BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
OREGON WATER RESOURCES DEPARTMENT

In the Matter of the Consolidated Case Involving Applications for Extension of Time for:	)
Permit S-32410, Modified by Permit Amendment T-8538, Application S-43365, in the Name of City of Lake Oswego;	) **~~PROPOSED~~ FINAL ORDER ON REMAND**
Permit S-37839, Application S-50819, in the Name of City of Lake Oswego;	) **Case No 2016-WRD-00006**[1]
Permit S-3778, Application S-5942, in the Name of South Fork Water Board;	)
Permit S-9982, Application S-11007, in the Name of South Fork Water Board;	)
Permit S-22581, Application S-28676, in the Name of South Fork Water Board;	)
Permit S-46120, Modified by Permit Amendment T-7434, Application S-60632, in the Name of Sunrise Water Authority and North Clackamas County Water Commission;	)
Permit S-35297, Modified by Permit Amendment T-7389, Application S-47144, in the Name of North Clackamas County Water Commission;	)
Permit S-43170, Modified by Permit Amendment T-7434, Application S-57226, in the Name of North Clackamas County Water Commission,	)
Applicants,	)

[1] The OAH assigned this case number to the referral of the remand in cases WR 08-004 through WR 08-011.

and	)
	)
City of Tigard,	)
	)
Intervenor,	)
	)
vs.	)
	)
WaterWatch of Oregon, Inc.; and South Fork Water Board,	)
	)
Protestants.	)

This matter is a consolidated contested case hearing involving applications for extension of eight municipal water rights located in the lower 3.1 miles of the Clackamas River. The case is on remand from the Oregon Court of Appeals. *WaterWatch of Oregon, Inc. v. Water Resources Dept.*, 268 Or App 187 (2014). The court remanded OWRD's 2010 final orders in this matter to address two specific issues. The court rejected WaterWatch of Oregon, Inc.'s (WaterWatch) other challenges to the 2011 final orders.

The Oregon Water Resources Department (OWRD) referred the remanded case to the Office of Administrative Hearings for limited further hearing to address issues arising from the Court's remand. Administrative Law Judge (ALJ) Rick Barber presided over the remand hearing and issued his Proposed Order on Remand on January 9, 2018.

Exceptions to the Proposed Order on Remand were timely filed by all parties to the proceeding: the City of Lake Oswego, the Sunrise Water Authority, and the North Clackamas County Water Commission (collectively, the "Joint Municipal Parties"), the South Fork Water Board, WaterWatch, and OWRD. WaterWatch timely filed responses to the exceptions of the Joint Municipal Parties, the South Fork Water Board, and OWRD. The Joint Municipal Parties and South Fork Water Board timely filed responses to the exceptions of WaterWatch.

OWRD adopts the following sections of the Proposed Order on Remand without modification: the History of the Case, Issues on Remand, Evidentiary Rulings, Procedural Issues, and Conclusions of Law.

OWRD adopts the Findings of Fact, Opinion, and Order sections with the modifications described herein. Additions to the ALJ's Proposed Order on Remand are shown in underlined text; deletions are shown in strikethrough text. In locations where the Proposed Order on Remand uses underlined text, the text has been converted to bold, underlined text to distinguish it from additions.

Finally, because the Court of Appeals' remand was limited in scope, OWRD incorporates its 2010 final orders (attached). This Final Order on Remand is intended to supplement and clarify the 2010 final orders in a manner that addresses the bases for the Court of Appeals'

remand. To the extent that there is a direct conflict between the 2010 final orders and this Final Order on Remand, this Final Order on Remand controls.

HISTORY OF THE CASE

This matter is a consolidated contested case hearing involving applications for extension of eight municipal water rights located in the lower 3.1 miles of the Clackamas River. The case is on remand from the Oregon Court of Appeals. *WaterWatch of Oregon, Inc. v. Water Resources Dept.*, 268 Or App 187 (2014).

On December 23, 2015, the Oregon Water Resources Department (OWRD, or the Department), referred the remanded case to the Office of Administrative Hearings (OAH) for a limited further hearing[2] to address issues arising from the Court's remand. The OAH assigned Administrative Law Judge (ALJ) Rick Barber to preside over the remand hearing.[3]

ALJ Barber convened a prehearing conference on January 25, 2016. Assistant Attorney General Jesse Ratcliffe represented the Department; Attorney Christopher Crean represented South Fork Water Board (SFWB); Attorney Jeff Ring represented the Joint Municipal Parties (JMP);[4] Attorney Lisa Brown represented WaterWatch. Hearing was initially scheduled for April 26 and 27, 2016, but was postponed and rescheduled for May 10 and 11, 2016.

Scope of Hearing. On May 4, 2016, WaterWatch filed an objection to the scope of the remand hearing. On May 6, 2016, the Department filed a Motion for Extension of Hearing,

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[2] OAR 137-003-0655 states:

> **Further Hearing and Issuance of Final Order**
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> (1) After issuance of the proposed order, if any, the administrative law judge shall not hold any further hearing or revise or amend the proposed order except at the request of the agency, except as provided in this subsection. The administrative law judge may withdraw a proposed order for correction within three working days of issuance of the proposed order. If the administrative law judge withdraws a proposed order for correction, the time for filing exceptions shall begin on the date the administrative law judge issues the corrected proposed order.
>
> (2) If the agency requests the administrative law judge to conduct a further hearing under section (1) of this rule, *the agency shall specify the scope of the hearing* and the issues to be addressed. After further hearing, the administrative law judge shall issue a proposed order.

(Emphasis added).

[3] ALJ Barber presided over the original consolidated hearing in March 2010 and issued the original Proposed Orders in the case in August 2010.

[4] The Joint Municipal Parties include the City of Lake Oswego, the Sunrise Water Authority, and the North Clackamas County Water Commission. In addition to Mr. Ring, Phil Bender and Mark Strandberg from the same firm were involved in representing the JMP.

withdrawing its approval of the May hearing dates because of the disagreement about the scope of the hearing. ALJ Barber postponed the May 10 hearing and convened a prehearing conference on that date in lieu of the hearing.

During the May 10 prehearing, the parties discussed the scope issue and the ALJ requested that the Department present a clear statement of the scope of the additional hearing pursuant to OAR 137-003-0655(2). The parties agreed to reschedule the hearing for July 6 and 7, 2016, and also agreed to provide written position papers to the Department on what the scope of the remand hearing should be. Mr. Ratcliffe agreed to prepare the Department's written statement of the scope and issues for the hearing, and did so in a letter dated June 2, 2016.[5]

The Hearing. The remand hearing convened as scheduled on July 6 and 7, 2016, in Salem. Mr. Ratcliffe represented the Department, and Mr. Crean represented SFWB. Messrs. Ring, Bender and Strandberg represented the JMP, and Ms. Brown represented WaterWatch.

The following witnesses testified on July 6 and 7: Oregon Department of Fish & Wildlife (ODFW) Instream Flow Specialist Tim Hardin; retired ODFW Water Quality/Quantity Section Manager Rick Kepler; OWRD Permit Extension Specialist Ann Reece; Consultant Robert Annear; WaterWatch Development Director Molly Whitney; Consultant John Davis; Ted Labbe; PGE Project Manager John Esler; John Ratliff; Hydrologist Jonathan Rhodes; and Fishery Habitat Ecologist Christopher Frissell. The record was held open for rebuttal evidence.

The remand hearing reconvened on October 4 and 5, 2016, in Tualatin, Oregon,[6] for the presentation of rebuttal and surrebuttal evidence. The following witnesses testified: Dr. Hardin; Dr. Annear; fisheries expert Steven Cramer; Davis; Labbe; Rhodes; and Dr. Frissell. The evidentiary record closed at the end of testimony on October 5, 2016.

Transcript Issue. In the process of the parties preparing their written closing arguments, it became apparent that there were several inaudible portions of the audio record of the October 4 and 5 rebuttal portion of the hearing. When it was determined that several portions of the record could not be recovered, the parties worked together to reconstruct the record as best they could, with the understanding that further hearing could be scheduled to allow re-examination of the witnesses as to disputed points. The additional evidentiary hearing was rescheduled for September 7 and 8, 2017.

On August 28, 2017, the parties informed the ALJ that they had resolved the transcript issues sufficiently that they did not need to recall any witnesses to clarify or replace testimony lost at hearing. On September 7, 2017, the parties convened by telephone to address the timing of the final transcript, a corrected briefing schedule, and for supplemental oral argument.

At oral argument, Mr. Ratcliffe represented OWRD; Mr. Crean represented SFWB; Mr.

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[5] Importantly with regard to later discussions of the scope of the hearing, no party sought postponement of the hearing (which had been set for July 2016) after they received the June 2, 2016 statement of the scope of the hearing.

[6] The location was changed due to a scheduling conflict in the Salem OAH office.

Bender represented the JMP; and Ms. Brown represented WaterWatch. The record was again held open for receipt of the corrected transcript, and for revised briefs (with corrected transcript citations). On November 8, 2017, the parties presented the finalized corrected transcript to the ALJ. By November 22, 2017, all parties provided the updated written briefs and the record was closed.

ISSUES ON REMAND

The remand issues have been set by the questions the Court asked, as well as by the scope of issues determined by OWRD before the hearing.

1. Whether the ODFW distinction between a "short-term drop" and a "long-term drop" below the target flows is supported by a preponderance of the evidence.

2. Whether OWRD can "connect the dots" to show that the drops below the target flows will continue to maintain the persistence of the listed fish species:

3. Whether Dr. Annear's Annual Scaled water scenario is valid and was appropriately relied upon by ODFW and OWRD.

4. Whether the changes in the annual meeting condition are supported by a preponderance of the evidence.

5. Whether the Court of Appeals' decision in the *Cottage Grove* case (*WaterWatch v. OWRD*, 259 Or App 717 (2014)) affects the measurement of "the undeveloped portion of the permit" in Permit S-35297.

EVIDENTIARY RULINGS

The following documents were offered by the parties:

OWRD offered the affidavits of witnesses Hardin, Kepler and Reece, and Exhibits OWRD R1 through R18, including R3a and R3b. All were admitted into evidence with the only objection being WaterWatch's objection to hearsay.[7] That objection was overruled with leave to raise it again during the hearing. During the hearing, the Department sought leave to provide more complete copies of OWRD Exhibits R3a, R3b and R6. Those corrected documents were received on July 19, 2016.

SFWB offered Exhibits SFWB R1 through R11, and all were admitted into evidence without objection.

JMP offered Exhibits JMP R1 through R20. All were admitted, with Exhibit JMP R16 being admitted over WaterWatch's objection.

[7] WaterWatch's objections on hearsay grounds are addressed at length in the Procedural Issues portion of this opinion.

WaterWatch offered Exhibits WW R1 through R6, R8 through R28, R30 through R34, R36 through R42, R44 through R52, R55, R56, R60 through R71, and R72.[8] JMP withdrew its previous objections to Exhibits R24, R26, R45, R46 and R47, and those documents were admitted into evidence. Exhibits R5 and R32, while admitted into evidence, will not be considered regarding information about persistence flows due to the Department's determination of the scope of the issues. Objections to R27, R55 and R67 were overruled and the documents were admitted into evidence. Objections to R50, R51, R52, R65, R68, R69, R70 and R71 were sustained, and the documents were excluded from evidence.

During the rebuttal (October) portion of the hearing, WaterWatch identified additional exhibits WW R73 through R83. R73, R74, R76, R77, R82 and R83 were admitted into evidence. R75, R78, and R79 were identified but not offered into evidence. Objections to Exhibits R80 and R81 were sustained for reasons described elsewhere in this opinion.

The Joint Municipal Parties contend that Ex. WW R79 was offered into evidence and that my ruling on its admissibility was not clear on the record. As noted above, I do not believe it was offered into evidence. If it was, however, I would have excluded it for the same reasons as Exs. WW R80 and R81.

Therefore, the admitted WaterWatch exhibits are these: R1-R6, R8-R28, R30-R34, R36-R42, R44-R49, R55, R56, R60-R64, R66, R67, R72-R74, R76, R77, R82 and R83.

PROCEDURAL ISSUES

Several housekeeping and procedural matters were raised by the parties in the case that are better addressed initially rather than in the body of the opinion.

1. WaterWatch's objections to the scope of remand. WaterWatch has raised both substantive and procedural arguments against OWRD's June 2, 2016 statement of the scope of the remand hearing. Procedurally, WaterWatch contends that the statement of scope was presented too close in time to the hearing:

> The department issued a June 2, 2016 letter clarifying the scope of remand. This letter was filed after the initial April 26, 2016 deadline for filing exhibits and after the original early May hearing dates that were postponed by request of the department.

(WW Arg. at 6).

WaterWatch's procedural argument is without merit. First, the exhibit deadline WaterWatch refers to was for the (postponed) May 10 hearing and those deadlines are unimportant to this analysis.

Second, the May hearing dates were postponed at the Department's request, primarily

[8] There are no WaterWatch Exhibits R7, R29, R35, R43, R53, R54, R57, R58 or R59, for reasons that are unclear.

because WaterWatch (on May 4, 2016), filed an objection to the scope of the hearing. The parties agreed to hold a prehearing on May 10, in lieu of the hearing, to address the Department's concern about the scope.

At the May 10 prehearing where the scope of the hearing was discussed—and after which all parties, including WaterWatch, were able to submit to the Department a written statement of their view of the scope issue—WaterWatch did not request to postpone the hearing. In fact, the parties (including WaterWatch) actually *set* the July hearing at that May 10 prehearing.

After the parties received the Department's June 2, 2016 statement of scope, WaterWatch again failed to request postponement of the July hearing. If WaterWatch believed it was disadvantaged by the timing of the scope letter, about five weeks before the hearing, it could have requested a postponement. It did not.

Substantively, WaterWatch argues that OWRD has set a statement of scope that is too narrow:

> WaterWatch asserts that the scope presented in the June 2 letter is overly narrow because of the court's rejection of the department's ultimate fish persistence. Further, the first contested case was held nearly six years ago and new information exists relevant to fish persistence. That evidence should be considered and issues such as the time periods in which the persistence flows apply, the flows and other relevant considerations should be within the scope.

(WW Arg. at 6-7).

The straightforward answer to WaterWatch's objection is that, pursuant to OAR 137-003-0655, the agency determines the scope of the additional hearing and the OAH is obliged to comply. However, for the following reasons I also conclude that the Department's scope of the issues is correct and that WaterWatch's objections are without merit.

First, although WaterWatch believes that the Department should allow additional evidence on target flow numbers, that issue is not something the court asked for on remand. The Court did not seek further clarification of the target flow numbers, and did not rule in WaterWatch's favor on that issue.

Second, WaterWatch's argument that it should be able to include "new information" that exists concerning fish persistence was addressed *and approved* by OWRD in its June 2 scope statement. Evidence that became available after the initial hearing, if relevant to the issues, could be admitted.[9] WaterWatch has not identified what additional "new information" it wanted to rely upon that was not allowed at hearing. Remembering that this is a remand hearing—answering the Court's questions concerning a decision made in 2010—the Department's

[9] Evidence concerning the 2015 "fish kill" in the river is obviously new information that the Department and all other parties have considered in this case.

limitation of the scope, with an exception for some new information, was reasonable.[10]

2. WaterWatch objection to lack of an appealable order. WaterWatch claims it was error to proceed to hearing in this matter without an appealable order from OWRD:

> *This contested case is being held without an order at issue. That means there were no proposed findings of facts [or] conclusions of law to review.* At a pre-hearing conference, WaterWatch advocated that there needed to be a proposed order before the case proceeded; however, others disagreed but Administrative Law Judge Barber did require the agency to file proposed permit conditions. In response, the department provided a document prepared by ODFW titled "Final ODFW Response to Court of Appeals decision in Clackamas municipal water right extensions," (4/18/2016), which includes proposed permit conditions ODFW's evidence and reasoning on some issues. (OWRD Ex. R-1 ("ODFW Response")). However, the ODFW Response is not an order and it is unknown what the department might choose to find or conclude. *The lack of findings of fact and conclusions of law continues to be a significant barrier to a fair hearing.*

(WW Arg. at 7; emphasis added).

The allegation that there was no order leading to what WaterWatch calls a "second contested case hearing" misses the point of this "additional hearing" under the APA. The current proceeding was convened at OWRD's request, to address the Court's remand questions in an already-existing case. The OWRD decisions that led to the initial contested case hearing are still at issue.

The Court of Appeals remanded the case to the Department because it considered the evidentiary record insufficient. ORS 183.482(8)(c) states:

> (8)(a) The court may *affirm, reverse or remand* the order. * * *
>
> * * * * *
>
> (c) The court shall set aside or remand the order if the court finds that the order is not supported by substantial evidence in the record. Substantial evidence exists to support a finding of fact when the record, viewed as a whole, would permit a reasonable person to make that finding.

(Emphasis added). Here, the Court remanded the orders to the Department rather than setting them aside.

