MUCKEN Alyssa M * WRD

From: Kimberley Priestley <kjp@waterwatch.org>
Sent: Monday, August 07, 2017 8:10 AM
To: MUCKEN Alyssa M * WRD
Subject: FW: IWRS 2017 Update Comments
Attachments: IWRS Comparison.pdf; drought TASK FORCE ideas2.doc; IWRS strategy 2017 COMMENT FINAL.pdf

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From: Kimberley Priestley
Sent: Wednesday, July 19, 2017 10:16 AM
To: 'waterstrategy@wrd.state.or.us'
Cc: Alyssa.M.Mucken@wrd.state.or.us
Subject: IWRS 2017 Update Comments

Hello,

Attached please find WaterWatch's comments (and attachments to the comments) on the WRD 2017 draft update of the Integrated Water Resources Strategy. If you have any questions, please do not hesitate to call.

Thank you, Kimberley

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WATERWATCH

PROTECTING NATURAL FLOWS IN OREGON RIVERS

July 19, 2017

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RE: Comments, Draft 2017 Integrated Water Resources Strategy (IWRS) Update

Dear Alyssa,

Thank you for the opportunity to comment on the Draft 2017 Integrated Water Resources Strategy (IWRS). WaterWatch was very involved in the development of the original Strategy, and has a continued interest in its directives and implementation.

The WRD has represented to Commission and to the public that the 2017 update was designed to focus on shoring up existing recommendations and/or adding new ones to fill "gaps". Despite this directive, there have been quite a few changes to the strategy that reach far beyond the realm of shoring up existing recommendations and/or adding new recommendations. In particular, a number of recommended actions important to the conservation community were cut from the strategy[1]. Many of these are quite substantive in nature. To that end, we would request that the final version of the 2017 IWRS adhere to the WRD's stated revision parameters of bolstering existing recommendations and/or adding new recommendations. WaterWatch's comments are focused so as to adhere to this directive, and to provide suggested revisions accordingly[2].

NOTE FOR REVIEW: Our comments below are drafted in to be read in tandem with WaterWatch Appendix A (attached), which provides a side-by-side comparison of the 2012 and 2017 critical issues and associated recommendations (in the form of "bullet points"). Generally, our section-by-section review found below follows the ordering of the 2017 update, focusing on recommended "bullet points" within each critical issue. Comments note the existing language found in the 2012 IWRS, the 2017 updated language, concerns with changes, proposed remedies and suggested augmentations ("bolstering"). Comments follow the ordering of the 2017 draft IWRS. While the bullet points are not numbered, ordering of bullet points on "exiting language" and "new language"

[1]Of additional concern, many of these changes were not flagged to the reader as "revisions" in the WRD's "at a glance" compilation of critical issues/directives, in which the WRD noted which recommendations were "new" or "revised". By flagging some changes to the document, but not all, and thus, in essence, steering public review to noted items, we have a concern that the public will not have the opportunity to comment on items that might be important to them.

[2] The 2012 IWRS was a "Christmas tree" strategy document of sorts, which contained a wide variety of well vetted recommendations meant to address both instream and out-of-stream needs. Not all interests supported all directives, but it was widely understood that the document, by statute, had to address both instream and out-of-stream needs. Based on the noted 2017 revision guidelines of "bolstering existing" or "adding new" recommendations, WaterWatch is not including comments on existing 2012 measures that we do not support and/or would prefer be removed altogether. That is not the purpose of this "update". We urge the WRD to take this into consideration when reviewing all comments; in other words, the 2017 update is not the place to remove 2012 recommendations select interests might not like—whether instream or out of stream.

become self-explanatory when read in tandem with Appendix A, which again, provides a side-by-side comparison.

I. Critical Issue 1: Understand water resources/supplies/institutions

A. Recommended Action 1A : Conduct Additional Groundwater studies

Original Language: Locate and document exempt use wells
New Language: Locate and document water wells
Concern: It is noteworthy that the original directive spoke not only to locating exempt uses, but documenting the volume of use as well (see narrative, 2012). How much water is being appropriated from Oregon's aquifers via exempt well use is very important for both planning and management purposes. This 2012 directive on documenting exempt well use has not only been cut from the 2017 recommendations but also from the narrative body of the 2017 IWRS update. The proposed change is a significant backtracking from the original language and intent of the 2012 IWRS. Exempt wells in Oregon are of significant concern to both conservation interests and senior water right holders alike. The WRD should be bolstering the strategy's attention to exempt wells by calling for a reform of exempt well law and/or flagging the need to ensure that exempt wells will not impact either streamflows or senior users, not cutting existing the one existing directive on exempt wells that calls for documentation of exempt well use.
Flagged as revision: NO
Remedy: re-insert specific language to exempt wells agreed upon in 2012, as well as the accompanying narrative.

Augment to 1A: We would suggest adding additional bullet points to 1A to bolster the state's understanding of groundwater including, but not limited to:

- Documenting basins/sub-basins where there are groundwater declines
- Exempt wells: Studies to determine if/where there are areas where exempt wells are contributing to groundwater declines, impacting senior water right holders and/or reducing streamflows. Fund this work.
- Scenic waterways: evaluate each scenic waterway to determine if the scenic waterway act's trigger for groundwater mitigation (e.g. "measurable reduction") has been met. Fund this work.
- Funding: fund groundwater studies and observation wells.

B. Recommended Action IB: Improve Water Resources Data Collection and Monitoring

Original Language: Update Oregon's Stream Gage Network
New Language: Increase the number of stream gauges with reportable water temperature data to support water quality programs
Concern: Edit to ensure that both components of the narrative are captured---the need for more stream gauges and the need for more stream gauges with water temp data. As written, there is no directive to continue to update (i.e. expand) the stream gauges for flow sake. Given the importance of this document for budget purposes, it is critical that the state keep the bullet on increased stream gauges in and of itself.
Flagged as Revision: NO
Remedy: Combine so that both concepts are captured, suggested language--"Increase the number of stream gauges and increase the number of gauges with reportable water temperature data".

Original Language: Add remote and real time capabilities to monitoring stations
New Language: Deleted
Concern: Unless all monitoring stations have been updated to provide remote and real time capabilities, this bullet point should be retained as a stand-alone bullet. Given today's technology, the state should strive towards real time capabilities for all monitoring.

Flagged as revision: NO
Remedy: Re-insert original language

C. Recommended Action 1C: Coordinate Inter-Agency Data Collection, Processing and Use in Decision Making

Original Language: Invest in Scientific Modeling Tools
New Language: Deleted
Concern: While the narrative on investing in scientific modeling tools is still included, the bullet point has been deleted from the recommended action. Investing in science and scientific modeling tools is a very important goal for this state and should be kept as a bullet point, especially since this document is used so heavily in budget discussions. Removing it does not fall under "shoring up existing" or "adding new" directives which WRD has represented are serving as the sideboards.
Flagged as revision: NO
Remedy: Restore.

NARRATIVE NOTE: cut from narrative is the subsection titled "Expand Use of Lidar Technology", with a pull out box highlighting this. This type of information is very important to documenting water use and other water related data and should be retained, and even given a bullet point. There was significant discussion of this in 2012; and while the subject has been relocated to "invest in Inter-Agency work" (pg. 32, 2017), the directive to "expand use" is now gone. Deleting the narrative directive on this point does not "shore up existing" or "add new" directives, but instead takes the document backwards. See page 24, 2012 IWRS.

NARRATIVE NOTE: The 2017 IWRS Draft has added a section on five year groundwater permits in groundwater administrative areas (see pg. 21, 2017) which declares that "the goal is to review and renew these time limited permits to a common date". This is a huge policy declaration that has no place in the IWRS, and makes a promise to users absent the data/review to back it. These permits need to be evaluated based on the scientific data available to the WRD at time of the review, which could, presumably lead to them being cancelled.
REMEDY: Delete the whole of the paragraph on time limited permits from page 21 on the 2017 document.

II. Critical issue 2: Further Define out-of-stream needs/demands

A. Recommended Action 2A: Update Long-term Water Demand Forecasts (2017 version says "regularly update")

Original Language: Quantify/model economic value of instream and out-of-stream water
New Language: Deleted
Concern: The notion of quantifying the economic value of instream and out-of-stream uses has been dropped both from the bullet point and the narrative. As discussed in the 2012 version, this kind of information is of critical importance to the USBR, OWEB and other major funding agencies, where economic information is needed to assess the costs and benefits of potential projects or proposals. Deleting this concept does not "shore up existing" or "add new" directives, but instead takes the strategy backwards. See pg. 32-33, 2012 IWRS).
Remedy: Re-insert the original language.

Original Language: Enhance the state's water use reporting system
New Language: DELETED
Concern: The state can and should be improving its water use reporting; removing this bullet point takes us backwards.
Flagged as revision: NO
Remedy: Re-insert and/or move to section 2B. It likely fits better in that section, but we do not want to see it lost altogether by simply deleting.

Augment: Enhance this directive by adding, "; seek broad reporting authority".

Narrative: Opening paragraph, pg. 36. This section has been updated to note that consumptive use accounts for 8% of the 100 million acre feet of water found in Oregon's streams, lakes and aquifers. Without context, this statement could lead the reader to believe that there is ample water to fuel new uses. The fact of the matter is nearly all river basins across the state are over-appropriated late spring, summer and fall months.
Remedy: The WRD should note the seasonal over-appropriations so the reader has a better understanding of context of this statement (if the statement is retained).

Narrative: The subsection on "conservation successes" on pg. 30 of the 2012 Strategy (under Water Use in Ag) has been deleted. It is unclear why as this is valuable information.
Remedy: Re-insert.

B. Recommended Action 2B: Improve Water Use Measurement and Reporting

Original Language: Fully Implement the State's water user measurement strategy
New Language: Update the state's 2000 strategic measurement plan
Concern: The WRD should not delete language directing it to fully implement the 2000 Strategy. While we agree that it needs some updates (i.e. setting timelines, seeking reporting authority, expanding to groundwater) to simply delete the directive to comply with the strategy takes the state backwards. Simply stating that the WRD will update the 2000 Water Measurement Plan does not lead to improvement in water use measuring and reporting.
Flagged as revision: NO
Remedy and augmentation: Have a bullet point for each:

(1) fully implementing the existing Water Use Measurement Strategy by 2020 (or some other near term date),
(2) update the strategy to address areas not captured under the original plan, including but not limited to:
a) reporting of measured use, b) measurement and reporting of groundwater,
c) expanding measurement/reporting beyond significant diversions.

