Oregon
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**MEMORANDUM**

TO: Water Resources Commission

FROM: Phillip C. Ward, Director

SUBJECT: Agenda Item M, May 30, 2014
Water Resources Commission Meeting

**Budget Update –2015-17 Budget Concepts**

## I. Issue Statement and Background

Development of the Agency Request Budget for 2015-17 is proceeding according to schedule. Staff will report on budget concept and request feedback from the Commission on the proposed budget concepts.

## II. Discussion

The Department is half way through the schedule for the development of the Agency Request Budget for 2015-17. In April, the Department submitted its base budget. Staff are now working to develop budget packages, which will add resources to the Department. Budget packages must be submitted to the Department of Administrative Services no later than June 30.

Department staff began developing ideas for budget concepts in February. Thereafter, a meeting was held with stakeholders to discuss the concepts and prioritize them. After reviewing the stakeholder rankings and considering Departmental priorities, a refined list of concepts was developed. A second meeting was held with stakeholders at the end of April to discuss the prioritization of the concepts.

In addition to the concepts presented to stakeholders, three additional concepts have been added relating to the Umatilla Tribal Water Rights Settlement, Technical Assistance for Dikes and Levee, and the Similkameen project. As shown in the table below, concepts highlighted in green, blue, and orange are recommended to move forward as budget packages, if sufficient resources are available. The Department has been given a preliminary "cap" of $2.5 million for its General Fund request, which can be accomplished if the items in red do not move forward. The recommendations are based on feedback from stakeholders and staff.

| Budget Concepts | FTE | Class Title | General Fund | Lottery / Other | Total | Cumulative GF Subtotals |
|---|---|---|---|---|---|---|
| Transfers and Leases of Water in the Klamath Basin | 1.00 | NRS 3 | 175K (other+GF) | | 175K | |
| Assessing Drought and Impact on Oregon Communities | 1.00 | LD 12 mths NRS 2 | 105K | | 105K | |
| Assistant Watermasters | 2.00 | NRS 2 | 385K | | 385K | |
| Klamath Basin Hydrotech to Assist with Water Management | 1.00 | NRS 2 | 190K | | 190K | |
| Implement KBRA Commitments | | | 0 | 3,400K | 3,400K | |
| Regional Solutions and Place-Based IWRS Planning | 2.00 | NRS 4 | 460K | 750K | 1,210K | |
| SB 1069 Grant Program Enhancement | 0.25 | NRS 4 | 120K | 250K | 370K | |
| Groundwater Data Management | 1.00 | NRS 5 | 250K | | 250K | 1.69 M Green |
| Monitoring Coordination | 1.00 | NRS 3 | 210K | | 210K | |
| Recapitalizing the Water Supply Development Fund | 0.50 | NRS 4 | 0 | 10,000K | 10,000K | |
| Dam Analysis, Rehabilitation & Safety | 1.00 | NRS 4 | 0 | 10,230K | 10,230K | |
| Re-establish a Northwest Region Hydrographic Tech | 1.00 | NRS 2 | 190K | | 190K | |
| Update Water Right Mapping | 1.00 | WRDT | 140K | | 140K | |
| Re-Classify Well Inspectors and Hydrographics Techs | 11.00 | NRS 2 | 155K (other+GF) | | 155K | |
| Mitigation Specialist | 1.00 | NRS 4 | 230K | | 230K | 2.6 M Green+Blue |
| Umatilla Settlement and Technical Assistance – Riverware Model | | | 100k | | 100k | |
| Dikes and Levees Technical Assistance | | | | 230k | 230k | |
| Similkameen Environmental Reviews | | | | 2,000K | 2,000K | |
| METRIC Program & Univ. of Idaho Collaborative Research | 1.00 | NRS 3 | 210K (staff) 210K (cost share) | | 420K | |
| Flood Characterization and Emergency Preparedness | 1.00 | NRS 4 | 230K (Staff) 25K | | 255K | |
| Review of Well Logs | 1.00 | NRS 2 | 190K | | 190K | 3.575 M All |

## III. Summary

The Department has been actively working to develop budget packages for the 2015-2017 Agency Request Budget with the input of stakeholders and staff. The Department seeks the Commission's input on the budget concepts and requests the Commission's endorsement of the concepts to move forward into budget packages.

