FINAL
ENVIRONMENTAL IMPACT
STATEMENT
(INCLUDING PROGRAM OVERVIEW)

WESTERN WASHINGTON INSTREAM
RESOURCES PROTECTION PROGRAM

PROPONENT AND LEAD AGENCY
WASHINGTON STATE DEPARTMENT OF ECOLOGY

JUNE 1979

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INTRODUCTION

The Washington State Department of Ecology proposes to establish instream flows on the Western Washington streams listed in Appendix IV. An instream flow is a legal limit which will restrict future appropriation of the surface water resource. Existing water right certificates and permits would not be affected, nor would present operating licenses of existing hydroelectric plants, flood control, or navigation projects. Permits issued after adoption of an instream flow would be conditioned to the instream flow levels so that diversions could not be exercised if the flow in the stream decreased to a rate less than the instream flow.

Procedurally, each stream will be considered individually, using the method described in Appendix IV. A draft regulation and program document will be issued detailing all factors relevant to the instream resources of that stream. After public comment, a final program document and proposed regulation will be prepared. Instream flows will then be established by adoption of the regulation.

This EIS is meant to provide an overview of the Western Washington Instream Resources Protection Program. Stream-specific information is not included. This will be presented in the individual program documents. To avoid duplication, this EIS incorporates other documents by reference. The referenced documents (Appendix II) are to be considered part of this EIS.

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Licenses Required: Department of Ecology - Adoption of individual regulations for each stream.

Background Data: See Appendix II.

Cost to the Public: Individual copies of this EIS may be obtained free from the DOE while supplies last. Normal duplicating costs may be charged thereafter.

Date of Draft: April 27, 1979.

Comments were Due: June 1, 1979.

Final EIS Issued: June 21, 1979

Distribution: See Appendix III.

SUMMARY

The Department of Ecology proposes to adopt instream flows for streams within the 26 water resource inventory areas (WRIAs) listed in Table 2 of Appendix IV. This list includes all WRIAs west of the Cascade range except Island (WRIA 06), San Juan (WRIA 02), and Chehalis (WRIAs 22 and 23). A basin plan including instream flows has already been established for the Chehalis Basin. Instream flows are not considered necessary for the San Juan or Island WRIAs. The program does include the Wind-White Salmon Basin (WRIA 29) and the Klickitat Basin (WRIA 30) which lie along the Columbia River just east of the Cascade range. Appendix IV contains a map of all WRIAs in the state.

An instream flow is a flow rate below which future water right permits may not be allowed to deplete the stream. Existing water right permits and certificates cannot be affected. Instream flows (base flows) are legally defined as "flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values" (90.54.020 RCW). Instream flows may limit future water rights. Some future irrigation, domestic, municipal, and industrial demands may not be met. Water that might have been used for out-of-stream purposes will remain in the stream. DOE is responsible for balancing these competing uses for the greatest public benefit.

Alternatives include: (1) "no-action," which eventually could result in adverse impacts on instream resources, (2) higher or lower instream flows (alternate methodologies), (3) establishing "minimum flows," (4) producing complete basin plans, and (5) a moratorium on water rights pending further study.

The principal adverse impact will be a less firm water supply for out-of-stream uses. Indirectly, this may lead to increased demand for out-of-stream storage which may produce adverse environmental impacts. Although direct mitigation is not possible, it is possible to make some trade-offs by providing a higher level of protection for some streams while providing relatively less protection for others. Some streams have higher instream values than others.

PROPOSED ACTION

The department proposes to develop and adopt instream flows for Western Washington streams. These instream flows will be adopted as administrative rules in the Washington Administrative Code under the authority of Chapter 90.22 RCW (which provides for establishment of minimum flows) and Chapter 90.54 RCW (which provides for establishment of base flows). To avoid confusion, flows proposed and adopted under this program will be known generically as "instream flows." This program is known as the "Western Washington Instream Resources Protection Program." At this point, the reader should read Appendix IV, which contains a detailed description of the background, the proposal, and the methods.

The only comprehensive land use plans which directly apply are local shoreline master programs. The proposed flows are not expected to conflict with them. Indirectly, all local land use plans may be affected as limited water availability in some locations may redirect some growth.

EXISTING ENVIRONMENTAL CONDITIONS

The existing environmental conditions are detailed in the referenced documents.

In general, the western side of the state is wet, although local conditions vary from rain forests on the west side of the Olympic Peninsula to very dry conditions around Sequim in the rain shadow northeast of the Olympic Mountains.

It is difficult to think of water as a limited resource in a marine climate. River water tends to be abundant during most of the year, but during the normally dry months of July, August, and September, the combination of low flows and high demand for water can be critical. During these months, the snow has melted and rainfall is slight. The problem is exacerbated during particularly dry years. A major source of river water is inflow from ground water. In some cases glacial melt contributes as well. At the same time, the dry weather increases the need for stream water for municipal, industrial, irrigation, and domestic use. Water is needed in the streams for recreational use. Anadromous and resident fish as well as wildlife need a flow sufficient for their purposes. The desire to balance competing interests is the reason for establishing instream flows.

ENVIRONMENTAL EFFECTS OF THE PROPOSAL

Appendix I, the "list of elements of the environment," has been marked "N/A" for "not applicable" in those areas where the proposal will have no effect. These will not be discussed in this EIS. The following discussion concentrates on those areas in which the establishment of instream flows will have either direct or indirect effects.

1. Surface Water

(Quantity)

An instream flow establishes a flow rate that is to be protected from future out-of-stream diversions and provides constraints on operation of future instream water projects capable of regulating flows. During low-flow periods, when the instream flow level is being protected, more water may remain in the stream than would be the case without an instream flow. Since we cannot administratively control nature, instream flows will likely be violated under very low natural stream flow conditions.

(Quality)

Less obvious is the effect water volume has on water quality. Many of the streams in question receive discharges from such sources as sewage treatment plants and industries. Urban, agricultural, and silvicultural runoff containing waterborne pollutants also impacts streams. The less water the stream contains, the less dilution these pollutants receive and the poorer the resultant water quality. Poor water quality can adversely affect public health, fish and

wildlife, riparian vegetation, and aesthetics. The referenced "303(e)" documents and areawide water quality plans detail water quality issues.

2. Ground Water

Indirectly, the limitations associated with an instream flow may cause potential users to turn to ground water sources. This would cause additional pressure on the ground water supply. Eventually, limitations on ground water appropriations may be necessary to protect ground water resources. It may be necessary to place instream flow limitations on some ground water rights if the ground water and surface water are found to be in hydraulic continuity. Some sections of streams contribute to the ground water supply. On the Dungeness River, the area between the Highway 101 bridge and the Ward bridge is such a ground water contributing area.

3. Public Water Supplies

Adoption of an instream flow for a stream would mean that new public water demands would not be allowed to deplete that stream below the specified flow. In some cases, future water supply projects would not yield as much water as they would were such flows not established. This could affect the benefit/cost analysis for future projects. Greater use of ground water could result. There may be a greater need for water storage facilities to supply utilities during dry periods. It is possible that new municipal water supplies could be obtained by condemnation of other rights. "Highest and best use" would have to be shown.

4. Flora

Adoption of an instream flow will help protect both streambank and aquatic vegetation from drying out and sloughing. This will in turn protect the many species of fish and wildlife that depend on this vegetation for food, cover, nesting, etc. Instream flows also contribute to overall ecosystem maintenance, including freshwater recruitment to estuaries and flood plain wetlands.

5. Agricultural Crops

Future irrigation using water from streams would be subject to the flow provisions. Irrigation pumps would be shut off during dry periods when necessary to preserve the flows. This could both restrict irrigated farming and increase demand on ground water supplies. It may also increase the demand for water storage projects.

6. Fauna

Fish will be the animal most affected by the establishment of instream flows. Protecting fish and other aquatic organisms is one of the prime reasons for setting flows. It is important to leave enough water in the stream to support these organisms. Not only must they have enough water in which to swim, but also there must

be enough flow to yield the proper habitat conditions such as temperature, water quality, and flow rate for successful reproduction, rearing, and migration.

Debate begins when one tries to determine the actual amount of flow necessary to accomplish these purposes. The referenced USGS preferred stream discharges document makes one set of recommendations. The base flow analysis described in Appendix IV may result in another. There will be considerable debate among competing water users concerning some streams and tributaries. Since determination of the smallest amount of water necessary for fish is not an exact science, a strong argument can be made for setting the instream flow high enough to include a substantial margin for error. If the flows are set too low and water is appropriated to that level, the water cannot be easily retrieved.

In addition to anadromous and resident fish, there are also other aquatic organisms to be considered. These include the entire food chain from phytoplankton and other aquatic plants through intermediate organisms such as crustaceans and insect larvae to the larger game and food fish. Streambank vegetation must be protected so that the riparian community is maintained.

Once the flow is allowed to become so low that the aquatic community is damaged, the community may take many years to reestablish itself. In the case of anadromous fish, the destruction of one year-class can have long-term effects, even though succeeding spawning cycles may have favorable conditions.

Land animals are also affected by low flows or dry channels. If water itself or water-dependent habitat is destroyed, the animals dependent on that habitat, even if they need it for only short periods of time each year, will also be destroyed. Islands often provide protected nesting areas for animals. Low water may allow these islands to be invaded by predators. Low flows can also expose the entrance to the dens of animals such as beaver.

7. Land Use and Population

If water supply becomes limited, people may make different decisions on where to live, work, and farm than they would make were the water supply not limited. With guaranteed instream flows, it is likely that an area will support many user-days of fish and wildlife-oriented recreation, with a potential increase in nearby restaurants, boat-launch ramps, sporting goods stores, motels, etc.

8. Natural Resources

Streams are a natural resource which are renewable in the sense that, in time they will flow again. They are nonrenewable in the sense that under state water laws, once water is committed to a particular use, that is, once a water right is established, the water is not easily retrievable as long as it continues to be put to that use. It is possible to condemn a water right provided the

new use is in the public interest and just compensation is paid the owner of the water right. This is a difficult and costly procedure. The referenced DOE reports to the Legislature discuss this matter in detail.

9. Waterborne Transportation

Many of our waterways support commercial and recreational waterborne traffic. Enough water must be maintained in streams to float watercraft and operate locks.

10. Parks, Recreation, and Aesthetics

People use streams for many forms of recreational pursuits, including water sports, fishing, camping near, and viewing. If flows become too low, nearby public facilities such as parks may become underused and others, where flows are adequate, overused. Low or dry streams are not generally considered aesthetically pleasing. As is navigation, recreation and aesthetic values are recognized by state law as beneficial uses of water and are considered in determining instream flow levels.

11. Energy

Many Western Washington streams have existing or planned hydroelectric power generation facilities or provide cooling water for thermal power plants. In addition, water used for cooling is discharged back into the stream, generally carrying a heat load acquired in the cooling process. Hydroelectric projects permitted after adoption of instream flows must maintain a certain amount of water flowing in the stream at all times. This will limit operational flexibility, decrease peaking capabilities, and may affect the economic feasibility of such projects. Response 9 in Appendix VI contains more information on this subject.

12. Economics

Under the State Economic Policy Act, an economic analysis will be conducted for each regulation proposed. In general, fish, recreation, parks, and other benefits of higher flows can all be assigned values and compared to the values of energy, irrigation, public water supplies, and other demands on the resource. Since many of these are judgmental factors, an economic solution may not be decisive. Because of other factors, society may decide to choose a course of action which is not the most economically advantageous.

THE RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY - IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

The objective of this program is to provide a permanent guaranteed flow of water for the benefit of instream resources, while trying to balance the out-of-stream uses to which it may be put. The debate centers on what level of instream flow is appropriate. Some argue for high instream

flows so as to make any errors on the side of instream values. The counter argument holds that out-of-stream uses are so important to man's basic welfare that instream flows should be set as low as possible, if at all.

This debate will be waged in terms of specific flow levels for each stream considered for regulation.

MITIGATION

In general, the proposal is a mitigative measure in that it aims to prevent overallocation of water resources. Once overallocated, there is no way to replenish water in the stream, except through condemnation or relinquishment. Fish hatcheries can attempt to offset lost habitat, but they cannot replace it. Neither can lost recreational and aesthetic values be easily replaced.

Trade-offs are possible in resolving differences. It may be that some streams or stream-segments may be assigned a higher relative instream flow than others. The object would be to overprotect the resource where it is currently the best and protect it to a lesser degree where existing unmitigatable conditions have already rendered it less than desirable.

ALTERNATIVES

1. No Action

   If the department chooses to make no legal provision for the maintenance of instream flows, proposed water right permits would continue to be reviewed by the state departments of Fisheries and Game, as would be the case with all alternatives if they so choose. They would recommend disposition based on protecting fishery resources as provided by Chapter 75.20 RCW. About 250 streams have been closed to further appropriation and about 250 have had low flow limits established under this law. Even with this process, it is possible that some Western Washington streams could be appropriated to the point where there would be insufficient water for instream demands particularly during dry years. In a way, this is not really an alternative because the department has been directed by the State Legislature to make a legal provision for the maintenance of instream flows (90.22, 90.54 RCW).

2. Various Methods of Establishing Instream Flows

   The proposed action is to adopt instream flows using the method described in Appendix IV. Other methods of determining instream flow needs either have been developed, or could be developed, which would result in typically higher or lower flow values.

   Estimates of instream flow needs which tend to result in higher flows provide an extra margin of safety to protect instream values. The referenced USGS preferred streamflow document is an example of a method which characteristically yields higher flows than the proposed method. Advocates of higher flows might argue that using

such a method to determine instream flows would be a choice to error on the side of instream values and that later, as better information on biological requirements becomes available, lower flows could be set if appropriate. The disadvantage of this strategy would be to create greater limits on water-related, out-of-stream uses than would occur with a lower instream flow. There would be less certainty of future supplies for out-of-stream uses and planning would be hampered.

The Department of Ecology feels that higher instream flow determination methods are based on the somewhat narrow objectives of providing optimum spawning area and rearing conditions for anadromous fish. Determining and advocating such flows is the mission of the state fisheries agencies. While such methods may be the best means of determining optimum flows for fish, they are not necessarily the best overall approach for balancing all river uses, including nonfishery instream values. If the proposed base flow method is used, flows resulting from the base flow calculations will be forwarded to the state departments of Fisheries and Game for their comments. If they feel it appropriate, they will use one of the methods which may result in a higher recommended instream flow to generate a counter proposal. Differences will be resolved by discussions between the agencies.

Methods could be designed which favor out-of-stream uses by recommending relatively low instream flows. Since water cannot be easily retrieved once allocated, this would pose a threat to the instream values in streams with high demand for future out-of-stream uses. As noted under "effects," once instream communities are damaged, for instance by one very dry year combined with excessive diversion of water from the stream, considerable time may pass before they are reestablished, if they are reestablished at all.

3. Use the Minimum Flow Technique

This is discussed in Appendix IV. The so-called minimum flow technique was used only once, for the Cedar River basin. The method was patterned after the adjudications procedures used to resolve and determine water rights. At least for the Cedar River example, a great deal of time and effort was required to arrive at the minimum flow levels.

The base flow methodology was subsequently developed which provides a means of quantifying "first-cut" flows in relatively rapid fashion. These are used as a basis of discussion in determining proposed instream flows. This method has been used successfully in a number of river basins in the state.

Both Chapter 90.22 RCW (minimum flow) and Chapter 90.54 RCW (base flow) are silent on methods to be used in determining flows. The department now intends to adopt flows under the authority of both statutes and to avoid further confusion will call these flows "instream flows." The comment letters and responses contain additional discussion of minimum flows.

4. Do Complete Basin Plans

A complete basin plan involves not only determining and establishing instream flows but also estimating the water required for all instream and out-of-stream uses and reserving water or otherwise making provisions for those purposes. Full basin plans take much longer to complete than just base flows. The arguments against delay presented above apply.

Actually, determination of instream flows through the proposed action is the first step in developing complete basin plans. After establishing base flows for the 26 proposed basins, it is DOE's intention to go back and complete the process. However, it is the department's position that it is important for protecting instream resources that the base flows be established for all streams as soon as practicable.

5. Declare a Moratorium

Some commentors recommended declaring a moratorium on the issuance of all water rights pending more information. This could be done for selected basins or for the entirety of Western Washington or the state. The suggestion was made that such a moratorium would allow time to pursue an alternative flow determination technique or to do complete basin plans for each basin.

The obvious advantage of this would be to buy time. However, it is by no means certain that better information would be available.

The disadvantage is that no new uses would be allowed. Not only would this adversely affect those who would otherwise use the water during the moratorium, but also it would severely cripple planning for future use by users such as water suppliers and power interests.

UNAVOIDABLE ADVERSE IMPACTS

Adverse impacts of adopting instream flow levels are primarily in terms of a lower certainty of water available for out-of-stream uses. Less irrigation-related development may occur, due to less-certain water supplies. Likewise, future municipal and industrial uses, as well as domestic supplies will be less certain. If the instream flow is set too low, instream resources such as fish and other aquatic organisms as well as navigation, recreation, and aesthetic values will be degraded.

The objective of the program is to balance these potential adverse impacts for the greatest public good.

APPENDIX I

LIST OF ELEMENTS OF THE ENVIRONMENT

(1) Every EIS shall have appended to it a list of the elements of the environment in subsection (2), (3), and (4) of this section. The lead agency shall place "N/A" ("not applicable") next to an item when the proposal, including its indirect impacts, will not significantly affect the area (or subarea) of the environment in question. Items marked "N/A" need not be mentioned in the body of the EIS. Subsections (2) and (3) of this section correspond in subject matter to the questions contained in the environmental checklist used for threshold determination, and the questions in the checklist may be used to interpret this outline listing. (Provided, this list of elements need not be appended to an EIS being prepared to satisfy both the National Environmental Policy Act and SEPA.)

