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WATERWATCH

PROTECTING NATURAL FLOWS IN OREGON RIVERS

"OASIS" PROJECT REPORT FACT SHEET

This fact sheet presents analysis of key data and arguments in the Oregon Oasis Project Resource Book, Informational Hearing Senate Committee on Business, Transportation and Workforce Development, Davis Wright Tremaine LLP (March 22, 2007) ("Oasis Project Report").

1. The Oasis Project Report Contains Misleading and Irrelevant Water Withdrawal Impact Analysis.

a) The Fact that the "Total Flow of Columbia River" is "198,000,000 Acre-Feet" (§3) is Not Relevant to Any Important Question.

The fact that the Columbia discharges, on average, a total amount of 198,000,000 acre-feet of water per year does not help illuminate the potential impacts of withdrawing more water during certain key times of the year. Further, there is never a "flow" of 198 million acre-feet, rather this is the cumulative amount discharged at the mouth over the course of an average year.

b) The Oasis Project Report's Use of McNary Dam for Calculation of Oasis Flow Impacts is Misleading and Under-Represents the Impacts.

McNary Dam is located at the Columbia River crossing of the Oregon/Washington border (near Richland, Pasco, and Kennewick) and is thus above 76.4 miles of the Columbia River and multiple irrigation diversions stretching from Umatilla downstream to Rufus. A more much more meaningful reference site would have been the John Day Dam, which the National Research Council chose to use in its book on Columbia River flows because "almost all existing Columbia River consumptive withdrawals are upstream of this dam." National Research Council, Committee on Water Resources Management, Instream Flows, and Salmon Survival in the Columbia River, "Managing the Columbia River: Instream River Flows, Water Withdrawals, and Salmon Survival" (2004) at p. 54 (available from National Academies Press). Further, as we understand the proposal, the John Day Dam represents the downstream portion of proposed Oasis withdrawals and thus flows there would be affected by the proposed project.

The Oasis Project Report itself contains data that shows how much lower the John Day Dam flows are as compared to the McNary flows that the report uses as a reference. See §10, p. 5

(showing John Day Dam flows as low as 68% of McNary Dam flows on July 2, 2001). The Project Report's misleading choice of reference flows translates into smaller projected flow impacts than would actually occur in the river and for the fish from the proposed Oasis withdrawals.

c) Use of "Net Depletions" in the Oasis Project Report Calculations is Misleading and Unsubstantiated.

The Oasis Project Report uses "net depletions" to portray flow impacts to the Columbia River, yet there appear to be no calculations or citations supporting these net depletion numbers. Further, net depletion (or more commonly, consumption) numbers by definition are dependent on some amount of the diverted water returning to the river. However, here there is no analysis regarding when, where or even if return flows rejoin the Columbia.

Regarding the requested water, the Oasis Project Report indicates a three acre-foot per irrigated acre usage. See §7, p. 1; §4, p. 1 and elsewhere (300,000 acre-feet of this would go to irrigate 100,000 new acres, and 195,000 acre-feet would go to irrigate 65,000 acres of ground water restricted acres). The Project Report also claims (without any citation) that Oregon currently irrigates 1.0 to 1.3 million acres in the Columbia Basin with a net amount of 1 million acre-feet. §7, p. 2. Using the Project Report's requested water to acreage ratio, Oregon would now be diverting 3.9 million acre-feet to irrigate this 1.3 million acres.

In the absence of analysis regarding when, where or if the return flows rejoin the river, the starting point for assessing river and fish impacts must be Oregon's diversion of 3.9 million acre-feet, based on proponents' acre-feet to irrigated acre ratio. The Project Report fails to present this analysis.

2. Comparing Oregon's Use of the Columbia to that of Idaho, Washington, and Montana is Nonsensical.

Oasis proponents make much of the fact that Washington and Idaho use more Columbia River water than Oregon. Yet simple geography shows why Oregon's use of the river should be expected to be less than that of either of these states. Before sharing the Oregon/Washington border, the Columbia traverses the entire state of Washington from north to south, while one would be hard pressed to find any of Idaho that is not drained by the a tributary to the Columbia. Oregon, in contrast, has sizable and important non-Columbia basins such as the Rogue, Umpqua and Klamath which are utilized for agricultural irrigation. The Oasis Project Report does not, and cannot, provide a meaningful context for its comparative state withdrawal numbers which do nothing to make the case for further water withdrawals from the Columbia River.

3. The Proposed Oasis Water Withdrawals Would Further Reduce Water Management Flexibility When Climate Change Should Urge the Opposite.