Original Language: Employ remote sensing
New Language: This language was removed from the measurement/reporting section and moved to "demand forecasts" with the qualifier "to improve crop water use estimates".
Concern: To remove this bullet from the "improve measurement and reporting" section calls into question the state's willingness to use this information to document water use, as opposed to using for demand forecasting. As the WRD is aware, the vast majority of water right holders in Oregon do not measure and report their water use; as such, remote sensing is, as noted in the 2012 narrative on this "an emerging measurement tool that may help the state to better understand the location, timing and quantity of water use into the future." The WRD's edit has changed the purpose of this bullet point substantially.
Flagged as revision: NO
Remedy: Keep this bullet point ("Employ remote sensing") under Measurement and Reporting Section where it lies under the 2012 Strategy.

Augment: We would recommend additional recommendations (bullets) to strengthen the "improve measurement and reporting" section. At virtually every open house and every PAG meeting, the need for improved measurement and reporting was raised. The WRD's directives on this point do not clearly articulate a path forward on outstanding issues. Thus, in addition to the points above, we would recommend adding the following bullet points:

- Seek broad reporting authority. (Currently, while the WRD has broad measurement authority, its reporting authority is more limited).
- Fund WRD water measurement and reporting staff/resources/data base management/etc.

- Improve data availability using emerging technologies—the PAG recommended that this be added to Recommended Actions 1-3, but we do not see it included. See WRD Memo to the WRC dated, 1/26/17.

C. Recommended Action 2D: Authorize the update of water right records with contact info

Original language: Update related water right database and GIS Data
New Language: Update related water rights records
Concern: All data should be available to the public, thus any updated water rights should be updated in the database. Moreover, GIS information is critical to future management. It is unclear why the WRD cut this language, but to ensure that users understand that GIS should and will be required of all rights this should be kept as part of the bullet point. If this is a "completed task" (i.e. all water rights have a GIS associated with them) then disregard this point, but if not we would suggest the following remedy.
Remedy: Merge the two statements so it reads: update related water rights records including, but not limited to, updating database and GIS data.

Narrative: Pg. 37, Contributions of Agriculture third paragraph. The 2017 version notes that agriculture produces $5.7 billion, "making it a top economic driver in Oregon". This is new language. At the same time, the section on outdoor recreation/tourism, which brings in $12.8 billion, does not have similar statements to denote its ranking as a "top economic driver" (see pg. 44, 2017 draft). If the document is going to state that Ag is a top economic driver, it should note the same for instream uses/tourism.

III. Critical Issue 3: Understand Instream Needs

A. Recommended Action 3.A: Determine flows needed (quality and quantity) to support instream needs

Pg. 48, 2017 Draft: WaterWatch strongly supports the changes made to Recommend Action 3A. These recommended changes mirror statewide discussions on this subject. Rather than go bullet point by bullet point, we will just comment that we support all the changes (or similar, if ODFW offers alternate language). In particular, we strongly support the bullet "conduct instream needs studies, base flow needs studies, and develop elevated flow requirements or prescriptions". That said, we would suggest adding to this point the following: "; provide funding for ODFW to complete this work". WaterWatch also strongly supports the new directive to, "continue to fund the Department of Fish and Wildlife's Instream flow program"; that said, we would encourage the WRD to also insert specific language tied to specific directives to ensure these important undertakings are not lost in the more general language of the noted bullet point. As WRD is well aware, the IWRS strategy is referenced widely in legislative discussions on budget; thus, reference to funding for specific instream pieces is critical to ensuring this directive is met. Currently, ODFW's instream flow program is not funded at a level that would allow it to meet the IWRS directives in any near term time frame (i.e. existing instream flow studies will take decades to complete with current funding).

Pg. 48, 2017 Draft: In addition to the revised bullet points found under Recommended Action 3A, we suggest adding the following bullet point (either here or in the climate change section):

- Develop instream flow demand forecast to understand ecological needs in a changing climate.

This is separate and distinct from the instream flow studies, and is critical to understanding where resources will be most scarce in the future and where state restoration priorities should focus. This bullet should be included either here or in the climate change section.

Narrative: The opening paragraph to this section has been changed (page 44, 2017 draft). Specifically, the WRD inserted a new paragraph describing volumes of water. As WRD has heard in multiple forums, fish do not rely on "acre foot" sum totals, but rather on flow rates at any given point in time. To say that there exists 91 million acre-

feet of un-diverted water is misleading and could serve to lead the reader to think there is not a problem as far as water remaining in our streams and rivers. The fact is, Oregon's rivers are seriously over-appropriated late spring/summer/early fall precisely when pressures on our rivers are at their highest. The result is, there is not enough water in our rivers when fish need it.
Remedy: Delete new paragraphs and insert the original (see 2012 strategy page 36).

Narrative: Headings throughout this section have changed so that definitive statements such as "Water instream supports economic health" now read "Understand how water instream supports economic health". This is less powerful as a statement. The 2017 update is supposed to enhance and/or fill gaps, making less strong statements strays outside of this directive.
Remedy: Use original headings

B. Recommended Action 3.B. Determine needs of groundwater dependent ecosystems

Original language: Complete groundwater basin studies
New Language: Deleted
Concern: While I appreciate WRD noted groundwater studies in Recommended Action 1, it should be retained here to ensure public and legislative understanding of the connection between groundwater ecosystem health and understanding our groundwater resources (i.e. studies).
Remedy: Restore
Augment: Oregon does not have clear directives for evaluating and/or protection groundwater dependent resources in permitting decisions. We would suggest that the WRD add a bullet point noting the state should/will seek this.

IV. Critical Issue 4: Water and Energy

A. Recommended Action 4C: Promote Strategies that Increase/Integrated Energy and Water Savings

Original language: Ensure that efficiency programs capture and publicly report both water and energy savings data
New Language: DELETED
Concern: Making data less accessible to the public is not the direction the state should be going, especially where public dollars are funding efficiency projects. Keeping water use data out of public reach appears to be a new trend, one we hope the state would reject as it is not good public policy.
Flagged as revision: NO
Remedy: Re-insert original language

V. Critical Issue 5: Climate Change

A. Recommended Action 5.A. Support continued basin scale climate change research efforts

Augment: This section failed to include the recommendation developed by the PAG which is:

- Understand the effects of climate change on streamflow

This should be added to the document. See PAG memo to the WRC, 1/26/17.

B. Recommended Action 5.B: Assist with Climate Change Adaptation and Resiliency Strategies

Original language: Invest in and make improvements in surface water and groundwater monitoring
New Language: DELETED
Concern: Monitoring of flow and water quality will be more critical than ever as the impacts of climate change heighten. This is a key piece to understanding climate change trends.
Flagged as revision: NO
Remedy: Restore original language

Original language: Invest in real-time forecasting of water deliveries, basin yield, streamflow, flood and drought frequency projections
New Language: DELETED
Concern: Moving towards real-time forecasting/monitoring should continue to be a priority of this state. It is unclear why this was deleted. If it is because the WRD added a bullet point in 5A relating to monitoring, I would note that that language does not include the work "real time monitoring".
Flagged as revision: NO
Remedy: Restore original language, or in the alternative insert the words "read time monitoring" into bullet #1 in 2017 Recommended Action 5A.

Original Language: Provide support to communities to incorporate climate change into their planning decisions
New Language: Provide technical and financial support to communities to incorporate climate change impacts into their planning decisions.
Concern: Scattered throughout the 2017 document are increased calls to providing financial support; however, little of this is directed to instream initiatives. While we don't object to this new language per se, unless the instream directives are also accompanied by language calling for "funding" and/or "financial support" we would object to the expansion of "support" to "financial support" for out-of-stream initiatives. Moreover, the new directive limits the scope to "climate change impacts" rather than incorporating concepts such as resiliency.
Flagged as revision: NO
Remedy: Insert language into the instream provisions to direct funding for ODFW and DEQ staff, initiatives, studies and monitoring efforts. Expand so that "resiliency" is part of the climate change planning process.

Augment: We would suggest that WRD work with ODFW to develop some river/fish climate change recommendations for this section, including directives on thermal refugia, among other things.

Additionally, we would recommend the WRD add the bullet point recommended by the PAG:

- Understand the effects of climate change on streamflow (see PAG Memo to the WRC, 1/26/17)

VI. Critical Issue 5.5 Extreme Events (new section)

Recommended Action 5.5A: Plan and Prepare for Drought Resiliency: The Drought directives should be augmented substantially. Governor Brown, via Ex. Order 15-09, specifically directed the WRD to "address drought in Oregon's 2017 update to the Integrated Water Resources Strategy, including long term drought resiliency planning". Despite this directive, little PAG time was spent on this subject; the recommendations under 5.5A reflect that.

I would also note that the minimal PAG time that was spent on drought was largely spent reviewing the recommendations of the Governor's Drought Task Force. A couple points on that. First, the Governor's Drought Task Force (which WaterWatch served on) was told repeatedly that its focus was limited to short term drought directives, and that any "drought resiliency" measures would be developed via the IWRS 2017 update process. As a result, many long term resiliency measures were not discussed and/or were punted to the PAG. Second, the

make-up of the Governor's Task Force was very unbalanced, with only three conservation seats of the eleven, and recommendations required (by statute) a "majority". As a result of these two factors, the recommendations of the Drought Task Force focused largely on easily supported recommendations (i.e. data needs, etc) and really did nothing to move the ball forward on what is likely the more difficult conversations needed to build drought resiliency measures, especially those needed for rivers and aquatic species. That the PAG then focused discussions on the Drought Task Force Recommendations, only served to further kick the can down the road as far as developing true resiliency measures.