It was then the Department's responsibility to determine how to address the remand. It could have issued an Order on Remand with further explanation if it considered the evidence in the existing record sufficient. Instead, OWRD gave the parties an opportunity to present

[10] The four-plus days of hearing on remand took longer than the total of all of the original hearings that were held in 2010.

evidence on the questions asked by the Court before it responded to the Court. There was no necessity for the Department to issue a new notice in the case; the original Final Orders approving the municipal extensions are still at issue.

As noted above, OAR 137-003-0655 requires the agency referring the case to the OAH to determine the scope of the hearing and the issues to be addressed. Contrary to WaterWatch's argument, nothing in this procedure for addressing a remand requires the issuance of a new contested case notice.

Furthermore, WaterWatch's claim that the process was not fair is without merit. WaterWatch participated at every level of this proceeding, including providing its input as to what the scope of the hearing should be.

3. Clarifying portions of the record. Because of the transcript issues previously addressed, the parties asked for clarification of my ruling on three places in the record.

Cramer Testimony. The first took place during the testimony of Steven Cramer, and Ms. Brown presented her recollection of the basis of her objection on page 177 of the corrected transcript for October 4, 2016, which, in the corrected transcript, still shows her comment as inaudible. I accept her representation that her actual comment was an objection:

> MS. BROWN: I have an objection here because I'm not sure what this is relevant to. This is a case about whether diverting an additional 160 cfs from the Clackamas River will have an effect on maintaining fish persistence as required by statute. I object to this.

(Oct 4 Tr. 177). Mr. Bender then responded to the objection and I concluded that the testimony was relevant and admissible within the scope of rebuttal. (Oct 4 Tr. 178).

WW Ex. R81. The second portion of the record needing clarification is my ruling on Exhibit WW R81, a PowerPoint document prepared by Mr. Labbe about his one day spent at the riffle on the lower Clackamas River. Although my notes do not reflect what occurred, and the record of the applicants' objections to the document is inaudible, (Oct 5 Tr. 290-291), I accept the proposed language to the inaudible portion of the transcript, as follows:

> MS. BROWN: I believe there was testimony to that effect yesterday as well.
> UNKNOWN: (Objection inaudible).
> UNKNOWN: We would join in that objection, your honor.
> HEARINGS OFFICER: Ms. Brown, my concern here is that you are indicating it is being offered because of testimony yesterday, October 4, but this is a document you submitted some time ago so (inaudible) I have a hard time thinking it was just intended (inaudible).
> MS. BROWN: Well, it also was—we also, just to back up (inaudible) we were prepared to present it at the July hearing but were not permitted to, but it is also relevant to rebut testimony offered yesterday.
> HEARING OFFICER: (Inaudible). I'm going to exclude the document.

Secondly, you know, frankly the evidence is (inaudible).

(Oct 5 Tr. 291).

I sustained the objections to WW Exhibit R81 (a document prepared by Labbe based on his one day at the riffle, with his analysis) for several reasons. First, as the transcript does show, I concluded the document should have been presented in the main part of the remand hearing, not on rebuttal, but that WaterWatch had failed to provide the document to the other parties before the exhibit deadline on the July hearing. Second, because Labbe did not follow the protocols for doing a riffle survey (discussed more fully below), I considered the document's attempt to project his findings into other years to be based on speculation. Finally, because he had already testified about the protocols under Thompson and California Methods, the document was cumulative as to the admissible information about the protocols that may have been in the document.

WW Exhibit R80. Finally, the parties question the basis for excluding WaterWatch Ex. R80, a PowerPoint prepared by Dr. Frissell for the original remand hearing in July but not allowed at that time because it had not been previously provided to the other parties.

Because the remand hearing was focused on specific issues, and because the scope of rebuttal and surrebuttal was intended to become narrower at each level, I concluded that surrebuttal was not an appropriate time for WaterWatch to present their initial evidence that, but for its error in not providing the copies to the other parties, would have been part of their case in July. Therefore, I excluded the document but did not prevent the witness from testifying about the issues as long as the evidence constituted surrebuttal.

4. Expertise of WaterWatch witness John Davis. When WaterWatch witness John Davis testified in July 2016, the Joint Municipal Parties contested his expertise and asked WaterWatch to identify Davis's area of expertise. Ms. Brown claimed Davis was an expert on municipal water supply issues, and the JMP questioned his expertise. I allowed Davis to testify at hearing, having taken his expert status under advisement.

Davis has worked as an engineer and consultant on water and wastewater projects since 1972, mostly preparing NEPA and SEPA applications.[11] He has been licensed as an engineer in Oregon and California in the past, but his Oregon license has lapsed. He has not consulted with any of the municipalities involved in this case, but has previously made projections on future water use in other communities. The projections were "based on the historical records of current water use." (July 6 Tr. 222-231).

In administrative law, objections such as this one by JMP generally go to the weight of the evidence presented, not its admissibility. Here, on a more probable than not basis, Davis is an expert in matters having to do with municipal water supplies. However, having so concluded, and as will be addressed below, there are serious questions about the content of the evidence he provided in the case.

[11] NEPA and SEPA are environmental assessments for the federal and state governments, respectively.

5. WaterWatch objections to hearsay. The authors of the response ODFW prepared for the Court of Appeals obtained some of the information about fish passage in the affected reach through conversations with fish biologists such as Todd Alsbury, who is mentioned in the response and in the affidavits of Dr. Hardin and Mr. Kepler. WaterWatch has objected to the information received from Alsbury and others, contending the information was hearsay. I conclude that the evidence was hearsay but that it is admissible and substantive for the following reasons.

The APA test for reliability of evidence, including hearsay evidence is found in ORS 183.450(1).[12] The standard is whether the evidence is "of a type commonly relied upon by reasonably prudent persons in [the] conduct of their serious affairs." *Waisanen v. Clatskanie School Dist. #6*, 229 Or App 563, 579 (2009). Generally speaking, hearsay is admissible in administrative hearings, with any objections going to the weight afforded it.

In this case, the authors of the ODFW response reasonably relied upon their staff experts for correct information about fish passage on the Clackamas River. Kepler, a former manager at ODFW and an expert in water resources and clean water, quite reasonably relied upon the information provided by fish biologists like Alsbury, and others. Hardin, likewise, obtained specific information from these sources.

WaterWatch argues that the evidence should have been excluded under the Supreme Court's rulings in *Cole/Dinsmore v. DMV,* 336 Or 565 (2004) and *Reguero v. TSPC,* 312 Or 402 (1991). The Court in *Cole/Dinsmore*, quoting *Reguero*, provided a non-exclusive list of factors to consider when determining the weight to give to hearsay evidence:

> [1] [T]he alternative to relying on the hearsay evidence; [2] the importance of the facts sought to be proved by the hearsay statements to the outcome of the proceeding and considerations of economy; [3] the state of the supporting or opposing evidence, if any; [4] the degree of lack of efficacy of cross-examination with respect to the particular hearsay statements; and [5] the consequences of the decision either way.

336 Or at 570.

Arguing that the evidence should have been excluded under these criteria, WaterWatch argues:

> [H]ere, the alternative to relying on the hearsay is to use other more reliable evidence, including but not limited to ODFW's own fish timing table and descriptions of fish in the 2007 ODFW Advice.

(WW Arg. at 34-35).

There are several reasons why WaterWatch's hearsay objection is without merit. First,

[12] Ms. Brown indicated, when making her initial objection on hearsay grounds on July 6, 2016, that she knew hearsay was often admissible in administrative hearings. (Jul 6 Tr. 7-8).

unlike the hearsay evidence of a sexual attack in *Reguero* or an absent arresting police officer in *Cole/Dinsmore*, the hearsay evidence in this case consists of scholarly conversations with experts on the fish in the Clackamas River. Hardin and Kepler would reasonably rely upon such conversations in the ordinary course of their work at ODFW.

Second, and related to the first, the "alternatives" to the hearsay information that WaterWatch suggests ("ODFW's own fish timing table and descriptions of fish in the 2007 ODFW Advice") are also hearsay—as are many of the documents relied upon by WaterWatch in these proceedings. As OWRD responded:

> OWRD could make similar complaints about much if not most of the testimony and evidence submitted by WaterWatch, which also relies on the work of other scientists (all of the parties, for example, are relying on climate science conducted by individuals not present at the hearing).

(OWRD Resp. at 12). Indeed, a review of most of the documents provided by the parties in this proceeding contain hearsay, and it is the nature of scholarly endeavors to refer to and rely upon the work of other professionals. Dr. Hardin and Mr. Kepler, like other professionals, clearly indicated the source of the information they relied upon. The fact that they cited conversations rather than written reports is a distinction without substance in this case. Any reader reviewing the ODFW response or the affidavits in this case would know the source of the information the authors cited.[13]

The crux of WaterWatch's argument is that "the sources of the hearsay [statements] were not made available to cross-examine." (WW Arg. at 35). However, WaterWatch was aware well in advance of the hearing who would testify for OWRD and would have been aware that the experts Hardin and Kepler consulted with were not on the witness list. WaterWatch never requested cross-examination of those individuals and never subpoenaed them to the hearing. Thus, any lack of cross-examination was due to WaterWatch's inaction.

6. Burden and Standard of Proof. There has been considerable discussion during the remand hearing and in the written briefing about which party has the burden of proof, and there have been many assumptions about what the standard of proof is on remand.

Burden of Proof. First, it is the municipal parties that have the burden to establish entitlement to the extensions they have requested in this case. Under ORS 537.230(2)(c), it is OWRD's responsibility to make sure that the undeveloped portions of the permits are "conditioned to maintain * * * the persistence of [listed] fish[.]" Thus, OWRD must determine that the conditions are appropriate to maintain the persistence of listed fish, based upon "existing data" and "the advice of [ODFW]." If OWRD cannot conclude that the conditions are sufficient to maintain fish persistence, it may not approve the extensions. In this case, although the municipal parties ultimately have the burden of proof, OWRD has concluded that the conditions are sufficient and has issued orders approving the extensions.

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[13] WaterWatch also submitted a hearsay document from several of the ODFW sources mentioned by Dr. Hardin. (Ex. WW R8).

Second, there is a general principle in the presentation of evidence in a contested case hearing that the proponent of a proposition has the burden of presenting evidence in support of that proposition. ORS 183.450(2). This principle applies in this case because WaterWatch's arguments against the permit extensions are primarily based upon the notion that any further withdrawals from the Clackamas River will cause a decline—even doom—the persistence of the listed species in the river. WaterWatch has the burden to present evidence in support of its zero additional water argument.[14]

Standard of Proof. There has also been some confusion expressed about the standard of proof in this remand hearing. Much of this has arisen because the Court of Appeals applied their "substantial evidence" standard to the case and found that, in certain areas, the previous Final Orders were lacking in substantial evidence and "substantial reason."

However, on remand and at the level of evidence-taking, the remand hearing reverts to the preponderance standard when evaluating the evidence. *Sobel v. Board of Pharmacy*, 130 Or App 374, 379 (1994), *rev den* 320 Or 588 (1995) (standard of proof under the Administrative Procedures Act is preponderance of evidence absent legislation adopting a different standard). Proof by a preponderance of the evidence means that the fact finder is persuaded that the facts asserted are more likely true than not. *Riley Hill General Contractor v. Tandy Corp.*, 303 Or 390 (1987). The burden of proof encompasses two burdens, the burden of production of evidence in support of an assertion, and the burden to persuade the fact-finder that the facts asserted are true. *Marvin Wood Products v. Callow*, 171 Or App 175 (2000).

Accordingly, my evaluation of the evidence in this order is based on a preponderance of the evidence, not the court's substantial evidence standard.

FINDINGS OF FACT

The Findings of Fact included here address only the remand issues and are intended to supplement the Findings of Fact made in the 2010 Proposed Orders and 2011 Final Orders. To the extent that any of the following findings conflict with previous fact-finding, the current finding of fact is considered the correct one on remand.

I. SELECTED FINDINGS OF FACT FROM PREVIOUS FINAL ORDERS

1. The Court of Appeals quoted several findings of fact from the 2011 Final Orders as part of its explanation why it could not address WaterWatch's "omnibus" substantial evidence challenge. I include them here to give context to the Court's questions and to the findings of fact on remand:

> 35. ODFW's recommended streamflows are required on a long-term basis to maintain the persistence of listed fish species in the lower 3.1 miles of the Clackamas River.
>
> 36. ODFW's recommended minimum streamflows are not presently met on some

[14] ORS 183.450(2) applies to all of the parties, not just WaterWatch.

occasions during the months of July, August, September and early October.

37. Listed fish species presently tolerate short-term streamflows below the minimum recommended streamflows, and will likely continue to do so.

38. The short-term drops below minimum streamflows predicted by Jonathan Rhodes are not incompatible with maintaining the persistence of listed fish species.[15]

39. The lower 3.1 miles of the Clackamas River represents less than 2% of the available rearing habitat in the Clackamas River basin, and is the least desirable rearing habitat within the basin.

* * * * *

44. Streamflow in the lower 3.1 miles of the Clackamas River during the period April through June is typically "well over" (typically more than 200 cubic feet per second above) the minimum streamflow values recommended by ODFW.

45. A fish count at sites in the lower 3.1 miles of the Clackamas River in August and early September of 2008 and 2009 found small numbers or steelhead and Chinook.

46. The lower 3.1 miles of the Clackamas River is likely to be "avoided by most species of concern during the warmest time periods in July and August.

47. Reducing streamflows below levels typically experienced in the lower 3.1 miles of the Clackamas River during the latter part of the summer may cause certain individual fish to either leave this reach of river to find better habitat, or be unable to do so and not survive.

48. The use of Timothy Lake releases that are available to the permit holders will not always be sufficient to raise streamflows in the lower 3.1 miles of the Clackamas River to the minimum streamflows recommended by ODFW. ODFW's advice acknowledges this fact and ODFW took this into account when concurring with [the department's] fish persistence conditions.

* * * * *

53. Timothy Lake sits roughly 23 miles upstream from the lower 3.1 miles of the Clackamas River.

54. Releases of water from Timothy Lake affect the entire reach of the Clackamas River downstream from the Lake, and not just the lower 3.1 miles of the River.

[15] It was this finding of fact that the Court found lacked substantial evidence.

* * * * *

56. ODFW's fish persistence advice is based upon persistence of listed species in the lower 3.1 miles of the Clackamas River, and does not reflect fish flow needs further up the Basin.

57. During the summer months, most of the habitat available to maintain the listed fish species is upstream from the lower 3.1 miles of the Clackamas River.

58. During the period from the first Monday in September through June 30th, if the minimum fish persistence flows are not met, the municipalities must reduce their diversions by the percentages by which the fish persistence flows are not being met, based on a seven-day rolling average of mean daily flows (e.g., if the fish persistence flows are being missed by 10%, the municipalities must reduce their diversion under the undeveloped portions of the permits by 10% from the maximum amount legally permitted).

59. During the period from July 1st through the day prior to the first Monday in September, [the department's] fish persistence conditions permit continued diversion of the undeveloped portions of the permit when the recommended streamflows are not being met.

(Quoted from the Court's opinion, 268 Or App 215-17; citations omitted and editorial parentheses provided by the Court).

II. PROCEDURAL HISTORY

2. In August 2010, the OAH issued Proposed Orders affirming the extensions that had been approved by OWRD. In January 2011, OWRD issued Amended Proposed Orders, adding several findings of fact, modifying the Proposed Orders regarding conditions, but again affirming the extensions. In April 2011, OWRD issued Final Orders in each case. WaterWatch appealed the Final Orders to the Court of Appeals. (Record).

3. On December 31, 2014, the Court reversed and remanded the three cases. The basis for the reversal is stated in several places by the Court:

> Petitioner WaterWatch of Oregon, Inc., seeks judicial review of three separate final orders issued in contested cases by the Water Resources Department (the department) that were decided based on a consolidated record, and which we have consolidated for purposes of argument and opinion. In those three orders, the department granted to respondents * * * extensions of time to perfect water rights under their respective permits for water diversions from the lower 3.1 miles of the Clackamas River. *In granting the extensions, the department was required to condition the "undeveloped portion" of the municipal parties' permits "to maintain * * * the persistence of fish species listed as*

> *sensitive, threatened or endangered under state or federal law."* ORS 537.230(2)(c). Petitioner asserts that the department's conclusion that the fish-persistence requirement has been met by the conditions that the department placed on the municipal parties' permits is not supported by substantial evidence and is contrary to law. Petitioner also challenges the department's modification of the administrative law judge's findings of fact and the department's procedural handling of evidence submitted by petitioner.
>
> *We conclude that the department's determination that the permits, as conditioned, will maintain the persistence of listed fish species in the affected waterway lacks both substantial evidence and substantial reason. The department based its decision on the distinction between a short-term drop below persistence flows, which will not affect the persistence of listed fish species, and a long-term drop below persistence flows, which will affect the persistence of listed fish species. However, the record lacks substantial evidence of what a short-term drop below persistence flows means versus a long-term drop. Additionally, the department failed to adequately explain how its findings support its conclusion that the undeveloped portions of the permits, as conditioned, will maintain the persistence of the listed fish species when, on their face, the conditions fail to ensure that diversion of the undeveloped portions of the permits will not contribute to long-term drops below persistence flows. We reject all of petitioner's remaining arguments on judicial review*, and we reverse and remand all three final orders to the department for further consideration.

