Active forestry management on O & C timber lands
 - The lidar data collected by DOGAMI and the Oregon Lidar Consortium is heavily used by Federal land management agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, wildfire hazards, endangered species and other forest related issues.
- Regulatory streamlining, regulatory technical assistance
 - DOGAMI will continue to work with other state regulatory agencies to identify streamlining the regulation of mining while guaranteeing no loss of oversight.
- Enhance marine, rail and telecommunication infrastructure
 - DOGAMI can partner with communities to identify natural hazards so planners can ensure development is sustainable, even after a natural disaster.
- Business retention, expansion and creation
- Build on recreation economy
 - DOGAMI to partner with communities to identify geologic and other natural features that have a tourism potential.
- Access to natural resources, support of natural resource economy
 - DOGAMI can partner with communities to identify natural resources available for exploration and development.
- Alternative energy development
 - DOGAMI has the expertise to conduct regional geothermal resource assessments especially to identify resources that may not be manifested at the surface.

Southern Region: Rogue Valley (Jackson and Josephine counties)

- Active forestry management on O & C timber lands

- The lidar data collected by DOGAMI and the Oregon Lidar Consortium is heavily used by Federal land management agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, wildfire hazards, endangered species and other forest related issues.
- Maintain and enhance forest industry infrastructure
- Business retention, expansion, creation and recruitment
- Regulatory streamlining
- DOGAMI will continue to work with other state regulatory agencies to identify streamlining the regulation of mining while guaranteeing no loss of oversight.
- Water conservation and stream restoration
- DOGAMI's has experience working with watershed groups on lidar mapping, flood mapping, and analysis of channel migration and other riverine processes. We have the tools to work with other state and local organizations to develop the information necessary to conserve water and restore streams.
- Workforce training
- Downtown revitalization

Metro Region (Multnomah, Washington and Clackamas counties)

- Regulatory Coordination, Streamlining & Continuous Improvement:
 - DOGAMI will continue to work with other state regulatory agencies to identify streamlining the regulation of mining while guaranteeing no loss of oversight.
- Infrastructure:
 - o Provide resources and technical assistance to modernize the region's key transportation and infrastructure systems to support livability and to promote traded sector economic growth
 - DOGAMI can partner with communities to identify natural hazards so planners can ensure development is sustainable, even after a natural disaster.
- Redevelopment:
 - o Align state policies and resources to cleanup and reuse brownfields and other potential redevelopment areas to efficiently use existing properties and protect productive farm and forest land and conserve natural resources
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has

the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.

- Economic Development:
 - o Improve the regional economy by prioritizing economic development efforts around distinctive industry clusters: 1) software & high technology; 2) advanced manufacturing; 3) clean technology; and 4) athletic & outdoor
- Regional Planning and Development:
 - o Align State policies and resources to maximize development that encourages land efficiency, multi-modal transportation, and balances future employment and housing growth

North Central Region (Wasco, Hood River and Sherman counties)

- Infrastructure focus:
 - o Waste water
 - o Water
 - o Telecommunications/broadband
 - o Public transportation, access, freight
- DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- DOGAMI's has experience working with watershed groups on lidar mapping, flood mapping, and analysis of channel migration and other riverine processes. We have the tools to work with other state and local organizations to develop the information necessary to conserve water and restore streams.
- Providing support for business clusters:
 - o Value added agriculture
 - o Fermentation sciences (wine, beer, distilling, cider, cheesemaking) (subset of value added agriculture)
 - o Technology
 - o Arts and culture
 - o Health care
 - o Renewable energy
- Work force training
- Attainable housing
- Availability of industrial land

- DOGAMI has the tools and knowledge to mapping and analyze lidar data for to identify where industrial land is available and safe to build on.
- Urban area boundaries in the National Scenic Area and need for clarity from Columbia Gorge Commission re: amendments
- Regulatory integration/streamlining

Central Region (Jefferson, Crook and Deschutes counties)

- Establishment of four year university (OSU Cascades)
- Job retention and growth; respond to emerging opportunities
- Ensure that the region has land and infrastructure available to retain/attract employers
- DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- Water availability
- DOGAMI's has experience working with watershed groups on lidar mapping, flood mapping, and analysis of channel migration and other riverine processes. We have the tools to work with other state and local organizations to develop the information necessary to conserve water and restore streams.
- DOGAMI's 3 dimensional geologic mapping program can provide necessary geologic constraints for modeling groundwater availability and determining surface and groundwater quantity. This is an important aspect of the Integrated Water Resource Strategy.
- Sewer infrastructure
- Central Oregon Transit System
- Strengthen regional agriculture
- Improve forest health and increase access to timber resources
- The lidar data collected by DOGAMI and the Oregon Lidar Consortium is used by Federal land management agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, wildfire hazards, endangered species and other forest related issues.
- Support for arts and culture

South Central Region (Klamath and Lake counties)