For the Drought Task Force WaterWatch developed a number of suggested provisions aimed at protecting critical flows for fish/rivers during times of drought. They are attached to these comments, and hereby incorporated by reference, but include the concepts of:

- Enforcing against waste
- Governor or WRC mandated conservation plans (separate from WMPCs)
- Measurement and reporting of water use
- Mandatory curtailment in times of drought
- Municipal and Ag WMPCs
- Drought fishing regulations
- Emergency minimum flows for fish
- Leasing/purchasing water instream
- Protecting thermal refugia
- Funding science/data

We would urge the WRD and WRC to consider including these proposals in the IWRS. Absent that, we would request that the WRD, via the 2017 IWRS, commit to long term drought resiliency planning. This planning effort should be made up of a balance of interests to advance mitigation and resiliency measures for major sectors affected by drought, including but not limited to, agriculture, municipal and fish and wildlife. In the alternative to a larger planning process, we would suggest that funding be provided to ODFW to develop a drought resiliency strategy for rivers/fish/wildlife.

As to the recommended bullet points (pg. 68, 2017 draft), in addition to calling for mitigation/resiliency planning for all sectors, the existing bullet points should be edited so as to include both instream and out-of-stream sectors. For instance, the directive to prepare for, respond to and mitigate for the impacts of water scarcity should state "<u>on instream and out-of-stream uses</u>". And the directive to "assess and assist those communities most vulnerable to drought" should be edited to state "those communities <u>and ecosystems</u>". All in all, we were very discouraged that nothing in the IWRS strategy directs strategies/mitigation/planning towards the most vulnerable sector in a drought—fish and wildlife. This needs to be corrected.

Additionally, it appears that some of the PAG's new recommended actions and/or new supporting statements/confirming statements did not make it into the 2017 update, including:

- PAG recommended action: Ensure the necessary data, vulnerability assessments, and documentation of impacts to better prepare for, respond to and mitigate water scarcity.
- PAG recommended Confirming Statement: The state should continue to increase and enrich water related data collection to inform water use decisions, conservation, and management, as well as better anticipate and respond to drought.

These should be added to the 2017 update. See PAG memo to WRC, 1/26/17.

As to the narrative, we would suggest working with ODFW to bolster the narrative on fish/rivers. It is not just "fishing days" that are affected; it's the health and viability of fish and other aquatic species over time.

Additionally, the description of the drought declaration process does not include a full description of the drought declaration process, and instead only describes drought declarations as requested by Counties. We would suggest that the drafters look to the Drought Task Force Report for a clear description of the available paths, including a Governor declared drought (absent counties). Furthermore, to the extent the IWRS is stating what comes with a drought declaration, the document should include all authorities, including the ability of the Commission to mandate conservation (not tied to WMPC's).

Recommended Action 5.5B: Plan and Prepare for Flood Events (pg. 69-70): This section should be amended to include both a narrative and a bullet point encouraging floodplain restoration. Floodplain restoration is proven technique for reducing the effects of floods, among other things. While we recognize it is mentioned in a later section of the IWRS, it is very relevant to this discussion.

VII. Critical Issue 7: Water Related Infrastructure

A. Recommended Action 7.A: Develop and upgrade water and wastewater infrastructure.

Current Language: Properly abandon infrastructure at the end of its useful life
New Language: Properly abandon wells at the end of their useful life
Concern: Wells are not the only infrastructure that should be properly decommissioned and/or abandoned. The 2012 strategy included narrative language on the need to properly decommission dams, among other infrastructure. This narrative piece has been deleted, and the associated bullet point greatly narrowed so the directive only applies to wells. It is unclear why WRD would delete such an important provision of the IWRS, especially without flagging this change to the reader.
Flagged as revision: NO
Remedy: Re-insert old language and augment to make the scope crystal clear, i.e. properly abandon/ decommission wells, dams and other infrastructure at the end of their useful life. Also, re-insert the deleted narrative on the subject of dam removal found on page 69 of the 2012 IWRS.

B. Recommended Action 7.B: Encourage Regional (Sub-Basin) approaches to water and wastewater systems.

Current Language: Provide incentives, such as funding and technical assistance
New Language: Provide funding and technical assistance to systems that want to consolidate
Concern: Again, scattered throughout this document are new directives "to fund". As we saw with the 2012 version, these types of directives lead to legislative efforts to build programs and supply funding for these projects. Our concern is that we are not seeing similar directives attached to the instream provisions, i.e. fund dam removal, fund instream flow studies, etc. This puts instream funding on an unequal playing field in budget discussions. Unless there is equal distribution of funding directives across sectors, we would object to this expanded language here. We are also concerned about the disproportionate directives to provide "technical assistance"; this puts into the strategy priorities for WRD staff. Moreover, the directive in this instance does not include sideboards of environmental, economic and social benefits; it simply directs funding to any system that wants to consolidate.
Flagged as revision: NO
Remedy: Re-insert the more discretionary existing language and/or attach the same firm (i.e. fund) directives to the instream directives.
Narrative: The document should encourage regional systems that allow consolidation in a way that takes pressure of sensitive streams.

VII. Critical Issue 8: Education and outreach:

A. Recommended Action 8.C: Promote Community Education and Training Opportunities

Augment section: Add a bullet point similar to the existing that says something akin to "look for opportunities to educate water user groups, watershed councils and the public about available conservation tools, including the Conserved Water Act".
Rationale: Discussions in the Drought Task Force and also Rep. Helm's Water Workgroup highlighted the need to educate the public, water user groups, watershed councils, etc. about the various tools available for conservation, including but not limited to the Conserved Water Act and instream transfers/leases. WaterWatch would suggest a new bullet point dedicated to educating water users, water associations, watershed councils, etc. about available legal tools.

B. Recommended Action 8.D: Identify Ongoing Water Related Research Needs

New Language (pg. 90, 2017): Provide funding for research needs
Concern: This new provision for funding is wholly undefined. There is no narrative attached to this bullet point. WaterWatch would support if it was limited to funding research needs of agencies, i.e. WRD, ODFW, DEQ, for necessary research/data such as groundwater studies, instream flow studies, etc. That said, in its current form this sentence is too undefined to be useful, and could result in unintended consequences (i.e. state funding of consultant work for private parties).
Remedy: Narrow bullet point so it reads "provide funding to state agencies for research needs that further the IWRS".

VIX. Critical Issue 9: Place Based Efforts

A. Recommended Action 9.A: *Continue to* Undertake Place Based Integrated Water Resources Planning

Title: This title of Recommended Action 9A has been changed from its original form (2012 version) by adding the words "continue to". WaterWatch objects to this change. As the WRD well knows, the inclusion of place based planning in the 2012 was very controversial. Funding for this work was also controversial, but made it through based on the understanding that funding was for a "pilot" process. The four pilots are currently underway. Until the pilots are completed, it is premature to change the directive to say "continue". Moreover, it's unnecessary. As drafted in the 2012 IWRS (Undertake Place Based Integrated Water Resources Planning), the door continues to be left open for future place based planning endeavors. What the addition of the word "continue" does is directs continued work regardless of the pilot results, and sets the stage for legislative budget decisions absent an evaluation of the final plans and/or the assessment of their usefulness. It should be noted that the PAG rejected the WRD suggestion to add the word "continue". It should also be noted that water stakeholders rejected a proposed funding package this session that would have continued the program into the future beyond the four pilots. Given broad stakeholder agreement that it would be wise to wait until the pilots are complete so as to assess the program as a whole, we are perplexed by the WRD's dogged pursuit of this particular piece of the IWRS. Again, leaving the title as is leaves the door open to future endeavors. Changing the title to include the word "continue" mandates a direction forward regardless of the pilot program's outcome. The WRD's decision to include this language renders the pilot nature of this endeavor meaningless.
Remedy: delete the words "Continue to" from the title of this recommended action.

New Language: Promote success by continuing to support the placed currently following the draft planning guidelines
Concern: This does not necessarily narrow to the pilot projects; it could be read to be directing the WRD to support any community that plans according to the WRD's draft guidelines
Remedy: adjust language so that it reads "promote success by continuing to support the four pilot projects as of 2017".

New Language: Continue to provide financial and technical assistance to support collaborative water planning
Concern: Again, given the pilot nature of this program it is premature to direct continued funding absent evaluation.
Remedy: Delete.

New language: Solicit community input on place placed planning, refine the planning guidelines, and implement process improvements.
Concern/remedy: The WRD should solicit input broadly, not just from communities. Strike the word "community".

B. Recommended Action 9B: Coordinate and reconcile existing ecological planning and restoration efforts
Existing language: Coordinate and reconcile existing ecological planning and restoration efforts
New Language: Coordinate and reconcile existing planning documents
Concern: by removing the words "ecological planning and restoration efforts" the new directive greatly expands the types of planning documents that might fall under this, and could lead to unintended consequences. While we appreciate the title of the section as a whole includes this language, we think it prudent to include in the actual directive so there is no confusion.
Remedy: Restore original language.
Augment: Nowhere in this document could we find a directive to further planning for rivers/fish/aquatic species. At the very least, the document should direct planning of resiliency and mitigation measures for aquatic habitats/species in the face of climate change, drought, etc. We would suggest a bullet point on this either here, in the drought section, in the climate change section or in the instream section.

XX. Critical Issue 10: Water Management and Development

A. Recommended Action 10A: Improve water use efficiency and water conservation

Original Language: Prioritize agricultural water use efficiency
New Language: DELETED
Concern: This measure is incredibly important for directing attention and resources to agricultural conservation. PAG members, open house participants and the on-line survey all noted the need for increased attention to conservation, but little to no time was spent in the PAG discussing. To then delete, with no discussion amongst the PAG, this critical directive takes the state in the wrong direction. As noted, WRD has represented to the public that the 2017 update would be limited to shoring up existing directives and/or adding new ones. To then delete a much negotiated directive from the 2012 Strategy (without flagging to the reader as a "revision" for that matter) undermines the process.
Flagged as a revision: NO
Remedy: Re-insert original language.
Augment: As noted, PAG members and the public called on the state to bolster the conservation directives; nothing was done. To that end, we would suggest at the very least that the WRD add the additional bullet point (in addition to re-instating the original point on agricultural efficiency):

- Fully implement the WRD's Water Conservation Policy found in the Div. 690-410 rules, which among other things, call on the state to develop basin by basin efficiency standards
- Enforce against waste. This is a basic tenant of Oregon Water Law, permit conditions, etc.