268 Or App at 190-91 (emphasis added). Later, the Court fleshed out this summary paragraph:

> On judicial review, petitioner raises five assignments of error: (1) the department's findings regarding fish persistence are not supported by substantial evidence or substantial reason; (2) the department's application of the statutory fish-persistence requirement in the final orders is contrary to law; (3) the department unlawfully modified the ALJ's findings of fact; (4) the ALJ failed to file prescribed administrative procedures, which unlawfully impaired the fairness of the proceedings; and (5) the department unlawfully considered petitioner's excluded climate-change exhibits without first reopening the contested case hearing before the ALJ and unlawfully excluded the DEQ letters.

Id. at 204. After addressing and rejecting WaterWatch's assignment of error concerning the meaning of the phrase "maintain * * * the persistence of fish species," (p 210-11), the Court addressed the matter that led to the remand:

> As a necessary preliminary matter, we first address the 35 additional findings made by the department, which petitioner challenges as unsupported by substantial evidence in the record. In the amended proposed orders, the department made additional findings [the Court describes the specific numbers in each of the orders, which differ], all of which addressed fish persistence. Those findings included the department's ultimate findings regarding what was

necessary for fish persistence in the affected reach, and addressed petitioner's fish-persistence evidence and expert opinions. *Petitioner broadly challenges all of those findings in a single sentence as "a mere recitation of evidence, followed by a bare conclusion." That challenge is not specific enough for us to conduct a review* of the findings for substantial evidence or reason. [Citations omitted].

Petitioner, however, does make specific challenges to findings 43[59][61], 45[61][63], 46[62][64], 48[64][66], 49[65][67], 63[79][81], 64[80][82], 65[81][83], and 66[82][84] as unsupported by substantial evidence in the record based on some cited record evidence. Having reviewed those findings, in view of the whole record, we conclude that they are supported by substantial evidence. * * *

Many of petitioner's contentions appear to stem from petitioner's initial premise that the persistence flows identified in the final orders must be met each year and in each season to maintain fish species persistence. * * * However, in its reply brief, petitioner retreats from that position and "agrees [with the municipal parties that] the flows were "intended to function as triggers for determining what actions might be necessary when flows fell below those targets'; the clear problem is that, during summer, they do not trigger anything (including ODFW's intended actions). Outside of summer, they trigger inadequate actions." Upon review of ODFW's advice and the department's orders, we agree with petitioner's refined position that, based on ODFW's advice, the department set the persistence flows as target levels used to trigger actions required by the permit conditions, and not as hard numbers that must be met at all times.

Our task, thus, is to determine (1) whether substantial evidence supports the department's findings regarding the effect on the persistence of the listed fish species when the persistence flows are not being met and (2) whether, in turn, substantial reason supports the department's conclusions that its permit conditions will maintain the persistence of the listed fish species with those effects in mind. With our broad-view task thus defined, we turn to petitioner's specific contentions regarding the persistence flows.

* * * * *

With the exception of finding 38[54][56], petitioner does not identify the specific findings that it challenges as lacking substantial evidence with regard to streamflow. However, the department made the following relevant findings: [findings omitted]

Based on its additional findings, the department explained that ODFW recognized that the listed fish species have persisted under current conditions where flows are not always met from July to October and that "ODFW has stated that the target flows are what are required on a *long-term,* rather than short-term basis for persistence of listed fish species. * * * ODFW believes that the fish

persistence conditions are sufficient to mitigate for the additional diversions contemplated under the permits." (Emphasis in original). The department also stated that there was no evidence in the record that the potential movement of fish from the lower reach or the loss of individual fish in the summer months "poses a threat to the persistence of any fish *species*." (Emphasis in original). The department thus concluded that the permits, as conditioned, maintained the persistence of listed fish species in the affected waterway.

Our main difficulty with petitioner's omnibus substantial evidence challenge to the department's findings is that petitioner does not identify problems with particular findings and does not engage with the administrative record as a whole relying instead upon its own expert, Rhodes. [Citations omitted]. Based on review of the record as a whole, we conclude that the department could reasonably weigh the expert evidence as it did and that the department's findings set forth above are supported by substantial evidence, with the exception of finding 38[54][56].

With respect to finding 38[54][56], there is not substantial evidence in the record as to what a "short-term drop" is in terms of fish persistence or why the flows predicted by Rhodes, which are not identified in the order, fall within that category. The only evidence pointed to in the record by respondents is testimony from ODFW employee Kepler, which, with respect to that finding, reduces to his bare statement that "Mr. Rhodes' testimony does not provide information that would alter [ODFW's] assessment." Bare conclusions by agency experts cannot be used as a substitute for evidence presented at a contested case hearing. [Citations omitted].

We also agree with petitioner that the department's ultimate determination that the permits, as conditioned, will maintain the persistence of listed fish species lacks substantial reason because the department failed to explain how its streamflow findings and the imposed conditions connect, so as to reach that determination.

Id. at 212-218 (emphasis added). Later, the Court further expressed its concern:

* * * The department failed to connect the dots between its finding of *what* is necessary to maintain fish persistence—long-term meeting of persistence flows—and how the conditions ensure that the diversion of the undeveloped portions of the municipal parties' permits do not contribute to the long-term failure to meet persistence flows.

That missing connection between the what and the how is particularly needed here because the meeting condition, on which the department (based on ODFW's advice), appears to have particularly relied as the means by which fish persistence will be maintained, is not a condition placed on the use of the undeveloped portion of the municipal parties' permits. Although the department may have

been hopeful, or even confident, that the municipal parties and ODFW will agree on a strategy each and every year to ensure that the diversion of the municipal parties' undeveloped portions of their permits do not prevent persistence flows from being met on a long-term basis, the statute requires more. The statute requires the department to find that "*the undeveloped portion of the permit is conditioned* to maintain * * * the persistence of [listed] fish species." ORS 537.230(2)(c)(emphasis added). * * * The department's findings regarding ODFW's intent with regard to the meeting condition cannot relieve the department of its statutory obligation to find that the undeveloped portions of the municipal parties' permits are *conditioned, i.e.*, their use is made conditional, on maintaining fish persistence.

268 Or App at 223 (emphasis in original).

Scope of the Hearing

4. Following the Court's reversal and remand, OWRD determined that additional evidence was required and referred the matters back to the OAH to hold an additional hearing on the remand issues. (Referral). On June 2, 2016, OWRD provided a statement on the scope of the issues to the parties.[16] The document stated in part:

> The scope of this referral is based on the specific substantial evidence and substantial reason grounds for the court's remand. OWRD addresses these issues in detail, and then also responds to certain other issues pertaining to the scope of the proceeding that have been raised by the parties or that OWRD believes would benefit from further explanation.
>
> **Substantial Evidence:**
>
> * * * * *
>
> The ALJ should conduct a hearing on the distinction between a "short-term drop" below the recommended persistence flows versus a "long-term drop."
>
> **Substantial Reason:**
>
> * * * * *
>
> The ALJ should conduct a hearing on drops below persistence flows and whether the evidence pertaining to these drops supports the conclusion that the undeveloped portions of the permits, as conditioned, will maintain persistence of the listed fish species. Evidence and argument that tends to support or contradict the proposition that the permits, as conditioned, will not result in "long-term drops" below the target flows (as that phrase is defined above, including the

[16] WaterWatch's objections to the scope of the remand hearing have been addressed in the Procedural Issues section above.

factors on which the determination is based) is within the scope of the proceeding.

Annear Scaled Model:

* * * * *

[After setting forth the different positions between WaterWatch and the other parties concerning whether the municipalities may rely upon predictions of future water use in attempting to extend the municipal water rights:]

WaterWatch argues in the alternative that if the Annear Scaled Model is within the scope of the proceeding, "all parties must be allowed to build an evidentiary record at the hearing regarding the Annear Scaled Model." OWRD agrees. Evidence that supports or challenges the Model is within the scope of the proceeding.

Annual Meeting Condition (including Timothy Lake releases):

[Describing ODFW's recommendations for change to the annual meeting condition]:

But for ODFW's recommendation to modify the annual meeting condition to address changes to the PGE agreement, the annual meeting condition would not have been the subject of the present remand hearing. OWRD concludes that additional evidence does not need to be taken pertaining to parts of the condition that have not changed. However, because OWRD agrees with ODFW that the annual meeting condition changes are an appropriate response to the revised PGE agreement, all parties are entitled to address the changes through evidence or argument.

New Information

If evidence is otherwise within the scope of the proceeding, the fact that it became available after the close of the initial contested-case record does not separately limit its admissibility.

Persistence flow numbers

While not raised in any of the parties' scope statements, OWRD points out that ODFW's fish persistence target flow numbers have not been challenged in this proceeding. Evidence or argument that is relevant solely to whether the fish persistence target flow numbers should be higher or lower is not within the scope of the proceeding.

***Cottage Grove* issue**

Although not a part of the court's remand, the decision in *WaterWatch v. Oregon Water Resources Department*, 259 Or App 717(2014)(referred to herein as *Cottage Grove*), bears on Permit S-35297. Specifically, the Oregon Court of Appeals ruled in *Cottage Grove* that the "undeveloped portion of the permit" referred to in ORS 537.230(2)(c) is to be measured by reference to the maximum rate of water applied to beneficial use before the expiration of the development deadline in the permit or last-issued extension. As described in greater detail in the Affidavit of Ann Reece, submitted with OWRD's exhibits, this interpretation affects only Permit S-35297. In order to comply with the *Cottage Grove* decision, the hearing needs to include evidence and findings pertaining to this issue.

Other issues

The scope of the hearing is limited as described above. Other issues, including but not limited to WaterWatch's challenges that were rejected by the court, are outside the scope of the hearing.

(June 2, 2016 Statement of Scope).

III. OWRD RESPONSE TO THE COURT'S REMAND QUESTIONS

5. At OWRD's request, the Oregon Department of Fish & Wildlife (ODFW) prepared a written response to the questions the Court of Appeals asked in the remand. The response consists of 17 pages of explanation and three appendices. The third, Appendix C, contains the proposed conditions that ODFW has recommended to OWRD. (Ex. OWRD R1). Tim Hardin, Ph.D. and Rick Kepler were two of the authors of the ODFW response, with input from others at ODFW. Harding and Kepler both consulted with District Fish Biologist Todd Alsbury about fish use of the affected reach. (Affs. of Hardin, Kepler). Hardin also consulted with other ODFW personnel: Luke Whitman, Kevin Goodson and Eric Brown. (Jul 6 Tr. at 136).

6. Hardin and Kepler rely on information received from other ODFW employees in the normal course of their work, especially when the employees contacted have more information or expertise. Dr. Hardin relied upon the employees mentioned because they had more knowledge about the Clackamas River than he did. (Jul 6 Tr. at 137).

7. Dr. Hardin has been an Instream Flow Specialist for ODFW since 2008, following 20 years of private consulting as an instream flow biologist and, before that, four years of working for the Instream Flow Group, a project of U.S. Fish & Wildlife. Dr. Hardin obtained his doctorate in Fisheries Biology from Colorado State University, a Masters of Arts in Aquatic and Population Biology from the University of California at Santa Barbara (UCSB), and an undergraduate degree in Biology and Chemistry from Knox College. (Ex. OWRD R18).

8. Until his retirement in May 2016, Richard Kepler was the Water Program Manager for ODFW, with the primary responsibility of assuring consistent statewide application of habitat protection measures for fish and wildlife. From 1984 until he began with ODFW in

1999, Kepler for the Oregon Department of Environmental Quality (DEQ) on water quality issues. He has a Masters in Geography, with minors in Natural Resource Economics and Water Resource Policy, from Oregon State University. Since retiring in 2016, Kepler has continued to work on ODFW projects as a Water Policy Specialist. (Ex. OWRD R11).

9. On April 18, 2016, ODFW provided to OWRD its written response to the questions the Court asked on remand. The response included the following description of its scope:~~17~~

> The following discussion is provided by the Oregon Department of Fish and Wildlife (ODFW) and is intended to provide the evidence and substantial reasoning the court sought for the following questions:
>
> 1. The difference between short and long term drops.
> 2. Why short-term drops are compatible with fish persistence.
> 3. Why the municipal permit extensions with the WRD conditions described below will maintain the persistence of the listed fish species.
>
> As described below, ODFW recommends certain modifications to the Fish Persistence Conditions included in OWRD's 2011 final orders. ODFW has worked with WRD to develop revised Fish Persistence Conditions, which are set forth in Appendix C. For the reasons described below, ODFW concludes that the modified Fish Persistence Conditions in Appendix C will maintain the persistence of listed species.
>
> ~~**General considerations**~~
>
> ~~[ODFW presented some general factors regarding fish persistence and fish habitat]~~

10. In support of ODFW',s conclusion, it presented certain factors regarding fish persistence and fish habitat, both in general, and then specific to the lower Clackamas. Based on a preponderance of evidence in the record, supported by ODFW's written response, OWRD finds the following:

> **Fish Persistence**
>
> - ~~ODFW views~~ f Fish persistence ~~as~~ is a population-based analysis, which means ~~we look~~ at the population and its health is looked at within a watershed context. ~~We~~ The next step is to consider the reach being affected by the water withdrawals and ask how the reach relates to the population and watershed as a whole, what services the reach provides to

~~17 This extended recitation of excerpts from the response is provided as a finding of fact for two reasons. First, historically the response is as described. Second, with the exception of places addressed in this order, I find that the ODFW conclusions are accurate based upon a preponderance of the evidence. For the most part, the agency's answers to the Court are best presented in ODFW's language instead of being summarized.~~

the target fish populations, ~~who~~ how the fish populations use the reach and how important the reach is at any given time to the population as a whole.

- Within a given watershed there are different types and qualities of habitat. In most cases fish will use the best quality habitat first before using similar reaches of lesser-quality habitat.
- ~~ODFW also recognizes that f~~ Fish populations use different types of habitat in different ways and at different times depending on where they are in their life cycle. For example, areas with spawning gravels are very important when fish are spawning, but may be of only average importance as rearing habitat outside of spawning season.
- ~~ODFW will also c~~ Consideration is also given to whether streamflow in the reach is the limiting factor for maintaining fish persistence in the basin, given the other factors that are affecting listed species persistence.
- Fish persistence is affected by annual variability in many factors, including climate, habitat and streamflow. In cases where supplemental flows from a reservoir are available, ODFW prefers to manage those flows adaptively rather than be bound by an inflexible mandate.

Fish Habitat

Fish habitat can be divided into three basic categories, corresponding to different life stages:

- Migration: for anadromous species, migration to and from the ocean; for resident species, access to different habitats within the watershed,
- Rearing: access to food sources, shelter and refugia, and
- Spawning: for salmonids, access to spawning gravels for egg deposition and development through the emergence of fry from the gravel.

These habitats can overlap and the life stages can occur at the same or different times of year and can be different depending on the species involved. An appropriate amount of each habitat needs to be available at the correct time to allow a fish species to persist.

Stream Reach affected by Municipal Extension Withdrawals

The Clackamas River and its tributaries provide approximately 40 to 276 miles of stream habitat for four anadromous fish salmonids, depending on the species []. The mainstem reach to which the target flows apply runs from River Mill Dam to the mouth, 23.5 miles. The lowest 3.1 miles of this mainstem reach, where the municipal diversions are located, is the **affected reach**.

-The affected reach is a migration corridor for all four species.

-the affected reach provides spawning habitat for fall Chinook only. By stream length, and assuming even distribution of gravels, there are 40 miles of potential fall Chinook spawning habitat in the Basin, making the affected reach 7.8% of fall Chinook spawning habitat. However, ODFW surveyors estimate only 2-5% of fall Chinook spawning occurs in this reach (Eric Brown, ODFW).

-The affected reach represents only 1-2% of rearing habitat for spring Chinook and winter steelhead in the Basin.

-By stream length, the affected reach is 7.8% of fall Chinook rearing habitat. However, fall Chinook juveniles exhibit a range of outmigration timing. It is likely that many or most fall Chinook juveniles in the Clackamas migrate downstream out of the Clackamas before August and would not be present in this reach during the period when flow withdrawals are an issue.

In summary, the main function of the affected reach is as a migration corridor. It provides a small portion of spawning habitat for fall Chinook, and a small percentage of (poor quality) rearing habitat for spring Chinook and steelhead. It is not rearing or spawning habitat for [C]oho salmon.

Basis of streamflow predictions with future municipal use

In the following discussion, comparisons are made between river conditions with existing water withdrawals, vs. future conditions with full development of the municipal water rights. The current conditions are based on 2000-2014 data from USGS gage #14211010, located at RM 1.7, and water records from each [Point of Diversion]. Future conditions were modeled by Rob Annear, Geosyntec. ~~We~~ ODFW used the Annual Scaled scenario, which is considered a high-end estimate of future water use. Current and future conditions take into account all diversions, including those downstream of the gage.

