Water Solutions, Inc.

Technical Memorandum

To: Craig Horrell, Chair of Deschutes Basin Study Work Group
Mike Britton, Chair of Deschutes Basin Board of Control

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Re: **Task 2, Part 2 – Water Right, Legal and Policy Opportunities and Impediments for Stored Water, Forbearance, Instream Flow Protection, and Mitigation**

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1. Introduction

As part of the Upper Deschutes Basin Study (Basin Study), GSI Water Solutions has developed the following Technical Memorandum that evaluates the opportunities and impediments, from a water rights perspective, associated with certain uses of stored water. Specifically, this memo focuses on water right opportunities to manage the Upper Deschutes Basin reservoirs to increase streamflow outside of the irrigation season. The memo also evaluates the water right opportunities and issues related to maintaining minimum pool height in the reservoirs at the end of the irrigation season, which can promote stable habitat and minimize the amount of water required to refill the reservoirs. Information from this memo will be combined with other Basin Study information to develop water resources management scenarios that can be evaluated for benefits, costs, and feasibility.

2. Background

The reservoirs in the Upper Deschutes Basin (Wickiup, Crane Prairie and Cresent Lake Reservoirs) are filled during the period outside of the irrigation season.[1] A description of the water rights authorizing storage of water in these reservoirs is provided in Table 1. To facilitate filling of the reservoirs, flow released below the dams is limited during this period and can significantly reduce flows needed for ecological functions. During the irrigation season, water

[1] The water rights authorizing storage of water in these reservoirs do not include a stated storage season. Further, there is not an identified storage season in the Deschutes Basin.

is released from the reservoirs to meet the needs of water users holding "secondary" water rights for the use of the stored water. (A "secondary" water right is a water right authorizing the use of stored water.) This release of water can result in streamflow that is much higher than the natural flow below the dams during the irrigation season.

Table 1. Storage Water Rights for Wickiup, Crane Prairie and Cresent Lake Reservoirs

Reservoir	Water Right Certificate	Water Right Holder	Authorized Volume of Water (acre-feet)[2]	Use Authorized by Water Right	Federal Authorization
Wickiup	51229	North Unit Irrigation District	200,000	Storage for irrigation and domestic use	Irrigation[3]
Crane Prairie	76685	Central Oregon Irrigation District	50,000	Multi-purpose storage	Irrigation
Cresent Lake	76637	Tumalo Irrigation District	51,050	Multi-purpose storage	N/A
	76683		35,000-annually 86,050-max. volume stored		

There is considerable interest in increasing streamflow in the Upper Deschutes Basin during the period generally from Mid-October through March to improve ecological functions and habitat for fish and wildlife. A potential source of water to meet this instream need is water that is currently being stored in the Upper Deschutes Basin reservoirs listed above. There is also interest in maintaining minimum pool heights in these Upper Deschutes Basin reservoirs at the end of the irrigation season. The benefits of retaining stored water in the reservoirs may include increased habitat on the perimeter of the reservoirs and decreasing the amount of wintertime streamflow required to fill the reservoir in subsequent years (thus increasing flows in the Upper Deschutes River). This Technical Memorandum explores the water right mechanisms that could be used to achieve the above-described water management objectives.

Although this memorandum focuses on Oregon water rights, it should be understood that the storage and use of water in some of the Upper Deschutes Basin reservoirs listed above must be consistent with federal authorizations and requirements. Based on information provided by the Bureau of Reclamation (Reclamation), the federal government asserts an ownership interest in Wickiup and Crane Prairie Reservoirs. There was federal approval for the costs of constructing,

[2] Oregon is referred to as a "one fill state," which means that reservoir water rights authorize storage of up to the stated volume only once during each storage season.

[3] North Unit Irrigation District's contract with the Bureau of Reclamation was amended, as provided by the Consolidated Natural Resources Act of 2008, to allow the use of stored water for instream purposes "to the extent that such use is required by Oregon State law in order for the District to engage in, or take advantage of, conserved water projects as authorized by Oregon State law," (such as implementation of an allocation of conserved water project).

or reconstructing, these reservoirs. As a result of its ownership interest in Wickiup and Crane Prairie Reservoirs, we understand that the federal government will consider the storage and use of water to be limited to those purposes identified in the original federal funding authorization for those reservoirs.[4] According to the Bureau of Reclamation, the authorized purpose for Wickiup and Crane Prairie Reservoirs[5] is storage for irrigation purposes, with the above-noted exception for Wickiup Reservoir for instream use. Storage and use of water in these reservoirs for other purposes, such as instream or fish and wildlife purposes, would likely result in the need for changes to the authorization for the project.