(2) ELEMENTS OF PHYSICAL ENVIRONMENT

Earth
N/A Geology
N/A Soils
N/A Topography
N/A Unique physical features
N/A Erosion
N/A Accretion/avulsion

Air
N/A Air quality
N/A Odor
N/A Climate

Water
Surface water movement
N/A Runoff/absorption
N/A Floods
Surface water quantity
Surface water quality
Ground water movement
Ground water quantity
Ground water quality
Public water supplies

Flora
Numbers or diversity of species
N/A Unique species
N/A Barriers and/or corridors
Agricultural crops

Fauna
Numbers or diversity of species
N/A Unique species
Barriers and/or corridors
Fish or wildlife habitat

N/A Noise

N/A Light or glare

Land Use

Natural Resources
Rate of use
Nonrenewable resouces

N/A Risk of explosion or hazardous emissions

(3) ELEMENTS OF HUMAN ENVIRONMENT

Population

N/A Housing

Transportation/circulation
N/A Vehicular transporation generated
N/A Parking facilities
Transportation systems
N/A Movement/circulation of people and goods
Waterborne, rail, and air traffic
N/A Traffic hazards

Public services
N/A Fire
N/A Police
N/A Schools
Parks and other recreational facilities
N/A Maintenance
N/A Other governmental services

Energy
N/A Amount required
Source/availability

Utilities
N/A Energy
N/A Communications
N/A Water
N/A Sewer
N/A Storm water
N/A Solid waste

Human health (including mental health)

Aesthetics

Recreation

N/A Archaeological/Historical

(4) The following additional element shall be covered in all EISs, either by being discussed or marked "N/A," but shall not be considered part of the environment for other purposes:

N/A Additional population characteristics
Distribution by age, sex, and ethnic characteristics of the residents in the geographical area affected by the environmental impacts by the proposal.

APPENDIX II

Documents Incorporated by Reference

The following documents are incorporated by reference and are to be considered part of this EIS:

Municipality of Metropolitan Seattle, 1978. Areawide Water Quality Plan. METRO, Seattle, WA, 111 pages.

Describes water quality issues and proposed solutions.

Pacific Northwest River Basins Commission, 1971. Puget Sound and Adjacent Waters. Puget Sound Task Force of the PNWRBC. Summary Report plus 15 separately bound appendices.

This very large report describes the Puget Sound region in detail and makes recommendations for future development. Appendices contain a comprehensive evaluation of all aspects of the natural and economic environment. This document is currently under reveiw for acceptability as a regionally adopted plan with which all water and related activities of federal agencies must be consistent.

Snohomish County Metropolitan Municipal Corporation, 1977. Areawide Water Quality Management Plan. SNOMET, Everett, WA, 126 pages.

Describes water quality issues and proposed solutions.

U.S. Army Corps of Engineers, 1975. Washington Environmental Atlas. U.S. Army Corps of Engineers Seattle District, Seattle, WA, 115 pages.

This large-format volume contains maps of the state depicting environmental resources.

United States Geological Survey, 1979. Preferred Stream Discharges for Salmon Spawning and Rearing in Washington, USGS open-file report 77-422. USGS Tacoma, WA, 51 pages.

This publication, prepared in cooperation with the State of Washington Department of Fisheries, presents recommended flows for many Western Washington streams. In general, the methodology used results in higher recommended flows than the base flow methodology used by the Department of Ecology.

Washington State Department of Ecology, 1975. Water Quality Assessment Report. DOE, Olympia, WA, 48 pages plus maps.

This two-volume set gives a written and a graphic overview of water quality in the state.

Washington State Department of Ecology, 1976. Final EIS for Water Resources Management Program, Chehalis River Basin. DOE, Olympia, WA, 29 pages plus appendices.

This EIS analyzes the impacts of implementing a basin plan for the Chehalis River Basin.

Washington State Department of Ecology, 1977. Washington Water Resources (Recommendations to the Legislature). DOE, Olympia, WA, 89 pages.

This third biennial report is an overview of issues and recommendations.

Washington State Department of Ecology, 1978. Water Quality Standards for the State of Washington. Chapter 173-201 Washington Administrative Code. State Code Reviser, Olympia, WA, 11 pages.

These standards contain both the specific standards themselves and the classification assigned to individual streams.

Washington State Department of Ecology (various years). 303(e) Water Quality Management Plan. DOE, Olympia, WA.

WRIA 01, Nooksack Basin (1975).
WRIA 02, San Juan Basin (1976).
WRIA 03 & 04, Skagit Basin (1975).
WRIA 05 & 07, Stillaguamish and Snohomish Basins (1975).
WRIA 06, Island County (1976).
WRIA 08 & 09, Cedar-Green Basins (1975).
WRIA 10 & 12, Puyallup-Chambers Basins (1975).
WRIA 11 & 13, Nisqually-Deschutes Basins (1975).
WRIA 14 & 16, West Sound Basin (1976).
WRIA 15, Kitsap Basin (1975).
WRIA 24, Willapa Basin (1975).
WRIA 27, 28, 29, 30, & 31, Lewis and Middle Columbia Basins (undated).

These documents contain water quality information and plans by stream segment.

Washington State Department of Ecology, 1979. Fourth Biennial Report to the Washington State Legislature, 1977 and 1978. DOE, Olympia, WA, 7 pages.

This is an update of the 1977 publication.

Washington State Department of Fisheries, 1975. A Catalog of Washington Streams and Salmon Utilization. Department of Fisheries, Olympia, WA, two volumes.

Contains an overview of anadromous fish and a detailed description of each stream segment. Volume I covers the Puget Sound Region and Volume II covers the Washington Coast.

These publications are all generally available. They and other background information may be inspected by contacting Tom Elwell of DOE at (206) 753-6891..

APPENDIX III

DISTRIBUTION LIST

State Agencies

Washington State Ecological Commission
Department of Natural Resources
Department of Social and Health Services
Department of Game
Department of Fisheries
Department of Agriculture
Department of Commerce and Economic Development
State Energy Office
Utilities and Transportation Commission
Planning and Community Affairs Agency
Governors Office of Financial Management
Parks and Recreation Commission
Interagency Committee for Outdoor Recreation
Department of Transportation
Oceanographic Commissoin
Energy Facility Site Evaluation Council
Washington Public Power Supply System
Oregon Department of Fish and Wildlife
Oregon Department of Water Resources
Oregon Water Policy Review Board
Idaho Department of Water Resources

Local Agencies

All Western Washington counties plus Skamania and Klickitat
Association of Washington Cities
Washington Association of Water Districts
Western Washington PUDs
Major City Water Utilities
Major City Energy Utilities
Washington State Association of Counties
Western Washington Indian Tribes
Yakima Indian Nation
Washington PUD Association
METRO
Puget Sound Council of Governments
County and Regional Planning Authorities
Douglas County PUD
Grant County PUD

Federal Agencies

U.S. Forest Service
Fish and Wildlife Service
Corps of Engineers
United States Geological Survey
Pacific Northwest River Basin Commission

Bonneville Power Administration
National Marine Fisheries Service
Federal Energy Regulatory Commission
U.S. Soil Conservation Service
Bureau of Indian Affairs
Environmental Protection Agency
Columbia River Water Management Group
Heritage Conservation and Recreation Service

Public Groups and Individuals

Audubon Society
Washington Environmental Council
Washington State Farm Bureau
Pacific Northwest Waterways Association
Columbia River Intertribal Fish Commission
Pacific Power and Light
Puget Sound Power and Light
Public Power Council
Mr. John Mikesell
Mr. Gil McCoy
League of Women Voters
Mr. Harris Teo
National Wildlife Federation
Columbia River Basin Fisheries Alliance
Washington State Sportsmen's Council
Steelhead Trout Club of Washington
Friends of the Earth
Ms. Nancy N. Kroening
Mr. Ed Chaney
Purse Seine Vessel Owners Assn.
Washington Kayak Club
Washington Fly Fishing Club
National Federation of Fishermen
Washington Charter Boat Assn.
U.W. College of Fisheries
Ms. Faye Olgivie

APPENDIX IV

Program Overview

State of Washington
Department of Ecology

STATE WATER PROGRAM

WASHINGTON STATE WATER PROGRAM

WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM:
AN OVERVIEW

Prepared by

Water Resources Policy Development Section
Washington State Department of Ecology

June 1979

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INTRODUCTION

This document is intended to provide an overview of a program to establish specific levels of instream flow protection for streams in Western Washington. This effort is pursuant to the Department of Ecology's September 1978 commitment to the departments of Fisheries and Game to establish instream flow levels for Western Washington stream systems. The program will involve the development and adoption of instream flow regulations under Chapter 90.54 RCW, Chapter 90.22 RCW, and Chapter 173-500 WAC for the 26 Water Resources Inventory Areas (WRIA) shown in Figure 1.* This activity is scheduled for completion by January, 1982.

OBJECTIVE

The Western Washington Instream Resources Protection Program is designed as a programmatic effort to determine and adopt as administrative rules instream resources protection measures for Western Washington streams. The central objective of the program is to provide adequate flows instream to protect and preserve the instream values defined in Chapter 90.54 RCW (Water Resources Act of 1971) and Chapter 90.22 RCW (Minimum Water-Flows and Levels). These include fish, birds, game, and other wildlife, navigation, water quality, recreation, scenic, aesthetic, and other environmental values.

HISTORICAL BACKGROUND

Low Flow Restrictions and Closures

The need to maintain flows in Washington's streams in sufficient quantity to support game and food fish populations was originally set forth as state policy in 1949 under Chapter 75.20 RCW (see Appendix A). Section 75.20.050 RCW provides that the Supervisor of Hydraulics (now the Director of the Department of Ecology) shall notify the directors of the departments of Fisheries and Game of applications for permits to divert surface waters and that he may refuse to issue such permits if, in the opinion of the directors of Fisheries or Game, the diversions might result in reducing the streamflow below that necessary to adequately support game and food fish.

Since the enactment of this law, the involved agencies have communicated their interests in water right applications primarily through biweekly or monthly meetings in which the specific impacts of proposed diversions on the fish resources are thoroughly discussed. As a result of such discussions, low-flow, or other restrictive permit provisions may be recommended by the departments of Fisheries and Game to accommodate their interests, and these are normally accepted by the Department of

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* In Western Washington, instream flows (i.e., base flows) have been established for the Lower and Upper Chehalis (WRIAs 22 and 23) as part of the Chehalis Basin Management Program (Chapter 173-522 WAC); instream flow regulations are not considered necessary at this time for San Juan (WRIA 02) or Island (WRIA 06) because these WRIAs lack extensive surface water resources.

Ecology and applied to the respective water right permits and subsequent water rights for that source. Many such low-flow provisions have been applied to individual rights over time, but because of changing personnel and a lack of data, in many cases, there is little uniformity among the low-flow values selected for different streams.

In those cases where it was determined that sufficient water beyond that required for fish would not be available on a reasonable frequency, streams could be closed to further consumptive appropriation. Statewide, there are approximately 250 streams now protected with low-flow provisions and 250 streams closed to future appropriations.

Minimum Flows

Recognizing the inadequacy of then exisitng flow preservation activities, the Legislature enacted a new law in 1969 to provide a more definitive and systematic approach (see Appendix B). Under this law, codified as Chapter 90.22 RCW and entitled "Minimum Water Flows and Levels," the Department of Ecology, when requested by Fisheries or Game, is directed to establish minimum streamflows and lake levels by administrative rule for purposes of protecting fish, game, birds, or other wildlife resources, or recreational or aesthetic values, or to preserve water quality. The Department of Ecology may also initiate the process. Under this law, hearing procedures were established but no criteria was defined for quantifying flows which should be retained in each stream to protect instream resources and environmental values.

Only one minimum flow regulation (Chapter 173-30 WAC for the Cedar River) has been promulgated under Chapter 90.22 RCW. Requests for establishment of minimum flows have been made by the departments of Fisheries and/or Game on 24 streams in Western Washington. These streams are listed in Table 1. (Requests have been made for minimum flows for two streams in Eastern Washington.)

Base Flows

In the Water Resources Act of 1971, the Legislature took additional action to affirm the state's interest in preserving instream values through a declaration of fundamentals for utilization and management of state waters (see Appendix C). RCW 90.54.020(3)(a) provides that, "Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental values and navigational values."

In a hydrologic sense, the term base flow normally refers to flow sustained in a stream during extended periods without precipitation or, that component of streamflow primarily derived from ground water effluent. In perennial streams, ground water usually contributes to streamflow to some degree throughout the year; thus it is reasonable to view base flow as a year-round phenomenon. Under natural conditions and at any given date of the year, these are flows that can be expected in the stream a relatively high percentage of the time. The department's base flow methodology is based generally on this concept.

TABLE 1

REQUESTS FOR MINIMUM FLOWS UNDER CHAPTER 90.22 RCW
FOR WESTERN WASHINGTON STREAMS

STREAM NAME	WRIA	DATE OF REQUEST	REQUESTING AGENCY	PRESENT STATUS
Cedar River	08	8-5-69	Fisheries	Minimum Flow
Dewatto River	15	8-18-70	Fisheries	
Wynoochee River	22	11-10-71	Fisheries	Base Flow
		7-8-74	Game	Partial Closure
Humptulips River	22	11-17-71	Fisheries	Base Flow
		1-10-73	Game	
Dosewallips River	16	10-31-72	Fisheries	
		1-10-73	Game	
Stillaguamish River	05	10-31-72	Fisheries	
		7-8-74	Game	
		1-22-75	Fisheries	
Green River	09	11-10-72	Game	Closed
Bear Creek	08	1-10-73	Game	Low Flow
S. Prairie Creek	10	1-10-73	Game	Low FLow
		1-15-75	Fisheries	
Deschutes River	13	1-10-73	Game	
Elk Creek	23	1-10-73	Game	Base Flow
N. Nemah River	24	1-10-73	Game	
Bear Br. Creek	24	1-10-73	Game	
Pilchuck Creek	05	10-31-73	Fisheries	Closed
Salmon Creek	28	10-31-73	Fisheries	
Skookumchuck River	23	5-16-74	Fisheries (not official)	Base Flow Partial Closure
Elochoman River	25	7-8-74	Game	Low Flow
Nooksack River	01	7-8-74	Game	Partial Low Flow
Kalama River	27	7-8-74	Game	Low Flow
Toutle River	26	7-8-74	Game	
Issaquah Creek	08	7-8-74	Game	Closed
Snoqualmie	07	1-22-75	Fisheries[1/]	
Spring Creek	30	10-9-75	Game	
Snohomish	07	9-8-71	Fisheries[1/]	

1/ King County Water District 68, by letter dated September 8, 1971, requested the Department of Ecology to establish minimum flows for the Snoqualmie and Snohomish river (WRIA 07).

Source: 9/28/78 memo from Louthain to Wallace; WRIA and status added.

PROCESS

The base flow methodology outlined in Appendix D provides a means of determining instream flows in a timely manner. The method described in Appendix D will be used to determine a "first-cut" flow regime. In the process, valuable hydrologic information is generated that can be used to associate an expected frequency of occurrence or nonoccurrence of proposed instream flow levels. The base flow methodology is characterized generally as a hydrologic approach to the instream resource protection problem.

At the same time as the "first-cut" base flows are being determined, the state departments of Fisheries and Game will be using habitat-based methods to determine their flow recommendations. An important spin-off of this work is information indicating the incremental effects of alternative flow levels on fish production determinents including spawnable area and rearing area available for fish.

When all this information is prepared, representatives of the departments of Ecology, Fisheries, and Game will meet and if possible negotiate a workable, mutually supportable instream flow regime. Whether the flows are fully agreed to or not, the department will propose flows for adoption as administrative rules under the Washington Administrative Code. A basin report will be prepared regarding the proposed flows and the programmatic EIS will be supplemented as necessary.

This program will be developed using a basin-by-basin approach. The basin documents will include, along with other information, an identification of streams which have been closed to further additional appropriation and those for which low flows have been establsihed under Section 75.20.050 RCW. These documents will be distributed, and public hearings will be held in counties in which the affected waters occur. Oral and written comments will be considered in the final draft of the basin documents and the proposed adminsitrative rules. An adoption proceeding will be held at department headquarters to hear final comments and to consider adoption of the proposed rules. Unless specifically indicated otherwise, the proposed flows will be adopted under both Chapter 90.22 RCW (minimum flow) and Chapter 90.54 RCW (base flow), and will be known generically in this program as instream flows.

Special Considerations for Proposed Storage Projects - Critical Instream Flows

Instream flows developed as described above could have serious adverse impacts on beneficial storage projects developed in the future for hydroelectric power generation and/or municipal and industrial water supply projects. For streams where such projects are proposed the department may propose special instream flow management procedures. This would include the provision for a two-tiered flow regime incorporating normal instream flows (arrived at as described above) which would provide guidance for instream flow releases during "normal" or better runoff years. For years of short water availability, the project operator could petition the department to declare a critical water condition and ask for relief from the requirements of the normal instream flow provisions.

The department will consider the petition and based on available runoff data either deny the request or grant the project operator permission to fall back to an instream flow level no lower than a specified critical instream flow.

Periodic Review and Future Planning

Each basin regulation will include a provision requiring the department to review the administrative rules within five years of adoption and henceforth within every five years. In its review, the department will consider additional information developed in the interim and may amend the rules as appropriate.

