Oregon
John A. Kitzhaber, M.D., Governor

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April 15, 2013

SENT VIA E-MAIL

Representative John Davis
900 Court St. NE, H-389
Salem, OR 97301

Subject: Data Requested for HB 2201/2202 Work Session

Dear Representative Davis:

The Department of Land Conservation and Development (DLCD) has worked with the Department of Agriculture (ODA) and the Department of Geology and Mineral Industries (DOGAMI) to prepare a coordinated response to the questions posed in your e-mail dated April 8, 2013. As we discussed, each agency has gaps in the data we are able to provide. Some of the data gaps could be addressed with additional time, and others will require more extensive data collection and analysis.

Background

Information included in this analysis:

- The information presented here was developed using existing data from Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon Department of Agriculture (ODA), Oregon Department of Land Conservation and Development (DLCD), Oregon Department of Forestry (ODF), U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), and the Federal Emergency Management Agency (FEMA).
- Disturbed mining sites regulated by DOGAMI as of 9-4-2012 are included (DOGAMI regulated sites are those which exceed 5,000 cubic yards of material annually). The area of the mine site included was determined depending on what data were available; if a disturbance boundary existed in DOGAMI's GIS, that boundary was used. If no boundary existed, it was digitized using Lidar or aerial photography, depending on the currentness and interpretability of the data source(s).
- Mining sites permitted by counties. These include both (1) mining sites that are regulated by DOGAMI and (2) mining sites of more than 1,000 cubic yards but less than 5,000 cubic yards of material annually, which are not regulated by DOGAMI. These data are collected by DLCD from counties on an annual basis. However, as discussed further below, specific data on sites less than 5,000 cubic yards are limited and could be supplemented by local governments.

- Sites inventoried by counties in comprehensive plans as "significant mineral or aggregate sites" (under requirements of LCDC Goal 5). These inventories map sites that are being mined or have been mined, and sites that are not mined but where mining is authorized under current local land use plans. As discussed further below, specific data on these sites are limited, and include only those sites inventoried after 1996. This data could be supplemented by local governments.

Information NOT included in this analysis:

- Areas permitted by DOGAMI for mining but not currently disturbed. DOGAMI indicates it can provide the information on such sites if given more time.
- Areas previously mined and not associated with an active DOGAMI permit.
- Sites inventoried by counties in comprehensive plans as "significant mineral or aggregate sites" prior to 1996.

Data sources used in this analysis:

- The UGB data, data on county permits for mining and data on county-inventoried sites originated from DLCD.
- The soils data originated from NRCS.
- The 100-year Floodplain data originated from FEMA and were limited to the following zones: A, AE, AH, and AO.
- DOGAMI databases and permit information, and aerial and Lidar surveys.

To fully address mined land disturbance over time (hindcast and forecast) will require additional capacity at DOGAMI, ODA and DLCD in order to:

- Complete the transformation of DOGAMI's Mined Land Database to fully GIS database.
- Conduct an analysis of historical mined land operation data and more complete visual analysis of Lidar-based geomorphology of Willamette Valley to identify historical disturbed land including Total Exemption site.
- Conduct at least a full desktop resource evaluation of sand, gravel, and upland quarry resources for the state.
- Complete the conversion of DLCD's EFU database and spatially enable that data (GIS).
- Conducts additional data gathering and analysis to determine acreage of nonfarm uses authorized in the valley over the relevant time periods.
- Complete the conversion of DLCD's Post Acknowledgement Plan Amendment database in order to spatially enable (GIS) the capture of new Goal 5 "significant sites" and plan amendments converting farmland to other uses.
- Update information from counties regarding Goal 5 inventories.

Questions

1. **What is the rate of loss of Willamette Valley "prime" farmland over the length of time for which data is available? Data since 1970 would be most helpful. In your response, please define "prime" as presented by your data. For purposes of our workgroup, we have been focusing on Class I and Class II soils as "prime."**

Response: ODA cannot answer this specific question with available data. The best available data that ODA is aware of comes from the National Resources Inventory, which is produced by NRCS (see citation below). This data goes back to 1982; the 2012 data is not yet available.