## VI. Alternatives

The Commission may consider the following alternatives:

1. Endorse the staff budget concept recommendations.
2. Endorse the budget concepts as modified.

## VII. Recommendation

The Director recommends Alternative 1.

Attachment 1: 2015 Budget Concepts for Discussion

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# Data Collection and Monitoring

Oregon's Integrated Water Resources Strategy calls for a significant investment in monitoring of groundwater, surface water, and habitat through instrumentation including dedicated monitoring wells and stream gages, as well as the technical staff to operate the systems, and increase agency coordination. In 2013, the Department received funding for monitoring wells and stream gages, as well as staff resources. The Department continues to need trained personnel who are able to collect data, provide quality control, and process the results. The ability to have accurate data that is accessible helps improve both the management of water for water users and to protect the resource, but also improves the Department's capacity to be responsive to requests for information and process water right transactions in a timely manner.

**Re-establish a Northwest Region Hydrographic Tech**
IWRS Recommended Action # 1B
There are 26 stream gages in the Northwest Region that are owned and operated by the Department. Data collected by Hydrographics technicians is used to distribute and manage water on a daily basis to protect instream and out-of-stream water rights, forecast floods, plan for recreational activities, determine water availability, and plan for water needs in the future. As a result of budget reductions, there is no longer a Hydrographic Technician in the Region to maintain the equipment, measure streamflow and provide quality assurance in the field. In the meantime, the duties have been shared by Watermasters, Assistant Watermasters, and Hydrographics staff. While this has been a workable temporary solution, it is not sustainable and workloads have suffered respectively.

**Groundwater – Data Management**
IWRS Recommended Action # 1b, 1c
One of the Department's Key Performance Measures is to complete initial reviews of applications within 45 days. The Department's performance on this KPM has suffered due to the time it takes to complete groundwater initial reviews. As a result, the Department continues to focus on identifying opportunities for efficiencies. Collecting data and making sure that it is organized, usable, and accessible takes time away from other tasks, such as reviewing groundwater applications or performing other groundwater analyses. Because of connectivity and security issues, staff cannot access WRD databases directly from the field. The groundwater section is updating its data management system to allow staff to enter data directly into mobile devices while in the field, which saves groundwater staff time.

An NRS5, chief groundwater technology scientist, would serve as the liaison between the groundwater section and the information services section to design routines to download information from existing databases onto field mobile devices. This scientist would also design the electronic forms that enable data entry and calculations while in the field. Finally, this scientist would design the program to allow field notes to be uploaded into WRD databases, to synchronize data without overwriting important components. The NRS 5 would be responsible for technology and software management, as well as a major overhaul of data storage and formatting. Improvements in the Department's groundwater information services capabilities will improve how staff process, use, and share groundwater data.

**Update Water Right Mapping**
IWRS Recommended Action # 1c, 2b, 2c, 2d, 9a
There is a need to improve our ability to efficiently identify rights that need to be reviewed for injury for new water right applications, transfers, and other transactions, as well as in the field to distribute water to senior users. This analysis is challenging in areas where water rights' point of diversion and place of use are unmapped, have been mapped using less accurate methods (prior to 2004), or where the place of use is not fully delineated, but rather only represented by a single point. Funding and filling the currently unfunded Data Tech 1 position would allow WRD to map poly-points and bring older, less accurate mapping up to standard. Updating our water right maps will improve the ability of the public and water users to identify if there is a water right on the property, as well as improve the accuracy of the location of points of uses and diversions. In addition, it will provide better data for consultants to download and perform analyses.

