

**BEFORE THE WATER RESOURCES DEPARTMENT  
OF THE  
STATE OF OREGON**

In the Matter of the Proposed Allocation )	DETERMINATION and ORDER
and Assignment of Conserved Water by the )	APPROVING ALLOCATION AND
Tumalo Irrigation District for certificates )	ASSIGNMENT OF CONSERVED
74146, 74148, and 76106, Deschutes )	WATER
County, Oregon )	

Pursuant to ORS 537.455 to 537.500; chapter 726, Oregon Laws 1997, as amended by chapter 394, Oregon Laws 1999; and OAR Chapter 690, Division 18, Tumalo Irrigation District and the Bureau of Reclamation filed an application for an allocation of conserved water and for assignment of the conserved water to instream water rights in Tumalo Creek and for use on lands served by the District. Public notice was published as required under OAR 690-18-050. No comments were received identifying injury or harm to other water rights resulting from the proposed allocation of conserved water, or otherwise opposing the project.

The proposed allocation of conserved water involves certificates 74146, 74148, and 76106, all in the name of Tumalo Irrigation District. These rights are for primary and supplemental irrigation from Tumalo Creek, Crater Creek, Little Crater Creek, and three spring branches, and supplemental irrigation from Crescent Lake as follows:

**Certificate 74146**

Priority: August 5, 1900; September, 1900; April 28, 1905; May 27, 1907;  
June 1, 1907  
Source: Tumalo Creek  
Rate: 71.571 cfs  
Duty: 9,019.62 acre-feet measured at the place of use  
Type of Use: Irrigation; pond maintenance, industrial, domestic including  
livestock  
Total Acres: 5,010.9

**Certificate 74148**

Priority: April 7, 1911  
Source: Crescent Lake Reservoir  
Duty: 35,000 acre-feet

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-080 and OAR 690-01-005 you may either petition for judicial review or petition the Director for reconsideration of this order.

Type of Use: Supplemental irrigation; pond maintenance, industrial  
Total Acres: 6,590.6

Certificate 76106

Priority: December, 8, 1961  
Source: Tumalo Creek and Upper Tumalo Reservoir  
Rate: 11.3 cfs  
Duty: 1,976.5 acre-feet  
Type of Use: Irrigation  
Total Acres: 790.6

In addition, the district holds the following water rights which are unaffected by the proposed allocation and assignment of conserved water:

Certificate 74147

Priority: October 29, 1913  
Source: Tumalo Creek, Crater Creek, Little Crater Creek, and three spring branches  
Rate: 136 cfs  
Duty: 65,312.8 acre-feet  
Type of Use: Irrigation; supplemental irrigation; pond maintenance, industrial, domestic including livestock  
Total Acres: 6,590.6

Certificate 74149

Priority: 1905  
Source: Deschutes River  
Rate: 9.5 cfs  
Type of Use: Supplemental irrigation; pond maintenance, industrial, storage  
Total Acres: 9.5 cfs for use on all district lands

Concurrent with the application for allocation of conserved water, the District has requested several water right transfers pursuant to ORS 540.580. As a result, the Department expects to have authorized the use of water under these rights at several locations other than those listed on the certificates when the proposed conservation project is completed.

The District has the capacity to divert the full amount of water allowed under the water rights. The maximum amount of water that can be diverted using the existing facilities is 185 cfs in the Columbia Southern Canal, 87 cfs in the Tumalo Feed Canal, and 164 cfs in the Bend Feed Canal. However, the system capacity limits the total quantity of water which can be diverted at the Tumalo and Bend Feed Canals to a maximum of 245 cfs.

The District, Water Resources Department staff, and the Bureau of Reclamation have worked together during the last several years to identify conservation alternatives to restore streamflows in lower Tumalo Creek and to provide a more reliable source of water to lands within the district currently irrigated under 1961 water rights.