The establishment of instream flows constitutes an allocation of part of the water resources of a basin. These flows will serve as a foundation for future planning activities and development of complete basin management programs.

TASKS

The Western Washington Instream Resource Protection Program is conceived as an overlapping program to establish instream flows in several basins simultaneously. Two basin planners will be at work on several basins at a time. Technical support will be provided by hydraulic engineers. As one basin nears completion, activities on the next priority basin will commence so that no time is lost in progressing through the priority list of basins.

General and specific tasks for each basin include:

1. Generate basin information profiles for each WRIA, using exisitng sources.

    A. Develop resource base map for WRIA.

    B. Collect available water resources, water utilization, instream sources, and water quality information.

    C. Review exisitng surface water source limitations for each basin, including documentary basis.

2. Perform technical and quantitative analysis fundamental to establishing draft instream flow levels.

    A. Determine appropriate number of hydrologic control points; locate on base map and identify in tabular form.

    B. Have management reaches rated by representatives of instream interests according to the value of instream resources.

    C. Detail hydrologic requirements (instream flows) for instream resource protection.

3. Refine instream flow figures by incorporating instream flow needs of fisherey interests determined by alternative methods.

   A. Present draft instream flow levels to the departments of Game and Fisheries and other instream interests. Compare flow levels with Fish and Game recommended levels determined by other methods.

   B. Negotiate with Fisheries and Game to revise draft flows as appropriate.

4. Produce draft basin document and instream flow regulation, and environmental impact supplement if required.

   A. Draft basin document from primary and secondary sources.

   B. Draft proposed administrative rules for instream resources protection measures.

   C. Determine if a supplement to the program EIS is necessary. If so, draft EIS supplement.

5. Obtain public and agency comments.

   A. Develop and maintain basin mailing list.

   B. Distribute draft basin document, regulation, and supplement to the EIS (if required) and solicit comments.

   C. Forward document and regulation and supplement to the EIS (if required) to the State Ecological Commission for review.

   D. Prepare presentation and materials for public meetings/hearings.

   E. Schedule and hold public meetings/hearings in affected counties and record comments.

6. Finalize and adopt instream flow regulation.

   A. Revise draft documents including proposed regulation to incorporate written and oral comments received during the comment period and distribute.

   B. Schedule and hold adoption proceeding for the regulation.

   C. Incorporate any changes prescribed by the Director of Ecology to finalize basin documents and regulation.

   D. Forward adopted regulation to the State Code Revisor.

COORDINATION

The Western Washington Instream Resources Protection Program proposal has developed out of a combined effort with the State of Washington departments of Fisheries and Game. Letters of intent from the directors of both departments have confirmed the high priority status of the program among state agencies. Since the program will protect resource values at the local level and provide developmental limitations, cities and counties in Western Washington are expected to be highly visible in the regulation process. Other agencies involved with affected water use practices, such as power and municipal supply, will participate throughout the program.

Because the Department of Ecology is the administrative authority charged with developing and adopting instream flow protection measures, it will be expected to bear the greatest share of responsibilities incurred through this program. After instream flows are established for a basin, administrative procedures will be developed for processing water permit requests. Water users will be required to comply with the instream flow restrictions adopted.

Proposed administrative rules and associated documents for the Western Washington Instream Resources Protection Program will be reviewed by the Washington State Ecological Commission. Authority of the Director of the Department of Ecology to adopt regulations for the basins is conditioned upon the advice and guidance of the State Ecological Commission.

BASIN SEQUENCE

The priority sequence in which instream flow regulations will be developed for the 26 WRIAs is presented in Table 2. The sequence of basins is shown graphically in Figure 2. The basin sequence was developed on the basis of the relative importance of each WRIA to fish and other instream resources, relative development pressures in each WRIA, and the current status of instream flow analysis in each WRIA. The agencies involved, however, are in agreement that due to the compressed time frame for completion of the program, that priorities among WRIAs are not really significant. Generally, it is the department's intent to proceed with the program in Puget Sound WRIA's, then move to coastal drainages and finally Columbia River drainages.

TECHNICAL PROCEDURES

The methodology to be used to determine the instream flows will be the same as that used in the base flow determination related to the basin management programs adopted to date, e.g., Chapter 173-522 WAC, the Chehalis Basin Management Program. These procedures are described in Appendix D.

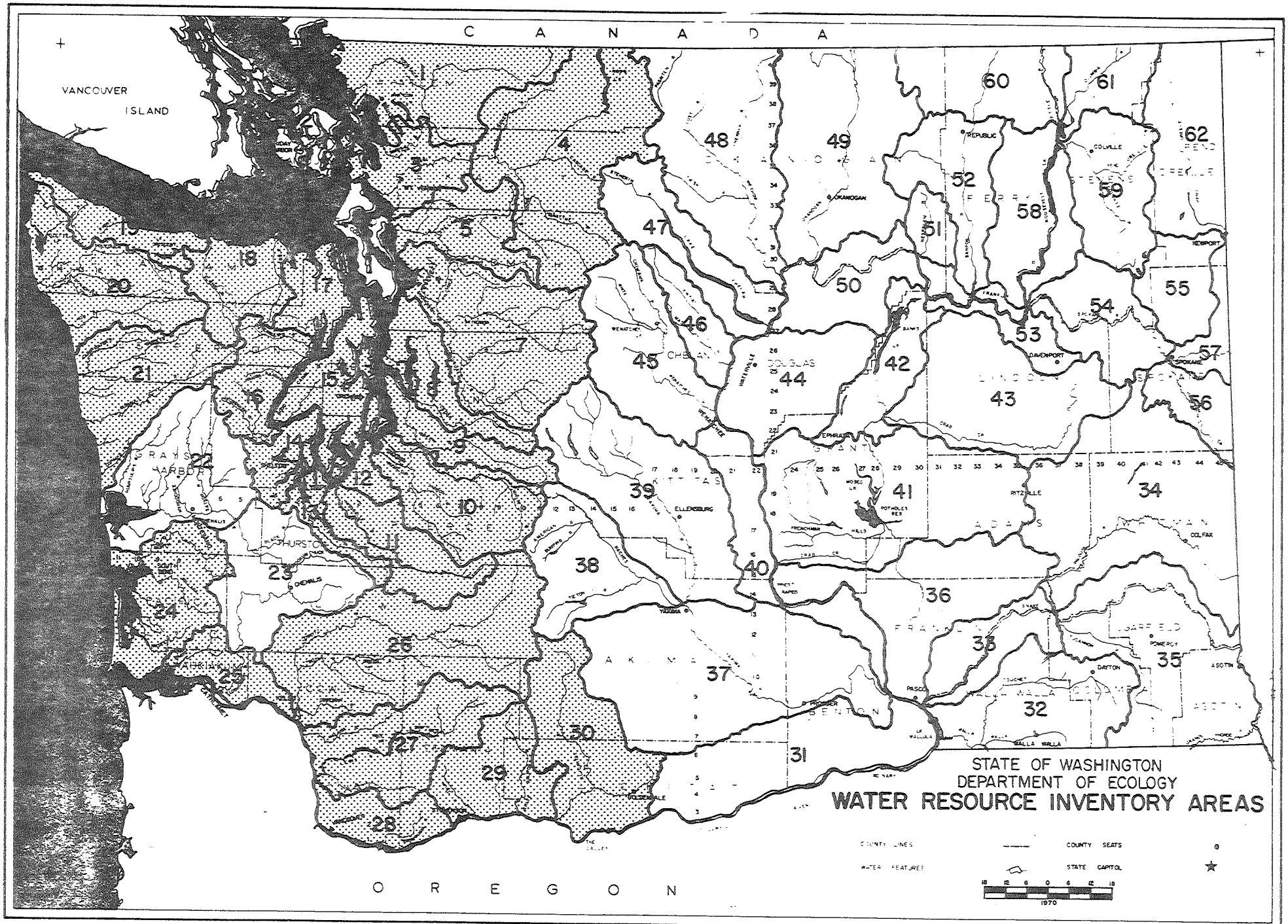


Figure 1 STUDY AREA - WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM

Figure 2
SCHEDULE OF BASINS - WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM

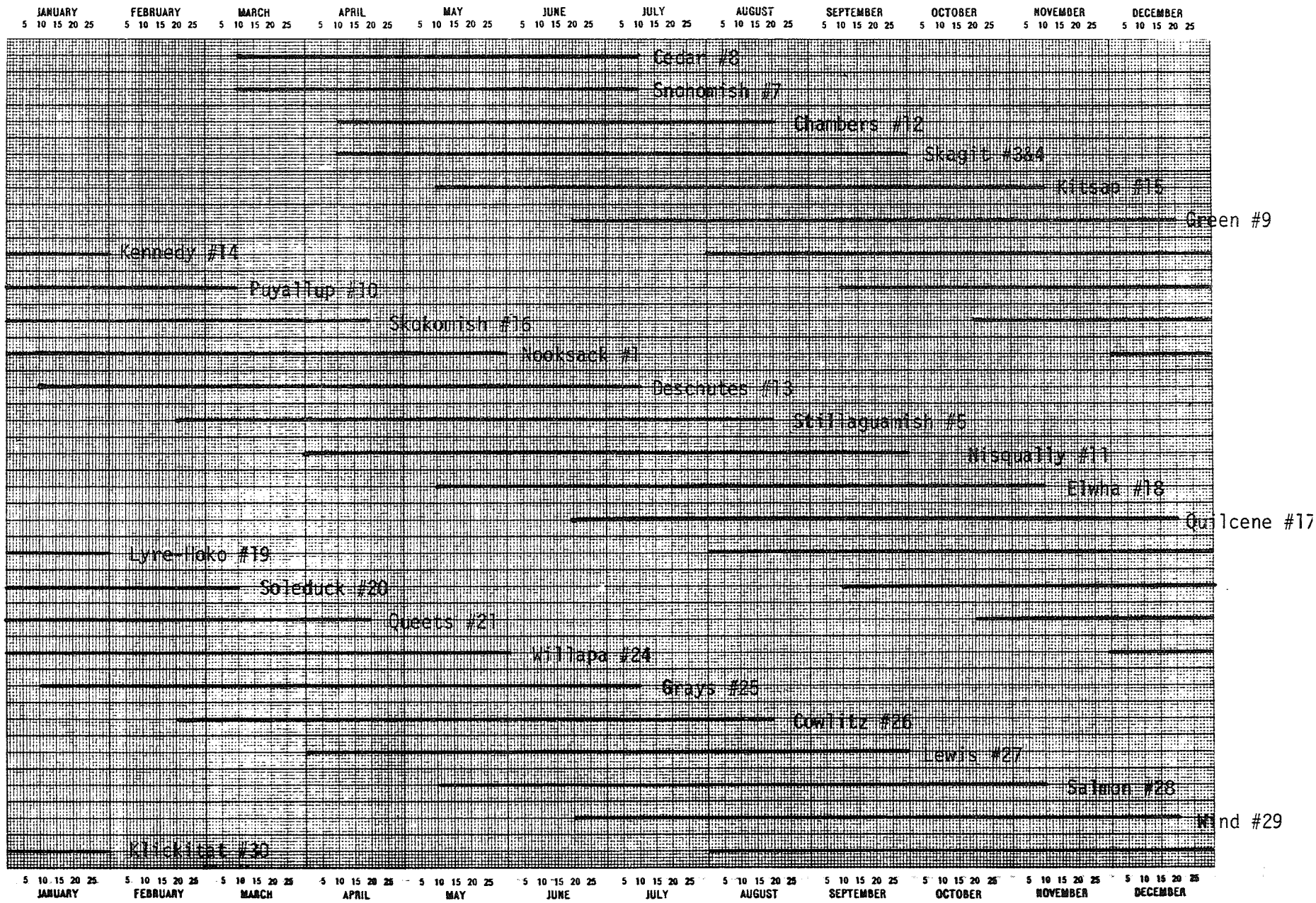


TABLE 2

SEQUENCE OF BASINS

Name	WRIA	Target Completion Date
First Priority Basins		
Snohomish	7	7-10-79
Cedar-Sammamish	8	7-10-79
Chambers-Clover	12	8-20-79
Skagit	3 and 4	9-30-79
Kitsap	15	11-10-79
Duwamish-Green	9	12-20-79
Kennedy-Goldborough	14	1-30-80
Puyallup	10	3-10-80
Skokomish	16	4-20-80
Nooksack	1	5-30-80
Deschutes	13	7-10-80
Stillaguamish	5	8-20-80
Nisqually	11	9-30-80
Elwha-Dungeness	18	11-10-80
Quilcene-Snow	17	12-20-80
Second Priority Basins		
Lyre-Hoko	19	1-30-81
Soleduck-Hoh	20	3-10-81
Queets-Quinault	21	4-20-81
Willapa	24	5-30-81
Grays-Elochoman	25	7-10-81
Cowlitz	26	8-20-81
Lewis	27	9-30-81
Salmon-Washougal	28	11-10-81
Klickitat	30	1-30-82

The proposed program does not provide for a determination of existing rights and water use, water availability for further appropriation, or closure of additional streams to further additional consumptive appropriation as would be the case in a complete basin management program. It is the department's intent that the proposed instream flow regulations will constitute partial basin management programs that will be amended in the future to expand their scope to include these other important factors. By establishing the instream flow levels at this time, the possibility of overallocating water resources in these stream systems can be diminished. The proposed program will provide due process as to existing closures and low flow limits, and these actions will be documented and confirmed.

WATER USE REGULATION

As discussed in Appendix D, the foundation for instream flow management is an adequate flow measurement network for controlling out-of-stream water diversions. In the conduct of field activities to maintain instream flow levels, certain key control stations will be designated as regional streamflow indicators. These stations could be incorporated as part of the Columbia River Operational Hydro-Meteorological Management System (CROHMS), an integrated system operated by federal agencies for the rapid or real time monitoring of hydrologic and meteorologic data. The key control station network will be used to monitor general streamflow conditions and will serve to identify where flows are approaching instream flow levels, thus signaling when water use regulation may be necessayr. During periods of critical low stream flow, all control stations will be monitored directly in the field as conditions require.

An administrative review procedure is proposed for small streams whose contribution to flow at key control stations may be masked by the magnitude of flow at the control station. Small streams can be very significant spawning habitat for salmon and steelhead. When a specified threshold quantity of water is requested for diversion, instream flow calculations may be made, if necessary, for such a small tributary stream. If conditions for fish or other instream values are found to be critical, a permanent monitoring station can be established, and permits may be conditioned to new instream flows for the tributary stream.

The implementation of any type of flow preservation program greatly increases the complexity of water use regulation activities. With the addition of instream flow requirements, water use regulation will be as follows:

1. Water rights established after the effective date of a flow regulation -

    a. For management units with downstream control, when streamflow recedes to established instream flow levels, the upstream diversions under such rights are regulated in order of priority until there is sufficient flow at the control station to meet or exceed the required instream flow.

b. For management units with upstream control, to assure the maintenance of established instream flow levels below the station, a specific downstream water diversion within the management unit must be regulated when the flow at the gage is equal to the established instream flow, plus the amount of the water right diversion in question added to the amount of other downstream diversions in the management unit that have water right priority dates between the time when the instream flow was established and the priority date of the specified diversion.

2. Water rights established before the effective date of an instream flow regulation that are subject to low-flow restrictions -

   a. When the low-flow restrictions are equal to or less than instream flow requirements, diversion shall be controlled in priority sequence according to individual conditions of each low-flow proviso.

   b. When the low-flow restrictions exceed instream flow requirements, no action shall be taken to regulate such use until all diversions under rights subject to instream flows have been curtailed.

3. Water rights established before the effective date of an instream flow regulation that are not subject to low-flow restrictions - Such rights are regulated in priority sequence only when there is insufficient water available to accommodate all rights in this category and only after diversion has been curtailed under all other rights that are subject to flow restrictions.

APPENDIX A

Chapter 75.20.050 RCW

Water flow to be maintained - May refuse permit to divert water. It is hereby declared to be the policy of this state that a flow of water sufficient to support game fish and food fish populations be maintained at all times in the streams of this state.

The supervisor of hydraulics shall give the director of fisheries and the director of game notice of each application for a permit to divert water, or other hydraulic permit of any nature, and the director of fisheries and director of game shall have thirty days after receiving such notice in which to state their objections to the application, and the permit shall not be issued until such thirty days period has elapsed.

The supervisor of hydraulics may refuse to issue any permit to divert water, or any hydraulic permit of any nature, if, in the opinion of the director of fisheries or director of game, such permit might result in lowering the flow of water in any stream below the flow necessary to adequately support food fish and game fish populations in the stream.

The provisions of this section shall in no way affect existing water rights.

APPENDIX B

CHAPTER 90.22 RCW
MINIMUM WATER FLOWS AND LEVELS

SECTIONS

90.22.010 ESTABLISHMENT OF MINIMUM WATER FLOWS OR LEVELS--AUTHORIZED--PURPOSES. The department of water resources may establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values of said public waters whenever it appears to be in the public interest to establish the same. In addition, the department of water resources shall, when requested by the department of fisheries or the game commission to protect fish, game or other wildlife resources under the jurisdiction of the requesting state agency, or by the water pollution control commission to preserve water quality, establish such minimum flows or levels as are required to protect the resource or preserve the water quality described in the request. Any request submitted by the department of fisheries, game commission or water pollution control commission shall include a statement setting forth the need for establishing a minimum flow or level. This section shall not apply to waters artificially stored in reservoirs, provided that in the granting of storage permits by the department of water resources in the future, full recognition shall be given to downstream minimum flows, if any there may be, which have theretofore been established hereunder. [1969 ex.s. c 284 § 3.]