Depending on the storage project, the mechanism for modifying the federal authorization may vary. Ultimately, changing the authorized purposes of the projects may require federal legislation. Consequently, many potential water rights mechanisms may not be available for use until the authorization for these projects has been changed.[6] For this reason, this Technical Memorandum divides the discussion of potential water rights mechanisms into two groups: those that could be implemented in the near term[7], and those that may require the federal authorization for a reservoir to be changed.

Finally, some of the identified water rights mechanisms may produce multiple benefits. In addition to meeting the need for additional instream flows, two of the mechanisms could potentially also result in the establishment of mitigation credits, which would provide a benefit to groundwater users in the Upper Deschutes Basin whose groundwater rights require mitigation credits. (See GSI Technical Memorandum, **Task 6 - Groundwater Mitigation under the Deschutes Basin Groundwater Mitigation Program – A Summary of Projected Supply and Demand.**)

3. Near-term Water Rights Mechanisms

3.1 The 1920 Act (Surplus Storage)

In the short-term, there may be some limited opportunity to use the water associated with Wickiup and Crane Prairie Reservoirs for instream flow benefits, despite the current federal authorizations. This could potentially occur under the 1920 Act (US Code Title 43 Chapter 12 Subchapter XIII ~ 521. Sale of surplus waters generally). We understand that Bureau of Reclamation staff have previously agreed the water could be used for additional purposes

[4] Nonetheless, we are aware of one instream lease that was approved by OWRD in 2000 that authorized a lease instream of 217 acre-feet of water under Certificate 51229 (the storage right for Wickiup Reservoir). More recently, however, we understand that the federal government has identified the purposes for which a project is authorized as an impediment to leasing storage rights instream.

[5] The federal government does not have an ownership interest in Crescent Lake Reservoir and, accordingly, concerns about federal authorization do not apply to the use of stored water from that reservoir, and transactions related to the Crane Prairie water right (Certificate 76685) have protected water instream.

[6] It is also important to note that the current allocation of stored water in the reservoirs is governed by the Inter-District Contract, dated April 4, 1938. That contract specifically provides for the relative rights and priorities among the irrigation districts with an interest in Crane Prairie and Wickiup Reservoirs. Any alteration to the storage regime would also likely require an amendment of that agreement.

[7] These mechanisms would also be available after a change in federal authorization.

under a "sale of surplus waters" if specific criteria were met. The Secretary of the Interior can authorize a contract for water from a Reclamation irrigation project for purposes other than irrigation under specific circumstances, without regard to the authorization for the project. Such a "sale of surplus water" is allowable so long as the following criteria are met: 1) approval of the surplus water sale contract by the water users' association(s) is first obtained; 2) there is a showing that there is not another practicable source of water supply for the purpose; and 3) the delivery of water cannot be detrimental to the water service for the irrigation project or to the right of "any prior appropriator."[8] Since no other sources of supply would likely be available, this mechanism could potentially provide an opportunity to lease a portion of a storage right instream, assuming that a contract could be obtained and that it would not be determined to injure other water users. Presumably, other districts with contracts and water rights to use the stored water would need to be in agreement.

To date, the 1920 Act has not been used to lease instream a storage right, but was used for two years (2007 and 2008) to lease instream a secondary right from Crane Prairie Reservoir for the period November through April (IL-773 and IL-878).

3.2 Forbearance from Storage

Another near-term opportunity to increase streamflow during the storage season is to not store the full volume of water allowed by the water rights. Rather than capturing the full authorized volume of water in the reservoirs, some of the water would be allowed to flow downstream. This is commonly referred to as forbearance.

In addition to not storing water through forbearance, a potential opportunity to increase storage season streamflow could include making adjustments in the timing of water storage. Such "adjustments" could include some level of forbearance.

There is no requirement that the holder of a storage water right must store the water to which they are entitled. The storage right holder could, therefore, simply forbear from storing some of the water to which they are entitled. No water right transaction would be required for this option.[9]

One consideration regarding this approach is that the water not stored would not be "legally protected" instream. In other words, the water could potentially be diverted at some location downstream for another use, such as storage in another reservoir or for stock water. However, the risk associated with subsequent downstream diversion is generally small as evidenced by

[8] 43 U.S.C. § 521 also provides that money from such sale of surplus water contracts shall be "covered into the reclamation fund and be placed to the credit of the project from which such water is supplied."