In the Annual Scaled model, for each water right, the maximum recorded daily diversion for each year is scaled up to its future total amount (developed plus undeveloped). For example, Lake Oswego has total rights of 59 cfs, of which 25 cfs are Developed and 34 cfs Undeveloped (Table 2). If its maximum recorded daily diversion for a given year was 20 cfs, the Annual Scaled diversion for this day is set at 59 cfs, and diversions for all other days are scaled up using the ratio 59/20. A recorded diversion of 15 cfs would be scaled up to 15 x (59/20) = 44.2 cfs (Figure 1).

The results of the Annual Scaled model therefore mimic the 2000-2014 daily historical pattern of water use, but peg it each year to a likely maximum amount of use under the water right. In other words, the full legal water right is assumed to be used for part of each year; the full legal right is assigned to the date(s) of actual maximum use, and the other dates are scaled accordingly. This estimate of the likely effects of full use of the cities' water rights and is based on existing data.

(Ex. OWRD R1 at 1-3). **Reason for modification**: Correction of typographical error.

10. ~~ODFW considered the estimates in~~ The Annual Scaled model likely produces withdrawal estimates ~~to be~~ in the high range (~~or~~ i.e., it is "conservative," as ~~the~~ certain parties referred to it at hearing), because of two factors:~~.~~

~~The Annual Scaled model likely produces withdrawal estimates in the high range~~

~~for two reasons:~~

-Actual municipal withdrawals occur at intervals over the lowest 3.1 miles. However, the model output is based below the last diversion, at about RM 0.7

-SFWB holds water right permits for the South Fork of the Clackamas River and Memaloose Creek (S-3778 and S-9982). Together, those water rights total 50 cfs. However, of the 50 cfs theoretically available under the permits, only about half is actually available in the lower 3.1 miles of the Clackamas reach in a median year. Because the Annual Scaled model is based on the amount of water right rather than the amount of water actually available, the model overestimates the effect of future withdrawals under these two permits, which are contingent upon water availability in the South Fork Clackamas and Memaloose Creek, by 20-25 cfs, or more during dry periods.

(*Id.* at 4).

11. Based upon the Annual Scaled scenario, ODFW's response compared the instream water right (from Certificate 59451) to the ODFW recommendations for its minimum recommended flows. The chart in the ODFW response notes that the instream right is 640 cfs at all times except in July, August and early September, when the instream right drops to 400 cfs. ODFW's recommended minimum flows are 800 cfs at all times except June, July, August and early September, when the recommended flow drops to 650 cfs. ODFW explained:

By comparing the results of the Annual Scaled Model with the target flows, ODFW determined the percentage of time the target flows will be missed, and the magnitude and duration of the shortfall, under the Annual Scaled model water use scenario. These results allow ODFW to make a determination whether the municipal use of the undeveloped portions of the permits will likely result in short-term or long-term drops below target flows.

~~The difference between short and long-term drops below target flows~~

12. ODFW defined short and long-term drops as follows:

ODFW's target flows are not flows that must be constantly met in order to maintain the persistence of the affected species. Rather, they are flows necessary over the long term to maintain persistence. The target flows are based on the understanding that stream flows naturally exhibit variation both within a given year and from year to year, and that the affected fish species have adapted to these variations. A short-term drop below target flows is a drop that allows the population of the affected species to remain fairly stable over time. A long-term drop below target flows is a drop that results in either a new normal at a lower population level or a continued decline in population level.

13. ODFW then described the factors that distinguish between a short and long-term drop. These factors are supported by a preponderance of evidence in the record and are adopted as findings of fact by OWRD:

Whether a given drop or set of drops below target flows constitutes a short-term or a long-term drop has to do with the frequency and magnitude of the drop, when the drop occurs and the spatial extent and characteristics of the reach where the drop occurs. All of these factors determine the response of the population to drops below target flows.

14. Applying the above factors to the lower Clackamas, ODFW concluded that water use under the Annual Scaled model water use scenario would not result in long-term drops for the following reasons. These reasons are supported by a preponderance of evidence in the record and are adopted as findings of fact by OWRD:

> Under the Annual Scaled model water use scenario, the drops below target flows happen only part of the time within a given year, do not happen every year, are usually not a large magnitude (see following section and Table 4), and occur over a small percentage of basin habitat (Table 1). For these reasons, ODFW did not consider the projected drops below target flows resulting from municipal use of the undeveloped portions of the permits to be "long-term" in regard to the impact on any population in the basin.
>
> However, while the Annual Scaled model scenario represents a likely maximum use scenario (and therefore likely overestimates actual use under the fully developed permits), ODFW also considered that the municipalities will have the legal right to use the full quantity of water allowed under the permits if the permits are fully developed. While such a scenario is unlikely for the reasons described above, ODFW accounted for it in its advice by recommending a curtailment condition during certain parts of the year. In ODFW's view, the curtailment condition is necessary in a "full permitted use" scenario to avoid long-term drops below persistence flows.

(*Id.* at 5-6; emphasis added). ODFW considered both the results of the Annual Scaled model scenario *and* the possibility that municipalities could legally use the entirety of the permitted amounts. (*Id.*).

12. ODFW noted that there are variations in the amount of water from "year to year" and also "within a given year," and addressed those types of variation separately. ODFW's findings and reasoning are supported by a preponderance of evidence in the record and are adopted as findings of fact by OWRD.~~:~~

1. Variations from year to year

> Variations in flow from year to year is a common condition for fish populations. One year will be an above-average flow year and other will be a below-average flow year. If flow is the limiting variable, fish populations can expand in above-average years and contract in below-average years. In the Clackamas under existing conditions (i.e. including current water use by the municipalities), the target flows are rarely or never missed except in the latter half of September and in October. Under the Annual Scaled water use scenario, using daily average flows, the target flow is missed 30.1% of the time August 1 – September 4, 19.4%

of the time September 5 – 15, 40% of the time September 16 – 30, and 17.4% of the time in October. (Table 4).

While the Annual Scaled model usage represents an increase in missed target flows in August, September and October, these missed flows still represent short-term drops that do not threaten fish persistence. * * *

Regarding where these target flows apply, ODFW analyzed the effect on the lower 3.1 miles of the total 23.5 mile reach, which represents 13 percent of the total reach. In the mainstem upstream of RM 3.1, target flows will be missed very rarely regardless of the municipal diversions in question (based on gage records for the Clackamas near Estacada). In other words, flow levels will be unaffected by these withdrawals in 87% of the reach.

(*Id.* at 6). Table 4 and Figure 2, both found on page 7 of the OWRD response demonstrate the percentage of time that target flows are currently missed, and how often they would be missed under the Annual Scaled model.

2. Variation within a given year

Variation within a given year is a seasonal flow change that the fish have evolved with over time and to which their life cycle has adapted. In the Clackamas basin, low flows occur in the late summer and early fall. With fall rains, flows increase to well above target flows and continue to be high through the winter and spring, until summer when flows begin to drop again (Figure 3). The pattern holds under the Annual Scaled model usage scenario, in which target flows are rarely or never missed except in August, September and October. In this scenario, August, September and October low flows can be viewed as an annual condition to which the fish have historically adapted and responded when flows increase with the fall rains.

(*Id.* at 8).

13. ODFW then provided a summary of why use of the undeveloped portions of the municipal water permits would be compatible with long-term fish persistence~~:~~. ODFW's findings are supported by a preponderance of evidence in the record and are adopted as findings of fact by OWRD.

Summary of reasons why use of the undeveloped portions of the municipal water permits is compatible with long-term fish persistence

This summary addresses the frequency, magnitude and spatial extent of anticipated drops below target flows based on the Annual Scaled model. The following section further addresses reach and basin characteristics that affect whether drops below target flows are properly characterized as short-term or long-term.

Within-year and year-to-year variation in the lower Clackamas, based on water use under the Annual Scaled model, are short-term flow effects that are

compatible with long-term fish persistence because:

- Target flows are rarely or never missed November through July. Based on year-to-year variation over the 15 modeled years, target flows would be met all days for 7 years for the period August 1-September 4; 9 years for September 5-15; 6 years for September 16-30, and 8 years for October 1-31. These numbers are based on average daily flows in the 3.1 mile reach under the Annual Scaled estimate.
- Within a given year, when flows are missed, they rebound in the fall as precipitation increases and municipal demand decreases.
- Target flows will be met in the mainstem above RM 3.1 almost all the time (see above).
- As described in more detail below, in the basin as a whole, low flows are not a key limiting factor in the Recovery Plan.

Low flows could become a concern for long-term fish persistence if the low-flow period lasts longer every year, the target flows are frequently missed by a large percentage, low flows do not recover with precipitation, or low flows begin to extend over a greater length of the river. None of these apply to the lower Clackamas River.

Additional reasons why the municipal permits, as conditioned, will not contribute to long-term drops below flows needed to maintain the persistence of listed fish species

1. Quality/Quantity of Habitat in Lower 3.1 miles of River:

As noted, flow reductions from municipal withdrawals affect the lower 3.1 miles of the Clackamas River, which represents 1-2% of the overall habitat in the basin for steelhead and spring Chinook, and perhaps up to 5% for fall Chinook. ODFW considered the relative importance of the habitat for listed fish species in the lower 3.1 miles in the context of habitat in the basin as a whole.

(*Id.* at 8-9).

14. ODFW's second additional reason looked to its 2006 Advice to OWRD and its 2010 Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon and Steelhead, specifically considering the factors listed there for the Clackamas River. In its evaluation under the current case, it concluded that municipal withdrawals were neither a primary nor a secondary limiting factor to the salmonids in the river. (*Id.*). This finding is supported by a preponderance of evidence in the record and is adopted as a finding of fact by OWRD.

15. Third in its list of additional reasons for its conclusions, ODFW addressed the question of Life Cycle Timing:. This finding is supported by a preponderance of evidence in the record and is adopted as a finding of fact by OWRD.

3. Life Cycle Timing

During periods when target flows are expected to be missed most often, the 3.1 mile reach is not providing important habitat for listed fish in the context of basin populations.

Rearing: For the time period July, August and early September, ODFW's Fish Timing Tables (Appendix 2) show that for listed species the predominant use is rearing; however, ODFW is not aware of any quantitative data on juvenile use of this 3.1 mile reach of the Clackamas in the summer. If the fish were uniformly distributed in the basin, only about 2% would be rearing in this 3.1 mile reach. The actual use is probably much lower, because the reach is poor quality habitat with warmer water temperatures compared to upstream (Table 6).

The level of steelhead juvenile use in the 3.1 mile reach is unknown but likely very low in terms of basin habitat for steelhead which has available about 276 miles of habitat in the basin (Table 1). Chinook juveniles exhibit two basic life history strategies: ocean-type (juveniles migrate out a few months after emergence) and stream-type (juveniles spend more than a year in fresh water). It is believed that ocean-type juveniles in this reach would migrate out by July, and stream-type juveniles are mainly upstream of RM 30 (Luke Whitman, ODFW, pers. comm.). Accordingly, the lower 3.1 miles of the river does not provide important juvenile habitat during low-flow periods.

[Table 6, showing monthly water temperatures for June through September at River Mile 23 and RM 2, omitted]

Spawning: Of the listed species, only fall Chinook use this reach for spawning. Very little spawning is known to occur here. ODFW surveys have found only 5 redds total in the reach over a 4 year survey period (Eric Brown, ODFW).

Moreover, the duration and magnitude of missing fall target flows are greatest in the late September period (Table 4), but most spawning occurs later in the season. ODFW estimates that about 10% of spawning would occur in late September, vs. 30% in October and 60% November and later (Todd Alsbury, ODFW District Biologist), when flow effects are negligible. Since the effect of the municipal withdrawals on flow are least when most of the spawning occurs, the effect on fall Chinook spawning within the reach is not expected to be significant.

(*Id.* at 11).

Curtailment Condition

16. ODFW's response to OWRD and the Court presented a curtailment condition for the extensions because, although it was considered unlikely, the municipal parties would have the legal right to use the full permitted amount of water at all times (i.e., the 24/7 scenario presented by Mr. Rhodes). ODFW explained:

How the curtailment condition helps maintain the persistence of listed species

Curtailment is a systematic way of lowering the maximum allowed diversion rate

in proportion to the percentage of shortfall from the target flow. For example, if an undeveloped water right is 10 cfs, and the target flow at a given time is being missed by 20%, then the maximum use of the undeveloped right is cut back by 20% to 8 cfs.

Important characteristic of curtailment:

-Curtailment reduces the **magnitude** of the shortfall but does not change the percent **time** of the shortfall.

-Curtailment lowers the amount of the undeveloped portion that may be diverted; it may or may not cause an actual reduction in diversion, depending on demand at that time. If a city is diverting its full undeveloped portion during a period when the target flow is missed by 20%, it will have to curtail the undeveloped portion by 20%. But if during that period the city was diverting less than 80% of its undeveloped portion, no cutback would be required.

As described above, ODFW has concluded that the drops below target flows predicted by the Annual Scaled water use model constitute short-term drops that are consistent with maintaining the persistence of listed species. ODFW has also concluded that the Annual Scaled water use model represents the likely maximum water use under the municipal permits if and when they are fully developed (and representing a likely overestimate of actual use).

However, the municipalities will have the legal right to use the full quantity of water allowed under the permits once the permits are fully developed. While such a scenario is unlikely, ODFW accounted for it in its advice by recommending adoption of a curtailment condition during certain parts of the year. In ODFW's view, the curtailment condition is necessary once the permits are fully developed to avoid long-term drops below persistence flows.

Modified recommended condition to maintain fish persistence (1)

Curtailment is a standard condition that ODFW recommends on most municipal extensions. In order to evaluate the need for curtailment, the **combined** effect of all diversions needs to be taken into consideration. After further review ODFW believes it needs to address two concerns with the curtailment formulas to align with subsequent fish persistence advice provided in other basins.

- The calculation needs to include all the municipal withdrawals associated with determining when curtailment occurs, and
- The time interval used for determining the percentage curtailment should be as short as possible.

The 2006 ODFW advice established the percentage shortfall based on the gage measurement. However, the method does not include water withdrawals below the gage and therefore, reduces the actual curtailment for all the municipal extensions. As an example this means that during the September 16-30 period (when the persistence flow would be 800 cfs), if flow at the gage is 700, this would be a 12.5% shortfall from the 800 cfs target flow.

a) % Shortfall at gage = (800-700)/800 = 12.5%

However, this does not take into account the Lake Oswego diversions coming out downstream of the gage. The Lake Oswego diversions (up to 25 cfs developed + 34 cfs undeveloped = 59 cfs) should be put into the equation in order to make sure that curtailment limits potential use when missing the target becomes a possibility. When flow at the gage is 859 cfs, the full Lake Oswego 59 cfs diversion (assuming full use) would cause the target to be missed, so if Lake Oswego is using the full amount, the gage reading minus 59 cfs is used to calculate curtailment.

For the present example, including the Lake Oswego diversions in the curtailment percentage gives 700 – 59 = 641 cfs at the mouth:

b) % shortfall at mouth = (800-641)/800 = 19.9%

Since all diversions in the reach are having an effect on flow at the mouth, all the undeveloped rights in the affected reach should be curtailed by 19.9%. In this example, ODFW advice would be that every POD would be limited to 100-19.9 = 80.1% of its total undeveloped amount. In practice the municipalities would be curtailed based on the actual amount of total extension water they are currently using and other permit requirements.

In addition to accounting for diversions occurring below the gage, ODFW also recommends adding the total withdrawals for all the municipalities into the equation based on average daily flows. This will assure curtailment begins when flows fall below the fish persistence levels at the mouth, and will also assure that adjustments are made on a timely basis when flows drop and/or demand fluctuations. Therefore, to avoid large fluctuations in river flows and curtailment amounts ODFW recommends a water right condition be included in the water permit calculating curtailment amounts and total water use on a daily basis.

Curtailment in the case of the lower Clackamas is a condition that will be most noticeable in a situation where the flow target is missed by a high percentage and demand is near maximal. For example, if in late September the flow dropped to 550 cfs at the mouth, the percentage shortfall would be 31.2% from the 800 cfs target. If the cities were at that time using the full 160.8 cfs of undeveloped water, they would be cut back to 110.6 cfs, a reduction of 50.2 cfs (but if they were using only 110 cfs at the time, they would not be curtailed). During low flows and with maximal demand, curtailment is largest.

The curtailment condition does not apply to the period of July 1 up to the first Monday in September. As described above, this is because the lower 3.1 miles of habitat already constitutes poor quality habitat for the listed species during this time period. The additional estimated diversions of water during this period are unlikely to result in the failure to maintain the persistence of listed species.

Modified recommended condition to maintain fish persistence (2)

> Although ODFW has chosen not to recommend curtailing water withdrawals in the lower 3.1 miles of the river July 1st through the first Monday in September (Labor Day) it is important to recognize that missing the target flows will have an effect on the ecology of this portion of the river. Therefore ODFW recommends as a further condition to reduce the magnitude by which target flows may be missed, upon the first occurrence of target flows being missed at the mouth of the Clackamas River July 1st through the first Monday in September, the water user must enact the first level or stage of alert in their water curtailment plan that includes mandatory water conservation measures and/or curtailment actions. Once enacted, implementation of the conservation measures and/or curtailment actions must continue through the first Monday in September. By taking measures to reduce water use in this manner, the degree to which target flows are missed will be decreased.