Severability--1969 ex.s. c 284: See note following RCW 90.48.290.

90.22.020 ESTABLISHMENT OF MINIMUM WATER FLOWS OR LEVELS--HEARINGS--NOTICE--REGULATIONS. Flows or levels authorized for establishment under RCW 90.22.010, or subsequent modification thereof by the department shall be provided for through the adoption of regulations. Prior to the establishment or modification of a water flow or level for any stream or lake or other public water, the department shall hold a public hearing in the county in which the stream, lake or other public water is located. If the same is located in more than one county the department shall determine the location or locations therein and number of hearings to be conducted. Notice of hearings shall be given by publication in a newspaper of general circulation in the county or counties in which the stream, lake or other public waters is located, once a week for three consecutive weeks prior to the hearing. Said notice shall include the following:

(1) The name of the stream, lake or other water source under consideration.

(2) The proposed levels or flows to be established, if the department has made such a determination prior to the hearing.

(3) The place and time of the hearing.

(4) A statement that any person, including any private citizen or public official may present his views either orally or in writing.

Notice of the hearing shall also be served upon the administrators of the departments of fisheries, health and natural resources, the game commission, the state highway commission and the water pollution control commission. [1969 ex.s. c 284 § 4.]

90.22.030 EXISTING WATER AND STORAGE RIGHTS--RIGHT TO DIVERT OR STORE WATER. The establishment of levels and flows pursuant to RCW 90.22.010 shall in no way affect existing water and storage rights and the use thereof, including but not limited to rights relating to the operation of any hydroelectric or water storage reservoir or related facility. No right to divert or store public waters shall be granted by the department of water resources which shall conflict with regulations adopted pursuant to RCW 90.22.010 and 90.22.020 establishing flows or levels. All regulations establishing flows or levels shall be filed in a "Minimum Water Level and Flow Register" of the department of water resources. [1969 ex.s. c 284 § 5.]

90.22.040 STOCKWATERING REQUIREMENTS. It shall be the policy of the state, and the department of water resources shall be so guided in the implementation of RCW 90.22.010 and 90.22.020, to retain sufficient minimum flows or levels in streams, lakes or other public waters to provide adequate waters in such water sources to satisfy stockwatering requirements for stock on riparian grazing lands which drink directly therefrom where such retention shall not result in an unconscionable waste of public waters. The policy hereof shall not apply to stockwatering relating to feed lots and other activities which are not related to normal stockgrazing land uses. [1969 ex.s. c 284 § 6.]

APPENDIX C

CHAPTER 90.54 RCW
WATER RESOURCES ACT OF 1971

SECTIONS

90.54.010 PURPOSE. The legislature finds that proper utilization of the water resources of this state is necessary to the promotion of public health and the economic well-being of the state and the preservation of its natural resources and aesthetic values. The legislature further finds that the availability of waters of the state is being evaluated by interests who desire to remove portions thereof from the state in a manner inconsistent with the public interest of people of the state. It is the purpose of this chapter to set forth fundamentals of water resource policy for the state to insure that waters of the state are protected and fully utilized for the greatest benefit to the people of the state of Washington and, in relation thereto, to provide direction to the department of ecology and other state agencies and officials, in carrying out water and related resources programs. [1971 ex.s. c 225 § 1.]

90.54.020 GENERAL DECLARATION OF FUNDAMENTALS FOR UTILIZATION AND MANAGEMENT OF WATERS OF THE STATE. Utilization and management of the waters of the state shall be guided by the following general declaration of fundamentals:

(1) Uses of water for domestic, stock watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, mining, fish and wildlife maintenance and enhancement, recreational, and thermal power production purposes, and preservation of

90.54.030 DEPARTMENT TO BE INFORMED AS TO ALL PHASES OF WATER AND RELATED RESOURCES--DUTIES IN SO ACCOMPLISHING--WATER RESOURCES ARCHIVE. For the purpose of insuring that the department is fully advised in relation to the performance of the water resources program provided in RCW 90.54.040, the department is directed to become informed with regard to all phases of water and related resources of the state. To accomplish this objective the department shall:

(1) Collect, organize and catalog existing information and studies available to it from all sources, both public and private, pertaining to water and related resources of the state;

(2) Develop such additional data and studies pertaining to water and related resources as are necessary to accomplish the objectives of this chapter;

(3) Determine existing and foreseeable uses of, and needs for, such waters and related resources;

(4) Develop alternate courses of action to solve existing and foreseeable problems of water and related resources and include therein, to the extent feasible, the economic and social consequences of each such course, and the impact on the natural environment.

All the foregoing shall be included in a "water resources archive" established and maintained by the department. The department shall develop a system of cataloging, storing and retrieving the information and studies of the archive so that they may be made readily available to and effectively used not only by the department but by the public generally. [1971 ex.s. c 225 § 3.]

90.54.040 DEPARTMENT TO DEVELOP, IMPLEMENT, STATE WATER RESOURCES PROGRAM--MODIFYING EXISTING AND ADOPTING NEW REGULATIONS AND STATUTES. (1) The department, through the adoption of appropriate rules, is directed, as a matter of high priority to insure that the waters of the state are utilized for the best interests of the people, to develop and implement in accordance with the policies of this chapter a comprehensive state water resources program which will provide a process for making decisions on future water resource allocation and use. The department may develop the program in segments so that immediate attention may be given to waters of a given physioeconomic region of the state or to specific critical problems of water allocation and use.

(2) In relation to the management and regulatory programs relating to water resources vested in it, the department is further directed to modify existing regulations and adopt new regulations, when needed and possible, to insure that existing regulatory programs are in accord with the water resource policy of this chapter and the program established in subsection (1) of this section.

(3) The department is directed to review all statutes relating to water resources which it is responsible for implementing. When any of the same appear to the department to be ambiguous, unclear, unworkable, unnecessary, or otherwise deficient, it shall make recommendations to the legislature including appropriate proposals for statutory modifications or additions. Whenever it appears that the policies of any such statutes are in conflict with the policies of this chapter, and the department is unable to fully perform as provided in subsection (2) of this section, the department is directed to submit statutory modifications to the legislature which, if

environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state, are declared to be beneficial.

(2) Allocation of waters among potential uses and users shall be based generally on the securing of the maximum net benefits for the people of the state. Maximum net benefits shall constitute total benefits less costs including opportunities lost.

(3) The quality of the natural environment shall be protected and, where possible, enhanced as follows:

(a) Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served.

(b) Waters of the state shall be of high quality. Regardless of the quality of the waters of the state, all wastes and other materials and substances proposed for entry into said waters shall be provided with all known, available, and reasonable methods of treatment prior to entry. Notwithstanding that standards of quality established for the waters of the state would not be violated, wastes and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof, except in those situations where it is clear that overriding considerations of the public interest will be served.

(4) Adequate and safe supplies of water shall be preserved and protected in potable condition to satisfy human domestic needs.

(5) Multiple-purpose impoundment structures are to be preferred over single-purpose structures. Due regard shall be given to means and methods for protection of fishery resources in the planning for and construction of water impoundment structures and other artificial obstructions.

(6) Federal, state, and local governments, individuals, corporations, groups and other entities shall be encouraged to carry out practices of conservation as they relate to the use of the waters of the state.

(7) Development of water supply systems, whether publicly or privately owned, which provide water to the public generally in regional areas within the state shall be encouraged. Development of water supply systems for multiple domestic use which will not serve the public generally shall be discouraged where water supplies are available from water systems serving the public.

(8) Full recognition shall be given in the administration of water allocation and use programs to the natural interrelationships of surface and ground waters.

(9) Expressions of the public interest will be sought at all stages of water planning and allocation discussions.

(10) Water management programs, including but not limited to, water quality, flood control, drainage, erosion control and storm runoff are deemed to be in the public interest. [1971 ex.s. c 225 § 2.]

enacted, would allow the department to carry out such statutes in harmony with this chapter. [1971 ex.s. c 225 § 4.]

90.54.050 SETTING ASIDE OR WITHDRAWING WATERS BY ADOPTION OF RULES--PUBLIC HEARING, NOTICE--APPEAL. In conjunction with the programs provided for in RCW 90.54.040(1), whenever it appears necessary to the director in carrying out the policy of this chapter, the department may by rule adopted pursuant to chapter 34.04 RCW:

(1) Reserve and set aside waters for beneficial utilization in the future, and

(2) When sufficient information and data are lacking to allow for the making of sound decisions, withdraw various waters of the state from additional appropriations until such data and information are available.

Prior to the adoption of a rule under this section, the department shall conduct a public hearing in each county in which waters relating to the rule are located. The public hearing shall be preceded by a notice placed in a newspaper of general circulation published within each of said counties. Rules adopted hereunder shall be subject to review in accordance with the provisions of RCW 34.04.070 or 34.04.080. [1971 ex.s. c 225 § 5.]

90.54.060 DEPARTMENT TO SEEK INVOLVEMENT OF OTHER PERSONS AND ENTITIES, MEANS--ASSISTANCE GRANTS. To insure that all of the various persons and entities having an interest in the water resources of the state and the programs of the chapter are provided with a full opportunity for involvement not only with the development of the program but the implementation by the department under this chapter, the following directions are given:

(1) The department shall make reasonable efforts to inform the people of the state about the state's water and related resources and their management. The department in the performance of the responsibilities provided in this chapter shall not only invite but actively encourage participation by all persons and private groups and entities showing an interest in water resources programs of this chapter.

(2) The department shall similarly invite and encourage participation by all agencies of federal, state and local government, including counties, municipal and public corporations, having interests or responsibilities relating to water resources. Said state and local agencies are directed to fully participate to insure that their interests are considered by the department. The department shall, when funds are made available to it for such purposes, provide assistance grants to said state and local agencies for the purposes of financing activities directed to be performed by them under this subsection. [1971 ex.s. c 225 § 6.]

90.54.070 REPORTS TO LEGISLATURE. The department shall report to each regular session of the legislature:

(1) On the experience of the department, including the progress made and any difficulties encountered, in formulating, adopting, and maintaining a state management program for water resources as provided in RCW 90.54.040(1), and

(2) Recommendations on legislation necessary to meet these objectives: PROVIDED, That the department shall submit to the next regular or special session, by the first day of said session, a report setting forth, in addition to the information hereinbefore provided, a detailed outline of the basics of the program developed by the department to carry out the direction of RCW 90.54.040(1). [1971 ex.s. c 225 § 7.]

90.54.080 STATE TO VIGOROUSLY REPRESENT ITS INTERESTS BEFORE FEDERAL AGENCIES, INTERSTATE AGENCIES. The state shall vigorously represent its interest before water resource regulation, management, development, and use agencies of the United States, including among others the federal power commission, environmental protection agency, army corps of engineers, department of the interior, department of agriculture and the atomic energy commission, and of interstate agencies with regard to planning, licensing, relicensing, permit proposals, and proposed construction, development and utilization plans. Where federal or interstate agency plans, activities, or procedures conflict with state water policies, all reasonable steps available shall be taken by the state to preserve the integrity of this state's policies. [1971 ex.s. c 225 § 8.]

90.54.090 STATE, LOCAL GOVERNMENTS, MUNICIPAL CORPORATIONS TO COMPLY WITH CHAPTER--REPORT TO LEGISLATURE OF FAILURES. All agencies of state and local government, including counties and municipal and public corporations, shall, whenever possible, carry out powers vested in them in manners which are consistent with the provisions of this chapter. The director of the department of ecology shall submit a report to the legislature, not later than thirty days prior to each regular session, setting forth any failures by such agencies to comply with the mandate of this section, and the circumstances surrounding such failure. [1971 ex.s. c 225 § 10.]

90.54.100 DEPARTMENT TO EVALUATE NEEDS FOR PROJECTS AND ALTERNATIVE METHODS OF FINANCING--REPORT TO LEGISLATURE. The department of ecology shall as a matter of high priority evaluate the needs for water resource development projects and the alternative methods of financing of the same by public and private agencies, including financing by federal, state and local governments and combinations thereof. Such evaluations shall be broadly based and be included as a part of the comprehensive state water resources program relating to uses and management as defined in RCW 90.54.030. A report of the department relating to such evaluations, including any recommendations, shall be submitted to the legislature in accordance with RCW 90.54.070. [1971 ex.s. c 225 § 11.]

90.54.110 AUTHORITY TO SECURE AND OBTAIN BENEFITS, INCLUDING GRANTS. The department of ecology is authorized to obtain the benefits including acceptance of grants, of any program of the federal government or any other source to carry out the provisions of this chapter and is empowered to take such actions as are necessary and appropriate to secure such benefits. [1971 ex.s. c 225 § 12.]

APPENDIX D
BASE FLOW ANALYSIS

Base flow determination, consists of the following steps:

- Stream system analysis i.e., concurrent selection of streamflow measurement stations and stream management reaches
- Stream rating
- Conversion of stream rating to percent-of-time flow duration
- Discharge-duration hydrograph construction
- Base flow hydrograph construction

Each of these steps is discussed below.

Stream System Analysis

Fundamental to sound base flow management is the need for a well designed streamflow measurement network that is capable of adequately controlling water diversions in all parts of each basin. Since the effectiveness of a flow control station is inversely related to the size of the drainage system it measures and, similarly, to distance from the various diversions within that drainage system, it is necessary to employ enough flow measurement stations to obtain a reasonable degree of sensitivity to the water diversions being monitored.

Considering the critical nature of the monitoring network, the initial step in base flow analysis is to examine existing streamflow records to identify those sites best suited for flow management. Generally, existing or former continuous record stream gaging stations will be used for base flow control whenever possible while, in areas lacking such record, sites are selected where miscellaneous flow measurements have been made. Usually it is preferable to select flow control sites that are located near the mouth of the mainstem stream and the mouths of major tributaries.

Concurrent with streamflow station selection, the basin is subdivided into logical segments (tributary drainages or stream reach units) that can be managed by each control station. Ideally, flow from or through each management unit should be controlled by a station at or near its downstream end or outlet. With control at such locations, all diversions above the station are reflected in flows measured at the station.

Upstream control (control station located above all or some of the diversions in a management unit), while possible, presents some complex management problems. Unlike downstream control, water diversions below an upstream control station do not affect flows at the station. Consequently with this type of control, different regulatory flow levels are necessary for each affected diversion. Therefore, upstream control stations should be avoided whenver possible and employed only where downstream control is not feasible.

90.54.120 "DEPARTMENT", "UTILIZE" AND "UTILIZATION" DEFINED. For the purposes of this chapter, unless the context is clearly to the contrary, the following definitions shall be used:

(1) "Department" means department of ecology.

(2) "Utilize" or "utilization" shall not only mean use of water for such long recognized consumptive or nonconsumptive beneficial purposes as domestic, stock watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, thermal power production, mining, recreational, maintenance of wildlife and fishlife purposes, but includes the retention of water in lakes and streams for the protection of environmental, scenic, aesthetic and related purposes, upon which economic values have not been placed historically and are difficult to quantify. [1971 ex.s. c 225 § 13.]

90.54.900 CERTAIN RIGHTS, AUTHORITY, NOT TO BE AFFECTED BY CHAPTER. Nothing in this chapter shall affect any existing water rights, riparian, appropriative, or otherwise; nor shall it affect existing rights relating to the operation of any hydroelectric or water storage reservoir or related facility; nor shall it affect any exploratory work, construction or operation of a thermal power plant by an electric utility in accordance with the provisions of chapter 80.50 RCW. Nothing in this chapter shall enlarge or reduce the department of ecology's authority to regulate the surface use of waters of this state or structures on the underlying beds, tidelands or shorelands. [1971 ex.s. c 225 § 9.]

90.54.910 SHORT TITLE. This chapter shall be known and may be cited as the "Water Resources Act of 1971". [1971 ex.s. c 225 § 14.]

For purposes of clarity and organization, designated control stations and management units are identifed on WRIA base maps and tabulated in downstream order on forms developed for the stream rating process. An example of a stream system analysis as prepared for the Upper Chehalis River Basin, (WRIA 23) is shown in Figures D-1 and D-2 and Table D-1.

In the control station sections of Table D-1, each management unit is identified by stream name, reach description, control station number, and location of the station by river mile, section, township, and range. If a management unit is described by stream name only, the entire stream system from headwaters to mouth, including tributaries, is included within the unit. Abbreviated description, in addition ot the stream name (nonstandard reach description), is provided if the unit consists of only a part of the total named stream basin.

Small triangles on Figure D-1 identify beginning and end points of stream reaches or end points of entire streams and tributaries described in the stream system analysis.

Figure D-2 shows the location of flow measurement sites, designated as control stations, and some information about the type of streamflow record that is available for each site. Numbers assigned to each station generally correspond to the middle four digits of identifying numbers for United States Geological Survey stream gaging stations.

Stream Rating

Since stream and watershed environments vary widely, not only among different stream systems but also within each drainage, it is reasonable to assume that some streams will require higher levels of base flow than others to adequately preserve their environmental values. Therefore, a procedure was developed whereby these differences could be identified and, in turn, used as a foundation for defining appropriate levels of base flow.

As discussed previously, RCW 90.54.020(3) requires that base flows be retained in perennial streams to preserve various environmental and navigational values. Following this guidance, a simple stream rating system was devised for differentiating the relative value of these parameters. These parameters are defined as follows:

Wildlife Values include use values for wild animals and birds; exclude fish.