**METRIC Program & Univ. of Idaho Collaborative Research**
IWRS Recommended Action #1b, 1c
Evapotranspiration is water that is transpired from the leaves of plants and evaporated from the soil. Idaho Water Engineering is helping state and local governments in the Pacific Northwest locate, track, and quantify evapotranspiration through a satellite-based technology called METRIC (Mapping EvapoTranspiration using high Resolution and Internalized Calibration). METRIC uses digital images from the Landsat satellite to compute and map evapotranspiration for individual fields. METRIC is up to 96 percent accurate over a full growing season, and can replace more expensive methods of monitoring water use on a monthly and annual basis. Evapotranspiration data is helpful for accurate water management, planning, and conservation efforts, because it can help to quantify the amount of water consumed by irrigated agriculture and on other lands. This information is useful to provide for more precise water distribution, to identify trends in agricultural water use, to confirm compliance with water right permit conditions, and to ensure accuracy and validity of water right transfer and conservation proposals. Use of the technology requires an initial investment in software, technically trained staff, and up-to-date and geographically accurate water right records. A full-time Natural Resources Specialist 3 could manage the METRIC evapotranspiration mapping program and maintain a collaborative relationship with University of Idaho.

**Monitoring Coordination**
IWRS Recommended Action #1b, 1c
Enterprise monitoring is part of Governor Kitzhaber's 10-year plan for a healthy environment that sustains communities, our economy, and the places we all treasure. The Enterprise Monitoring System builds on existing collaborative monitoring efforts by sharing capabilities and capacities to maximize the efficient use of state resources to achieve environmental outcomes more efficiently, cost effectively and with better results. A significant part of the Governor's investment in water quantity and quality builds upon a cross-agency enterprise approach to monitoring water quality and watershed health to obtain information to identify and prioritize problems, measure and reward successes, focus resources to target actions where they will have the most benefit for the least cost, and ensure that programs produce the desired results. Together, these monitoring purposes allow for the understanding of current trends and conditions as well as the effectiveness of actions to achieve desired outcomes. Monitoring data is also needed in some circumstances to permit new activity, meet regulatory requirements and to achieve other objectives. Oregon needs to invest in natural resource monitoring to provide the information needed to wisely manage the resource, comply with legal mandates, support economic development and achieve public and private interest outcomes. Adding a full-time Natural Resources Specialist 3 will allow us to coordinate inter-agency collaborative monitoring efforts, fill data gaps, and make improvements to how we gather, process and share water resources data and information.

## Water Management

The ability to partner with the community and work on the ground is one area that sets Oregon apart from other states who have written policies, but limited capacity to implement or enforce them out in the field. The State's ability to identify and correct problems in water management is dependent on the number of skilled personnel, the technical training they receive, the equipment (measurement, communications, and transportation) available to them, and their ability to educate and inform customers.

**Review of Well Logs**
IWRS Recommended Action #1B, 7A
At current staffing levels, the Department only has the capacity to inspect approximately 25 percent of the wells constructed and review well logs for completeness, but it does not have the staff resources to review well logs for well construction standards. Waiting until months, years, or even decades later to review and comment on well logs means that opportunities are missed to provide feedback and education to drillers. A review of well logs when they are received would help protect the resource and well owners by ensuring that drillers receive feedback about their methods and can make repairs or adjust practices. This concept would authorize one full-

time Natural Resources Specialist 2 to review well logs, to confirm and ensure that construction meets Department standards.

**Re-Classify Well Inspectors and Hydrographics Technicians**
IWRS Recommended Action # 8b, 10, 12a, 12c
Well Inspectors interface with the public and need to be able to make decisions on behalf of the Department. Well Inspectors visit wells being constructed in the field to observe practices and ask well-drillers questions about construction and geology. They must have both the knowledge to understand proper well construction and identify improper practices, as well as the presence and tact to make decisions in the field. These decisions impact both the affected well-driller, as well as the ability of the Department to protect the resource and well-owners.

Hydro-techs increasingly are required to operate sophisticated equipment and to interface with WRD and other agency staff in the field. Hydro-techs are responsible for programming equipment in the field, such as telemetry equipment on gauges and robotics used to take measurements on reservoirs.

In both instances, it is a challenge for the Department to recruit and retain individuals that can effectively perform the job requirements. Re-classifications from NRS1 to NRS2 will enable the Department to increase technical training and skill requirements necessary to protect the resource and meet customer service needs.