Original Language: Conduct a state-wide conservation potential assessment
New Language: DELETED
Concern: This was another key bullet point negotiated in the 2012 strategy. As noted in the 2012 narrative (also deleted in the 2017 version):

> As for research needs, a statewide assessment that looks at the potential for water conservation would provide a quantitative basis for estimating how much water savings could be achieved with a variety of conservation best practices. A basin-by-basin hydrologic assessment of conservations benefits and/or impact on streamflows is another research need that could help the State and its conservation partners prioritize future efforts.

This continues to be a need in 2017. That the WRD deleted this in the face of public comments to bolster conservation is troubling.
Flagged to reader as a revision: NO
Remedy: Re-insert original language.

B. Recommended Action 10E: *Continue the* Water Resources Development Project

The WRD has wholly changed the substance, and hence, the meaning of this section. As originally drafted, this section focused on enabling the WRD to partner and invest in water supply development projects, as a state agency (see pg. 96-97 of 2012 IWRS). In the 2017 draft (see pg. 112, 2017 draft), the WRD has completely transformed this section from a directive for the state to engage in water development as a state to a directive to further bolster feasibility studies, place based planning and SB 839 funding for water projects. Notably, these three subjects are already captured in the document elsewhere, e.g. see Section 9 and Section 13. There is no need for further narrative and/or bullet points on these three subjects. By proposing the narrative and bullet points that simply bolster already existing sections/directives serves to elevate these ideas above others; in other words, it gives them an unfair advantage in funding/policy realms over other equally important directives (i.e. instream). If the state is no longer interested in seeking authority to enable it to be an active partner in water supply development (as opposed to a funding source); this entire section should be deleted. Again, Section 9 and Section 13 already give direction on the points contained herein.

Remedy: delete 10E as a whole. If the WRD does not delete this section (narrative and bullet points), than it should at least change the bullet points so that instead of "communities" change to "communities and ecosystems". As noted previously, the 2017 version has bolstered substantially the funding directives aimed at consumptive users. Equal attention should be paid to instream. The statutory directive for this plan clearly states that the plan is to meet instream and out-of-stream needs; the IWRS should reflect that.

Augment: In addition to deleting the section as proposed, WaterWatch would suggest that this section be re-invented so that the IWRS has a stand-alone section on groundwater in the water management section (separate discussions than under 11's "healthy ecosystems"). As the WRD and WRC are well aware, the sustainability of our groundwater resources is of increasing concern across all spectrums. A groundwater management section could focus on:

- Rule Updates to ensure sustainable groundwater permitting (i.e. default to no) and enhancing regulatory authority (i.e. outside of one mile from streams).
- Exempt well reform (i.e. no exempt wells w/i ¼ mile of an over appropriated stream and/or other groundwater compromised systems; decreasing amount for domestic from 15k a day to 5k a day, etc)
- Fund observation wells, data collection, groundwater studies/research
- Measurement and reporting of groundwater use

Recommended Action 10F: Provide Adequate Presence in the Field

WaterWatch strongly supports the inclusion of this new section as field staff are incredibly valuable to all interests----farmers, cities, fish, recreationalists, etc. That said, we would strongly recommend that the 2017 IWRS narrative include explanations of what the field staff for ODFW and DEQ accomplish, as well as the narrative WRD has included on WRD water masters. The importance of this cannot be overstated. This document is widely used in legislative budget discussions; as such the document should be drafted to give equal attention to the needs of the three state agencies called out specifically in the governing statute: WRD, ODFW and DEQ. It is not equitable to only describe the work of WRD.

XI. Critical Issue 11: Healthy Ecosystems

WaterWatch supports comments by ODFW and DEQ to improve/augment this section.

Augmenting Healthy Ecosystems Section: As noted, sprinkled throughout the 2017 IWRS, and then also captured in Section 13, are a number of new funding directives that are aimed largely at out-of-stream user and/or water development. The 2017 IWRS should also have instream directives augmented to address funding. Specific to directives included in Section 11 we would ask that the WRD include funding directives to:

- Fund ODFW instream flow studies needed to support instream water rights
- Fund Oregon Department of Parks work to study three rivers per biennium for inclusion in the state scenic waterway program
- Fund ODFW instream flow demand forecasting
- Fund fish passage and screening
- fund implementation of the Oregon Conservation Strategy

A. Recommended Action 11.B. Develop Additional Instream Protections

Augment: While we strongly support this section, it could be strengthened by including more detailed directives. For instance, for the establishment of scenic waterways, the document should commit to the study of 3 rivers per biennium, which was the charge directed by Gov. Kitzhaber, and carried forward by Gov. Brown, in 2013. The instream water right directive should include a directive to establish instream water right needed for the full suite of flows, not just minimum flows. Developing protections for thermal refugia should also be noted. And finally, funding for all this work should be included as a bullet point.

B. Recommended Action 11.D: Protect and restore instream habitat and habitat access for fish and wildlife

Augment fish passage barrier removal: Actions should not be limited to those in the Oregon Conservation Strategy. Oregon should commit to aggressively working to solve the fish passage barrier problem in this state, including but not limited to proactive dam removal and/or requiring fish passage (beyond triggering events). Fish passage is required under Oregon law. Moreover, funding needs to be called out for this work.

C. Recommended Action 11E: Develop additional groundwater protections

WaterWatch strongly supports the inclusion of additional directives on groundwater. That said, as we noted repeatedly in 2012, we think the strategy would benefit greatly from an independent section on groundwater. As to the recommended language, in addition to the bullet points contained in this new section, we would suggest the following:

- Reform exempt well rules/regulations (i.e. no wells w/i a ¼ mile, permitting decisions, etc)
- Ensure mitigation is provided for any new groundwater permits where "measurable reduction" trigger of the Scenic Waterway Act has been met.

XII. Critical Issue 13--Funding; As noted previously, the 2017 draft IWRS has substantially bolstered language connected to water development, community planning and other endeavors that are primarily geared at out-of-stream users. Instream directives and those that would advance water management for all users need commensurate language. Specifically, we request the following bullet points (some noted earlier) be included here:

- Fund ODFW instream flow studies (base, elevated, svf)
- Fund additional groundwater studies
- Fund Oregon Department of Parks work to study three rivers per biennium for inclusion in the state scenic waterway program
- Fund ODFW instream flow demand forecasting
- Fund fish passage and screening
- Fund streamflow gauges
- Fund observation wells
- Fund water measurement and reporting staff/data/analysis/cost share fund
- Fund climate change research/projections
- Fund implementation of the Oregon Conservation Strategy
- Fund drought resiliency planning for Oregon's rivers/aquatic species

As the WRD is well aware, natural resource agencies are chronically underfunded. Without equal support of instream work, this document will provide unbalanced direction to the legislature as far as funding priorities for water. In other words, by calling for funding of some directives but not others, the 2017 IWRS is, in a sense, prioritizing select activities over others. This is not fair and does not meet the statutory directive to meet both instream and out-of-stream needs.[3]

Recommended Action 13C: Invest in Local or Regional Planning Efforts

New Language: Continue to authorize and fund public and private investments in place-based integrated water resources planning (no existing language)
Concern: As noted previously, place based planning is still in its PILOT stage. Until the pilots are competed and then assessed as to their value, it is premature for the IWRS to direct the continued funding of this work.
Remedy: strike from the document; in the alternative, change the directive so that it references the pilot nature of the endeavor (i.e. once pilots are complete and stakeholder/agency evaluation results in support to continue this work, then fund…….). The narrative, also, needs to be updated so as to explain to the reader the pilot nature of this work.

New Language: Provide funding to develop water management and conservation plans (no existing language)
Concern: The state should not be paying for WMPCs that are required by law either under the Div. 86 rules or the Div 410 rules (which included Ag). The narrative focuses on small water providers, but the bullet point directive is wide open and could apply to any WMPC. Moreover, as noted, given the limited nature of state funds we do not think it appropriate for this guiding document to be basically calling for a subsidy of already required work.
Remedy: Delete from document

[3] NOTE: WRD should work with both DEQ and ODFW (the two NR agencies WRD is tasked with coordinating with on the development the IWRS under statute) to determine what funding priorities they want included in this document as the above list might not be fully comprehensive.

New Language: Support river basin planning efforts (no existing language)
Concern: There is no narrative explaining this point. That said, given its location under the "invest in local or regional water planning efforts" we can only surmise that the WRD's intent is to influence an ongoing debate/question about the role of place based planning. Place based planning is separate and distinct from "basin plans", and has never been publically promoted as a path to changing existing basin plans. If the state is trying insert a policy directive that would lend to an initiative that would have place based plans usurp existing law (basin plans are in rule) then we would strongly object. These are very different documents; most importantly, the basin plans set protective restrictions on use and appropriations based on data/research connected to the state of the resource, not on the opinions of the local community.

Conclusion: WaterWatch appreciates the time and effort that the WRD put into the draft 2017 Update. That said, as noted, we have concerns about the many changes made to the 2012 Strategy that remove or alter many agreed upon recommendations. We would urge the WRD to narrow its revision to limit changes to bolstering existing and/or adding additional sections where there are gaps, as represented. The 2012 IWRS was the result of intensive discussion/negotiation. The 2017 update was a much more truncated discussion/process. We do not believe the 2017 work should undo past good work, but instead add to it.

Thank you for the opportunity to comment. If you have any questions please do not hesitate to call.

