



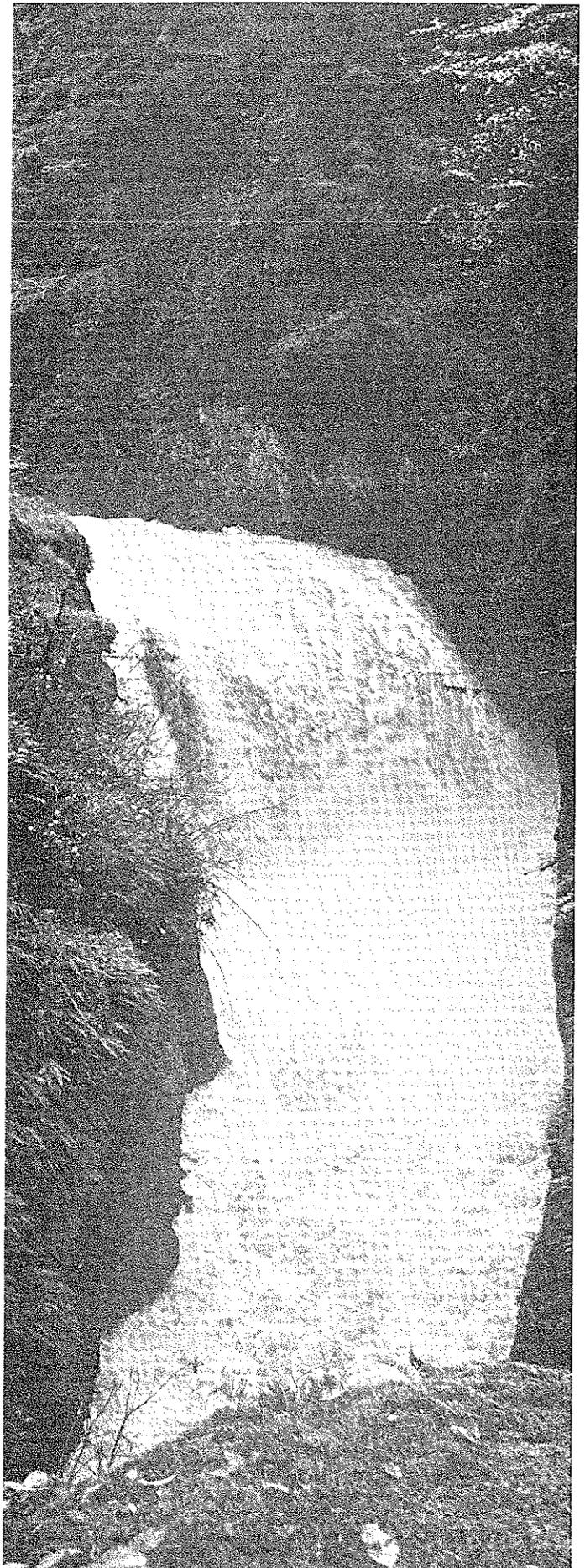
State
of
Washington

DEPARTMENT
OF ECOLOGY

WASHINGTON'S WATER RESOURCES

FOURTH BIENNIAL
REPORT TO THE
WASHINGTON STATE
LEGISLATURE

1977 & 1978



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FOURTH BIENNIAL REPORT TO THE LEGISLATURE
1977 and 1978

STATE OF WASHINGTON
Department of Ecology
Office of Water Programs
Olympia, Washington

January 1979

Dixy Lee Ray
Governor

Wilbur G. Hallauer
Director

79-3

Cover: Upper Deschutes River Falls
Photo by: Rollie Geppert

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STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY

Olympia Washington 98504 206/753-2800

Mail Stop PV-11

M E M O R A N D U M

January 19, 1978

To: The Washington State Legislature

From: Wilbur G. Hallauer, Director
Department of Ecology

Subject: Biennial Report on Water Resources Activities

I am providing you the department's Fourth Biennial Report on its water resources management activities covering the period 1977 to 1979. These years have been busy - clearly indicating the increasing demands on the water resources of our state. The 1976-77 drought and new programs such as Initiative 59 required new management techniques and more vigorous implementation of basic water management programs such as adjudications, dam safety inspections, and the establishment of minimum flow regulations.