**Assistant Watermasters**
IWRS Recommended Action # 13B
The Department's watermaster corps protect and manage water rights to meet Oregon's water needs, including monitoring, managing, and protecting instream water rights to provide fish and recreational flows and to improve water quality. In the 1990s, Water Resources staff was supplemented by 37 county-funded assistant watermasters in the field. With decreases in county-funded watermasters in recent years to only 15 FTE, the technical assistance and water distribution capacity at the Department has declined, leaving fewer field resources to help senior water right holders and Oregon communities.

## Water Supply for Instream and Out-of-Stream Needs

As discussed in the Integrated Water Resources Strategy, improving the state's ability to facilitate actions designed to provide access to new water supplies will be important for meeting future instream and out-of-stream needs in Oregon.

**Recapitalizing the Water Supply Development Fund**
IWRS Recommend Action # 10e
WRD will see the first bond sale to capitalize the State's Water Supply Development Account during 2015. Presumably, these funds will be oversubscribed, with Oregon communities competing for implementation funds for their water resources development projects. If the fund is not recapitalized and all of the money is granted in 2015, the Department will be unable to provide another round of grants for four years, depending on when the bonds are sold and accounting for the time it takes to review and issue grants. There is a need to continue to recapitalize the fund to keep pace with demand and enable Oregon to meet its current and future instream and out-of-stream water needs.

**Regional Solutions and Place-Based IWRS Planning**
IWRS Recommended Actions # 9a, 9b, 9c
As discussed in the IWRS and the Department's Regional Solutions implementation plan, place-based integrated water resources planning is an important tool for meeting Oregon's instream and out-of-stream water needs. Such planning empowers local communities to engage in a collaborative process to determine how best to meet their unique instream and out-of-stream water needs, developing locally led IWRS's in consultation with the state. Place-based planning allows data collection, problem-solving, and project development to take place at a scale that the statewide efforts may not be able to achieve. Place-based plans can leverage technical and funding resources to make more meaningful local impacts.

Already, regions have begun working together through Regional Solutions and Oregon Solutions efforts to address basin-specific water challenges. These efforts include the "Water for Irrigation, Streams, and Economy" (WISE) project in southwest Oregon, the Columbia River Umatilla Solutions Task Force (CRUST) in northeast Oregon, and the Deschutes Water Planning Initiative (DWPI) in central Oregon. With additional staff, OWRD could increase its capacity to participate in Regional Solutions efforts and place-based planning efforts—providing technical guidance, data, grants, and permitting assistance—to advance regional solutions priorities and local place-based plans to secure water supplies for future instream and out-of-stream needs. This request would also include grants to communities to increase local capacity to participate in place-based planning.

**SB 1069 Grant Program Enhancement**
IWRS Recommended Action # 13c
Local communities often find it difficult to secure feasibility study funding as part of their project development. Such studies help determine the environmental, engineering, economic, and social implications of proposed water supply projects. Oregon can help bridge the existing funding gap for feasibility studies. The Department currently has $750,000 in its base budget for this program. Additional investments could increase this successful investment in future water supply development. The Department would also benefit from increasing the resources available for staffing (currently at .25 FTE) to manage and monitor the granting process.

**Mitigation Specialist**
IWRS Recommend Action # 10d, 10e
With increased demand for groundwater throughout the state and the requirement to mitigate surface water withdrawals from the Columbia River during the growing season, there is an increased interest and need for mitigation to support new water right permits. The Department will need a mitigation specialist to develop, track, and oversee mitigation credit transactions. Early areas of focus will be the Umatilla, Deschutes, and Klamath Basins.

**Assessing Drought and Impact on Oregon Communities**
IWRS Recommended Action # 1c, 5b
As shown by drought in the 2014 water year, Oregon is confronted with challenges associated with drought and water supply. Oregon is likely to experience an increased incidence of drought due to climate variability, placing added stress on Oregon communities. For example, the April 1st snowpack, an indicator of natural water storage available for the warm season, is projected to decline by as much as 40% in the Cascades by the 2040s. This reduction in available snowpack (and thus water) could increase the risk of drought during normally dry summers.