Sincerely,

Kimberley Priestley
Sr. Policy Analyst

Enclosures

Appendix A Recommendation Set #1

2012	*2017*
Recommended Action 1.A Conduct Additional Groundwater Investigations *How to implement this action:* • Test water quality in private drinking water wells • Maintain and install additional monitoring wells • Partner with USGS to conduct and cost-share additional groundwater investigations • Assess groundwater administrative areas • Locate and document exempt use wells • Locate and document UICs (Pg. 20)	**Recommended Action 1.A** Conduct Additional Groundwater Investigations *How to implement this action:* • Install and maintain dedicated state observation wells in priority basins • Partner with U.S. Geological Survey to conduct and cost-share additional groundwater recharge studies and basin investigations • Evaluate groundwater administrative areas • Locate and document water wells • Ensure high-quality groundwater level measurements, installing measuring tubes and making scheduled measurements (Pg. 21)
Recommended Action 1.B Improve Water Resources Data Collection and Monitoring *How to implement this action:* • Establish dedicated monitoring wells • Update Oregon's stream gage network • Implement an on-going state-wide groundwater quality monitoring program • Prioritize basins for data collection and monitoring • Evaluate habitat conditions and effectiveness of restoration efforts • Add remote and real-time capability to monitoring stations (Pg. 23)	**Recommended Action 1.B** Improve Water Resources Data Collection and Monitoring *How to implement this action:* • Use agencies' monitoring strategies, or similar methods, to design and maintain monitoring networks • Prioritize basins for data collection and monitoring • Establish quality assurance procedures to verify the accuracy of water use and other data • Improve agency capacity to collect and analyze data, bringing records to final form • Implement an on-going state-wide groundwater quality monitoring program • Update water quality standards and develop additional TMDLs as necessary • Increase the number of stream gages with reportable water temperature data to support water quality programs • Monitor habitat and watershed conditions and evaluate the effectiveness of restoration efforts (Pg. 24)
Recommended Action 1.C Coordinate Inter-Agency Data Collection, Processing, and Use in Decision-Making *How to implement this action:* • Coordinate federal, state & local monitoring and data efforts • Improve and integrate data from partners • Process backlogs • Improve availability of information • Invest in scientific modeling tools • Map major water institutions, documenting their responsibilities, programs, data (Pg. 25)	**Recommended Action 1.C** Coordinate Inter-Agency Data Collection, Processing, and Use in Decision-Making *How to implement this action:* • Help homeowners test water quality in private drinking water wells; update real estate transaction database • Improve coordination of data sets • Improve data availability using on-line platforms and emerging technologies, mobile apps, and open standards • Develop or update decision-support tools • Invest in inter-agency work (Pg. 33)

Recommendation Set #2

2012	***2017***
<u>Recommended Action 2.A</u> Update Long-Term Water Demand Forecasts *How to implement this action:* • Update the state's long-term water demand forecast • Update crop water-use tables • Quantify/model economic value of instream and out-of-stream water • Enhance the state's water use reporting system (Pg. 32)	**<u>Recommended Action 2.A</u>** Regularly Update Long-Term Water Demand Forecasts *How to implement this action:* • Update demand projections with new population, per capita water demand, industrial demand, crop water use, and climate projections • Employ remote sensing to improve crop water use estimates (Pg. 40)
<u>Recommended Action 2.B</u> Improve Water-Use Measurement and Reporting *How to implement this action:* • Reinstate a water-use reporting coordinator at WRD • Fully implement the State's Water Measurement Strategy; offer cost-share dollars • Encourage businesses to conduct self-evaluations of water use • Employ remote-sensing (Pg. 33)	**<u>Recommended Action 2.B</u>** Improve Water-Use Measurement and Reporting *How to implement this action:* • Continue to improve the software used for water use measurement and reporting • Update the state's 2000 Strategic Measurement Plan • Broaden eligibility criteria for measurement cost share dollars • Coordinate the Water-Use Reporting Program and 2000 Strategic Measurement Plan (Pg. 41)
<u>Recommended Action 2.C</u> Determine Pre-1909 Water Right Claims *How to implement this action:* • Complete un-adjudicated areas • Settle federal reserved claims, including tribal claims • Settle groundwater claims (Pg. 34)	**<u>Recommended Action 2.C</u>** Determine Pre-1909 Water Right Claims *How to implement this action:* • Complete unadjudicated areas • Settle federal reserved claims, including tribal claims • Settle groundwater claims (Pg. 42)
<u>Recommended Action 2.D</u> Update Water Right Records with Contact Information *How to implement this action:* • Authorize WRD to update names on water right certificates • Update related water right database and GIS records • Rule-making should specify acceptable documentation (Pg. 35)	**<u>Recommended Action 2.D</u>** Authorize the Update of Water Right Records with Contact Information *How to implement this action:* • Authorize the Water Resources Department to update names on water right certificates • Update related water right records (Pg. 43)
<u>Recommended Action 2.E</u> Update Oregon's Water-Related Permitting Guide *How to implement this action:* • Provide updated agency contacts, policies, links • Provide industry-specific information where possible (Pg. 36)	**<u>Recommended Action 2.E</u>** Regularly Update Oregon's Water-Related Permitting Guide *How to implement this action:* • Provide updated agency contacts, policies, and links • Provide industry-specific information, where possible (Pg. 43)

Recommendation Set #3

2012	***2017***
<u>Recommended Action 3.A</u> Determine Flows Needed (Quality and Quantity) to Support Instream Needs *How to implement this action:* • Conduct base flow needs studies • Develop elevated flow requirements • Develop models/studies on economic value of instream and out-of-stream water (Pg. 42)	**<u>Recommended Action 3.A</u>** Determine Flows Needed (Quality and Quantity) to Support Instream Needs *How to implement this action:* • Prioritize and install gages in additional locations to monitor the status of instream water rights • Identify basins with listed species and install monitoring equipment to help characterize the suite of flows through these basins • Conduct instream needs studies, base flow needs studies, and develop elevated flow requirements or prescriptions • Develop models/studies to quantify the economic, social, and cultural value of instream uses • Continue to fund the Department of Fish and Wildlife's instream flow program (Pg. 48)
<u>Recommended Action 3.B</u> Determine Needs of Groundwater-Dependent Ecosystems *How to implement this action:* • Identify and characterize groundwater-dependent ecosystems statewide • Complete groundwater basin studies (Pg. 42)	**<u>Recommended Action 3.B</u>** Determine Needs of Groundwater-Dependent Ecosystems *How to implement this action:* • Identify and characterize groundwater-dependent ecosystems • Quantify the water quantity and water quality needs of groundwater-dependent ecosystems (Pg. 48)

Recommendation Set #4

2012	***2017***
<u>Recommended Action 4.A</u> Analyze the Effects on Water from Energy Development Projects and Policies *How to implement this action:* • Analyze the water demands and water quality impacts of current and proposed water-intensive energy development projects (bio-energy, geothermal, solar, natural gas, and hydroelectric) (Pg. 48)	**<u>Recommended Action 4.A</u>** Analyze the Effects on Water from Energy Development Projects and Policies *How to implement this action:* • Analyze the water demand and water quality impacts of current and proposed energy development projects (hydroelectric, solar, wind, geothermal, bio-energy, and natural gas) (Pg. 53)
<u>Recommended Action 4.B</u> Take Advantage of Existing Infrastructure to Develop Hydroelectric Power *How to implement this action:* • Utilize the state's expedited application process to develop hydroelectric projects at existing infrastructure (Pg. 49)	**<u>Recommended Action 4.B</u>** Take Advantage of Existing Infrastructure to Develop Non-Traditional Hydroelectric Power *How to implement this action:* • Utilize the state's expedited application process to develop hydroelectric projects at existing infrastructure (Pg. 54)
<u>Recommended Action 4.C</u> Promote Strategies That Increase/ Integrate Energy and Water Savings *How to implement this action:* • Move toward energy independence for publicly operated treatment works (wastewater treatment) • Encourage communities to look for and integrate ways to conserve both energy and water • Continue to implement and evaluate building codes that encourage water and energy efficiencies • Ensure that efficiency programs capture and publicly report both water and energy savings data • Partner with Oregon's 10-year Energy Action Plan to promote conservation strategies for water and energy (Pg. 51)	**<u>Recommended Action 4.C</u>** Promote Strategies That Increase/Integrate Energy and Water Savings *How to implement this action:* • Move toward energy independence for publicly operated treatment works (wastewater treatment) • Continue to implement and evaluate building codes that encourage water and energy efficiencies • Encourage individuals, communities, industries, and businesses, including agriculture, to look for and integrate ways to conserve both energy and water • Encourage cross-sector and cross-agency collaboration to achieve energy and water savings (Pg. 55)

Recommendation Set #5

2012	***2017***
Recommended Action 5.A Support Continued Basin-Scale Climate Change Research Efforts *How to implement this action:* • Improve climate change projections at a basin scale • Develop reliable projections of basin-scale hydrology, and their impacts on other systems (Pg. 53)	**Recommended Action 5.A** Support Continued Basin-Scale Climate Change Research Efforts *How to implement this action:* • Invest and make improvements in surface water and groundwater monitoring, flood and drought frequency projections, and long-range forecasts • Improve climate change projections at a basin scale • Develop reliable projections of basin-scale hydrology, and associated impacts on built and natural systems (Pg. 61)
Recommended Action 5.B Assist with Climate Change Adaptation and Resiliency Strategies *How to implement this action:* • Provide support to communities to incorporate climate change into their planning decisions • Look for more efficient ways to conserve, store, and reuse water in anticipation of climate change • Invest and make improvements in surface water and groundwater monitoring • Invest in real-time forecasting of water deliveries, basin yield, streamflow, flood and drought frequency projections • Analyze how instream and out-of-stream water rights will fare with hydrologic changes • Analyze how water rights will fare with changing crop needs • Use the U.S. Environmental Protection Agency's Climate Ready Water Utilities Program • Increase ecosystem resiliency to climate change • Ensure continued water and wastewater services in a changing climate (Pg. 59)	**Recommended Action 5.B** Assist with Climate Change Adaptation and Resiliency Strategies *How to implement this action:* • Analyze how instream and out-of-stream water rights will fare with hydrologic changes • Look for more efficient ways to conserve, store, and reuse water in anticipation of climate change • Provide technical and financial support to communities to incorporate climate change impacts into their planning decisions • Promote the U.S. Environmental Protection Agency's Climate Ready Water Utilities Program • Support ecosystem resiliency to climate change through habitat protection and restoration projects (Pg. 63)