Fish Values include use values for propagation, rearing, and migration of fish, and values of streams for fishing.

Scenic and Aesthetic Values include audible and visual values of natural beauty associated with flowing streams and their surroundings, including recreational enjoyment of these values.

Navigational Values refer to commercial and recreational boating, including canoeing, kayaking, and rafting.

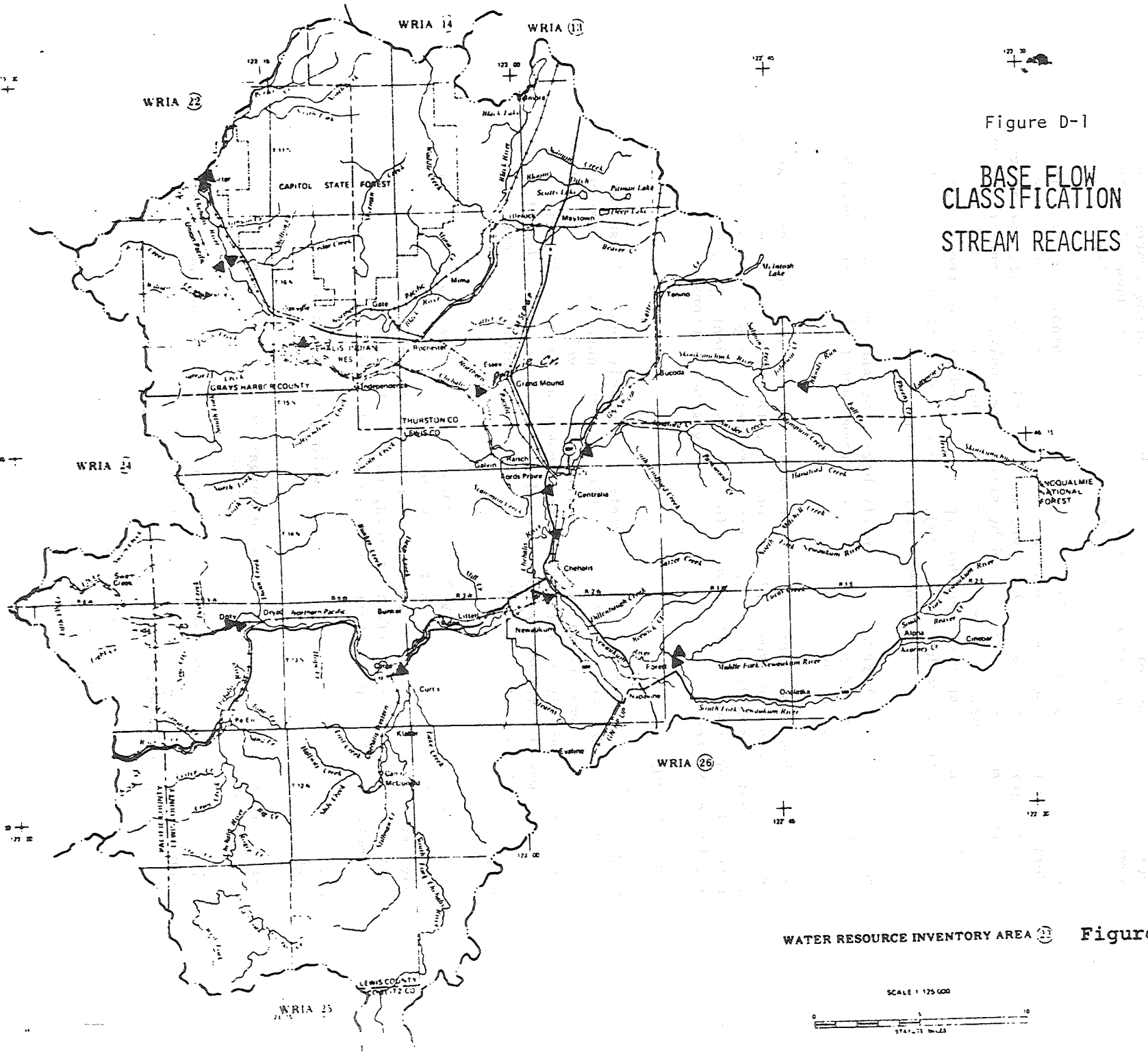
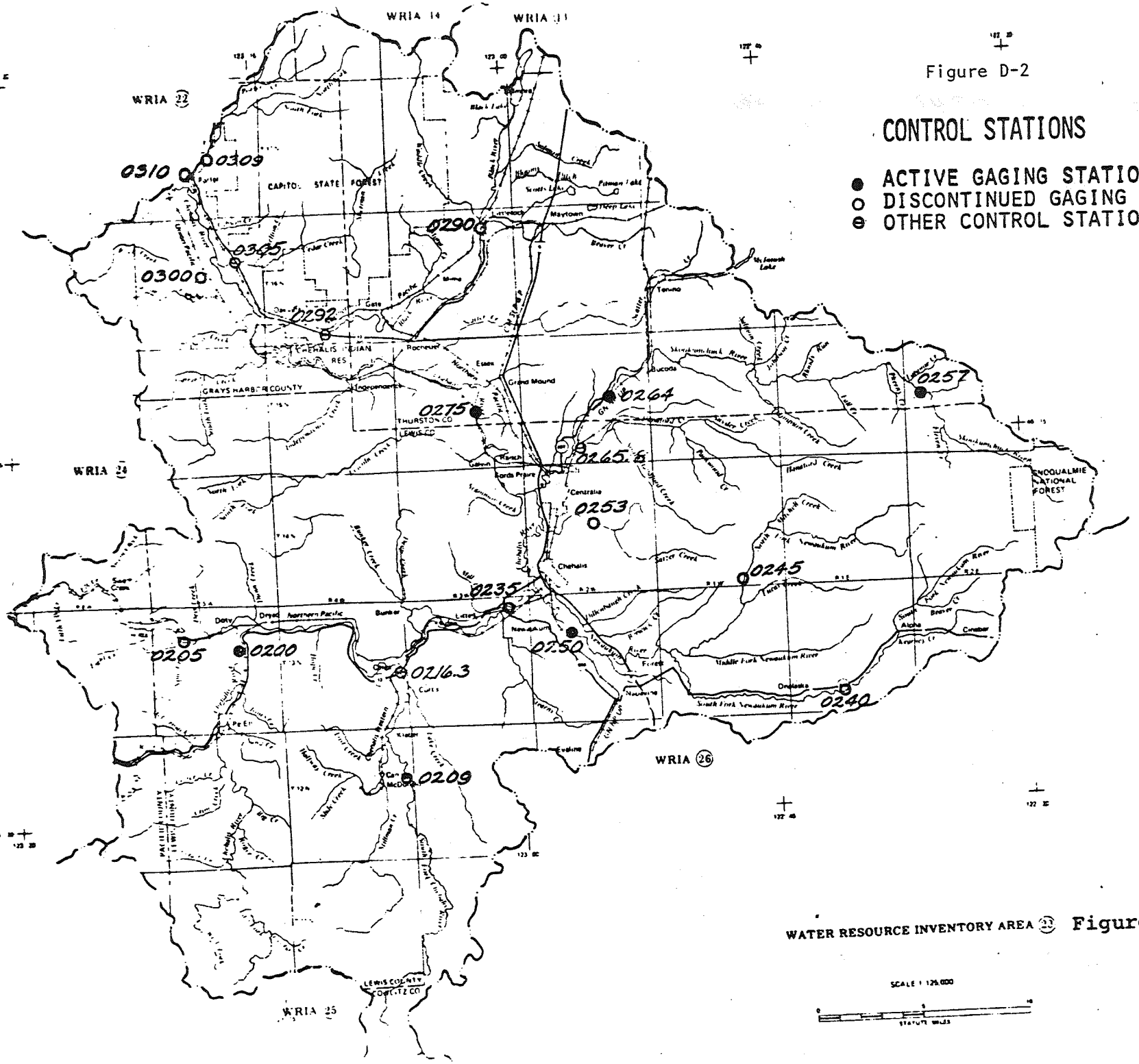


Figure D-1

BASE FLOW CLASSIFICATION STREAM REACHES

WATER RESOURCE INVENTORY AREA (23)

Figure D-1


WRIA 14
WRIA 23
WRIA 22
0310
0309
CAPITOL STATE FOREST
0290
0305
03000
0292
CHEHALIS INDIAN RES
GRAYS HARBOR COUNTY
0275
THURSTON CO
LEWIS CO
WRIA 24
0264
0257
0265.6
0253
0245
0235
0205
0200
0216.3
0250
0209
WRIA 26
WRIA 25
LEWIS COUNTY
CONGITZ CO
Figure D-2
CONTROL STATIONS
ACTIVE GAGING STATIONS
DISCONTINUED GAGING STATIONS
OTHER CONTROL STATIONS
WATER RESOURCE INVENTORY AREA 23
Figure D-2
SCALE 1:125,000
STATUTE MILES

BASE FLOWS in WRIA-23

Control Station / Stream Name (Non Standard Reach Description)	Number / River Mile / Sec. Twp. Rge.	Stream Uses: Wildlife	Fish	Scenic & Aes.	Navigation	Other Environ.	Quality, Etc.	Total Rating (Flow Level)	Required Quantities in Cubic Feet per Second: Jan May Sep 1	Jan May Sep 15	Feb Jun Oct 1	Feb Jun Oct 15	Mar Jul Nov 1	Mar Jul Nov 15	Apr Aug Dec 1	Apr Aug Dec 15
Stookumchuck R. (Mouth to confl. w/Skookum Chuck Cr. incl. Skookum Chuck Cr. ex. Horsethief Cr.)	12.0026.00 6.4 22-15-2W	3.0	4.0	3.3	1.3	2.5	3.0	17.1 (75) (95)	160 140 35	130	103	83 35	67 59	54 96	43 160	160 35 160
Hamma Hamma Cr.	12.0765.80 0.1 33-15-2W	2.0	3.0	1.0	0.0	2.0	3.0	11.8 (84) (95)	40 28 25	20	14	10.0 3.3	7.0 4.5	5.0 6.0	3.5 11.0	4.0 2.5 4.0
Chehalis R. (Confl. w/ Newaukum R. to confl. w/Rainie Cr. ex. Skookumchuck R. & Salzer Cr.)	12.0275.00 59.9 22-15-3W	4.0	4.0	2.3	3.0	2.5	3.0	19.0 (70) (95)	1300 1000 185	780	600	460 200	355 440	275 760	210 1300	1300 165 1300
Black R. (Confl. w/Beaver Cr. to Kaiser)	12.0290.00 17.2 2-16-3W	4.0	4.0	2.6	3.0	2.0	3.0	18.6 (71) (95)	100 76 100	57	42 10.5	32 11.0	24 24	18 49	13.0 100	100 10.0 100
Black R. (Mouth to confl. w/Salzer and incl. Beaver Cr.)	12.0292.00 4.1 33-16-4W	4.0	4.0	2.6	3.0	2.0	3.0	18.6 (71) (95)	200 170 66	145 66	120 68	104 70	88 100	75 140	70 200	200 66 200
Rock Cr.	12.0302.00 1.2 15-16-5W	2.0	4.0	1.6	0.0	0.5	3.0	10.9 (86) (95)	40 26 15	18 1.5	11.5 1.9	7.7 2.5	5.2 6.5	3.5 16	2.3 40	40 1.5 40
Cedar Cr.	12.0305.00 1.1 14-16-5W	4.0	3.0	2.2	0.3	1.5	3.0	14.0 (73) (95)	90 70 11.0	54 11.0	40 13.5	31 17	24 50	19 52	14 90	90 11.0 90
Porter Cr.	12.0309.00 1.3 22-17-5W	4.0	4.0	2.7	3.0	2.5	3.0	16.2 (75) (95)	90 56 12.0	35 12.0	27 13.5	24 15	21 28	17 50	14.2 90	90 12.0 90
Chehalis R. (Confl. w/Rainie Cr. to confl. w/Pennicle Cr. ex. Black R., Rock, Cedar & Porter Cr.)	15.0310.00 33.3 28-17-5W	4.0	4.0	2.0	3.0	2.0	3.0	18.0 (72) (95)	2500 1900 260	1420	1040 260	800 320	610 400	460 760	340 1380	2500 260 2500

Table D-1

BASE FLOWS in WRIA-23

3 of 3

Control Station / Stream Name (Non Standard Reach Description)	Number / River Mile / Sec. Twp. Rge.	Stream Rating: Wildlife	Fish	Scenic & Aesth.	Navigation	Other Envir.	Quality, Std.	Total (Flow Levels)	Required Quantities in Cubic Feet per Second: Jan May Sep 1	Jan May Sep 15	Feb Jun Oct 1	Feb Jun Oct 15	Mar July Nov 1	Mar July Nov 15	Apr Aug Dec 1	Apr Aug Dec 15
S. Fk. Chehalis R. (Alternate Control)	12.02 16.30 03 24-13-4W	3.0	4.0	1.7	1.0	1.5	3.0	14.2 (79) (95)	200 145 15	105 15	75 21	55 28	40 56	29 105	21 200	200 15 200

D-6

Table D-1 (Continued)

Other Environmental Values refer to other miscellaneous environmental values not covered under the above parameters and include other forms of recreation, such as swimming and wading.

Water Quality Standards refer to Washington State Water Quality Standards.

The parameter rating system is presented in Table D-2.

To maintain a reasonable degree of uniformity and balance in the rating process, a stream rating committee was formed consisting of representatives of the state agencies that have a general interest or responsibility in stream related activities, namely the following:

Department of Ecology
Department of Fisheries
Department of Game
Department of Natural Resources
Department of Highways
Interagency Committee for Outdoor Recreation
State Parks and Recreation Commission

The representaitve of the Department of Ecology serves as chairman of this group.

Prior to the actual rating process, member agencies are assigned those parameters most closly associated with their area of interest and authority. Each committee member then rates these parameters for the management units identified through stream system analysis. In geographic areas where member agencies lack authority or background, a committee member may choose to withdraw from the rating process for that particular area or stream system. Finally, after all rating forms are submitted to the chairman, composite total rating values are prepared for each management unit, by adding average rating values for each parameter.

A stream classification rating for the Upper Chehalis River Basin is shown in the right half of Table D-1. The maximum possible rating for a stream management unit is 24 while the lowest score would be 1.

TABLE D-2

STREAM RATING SYSTEM

Parameters	Basis of Rating	Rating Value
Wildlife Values)	(Very high value or usage	4
Fish Values)	(High value or usage	3
Scenic and Aesthetic Values)	(Moderate value or usage	2
Navigation Values)	(Low value or usage	1
Other Environmental Values)	(No value or usage	0
Water Quality Standards)	Class AA	4
)	Class A or Lake Class	3
)	Class B	2
)	Class C	1

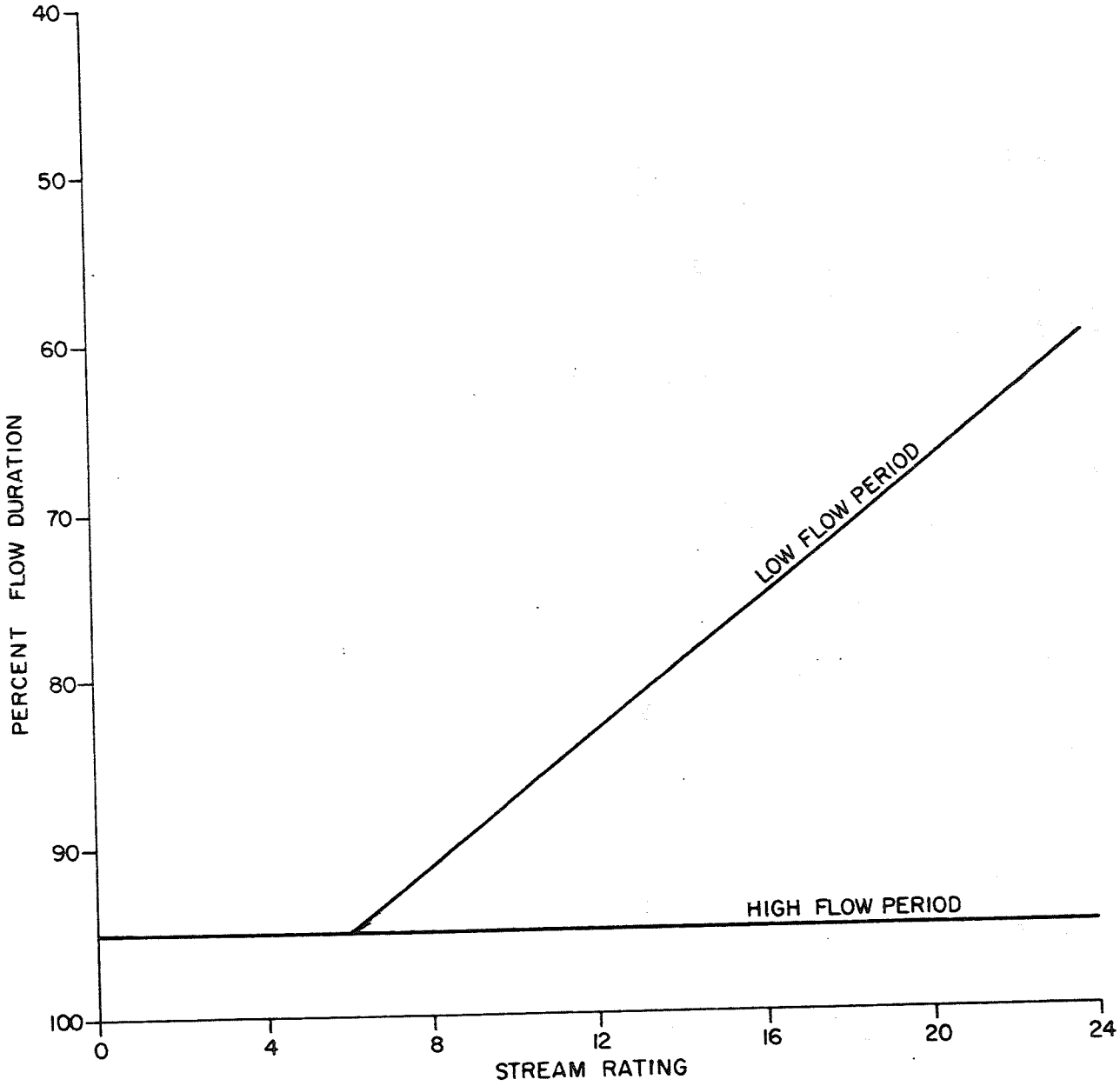


Figure D-3 CONVERSION CURVE
STREAM RATING TO PERCENT FLOW DURATION

Conversion of Stream Rating to Percent-of-Time Flow Duration

The relationship between stream rating and percent-of-time flow duration is presented as Figure D-3. This relationship evolved through inter-agency negotiations, an analysis of minimum flow requirements for fish and an assessment of other instream needs. Studies of fish requirements, particularly in Western Washington, pointed to a general critical need for flow during the spring to summer rearing period, while flow needs for fish spawning and migration are more easily met during the high-flow period. These relationships indicated that it would be desirable to use different conversion curves for high-flow and low-flow periods. After considerable debate, it was the consensus of involved agency participants that the 95 percent-of-time flow-duration hydrograph would serve as a guide for base flows during all high-flow periods while a variable percent duration, based on the composite stream rating value, would be used during low-flow periods.