The NRCS defines "prime farmland" as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods. The NRCS maintains a nationwide listing of soils designated as prime farmland.

Oregon Cropland designated Prime farmland, total acres	
1982	2,429,500 acres
1987	2,295,900 acres
1992	2,193,900 acres
1997	2,155,100 acres
2002	2,116,300 acres
2007	2,096,500 acres
Change	-333,000 acres -13.7%

Source: U.S. Department of Agriculture. 2009. *Summary Report: 2007 National Resources Inventory*, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa.

The most recent NRI (2002 and 2007) data available only provides statewide data. Regional NRI data estimates for Class I and Class II farmland are available for the time period 1982 to 1997, as shown in the table below.

Oregon Cropland, Pastureland and Rangeland Converted to Urban and Built-Up Land 1982-1997[1]		
	Class I Estimate	**Class II Estimate**
Willamette Basin	1,700 acres	36,600 acres
Oregon Total	2,200 acres	49,700 acres

Source: U.S. Department of Agriculture. 1997. *Summary 1997 National Resources Inventory*, Natural Resources Conservation Service, Washington, DC

[1] **Urban and built-up areas.** A *Land cover/use* category consisting of residential, industrial, commercial, and institutional land; construction sites; public administrative sites; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures and spillways; other land used for such purposes; small parks (less than 10 acres) within urban and built-up areas; and highways, *railroads*, and other transportation facilities if they are surrounded by urban areas. Also included are tracts of less than 10 acres that do not meet the above definition but are completely surrounded by Urban and built-up land. Two size categories are recognized in the NRI: areas of 0.25 acre to 10 acres, and areas of at least 10 acres.

As discussed in response to Question 2 below, it is possible that additional data could be developed to analyze the conversion of Class I and II farmland to non-farm or urban uses.

2. **To what extent is this loss of prime farmland attributable to all permitted uses (i.e. break out the acreage lost by how the land has been lost to permitted uses - e.g. road building, mining sites, agricultural buildings, churches or cemeteries, wetlands, dwellings, accessory dwellings, utility facility service lines, and other permitted uses under ORS 215.213)? To the extent data is only partially available, please disclose what is available.**

   Response: DLCD cannot answer this specific question with available data. DLCD does not collect data on loss of prime farmland due to conversion to specific non-farm uses. However, DLCD does collect some data on permitted uses in exclusive farm use (EFU) zones. In addition, the Oregon Department of Forestry (ODF) collects data on land conversion based on digital imagery. Data from these sources is included below.

   a. Oregon Department of Forestry aerial imagery.
      - Between 1984 and 2009, approximately 34,000 acres of farmland in the Willamette Valley were converted to nonresource/developed uses. These data are based on aerial images, and therefore reflects actual uses (and conversion), not zoning.
      - Source: Forest, Farms, & People: Land Use Change on Non-Federal Land in Oregon (1974-2009), ODF.

   b. DLCD maintains a Post Acknowledgment Plan Amendment database that tracks local government comprehensive plan amendments. The table below provides information on amendments required by LCDC rules to inventory significant mineral and aggregate sites in local comprehensive plans between 1996 and 2011.

New Goal 5 Sites (1996-2011)		
County	**No. Significant Sites**	**Reported Acreage**
Benton	2	492
Clackamas	2	>101
Lane	-	-
Linn	11	661
Marion	8	2,098
Multnomah	1	*no answer*
Polk	1	20
Washington	2	>50
Yamhill	3	639
Total	**30**	**4,061**

c. DLCD maintains a Farm and Forest database that tracks county permits for farm and non-farm uses in EFU zones. However, these data have several constraints: (1) The data are tabular (not GIS spatially enabled), so DLCD is unable to report this information with respect to prime farmland; (2) Acreage data are incomplete, consequently DLCD can only report on the number of permits; (3) The types of farm and non-farm uses that are permitted have changed over the years with various statutory and rule changes, and data on specific uses have been collected generally only for the most frequently-approved or most land-consumptive uses. Therefore, the data do not reflect the full number of permit approval approvals.