James Anderson, an expert whose work the Oasis Project Report presents, says of the flow changes predicted to result from climate change:

> Perpetuating existing flow policies would be even more wasteful than they are currently, and would limit the ability of water managers to allocate water appropriately in a new climate regime.

§13, p. 7.

The new climate regime, he explains, is predicted to include lower summer flows such as those that occurred in 2001. Id. Yet, limiting the ability of water managers is exactly what the Oasis proposal would do by allocating yet more summer water from the Columbia River. In its report on Columbia River flows and proposed additional Washington withdrawals, the National Research Council made a similar point about needed water management flexibility:

> Decisions regarding the issue of additional water withdrawal permits are matters of public policy, but if additional permits are issued, they should include specific conditions that allow withdrawals to be discontinued during critical periods. Allowing for additional demand, low flows, and comparatively high water temperatures identified in this report would increase the risks to survivability to listed salmon stocks and would reduce management flexibility during these periods.

National Research Council, Committee on Water Resources Management, Instream Flows, and Salmon Survival in the Columbia River, "Managing the Columbia River: Instream River Flows, Water Withdrawals, and Salmon Survival" (2004) at p. 197.

The NRC Report also addressed climate change in its Epilogue:

> Migratory behavior and survival rates of salmon are also affected by low river flows. This situation is especially troubling because of prospective future climate warming (which could entail not only higher water temperatures but also further decreases in low flows) and demands for additional diversions of Columbia River water during low-flow periods. Further increases in water temperature and further reductions in low flows would exacerbate risks to salmon survival. As this report has noted, the effects of prospective additional withdrawals in July (234,000 acre-feet) could be substantial. July is a period of high demand for Columbia River water. The upper end of the range of prospective additional withdrawals considered in this study would increase July withdrawals from their current value of roughly 6.8 percent of mean Columbia River flows to roughly 8.6 percent. Under *minimum* July flow conditions, the effects would be greater: the upper end of the proposed range of diversions would increase current July withdrawals from roughly 16.6 to 21 percent of Columbia River *minimum* flows.

Id. at p. 199, Epilogue.

Particularly in the face of climate change, reducing flexibility by creating more demand during low flow periods does not make sense.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

January 26, 2012

Phil Ward, Director
Oregon State Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Dear Mr. Ward:

It was a pleasure to meet with you and your staff in late November to discuss water resource issues common to our two states. I look forward to continuing that dialogue and exploring opportunities for joint water supply development ventures.

At our recent meeting, you asked for an explanation or clarification concerning the state of Washington's policies for issuance of new water rights. Specifically, you asked if our state is issuing new rights for water from the Columbia River mainstem without mitigation. The answer to that question is no. Under the 2006 Columbia River legislation, we have been aggressively pursuing development of additional water supplies; however, we have done so through making additional water available through surface and aquifer storage, conservation savings, and acquisitions and leases of existing water rights.

For example, the Office of Columbia River recently announced that it had started the process of issuing new water rights to municipal and industrial water users up and down the Columbia River for a total of 25,000 acre-feet of water. That water is stored in Grand Coulee Dam under a 1938 water storage right and has been purchased from the Bureau of Reclamation under a service contract with the state. In addition, the service contract makes 12,500 acre-feet of stored water available for instream flow support in the Columbia River downstream of Grand Coulee Dam. Another example is Office of Columbia River's acquisition of 14,000 acre feet of water stored in Pend Oreille County Public Utility District's Sullivan Lake Reservoir under an early 1900s era storage right. That water will be allocated to municipal, industrial, domestic, irrigation, and instream flow support purposes in northeast Washington.

As I indicated in our recent discussion, we are working with the fisheries co-managers in the Columbia Basin to evaluate the efficacy of out-of-kind mitigation, such as intake screening and habitat improvements, in offsetting impacts associated with new diversionary rights. However, in the event that such an out-of-kind mitigation approach was actually to be implemented, its use

would be limited to a few rare situations with unique circumstances. As that effort unfolds, I will certainly keep you updated.

There are temporary and permanent transfers of existing water rights that occur on a routine basis that change the place of use for those rights, but do not involve mitigation. There are also permits that were issued a number of years ago with development schedules that allowed for gradual implementation of the water right and associated land development over time.

Again, thank you for the opportunity to meet and discuss water management in the Columbia Basin of Washington and Oregon. I look forward to the opportunity to meet again. If I can be of any further assistance, do not hesitate to call me at (509) 457-7120.