Although we know that droughts have occurred in the past, there has not been an effort to understand how frequently they have occurred and how they have affected Oregonians. In order to better understand when and where drought occurs and its related impacts on Oregon's communities, OWRD, possibly in partnership with other state and federal agencies, should undertake a project to characterize the history of droughts in Oregon and their economic and environmental impacts. This project would then assess which communities are most vulnerable to drought, the impacts, and how likely drought will affect the state and specific regions in the future. This project would also be essential in meeting the statutory criteria for the state of Oregon's 2015 Hazard Mitigation Plan.

## Emergency Preparedness and Response

There is confidence that flooding will increase in the 21st century. Flooding in Oregon generally occurs due to extreme precipitation events, rapid snowmelt, or rain-on-snow precipitation events. In the next few decades, extreme daily precipitation events may increase. Due to structural deterioration, the potential for earthquakes, and the increasing risk of extreme floods, dam owners need to evaluate and retrofit dams. As discussed in the

Integrated Water Resources Strategy, resources will be needed to prepare communities to respond to flooding, and to conduct more through evaluations of older dams and dams where the hazard rating has changed due to downstream development.

**Dam Infrastructure Analysis, Rehabilitation & Safety**
IWRS Recommended Action #: 7a, 7b, 10b, 12a
Dams in Oregon are aging, with the majority more than 50 years old, and some approaching 100. The Water Resources Department directly regulates more than 900 dams. Using mostly Federal Funds, the Department worked with the US Army Corps of engineers to develop a "Phase 1 safety analyses of dams" between 1979 and 1981. This project involved six WRD employees, in addition to U.S. Army Corps of Engineers employees, and resulted in the analysis of 40 dams in Oregon. It has been almost 35 years since this last comprehensive analysis took place. Dozens of dams have not received this type of analysis, and none have received an updated seismic evaluation from the Department.

An initiative to systematically evaluate Oregon's portfolio of dams for seismic capacity, flood capacity, and structural integrity is needed. A first step would be to determine cost factors per dam and to determine procedures for consultant engineers or the state to complete this work for dam owners. A modern dam safety analysis of dams would include:

- Seismic slope stability and liquefaction potential
- Ability to pass floods safely through spillway without overtopping and failure
- Deterioration of conduits through dams; potential for piping; and loss of dam integrity
- Identification of internal erosion and need for monitoring.

The state's dam safety engineer and staff inspect hundreds of dams each year in Oregon. More than 60 of these are classified as "high hazard," referring to the likely loss of life downstream from the dam, should the dam fail. These dams are further identified by the condition of the dam itself. The Department has identified almost 20 "high hazard" dams in Oregon that are also in "unsatisfactory" or "poor" condition. As structures age and additional seismic information becomes available, Oregon's state agencies are encouraging dam owners to evaluate and retrofit dams, performing needed maintenance and upgrades. Dam owners should be encouraged to evaluate, modify, and invest in dams in order to protect public safety, and maintain the water supply, flood control, and other benefits that result from dams and reservoirs. Doing this work requires significant financial resources that many private dam owners cannot afford. This concept proposes to establish both a pilot project to analyze the structural integrity of dams as well as a grant program to provide financial assistance to dam owners.

**Flood Characterization and Emergency Preparedness**
IWRS Recommended Action # 1B, 1C, 5B, 6A, 9C, 10B, 13B
The National Flood Insurance Program reports that 256 communities in Oregon are prone to flooding, affecting all 36 counties. Oregon has seen the damaging effects of severe winter storms and resulting floods as recently as January 2012, with a major disaster declaration issued for twelve counties in Oregon. There is confidence that flooding will increase in the 21st century, particularly in areas that have a history of chronic flooding. Flooding in Oregon generally occurs due to extreme precipitation events, rapid snowmelt, or rain-on-snow precipitation events.