Recommendation Set #5.5

2012	*2017*
	<u>Recommended Action 5.5A</u> Plan and Prepare for Drought Resiliency *How to implement this action:* • Develop the appropriate set of indicators that signal differing stages of drought • Document the economic, social, and environmental impacts of drought in Oregon, including the frequency, distribution, intensity and duration • Prepare for, respond to, and mitigate for the impacts of water scarcity • Assess and assist those communities most vulnerable to drought (Pg. 68)
	<u>Recommended Action 5.5B</u> Plan and Prepare for Flood Events *How to implement this action:* • Develop indicators of flood emergency stages, using information about meteorologic, hydrologic, hydraulic, and watershed conditions • Document the economic, social, and environmental impacts of floods • Modernize precipitation and flood frequency information with state participation in these studies • Establish early flood warning systems in areas where recent drought and wildfire have affected forests and vegetation (Pg. 70)
	<u>Recommended Action 5.5C</u> Plan and Prepare for Cascadia Subduction Earthquake Event *How to implement this action:* • Follow the recommendations provided by the Oregon Seismic Safety Policy Advisory Commission in its 2013 Oregon Resilience Plan • Evaluate and retrofit dams and other water infrastructure to meet new seismic standards • See recommended actions in the infrastructure sections of the IWRS (7A – 7C) (Pg. 72)

Recommendation Set #6

2012	***2017***
<u>Recommended Action 6.A</u> Improve Integration of Water Information into Land Use Planning (& vice-versa) *How to implement this action*: • Develop and share information regarding the location, quantity, and quality of water resources • Protect water sources in the course of land use decisions (Pg. 64)	**<u>Recommended Action 6.A</u>** Improve Integration of Water Information into Land Use Planning (& vice-versa) *How to implement this action:* • Protect natural water bodies in the course of land use decisions, such as wetlands, estuaries, groundwater aquifers, rivers, and lakes • Locate and document Underground Injection Control Systems • Develop and share information regarding the location, quantity, and quality of water resources that can be used by local governments in land use decisions • Improve coordination; technical guidance, and assistance to local governments for land-use decisions with regard to water • Take next step to implement land use goals related to water resources • Build partnerships with local governments to provide land-use information, such as tax lot information, to the state (Pg. 77)
<u>Recommended Action 6.B</u> Update State Agency Coordination Plans *How to implement this action:* • Update State Agency Coordination Programs in coordination with DLCD (Pg. 65)	**<u>Recommended Action 6.B</u>** Improve State Agency Coordination *How to implement this action:* • Update State Agency Coordination Plans in partnership with the Department of Land Conservation and Development • Design each agency permit "contingent" upon approval of all other state agency permits (Pg. 78)
<u>Recommended Action 6.C</u> Encourage Low Impact Development Practices *How to implement this action:* • Compile and provide online information on low impact development policies& • Update local development codes, improving local capacity to review and permit green infrastructure designs (Pg. 65)	**<u>Recommended Action 6.C</u>** Encourage Low Impact Development Practices and Green Infrastructure *How to implement this action:* • Compile and provide online information on low impact development best practices • Update local development codes, improving local capacity to review and permit green infrastructure designs • Encourage communities to consider natural infrastructure in lieu of, or as a complement to, built infrastructure (Pg. 79)

Recommendation Set #7

2012	***2017***
<u>Recommended Action 7.A</u> Develop and Upgrade Water & Wastewater Infrastructure *How to implement this action:* • Improve dam safety; retrofit for seismic issues • Develop emergency action plans for high hazard dams • Properly abandon infrastructure at the end of its useful life • Use an "asset management" approach to identify and plan for rehabilitation, upgrade or replacement of infrastructure • Ensure that basic maintenance needs continue to be eligible for grant and loan funding • Advocate for continued infrastructure funding • Encourage communities to consider natural infrastructure in lieu of, or as a complement to, built infrastructure (Pg. 69)	**<u>Recommended Action 7.A</u>** Develop and Upgrade Water and Wastewater Infrastructure *How to implement this action:* • Use an "asset management" approach to identify and plan for rehabilitation, upgrade, or replacement of infrastructure • Provide timely inspection of well construction and well logs, and education of drillers and pump installers to ensure construction standards are met • Properly abandon wells at the end of their useful life • Inventory, inspect, and make safety improvements to levees (Pg. 81)
<u>Recommended Action 7.B</u> Encourage Regional (Sub-Basin) Approaches to Water and Wastewater Systems *How to implement this action:* • Provides incentives, such as funding and technical assistance (Pg. 70)	**<u>Recommended Action 7.B</u>** Encourage Regional (Sub-Basin) Approaches to Water and Wastewater Systems *How to implement this action:* • Make use of shared contracts, services, purchases • Develop mutual assistance agreements • Establish inter-ties and back-up supplies • Provide funding and technical assistance to systems that want to consolidate (Pg. 82)
	<u>Recommended Action 7.C</u> Ensure Public Safety / Dam Safety *How to implement this action:* • Modernize state laws to improve the safety and resiliency of Oregon dams • Authorize resources to determine if dams have safety deficiencies; evaluate and retrofit dams to meet new seismic standards • Authorize emergency actions and encourage cooperative actions to improve the safety of dams • Coordinate interagency emergency responses regarding dam inspection, communication, and evacuation • Define the legal responsibilities of a dam owner • Authorize a requirement for remote monitoring on deficient high hazard dams • Require dam owners to maintain an Emergency Action Plan for all existing dams rated high hazard • Authorize a fee for review of plans and specifications • Dedicate grant and loan resources for rehabilitation of deficient dams (Pg. 85)

Recommendation Set #8

2012	*2017*
Recommended Action 8.A Support Implementation of Oregon's K-12 Environmental Literacy Plan *How to implement this action:* • Support funding for implementation • Natural resource agencies, community organizations, and others should engage in education for environmental literacy activities. (Pg. 72)	**Recommended Action 8.A** Support Implementation of Oregon's K-12 Environmental Literacy Plan *How to implement this action:* • Support implementation of the Environmental Literacy Plan • Natural resource agencies, community organizations, and others should engage in education for environmental literacy activities (Pg. 86)
Recommended Action 8.B Provide Education and Training for Oregon's Next Generation of Water Experts *How to implement this action:* • Conduct a survey of water organizations in Oregon • Determine whether educational programs in Oregon are equipped to meet the coming demand for water professionals • Offer internships, fellowships, and job shadow programs to expose students to careers in water • Continue funding support for water-related trade programs at Oregon community colleges (Pg. 74)	**Recommended Action 8.B** Provide Education and Training for Oregon's Next Generation of Water Experts *How to implement this action:* • Determine whether career training programs are available and equipped to meet the coming demand for water professionals • Offer job shadow programs to expose students to careers in water • Continue funding support for water-related trade programs at Oregon community colleges (Pg. 89)
Recommended Action 8.C Promote Community Education and Training Opportunities *How to implement this action:* • Continue to promote education and outreach through actions required in local Water Management and Conservation Plans • Promote technical training for public and private partners • Promote access to water-related recreational opportunities through the use of the Water Trails Program (Pg. 75)	**Recommended Action 8.C** Promote Community Education and Training Opportunities *How to implement this action:* • Look for opportunities to keep the general public informed about the importance of water resources • Promote technical training for public and private partners • Promote access to water-related recreational opportunities through the use of the Water Trails Program (Pg. 90)
Recommended Action 8.D Identify Ongoing Water-Related Research Needs *How to implement this action:* • Continue to identify ongoing research needs at the local and state level • Partner with public and private researchers (Pg. 76)	**Recommended Action 8.D** Identify Ongoing Water-Related Research Needs *How to implement this action:* • Continue to identify ongoing research needs at the local and state level • Partner with public and private researchers to address research needs • Provide funding for research initiatives (Pg. 90)

Recommendation Set #9

2012	***2017***
Recommended Action 9.A Undertake Place-Based Integrated, Water Resources Planning *How to implement this action:* • Develop a template for place-based integrated water resources strategies • Provide technical assistance and other incentives to communities undertaking place-based IWRS • Compile relevant and readily-available water-related information to support place-based IWRS (Pg. 80)	**Recommended Action 9.A** Continue to Undertake Place-Based Integrated Water Resources Planning *How to implement this action:* • Promote success by continuing to support the places currently following the draft planning guidelines • Continue to provide financial and technical assistance to support collaborative water planning • Promote peer-to-peer learning between communities pursuing collaborative water planning • Solicit community input on place-based planning, refine the planning guidelines, and implement process improvements (Pg. 98)
Recommended Action 9.B Coordinate Implementation of Existing Natural Resource Plans *How to implement this action:* • Coordinate and reconcile existing ecological planning and restoration efforts • Dedicate resources for state and local implementation (Pg. 82)	**Recommended Action 9.B.** Coordinate Implementation of Existing Natural Resource Plans *How to implement this action:* • Coordinate and reconcile existing planning documents • Dedicate resources for state and local implementation of existing plans (Pg. 99)
Recommended Action 9.C Partner with Federal Agencies, Tribes, and Neighboring States in Long-Term Water Resources Management *How to implement this action:* • Protect Oregon's interests in shared surface water and groundwater basins • Partner to improve access to additional stored water (Pg. 84)	**Recommended Action 9.C** Partner with Federal Agencies, Tribes, and Neighboring States in Long-Term Water Resources Management *How to implement this action:* • Protect Oregon's interests in shared surface water and groundwater basins • Negotiate agreements such that water protected instream is shepherded across state lines to the mouth of the river • Partner with neighbors and tribes to continue or improve access to additional sources of water (Pg. 101)