[9] The members to the 1938 inter-district agreement regarding the filling order of Crane Prairie and Wickiup Reservoirs would, however, likely need to concur with the forbearance approach.

the relative lack of surface rights identifying the storage season as the period of use.[10] Further, the first significant authorized diversion of this water outside of the irrigation season would be in the area of the City of Bend, and the stream reach above this point, which is the prioritized reach for winter flow restoration, would experience increased flows even if the water was not protected instream.

Another water right consideration associated with forbearance is that the storage right could become susceptible to allegations of forfeiture for non-use. (ORS 540.610.) This risk would only occur if the holder of a storage right did not store the full volume of water to which they were entitled (when it was available) for a period of five consecutive years. (Depending on the circumstances, factors could exist that would rebut a presumption of forfeiture.[11]) Allegations of forfeiture are fact-specific, so it is difficult to predict the level of risk associated with this possibility.

3.3 Forbearance from Releasing All Stored Water

An additional opportunity to increase streamflow in the near term is to make changes in management of the Upper Deschutes Basin reservoirs to maintain minimum pool height at the end of the irrigation season, which we understand is currently being implemented. The reservoirs can be operated to retain some of the stored water during the irrigation season. This approach reduces the elevation changes in the reservoir, thereby creating stable habitat and also functions to reduce the amount of water that must be stored to refill the reservoir the following year. Having stored water remain in the reservoirs until the subsequent storage season results in the need to store less water and thus increases streamflow below the dams.

The holder of a storage right is not required to release all of the water stored in the reservoir for use each year. As a result, retaining stored water in a reservoir at the end of the storage season would not require a water right transaction.

It is worth noting that retaining a significant portion of the stored water in a reservoir each year could potentially result in district patrons bringing a legal action (either against the district or Reclamation) for breach of contract. Not releasing the stored water could also potentially raise a question whether the storage of water was consistent with the storage water right. For example, the storage water right for Wickiup Reservoir (Certificate 51229) authorizes the storage of water for "irrigation and domestic" use. Neither of these uses includes maintaining minimum pool levels in a reservoir. (See definitions in OAR 690-300-010(14) and (26).) Thus, there is some potential that failure to release stored water from Wickiup Reservoir to meet secondary water rights could be challenged as being inconsistent with the existing storage right for irrigation and domestic purposes. At present, the risk of such a challenge is likely to be low.

[10] In addition, irrigation districts could enter into agreements related to protecting the water from diversion for the purpose of stock runs.

[11] For example, a presumption of forfeiture for non-use would be rebutted if the water right holder was prohibited by law from using the water.

We are unaware of such a challenge occurring to date, however, increased tensions in the Upper Basin related to water could increase the likelihood of these types of conflicts.

This mechanism could also potentially impact existing secondary water rights. Secondary water rights have been issued that authorize the use of the stored water in Cresent Lake, Wickiup, and Crane Prairie Reservoirs for numerous uses including but not limited to irrigation, supplemental irrigation, municipal, quasi-municipal, pond maintenance and industrial purposes. (It should be noted that although the secondary water rights from Crane Prairie Reservoir include multiple purposes, according to Reclamation the reservoir is only authorized for irrigation). If some of the water stored in the reservoirs was not released to meet secondary water rights, these water rights could be affected in one of two ways. First, all water users could receive some, but not all, of the stored water authorized by the secondary water rights. Alternatively, some water users could receive stored water while others did not. Under the latter approach, these water rights could become subject to allegations of forfeiture for non-use of all or a portion of the rights if they did not use water for a period of five consecutive years. (See ORS 540.610(1).) However, the forfeiture statutes provide a number of potential defenses against a presumption of forfeiture. Often, an important consideration in rebutting forfeiture is a demonstration that the water right holder has a facility capable of handling the full allowed authorized rate and duty, and is otherwise ready, willing and able to use the entire amount of water allow under the water right. (See ORS 540.610 (2) and (3)).

4. Water Rights Mechanisms Potentially Requiring Changes to Federal Authorizations

The remaining water right mechanisms associated with the Upper Deschutes Basin storage water rights that could be used to increase streamflow would not be expected to be available in the near term. These mechanisms are anticipated to require modification to the existing authorization for the associated Upper Deschutes Basin reservoir as previously discussed. These water right mechanisms are leasing storage water rights instream and transferring storage water rights instream.