Total Permits 1996-2011		
	Farm Uses	
Sub-1 Uses ("Permitted")	Primary farm dwelling	1255
	Accessory farm dwelling	584
	Relative help dwelling	718
	Winery	92
	Farm stands	59
	Small-scale farm processing	28
	Irrigation canals and reservoirs	-
	Land application of reclaimed water (typically in conjunction with farm use)	-
Sub-2 Uses ("Conditional")	Commercial activities in conjunction with farm use	206
	Propogation of acquatic or insect species	-
	Landscape contracting business if in conjunction with farm use	-
	Agritourism uses	-
	Non-Farm Uses	
Sub-1 Uses ('Permitted")	*Churches and Cemeteries**	40
	Utility facilities necessary for public service (including cell towers, transmission lines, utility substations, etc.)	647
	Exploration of geothermal, gas and oil reserves	-
	Exploration for minerals	-
	Site for model aircraft	-
	Fire service facilities	-
	Utility facility service lines	-
	Existing county law enforcement facility	-
	Dog training classes or testing trials	-
	Parking of log trucks	-
	On-site filming and related activities	-
	Outdoor and mass gatherings	-
	Existing firearms training facility	-

Sub-2 Uses ("Conditional")	Bed & Breakfast/Guest Ranch	68
	Mineral and Aggregate (mining and/or processing)	280
	*Private parks**	115
	Public parks	4
	Community centers	-
	*Golf courses**	20
	Commercial power generating facilities	53
	Personal-use airports	49
	Home occupations	345
	*Solid waste disposal facilities**	-
	Temporary hardship dwelling	1419
	Non-farm dwelling**	3384
	Lot of record dwelling**	1126
	Transmission Towers over 200 ft	6
	Commercial dog boarding	44
	Residential homes	-
	*Destination Resorts**	1
	Room and board arrangements	-
	Water extraction and bottling	-
	Expansion of existing fairgrounds	-
	Living history museum	-
	Aerial fireworks display	-
	*Public or private schools**	28
	Restaurant in conjunction with large wineries	-
Locationally-Dependent (ROW)		
	Roads and Improvements (generally, new right-of-way is a conditional use; in some cases, an exception is required).	147

**not allowed on high-value farmland*
***limited on high-value farmland

If more time were available, a comparison and analysis of conversion in the Willamette Valley using DLCD, NRI and ODF data could be done.

3. **What total number of acres of Willamette Valley farmland are currently in food production? Has this acreage grown or fallen over the length of time for which data is available? Data since 1970 would be most helpful.**

Response: As currently compiled, there are no data that ODA is aware of that specifically distinguishes agricultural lands that produce food from other agricultural lands. Long-term, such data may be able to be developed looking at Census of Agriculture and/or OSU data.

Using cropland as a surrogate, we can distinguish cropland (statewide) from other agricultural lands. The table below utilizes data from the NRI. In order to look at the Willamette Valley (cropland) and to go further back in time, we would need to consolidate county level data from the Census of Agriculture.

Oregon Cropland (nonfederal land) total acres	
1982	4,348,500 acres
1987	3,941,600 acres
1992	3,746,900 acres
1997	3,733,300 acres
2002	3,636,400 acres
2007	3,601,800 acres
Change	-746,700 acres -17%

Source: U.S. Department of Agriculture. 2009. *Summary Report: 2007 National Resources Inventory*, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa.

Cropland. A *Land cover/use* category that includes areas used for the production of adapted crops for harvest. Two subcategories of cropland are recognized: cultivated and noncultivated. Cultivated cropland comprises land in *row crops* or *close-grown crops* and also other cultivated cropland, for example, hayland or pastureland that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent *hayland* and *horticultural cropland.*

Horticultural cropland. A subcategory of *Cropland* used for growing fruit, nut, berry, vineyard, and other bush fruit and similar crops. Nurseries and other ornamental plantings are included.

4. **What total number of acres of Willamette Valley disturbed mined acres are located on Class I and II soils in the Willamette Valley <u>inside</u> UGB's? <u>Outside</u> UGB's?**

Response: The information below was compiled from DOGAMI data, and reflects currently disturbed mined acres.