Recommendation Set #10

2012	***2017***
Recommended Action 10.A Improve Water-Use Efficiency and Water Conservation *How to implement this action:* • Establish and maintain an online water-use efficiency and conservation clearinghouse • Prioritize agricultural water-use efficiency • Expand outreach and participation in the State's water-use efficiency and conservation programs • Conduct a state-wide water conservation potential assessment (Pg. 89)	**Recommended Action 10.A** Improve Water-Use Efficiency and Water Conservation *How to implement this action:* • Establish a water-use efficiency and conservation program that provides technical assistance to water users in all sectors • Expand participation in already-existing water-use efficiency and conservation programs (Pg. 105)
Recommended Action 10.B Improve Access to Built Storage *How to implement this action:* • Develop additional below-ground storage sites • Re-allocate water in federal reservoir systems that have not undertaken formal allocation processes in Oregon • Develop additional above-ground, off-channel storage sites where needed • Evaluate the status of storage infrastructure • Authorize and fund the State to invest in and purchase water from stored water facilities (Pg. 92)	**Recommended Action 10.B** Improve Access to Built Storage *How to implement this action:* • Encourage increased use of below-ground storage sites • Re-allocate water in federal reservoir systems that have not undertaken formal allocation processes in Oregon • Investigate potential off-channel sites for aboveground storage projects • Evaluate the status of storage infrastructure, including the maintenance and rehabilitation needs of reservoirs • Incorporate existing reservations of water into planning efforts (Pg. 109)
Recommended Action 10.C Encourage Additional Water Reuse Projects *How to implement this action:* • Conduct a statewide assessment of the potential for additional water reuse • Ensure that Oregon has the right policies and regulations in place to facilitate water reuse • Provide incentives for increased water reuse (Pg. 94)	**Recommended Action 10.C** Encourage Additional Water Reuse Projects *How to implement this action:* • Conduct a statewide assessment of the potential for additional water reuse • Ensure that state agencies have—and communicate—policies and regulations that facilitate water reuse • Provide incentives for increased water reuse (Pg. 111)
Recommended Action 10.D Reach Environmental Outcomes with Non-Regulatory Alternatives *How to implement this action:* • Assist in the research and development of nonregulatory tools to meet environmental outcomes • Develop protocols for translating water quality projects into credits • Develop protocols for translating streamflow restoration into credits and accounting strategies • Complete stream functional assessment (Pg. 95)	**Recommended Action 10.D** Reach Environmental Outcomes with NonRegulatory Alternatives *How to implement this action:* • Assist in the research and development of nonregulatory tools to meet environmental outcomes • Continue to develop water quality trading programs • Develop protocols for translating streamflow restoration into credits and accounting strategies (Pg. 111)

Recommended Action 10.E Authorize and Fund a Water Supply Development Program *How to implement this action:* • Identify opportunities for the State to serve as a partner in water supply development projects • Authorize the Water Resources Department to invest in projects, to purchase and/or contract for water supplies • Authorize bonds to finance these investments (Pg. 97)	**Recommended Action 10.E** Continue the Water Resources Development Program *How to implement this action:* • Identify opportunities for the state to serve as a partner in water resources development projects • Seek out additional technical resources to help communities • Find additional federal, state, private, and other match funds to help communities (Pg. 112)
	Recommended Action 10.F Provide an Adequate Presence in the Field *How to implement this action:* • Review and assess workloads; establish priorities and seek efficiencies • Improve regulatory tools, including updating the legal and statutory foundation, modernizing technology and enforcement tools, and providing (cross) training • Improve the ability for field staff to conduct education and outreach within their districts • Enhance Department of Fish and Wildlife's capacity to work directly with water users and conservation interests (Pg. 114)
	Recommended Action 10.G Strengthen Oregon's Water Quantity & Water Quality Permitting Programs *How to implement this action:* • Expand staff training opportunities; provide adequate staffing • Update technologies, processing manuals, and guidance documents • Develop outreach materials and follow-up procedures to help water users understand the application process and permit, transfer, or extension requirements • Develop a mitigation strategy • Create stronger linkages among partner agencies • Develop and implement a long-term workplan to improve the quality and timeliness of individual National Pollutant Discharge Elimination System permits (Pg. 117)

Recommendation Set #11

2012	***2017***
Recommended Action 11.A Improve Watershed Health, Resiliency, and Capacity for Natural Storage *How to implement this action:* • Improve riparian conditions • Preserve wetlands • Restore floodplain functions • Maintain forested areas (Pg. 98)	**Recommended Action 11.A** Improve Watershed Health, Resiliency, and Capacity for Natural Storage *How to implement this action:* • Improve riparian conditions to protect a healthy buffer between aquatic and terrestrial ecosystems • Restore wetlands and floodplains to maintain critical functions like processing nutrients, providing habitat and storing water • Protect estuarine conditions to maintain a healthy buffer between freshwater and marine systems • Maintain forested areas, in part to maintain to source water quality (Pg. 120)
Recommended Action 11.B Develop Additional Instream Protections *How to implement this action:* • Establish additional instream water rights where needed to protect flows • Designate scenic waterways where needed to protect recreation, fish, and wildlife uses • Expand the use of voluntary programs to restore streamflow • Expand the geographic range of flow restoration efforts (Pg. 100)	**Recommended Action 11.B** Develop Additional Instream Protections *How to implement this action:* • Establish additional instream water rights where needed to protect instream flows for fish and wildlife and water quality • Designate scenic waterways where needed to protect recreation, fish, and wildlife uses • Expand the use of voluntary programs to restore streamflow • Expand the geographic range of flow restoration efforts by identifying flow restoration priorities (Pg. 122)
Recommended Action 11.C Prevent and Eradicate Invasive Species *How to implement this action:* • Support the Oregon Conservation Strategy's six state-wide actions to prevent new introductions, and decrease the scale and spread of infestations • Implement and enforce ballast water management regulations (Pg. 102)	**Recommended Action 11.C** Prevent and Eradicate Invasive Species *How to implement this action:* • Support the Aquatic Invasive Species Prevention Program • Support the Oregon Conservation Strategy's seven state-wide actions to prevent new introductions, and decrease the scale and spread of infestations • Continue to implement and enforce ballast water management regulations (Pg. 123)

Recommended Action 11.D Protect and Restore Instream Habitat and Habitat Access for Fish and Wildlife *How to implement this action:* • Remove fish passage barriers and support fish screening efforts by implementing actions in Oregon's Conservation Strategy • Build upon existing ecological planning and restoration efforts (Pg. 105)	**Recommended Action 11.D** Protect and Restore Instream Habitat and Habitat Access for Fish and Wildlife *How to implement this action:* • Continue to update the inventory of fish passage barriers • Remove fish passage barriers and support fish screening efforts by implementing actions in the Oregon Conservation Strategy • Build upon existing ecological planning and restoration efforts • Update streamflow restoration priority areas using new species distribution and climate change information (Pg. 125)
	Recommended Action 11.E Develop Additional Groundwater Protections *How to implement this action:* • Develop a long-term plan for sustainable groundwater management • Develop clear objectives and metrics • Identify and prioritize important tasks • Sketch out the necessary timelines, staffing, and resource needs (Pg. 127)

Recommendation Set #12

2012	***2017***
Recommended Action 12.A Ensure the Safety of Oregon's Drinking Water *How to implement this action:* • Assist public water suppliers; support small public water systems • Protect drinking water sources • Monitor public drinking water for contaminants of emerging concern • Encourage water providers to join the Oregon Water/Wastewater Agency Response Network • Increase domestic well testing (Pg. 107)	**Recommended Action 12.A** Ensure the Safety of Oregon's Drinking Water *How to implement this action:* • Assist drinking water systems of all sizes • Protect drinking water sources • Improve monitoring of public drinking water for contaminants of emerging concern • Encourage water providers to join the Oregon Water/Wastewater Agency Response Network • Increase domestic well testing and provide updated support materials and education (Pg. 130)
Recommended Action 12.B Reduce the Use of and Exposure to Toxics and Other Pollutants *How to implement this action:* • Finalize and implement DEQ's Toxics Reduction Strategy • Implement green chemistry executive order, including revising purchasing practices related to toxic chemicals • Implement Water Quality Pesticide Management Plan • Support Pesticide Stewardship Partnerships • Establish and fund "take back programs" • Continue to identify and address hazardous or contaminated sites, including brownfields • Prevent blue-green algae from forming beyond natural background levels • Monitor recreational waters and inform the public when contaminants are present (Pg. 110)	**Recommended Action 12.B** Reduce the Use of and Exposure to Toxics and Other Pollutants *How to implement this action:* • Update and implement the Department of Environmental Quality's 2012 Toxics Reduction Strategy • Implement green chemistry executive order, including revising purchasing practices related to toxic chemicals • Implement Water Quality Pesticide Management Plan • Support Pesticide Stewardship Partnerships • Establish and fund "take back programs" • Continue to identify and address hazardous or contaminated sites, including brownfields • Prevent blue-green algae from forming beyond natural background levels • Monitor recreational waters and inform the public when contaminants are present (Pg. 135)
Recommended Action 12.C Implement Water Quality Pollution Control Plans *How to implement this action:* • Continue to develop and implement TMDLs for water bodies that do not meet water quality standards • Continue to address nonpoint sources of pollution across all land uses; increase monitoring • Ensure effective management and oversight of stormwater in urbanized areas • Assist communities with septic system challenges (Pg. 113)	**Recommended Action 12.C** Implement Water Quality Pollution Control Plans *How to implement this action:* • Continue to develop and implement TMDLs for water bodies that do not meet water quality standards • Continue to address nonpoint sources of pollution across all land uses; increase monitoring • Ensure effective management and oversight of stormwater in urbanized areas • Assist communities with septic system challenges (Pg. 137)