Many problems remain, especially in the arid parts of our state. Ground water problems, for example, are not at all resolved. Yet, we can report good progress to protect and utilize our ground water resources.

During these years, the department issued more than 3,800 water rights permits. A peak in this water right activity occurred as a result of people seeking new sources of water during the 1977 drought. Almost 500 of the permits were temporary emergency permits issued during that period.

The department's river basin management program has progressed. Three additional programs have been adopted, including that for the John Day/McNary reach of the Columbia River. Efforts to attain federal authorization for flood control work in the Snohomish Basin continue.

A new emphasis has been directed to assess potential water development projects. We are looking at possibilities which could ultimately meet the balanced water use demands of the future. In addition, the Department of Ecology is expanding its program of establishing minimum flow regulations on rivers and streams to protect instream resources and uses.

Much time and effort has been spent on efforts to solve problems of Indian water rights.

The State of Washington is blessed with what appears to be a bountiful water supply. However, because of geographic and seasonal shortages, each person cannot always have all the water he feels he needs. Further, the aggregate quantity is finite; there will never be more. With our increasing population and the associated expanding demands for water for all purposes - domestic, industrial, agricultural, power, and recreation - we are finding more need for trade-offs and compromise. These decisions do not come easily. But, with continuing legislative support, we will be able to provide progressive management policies for this most important resource.

During this legislative session, you will be considering several water resource proposals. These will include the need to continue authorizations to obligate emergency drought funds and the remaining Referendum 27 funds for major projects in the state. We also are recommending to the Governor that a replacement bond issue be placed before the voters for funding municipal and agricultural water supply projects.

A major legislative need that we support is the establishment of a state reclamation and project development authority. Over the years, the leadership in water resources planning and project construction by the federal government has dwindled, while the need for improved water management has increased.

We will be supportive of legislation to integrate the right to reserve water into the priority-setting system of the existing water code, to clarify the water rights forfeiture laws, to establish a withdrawal permit system applicable to commingled natural and artificially stored ground water, and to provide for the elimination of wasteful practices under our present water rights system.

I am looking forward to discussing these issues with you during the 46th legislative session. I am confident that we can work together on these water resource management issues which are the most significant topics facing this department in serving the people of the State of Washington.

WGH:lh

The 1976-77 Drought

The economic impact of the drought was substantial. Total personal income loss to Washington citizens in 1977 and 1978 is estimated to have been \$200 million. Approximately 7,500 jobs were lost and it is estimated that the Gross State Product during 1977 and 1978 was reduced by at least \$330 million.

In February 1977, Governor Ray established the Ad Hoc Executive Water Emergency Committee to deal with drought-related problems. The committee was successful in assuring a coordinated response to drought-caused problems and was at least partly responsible for the drought relief funds received by the state. A \$250,000 grant to the state from the Pacific Northwest Regional Commission funded committee activities. Second Substitute Senate Bill 2620 (Chapter 1, Laws of 1977, First Extraordinary Session) made approximately \$33 million in state money available for agricultural and municipal drought relief. Approximately \$86 million in federal drought assistance (grants and loans) was made available through December 31, 1977.

While the Governor's Ad Hoc Committee is no longer active, it could be formed again should a need arise. Nevertheless, there is no statewide drought contingency response plan which could quickly and efficiently serve to mitigate future drought impacts. Formulation of such a program is essential.

Project Assessment Activities

Work on project evaluation increased significantly this past biennium. (See attached table.) Several of the projects have been terminated; the balance are actively being considered. Studies are underway on the Squaw Creek storage proposal, the Yakima River reregulation dam, and reservoir sites on the Similkameen, Teanaway, Rattlesnake, Ahtanum, and the Little Naches rivers.

Adjudications

Our 1977 Report to the Legislature indicated that adjudications, which began in 1917, had proceeded slowly and only about 10 percent of the state has been adjudicated.