- 2494.0 total disturbed mined acres of Class I and II soils in the Willamette watershed.
- 223.6 acres of Class I and II soils disturbed by mining inside UGB's.
- 2270.4 acres of Class I and II soils disturbed by mining outside UGB's.

5. Please break out the percentage of soils disturbed by all mine sites in the Willamette Valley floodplain by soil classifications (Class I through VII). Please include past acreages as well.

Response: The information below was compiled from DOGAMI data, and reflects currently disturbed mined acres

Soil Acreages by Class in the Willamette Valley 100 Year Floodplain				
Non-Irrigated	**Irrigated**	**Total**	**Disturbed by Mining**	**Percent Disturbed**
Cls1_Nirr	Cls1_Irr	25494.6	6.4	0.03%
Cls2_Nirr	Cls1_Irr	8.1	0.0	0.00%
Cls2_Nirr	Cls2_Irr	140119.8	1258.6	0.90%
Cls2_Nirr	Cls3_Irr	90.4	0.0	0.00%
Cls2_Nirr	Cls4_Irr	53.7	0.0	0.00%
Cls2_Nirr	No	35493.4	182.7	0.51%
Cls3_Nirr	Cls2_Irr	126.1	0.0	0.00%
Cls3_Nirr	Cls3_Irr	74105.4	288.8	0.39%
Cls3_Nirr	Cls4_Irr	107.7	0.0	0.00%
Cls3_Nirr	Cls6_Irr	7.4	0.0	0.00%
Cls3_Nirr	No	4266.9	0.3	0.01%
Cls4_Nirr	Cls2_Irr	64.6	0.0	0.00%
Cls4_Nirr	Cls3_Irr	103.1	0.0	0.00%
Cls4_Nirr	Cls4_Irr	69946.7	326.2	0.47%
Cls4_Nirr	Cls6_Irr	3.1	0.0	0.00%
Cls4_Nirr	No	2896.0	25.5	0.88%
Cls5_Nirr	Cls3_Irr	429.3	0.0	0.00%
Cls5_Nirr	No	149.9	0.0	0.00%
Cls6_Nirr	Cls4_Irr	33.1	0.0	0.00%
Cls6_Nirr	Cls6_Irr	419.7	0.0	0.00%
Cls6_Nirr	No	23088.5	118.0	0.51%
Cls7_Nirr	Cls7_Irr	38.0	0.0	0.00%
Cls7_Nirr	No	10381.6	270.2	2.60%
Cls8_Nirr	No	36876.0	2063.8	5.60%
No	No	41811.1	557.6	1.33%

Additional information –

The table below shows the reclamation acreages for all permit sites in the Willamette Watershed that DOGAMI has in its MLRR Database from approximately 2001. These data have limited metadata associated with them and are not GIS derived.

Willamette Watershed Reclamation				
Post Mining Use	**Reclaimed**	**Voluntary**	**Total**	**Percent of Total**
Agriculture	121	2	123	6.1%
Anadromous Fish Habitat	33	120	153	7.6%
Forestry	80	21	101	5.0%
Housing/Const	349	10	359	17.9%
Industrial	33	0	33	1.6%
Open Space/Range	111	2	113	5.6%
Other	263	2	266	13.3%
Recreation	58	0	58	2.9%
Returned to Exempt	92	0	92	4.6%
Wildlife/Wetlands	163	94	258	12.9%
Not Defined in Database	337	109	450	22.4%
TOTAL	**1,640**	**360**	**2,006**	**100.0%**

Contacts

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James Johnson, Land Use and Water Planning Coordinator, ODA at (503) 986-4706

Bob Rindy, Senior Policy Analyst, DLCD at (503) 373-0050 ext. 229

Please contact the respective agencies if you have any questions or would like a briefing to discuss the information provided.

Very truly yours,

Carrie MacLaren
Deputy Director

cc: Katy Coba, ODA Director (via e-mail)
Vicki McConnell, DOGAMI Director (via e-mail)
Jim Rue, DLCD Director (via e-mail)