Recommendation Set #13

2012	***2017***
Recommended Action 13.A Fund Development and Implementation of Oregon's Integrated Water Resources Strategy *How to implement this action:* • Fund implementation of 2012-2017 IWRS • Fund required updates of state-level IWRS • Fund development of place-based IWRS (Pg. 114)	**Recommended Action 13.A** Fund Development and Implementation of Oregon's Integrated Water Resources Strategy *How to implement this action:* • Fund implementation of the 2017 Integrated Water Resources Strategy • Fund the five-year required updates, next scheduled for 2022 (Pg. 138)
Recommended Action 13.B Fund Water Resources Management Activities at the State Level *How to implement this action:* • Fund those water management activities for which the State has responsibility • Ensure increased and adequate funding from the General Fund • Seek additional funding sources (Pg. 117)	**Recommended Action 13.B** Fund Water Resources Management Activities at State Agencies *How to implement this action:* • Fund those water management activities for which the state has responsibility • Ensure increased and adequate funding from the General Fund • Seek additional funding sources (Pg. 139)
Recommended Action 13.C Fund Communities Needing Feasibility Studies for Water Conservation, Storage, and Reuse Projects *How to implement this action:* • Continue to provide SB 1069 grants to help evaluate the feasibility of water conservation, storage, and reuse projects (Pg. 118)	**Recommended Action 13.C** Invest in Local or Regional Water-Planning Efforts *How to implement this action:* • Continue to authorize and fund public and private investments in place-based integrated water resources planning • Provide funding to develop water management and conservation plans • Provide funding to support hazard mitigation planning (e.g. droughts, floods) at the local level • Support river basin-planning updates (Pg. 140)
	Recommended Action 13.D Invest in Feasibility Studies for Water Resources Projects *How to implement this action:* • Continue to provide Feasibility Study Grants to help evaluate the feasibility of water conservation, storage, and reuse projects • Review and update the Feasibility Study Grants program based on lessons learned since 2008 (Pg. 141)
	Recommended Action 13.E Invest in Implementation of Water Resources Projects *How to implement this action:* • Authorize bonds to finance these investments

	• Ensure that basic maintenance needs continue to be eligible for grant and loan funding • Advocate for continued state and federal funding for water and wastewater infrastructure • Develop funding and technical support for low income and small communities to maintain and operate water and wastewater-related infrastructure • Continue funding and support for watershed restoration and Focused Investment Partnerships • Continue to fund Water Project Grants and Loans (Pg. 144)

WATERWATCH

PROTECTING NATURAL FLOWS IN OREGON RIVERS

Memorandum

To: Drought Task Force
From: Kimberley Priestley, WaterWatch of Oregon
Date: August 22, 2016
Re: Drought Ideas for Task Force Consideration

A. DECLARATION OF DROUGHT: The Governor currently has statutory authority under ORS 536.740 to declare a drought absent county application; however it is our understanding that generally drought declarations follow applications by counties under ORS 401.165 (state of emergency). The drought process should be revised so that the Governor declares droughts (1) solely via ORS 536.740 (i.e. without a tie to the county emergency request under ORS 401.165) and (2) utilizing the US Drought Monitor (http://droughtmonitor.unl.edu/AboutUSDM.aspx). Utilizing existing authority in this way would remove local politics from the drought declaration process.

B. ENFORCEMENT AGAINST WASTE: Statute, rule and permit conditions all require that water be used beneficially without waste; however, WRD enforcement against waste is neither widespread nor uniform. No statutory changes are needed; the following can all be achieved under existing authority of the Governor and/or WRD.

- Governor direction to WRD to actively enforce against waste and fund extra water masters to do this: Existing statute, rule and permit conditions require that water use be limited to beneficial use without waste. Direct WRD to enforce against waste, including regulation of wasteful use and imposing civil penalties. Fund seasonal water masters to actively enforce against waste.

- Direct WRD to fully implement OAR 690-410-060: OAR 690-410-060 contains important tools to ensure the elimination of waste including but not limited to: i.e. (1) develop sub basin conservation plans and provide public assistance in areas of known over-appropriation of surface water and groundwater and water quality problems, (2) set basin specific efficiency standards and practices for irrigation/agriculture, (3) update basin plans to require a conservation element**.**

- Utilize state authority under ORS 536.720 and ORS 536.780: Existing drought statutes allow for Governor and/or WRC to order state agencies or political subdivisions (which includes municipalities and districts) to develop curtailment/conservation plans, including direction to undertake activities to prevent waste. Governor and/or WRC should utilize this authority beyond state agencies (as was done in 2015) to include, at a minimum, municipal/quasi-municipal providers and districts.

C. MEASUREMENT AND REPORTING: Measurement and reporting is critical for proper management of Oregon's water resources, especially in times of drought. Ideas include:

- Governor direction to WRD/WRC to use existing authorities to require measurement and reporting of surface water diversions, groundwater and reservoirs (i.e. including but not limited to ORS 540.310, ORS 540.330, ORS 540.435. ORS 537.665).
- Governor and/or WRC set near term deadlines for full implementation of all three tiers of the WRC's 2000 Strategic Water Use Measurement Plan (tier one---significant diversions in priority basins, tier two—significant diversions statewide, tier three---all diversions).
- Provide additional funds to the Measurement Revolving Fund.

D. MANDATORY CURTAILMENT IN TIMES OF DROUGHT: Upon a declaration of drought, require mandatory curtailment that is tied to a conservation target (i.e. 25%) and/or river flows (i.e. flows hit XX, curtailment measures are triggered). The Governor and the OWRC have the authority to require curtailment/conservation plans for state agencies, municipalities and irrigation districts under ORS 536.720 and ORS 536.780. During the 2015 drought Governor Brown issued an executive order requiring state agencies to achieve a 15% reduction of consumptive use; however she did not extend this to municipal/irrigation interests. CA has required a 25% statewide reduction in municipal water use, see: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/emergency_regulation.shtml

E. MUNICIPAL WATER MANAGEMENT AND CONSERVATION PLANNING: Ideas that could move forward under existing law:

- Require WMCPs: ORS 536.780 allows the Water Resource Commission, "upon a finding that a severe or continuing drought is likely to occur," to direct individual state agencies and political subdivisions to prepare "a water conservation or curtailment plan or both." Governor could present to the Commission and request that, for any such entity without a WMCP, it require these plans to be produced.

- WMCPs for smaller entities: Governor to direct WRD to produce and make available a scaled down, off-the-shelf WMCP for smaller entities, including those that may not have a WMCP trigger (e.g. home owners associations, mobile home parks, smaller special districts). This would be a plan that would be simpler and easier to implement.

Consider amendments to municipal water management conservation rules (Division 86) and/or drought rules (Division 19) to help rivers/fish in times of drought. Ideas include:

- Municipal Curtailment in Drought: Direct WRD to improve the "Municipal Water Curtailment Element" in the WMCP rules (OAR 690-086-0160) to specify that curtailment stages must include triggers related to river flows and fish needs. As it is now, the WMPC rules are vague and refer to severity of water shortage and water service difficulties, but have no direct tie to river flows or fish (unless a water permit has a condition such that those conditions could limit water use under the permit independently.). This could also be achieved by amending the drought rules to include triggers (OAR 690-019).

- Require meaningful curtailment/conservation actions to be triggered at certain stages of drought: Direct WRD to improve the WMCP requirement to clarify what meaningful conservation/curtailment actions are required at various stages of drought. This could also be achieved by amending the Drought Rules (OAR 690-019).

- Conservation Target: Direct WRD to revise the WMCP rules or the Drought Rules to require attaining a conservation target (like in CA) during drought. Credit would be given to entities that have already achieved low water use rates.

- Full compliance of WMCP a pre-requisite to state funding: Make full compliance with WMCP, including hitting target leak rate (10 or 15%, depending on plan and stage of plan) a perquisite for qualifying for water project funding (e.g. 1069, etc.) unless that funding request is specifically and strictly for reducing leak rate or accomplishing other meaningful conservation.

F. AGRICULTUAL WATER CONSERVATION AND MANAGEMENT PLANS: Improve drought rules and/or WMPC rules so, at a minimum, Districts have to develop a drought curtailment plan that sets curtailment triggers and conservation measures (i.e. WMPC "light").

G. DROUGHT FISHING REGULATIONS: Establish proactive emergency regulation temperature triggers for fishing closures during drought, including protective triggers for thermal refugia. Details developed by ODFW.

H**. LEASING/PURCHASING OF WATER FOR INSTREAM USE:** Provide state funds for the specific purpose of leasing and/or purchasing water for instream use in areas under declared drought. Prioritize funding for streams that support listed fish and/or are of high ecological values. Additional ideas noted by DRC at 8/15/16 meeting (i.e. suspend/cut fees, advance approval of leases, etc).

I. EMERGENCY MINIMUM FLOWS FOR FISH: Similar to California's regulations on this, set emergency minimum flows for fish on streams of significant ecological value. The basic structure of the CA directive is as follows:

a. Voluntary cooperative agreements to maintain emergency minimum flows for listed fish.
b. If voluntary plans do not cover a significant percentage of the water diverted in the basin, then mandatory minimum emergency flows for listed fish.
c. Curtailment of diversions to meet minimum emergency flows. Flows vary by season and include some pulse flows.
d. Curtailment orders suspended if the identified listed fish are not present and/or there is a change in hydrologic conditions.

For further information on how the CA regulations work go to the following link: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/milldeerantelope.shtml#new information

J. FUNDING SCIENCE/DATA: Provide funding for data necessary to build resiliency against drought, i.e. USGS Groundwater Investigations, stream gauges, water use measurement devices, etc.

K. **RIPARIAN PROTECTION:** Improving riparian protection across land use types and ownerships can provide important benefits to rivers and streams during times of drought. One idea proposed by some conservation groups is to require 100 foot no till buffers on each side of perennial streams on all lands designated for Exclusive Farm Use. Healthy, functioning riparian areas (especially on agricultural lands) help resist the consequences of drought by storing water in the subsoil and releasing it gradually over the summer, prolonging instream flows. Water stored naturally underground is not subject to the heating and evaporation that occurs in man-made reservoirs and not only does not create passage problems for fish but may provide thermal refuges from elevated water temperatures. Riparian areas also protect water quality of lowered instream flows, caused by drought, by shading streams that, in turn, reduces water temperatures and increases cold groundwater inputs. Lower stream temperatures can resolve depleted levels of dissolved oxygen caused by low flows and riparian areas also help to filter out polluted agricultural runoff. Riparian vegetation stabilizes stream banks that, in turn, reduces erosion and sedimentation, which leads to shallower and warmer streams. And riparian vegetation adds complexity to streams, which improves fish habitat, increases the likelihood of aquatic life survival in times of drought, and increases hyporheic exchange.