Sincerely,

Derek I. Sandison, Director
Office of Columbia River

DIS:RAZ (120132)

State of Oregon
Water Resources Department

Memorandum

To: Barry Norris, Administrator, Technical Services
From: Rick Cooper, Hydrologist, Technical Services
Date: September 30, 2005
Subject: Columbia River water availability

I have completed an analysis of the water available on the Columbia River at Bonneville and McNary dams. The months 'on' and 'off' are shown in Table 1. The results of the water availability calculation showing the monthly stream flow available for appropriation in cubic feet per second are shown in Table 2. The observed stream flows at Bonneville and McNary dams are shown in Table 3. Based on the period 1975 to 2004, these values represent stream flows affected by regulation from numerous dams upstream and numerous depletions due to diversion. Finally, the target flows at the two sites are shown in Table 4. These values were taken from the National Oceanic and Atmospheric Administration, National Marine Fisheries FCRPS Biological Opinion of December 2000. They are used in the analysis as stream flow required to be left in-stream.

In this analysis, water available is simply the 50% exceedance stream flow less the target flow for each month. Nesting of watersheds is considered. The smallest downstream value is carried upstream. Comparisons of the 50% exceedance stream flows and the target flows at Bonneville and McNary dams are shown in Figures 1 and 2, respectively,

This analysis departs from the usual water availability analysis in that the natural stream flows for the two watersheds are not determined and subtractions for expected consumptive demands are not made. Nor is a correction made for the effects of stream flow regulation by the numerous dams upstream. Natural stream flows for these watersheds cannot be determined because realistic estimates of the depletions made by diversions upstream cannot be made.

It is assumed that the expected consumptive demands are included in the observed stream flows. For that reason, the most recent 30 year period (1975 to 2004) is used as a base period since it best represents the current consumptive uses made of the Columbia River. However, if use has increased significantly during the period, the exceedance statistics based on the observed stream flows are overestimated.

Another concern is whether stream flow during the base period fairly represents stream flow for the longer term. Figures 3 and 4 compare mean annual stream flows during the period 1975 to 2004 to the period of observed stream flows 1878 to 2004 for the Columbia River at The Dalles (14105700). On average, stream flow during the base period was less than for the longer period. It is unknown whether this reduction in stream flow is due to normal climate cycles or to increasing consumptive uses or some combination of the two.

Finally, this analysis represents a static picture of water availability on the Columbia River. While we could debit the amount of water available for uses allocated in Oregon, allocations in other states and in Canada can not easily be accounted for. Stream flow estimates based on the last 30 years of record do not adequately account for new allocations.

Columbia River Water Availability

Table 1. Columbia River 'water available' at Bonneville and McNary dams

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						cfs						
Bonneville	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
McNary	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	No	Yes

Table 2. Columbia River 'water available' at Bonneville and McNary dams. These values are the result of subtracting the target stream flows (Table 4) from the 50% exceedance stream flow (Table 3). Nesting of watersheds is considered. The smallest downstream value is carried upstream.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						cfs						
Bonneville	15,015	24,030	24,744	46,681	264,345	266,440	172,464	133,581	114,365	118,532	-24,731	90
McNary	15,015	24,030	24,744	-71,000	-11,000	-1,000	-33,000	-72,000	108,000	111,000	-24,731	90

Table 3. Columbia River 50% exceedance stream flows at Bonneville and McNary dams. Based on the period 1975 to 2004, these values represent stream flows affected by regulation from numerous dams upstream and numerous depletions due to diversion.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						cfs						
Bonneville	175,015	184,030	184,744	206,681	264,345	266,440	172,464	133,581	114,365	118,532	135,269	160,090
McNary	156,000	165,000	167,000	189,000	249,000	259,000	167,000	128,000	108,000	111,000	126,000	146,000

Table 4. Columbia River target stream flows at Bonneville and McNary dams. These values were taken from the National Oceanic and Atmospheric Administration, National Marine Fisheries FCRPS Biological Opinion of December 2000.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						cfs						
Bonneville	160,000	160,000	160,000	160,000							160,000	160,000
McNary				260,000	260,000	260,000	200,000	200,000				