(*Id.* at 12-14).

Annual Meeting Condition

17. After describing how the releases from Timothy Lake could be used to maintain the persistence of the fish species, ODFW described its recommendations for the annual meeting condition:

> ODFW's 2006 advice asked for an annual meeting with the municipalities to determine how to use the augmentation water provided from Timothy Lake. However, under the new Timothy Lake agreement PGE has indicated they will not know whether water is available for augmentation until a couple of weeks before they are able to release the water. ODFW now recommends that an annual strategy be developed based on the current year's projected water availability. The strategy will include two flow augmentation periods (June 1st to Labor Day) and (Labor Day to Oct 31st). The June 1st to Labor Day period will determine whether flows are needed for steelhead spawning and incubation or can be used for flow augmentation later in the summer. The Labor Day to Oct 31st period will determine the timing for flow augmentation for chinook spawning. The permittees will consult with PGE to determine when and if water is available for flow augmentation. The permittees will notify ODFW about the timing and the amount of flow that can be released. If the available water cannot meet the strategy targets, then the permittees and ODFW will modify the water augmentation strategy to maximize fishery benefits. The permittees will then submit a flow augmentation request to PGE.[18]

(*Id.* at 14-15).

18. ODFW completed its response to the Court with a summary of its conclusions regarding fish persistence:

> SUMMARY

[18] The actions are required of the permittees because ODFW is not a party to the agreement between PGE and the municipalities, and has no standing itself to request flows from Timothy Lake.

For the reasons described above, ODFW concludes that the fish persistence conditions included in OWRD's 2011 final orders, with the following modifications, will maintain the persistence of listed fish species:

- Account for Lake Oswego's water withdrawals in curtailment calculations, rather than base calculations on the gage reading.
- Recommend calculating curtailment amounts on a daily basis to minimize fluctuations in river flows and curtailment requirements.
- Recommend enactment of the first level or stage of alert in the water user's water actions when the river is at or below the target flows. Further, once enacted, implementations of the conservation measures and/or curtailment actions must continue through the first Monday in September.
- Update requirement to consult with ODFW when water is available under the 2011 Timothy Lake agreement.

-The 2010 Conservation and Recovery Plan does not identify water withdrawal as either a key or secondary limiting factor for adult Chinook or steelhead in the Clackamas Basin. Water withdrawal, as related to temperature, is listed as a secondary factor for juveniles.

-Modeled drops below persistence flows are short term, both inter- and intra-annually.

-Flow effects on rearing habitat are confined to a short reach that provides less than 2% of basin habitat.

-Almost all spawning takes place upstream of the affected reach. Only fall Chinook spawn in the affected lower 3.1 miles and this reach represents less than 5% of their spawning habitat. The biggest shortfalls from target flows occur in the early part of spawning season, whereas most of the spawning occurs later in the season.

-Shaping and timing Timothy Lake water for flow augmentation will provide additional habitat over a longer reach, and will improve overall fish persistence for the listed fish species in the watershed as a whole.

MODIFIED FISH PERSISTENCE CONDITIONS

OWRD recommends the fishery resource protection conditions as set forth in Appendix C to maintain the persistence of fish species listed as sensitive, threatened or endangered under state or federal law. The fish persistence conditions were formulated in coordination with OWRD and are consistent with the advice given to OWRD in this response.

(*Id.* at 16).

19. Appendix C to the ODFW response contains edited and "clean" copies of each of the conditions for each of the eight municipal permits. (*Id.* at Appendix C).

Reasons for modification to Findings of Fact 1 through 19: To correct typographical errors, and to clarify that, while the findings of fact quote extensively from ODFW's Remand Report, that is because, after reviewing the entirety of the evidence in the record, the quoted findings are supported by a preponderance of evidence in the record and are adopted as findings of fact by OWRD.

IV. ADDITIONAL EVIDENCE SUPPORTING ODFW'S RESPONSE TO THE COURT

Annear Annual Scaled Scenario

20. ODFW's response to the Court relied upon the expertise of Hardin and Kepler, and also upon the analysis provided by the Annual Scaled scenario modeled by Dr. Robert Annear, using the CE QUAL W2 modeling software. (Ex. OWRD R1; Jul 6 Tr. at 179-182).

21. Dr. Annear obtained his Ph.D. in Civil and Environmental Engineering from Portland State University (PSU) in 2007, an MS degree in Civil Engineering from PSU in 1997, and a Bachelor's degree in Aerospace Engineering from Boston ~~College~~ University in 1993. He also earned a graduate certificate in Hydrology from PSU. He is a licensed engineer in Oregon, Idaho, Washington, and Florida. (Ex. JMP R2). **Reason for modification**: There is clear and convincing evidence in the record that this finding is incorrect with respect to where Dr. Annear obtained his Bachelor's degree. (Ex. JMP R2 at 1).

22. Dr. Annear has worked primarily as a water resources engineer, doing hydrodynamic and water quality monitoring for such projects as regulatory permits, stormwater management, drinking water studies, surface water system assessments, TMDL development (including the Willamette TMDL study for DEQ), Endangered Species Act (ESA) issues, FERC licensing and others. He has more than 18 years of modeling development and calibration, and the model he used in this case, ~~has used~~ the CE QUAL W2 model, has been used in more than 1000 applications in 50 countries. (Jul 6 Tr. at 183). He has worked on several studies in New York, Oregon, California, Washington, Idaho, Texas and Minnesota. He has also lectured on the model on several occasions in Europe. (Ex. JMP R2). **Reason for modification**: There is clear and convincing evidence in the record that, while the CE QUAL W2 model has been used more than 1000 times in 50 countries, Dr. Annear has not personally used the model that many times. (July 7 Tr at 182-183).

23. In the Annual Scaled scenario, Dr. Annear used the historic patterns of water use in the affected reach between 2000 and 2014 and projected similar use to the point where the municipal permits are fully developed. The operating assumption was that current use patterns will continue into the future, and it created a scenario that was "conservative but reasonable." (Jul 6 Tr. at 192-194). Dr. Annear took gage data and records of actual withdrawals at the PODs in the affected reach to determine the historic water use between 2000 and 2014. He then "scaled up" that water use as a projection for future years when the full permitted amounts would be available. For example, if the municipalities have used the (current) full permitted amount on specific dates and less amounts at other times, the Annual Scaled scenario reflects the same pattern of use but at the higher amounts—the full permitted amounts under the extensions for the highest days and correspondingly less on the other days. (Ex. JMP R1).

24. Dr. Annear used this scale rather than applying the full permitted amount on a continuous basis because he was unaware of any municipality that has ever used its full permitted amount of water around the clock, seven days per week, and he believed that level of use would be unrealistic. (Jul 6 Tr. at 194).

25. The model is calibrated for flow, water level, and temperature. (Oct 4 Tr. 118). Dr. Annear previously used the model for water temperatures in the Willamette TMDL testing for DEQ. For the Annual Scaled scenario, Dr. Annear modeled temperatures that correlated well with the actual river temperatures, finding that temperature changes for water flowing through the affected reach would be no more than 0.6 C. Dr. Annear's findings disputed WaterWatch's experts' hypothesis that withdrawals from the river always caused water temperatures to rise. (Oct 4 Tr. 88).

26. As a second test for water temperature, Dr. Annear also examined the actual temperature records for the Clackamas River Water POD at RM 3.3,[19] above the affected reach, and the Lake Oswego POD at RM 0.8. This study showed that, at times, the water was actually colder downstream. (Exs. JMP R17, R18; Oct 4 Tr. at 93-94).

27. Dr. Annear considers the estimate of future water use to be conservative (that is, on the high end), because the SFWB water rights were fully included in the Annual Scaled scenario, but approximately 25 cfs of the SFWB water will not be available in median-to-dry years. Furthermore, although not included as part of the model scenario, per capita use of water has been declining yearly for approximately ten years. If that trend continues, it makes the Annual Scaled estimates even more conservative. (Jul 6 Tr. at 202).

Current and Projected Flows through the Reach

28. The flows recommended by ODFW for the mainstem Clackamas River, which includes the affected reach, 650 cfs from June until early September and 800 cfs for the rest of the year. Referred to as either "target flows" or "persistence flows" by the Court and the parties, they are the flows necessary for the long-term health of the listed fish species in the reach. However, they are not an exact flow below which the fish population is damaged or lessened. A drop below the target flow (a "miss") is an indicator that fish persistence needs to be evaluated. The magnitude of the miss (how far below the target flow) and the length (how long it remains under the target flow) are important factors. (Aff. of Hardin). Dr. Hardin stated:

> The 650 cfs flow for June-September 15 is a **target flow** for fish persistence, and not an exact flow below which the population is damaged regardless of the timing and magnitude of the "miss". OWRD Exhibit R-12 compares existing vs. Annual Scaled flows for July through November (in the remaining months, the flow targets are expected to be missed very rarely under the Annual Scaled Scenario, and therefore do not affect the persistence of listed species). The percentages of time that the targets are missed are tabulated for each of 6 time blocks.
>
> **Overall magnitude of missed flow target**: The percentage of time missing the

[19] This is the point of diversion for Clackamas River Water (CRW), which is not a party to this proceeding but has a POD just outside the reach.

target is more meaningful when it is combined with the magnitude of each miss. For example, it is potentially more significant when the target is missed by 150 cfs for 3 days vs. by 15 cfs for 3 days.

During the period covered by the 650 cfs target flow, the highest percentage of missed days is predicted by the Annual Scaled scenario to be the time block August 1 to Labor Day (represented by August 1-September 4). I combined all the daily flows for this time interval for the years of record into one overall chart of flow exceedance. Flow exceedance curves are a standard tool for expressing hydrological statistics, in particular, the percentage of time that any specified flow level has, or is expected to occur. In this case, the flow exceedance curve expresses the total **time** below the target flow, as well as the magnitude of each shortfall. In other words, the occurrence of missed target flows is illustrated in terms of magnitude and percent time simultaneously.

(Hardin Aff. at 3).

29. There is an instream water right through the reach (from Certificate 59451) that requires flows in the river of 400 cfs from July 1 through September 4, and 640 cfs for the rest of the year. (Jul 6 Tr. at 118).

30. Historically, and as projected by the Annual Scaled scenario, the highest percentage of missed target dates are from August 1 to the first Monday in September. (Hardin Aff. at 3). Target flows are rarely missed from November through July, and the Annual Scaled scenario predicts that the same would be true under full development of the water rights. (Ex. OWRD R1 at 8).

31. Drops below target flows happen only part of the time within a given year and do not happen at all during other years. (Ex. OWRD R1 at 5). OWRD estimates that, under the Annual Scaled view of the fully developed permits, the target flow would be missed 30.1% of the time between August 1 and September 4; 19.4% of the time between September 5 and September 15; 40% of the time between September 16 and September 30[20]; and 17.4% of the time in October. (*Id.* at 6-8).

Fish Use and Timing in the Affected Reach

32. There are, as ODFW has identified, four listed fish species in the Clackamas and each use the river differently and at different times. Kepler summarized the fish species and use of the river:

1. The life history of the Federally listed Salmon and Steelhead:

a. Winter Steelhead – Migrate into the Clackamas River during the winter (late November through June) and move into the tributaries to spawn. Egg incubation through fry emergence occurs January through July and

[20] This larger percentage may be explained, in part, by the increase in the target flow from 650 to 800 cfs at that time.

juvenile rearing occurs in the tributaries year-round, with smolt out-migration occurring late March through early July.

b. Spring Chinook – Migrate into the Clackamas River during the spring (April through early July), then hold over the summer in cool refuges (deep pools, tributaries and groundwater upwelling areas). They then move into the upper tributaries to spawn in the fall (late August through October). Egg incubation through fry emergency occurs August through April, with juvenile rearing split between about 20% out-migrating immediately and the remainder staying for a year, mostly in the tributaries and out-migrating October through June. (Note: ODFW has bred hatchery Spring Chinook to come in almost a month later than their wild cousins and has attempted to acclimate them lower in the river in the hopes they will stay in the lower river (around River Mile 9) rather than moving up stream to improve fishing opportunities in the Lower Clackamas River).

c. Fall Chinook – Although functionally extinct in the Clackamas River, some fish do stray into the Clackamas, migrating into the mainstem in the late fall when fall rains increase stream flows. Fall Chinook are mainstem spawners and are the only salmon that spawns in the Lower Clackamas River. Depending when the rains arrive, egg incubation through fry emergence occurs late October through mid-April with out-migration occurring through June.

d. Coho Salmon – are another salmon species that waits to come in until the rains start. There are two runs in the Clackamas River. An early hatchery run is intended to provide an early fishery; these will come in in late August if there is a cool wet summer but more typically will come in in October. The native run comes in in October through March and spawns in the upper tributaries through April. They incubate and emerge through July and then out-migrate through mid-July.

e. Chum – are extinct in the Clackamas River although they are a winter spawner with out-migration occurring in the spring.

The life histories of salmon and steelhead in the basin are focused on avoiding the lower river when flows are the lowest and water temperatures are the highest. The majority of the salmon and steelhead have either migrated upstream or migrated out of the system towards the ocean before the habitat of the lower river becomes poor quality in July, August and the early part of September. This is typical of all the native species in the Willamette basin including the Clackamas. The lower 3.1 miles is a migration corridor for all the salmon and steelhead in the basin that move up the basin into cooler, better habitat as the summer progresses or don't come in until conditions improve in the fall. (Exhibit OWRD R-2). All the salmon species avoid water temperatures above 68° F and prefer cooler temperatures; this is why these species come in in the spring and move up into the tributaries before the lower rivers warm up, and is why they avoid the lower Clackamas River in late July and August (Exhibit OWRD R-3a Temperatures at

Oregon City Gage).

(Kepler Aff. at 2-3). Clackamas River salmonid expert Steve Cramer agrees with this assessment of the life histories of the listed species, as does Dr. Hardin. (Oct 4 Tr. at 184).

33. The lower 3.1 miles of the Clackamas River, the affected reach, is primarily a migration corridor for the listed fish species. Dr. Hardin indicates:

> The main value of the Affected Reach is as a passage corridor for adult salmon and steelhead on their way to many miles of good spawning and rearing habitat upstream.

(Hardin Aff. at 5).

34. The timing of the fish passing through the affected reach, and other uses of the reach, does not coincide with the low flow parts of the year for the most part:

> During the period of time in which the 650 cfs target flow for rearing applies, almost all rearing is taking place upstream of the 3-mile affected reach. The same is true for the period covered by the 800 cfs target flow for spawning: all spawning of Coho, steelhead, and spring Chinook, almost all for fall Chinook, takes place upstream of the Affected Reach. And use of the affected reach for fall Chinook spawning is mainly mid-October through December, not in late September when target flows are most likely to be missed (Todd Alsbury, personal communication).
>
> * * * * *
>
> Similarly, from late September through May the target flows are based on spawning and incubation for salmon and steelhead in the 23-mile reach below Estacada. The 3-mile Affected Reach has very little spawning use overall; it has no spawning use by steelhead, Coho, or spring Chinook, and a very low amount of use by fall Chinook. The period of most frequent missing of the 800 cfs target flow coincides with very low occurrence of fall Chinook spawning (OWRD Exhibit R-15).
>
> In summary, missing the rearing and target flows would occur more often, and sometimes with greater magnitude, compared to existing conditions. Overall, the numerical reduction from target flows is low when magnitude and [percentage of miss] are combined. Most important, the missed flows would generally occur in the Affected Reach during periods when there is little or no use by key fish species in this 3.1 mile reach. This inverse relationship between missed flows and fish use, combined with the relatively low magnitude and duration of the missed flows, indicate that the effect of the missed flows on the listed species does not fall into the category of a long-term impact. Therefore, the required objective of maintaining the persistence of listed species will be met under the Annual Scaled scenario.

(Hardin Aff. at 4)..

35. Steven Cramer is a fish biologist with expertise on Clackamas River salmonids. (Oct 4 Tr. at 159). He is very familiar with the river because of a lifetime of personal and professional use of the Clackamas. Using a stock/recruitment analysis (comparing the "stock" fish that are spawning in the river and the number of "recruits" or future spawners), the overall population of Chinook salmon in the river is healthy because there is consistently a greater number of recruits than spawners. (Oct 4 Tr. at 168-175).

36. Cramer agrees with Dr. Hardin and Kepler, and the ODFW analysis, that the affected reach is primarily a migration corridor and that most of the fish activity is upriver. Based upon his review, most of the listed species are out of the affected reach by early June (or earlier in dry years), and no later than July in wet years. He concluded there are probably "late passers" or "stragglers" in the river at later summer dates. Cramer concluded that, if those stragglers were lost, it would not affect long-term fish persistence in the affected reach. (Oct 4 Tr. at 184-188).

37. Although some fall Chinook could be spawning in the affected reach, Cramer noted that they generally wait for the fall rains to enter the river and do most of their spawning upriver, near in Deep Creek, Eagle Creek and Clear Creek. (Oct 4 Tr. at 190). **Reason for modification**: A preponderance of evidence in record supports the finding that the primary spawning areas for fall Chinook are *in* the three listed creeks, not near them. (Oct 4 Tr at 190, Ln. 8-17).