Oregon has a serious gap in its ability to assess flood conditions in a timely and accurate manner, and is therefore, reactive and slow to respond to multi-county floods. The National Weather Service provides information on quantitative precipitation forecasts, and also provides flood watches, advisories and warnings. There are also forecasted flood levels for selected streams. However, there is little ability to translate the technical flood information into an understanding of the severity of a flood and the needed response actions for emergency managers to use at the local level. While federal agencies typically provide data, they do not provide the assistance necessary to interpret that data and formulate a response. There is no clear responsibility for determining and communicating the severity and extent of expected and arriving flood events at the State level. Timely information on flood potential and likely impacts is essential if emergency managers are to reduce risk

to life and property from flooding. The Water Resources Department with adequate resources could provide essential technical interpretation and support to Oregon communities before, during, and after flood events. The Department could contract services for the technical development or review of flood characterization products so that managers know the extent of flooding that could occur based on river levels, and identify an appropriate and effective response.

## Klamath Basin

Since 1975, the Department has been working to adjudicate the water rights in the Klamath Basin. In 2013, the Findings of Fact and Final Order of Determination were delivered to the Klamath County Circuit Court, marking the first time that senior water rights could be enforced. In addition to the adjudication, the implementation of two settlement agreements – the Klamath Basin Restoration Agreement (2010) and the Upper Klamath Basin Comprehensive Agreement (2014) – has led to an increased need for resources to manage water in the basin.

**Klamath Basin Hydrotech to Assist with Water Management**
IWRS Recommended Action #: 7a, 10, 2a, 12b
The Final Order of Determination in the Klamath Basin Adjudication was delivered to the Klamath Circuit Court in March of 2013. In that order, many senior instream water rights were determined and can now be enforced. To monitor and distribute water in the basin, a significant increase in hydrographic operation duties will be necessary to provide timely information.

**Transfers and Leases of Water in the Klamath Basin**
IWRS Recommend Action #10
In order to meet the provisions of the 2010 Klamath Basin Restoration Agreement (KBRA) and the 2014 Upper Basin Comprehensive Agreement, inflows into Upper Klamath Lake must increase by 30,000 acre-feet. This will be achieved in part by leasing and transferring water rights. The Department expects that this increased activity will necessitate additional staff, so that processing times for transfers and leases do not increase.

**Implement KBRA Commitments**
IWRS Recommend Action #2c, 10d
To fulfill the requirements of the KBRA, the department must obtain $3.4 million to offset economic losses resulting from the KBRA, including: lost property tax payments upon retirement of four hydroelectric dams, and reductions in property values, business opportunities, and agricultural water rights and water deliveries. The KBRA directs $3.2 million to be used to compensate Klamath County for the anticipated loss of property tax revenues, with the remaining funds to be used to provide grants for renewable energy, energy efficiency, and water conservation projects that serve agricultural users in Klamath County.

## Recently Added Concepts

**Confederated Tribes of the Umatilla Water Rights Settlement Technical Assistance - RiverWare Model**
IWRS Recommended Action #2c, 9c
The state is currently in negotiations to settle the Confederated Tribes of the Umatilla Indian Reservation's water rights. The state may need to obtain licenses for the RiverWare Model, as well as contribute funding for expanding the Umatilla River Basin RiverWare Model, in the event that parties determine it should encompass the entire Umatilla River watershed.

**Dikes and Levees Technical Assistance**
This concept is still in development; it would provide the Department with the ability to provide technical assistance to evaluate the integrity of dikes and levees.

**Similkameen Project Environmental Reviews**
In conjunction with the State of Washington, the Department is working with Fortis Inc., a Canadian energy company, to investigate the potential to invest in a hydroelectric dam on the Similkameen River in British

Columbia in exchange for releases of water to mitigate for withdrawals from the Columbia River. Prior to securing approval for project construction, Fortis must conduct environmental studies in coordination with the British Columbia provincial government. Washington and Oregon are considering providing a financial contribution to the environmental study to help assess the feasibility of the project prior to making a more significant investment. Any financial contribution to the study would count toward the state's portion of any future investments needed to facilitate project construction and stored water releases.