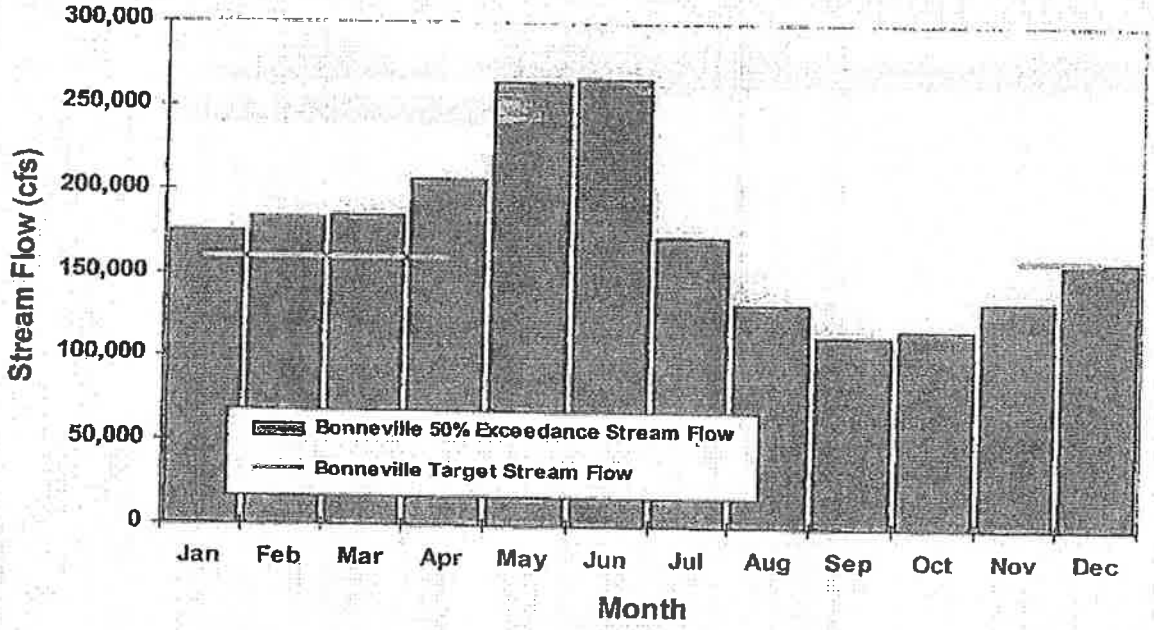

Figure 1. Observed 50% exceedance and target stream flows at Bonneville dam.

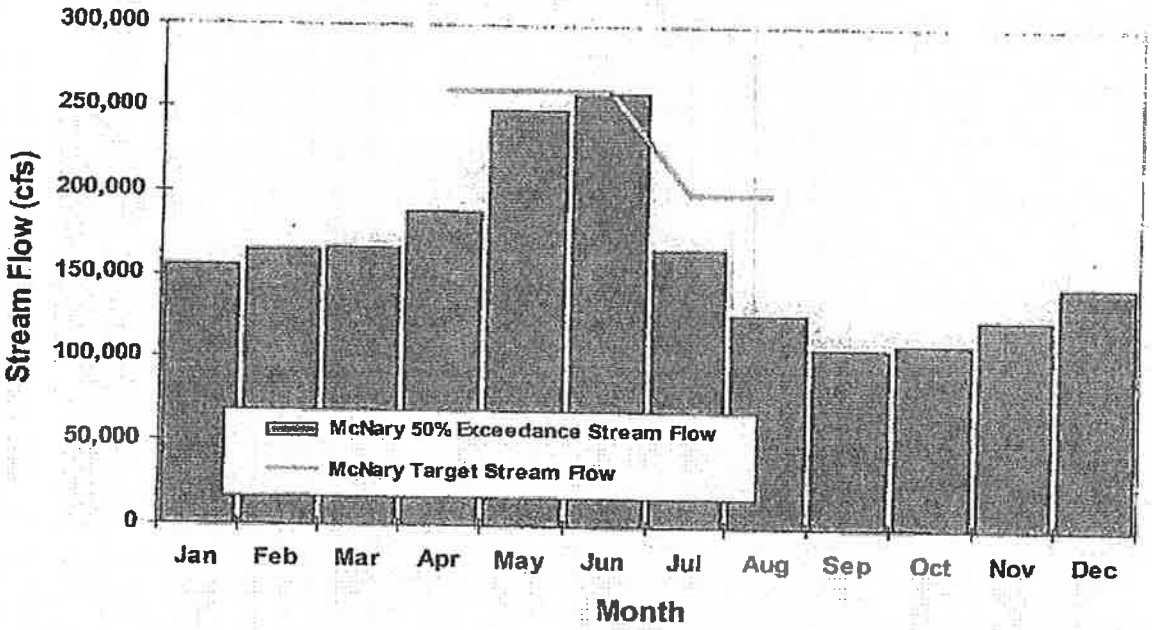

Figure 2. Observed 50% exceedance and target stream flows at McNary dam.