4.1 Leasing storage water rights instream

All or a portion of a water right certificate authorizing the storage of water in a reservoir could be leased instream. OWRD's administrative rules expressly allow leasing storage water rights instream. (OAR 690-077-0076(1)(a).) Through a lease, all or a portion of the water right could be temporarily protected instream for a period of up to five years, with the opportunity to renew the lease for multiple five-year periods. (OAR 690-077-0076(1) and 0077(10).) During that time, the leased water would not be stored in the reservoir. Instead, the water would be protected instream during the time period when water would normally be stored, which would be consistent with efforts to increase Upper Deschutes Basin streamflow during the period of mid-October through March. Leasing all or a portion of a storage right instream will also

protect the right from allegations of forfeiture when the water is not stored in the reservoir. (OAR 690-077-0077(11).)

OWRD reviews water right applications to lease a water right instream to determine whether the change would cause injury or enlargement. (OAR 690-077-0077(2).) OWRD would consider a lease to injure an existing water right if it precluded the existing right from receiving water to which it is legally entitled (OAR 690-380-0100(3).) OWRD's rules define "enlargement" to mean "an expansion of a water right [that] includes, but is not limited to: (a) using a greater rate or duty of water per acre than currently allowed under a right; (b) increasing the acreage irrigated under a right; (c) failing to keep the original place of use from receiving water from the same source; or (d) diverting more water at the new point of diversion or appropriation than is legally available to that right at the original point of diversion or appropriation." (OAR 690-380-0100(2).) Additionally, OWRD must determine that the water right to be leased has been used at least once in the last five years or is otherwise not subject to forfeiture. (OAR 690-077-0076(h).)

4.2 Transferring storage water rights instream

Transferring a portion of a storage water right instream is another potential mechanism to protect water instream. The water transferred instream would not be stored in the reservoir. As opposed to a lease, which is limited to five-year increments, a transfer could authorize a permanent or time-limited[12] change to the storage right to instream use. (OAR 690-077-0075(1).) Unlike instream leases, OWRD's rules do not expressly authorize the transfer of a storage right to instream use; however, there is nothing in the instream transfer rules that preclude such a transfer. (See OAR 690-077-0065 to 0075.)

Similar to instream leases, OWRD reviews instream transfer applications to determine whether the change would cause injury or enlargement.[13] (OAR 690-077-0075(2) and 690-380-4010(2).) Additionally, OWRD must determine that the water right to be transferred has been used at least once in the last five years or is otherwise not subjected to forfeiture. (OAR 690-077-0076(h).) OWRD must also consider a number of other factors specific to the instream right to be created, which includes the amount and timing of the proposed instream flow, the instream reach, and whether the instream flow will provide a public benefit and be appropriate considering return flows and any "losing reaches" in the stream. (OAR 690-077-0075(2)(b).)

If a storage right were permanently transferred instream, it is unlikely that it could subsequently be transferred back to allow the storage of water.[14] Transferring a right from instream use to storage would require the same assessment of injury and enlargement described

[12] A "time-limited instream transfer" is an instream transfer that is not permanent and will revert back to its original use either automatically after a specified time period, or when conditions for termination are met. OAR 690-077-0010(31).)

[13] The definitions of "injury" and "enlargement" are provided in section 3.2 above.

[14] Generally, changing a non-consumptive use to a consumptive use is considered to cause injury to other water rights.

above. OWRD will evaluate injury based on the circumstances presented by the transfer application. Changing a water right from a non-consumptive use (such as instream purposes) to a consumptive use (which would include storage) would typically cause injury to downstream instream water rights that are "junior" in priority (have a more recent priority date). OWRD must deny a transfer application that will result in injury to existing water rights.

An application for a time-limited transfer is processed in the same manner as a permanent transfer. Upon approval of a time-limited transfer, the original right is suspended (but not cancelled) for the period of the instream transfer. The final order approving a time-limited transfer will identify the date or the specific condition(s) upon which the transfer will terminate. Under a time-limited instream transfer, the storage right will be authorized for use for instream purposes and preclude the storage of the water. Use of the water for instream purposes under a time-limited instream transfer constitutes beneficial use under the water right.

Leasing or transferring storage water rights to instream purposes could potentially impact existing secondary water rights authorizing use of the stored water because some of the stored water would not be available for use under existing secondary water rights.

The forfeiture statute establishes a rebuttable presumption of forfeiture if all or a part of a perfected water right is not used for five consecutive years. ORS 540.610(1). The statute also establishes numerous factors that allow the water right holder to rebut a presumption of forfeiture. ORS 540.610(2). It is possible that the holder of a secondary right could, for example, potentially rebut the presumption of forfeiture on the basis that the stored water was not available, so long as they were "ready, willing and able" to use the water. ORS 540.610(2)(j). If specific concerns about forfeiture of secondary water rights are identified, OWRD has suggested that more detailed legal evaluation of the issue be conducted by the Department of Justice.