V. OTHER FINDINGS OF FACT

Some Fish Use in Low Flow Times

38. There is some fish use of the affected reach of the river probably at all times of the year, but fish use at the low flow times is minimal. Some smolt and juveniles are down-migrating through the affected reach from July to September. (Oct 4 Tr. at 187). The 2008 and 2009 Huntington snorkel survey, taking place in August and September each year, demonstrated about one fish per 1100 square feet of river. (Oct 4 Tr. at 23-24). There may be some "straggler" fish coming through later than the large majority of the migration of the different species. (Oct 4 Tr. 188, 196).

2015 Fish Mortality Event (Fish Kill)

39. In 2015, during a summer where high water temperatures in the river began a month early, in June, several salmon bound for upper Willamette tributaries (the Santiam and the McKenzie), sought the slightly cooler waters of the Clackamas as a refugia. The fish had become infected with columnaris while still in the Columbia or the Willamette, entered the slightly cooler waters of the Clackamas and died there. (Ex. JMP R10). Of the 56 fish identified in the Clackamas, most were tagged so their location could be identified. One was a Clackamas fish, four were "wild," meaning their origin was unknown, and the rest were from further up the Willamette. (Kepler Aff. at 5).

40. There was a very good run of Chinook salmon in 2015, the fish having entered the river before the mortality event that began on or about June 12, 2015. (Oct 4 Tr. at 212-213; Oct

5 Tr. at 274).

The Riffle

41. Just above the mouth of the Clackamas River, there is a riffle where fish coming into the river tend to congregate, possibly to cool off from the warmer Willamette River. Steve Cramer and other fish biologists familiar with the Clackamas River are aware of the riffle. Cramer has been to the riffle many times, and Doug Cramer, Cramer's brother and the lead biologist for PGE, has seen fish congregate there and be gone the next day. District fish biologist Todd Alsbury told Cramer that it is considered a good fishing hole because of the fish congregating there. (Oct 4 Tr. 160-164).

42. At WaterWatch's attorney's request, (Jul 6 Tr. 279), Ted Labbe performed a partial riffle survey on August 20, 2015. Labbe has a Master's Degree in Fish and Wildlife Biology from Colorado State and a Bachelor's degree from Bowdoin College. (Ex. WW R39). Labbe was "motivated to assist Oregon WaterWatch" because the State of Oregon had never done the analysis at the riffle. (Jul 6 Tr. at 281).

43. Labbe's partial riffle survey on August 20, 2015, was his first. He reviewed the procedures, and followed the procedures in his measurements on August 20, 2015, measuring the "bankfull" width of the river to compute the percentage of the river that meets minimum depth for Chinook salmon passage. Several hundred feet of the measurements were on dry land between the banks and the river. Based on percentages, Labbe interpreted his findings as a "pretty clear fail" for fish passage. (Ex. WW R37; Jul 6 Tr. at 291).

44. Labbe did not complete the survey requirements because he did not go back to the site on different dates with different flows as required by the procedures in both Oregon "Thompson" method and the California Critical Riffle survey method. (Jul 6 Tr. at 282).

45. Dr. Hardin analyzed Labbe's study and disagreed with his conclusions. He wrote:

> ODFW does not agree that flows in this range restrict passage. *This riffle has a well-defined thalweg (relatively deep part of the channel) where most of the flow is directed. Depths in this part of the channel during Labbe's study were 0.8-1.5 ft. over a considerable widt*h; they were over 0.8 for a continuous width of 59 ft., and over 0.9 ft. for a continuous width of 35 ft. The fact that there are broad shallow areas on either side of the thalweg, totaling well over 350 ft. of width, is likely unimportant for adult fish migrating upstream: they will be naturally attracted to the main current and move through the thalweg.
>
> The Oregon Method (Thompson 1972) used criteria of 0.8 ft. of depth for Chinook salmon, while the California Critical Riffle method uses 0.9. This makes a big difference in the calculations: *the biggest continuous width is 59 ft. vs. 35 ft. for the 0.~~0~~8 and 0.9 criteria, respectively.*
>
> This riffle is well-known to ODFW staff. Fish tend to congregate below this riffle, which is just a short distance upstream of the Willamette confluence. The District Biologist has observed the riffle on many occasions, and has never seen upstream migrating fish have any problems getting past it (Todd Alsbury,

personal communication).

(Hardin Aff. at 5-6).

Reason for modification: A preponderance of evidence in the record supports the finding that Labbe's study resulted in 35 feet of continuous width at 0.8 feet of depth, not 0.0 feet of depth. (Hardin Aff. at 5).

46. Labbe agreed that there were 47 feet of thalweg that provided sufficient passage for Chinook salmon under either the Thompson or California methods, and that fish generally seek out the thalweg because the current is flowing through it. (Jul 6 Tr. at 294). Nevertheless, he considered the passage analysis a failure for the fish based on the percentages. (Jul 6 Tr. at 293).

47. Labbe saw no fish on that day in August. (Jul 6 Tr. at 277).

***Cottage Grove* Issue**

48. North Clackamas County Water Commission (part of JMP) holds permit S-35297. When it filed its application for extension in this case, OWRD asked the permittee to provide evidence the maximum rate of water diverted up to that date. NCCWC complied, reporting that 32.99 cfs had been diverted. (Aff. of Reece).

49. In December 2013, the Oregon Court of Appeals decided *WaterWatch v. OWRD*, 259 Or App 717 (2014),[21] also known as the *Cottage Grove* case. In *Cottage Grove*, the Court interpreted the "undeveloped portion of the permit" language (from ORS 537.230(2)(c)) to be measured by reference to the maximum rate of water applied to beneficial use before the expiration of the development deadline for complete application of water in the original (or previously extended) permit (the "C-date."). (Aff. of Reece).

50. As a Permit Extension Specialist for OWRD, Ann Reece evaluated all eight of the extensions that are part of this proceeding to determine if the Cottage Grove ruling affected them. Only Permit S-35297 is affected by the *Cottage Grove* decision. (Aff. of Reece).

51. The C-date on Permit S-35297 was October 1, 2000. As of that date, the permit holder had diverted 19.47 cfs (the other approximately 20 cfs previously reported had been diverted between October 1, 2000 and the date of the extension request). (Aff. of Reece).

52. Based upon the Cottage Grove ruling, OWRD determined that the undeveloped portion of the permit, and therefore the portion of Permit S-35297 subject to the fish persistence statute, is 42.53 cfs. (Aff. of Reece).

John Davis

53. Davis has worked as an engineer and consultant on water and wastewater projects since 1972, mostly preparing LEPA and SEPA applications. He has not consulted with any of

[21] The Court's decision was in December 2013, but the Appellate Judgment was entered in 2014.

the municipalities involved in this case, but has previously made projections on future water use. The projections were "based on the historical records of current water use." (Jul 6 Tr. 222-231).

54. Mr. Davis prepared a "conceptual diagram" of how he interprets the effect of the increased withdrawals on the flow of the Clackamas if the extensions are approved. (Ex. WW R62). Mr. Davis's diagram assumed that the municipalities would use their full permitted amount of water all of the time. He based his diagram on a continuous use of 297 cfs, the sum of the paper water rights. (Jul 6 Tr. at 246). Davis's diagram is not to scale, does not include actual data:

> [I]t's a conceptual diagram. It's not intended to be anything where numbers are plotted. It's just something to support a discussion.

(Jul 6 Tr. at 248).

Jonathan Rhodes

55. Mr. Rhodes is the principal hydrologist for Planeto Azul Hydrology in Portland, Oregon. He has earned a Master's Degree in Hydrology and Hydrogeology from the University of Nevada-Reno, and has completed the coursework but not the dissertation in his doctoral program. Since leaving school in 1989, he has worked for the Columbia River Inter-Tribal Fish Commission, as a consulting hydrologist for non-profit organizations and, since 2001, as principal hydrologist for his company. (Ex. WW R34).

56. Mr. Rhodes has prepared his estimates of the effects of the fully-developed municipal water permits with the assumption that the municipalities will use the full permitted amount of water 24 hours per day, seven days per week, at least during the low flow months.[22] (Jul 7 Tr. at 33, 109). Based upon Rhodes' reliance upon the municipalities using all of their permitted water all of the time, Rhodes predicts that the flow would miss during the dry season 62 percent of the time. (Jul 7 Tr. at 34).

57. Mr. Rhodes' did not do any specific analysis of the Clackamas River, other than to assume that the municipalities" paper water rights would be fully used. The fact that approximately 25 cfs of water (from SFWB) cannot be used in dry times did not change his analysis. (Jul 7 Tr. at 106).

58. Mr. Rhodes does not have an opinion as to whether the municipalities would ever actually use the full permitted amounts on a continuous basis. (Jul 7 Tr. at 119).

Christopher Frissell, Ph.D.

59. Dr. Frissell earned his Ph.D. in Fisheries Science at Oregon State University, his Masters at the same school, and his B.A. in Zoology at the University of Montana. He currently lives in Polson, Montana, working as the principal scientist for his private company and also as an Affiliate Research Professor at the University of Montana's Flathead Lake Biological Station. (Ex. WW R6).

60. Dr. Frissell has not studied salmonids on the Clackamas River, but has done "big

[22] Mr. Rhodes' analysis was focused on the dry months between June and October.

picture" studies of the Columbia Basin. He has not visited the riffle or other spots on the river, except for a forest management trip at the headwaters of the river approximately 13 years ago. (Jul 7 Tr. at 165-166).

61. Dr. Frissell has concluded that there should be no more human-caused withdrawals of water from the Clackamas River, or the persisted fish will not survive:

> Given that salmon habitat in this reach is already on the lower cusp of suitable thermal conditions, I conclude that any additional human-caused reduction of flows below present flow levels in the lower Clackamas is highly likely, if not certain, to cause severe declines in late-migrating adult Chinook, and of summer-resident and summer-migrant juvenile salmon and steelhead, placing their continued persistence in the lower Clackamas in jeopardy.

(WW Ex. R-5 at 13). He is against what he considers "essentially a permanent tradeoff or sacrifice of a relatively important chunk of habitat for fish" and "essentially pushing that chunk of habitat over the edge." (Jul 7 at 157).

CONCLUSIONS OF LAW

1. The ODFW distinction between a "short-term drop" and a "long-term drop" below the target flows is supported by a preponderance of the evidence.

2. OWRD has "connected the dots" to show that the drops below the target flows will continue to maintain the persistence of the listed fish species.

3. Dr. Annear's Annual Scaled water scenario is valid and was appropriately relied upon by ODFW and OWRD.

4. The changes in the annual meeting condition are supported by a preponderance of the evidence.

5. The Court of Appeals' decision in the *Cottage Grove* case affects the measurement of "the undeveloped portion of the permit" in Permit S-35297.

OPINION

Although the process of holding the remand hearing has taken the better part of three years, the issues are relatively straightforward. The Court of Appeals asked for specific information in its remand—information which it needed to determine whether there was a substantial basis to support OWRD's approval of the municipal extensions. In the course of the hearing, OWRD has presented as its main evidence the written response from ODFW, as well as the affidavits of Dr. Hardin and Mr. Kepler. It has also presented evidence to show that the conclusions ODFW reached are supported by Dr. Annear's Annual Scaled model, by Dr. Annear's testimony, and by Steven Cramer's expertise with salmonids on the Clackamas River.

This opinion will briefly address the evidence presented by OWRD and ODFW, recognizing that the answers to the Court's questions have been answered directly in ODFW's response, and will spend considerably more time addressing WaterWatch's various arguments against the extensions. I will also address issues relating to the conditions and, briefly, the issue concerning Permit S-35297.

The Response to the Court of Appeals

The Court of Appeals remanded this matter to OWRD, and OWRD to the Office of Administrative Hearings, to address questions of fish persistence on the lower Clackamas River in light of the statutory requirement. ORS 537.230(2) states in part:

> (2) The holder of a permit for municipal use shall commence and complete the construction of any proposed works within 20 years from the date on which a permit for municipal use is issued under ORS 537.211. The construction must proceed with reasonable diligence and be completed within the time specified in the permit, not to exceed 20 years. However, *the department may order and allow an extension of time to complete construction or to perfect a water right beyond the time specified in the permit under the following conditions*:
>
> * * * * *
>
> (c) For the first extension issued after June 29, 2005, for a permit for municipal use issued before November 2, 1998, *the department finds that the undeveloped portion of the permit is conditioned to maintain, in the portions of waterways affected by water use under the permit, the persistence of fish species listed as sensitive, threatened or endangered under state or federal law. The department shall base its finding on existing data and upon the advice of the State Department of Fish and Wildlife.* An existing fish protection agreement between the permit holder and a state or federal agency that includes conditions to maintain the persistence of any listed fish species in the affected portion of the waterway is conclusive for purposes of the finding.

(Emphasis added).

For all eight of the permits, the matters that went to hearing in 2010 were the "first extension issued after June 29, 2005," and the issues, then and now, concern conditioning the extensions on maintaining the persistence of the listed fish species.

Finding of Fact 38/54/56. On appeal, the Court determined that this finding of fact lacked substantial evidence in the record:

> 38. The short-term drops below minimum streamflows predicted by Jonathan Rhodes are not incompatible with maintaining the persistence of listed fish species.

The problems with this finding of fact, as written, are many. First, OWRD[23] failed to explain how short term drops could support the maintenance of the persistence of the listed fish. Second, OWRD did not explain or analyze Rhodes' streamflow predictions.

The Court's inability to understand the position taken by OWRD, based upon the previous record, is understandable. On the surface, it appears that the Department is contending that the development of the additional portions of the municipal permits, while clearly requiring larger withdrawals from the Clackamas River, won't affect the river or the fish living in it.

On remand, the evidence is clearer. In addition to providing a better differentiation between short-term and long-term drops below the target flows, OWRD and ODFW have explained why the timing of the low flows and the timing of fish use in the affected reach make fish persistence probable even with the additional municipal withdrawals.

ODFW has explained the timing and types of use of the listed species in the lower 3.1 miles of the river. It has presented the seasons of use by the fish, establishing by a preponderance of the evidence that the majority of the fish are not using the lower 3.1 miles during the low flow season.

The evidence does not indicate there are *no* fish in the reach during the low flow times; it establishes that there are *few* fish there at low flow times. There are "straggler" fish coming through in the summer months, and it appears that smolts and juveniles may be out-migrating during part of July. However, the expert evidence from Mr. Cramer indicates that even if the straggler fish were lost or directed outside the reach, it would not affect the long-term health of the fish in the reach.

Importantly, the possibilities that there are fish—even large Chinook salmon—traveling through the reach during the summer months does not mean those fish are going to die. When Mr. Labbe performed his partial fish passage survey at the riffle on August 20, 2015, a very low flow day in a very dry and warm year, there was still a thalweg deep enough to allow salmon passage, and it was more than 40 feet wide. If Labbe had actually seen fish that day—he did not—the fish would have had no problems with passage at the riffle.

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[23] This was an additional Finding of Fact made by OWRD after the issuance of the Proposed Orders in this case.

Rhodes' Opinion. The second aspect of reviewing finding of fact 38 quoted above concerns Mr. Rhodes' opinion. Rhodes testified at the hearing in 2010, and again in the remand hearing. Fully understood, his opinion should never have been considered valid in the first place.[24] The problems with Rhodes' opinion are best shown in comparison to the assumptions in the Annual Scaled scenario.

As the previous discussion of the Annual Scaled scenario has shown, it was built on records of historic water use and the assumption that patterns of use in the future will be similar to historic patterns. Dr. Annear scaled up the water use, matching high use days and periods under current levels of development with corresponding days in the future, using the full permitted use. This has been considered a reasonable model by ODFW, OWRD, and I accept it as reasonable based upon a preponderance of the evidence.

Mr. Rhodes' assumptions are not built on historic use and appears to be focused on showing that the Annual Scaled scenario is incorrect rather than showing what is correct. Like other WaterWatch witnesses, has been highly critical of the model's future projections, and has attempted to reinterpret the Annear data to show that the municipal withdrawals will "miss" target flows much more often than Annear's model projects. During dry times, when Annear projects a 20 percent miss rate, Rhodes projects a 62 percent miss rate.

The reason for the difference in results is quite plain. Rhodes has based all of his computations on the assumption that all of the municipalities will use all of their permitted water rights, all of the time, the 24/7 use assumption. However, there is not a scintilla of evidence to support Rhodes' unreasonable assumption. The others who have testified, such as Annear and Harding and Kepler, consider the "24/7" assumption to be unrealistic. Moreover, even Rhodes admitted at hearing that he had no opinion about whether any municipality had ever used the full amount of permitted water all of the time.

Thus, Rhodes' calculations are based upon an unlikely assumption—full permitted use, all of the time—that is unsupported by the evidence and that not even Rhodes believes is accurate.

For these reasons, because OWRD has explained the difference between short-term and long-term drops, and because Rhodes' streamflow predictions are not supported by the evidence, I conclude that OWRD has adequately addressed finding of fact 38/54/56.