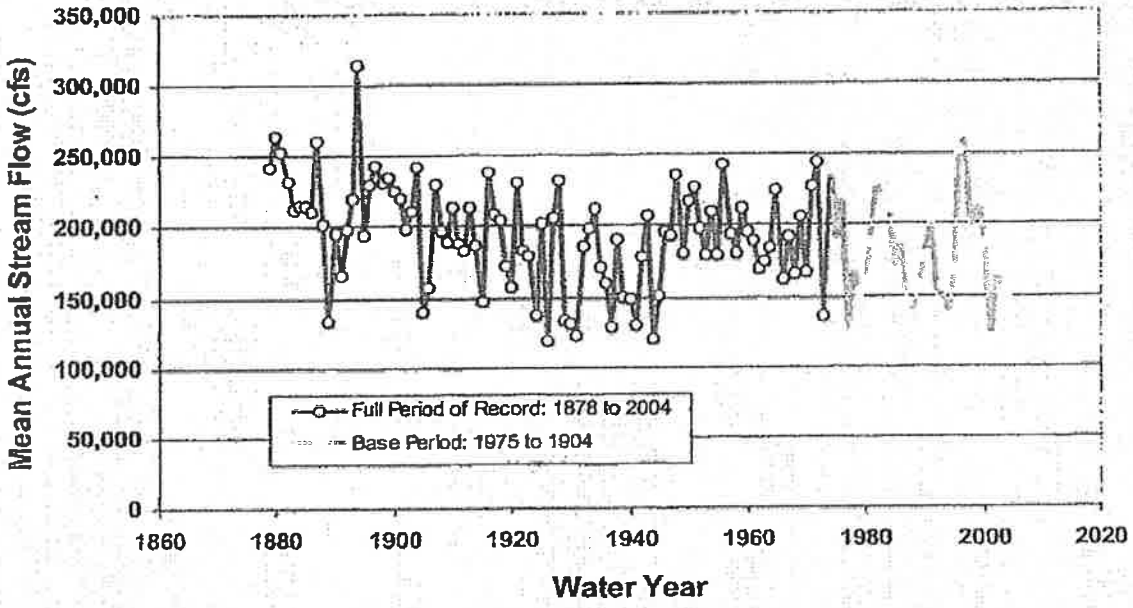

Figure 3. Observed mean annual stream flows for the Columbia River at The Dalles, OR (145105700) comparing the base period 1975 to 2004 to the entire period of record.

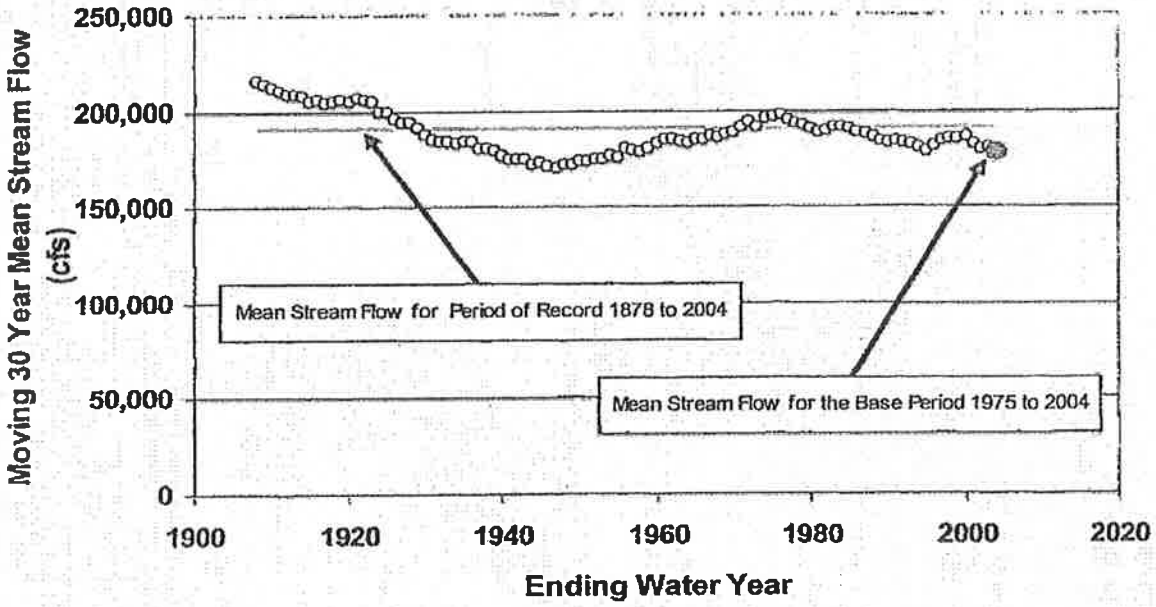

Figure 4. The 30 year moving average of the mean annual stream flow for the Columbia River at the Dalles, OR (14105700). Highlighted is the 30 year average for the base period ending in 2004. Also shown is the mean flow for the entire period of record.