Since 1977, the department has developed an adjudication team as we had proposed in our last report. There currently are four full-time equivalent positions (FTE) assigned to adjudications in headquarters and two FTE in the regions. Through this reemphasis, the department has completed three adjudications, has held additional hearings on one pending adjudication, and has begun proceedings on three additional streams. A priority list of streams needing adjudications has been developed.

We recommended to the Legislature in 1977 that additional personnel be provided for the adjudications program. Our proposed budget for the next biennium requests nine new positions and the supporting costs for an expansion of the adjudication program.

Project Evaluation, Financing and Development
State of Washington

PROJECT	LOCATION	PURPOSE	Type of Activity or Assistance	Total Cost	State Participation	Actual or Potential Source of Funding	Status
Walla Walla Ground Water Development	Walla Walla Basin	Improve water supply by conjunctive use of ground and surface water.	Financial and Engineering	Undetermined	Undetermined	Undetermined	Dormant
Squaw Creek Off-Channel Storage	Yakima County	Storage reservoir for fish and wildlife and irrigation	Engineering	\$150,000,000	Undetermined	Undetermined	Ongoing
Yakima River Reregulation Dam	Yakima County	Conserve water and equalize flows.	Engineering	\$ 8,000,000	Undetermined	Undetermined	Ongoing
Wenas Dam	Yakima County	Improve dam safety	Engineering and Funding	Undetermined	Undetermined	Undetermined	Ongoing
Seiah and Moxee Irrigation Districts	Yakima County	Facility replacement	Engineering and funding	\$ 225,000	\$ 155,000	Ref. 27 and Rec. Revolv. Fund	Ongoing
Yakima-Tieton Irrigation District	Yakima County	Facility rehabilitation	Permit applications, funding possibilities	\$ 53,000,000	Undetermined		Ongoing
Okanogan Irrigation District	Okanogan County	Facility rehabilitation	Funding, contract administration	\$ 2,275,000	\$ 525,000	Ref. 27	Ongoing
Wenatchee Heights Reclamation District	Chelan County	Facility rehabilitation	Funding, contract administration	\$ 1,437,500	\$ 493,500	Ref. 27	Ongoing
Second Bacon Siphon & Tunnel, Columbia Basin Project	Grant County	Additional water supply	Funding, contract administration	\$ 34,000,000*	\$15,000,000	Ref. 27	Ongoing
Washington Water Power Co. Generating facility and water supply	Lincoln County	Cooling water supply and potential irrigation supply	Engineering	Undetermined	Undetermined	Undetermined	Dormant

* TOTAL CONTRACT=\$117,000,000

The need for increased adjudication activity became apparent in 1977 when the drought created statewide alarm about water availability. This resulted in numerous requests from individuals for DOE to regulate water diversion and usage. It also prompted several petitions from the public to initiate adjudication proceedings on streams where the water shortages were occurring. Regulation and sound management practices are nearly impossible without verification and quantification of all the water rights within a basin. This can only be done through the adjudication process.

The department plans to initiate an adjudication for the Yakima River Basin as a first priority, but even with the proposed staff addition, it is estimated it will take 10 years to complete.

Basin Management Programs

In the two years covered by this report, basin management programs have been adopted for the Colville and Walla Walla basins and for the John Day/McNary reach of the Columbia River. The Yakima Basin Program is nearing completion but has been slowed by problems of Indian water rights, adjudications, and unresolved differences over the required levels of instream base flows.

Five staff members are working full or part time on the Joint Cedar-Snohomish Study. While a schedule of additional basin studies has been established, limited manpower precludes any new starts in the immediate future.

An outline for a systemwide Columbia-Snake River Study has been drafted. Current activities are limited to the Instream Resources Protection Program which is scheduled for completion by March 31, 1979. The conservation segment, which was eliminated from the John Day/McNary reach program, will be reconsidered as part of the Instream Resources Program for the entire system. Additional reach programs will be established as funding and manpower permit.

Osoyoos Lake - Okanogan Activities

The Okanogan River flows from Canada across the International Border through Osoyoos Lake in north central Washington. The lake level and outflow are controlled by a private dam in the State of Washington. British Columbia and Washington have completed extensive planning for their parts of this river basin. An International Osoyoos Lake Board of Control and the International Joint Commission have indicated concern over the control of Osoyoos Lake.