Connecting the Dots. In the Court's opinion, the judges pointed out that OWRD had failed to "connect the dots" between what was necessary to maintain fish persistence and how it would do so:

> * * * The department failed to connect the dots between its finding of *what* is necessary to maintain fish persistence—long-term meeting of persistence flows—and *how* the conditions ensure that the diversion of the undeveloped portions of

[24] In context, it does not appear that OWRD ever relied on Rhodes' estimates; rather, it appears that this finding of fact was used as an "even if this were true" extreme argument that the Department still believed did not defeat the municipal extensions.

the municipal parties' permits do not contribute to the long-term failure to meet persistence flows.

268 Or App at 223.

In its response to the Court, ODFW has explained the connection between the fish use of the affected reach and the streamflow changes that will come with additional withdrawals. It has also presented its intended conditions on the permits. ~~With one addition that I will address shortly,~~ t The conditions that ODFW has suggested and OWRD has adopted are supported by a preponderance of the evidence.

The three conditions include a curtailment condition for the period after early September and through June. This is the most important condition because it coincides with fish use of the affected reach. It also generally coincides (after October) with the high flow seasons in the reach.

Therefore, it is possible that the curtailment provision will rarely be used. ODFW has concluded that the curtailment provision would only be important for fish persistence during the early September through June period if the permit holders were using close to their maximum permitted amounts almost all the time, a water-use scenario which, as described above, is not supported by a preponderance of the evidence.

Another condition involves releases from Timothy Lake. ODFW's explanation for the use of the released flow is reasonable.

The final condition, covering the period of July through the first Monday in September (generally Labor Day), bears comment and, in my opinion, some modification. As ODFW has described that condition:

> **Modified recommended condition to maintain fish persistence (2)**
>
> *Although ODFW has chosen not to recommend curtailing water withdrawals in the lower 3.1 miles of the river July 1st through the first Monday in September (Labor Day)* it is important to recognize that missing the target flows will have an effect on the ecology of this portion of the river. Therefore ODFW recommends as a further condition to reduce the magnitude by which target flows may be missed, upon the first occurrence of target flows being missed at the mouth of the Clackamas River July 1st through the first Monday in September, the water user must enact the first level or stage of alert in their water curtailment plan that includes mandatory water conservation measures and/or curtailment actions. Once enacted, implementation of the conservation measures and/or curtailment actions must continue through the first Monday in September. By taking measures to reduce water use in this manner, the degree to which target flows are missed will be decreased.

(Ex. OWRD R1 at 12-14; emphasis added). ODFW concluded that no curtailment was needed during this period of time because there are very few fish in the affected reach during that period

of time. In lieu of curtailment, ODFW recommends a requirement that the municipalities, upon notification, would enact their first stage conservation plans under the permit holders' Water Management and Conservation Plans (WMCPs) and would continue them until Labor Day. Based upon a preponderance of the evidence, this condition is reasonable under current water use and the ~~projected~~ projections of future water use that are supported by a preponderance of the evidence.

~~However, the modification that I recommend to this condition starts with the language of the statute and the decision of the Court of Appeals. ORS 537.230(2) requires that *OWRD* condition the municipal permit extensions to maintain the persistence of the listed fish species. The basis for OWRD's conditions on the permits is "existing data" and the advice of ODFW. To reiterate, OWRD must impose the conditions, not ODFW.~~

~~Part of the "existing data" available to OWRD at the present time indicates that climate change is occurring and will probably have an effect on the Clackamas River as it will on other areas in the Pacific Northwest and elsewhere. In essence, OWRD does not know what the future holds. This current uncertainty includes the possibility that times and seasons, including such things as fish timing and use of the affected reach may change over time.~~

~~With that uncertainty in mind, I make one suggestion concerning the period of July through September 4: as a secondary condition, OWRD should include a curtailment provision.~~

~~Under current circumstances and under those reasonably forecast by the Annual Scaled model, curtailment will not be necessary. Enactment of the WMCP conservation provisions will accomplish what is needed for flows. However, OWRD should reserve for itself the right to curtail use if circumstances in the reach change enough that the listed species are put at risk during those summer months.~~

~~Otherwise, the driest part of the year in the affected reach, and the period with historically the lowest flows, is the only time of the year where curtailment would not be possible.~~

~~It is also important, as WaterWatch has argued, that at least the curtailment portions of the conditions be expressly connected to the persistence of listed fish. Indeed, that was what the Court was referring to when it mentioned "connecting the dots." The Court's opinion addressed the need for specific conditions:~~

> ~~That missing connection between the what and the how is particularly needed here because the meeting condition, on which the department (based on ODFW's advice), appears to have particularly relied as the means by which fish persistence will be maintained, is not a condition placed on the use of the undeveloped portion of the municipal parties' permits. Although the department may have been hopeful, or even confident, that the municipal parties and ODFW will agree on a strategy each and every year to ensure that the diversion of the municipal parties' undeveloped portions of their permits do not prevent persistence flows from being met on a long-term basis, the statute requires more. The statute requires the department to find that "*the undeveloped portion of the permit is*~~

~~*conditioned* to maintain * * * the persistence of [listed] fish species." ORS 537.230(2)(c)(emphasis added). * * * The department's findings regarding ODFW's intent with regard to the meeting condition cannot relieve the department of its statutory obligation to find that the undeveloped portions of the municipal parties' permits are *conditioned, i.e.*, their use is made conditional, on maintaining fish persistence.~~

~~268 Or App at 223(italic emphasis in original, underlining added).~~

~~Based upon the ODFW response, it appears that the Timothy Lake releases and the summer WMCP condition are considered important conditions but not necessarily directed at fish persistence. However, the curtailment condition (and the secondary curtailment condition I recommend) should be expressly placed as conditions relating to fish persistence.~~

Reason for Modification: The ALJ's proposed curtailment condition for the period July 1st through September 4th is not supported by a preponderance of evidence in the record. The findings of fact demonstrate, and the ALJ's opinion states that under current circumstances, and those reasonably forecast by the Annual Scaled Scenario, curtailment during this period is not necessary. Despite this, the ALJ recommends that OWRD retain the ability to impose a curtailment condition during this period because "OWRD does not know what the future holds." This is not a sufficient basis for imposing the ALJ's proposed condition.

The ALJ concludes that "the evidence on climate change from all of the witnesses suggests that the levels of precipitation in the the Pacitic Northwest, including the Clackamas Basin and the affected reach, will remain roughly the same but with more rain and less snow. There is also the possibility of longer, drier, summers." (Remand Order at 52). More specifically, if the evidence of the generalized effects of climate change in the Pacific Northwest is applied to the Clackamas Basin, the Clackamas River may see somewhat lower flows and higher temperatures in July and August. (Kepler Affidavit at 6.) However, this will have little effect on the listed species, because the evidence in the record indicates that they are not now nor will be in the future using the Affected Reach to maintain the persistence of their populations. *Id.*

The evidence in the record pertaining to the effects of climate change on the Clackamas River during the period of July through September 4th, and the results of those effects on the listed species in the Affected Reach, are, as required by ORS 537.230(2), comprised of the existing data and the advice of ODFW. If OWRD were to create a condition to address outcomes other than those predicted by the evidence in the record, it would be based solely on speculation, not evidence.

The Remand Order concludes that the curtailment condition applicable from early September through the end of June should "be expressly connected to the persistence of listed fish." (Remand Order at 46). OWRD agrees that the curtailment condition is linked to fish persistence, but only in a limited fashion. ODFW advised that the curtailment condition is not necessary to maintain fish persistence given the stream flows predicted based on Dr. Annear's Annual Scaled scenario. The Remand Order concludes that both ODFW's advice on this point and the Annual Scaled scenario are supported by a preponderance of the evidence. (Remand

Order at 46, 48.) The curtailment condition only becomes relevant to fish persistence in the unlikely event of continual use of the full quantity of water allowed under the permits once the permits are fully developed (i.e., a water use scenario that the Proposed Order correctly concludes is *not* supported by a preponderance of the evidence). (*See* OWRD Ex. R-1 at 12.) It is in this limited sense that the curtailment condition is a "fish persistence condition."

***Cottage Grove* Issue for Permit S-35297**

In its scope statement, OWRD requested a ruling on the issue that arose in *WaterWatch v. OWRD*, 259 Or App 717 (2014)(referred to as the *Cottage Grove* case), a case that interprets the amount of the "undeveloped portion of the permit" as described in ORS 537.230(2)(c).

As Ms. Reece indicated in her affidavit, the court's interpretation of that phrase requires measuring the maximum rate of water applied (when requesting an extension) from the development deadline for complete application (the C date) of the water under either the original permit or a previous extension. Ms. Reece examined each of the eight extension applications here in light of *Cottage Grove*, and only one—Permit S-35297, in the name of North Clackamas County Water Commission—was affected by the ruling.

Permit S-35297 is a municipal permit for 62 cfs from the Clackamas River. The C-date on Permit S-35297 was October 1, 2000. As of that date, the permit holder had diverted 19.47 cfs (the permit holder had previously reported a greater amount to OWRD under the old interpretation of the language, including amounts that had been diverted after the October 1, 2000 C date and before the date of the extension request).

Based upon the *Cottage Grove* ruling, OWRD determined that the developed portion of the permit was 19.47 and the undeveloped portion of the permit, and therefore the portion of Permit S-35297 subject to the fish persistence statute, was 42.53 cfs. The Department's determination is correct.

WaterWatch's Arguments and Evidence against the Extensions

Before addressing particular arguments made by WaterWatch on remand, a general comment about WaterWatch's evidence and its perspective is necessary. The municipal parties and WaterWatch both present a vision of the future based on their own philosophical view, and the differences in vision could not be more opposite.

The municipal permit holders see a future where the undeveloped portions of their existing water rights can be put to beneficial use while maintaining the persistence of the listed fish. It is a complicated analysis and process. The permit holders have presented evidence from Dr. Hardin, Mr. Kepler, Dr. Annear and Mr. Cramer, addressing the projected effect of the additional withdrawals on streamflow and how those withdrawals will coordinate with fish use in the affected reach. All, in my estimation, have made reasonable attempts to determine what the future will look like in the affected reach.

WaterWatch's approach has been to object to any future human withdrawals from the

river. This opposite vision is best summed up by Dr. Frissell's statement, in Ex. WW R5, that any further human withdrawals from the Clackamas River will likely doom the persistence of the listed species. It is shown in Mr. Rhodes' calculations of continuous full permitted use all day, every day, even though there is no evidence to support that assumption and in Mr. Davis's suggestion that planning should be based upon the "worse case [sic] scenario."

WaterWatch has raised several arguments and objections, most of which have been addressed previously in this opinion. The other arguments are as follows:

The ODFW response fails to provide a definition of short-term drop that addresses the court's questions.

For the reasons explained above, I have concluded that OWRD, based upon the ODFW response and the evidence supporting it, has adequately answered the court's question about the difference between long and short-term drops, and how they relate to fish persistence.

The Department produced no evidence or analysis regarding the drops below persistence flows that would occur if the permits were exercised with the proposed conditions.

WaterWatch is arguing here that OWRD failed to base its analysis of the future on the maximum use of the full permitted amount rather than on what WaterWatch considers "estimates of future withdrawal amounts provided by the permit holders[.]" (WW Arg. at 10). WaterWatch is correct that the Department did not consider the full permitted amount used 24/7 to be a realistic picture of the future. However, the Annual Scaled model's analysis was certainly more than the permit-holders "estimates of future withdrawals." For the reasons set forth above, Dr. Annear's Annual Scaled scenario is a reasonable approach and is supported by a preponderance of the evidence. Furthermore, contrary to WaterWatch's argument, ODFW specifically addressed the possibility that the permit holders could use their full permitted amounts continuously, and explained how the conditions would respond to that unlikely event.

The proposed permit conditions remain largely unchanged from those in the Final Orders.

WaterWatch is correct that the proposed conditions are largely unchanged~~, although the recommendation I made above constitutes some change~~. However, WaterWatch has failed to show that the Court was requiring major changes in the conditions, and the evidence in the record does not support the changes advocated by WaterWatch.

On remand, the conditions suggested by OWRD are better explained in the context of the timing of low flows and fish use in the affected reach. The fact that they are largely the same as in the FOs is not a valid argument in this case.

Reason for modification: To make the discussion of changes to the proposed permit conditions consistent with the changes themselves.

The estimated diversions exclude substantial amounts of the permitted amounts.

WaterWatch's argument here is initially difficult to understand, and is presented as if the municipal permit-holders are playing "hide the ball" and misrepresenting the actual amounts under the permits.

However, once the argument is unwound from unneeded complexity, all WaterWatch is saying (again) is that the Annual Scaled scenario predicts a lower level of expected future water use than WaterWatch's 24/7 hypothesis that the permit-holders will use all of the water all of the time. (The "substantial amounts" excluded are the portions of the permitted amounts above what the Annual Scaled scenario projects and what the full "paper" water right shows).

There are two important points in response. First, the Annual Scaled scenario is a reasonable projection of future water use based on the pattern of usage in the past several years. I have already concluded that it is supported as a reasonable approach based upon a preponderance of the evidence.

Second, even if the Annual Scaled scenario "excludes" those additional amounts from the expected water use, the ODFW response and resultant conditions do not. ODFW prepared its curtailment condition expressly because, in the unprecedented and unlikely event that all of the permit holders used all of their permitted water all of the time, every day, the persistence of the listed fish would be maintained.

ODFW's conclusions regarding the frequency and magnitude of the drops are not supported or explained.

For the reasons more fully addressed above, I disagree and have concluded that ODFW fully explained its position on the drops below target flows.

Stating there is more habitat elsewhere in the basin does not meet the statutory requirement that fish persistence be maintained in the "affected reach."

The statute does require the maintenance of the listed fish in the "affected reach," but ODFW has explained that it must look at the river as a whole rather than at just the affected reach in this case. The court did not object to this view.

The evidence shows that the affected reach, the lower 3.1 miles of the river, serves as a migration corridor for the four listed species in the Clackamas, and offers little more for the lives of the fish. It offers small amounts of spawning gravels for fall Chinook, although the evidence indicates that most of the fish spawn up the river near Clear Creek. Most of the needs for the fish are met upriver, and the fish by nature will tend toward better habitat if they can.

The evidence shows that the affected reach provides relatively poor habitat and relatively high water temperatures during the summer. Nothing in the statute requires the permit-holders to make the reach better, or to hold fish maintenance efforts to a standard higher than is already present.

The "Life Cycle Timing" section of ODFW's Response and related claims do not comply with the statutory standard and are not supported by the evidence.

This argument, like many others, claim that the agency's position is unsupported by the evidence because ODFW's authors and witnesses relied upon hearsay evidence coming from conversations with other ODFW employees with specific expertise on the river. I have already determined that the hearsay WaterWatch objects to (and its own hearsay documents that it did not object to) are evidence of the type that reasonable experts would rely upon in the course of their business.

Therefore, the life cycle timing portion of the response is supported by the evidence, and the evidence opposing it is not persuasive. WaterWatch argues that there are fish in the reach at all times, and the evidence shows that there are probably a small number of fish there even in the summer months with low flow. But the better evidence indicates that the listed species are, for the most part, absent from the reach during the low flow season.

OWRD's analysis is "unlawful" because persistence in the affected reach cannot be maintained by other habitat elsewhere.

WaterWatch's argument ignores the reality of the purpose of the reach in the life cycle timing of the fish. It objects to the ODFW response that indicates the fish use other areas of the reach for rearing and compares the relative low quality of the affected reach. It is unclear whether WaterWatch is arguing that the permit-holders have the duty to ameliorate the affected reach—make it better than it is now to maintain the persistence of the listed fish—or that the extensions should simply be denied because the affected reach does not contain, in its 3.1 miles, all of the categories of habitat that each of the listed species requires.

ODFW's population-based (and basin-wide) focus on fish persistence is reasonable. I interpret the statute to take the affected reach as it is, and to make sure that the permit extensions are conditioned so that the affected reach does not, now or in the future, fail to do its part in maintaining the persistence of the listed fish.

ODFW's approach of "lopping off" portions of the runs and life histories of the listed fish does not meet the persistence standard and ODFW offers no explanation as to how it could.

The term "lopping off" was actually a descriptor of WaterWatch witnesses when the permit-holders' evidence acknowledged that there might be some straggler fish in the reach during the warmer, low flow months. ODFW's witnesses and Mr. Cramer testified that some fish might be lost or redirected during low flow times, but they were not statistically significant for long-term health or persistence of the listed fish species.

Dr. Frissell, who made it clear that he believed any further human-caused withdrawal from the river would doom the listed species, testified that the loss of the late-arriving fish may have a significant impact on the species, and that lopping off a significant chunk of the fish life

history could also doom the fish. Dr. Frissell offered no evidence other than his speculation that the loss of the occasional fish during low flow times would affect the entire species.

Furthermore, as addressed above, the fact that fish are in the reach during low flow times does not mean that they are going to die. As Mr. Labbe noted during his partial riffle survey, there was a thalweg of considerable width that would have allowed any fish in the area to pass the riffle.