High-flow periods of the hydrograph are distinguished from low-flow periods by a simple process of comparing the median daily flow for the entire period of record to the 50 percent-of-time discharge-duration hydrograph curve. The median daily flow is the fifty percent exceedance flow computed from average daily flow records. This is represented as a straight line across the hydrograph at the appropriate rate of flow. High-flow periods are those where the 50 percent of time hydrograph curve exceeds the median flow and, conversely, low-flow periods are identified by the times when the 50 percent curve is below the median flow.

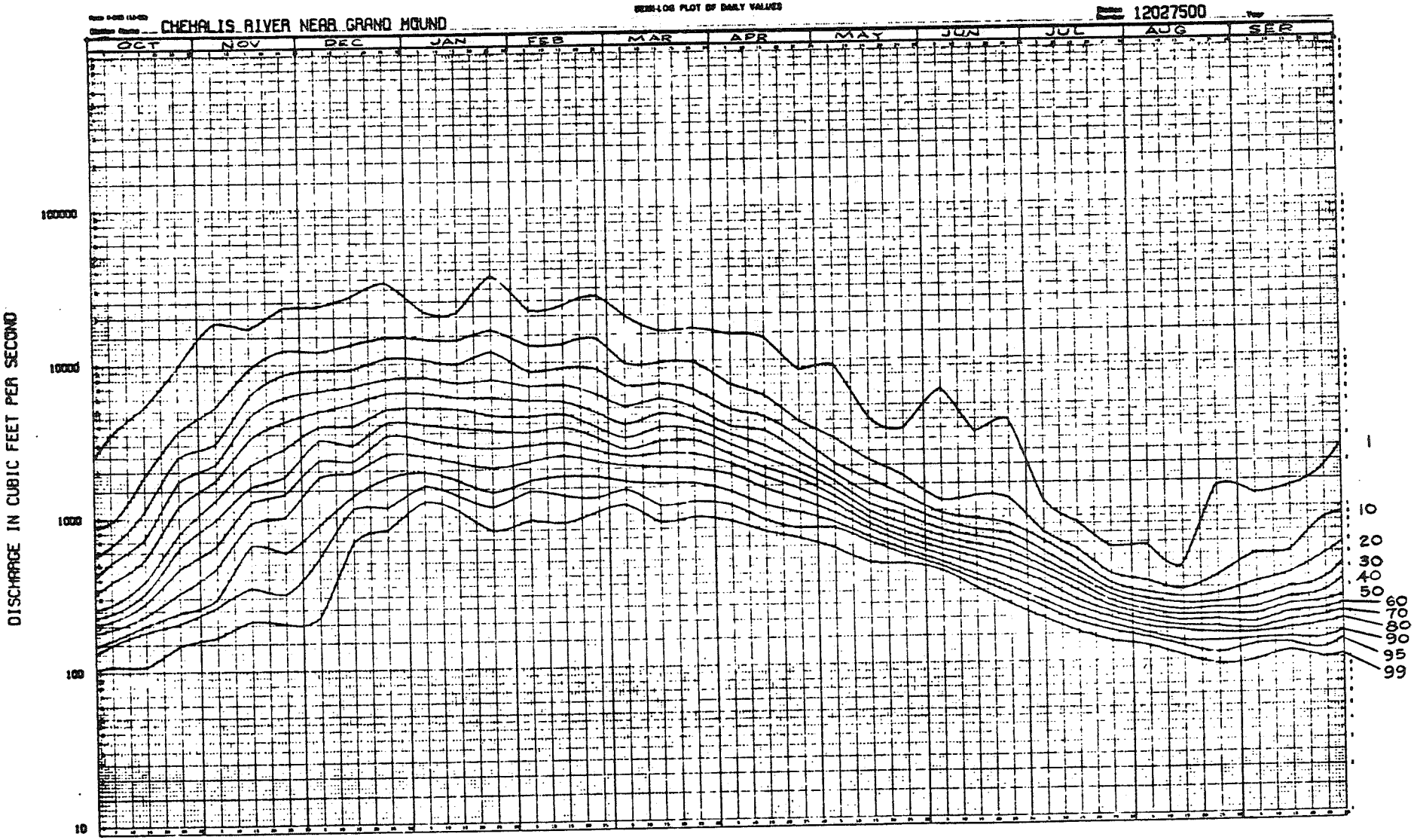

CHEHALIS RIVER NEAR GRAND MOUND
12027500
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
DISCHARGE IN CUBIC FEET PER SECOND
100000
10000
1000
100
10
1
10
20
30
40
50
60
70
80
90
95
99

Figure D-4

Discharge-Duration Hydrograph

A discharge-duration hydrograph shows the relative year-round expectance of different levels of streamflow for a particular stream location based on an analysis of historical streamflow records for that location. Flow expectancy or frequency of occurrence is shown on a discharge-duration hydrograph in terms of the percent-of-time that the indicated daily discharges (or flows) have been exceeded during the period of record analysis. To show a complete flow-picture, a discharge-duration hydrograph is constructed as a family of hydrographic curves with each individual curve displaying a specific percent-of-time exceedance frequency level.

Since most streams experience a wide range in flows between wet and dry periods, it is normally more practical to use a semi-logarithmic plot for discharge -duration hydrographs, with daily flow values as ordinates along the logarithmic scale and time in days as abscissa on a unfirom scale. Such a plot, because of mathematical relationships, has an additional value of displaying recessional streamflow, which normally occurs in spring and summer, as a straight line or nearly a straight line.

Computer programs have been developed for calculating and plotting discharge-duration hydrographs from continuous record streamflow data. Where only miscellaneous or short-term flow records are available, it is possible to construct duration hydrographs through regression relationships with highly correlated long-term records collected at nearby gaging stations. A sample discharge-duration hydrograph for an Upper Chehalis Basin control station is shown in Figure D-4. The numbers on the right margin associated with various curves on the graph indicate the percent of time that the flow has exceeded the curve during the period of record used to construct the hydrograph.

Base Flow Hydrograph Construction

The controlling hydrograph curve that serves as a basis for final base flow level definition is constructed as follows:

1. Identify high and low-flow periods.

2. Delineate the 95 percent of time hydrograph curve during the high-flow period.

3. Delineate a low-flow period curve parallel to adjacent hydrograph curves at the appropriate percent level.

4. Connect the two curves with a smooth transition line covering a two-month period, starting one month before the time when the 50 percent of time curve crosses the median flow and extending one month beyond this date.

Detailed hydrographs prepared in this manner are then used as the basis for developing final working hydrographs. The working hydrographs are

constructed by a series of connected straight lines that closely approximate the detailed hydrograph shape but eliminate anomalous irregularities that distort general flow trends. Normally the basic semi-log plotted hydrograph can be closely approximated with about four to six straight line segments. In regulation form, specific points along each straight line segment of the final base flow hydrograph are described by flow value and date.

APPENDIX V

Comments

The following are the comments received on the draft EIS and program document. We sincerely thank those agencies who took the time to formally respond. It is clear that these letters reflect a great deal of time and effort. All comments will be considered in the departments deliberations.

The reader may wish to scan all the letters to obtain the flavor of comment. It is interesting to note the conflicting points of view from different perspectives. We hope to reach a reasonable compromise consistent with the statutes which mandate our actions.

Comments were received from the following: (Arranged in order of receipt with response numbers in brackets).

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Water Resources Division
1201 Pacific Avenue - Suite 600
Tacoma, Washington 98402

MAY 10 11 11 '79

May 7, 1979

Mr. Ken Slattery
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

We have reviewed the Environmental Impact Statement for the Western Washington Instream Resources Protection Program as proposed by the Washington State Department of Ecology. We would make the following comments relative to this plan:

1. On page 10 of Appendix IV it is stated that key control stations may be incorporated as part of the Columbia River Operational Hydrometeorological Management System (CROHMS). We would caution that if this does take place, the stage-discharge relations used in the CROHMS system will need to be updated on a real-time basis. Stage-discharge relationships, particularly at the lower discharges, tend to be unstable and rating changes are frequent. Small changes in the stage-discharge relation tend to be accompanied with large changes in discharge.

1

2. On page 3 it is stated that limitations associated with baseflow may cause potential users to turn to ground-water sources. It is further stated that eventually limitations on ground-water appropriations may be necessary to protect ground-water resources. We would suggest that the impact on the ground-water resources be evaluated concurrently with this baseflow limitation plan. Consideration of surface and ground water concurrently is required because of the interrelationships between the ground and surface waters. A sound water-management plan cannot be made without the recognition of the effect of one upon the other.

2

3

3. None of the alternatives proposed utilize the standard statistical analysis of low-flow discharges. We concur with the method proposed for determining instream resource protection but would suggest that a statewide low-flow analysis be conducted so that the probabilities of baseflows adopted can be evaluated. The purpose of such evaluation would be to assure some degree of uniformity in baseflows adopted and may point out unreasonable baseflow determinations.

Thank you for the opportunity to review and comment on this plan. If we can be of further assistance, please so advise.

Sincerely yours,

Charles R. Collier
District Chief

SKAGIT COUNTY PLANNING DEPARTMENT
County Administration Building Mount Vernon, Wa. 98273 Phone (206) 336 - 9333

Robert C. Schofield
Director

Otto M. Walberg
Asst. Director

Paul R. Shelver
Zoning Administrator

May 22, 1979

Ken Slattery
Dept. of Ecology M/S PV - 11
Olympia, Wash. 98504

RE: Draft Environmental Impact Statement "Western Washington Instream Resources Protection Program".

Dear Mr. Slattery:

The Skagit County Planning Department has reviewed the Draft EIS for the above project and has no substantive comments to offer.

The Planning Department does, however, have two requests:

4 1. The Department of Ecology hold a public hearing regarding the regulations and proposed levels for the streams within our Basin, somewhere in Skagit County.

5 2. Prior to the above hearing date, Department of Ecology staff review the proposal with Planning Department staff.

Thank you for the opportunity to comment on the Draft EIS.

Sincerely,

Otto M. Walberg Jr.

Otto M. Walberg, Jr.
Assistant Director

OMW/nn

MUCKLESHOOT INDIAN TRIBE
38811 172ND AVENUE S.E. - AUBURN, WASHINGTON 98002 - (206) 939-3311

May 23, 1979

Mr. Eugene Wallace
Division Supervisor
Water Resources Management
Washington State D.O.E.
Olympia, WA 98504

Dear Sir:

We appreciate this opportunity to comment on the draft environmental impact statement entitled "Western Washington Instream Resources Protection Program". Protecting in-stream flow needs has been a goal of the Muckleshoot Tribe for decades, and we consider this measure long over-due.

6 Our concern with the program is the overall scope. Is Table 1 of the draft over view a partial list of streams to be studies? It seems to us that several streams, very important to fisheries resource, were not listed. As you know, the Muckleshoot's court-appointed Usual and Accustomed fishing area encompasses the most heavily populated area of the state, and is experiencing very rapid

7 urban growth. In-stream flow need data must be collected before a stream basin is developed, and thus possibly altered.

8 The tribe is also concerned that the stated methodology will not maximize preservation and rehabilitation of native anadromous fish stocks. As stated on page 6, "fish hatcheries can attempt to off-set lost habitat, but they cannot replace it". The tribe recommends adoption of methodology which would optimize fishery resource habitat.

Thanks again for the opportunity to comment on this important issue.

Sincerely,

Dennis Moore
Enhancement Biologist

DM/bs

STATE OF WASHINGTON

Dixy Lee Ray
Governor

WASHINGTON STATE ENERGY OFFICE

400 E. Union-1st floor, Olympia, Washington 98504 206/754-1350

May 23, 1979

Ken Slattery
Department of Ecology
Olympia, WA 98504

Dear Mr. Slattery:

SUBJECT: Western Washington Instream Resources Protection Program

Thank you for the opportunity to comment on the Draft EIS for the above program. Although this office has no comment on the overall program design, at the present time, we feel the program may significantly impact planning for future energy projects both thermal and small scale hydro. We would like to be kept informed as individual basin plans and base flows are developed and would be willing to provide technical assistance at anytime, if necessary. 9

Sincerely,

Mary S. Anderson

Mary S. Anderson
Energy Program Coordinator

MSA/jm

jefferson county planning department

courthouse
port townsend, washington 98368
telephone (206) 385-1427

david goldsmith, director

May 10, 1979

Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Re: Draft Environmental Impact Statement, Western Washington Instream Resource Protection Program

Dear Mr. Slattery:

The Jefferson County Planning Department has reviewed the above-noted document and supports the establishment of base flow rates necessary to protect biological, aesthetic, and navigational values within Western Washington streams. We wish, however, to make the following comments.

There appears to be a conflict between Chapter 90.50.010(3) R.C.W. and the development of a methodology based upon the hydrologic use of "base flow" as stated in paragraph 4, page 3, Appendix IV. Other methods not in conflict with the R.C.W. were discussed in Appendix D, Appendix IV, and elsewhere in the document. We suggest the above mentioned paragraph be amended to resolve this conflict. 10

Even though a purpose of establishing base flows is to reduce conflicts between the Department of Ecology and the Departments of Game and Fisheries, situations may arise where critical habitats or populations would be endangered by stream withdrawal to the established base flow rate. To help maintain adequate stream flow in these cases, the directors of Fisheries and Game should maintain permit review authority as provided by Chapter 75.20.050 R.C.W. 10

No consideration is being given to estuarine resources in the establishment of base flow rates. Stream water diversion may effect shellfish and other brackish water species by raising salinity. This effect should be included when developing base flows. 11

This program is an excellent first step in developing complete basin plans. Please keep us informed as to your progress.

Sincerely,

E Darden

Edward Darden
Associate Planner

ED:cg

Public Utility District No. 1 of Klickitat County
Phone 773-5891 Owned by Those it Serves GOLDENDALE, WASHINGTON 98620

May 24, 1979

Mr. Eugene Wallace
Division Supervisor
Water Resources Management
Washington State Department of Ecology
Olympia, Washington 98504

Re: Draft Environmental Impact Statement
Western Washington Instream Resources
Protection Program

Dear Mr. Wallace:

We have reviewed the Draft referenced above, and have the following comments to offer for your consideration.

P.U.D. No. 1 of Klickitat County is principally concerned with WRIAs 29 and 30, which cover river basins within the geographical bounds of our utility services area. However, several comments and concerns expressed below may be of general applicability to the proposed program as it affects other WRIAs, and may be shared by other public and private utilities serving the areas involved, as well as by the public.

I. Elements of the Environment Significantly Affected.

A. Energy/Utilities.

In Appendix I of the Draft the Department of Ecology has placed the "Not Applicable" ("N/A") designation next to the "Amount Required" subarea of the "Energy" area, and next to all subareas of the "Utilities" area, particularly the "Energy" subarea thereof. The Department apparently overlooks the significant potential impacts, both direct and indirect, which may occur from the adoption of base flow levels on streams which may restrict or prohibit planned or potential small hydroelectric generation projects on those streams. 12

It appears true that the principal adverse impact of base flow level establishment and resultant restrictions on flow-affecting activity may well be the lower availability of water for out-of-stream use (also a concern of this utility as noted below). However, such levels and restrictions will undoubtedly have significant impact on local utility and regional power planning.

"It appears the sole treatment of this area in the Draft is paragraph 10 on page 5 which states, in relation to "Energy":

> "Many Western Washington streams have existing or planned hydroelectric power generation facilities or provide cooling water for thermal power plants. In addition, water used for cooling is discharged back into the stream, generally carrying a heat load acquired in the cooling process. Hydroelectric projects permitted after adoption of base flows must maintain a certain amount of water flowing in the stream at all times. This will limit operation flexibility, decrease peaking capabilities, and may affect the economic feasibility of such projects."