Extensive discussions between parties have been held. Washington modified its position regarding the development of a common position with British Columbia on the management of Okanogan waters to speed a resolution of the problems. We also committed to provide certain modifications of the control dam on the lake.

Further resolution of Okanogan Basin issues is expected during 1979.

Large Diversions

In June 1976, Chapter 173-596 WAC was adopted by the department in an effort to provide better management of very large diversions of surface water for irrigation. The regulation provided an option for limits on the life of permits for large projects proposed by an individual or single entity and also emphasized the need for conservation and management programs.

However, with the approval of Initiative 59 (The Family Farm Water Act Chapter 90.66 RCW) by the state's voters in November 1977, the need declined for Chapter 173-596 WAC. Initiative 59 provides for the issuance of a Family Farm Permit with no time limit, provided the land is irrigated in compliance with the definition of a family farm. "Family Farm" is defined as "a geographic area, including not more than two thousand acres of irrigated agricultural lands, whether contiguous or noncontiguous, the controlling interest of which is held by a person having a controlling interest in no more than two thousand acres of irrigated agricultural lands in the State of Washington which are irrigated under rights acquired after the effective date of this act." Uses of surface or ground water for agricultural irrigation in excess of 2,000 acres by such a person or entity are subject to term permits called Family Farm Development Permits. The act provides for the issuance of such permits for a maximum of 10 years with a provision for a 10-year extension if additional time is required to develop the land and pass title to owners of not more than 2,000 irrigated acres.

The Department of Ecology has prepared guidelines for the administration of Initiative 59. The guidelines will remain in effect until the department adopts the implementing regulations.

Certain provisions of the act have raised matters which prompted the department to request a formal opinion from the attorney general; the department is awaiting the response.

Because the enactment of the Family Farm Water Act accomplishes goals similar to those of DOE's term permit regulation, the department is examining the possibility of repealing Chapter 173-596 WAC.

President's Water Policy Review

In his 1977 Environmental Message to Congress, President Carter announced a comprehensive review of federal water resources policy. The President directed that the review be conducted in consultation with the public and Congress. A hearing was held in Seattle in August 1977 as one of eight regional hearings on "issue and option papers" prepared for the study and published in the Federal Register. The department presented testimony on behalf of the State of Washington and subsequently submitted detailed written comments on the issue and option papers to the U.S. Water Resources Council.

Early in the review, the issue of Indian water rights was dropped from consideration, to be taken up separately. However, testimony from Washington State and others emphasizing the importance of the Indian and federal reserved water right issue may have helped to draw the President's attention. In his June 1978 water policy message, President Carter instructed federal agencies to inventory and quantify federal reserved and Indian water rights, emphasizing negotiation rather than litigation wherever possible.

Other issues addressed by President Carter in his water policy message include water conservation, improved application of water resource planning and evaluation criteria, more rigorous implementation of existing environmental laws, improved federal-state cooperation in water resource planning and construction, and increased nonfederal cost-sharing on federal water projects.

It appears that through such organizations as the National Governors Association, the Interstate Conference on Water Problems, and the Western States Water Council, Washington and the other involved states had a significant voice in the final policy decisions made by the President.

Irrigation Activities - Bacon Siphon and Tunnel

Under terms of a contract with the Bureau of Reclamation in August 1976, the Department of Ecology disbursed a total of \$15 million toward the construction costs of the second Bacon Siphon and Tunnel on the Columbia Basin Irrigation Project near Coulee City, Washington. The structure is the first step toward the ultimate development of the second half of the one million-acre project. The contract also states that the Bureau of Reclamation is obligated to complete the main conveyance system by 1983.

The "front end" money expedited the start of construction work and as an incentive to the federal government to provide additional financing. Work has been monitored by DOE engineers and disbursements of funds made as work progressed. The full \$15 million of Referendum 27 money was expended between October 1976 and June 1977.

The contractor has progressed on the tunnel and siphon work faster than was originally scheduled. Detailed monthly progress reports are provided to the state.

Ground Water Problems

Many of the surface waters of our state are reaching a point of full appropriation or total utilization. In numerous areas, this leaves ground water development as the only viable means to meet our increasing water requirements and to provide for continued economic growth.