Mr. Cramer's exhibits on spawner recruits and ocean harvest ignore life history diversity and do not address the issues in this case.

Mr. Cramer provided important evidence concerning fish timing on the Clackamas River, the riffle passage, and the stock/recruit status of the river regarding the salmonids there. His testimony corroborated the ODFW evidence about fish use on the river.

WaterWatch's response to Mr. Cramer's testimony and opinions at hearing came from Dr. Frissell, who considered Mr. Cramer's stock recruit analysis simplified and out of date, and his fish information exaggerated. Because Dr. Frissell has no actual experience on the Clackamas River (other than a forest management trip at the headwaters 12 years ago), I accept Mr. Cramer's specific expertise on the river as more persuasive than Dr. Frissell's criticisms.

OWRD has failed to address impacts from the diversions in areas such as increased water temperatures, migration, climate change, and fish passage problems during low flows.

Water Temperature. Contrary to WaterWatch's argument, the Department addressed the argument (raised by WaterWatch's witnesses) about increased water temperature. As explained more fully above, Dr. Annear responded to the argument using the model, and also by an actual comparison of water temperatures at RM 3.3 (the CRW diversion point) and the Lake Oswego POD at RM 0.8. There was very little change in temperature, and sometimes even a decrease in temperature, despite the several withdrawals taking place in between.

Furthermore, remembering that the reach in question is only 3.1 miles in length, while there might be some increased water temperature based upon a simple heat budget analysis, there has been no evidence to show how that slight increase (if any) would impact fish persistence.

Migration. Fish migration in the reach has been addressed above. Most fish migration, up or out to the ocean, takes place outside the low flow periods. Although some smaller fish may be out-migrating during July, there is no evidence that they are hindered in any way by low flows. In fact, because the evidence shows that fish passage for adult Chinook was possible at the riffle even in late August, it is reasonable that smaller fish would be able to out-migrate at the same time.

Climate change. Contrary to WaterWatch's argument, ODFW and OWRD have considered climate change in the conditions provided for the permits. Mr. Kepler testified that climate change models for the Northwest predict annual precipitation will be about the same as it

is now. (Kepler Affidvait at 5). Low and mid-elevation snow pack will decrease as more precipitation fals as rain. High elevation snow pack will continue, but may be diminished. As a result, stream flows may increase in winter and spring as more precipitation falls as rain, which will run off rather than be stored as snow. High elevation snow is likely to melt earlier, meaning that spring runoff may occur earlier. Summertime flows may be lower at the beginning of the summer but likely level out towards the end of summer when the river shifts from a snow-fed stream to base flows that rely on groundwater. *Id.*

Although there is little climate research pertaining the Clackamas system specifically, if these generalized findings are applied to the Clackamas, the river may see somewhat lower flows and higher water temperatures in July and August. This will have little effect on the listed species, because as described above they are not now nor will be in the future using the Affected Reach during those months to maintain the persistence of their population. *Id.* at 6.

With respect to Fall Chinook, which use the Affected Reach for spawning, climate change models predict that fall precipitation will be about the same as it is now. Fall Chinook, currently wait for flows to come up and water temperatures to go down before coming in to spawn, and the same pattern is expected to hold under climate change conditions. *Id.* ~~As I have addressed above, I have recommended an additional secondary condition that I believe OWRD should add to the permits for the possibility that climate change would have a greater impact in the future.~~

Reason for modification: As described above, the ALJ's recommendation of a curtailment condition during the summer months is not supported by a preponderance of the evidence.

Fish passage. At WaterWatch counsel's request,[25] Mr. Labbe studied the techniques for performing a California Critical Riffle survey at the riffle near the mouth of the Clackamas River. He did not perform the full survey and his partial survey and his conclusions based on that partial survey are entitled to little weight in this case.

Labbe stated he was motivated to help WaterWatch in the survey because the State had not done a riffle survey there. Dr. Hardin testified that no riffle survey had been done there because there had never been any indication that there was a fish passage problem there.

The evidence from Mr. Cramer and Dr. Hardin more persuasively shows that fish congregate below the riffle on occasion (making it a popular fishing hole), but the fish disburse soon thereafter. Labbe's own study showed that, on ~~what must have been one of the driest days of the already warm 2015 summer~~ a low-flow day in the summer of 2015, there was still a thalweg dozens of feet wide, where large Chinook salmon could easily pass upriver.

Based on a preponderance of the evidence, therefore, the fish passage issue raised by WaterWatch is without merit.

In its Response Brief, WaterWatch reiterated some of the same arguments but also raised ones not initially raised, presumably in response to the simultaneous initial arguments of the

[25] The source of the request is important, as the evidence presented was clearly prepared for litigation purposes.

other parties.

Reason for modification: The reference to "one of the driest days of the already warm 2015 summer" is not supported by a preponderance of the evidence. There is evidence in the record pertaining to the river flow rates in 2015, including on the day in question, that support the statement that it was a comparatively "low-flow" day. There is not sufficient evidence in the record to determine how "dry" the day was, in terms of precipitation or humidity.

The curtailment permit condition (and maybe also the summer condition) is a condition needed to maintain fish persistence.

For reasons previously discussed, I agree with WaterWatch that the curtailment condition in the proposed conditions is for fish persistence and must be so designated by OWRD in order to comply with the requirements of ORS 537.230(2)(c).

The Remand Order concludes that the curtailment condition applicable from early September through the end of June should "be expressly connected to the persistence of listed fish." (Remand Order at 46). OWRD agrees that the curtailment condition is linked to fish persistence, but only in a limited fashion. ODFW advised that the curtailment condition is not necessary to maintain fish persistence given the stream flows predicted based on Dr. Annear's Annual Scaled scenario. The Remand Order concludes that both ODFW's advice on this point and the Annual Scaled scenario are supported by a preponderance of the evidence. (Remand Order at 46, 48.) The curtailment condition only becomes relevant to fish persistence in the unlikely event of continual use of the full quantity of water allowed under the permits once the permits are fully developed (i.e., a water use scenario that the Proposed Order correctly concludes is *not* supported by a preponderance of the evidence). (*See* OWRD Ex. R-1 at 12.) It is in this limited sense that the curtailment condition is a "fish persistence condition."

The summer WMCP conservation requirement ~~may or may not be directly related to the persistence of listed fish; ODFW has designated it~~ is an ecology condition more focused on habitat because most of the fish are not in the affected reach at those times. ~~However, for the reasons I have previously mentioned, I have recommended that OWRD reserve for itself a secondary curtailment condition, potentially to maintain the persistence of listed fish if unforeseen climate change occurs.~~

Reason for modification: To clarify, consistent with the preponderance of evidence in the record, the manner in which the curtailment condition is a "fish persistence condition."

The Department's assertions about climate change do not conform to the evidence.

The evidence on climate change from all of the witnesses suggests that the levels of precipitation in the Pacific Northwest, including the Clackamas Basin and the affected reach, will remain roughly the same but with more rain and less snow. There is also the possibility of longer, drier, summers. Thus, WaterWatch's assertion that the Department's position on climate change fails to conform to the evidence is incorrect.

It appears that WaterWatch is actually arguing that the Department has failed to appropriately predict the future regarding the availability of water in the affected reach. Because there is no way to prove a prediction, only the march of time will show who has more closely predicted the effects of climate change.

However, this returns the narrative of the case to the underlying philosophies of the parties. The permit holders have presented a reasonable interpretation of the future use of water in the affected reach, and the agencies, OWRD and ODFW, have placed conditions on that interpretation as required by law. WaterWatch, on the other hand, has not presented an alternative theory other than to claim that no further development of the river (no human-based withdrawals) should ever be approved. This worst case scenario approach, in addition to not being supported by the facts of the case, is not helpful.

Claims by OWRD and the permit holders that the permit holders will not use the full permit amounts are beyond the scope here and irrelevant to the fish persistence standard.

WaterWatch's argument here is essentially the same as previous ones, but it now argues (in the final argument and for the first time), that evidence about how much of the permitted amounts the municipalities will use is "beyond the scope." This scope argument is raised too late, and is also not supported by the evidence.

Once again, WaterWatch is arguing that the only standard that may be used to address fish persistence is Mr. Rhodes' unrealistic 24/7 theory that municipalities will use all of their permitted water, all day long, every day. Nothing in the statute requires that standard, and there is no evidence to support it.

The permit holders' evidence of annual scaled use is a realistic prediction of future water use. WaterWatch's argument is without merit.

The Department's claim that WaterWatch has the burden to show that the permit will be fully exercised is legally incorrect.

As discussed previously, WaterWatch is the proponent of the position that permittees will use all of their permitted water rights all of the time. Rhodes' analysis is based on that assumption, as is Mr. Davis's "conceptual diagram," although the evidence from ODFW, OWRD, Dr. Annear and Mr. Cramer cast doubt on that assumption.

ORS 183.450(2) indicates that the burden of presenting evidence in support of a position is on the proponent of that position. So, just as a party raising an affirmative defense in a civil matter has the burden of presenting evidence on that defense, so WaterWatch here has the burden to show that the assumption made by its experts is accurate. It has not done that, and cannot do that.

The CE QUAL W2 model framework is a hydrodynamics model that is not scientifically accepted for projecting future municipal water supply demands and in no way

supports the permit holders' assumptions about future water use.

WaterWatch's attack on the scientific basis of the model used in the Annual Scaled scenario is argument without evidence. Mr. Davis considered himself qualified to question the assumptions used by Dr. Annear in the model, but the evidence supports the reasonableness of Dr. Annear's assumption (that future water use will follow historic patterns of use, but at higher levels of water use), and does not support the all-day everyday use assumptions of Davis and Mr. Rhodes. WaterWatch claimed the model had not been calibrated, but Dr. Annear testified about the multiple calibrations of the model.

Coming at the attack from a different direction, WaterWatch also argues that the question presented in this case was one that could have been figured out on a calculator, but the permit holders instead ran it through a large modeling program to make it appear more complex:

> You don't need a hydrodynamics model to assess stream (inaudible) impacts of diversion. That's easily and just as accurately done on an Excel spreadsheet. And certainly the use of that model to make those calculations does nothing to validate the model input; in other words, these unsupported future estimates of diversion. This would be like using a supercomputer to add up list of numbers when using the calculator on your smartphone would be completely adequate, and then claiming that entering the numbers into a supercomputer somehow validates the numbers. It doesn't, and it's preposterous to claim that it does. Dressing up the unsupported diversion estimates by entering them into the irrelevant and unnecessary CE QUAL W2 models does not make the diversion estimates reasonable.

(Ms. Brown, oral arg. at 34).

WaterWatch's arguments that Dr. Annear's modeling was either not scientific or was just window dressing to buttress "unsupported future estimates of diversion" are based, once again, on the philosophical position that I am required to assume that all of the water will be used, all of the time, every day. To WaterWatch, the questions presented in these eight extension cases are a simple issue of mathematics: just add up the paper permitted rights, subtract that amount at all times from the river, and conclude that the permits will not maintain the persistence of the listed fish species.

However, I am persuaded that the analysis is not so simple, that reasonable estimates of future water use are important to the determination, and that the permit holders have presented such evidence in this case through the model and through the evidence supporting the model's conclusions.

The parties misrepresent—and miss the point of—the riffle passage survey.

WaterWatch argues that the permit holders and OWRD have missed the importance of the riffle survey because they do not address the passage issues at the riffle that will exist with the additional diversions. (WW Response at 37). Once again, WaterWatch assumes the full

permitted use of the water right.[26]

Again, the analysis of the information at the riffle must start with the incomplete nature of Labbe's study. He probably used the ~~transept~~ transect and followed the California method correctly on that one day; there is no evidence indicating otherwise. But he did not perform the other surveys at other flows, so his data and any conclusions arising from his data are incomplete. **Reason for modification**: Correction of typographical error.

WaterWatch disagrees, trying to use the "one time" survey to establish a passage issue for the fish. This disagreement ignores Labbe's own claim for the incomplete survey, when he called fish passage a "pretty clear fail" on that low flow day in August 2015.

However, Labbe's own evidence about the riffle actually supports the lack of a fish passage problem at the present time.

As noted, Mr. Labbe performed his one and only survey of the riffle on August 20, 2015, a very hot day in a very dry year of very low flows. Notably, although WaterWatch claims that there are fish all through the river during the summer months, Labbe did not see any fish on the day he performed the partial survey. If there are fish in the river at all times, as WaterWatch argues, one would expect to see them passing—or being held up by—the riffle.

Second, although Labbe's partial survey of the river at that point led him to conclude that it was a barrier to fish passage on low flow days (relying on the percentage analysis of the measurement methods), he conceded that there was a thalweg at least 47 feet wide with depths that would allow passage of all the listed species. Thus, even if there were some straggler fish in the river during the low flow days, their demise would not be a foregone conclusion.

Again, however, WaterWatch insists that the permit holders and OWRD have failed to consider future fish passage under the full permitted amounts. I disagree. The Annual Scaled scenario takes into account reasonable water use, flow information and other factors about future withdrawals. The timing of the fish use in the affected reach indicates that, even if the flow in August would be less than it was on the date that Labbe did his partial survey, there would probably not be a fish passage problem. Finally, conditions have been developed to address the possibility that the projections for the future are inaccurate.

In summary, WaterWatch's arguments against the Department's answers to the Court's remand questions are, for the most part, without merit. Specifically, the evidence does not support WaterWatch's assumption that the permit-holders will use their full permitted amount on a 24/7 basis, and Dr. Rhodes' analysis based on that assumption is entitled to little weight. In addition, Dr. Frissell's belief that any further human-caused withdrawals from the Clackamas River will doom the persistence of the listed fish is an extreme position that is not supported by the evidence.

Having answered the Court's questions, the Department should on remand again approve

[26] The response refers to "160 cfs being diverted," which is the sum of the undeveloped portion of the municipal rights.

the municipal extensions in all eight cases, conditioned as set forth above to maintain the persistence of listed fish in the affected reach. With regard to Permit S-35297, the extension should be amended to indicate that the undeveloped portion of the permit, for purposes of fish persistence, is 42.53 cfs.

ORDER

~~I propose~~ OWRD issues the following order:

That the Department has answered the questions asked by the Court of Appeals based upon evidence that is accurate based on a preponderance of the evidence;

That the conditions set by the Department are approved~~, with one addition and one clarification: the addition being that a secondary curtailment provision should be added for the period July through September 4, specifically for fish persistence, and only to be invoked if the conservation condition fails to maintain the persistence of listed fish; and the clarification being that the curtailment provisions are conditions specifically placed to maintain the persistence of the listed fish species~~; and

That Permit S-35297's undeveloped portion of the permit for fish persistence purposes is 42.53 cfs.

Reason for modification: To make the order consistent with the findings of fact, conclusions of law, and reasoning set forth above.

Dwight French, Administrator
Water Right Services Division
Oregon Water Resources Department

Appeal Rights: You are entitled to judicial review of this order. Judicial review may be obtained by filing a petition for review within 60 days from the date of service of this order. If this order was personally delivered to you, the date of service is the day you received the order. If this order was mailed to you, the date of service is the day it was mailed. Judicial review pursuant to the provisions of ORS 536.075 and ORS 183.482 is to the Oregon Court of Appeals. If you do not file a petition for judicial review within the 60 day time period, you will lose your right to appeal.

CERTIFICATE OF SERVICE

I hereby certify that on October 24, 2018, I served foregoing FINAL ORDER ON REMAND on the parties hereto by e-mail, first-class mail a true, exact and full copy of the enclosed documents thereof to the addresses listed below:

Richard D. Barber Administrative Law Judge Office of Administrative Hearing P.O. Box 14020 Salem, Oregon 97309-4020	☐ by regular mail, postage prepaid ☐ by hand-delivery ☐ by facsimile # _____ ☐ by certified mail #_____ ☒ Other: Email
Lisa Brown WaterWatch of Oregon 213 S.W. Ash Street, Suite 208 Portland, OR 97204	☒ by regular mail, postage prepaid ☐ by hand-delivery ☐ by facsimile # _____ ☐ by certified mail #_____ ☒ Other: Email
Christopher D. Crean Beery Elsner & Hammond LLP 1750 S.W. Harbor Way, Suite 380 Portland, OR 97201-5106	☒ by regular mail, postage prepaid ☐ by hand-delivery ☐ by facsimile # _____ ☐ by certified mail #_____ ☒ Other: Email
Patricia McCarty Oregon Water Resources Department 725 Summer Street N.E., Suite A Salem, OR 97301	☐ by regular mail, postage prepaid ☐ by hand-delivery ☐ by facsimile # _____ ☐ by certified mail #_____ ☒ Other: Email
Jeffery W Ring Ring Bender McKown & Castillo 621 SW Morrison Street Suite 600 Portland, OR 97205	☒ by regular mail, postage prepaid ☐ by hand-delivery ☐ by facsimile # _____ ☐ by certified mail #_____ ☒ Other: Email

DATED this 24th day of October 2018.

Jesse D. Ratcliffe, #04394
Assistant Attorneys General
Natural Resources Section