The applicants have reduced seepage losses from the District's distribution facilities through a combination of piping canals, eliminating canals, and improving measurement and reporting of flow data. These measures include closing the Columbia Southern Canal into which irrigation water was diverted from Tumalo Creek at approximately rivermile 11, improving the capacity of the Tumalo Feed Canal and piping the uppermost portion, and installing an electronic flow meter on the canal and connecting the meter to the HYDROMET system. The measures were funded 66 percent by the District and 34 percent by the Bureau of Reclamation. The measures were completed in 1997 and resulted in water savings of at least 17.12 cfs and 8,489 acre-feet.

The Tumalo Irrigation District and the Bureau of Reclamation currently are developing a project to complete the piping of the Bend Feed Canal through which Deschutes River water stored in Crescent Lake Reservoir is diverted to the District. Approximately half of the canal is currently piped. An electronic flow meter has been installed on the canal and connected to the HYDROMET system. The project will be funded 50 percent by the District and 50 percent by the Bureau of Reclamation and will save at least 3,746 acre-feet of stored water. The project is scheduled for completion in 2003.

Tumalo Irrigation District and the City of Bend hold water rights totaling approximately 250 cfs from Tumalo Creek and Bridge Creek, tributary to Tumalo Creek. Other entities hold consumptive water rights totaling less than 1 cfs from Tumalo Creek. Prior to implementation of the conservation measures, flows in Tumalo Creek were seriously depleted downstream of the Columbia Southern diversion. The 185 cfs which Tumalo Irrigation District could divert through the Columbia Southern Canal represented substantially more than is present in Tumalo Creek during the late summer and early fall of a normal year.

Historically, the 2.5 miles of Tumalo Creek downstream of the Tumalo Feed Canal has often been completely dewatered as a result of diversions. An instream water right with a priority date of October 11, 1990 has been established on Tumalo Creek from the mouth to the South Fork Tumalo Creek which is above the site of the Columbia Southern Canal diversion. The instream water right is rarely met during summer months. During recent years, 2.5 cfs has been bypassed at the Tumalo Feed Canal diversion under a lease. However, the lease does not offer permanent protection for flows in lower Tumalo Creek and the lessor has indicated a need for the water in the future.

Several segments of the Deschutes River have been designated as State Scenic Waterways. Three segments are potentially affected by the proposed allocation of conserved water. These are:

- Robert Sawyer Park (approximately rivermile 164) downstream to Tumalo State Park (approximately rivermile 159),
- Deschutes Market Road (approximately rivermile 157) downstream to Lake Billy Chinook Reservoir (approximately rivermile 120), and
- Pelton Reregulating Dam (approximately rivermile 100) downstream to the confluence with the Columbia River.

An instream water right has been established in the Deschutes River from Pelton Reregulating Dam downstream to the confluence with the Columbia River. Streamflows in the Deschutes

River below Pelton Reregulating Dam are frequently sufficient to meet instream water right and State Scenic Waterway requirements, but not on an 80 percent exceedance basis. The monthly gaged streamflow in the Deschutes River near Madras at the 80 percent exceedance level ranges from 3,270 cfs in August to 4,480 cfs in March. The instream water rights and Scenic Waterway requirements range from 3,500 cfs in August to 4,500 cfs during the winter months. At 80 percent exceedance, August streamflows are approximately 93 percent of the instream flow need.

The Oregon Department of Fish and Wildlife has applied for an instream water right in the Deschutes River from the Bend Diversion Dam (approximately rivermile 165) to Lake Billy Chinook. Between the Bend Diversion Dam and Lower Bridge, Deschutes River flows are seriously depleted. The irrigation districts operating the Bend Diversion Dam voluntarily bypass 30 cfs during summer months. The monthly gaged streamflow in the Deschutes River below Bend at the 80 percent exceedance level ranges from 26 cfs in August and September to 518 cfs in April. The flows requested in pending instream water right applications for the middle Deschutes River are met on an 80 percent exceedance basis during winter months. However, flows during the irrigation season are substantially below the flows identified as needed in the instream water right applications. Streamflows during August and September are approximately 10 percent of the need as reflected in the instream water right application.