We suggest that this element of the environment merits more serious study, consideration and discussion in any Environmental Impact Statement promulgated in connection with the Instream Resources Protection Program. This is particularly true in light of the current energy situation and forecasts for the Pacific Northwest. Heavy reliance has been placed on filling this region's future energy needs, in the federal Hydrothermal Power Program, on firm energy from thermal sources, principally nuclear plants. Because of the current problems and delays in nuclear construction and generation programs, and the virtual lack of other alternatives, the desirability, indeed, necessity of meeting a portion of future energy demand, whether through firm or peaking capacity, through small hydroelectric generation facilities mandates serious attention to potential small stream hydroelectric resources by both utility and government officials.

This utility has presently pending an Application for Preliminary Permit to the Federal Energy Regulatory Commission for priority on study and development of hydroelectric generation facilities on the WHITE SALMON RIVER, WRIA 29. We note that the White Salmon River is specifically excepted from the restrictions of chapter 75.20.010-.020 RCW. (See RCW 75.20.030). 13

Other public and private utilities may well be considering the potential for small stream hydroelectric resources on other streams with WRIAs affected by the proposed program.

We therefore strongly submit that the Draft EIS is significantly inadequate to fulfill the purposes of NEPA/SEPA in its virtual silence on the substantial direct and indirect

impacts the Department's proposed action may have on the energy and utility elements of the environment, and a new draft impact statement should be prepared and issued which adequately considers these elements and impacts.

B. Utilities/Water.

The Draft also indicates no consideration of the impact of the proposed program on the subarea "Water" under the "Utilities" element.

Klickitat County P.U.D., along with other public utilities in the State of Washington, furnish water services, as well as electric services, to certain communities within our respective service areas. In particular, we furnish water services within the Klickitat River Basin to several small localities, which services involve both ground, spring and stream sources.

14 While the Draft does recognize and discuss potential adverse impacts of the proposed action on out-of-stream use, it does so in an entirely hypothetical and general manner, and does not relate such impacts to utility water elements, particular locales, or alternatives which may relieve or mitigate potential adverse impacts on public and utility water supplies and services.

To this extent the Draft is inadequate and a new Draft should be issued.

II. Proposed Methodology.

A. Stream Rating.

15 As explained in Appendix D to the Draft, the parameter rating system established under RCW 90.54.020 (3), does not appear to include parameters for stream use and function unrelated to wildlife, fish, scenic, navigation and recreational, and water quality values. Described as a "simple" system in the Draft, we must concur in this estimation, and express strong dissent from this use of "simplicity" in such a complex context. This system of rating apparently does not include or give rating value directly to water supply, agricultural, power generation or other stream uses, independent of the parameters considered. If it is the Department's position that the parameter "Other Environmental Values" is meant to

include such stream uses, the rating system almost certainly would distort an accurate evaluation of these other stream uses by assigning a maximum value to all such non-fish, non-wildlife and non-recreational uses of 4 of a possible 24 units of value.

We strongly consider such a rating system as deficient, and unreliable upon which to premise any reasonable agency action in establishing or regulating base stream flows.

The Draft EIS is, we believe, inadequate to the extent it relies on this rating system. And, indeed, we believe that the policies enunciated in RCW 90.54 are not well served by such a system.

A new, although perhaps more complex, rating system should be developed; one which will properly consider and weigh all stream values, perhaps individually for each stream to avoid the distortion inevitable in conglomeration of "Value" ratings. Only then would a new Draft EIS, incorporating that stream rating system in the proposed program, be adequate to fulfill SEPA policy, and provide a proper context for comment and decision-making.

B. Percent-of-Time Flow Duration Conversion.

16 On page D-9 of Appendix D we are referred to Figure D-3 as presenting the relationship between stream rating and percent-of-time flow duration. We do not believe the information presented to be adequate to demonstrate any actual relationship, but rather to represent an artificial "constraint" which apparently was the result of some "negotiation" and "value" judgments by the Department, once again apparently primarily related to the fish parameter of stream value.

We find such an artificiality in assessing and constructing values which may be determinative in the establishment of base flows, while ignoring non-instream needs, to be a serious deficiency in the program, and as such, in the Draft EIS.

If such artificial, "negotiation" related constraints are to be established, their relationship to real stream characteristics and uses in any particular case is doubtful. If the premise is doubtful, how unreliable may be the evaluations and conclusions reached by the agency, and the public in reasoning from the premise? Why does the Department place

the conversion curves at the 95 percent level for high-flow periods and at the levels otherwise represented for low-flow periods? Why not alternative curves? What relationship exists in fact between the artificial conversion curve and the actual value of any stream for various uses?

It appears that this conversion, along with the stream-rating system, distorts stream values and the value/flow level balancing process so as to produce artificial limits on stream use, emphasizing only a limited number of potential stream values. No proper consideration and balancing of public interests can, we believe, be properly achieved by this program, as these elements are currently proposed. To this extent a substantial inadequacy exists in the Draft EIS, which not only frustrates the intent of the EIS by making cogent effective evaluation and comment on the proposed program difficult if not impossible, but mandates a new EIS which will properly achieve this function.

C. Base Flow Hydrograph Construction.

We accept for the purposes of the proposed program the use and accuracy of hydrographic curves as a basis for developing a depiction of stream flow levels overtime. However, the use of a hydrographic curve determined through the stream rating system and conversion curves described in the Draft will, we believe, be as limited in relevance to actual stream use values and proper flow percentage constraints, as are the rating systems and artificially-assessed or -constructed curves. Since we believe, as noted above, that serious deficiencies exist in the stream rating system, and in the conversion curves, to the extent that any final base flow hydrographs are constructed by such a methodology, we strongly contest the adequacy of such to properly illustrate actual desirable base flows, or serve as a basis for proper public and agency review, evaluation and decision-making.

17

III. General.

While we recognize the policy and desirability of simplifying environmental compliance under both NEPA and SEPA, we must regretfully note that simplification can slip easily into over-simplification, and produce an environmental impact assessment and statement which is inadequate to fulfill its purpose as a vehicle for informed comment and review of the proposed action by the public and decisionmakers in the lead

18

and other agencies, and the legislature. We believe that this has occurred in the case of this Draft.

The Department proposes to measure and establish base flows for virtually all streams west of the Cascade Crest, and two stream systems east of that line. This action is premised on legislation which is principally related to the protection of fish and game resources, but this action not only may but almost certainly will result in substantial impact to virtually every sector of the human environment. It will directly impact recreation, fish and game resources, navigation, hydroelectric resources, aesthetics, and future water rights, among other areas. But the apparently limited direct impact of a base flow restriction on any stream will have far-reaching effects on agriculture, population movement, housing, land use, governmental tax bases and services, and myriad other elements of the human environment. Many of these effects may promote or reinforce effects in other areas of the environment, creating a "ripple" effect which in its consequences may far surpass in impact even the generalizations of this Draft, which extend even in their simplicity to impacts on the "benefit/cost analysis" for future water supply projects; to the limiting of "operational flexibility", decreasing of "peaking capabilities" and effect on the "economic feasibility" of hydroelectric projects; to the fact that "if water supply becomes limited, people may make different decisions on where to live, work, and farm than they would make were water supply not limited".

18

The Department is essentially proposing an action which may do no less than set the pattern for virtually all human/environment interrelationships in the affected WRIAs for many years to come.

In this general regard we make no comment as to the nature of these impacts, whether beneficial or adverse. We do however strongly object to basing the proposed action and decision-making process on the Draft as it presently exists. It is patently and thoroughly inadequate in its content to fulfill its statuatory purpose, relying on it does on generalistic statements of vast potential impacts, ignoring other equally vast direct and indirect potential impacts, and discussing no impacts in a specific, detailed manner necessary to provide an environmental assessment of the proposed action which may result in informed and reliable comment, consideration and decision-making.

18

We note that the sole inter-agency consultation on the proposed action evident from the Draft has been between the Departments of Ecology, Fisheries and Game, and has been limited in extent. In the light of the deficiencies and inadequacy of the Draft, we would suggest that for purposes of preparation of a new Draft, consultation and communication be established with other State agencies, municipalities, public utilities, public groups, and perhaps federal agencies concerned with or possessing expertise with respect to the myriad environmental issues involved in the program.

19

We would suggest that we, along with other utilities, state agencies and other concerned organizations, be allowed to become involved in the development by the Department of a new and adequate environmental assessment, as well as the development of appropriate methodology and procedures under the proposed program. It is our sincere belief that only by such involvement, on our part and that of others, can the Department receive significant and effective input for an adequate EIS, and a program that will properly evaluate and balance all factors relevant to the public interest inevitably affected by the proposed action.

Thank you for the opportunity of submitting these comments, and we hope they will promote the preparation of an adequate new draft and final environmental statement.

Very truly yours,

JOHN H. BUDD
General Manager

JB/RN/aw

5529 24th Ave. N.E.
Seattle, WA. 98105
May 29, 1979

Mr. Kenneth Slattery
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

Regarding: Western Washington Instream Resources Protection Program

As a member of the Water Resources Committee of the Washington Environmental Council, I wish to make these comments and ask some questions.

Base flow levels established at this time seems the right step to take in eliminationg over appropriation of Western Wahington waters. Particularly important is to determine the base flow in such rivers as the White Salmon, scheduled for 1981, because of the influx of developers. Not only are the hydro-power people planning a series of dams on the White Salmon, but California realtors are buying up land for resale with no assured water supply.

20

Question 1 How are National Forest streams to be monitored? Skykomish has been recognized by the State as Scenic River but the Forest Service does not.

21

Question 2: For three months the Columbia River in the Gorge has brown water flowing. This is downstream from the irrigation areas. What do the monitoring stations tell? What does DOE do about it?

Sincerely,

Faye Ogilvie

Faye Ogilvie (Mrs. Ellis H. Ogilvie)

Office Of The Mayor
City of Seattle

Charles Royer, Mayor

May 29, 1979

Mr. Ken Slattery
Washington State Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

I appreciate the opportunity you have given the City of Seattle to extend comments on the Draft Environmental Impact Statement for the Western Washington Instream Resources Protection Program.

The Department of Community Development has the general responsibility for coordinating such comment activities for the City of Seattle. I am enclosing a copy of the response developed by the Department.

Sincerely,

Charles Royer

Charles Royer

CR/dhp
Enclosure

Your
Seattle
Community Development

Darel Grotnaus, Director
Charles Royer, Mayor

May 29, 1979

The Honorable Charles Royer
Mayor
City of Seattle

Dear Mayor Royer:

This Department has completed its review of the Draft Environmental Impact Statement for the Western Washington Instream Resources Protection Program. The comments presented below represent the concerns of the Water and City Light Departments as well as our own.

22 Generally, we feel that a proposal such as the Western Washington Instream Protection Program, which has such long ranging and varied effects, should be dealt with in a more detailed examination. Fundamental to the EIS process is the concept of full disclosure which is to facilitate public and agency review of the proposal. We feel that in order to make a complete determination of the proposal, more substantive information is needed.

23 From a regional water resource management view point we support the concept of instream flow regulations. We also support the concept of establishing some form of "base" or "minimum" flow for instream use and the spirit of 90.54.040 RCW which called for a high priority for establishing such flows. However, we feel that the proposed approach may, in some cases, sacrifice a thorough and lasting solution in order to meet an arbitrary schedule.

24 The establishment of instream flow regulations, particularly on the Cedar and Tolt Rivers, will significantly impact Seattle's future water supply. Once these regulations are established they will be difficult to change. We believe that care and patience must be exercised during the development stage of the proposal if we are to avoid future situations with unworkable regulations or regulations that would prove to be non-beneficial to the region. Further, we do not agree that expediency is necessary in order to

25 avoid possible over-appropriations. We feel that since such appropriations are solely the responsibility of the Department of Ecology, it appears that the Department has the option of withholding future appropriations until instream regulations are finalized.

26 The approach set forth in this document appears to be in conflict with WAC 173-500-060(2) which requires that instream flow regulations should be established as sufficient data becomes available. We can find no evidence to support that sufficient data exists in all of the Water Resources Inventory Areas (WRIA). Therefore, we feel that more information regarding

27 data availability should be included in the Final EIS.

Yesler Bldg. 400 Yesler Way Seattle, Washington 98104 (206) 625-4501

28 The regulation of instream flows can have substantial impacts on some basins but not necessarily on others. The impacts are different, distinct and unique in each individual basin. Because this Draft EIS is programmatic in nature and does not provide individualized assessments of impacts on localized environments, we suggest that it may be appropriate to prepare further environmental review prior to defining specific regulations for each river basin. This is especially true for the Cedar or Tolt Rivers, since the proposed regulation will significantly impact the City's ability to provide an adequate, high quality water supply.

29 In addition, by virtue of the Federal Power Act and other recent federal decisions, the Federal Energy Regulatory Commission exercises final jurisdiction over flow releases from licensed projects. We feel that the Department of Ecology should clarify its position with regard to its authority to establish legal limits on federally licensed projects.

We believe that there are several questions raised by the proposal that should be answered in the Final EIS, specifically:

30 Page 4, Item 3. The demand for public water supply is not easily controlled, and to maintain supply there would be a proliferation of smaller storage facilities and diversions in greater numbers. We feel that the discussion of the effects of the public water supply is extremely important and should be expanded to address the effects on increased water costs to users and the anticipation of a greater number of impacted areas.

31 Page 4, paragraph 4. High flows are used because of uncertainty of the method. It is implied that with additional information these flows could be lowered in the future. We can find no provisions for this in WAC 173-500. We would ask that the Final EIS address the provisions of WAC 173-500 in regard to the proposal.

32 Page 6, paragraph 1. We suggest that the economic analysis should also investigate out-of-stream uses if it is to depict a complete analysis of the issue.

33 Page 7, paragraph 5. The discussion regarding the Use of the Minimum Flow Technique should explain the actual technique in more depth. We feel that the description of the technique in the DEIS does not show cause for eliminating the use of this technique other than the stated issue of requiring more time to implement than other techniques. We strongly recommend against the use of "shortcut" methods in determining regulations on streams where significant out-of-stream use exists or is foreseen in the future.

34 Appendix IV Page 5. More detail is needed regarding the additional "basin documents" that are to be available at a future date. Specific mention should be made as to whether they will include the data concerning benefits to the region, and whether these documents will be considered supplemental to the present EIS or will be separate impact statements for each region.

35 On the same page under the "Tasks" discussion we found no task that would develop input for costs and benefits of out-of-stream uses. Further, we found neither a task that would evaluate the effects of each particular regulation or the region as a whole, nor a task to collect sufficient data to make this evaluation. We feel that the scope of investigation should be broadened to include these parameters in the Final EIS. A more wide-ranging approach would also help satisfy RCW 90.54.020 which requires the determination and securing of the maximum net benefits for the people of the State.

36 Appendix D. This discussion should distinguish between regulated and non-regulated streams. Often, the only flow records available are those reflecting the affects of regulation. This appendix should be modified to recognize regulated flows and how they will be treated in the analysis.

37 We further suggest that the steps outlined for determination of base flows be expanded to contain an evaluation on a basin by basin basis as well as a regional evaluation. The approach mentioned in the DEIS is adequate for a broad reconnaisance study, but we suggest that a more detailed analysis would be more appropriate.

38 Page D-7. A list of agencies is presented that have an interest or responsibility for instream-related activities. There does not appear to be any agency listed that has the single responsibility of representing hydro-electric power, which is also an instream use. The Final EIS should reflect how DOE expects to represent this interest, or how this interest will be articulated. Further, since the make-up of the committee reflects the concerns of instream users, there arises a question as to how will the concerns of the out-of-stream users or those with regional multi-use concerns be addressed. We suggest that the Final EIS also address these issues.

39 Page D-7, Table D-2. The parameters of the Stream Rating System make no mention of energy values. We suggest that energy production be included as part of the instream evaluation system. Further, we feel that to maintain a reasonable degree of uniformity and balance in the rating process it is necessary that the stated parameters of the stream rating system be based on a clearly stated set of objectives.

40 Page D-8. We recommend that the curve should be further documented to its origin and significance.

41 Page D-9, paragraph 2. An explanation of what is the median flow and how it is determined should be given in the Final EIS. We would also ask why this information is not included in Figure D-4?

42 Page D-9, paragraph 3. We suggest that to truly show a complete picture, the analysis should also show minimum and maximum flow records for the considered time span. In addition, valuable information would be gained with the inclusion of minimum and maximum flow data for the historic record. We are unable to find the analyzed time period recorded for the included sample of the Upper Chehalis Basin.

Page D-10. Using the criteria as determined in the sample figures D-3 and D-4 for the Chehalis River Station 120275.00 in Table D-1, the rating value was found to be 19. This number, 19, intersects the low flow period curve at 70%. The base flow listed in Table D-1 for the period from July 15 to September 1 appears to reflect the 60% flow duration curve rather than 70%. This would reduce the base flow values from 275 cfs to 250 cfs, and 165 to possibly 155. We feel an explanation should be made as to whether these numbers read from the curve or are part of the computed output.

43

If you have any questions regarding our comments, please do not hesitate to contact Larry Schmeiser, Director of this Department's Environmental Management Division.