Initial ground water development in an area often gives the false impression that supplies are bountiful (e.g., basalt aquifers in Eastern Washington yield very large quantities of water through properly constructed wells) and this spurs development activity.

However, experience is showing that ground water systems are extremely complex. Although they hold vast quantities of water in storage, they are often very sensitive to artificial discharge through wells. Whenever the annual withdrawal exceeds the average annual recharge to the system, water levels decline. This can result in adverse effects on the flow of springs and streams as well as interfering with shallow domestic wells. In the case of deep wells, water levels could be drawn down to a point where it will no longer be economically feasible to pump the waters.

The above conditions are becoming a reality in the State of Washington. We do have areas with definite decline trends. We also have areas where it is suspected that spring and stream flows are being affected by ground water withdrawals.

Therefore, notwithstanding social and economic pressures, the department will continue to be conservative in the granting of new ground water permits in any area where we anticipate problems or lack sufficient data to make accurate decisions.

Safety of Dams Program

With impetus provided by the failure of Teton and Tekoa Falls Dams, President Carter provided \$15 million during federal FY 1978 to initiate the inspection of high hazard dams throughout the country. Using state and consultant assistance, a total of 33 dams in Washington were inspected under the direction of the Seattle District Corps of Engineers during the past year. It is anticipated that about 15 dams will be inspected in this program during 1979 and about 36 more during the following two-year period.

Corps of Engineers involvement in this program is expected to end on September 30, 1981, and continuation of the program will become entirely a state responsibility. In anticipation, the Corps has funded two state engineering positions; one through September 1980 and the other through September 1981. To benefit from the training received by these individuals and to assure continuity, the state should fund these positions after the above dates. Adequate continuing surveillance over more than 600 dams in the state will require a staff of professional engineers and geologists trained in hydraulics, hydrology, structural design, soil and rock mechanics, and seismology.

In the current budget, only one-half the time of one engineer has been identified for administration of the state's dam safety program. In addition to the federal dam inspection activity and other state level inspections associated with new construction, in recent years, plans and specifications for an average of about 10 dams have been reviewed and approved each year.

Federal Energy Regulatory Commission (FERC)

During the biennium, there have been 14 actions by state utilities pending before the FERC. Six relate to relicensing of hydroelectric projects for 50-year renewal. The department has filed for and has been granted intervenor status in two of these proceedings.

Five applications for preliminary permits have been filed by four utilities for which the department has filed for and been granted intervenor status in four cases.

Amendments to existing licenses were pending in three other cases, one of which has been completed and approved by the FERC. The department has not intervened in any of the proceedings in this category. It continues to review and advise one utility in evaluating alternative plans in an effort to minimize adverse environmental impacts.

Low-Head Hydroelectric Projects

With changes in the economics of hydroelectric power generation, many small projects previously considered infeasible (those with limited output based on water volume and/or head) are now receiving attention from industry, agriculture, and government. Small plants due for phase-out are being reconsidered; and potential ones, ruled out in the past are being reevaluated.

Within the past year the department has received proposals for two low-head hydropower generating facilities at existing structures along irrigation waterways within the Bureau of Reclamation's Columbia Basin Project in Eastern Washington. These will have power outputs of 4.42 and 15 MW, respectively. The installations, located along irrigation waterways, will function as "run of the river" plants with no provision for storage. No changes in the pattern of irrigation flows are planned.

The department received another proposal from the City of Spokane to add new hydroelectric generating facilities at its existing Upriver Dam. Installed capacity will be 15 MW.

The department is serving as the coordinating agency providing guidance and information on permits, approvals, regulations, dam safety, and other governmental matters.

In addition to the sites already proposed, feasibility studies are being conducted at seven other sites within the Columbia Basin Project. If these sites show promise, they will be proposed during the first half of 1979. Approximately 15 to 20 sites in the Columbia Basin Project may undergo feasibility studies in 1979.

Outside of the Columbia Basin Project in Eastern Washington, six sites are now under study. In all of Washington, probably 200 to 300 sites will be assessed for low-head hydro potential in the future.



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