Most seepage losses from the Tumalo Irrigation District flumes and canals recharge the regional ground water system or are used by vegetation adjacent to the canals. Minor losses also result from evaporation from the open canals. The regional ground water system discharges to the Deschutes River primarily between Lake Billy Chinook and Lower Bridge.

Currently, there is not sufficient water to irrigate the 790.6 acres supplied under Certificate 76106 in July, August and September during years when flows are below average (5 out of every 10 years). Application of the district's share of Tumalo Creek conserved water to those lands will provide a firm source of water which will increase the amount of water consumptively used. Crop consumption on pasture lands in the Bend area is estimated at 14.73 inches during July through September. The proposed use of the district's portion of the conserved water will result in an increase in consumptive use on those lands by approximately 970 acre-feet during those years in which water would not otherwise be available for irrigation of the 790.6 acres.

The conservation project will also eliminate the depletions due to evapo-transpiration from vegetation adjacent to the canals and evaporation losses from the canals. Thus, the net increase in consumptive use will likely be less than 970 acre-feet. Because of the distance between the district and the point of discharge of the regional ground water system, the timing of the impacts of the additional depletion likely would be evenly distributed. An additional depletion of 970 acre-feet during 5 of every 10 years will reduce flows in the lower Deschutes River by no more than 0.67 cfs.

Pursuant to section 4, chapter 726, Oregon Laws 1997, the applicants have requested that the priority dates of the conserved water rights be the same as the priority dates of the originating rights. Prior to re-assignment, the allocation of conserved water would be as follows:

- 11.3 cfs from Tumalo Creek to the district, priority of September, 1900

- 5.8 cfs from Tumalo Creek to the state, priority of September, 1900
- 1,873 acre-feet from Crescent Lake to the district, priority of April 7, 1911
- 1,873 acre-feet from Crescent Lake to the state, priority of April 7, 1911

The District, Water Resources Department, and Bureau of Reclamation have sought to maximize the benefits to instream uses in Tumalo Creek and to provide a more reliable source of water to the District's 1961 water rights. To best meet those objectives, the applicants have requested that the Department provide to the District that portion of the stored water which would otherwise become the state's in exchange for an instream right on Tumalo Creek which is superior to all of the District's rights and for the District's existing 1961 irrigation right on Tumalo Creek. The proposed assignment of the conserved water rights would be as follows:

- The district's 11.3 cfs from Tumalo Creek be assigned to the primary irrigation of 790.6 acres of district lands that presently have a 1961 priority.
- The district's 1,873 acre feet from Crescent Lake and the state's 1,873 acre feet from Crescent Lake be assigned to the supplemental irrigation of 790.6 acres of district lands that presently have a 1961 priority.
- The state's 5.8 cfs from Tumalo Creek be assigned to instream flow maintenance from the Tumalo Feed Canal diversion downstream to Lake Billy Chinook on the Deschutes River. For this assignment, the district would agree that the 5.8 cfs of instream flow would be superior to all rights of the district to the waters of Tumalo Creek. In addition, the district would transfer their 11.3 cfs of primary right, priority December 8, 1961, to instream use from the Tumalo Feed Canal diversion downstream to Lake Billy Chinook on the Deschutes River.

The Department has consulted with the Departments of Fish and Wildlife, Environmental Quality, and Parks and Recreation to determine if the state's portion of the conserved water is needed to support instream uses. The agencies agree that the conserved water would provide substantial benefits in meeting instream needs in Tumalo Creek and the Deschutes River for which serious deficits currently exist.

### **Determination and Findings**

The proposed conservation project will result in a reduced diversion. The replacement of unlined canals with pipe is a proven method for reducing seepage losses. In addition, better measurement of irrigation diversions is commonly used to improve management and reduce water needs.

The proposed allocation and assignment of conserved water will not result in harm or injury to other water rights. The district's share of the conserved water will be used on lands that are currently irrigated under junior water rights. This will allow irrigation of those lands later into the season than is currently possible during an average water year and could increase water consumption minimally.