5. Mitigation for Instream Leases or Transfer of Storage Rights

In addition to increasing streamflow outside of the irrigation season, leasing or transferring a storage right instream may also provide the basis for establishing mitigation credits under OWRD's Deschutes Basin Ground Water Mitigation program.[15] According to OWRD, to date, no mitigation credits (either permanent or temporary) have been established through a transfer or lease of a storage water right.

OWRD's Deschutes Basin Ground Water Mitigation Rules provide that a "lease of an existing water right to instream use" is one of the identified opportunities to establish a mitigation project. (OAR 690-505-0610(3)(b).) OWRD refers to credits established through instream leases as temporary mitigation credits. Temporary credit must be established by a mitigation bank.[16] (OAR 690-521-0300(3)(b).) Further, the current administrative rules provide that when

[15] The Department's mitigation program is intended to allow additional groundwater development within the Deschutes Ground Water Study Area while protecting scenic waterway flows.

[16] Currently, the only chartered mitigation bank that can hold temporary credits is run by the Deschutes River Conservancy.

temporary credits are used to meet a groundwater right holder's mitigation obligation, the mitigation bank must retain an equal number of credits. (OAR 690-521-0300(3).) In other words, a groundwater right holder must provide twice as many temporary credits (as compared to permanent credits) to meet a mitigation obligation.

Mitigation projects established through instream leases of storage rights may have additional benefits beyond that associated with typical mitigation projects. One of the criticisms of OWRD's Ground Water Mitigation Program is that it increases streamflows during the summer months (generally by leasing or transferring irrigation rights instream) but groundwater pumping (authorized by the use of this mitigation) can cause impacts to surface water year-round. The potential impact is decreases in streamflow outside of the irrigation season. Leasing storage rights instream during this time period may, therefore, help to address this concern associated with the Mitigation Program.

Similarly, transferring a storage right instream could potentially establish mitigation credits. There are two possible approaches through which mitigation credits could potentially be established for transferring a storage water right instream. First, OWRD's rules provide that transferring a water right instream can be a "mitigation project" used to establish mitigation credits so long as the water right "is lawfully eligible for transfer to another out-of-stream use." (OAR 690-521-0300(1)(b).) Alternatively, OWRD rules state that a mitigation project includes "other projects approved by the Department that result in legally protected mitigation water." (OAR 690-521-0300(1)(e). OAR 690-521-0200(9) defines "mitigation water" to mean "water that is legally protected for instream use from implementation of a mitigation project, calculated in acre-feet."

If approved, a permanent transfer of a storage water right could be used to establish permanent mitigation credits. If the transfer were time-limited, the project would establish temporary credits. As described above for instream leases, the temporary credits would need to be established through a mitigation bank and twice as many temporary mitigation credits are currently required to meet a mitigation obligation compared to permanent mitigation credits. Similar to an instream lease, an instream transfer would have the additional benefit of starting to address one of the perceived shortcomings of the Mitigation Program by protecting water instream outside of the irrigation season.

Finally, the Deschutes Basin Mitigation Bank and Mitigation Credit rules (OAR Chapter 690, Division 521) do not establish season of use limitations on credits produced through the program. In other words, there is nothing in the rules that preclude the use of a "storage season" mitigation credit by a year-round groundwater user. Currently, mitigation credits are almost exclusively generated through the retirement of irrigation water rights to mitigate for year-round groundwater pumping.

6. Conclusion

The storage water rights associated with the reservoirs in the Upper Deschutes Basin (Wickiup, Crane Prairie and Cresent Lake) provide an opportunity to increase streamflow outside of the irrigation season. In the near-term, some of these opportunities may be limited due to the federal authorization for Crane Prairie and Wickiup Reservoirs, which limits the projects to storage of water for irrigation purposes. Nevertheless, under existing authorizations, forbearance from storing the full volume of water or limiting the amount of stored water released during irrigation season can contribute to increased non-irrigation season streamflow. Assuming modification to the existing reservoir authorizations, additional water right tools such as leasing storage water rights instream and transferring storage water rights instream can be used to improve non-irrigation season streamflow. Moreover, these leasing and transfer water right tools may also potentially be used to establish mitigation credits for groundwater pumping under the Deschutes Basin Ground Water Mitigation program.