- Infrastructure
 - o Water systems
 - o Water storage
 - o Sewer
 - o Natural gas
 - o Rail
 - o Hwys 97 and 140
 - o Airports
- DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. These elevation data allow for high resolution landform mapping. These data and the GIS maps are essential for analyzing and mapping of potential industrial land to determine if it can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- Work force training
- Availability and marketability of industrial land
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. This data allows for high resolution mapping. This data is essential for doing analysis and mapping necessary to ensure that industrial land is identified and can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- Downtown revitalization
- Business retention, expansion, and attraction
 - o Energy efficiency
 - o Food processing/value added agriculture
 - o Wood stove change out/improve air quality
 - o Aviation
 - o Health care
 - o Renewable energy:
- DOGAMI is the regulator of geothermal exploration and production. In addition, DOGAMI has the capability to work with federal and local partners to identify areas of high geothermal energy potential. This region has the most developed geothermal resource and has the potential to be a significant source of clean alternative energy.
- Improve forest health and access federal timber resources

- The lidar data collected by DOGAMI and the Oregon Lidar Consortium is heavily used by Federal agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, endangered species and other forest related issues.
- Support for entrepreneurship
- Housing rehabilitation/housing for vulnerable populations
- Regulatory integration/streamlining
- DOGAMI will continue to work with other state regulatory agencies to identify streamlining the regulation of mining while guaranteeing no loss of oversight.
- Respond to immediate, emerging opportunities

Greater Eastern Region (Gilliam, Wheeler, Morrow, Umatilla, Grant, Harney and Malheur counties)

- Increased productivity from federal forest lands
 - The lidar data collected by DOGAMI and the Oregon Lidar Consortium is heavily used by Federal agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, endangered species and other forest related issues.
- Water management and development
 - DOGAMI's has experience working with watershed groups on lidar mapping, flood mapping, and analysis of channel migration and other riverine processes. We have the tools to work with other state and local organizations to develop the information necessary to conserve water and restore streams.
 - DOGAMI's 3 dimensional geologic mapping program can provide necessary geologic constraints for modeling groundwater availability and determining surface and groundwater quantity. This is an important aspect of the Integrated Water Resource Strategy.
- Skilled workforce availability
- Workforce housing
- Infrastructure to serve industrial sites
- Regulatory technical assistance
 - DOGAMI Mined Land Regulation and Reclamation Program staff can work with communities on permitting of mine, geothermal, and oil and gas development.
- Avoid/Mitigate Sage Grouse Endangered Species Act listing

- DOGAMI is partnering with BLM, private industry and other agencies to use lidar to better identify Sage Grouse habitat. In conjunction with our partners, we have the capability to do detailed analysis to help decision makers understand Sage Grouse habitat and how to manage it in conjunction with responsible development.
- Marketable industrial land
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. This data allows for high resolution mapping. This data is essential for doing analysis and mapping necessary to ensure that industrial land is identified and can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.
- FEMA National Flood Insurance Program changes
 - DOGAMI is a cooperating technical partner with FEMA, doing significant amounts of flood mapping. In addition, DOGAMI works in conjunction with DLCD to prepare non-regulatory products that help local planners perform their work and that allow land owners to request map amendments when their properties are outside of the zones requiring insurance.
- Mining/Metals extraction
 - DOGAMI is the state agency with responsibility for regulating mining activity. The agency actively works with mine developers, local governments and state agencies to ensure that mines are developed and reclaimed responsibly.
 - DOGAMI has the expertise to collect, update, and otherwise make mineral resource information and data available so that mining companies know where to invest their resources.
- Unmanned Aviation Vehicle industry

Northeast Region (Union, Baker and Wallowa counties)

- Increased productivity from federal forest lands
 - The lidar data collected by DOGAMI and the Oregon Lidar Consortium is heavily used by Federal agencies, and the Oregon Department of Forestry to address many issues associated with Oregon forests including tree growth rates, forest health, endangered species and other forest related issues.
- Skilled workforce availability
- Marketable industrial land:
 - DOGAMI, through the Oregon Lidar Consortium, is the lead agency for the collection and dissemination of high resolution lidar data. This data allows for high resolution mapping. This data is essential for doing analysis and mapping necessary to ensure that industrial land is

identified and can be developed without impediment. DOGAMI has the tools and knowledge to do this mapping and analysis for partners, or can work with partners to enable them to do the work.

- Available infrastructure to serve industrial sites
- Value-added agriculture
- Support regional vertical integration opportunities
- Regulatory technical assistance
- Mining/Metals extraction
 - DOGAMI is the state agency with responsibility for regulating mining activity. The agency actively works with mine developers, local governments and state agencies to ensure that mines are developed and reclaimed responsibly.
 - DOGAMI has the expertise to collect, update, and otherwise make mineral resource information and data available so that mining companies know where to invest their resources.
- Regional business recruitment marketing strategy
- USFS 39 Road
- Entrepreneurial development
- Business succession/transition to next generation