The state's share of the conserved water will provide significant and measurable increases in streamflows in lower Tumalo Creek and in the Deschutes River between the mouth of Tumalo Creek and Lower Bridge. Flows in these stream reaches currently are depleted to the extent that instream uses are seriously impacted.

The lands to be supplied by the allocation of conserved water are currently irrigated. The allocation and assignment of conserved water will not affect land uses and is consistent with the Deschutes County Comprehensive Plan.

Pursuant to Section 3, chapter 726, Oregon Laws 1997, the portion of the conserved water allocated to the state is based on the percentage of federal and state non-reimbursable funds used to finance the projects. The Tumalo Irrigation District provided 66 percent of the funding for the conservation project involving the closure of the Columbia Southern Canal and the improvement of the Tumalo Feed canal and will provide 50 percent of the funding for the conservation project involving piping the Bend Feed Canal. The balance of the funds are from public funds not subject to repayment. The state will receive 34 percent of the water conserved through the project involving closure of the Columbia Southern Canal and the improvement of the Tumalo Feed Canal and 50 percent of the water conserved through piping of the Bend Feed Canal.

Prior to re-assignment, the conserved water is to be allocated as follows:

- 11.3 cfs of Tumalo Creek water to the Tumalo Irrigation District.
- 5.82 cfs of Tumalo Creek water to the state for an instream uses.
- 1,873 acre-feet of Deschutes River stored water to Tumalo Irrigation District.
- 1,873 acre-feet of Deschutes River stored water to the State for instream uses.

The rates and duties for the water rights associated with the allocation of conserved water would be as follows:

Original Certificate Number/ Priority Date	Acres	Existing Rate/Duty	New Rate/Duty	Conserved Water	
				Applicant Share	State Share
74146					
Aug. 5, 1900	407.60	5.823 cfs	5.823 cfs	0	0
Sept. 1900	3,265.85	46.655 cfs	29.535 cfs	11.3 cfs	5.82 cfs
Apr. 28, 1905	301.60	4.309 cfs	4.309 cfs	0	0
May 27, 1907	43.20	0.603 cfs	0.603 cfs	0	0
June 1, 1907	<u>992.65</u>	<u>14.181 cfs</u>	<u>14.181 cfs</u>	<u>0</u>	<u>0</u>
Totals	5,010.90	71.571 cfs	54.451 cfs	11.3 cfs	5.82 cfs
74148					
Apr. 7, 1911	6,590.60	35,000 ac-ft	31,254 ac-ft	1,873 ac-ft	1,873 ac-ft

The State's portion of the conserved water is needed to meet instream needs. The proposed assignment of the conserved water will maximize benefits for instream uses. With the assignment of the rights, water will be allocated as follows:

Water Right Superseded/ Priority Date	Post Allocation of Conserved Water		Conserved Water Rights Assignment		Total Rights on Project Completion	
	Acres	Rate/Duty	Acres	Rate/Duty	Acres	Rate/Duty
74146 Aug. 5, 1900	407.60	5.823 cfs	0	0	407.60	5.823 cfs
Sept. 1900	3,265.85	29.535 cfs	790.6	11.3 cfs	4,056.45	40.835 cfs
Apr. 28, 1905	301.60	4.309 cfs	0	0	301.60	4.309 cfs
May 27, 1907	43.20	0.603 cfs	0	0	43.20	0.603 cfs
June 1, 1907	<u>992.65</u>	<u>14.181 cfs</u>	<u>0</u>	<u>0</u>	<u>992.65</u>	<u>14.181 cfs</u>
Totals	5,010.90	54.451 cfs	790.6	11.3 cfs	5,010.90	54.451 cfs
74148 Apr. 7, 1911	6,590.60	31,254 ac-ft	790.6	3,746 ac-ft (applicant's 1,873 ac-ft and state's 1,873 ac-ft)	7,381.2	35,000 ac-ft
74146 Sept. 1900	instream	5.82 cfs	N/A	0	instream	5.82
76106 Dec. 8, 1961	790.6	11.3 cfs 1,976.5 ac-ft from Tumalo Cr.  1,100 a.f. from Upper Tumalo Res.	N/A	0	Instream          Suppl. All allowed uses on lands served by district	Rate (cfs): Apr - 1.9 May - 4.3 Jun - 6.3 Jul - 7.8 Aug - 6.3 Sep - 4.3 Oct - 1.7 Duty (ac-ft): 1,976.5  1,100 a.f.

Consistent with the applicant's proposal, the irrigation water right to be issued superseding 74146 and for the additional lands to be irrigated using conserved water shall be subordinate to the instream water right for conserved water. However, the streamflows to be protected by that instream water right may be used to provide fish screen bypass and cleaning flows at the Tumalo Feed Canal diversion provided such use does not interfere with use of instream flow to operate fish passage facilities at the same site.

**Now, therefore, it is ORDERED:**

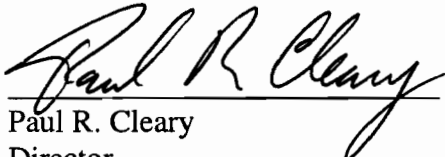
On submittal of notice of completion of the conservation projects described in the application for allocation of conserved water, the Department shall:

1. Cancel certificate 74146 and issue a superseding certificate for: 5.823 cfs with an August 5, 1900 priority for 407.60 acres-equivalent, 40.835 cfs with a September 1900 priority for 4,056.45 acres-equivalent, 4.309 cfs with an April 28, 1905 priority for 301.60 acres-equivalent, 0.603 cfs with a May 27, 1907 priority for 43.20 acres-equivalent; and 14.181 cfs with a June 1, 1907 priority for 992.65 acres-equivalent. The place of use shall be those lands described under certificates 74146 and 76106, as modified by any transfers completed pursuant to ORS 540.580. All other conditions and limitations of the existing water right shall be included in the superseding certificate. The amount of water used shall be limited to a diversion of one-seventieth of one cubic foot per second per acre and 1.8 acre-feet per acre, measured at or within one-half mile of the land to be irrigated. In addition, the right shall be subordinate to the Tumalo Creek instream right from conserved water, as allocated by this order.
2. Cancel certificate 74148 and issue a superceding certificate for the supplemental irrigation of the 6,590.60 acres provided for under certificate 74148 and the 790.6 acres provided for under certificate 76106, as modified by any transfers completed pursuant to ORS 540.580. The amount of water which may be used under the new certificate shall be 35,000 acre-feet of water stored in Crescent Lake Reservoir.
3. Cancel certificate 76106 and issue a new certificate for an instream water right with a priority of December 8, 1961. The monthly quantities of water allocated under the instream right shall be as follows: April, 1.9 cfs; May, 4.3 cfs; June, 6.3 cfs; July, 7.8 cfs; August, 6.3 cfs; September, 4.3 cfs; and October, 1.7 cfs. The total seasonal duty shall be 1,976.50 acre-feet. The instream water right reach shall be in Tumalo Creek from the site of the existing Tumalo Feed Canal Diversion to the mouth of Tumalo Creek and in the Deschutes River from the mouth of Tumalo Creek to Lake Billy Chinook. In addition, a superceding certificate shall be issued for the use of 1,100 a.f. stored under certificate 75924 in Upper Tumalo Reservoir. The use shall be to supplement all uses and lands served by the District.
4. Issue a new certificate for an instream water right for 5.82 cfs during the period April 1 to November 1 with a priority of September 1900. The instream water right reach shall be in Tumalo Creek from the site of the existing Tumalo Feed Canal Diversion to the mouth of Tumalo Creek and in the Deschutes River from the mouth of Tumalo Creek to Lake Billy Chinook. The instream water right shall allow the use of the water to provide fish screen



bypass and cleaning flows at the Tumalo Feed Canal diversion provided such use does not interfere with use of instream flow to operate fish passage facilities at the same site.

Dated at Salem, Oregon this 15<sup>th</sup> day of November, 2000.

  
Paul R. Cleary  
Director