Sincerely,

for Darel E. Grothaus
Director

DEG/DH/sp

cc: Water Department
City Light

DIVISIONS
Light
Water
Belt Line

City of Tacoma
WASHINGTON

DEPARTMENT OF PUBLIC UTILITIES
Paul J. Nolan, Director

Please address reply to:
City of Tacoma
Department of Public Utilities
P. O. Box 11007
Tacoma, Washington 98411

Attention:

May 29, 1979

Mr. Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

44 In the Environmental Impact Statement (EIS) regarding the "Western Washington Instream Resources Protection Program", we note that although the Water Resources Act of 1971 includes hydroelectrical power production and domestic water use among the uses which are compatible with the "enjoyment of the public waters" of the State, no weight is given these values in your method of base flow analysis. We also note that in the list of the elements of the

45 environment under "Utilities" both energy and water are listed as N/A, although public water supplies are recognized under the heading of "Water". The base flow program, as proposed, does not appear to adequately recognize these uses or the value of other out-of-stream uses, such as agriculture, in determining base flow quantities. These uses are of equal or greater value to the citizens of Washington as those parameters listed in your stream rating system. In order to achieve Department of Ecology's goal of a fair allocation of the State's water, representation should be given on your stream rating committee to interests of the out-of-stream users.

46 Lack of recognition of valuable and legitimate out-of-stream resource uses is reflected in the department's approach to base flow determination as presented in Appendix D of the draft report. As we interpret this procedure, base flow levels are highly dependent on qualitative evaluation of a stream's parameters by various state agencies, whose sole interest would be in-stream resource use to the exclusion of out-of-stream resource utilization. It appears many of the base flow levels resulting from such methodology would be unrealistically high - at or near median values. This is hardly an equitable trade-off between in-stream and out-of-stream resource utilization. Consideration needs to be given to natural low flow conditions of the rivers and an equitable sharing of the waters at that time, if your program is to meet the requirements of the Water Resources Act of 1971.

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

Mr. Ken Slattery
May 29, 1979
Page 2

It appears the proposed program will generally have no impact on the Light Division's existing hydroelectric projects. Depending on the base flow levels adopted for certain streams, however, the program will very likely restrict feasibility of future development of additional hydrogeneration sites. In view of the emphasis at the national level on the development of low-head hydroelectric projects and on renewable resources in general, potential benefits from energy or capacity generation benefits should be carefully analyzed and accorded substantial weight in determining the final base flow required for a given stream.

47

The major concern for the Water Division involves the effect upon our proposed Green River Pipeline No. 5 domestic water supply. Our concern involves both quantity and quality of the water available for domestic use. Since the draft EIS does not have detailed information regarding the flow regulation of the Green, we anticipate that a separate EIS will be needed for the Green River basin study and that we will have specific comments to make at that time.

48

Very truly yours,

Paul J. Nolan
Director of Utilities

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT No. 1
2320 California St., Everett, Washington 98201 258-8211
Mailing Address: P O. Box 1107, Everett, Washington 98206

May 30, 1979

Mr. Eugene Wallace, Division Supervisor
Water Resources Management
Department of Ecology
Olympia, WA 98504

Dear Mr. Wallace:

Draft EIS Western Washington
Instream Resources Protection Program

The Snohomish County Public Utility District No. 1 staff has examined the SEPA EIS report for the Western Washington Instream Resources Program and feels that the adoption of the program, as proposed, would have a detrimental effect on future hydroelectric power development for the remaining hydroelectric sites available in this portion of the State. The critical need for renewable power resources should be considered when considering such a program. Alternatives to hydroelectric power are detrimental to the air quality if thermal resources are relied upon and nuclear alternatives are becoming less attractive due to rising costs and public concern for the radiation hazard. Therefore, the potential to develop all hydroelectric resources should be maintained.

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General Comments

1. The general base flow concept as presented seems to present a basic conflict with the Water Resources Act of 1971 in that Section 90.54.020(2) emphasizes an allocation of waters among potential uses and users. Section 90.54.020(3) states that the environment will be protected and, where possible, enhanced by establishing a base flow. The conflict arises in that once the base flow is reached, there is no longer an allocation of the available water among uses but a reservation of water for instream uses only. There may be other users during an extended dry period who have critical needs, but under the presented criteria they would receive no water. Allocation based on need should continue below the base flow level on a percentage basis until a critical minimum flow is reached.

51

As an example only, an analysis of the Sultan River flows for the dry water year of 1941 was performed based on the base flows developed for that River by the Department of Ecology. If those base flows were enforced, new users would not be able to divert water from the river for any use for the following number of days:

52

Month	Number of Days
October	1
November	2
December	0
January	0
February	11
March	5
April	15
May	12
June	23
July	30
August	26
September	0

Although these base flows are not going to be applied to the Sultan River, similar results could be expected on other rivers.

2. The methodology is arbitrary and does not consider the size of the stream, its variability, or even the existence of fish in the stream in setting the 95 per cent flow as the lower limit of flow in all seasons of the year.

53

3. No detailed explanation is given for the application of the base flow concept to non-consumptive users who may divert at one point and then discharge the water back into the river a short to moderate distance downstream. This could impact small scale hydroelectric development where short diversions out of stream are necessary to gain head and thus avoid the environmental impacts of larger dams and reservoirs.

54

4. No explanation has been provided on how the base flow regulations, once adopted, may be modified when new needs arise in the future.

55

5. It is our opinion that requests for diversions should be studied and analyzed on an individual basis through the SEPA process rather than be setting arbitrary base flows as an administrative procedure.

56

Specific Comments

Page 3, paragraph 2. "The desire to balance competing interests is the reason for establishing base flows". Base flows do not balance uses; they reserve water for instreams use only.

57

Page 3, Section 5. It is stated that "If a base flow is set too low and water is appropriated to that level, the water cannot be easily retrieved". This also applies to the case of setting the base flow too high. Once it is set too high, water may be exceedingly difficult to retrieve for other critical uses that may arise in the future. This again points out the conflict between allocation and reservation by a fixed amount of water rather than by percentage.

58

Page 5, Section 10. Will flows less than base flows be allowed in short to moderate stream reaches to allow for power diversion to gain head in run of the river hydroelectric schemes after adoption of base flows? Not only will this limit operational flexibility of peaking plants, but could cause the construction of larger dams and reservoirs in order to bypass the base flow requirements and to gain the head that tunnel and pipeline diversions could provide. The buffering of flow fluctuations by reservoirs should be considered in setting base flows.

59

Page 6, Section 1. The no action alternative is the preferred alternative in our opinion in that each alternative is considered on a case by case basis with individual stream parameters and needs considered at the time of application. Individual EIS's should be required on all applications for water rights above a specified amount.

60

Page 7, Section 2, paragraph 3. Difference between methods of setting base flows should be resolved by meetings not only between Fish, Game and DOE but also concerned citizens, PUD's and other users.

61

Page 7, Section 3. A more detailed approach takes a much longer time to implement because the issue is an extremely complex one. This again illustrates the fallacy of an arbitrary scheme utilized for administrative expediency.

62

Page 8, Section 4. Complete basin plans are preferable to the setting of base flows in advance due to the fact that once regulations are set they tend to be "cast in concrete".

63

Appendix D of Appendix 4, page D-8. Figure D-3 is quite arbitrary and no adequate discussion is provided of its development. It does not consider the size of the stream or of its flow variability. The stream rating system is arbitrary and needs input from other than just state personnel. The 95 per cent flow can be excessively high in larger streams in winter and spring months.

64

Appendix D of Appendix 4, page D-9. The discussion of the development of the discharge-duration curve is not adequate to allow independent duplication of the results.

65

Yours very truly,

W. G. Hulbert, Jr.
Manager

Skokomish Indian Tribe

(206) 877-5267 Rt. 5, Box 432 Shelton, WA 98584

May 30, 1979

Mr. Tom Elwell
Department of Ecology
M/S PV-11
Olympia, Washington 98504

Dear Mr. Elwell:

The draft EIS on the Western Washington Insteam Resources Protection Program contains several comments that are alarming to the Skokomish Tribe.

The first alarming statement is that some streams be afforded a higher level of protection than needed in order to let other streams be over-appropriated where "unmitigatable" conditions exist that adversely impact fish resources. Many Indian tribes, the Skokomish included, have river fisheries. 66 These fisheries are important to the tribal members economically and culturally. It is not acceptable to "trade off" on reservation river fisheries in the manner proposed for the benefit of Alaskan, Canadian, off-shore and Puget Sound fishermen. Although it is not clear which river would be so "traded off" to any Indian tribe on such a river, the impact of such a "trade-off" would be to severely damage the river fishery for the benefit of these other resource users.

The second alarming statement is that the "higher base flows (proposed by the U. S. G. S.) are based on the somewhat narrow objectives of providing optimum (not maximum) spawning area and rearing conditions." 67 The D.O.E. does not seem to take account of the possibilities for ground water for out-of-stream uses of water. In seeking a "balanced" use of the rivers it seems that base flows should be set to recognize that there is 68 a groundwater alternative for out-of-stream users that is not available to in-stream users, such as fish and fishermen.

The third alarming fact is that the D.O.E. seems to be saying that base flows as proposed are a second best alternative 69 compared to the original "minimum flow" calculation. It is laudable that the D.O.E. wants to do something to prevent over-appropriation. Why wasn't a moratorium on water permits on

endangered streams considered as an alternative so that the 70 more complex calculations could be made? It is almost a scare tactic to raise the real danger of over-appropriation from inaction, but ignore the possibility for a temporary moratorium while planning proceeds.

In general, the EIS states in so many words that fish would receive the largest negative impact from the proposed action. Why is there no attempt to quantify the amount of fish 71 damage that could occur? Would the state be liable for such damages? It is not at all evident that the more "balanced" use of rivers would produce a net benefit. There needs to be more analysis and discussion of why fish have been chosen as the secondary consideration. Why should the out-of-stream user receive higher consideration than fish or other in-stream users? It also appears possible that management of these resources in the manner proposed could be in violation of federal law.

In sum, although the goal of preventing over-appropriation is of maximum importance, it appears that the moratorium technique could have been considered as an alternative that would allow a more thorough consideration of the resource questions.

Sincerely,

Steve Johns, Sr.
Tribal Chairperson

SJ:hr

Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

In reply refer to: PRC

May 30, 1979

Mr. Ken Slattery
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

This is in response to your letter of April 27, 1979, requesting comments on the draft environmental impact statement entitled "Western Washington Instream Resources Protection Program."

72 With the minor exceptions of the Wind-White Salmon and Klickitat Basins, the streams considered in this impact statement are all located west of the Cascade Range and, thus, outside of the Columbia River Basin. As a result, the establishment of baseflows for western Washington streams has little or no impact on the Federal hydrogenerating system and the Columbia River watershed.

73 We realize the importance of baseflows for the purpose of protecting instream values including fish, recreation, navigation (where applicable), water quality, hydropower, wildlife, and esthetics. Since existing water rights certificates and permits would not be affected, nor would the operation of existing hydroelectric plants, we assume there will be no operational changes associated with existing projects on such rivers as the Skagit, Cowlitz, and Lewis, which have been marked for baseflow analysis.

74 Future hydroelectric projects authorized after the adoption of baseflows will be impacted by limiting operational flexibility and by a decrease of peaking capabilities. Consequently, the economic feasibility (benefit/cost ratio) of these projects will be affected. However, your method for determining baseflows appears to provide a good balance for the

75 multipurpose demands placed on western Washington streams. Once quantified, these flows may then be reviewed in greater detail by all concerned. Thank you for the opportunity to comment.

Sincerely,

Hector J. Durocher
Assistant Administrator for
Power Management

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Room 360 U.S. Courthouse, Spokane, Washington 99201

May 31, 1979

Mr. Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

76 We have reviewed the proposed Instream Resources Protection Program for Western Washington. It does not appear that this program will directly affect any programs administered by the Soil Conservation Service.

Thank you for the opportunity to review your statement.

Sincerely,

Galen S. Bridge
State Conservationist

Nisqually Indian Tribe

4820 She-Nah-Num Drive S.E.
Olympia, Washington 98503
Phone: 456-5221

May 31, 1979

Mr. Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery;

The Nisqually Tribe has reviewed the draft Environmental Impact Statement and Program Overview of your Instream Resource Protection Program and we offer the following comments:

77 78 1) Concerning methodology for determining base flows, we believe that the most appropriate methodology is one that assures optimum protection for fish - i.e. the U.S.G.S. method. To seek a balance between uses (E.I.S., page 7) implies that the various uses are coequal. We disagree with this implication; fishery uses are primary.

79 2) If the more conservative U.S.G.S. method is adopted, Ecology will not have to negotiate with Fisheries and Game (page 6 of overview). If such negotiations do occur, we suggest that the relevant Indian Tribe, if any, be included in the discussions. We would like to be included in any such negotiations concerning the Nisqually River.

80 3) We also suggest that the relevant Indian Tribe (if any) be included on the proposed Stream Rating Committee (Overview, page D-7).

81 4) Within WRIA 11 - the Nisqually Basin - there is an independent drainage, McAllister Creek. A base flow should be established for McAllister Creek, since it has significant salmon spawning habitat.

82 5) The Nisqually Tribe, WDF, and WDG are currently involved in litigation before the Federal Energy Regulatory Commission concerning minimum flows on the Nisqually River. It might be wise to coordinate your project with the F.E.R.C. proceedings and ordered minimum flows.

We generally support your project. We trust our comments will be used in finalizing the project procedures.

Sincerely,

Dorian S. Sanchez

DORIAN S. SANCHEZ, Chairman

Paul Svoboda for

Bill Frank, Jr., Fisheries Manager

DSS/sjw

STATE OF WASHINGTON

Dixy Lee Ray
Governor

WASHINGTON STATE PARKS AND RECREATION COMMISSION
7150 Cleanwater Lane, Olympia, Washington 98504 206/753-5755

May 31, 1979

35-2650-1820
Draft EIS - Western Washington
Instream Resources Protection
Program (E-1624)

TO: Ken Slattery, Washington State Department of Ecology

FROM: D. W. Heiser, E.P., Chief, Environmental Coordination

RE: DRAFT EIS - WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM

The staff of the Washington State Parks and Recreation Commission has reviewed the above-noted Draft Environmental Impact Statement and has the following concerns:

83 The Draft EIS is extremely brief and makes it difficult to evaluate the specific impacts of the Instream Resources Protection Program at this time. Hopefully, the future addendums to this document, evaluating the proposed base flows by WRIA(s), will allow for detailed analysis of the impacts.

84 The streams and rivers of Western Washington provide a primary recreational resource to residents and visitors in this state. Many recreational activities are water-dependent, including boating, canoeing, kayaking, rafting, fishing, swimming, water-skiing and other water sports. Many other activities are water-related including, picnicking, camping, hiking, photography and observing nature. Certainly, there are many more activities that are enhanced by the aesthetically pleasing view of a river or stream nearby. All these forms of recreation and the economic benefits derived from them need to be considered when determining base flows for Western Washington streams and rivers.

Thank you for the opportunity to review and comment on this document.

sg

STATE OF WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF TRANSPORTATION KF-01
Highway Administration Building, Olympia, Washington 98504 206/753-6005

May 31, 1979

Mr. Ken Slattery
Water Resource Management
Department of Ecology
Olympia, Washington 98504

Department of Ecology
Western Washington Instream
Resources Protection Program
Draft Environmental Impact Statement

Dear Mr. Slattery:

We have reviewed the subject document and have no objections to the proposal but have the following comment:

85 It appears the document should address short time or emergency usage such as the need for water for dust control, flushing of roadways and drainage facilities, herbicide application, etc. Water from streams are often the only source for fire control and moisture control of embankment material to achieve optimum densities during construction.

We feel the determination of the base flows should allow provisions for special uses such as mentioned above.

If you have any questions, please call me at 753-3811.

Sincerely,

ROBERT S. NIELSEN
Assistant Secretary for
Public Transportation and Planning

Russell Albert for

By: WM. P. ALBOHN
Environmental Planner

RSN:yw
WPA:WBH

cc: A. R. Morrell
D. D. Ernst
C. S. Gloyd
R. Albert
Environmental Section

Public Utility District No.1
of Douglas County

May 31, 1979

Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

Attached please find the comments of Public Utility District No. 1 of Douglas County, Washington, regarding the draft environmental impact statement prepared for the Western Washington Instream Resources Protection Program proposed by the Washington State Department of Ecology.

Public Utility District No. 1 of Douglas County would like to be on the distribution list for the final EIS on this project and would also like to make it clear at this point that we are available for commentary. Thanks for your attention to our contribution.

Sincerely,

PUBLIC UTILITY DISTRICT NO. 1
OF DOUGLAS COUNTY

By
FRED LIEBERG, Manager

FWL:ds
Enclosure

1151 North Main Street
East Wenatchee, WA 98801
(509) 884-7191

Commissioners LLOYD McLEAN MICHAEL DONEEN HOWARD PREY Manager FRED W. LIEBERG

COMMENTS OF PUBLIC UTILITY DISTRICT NO. 1
OF DOUGLAS COUNTY ON THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT
PREPARED BY THE STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Prepared in accordance with the
Washington State Environmental Policy Act

WESTERN WASHINGTON
INSTREAM RESOURCE PROTECTION PROGRAM

May, 1979

By

PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY,
WASHINGTON, A MUNICIPAL CORPORATION

Fred W. Lieberg, Manager

IDENTIFICATION OF AUTHOR

The Wells Hydroelectric Project FPC (FERC) license number 2149 is owned and operated by Public Utility District No. 1 of Douglas County, Washington (Douglas). This dam is the most upstream dam in the Columbia River which has fish passage facilities. Chief Joseph Dam, located directly upstream, has no fish passage facilities, thereby forming a barrier to anadromous fish. The Wells Reservoir (Lake Pateros) has two relatively small rivers providing inflow over and above the water which is furnished by the Columbia River via Chief Joseph Dam. These rivers are the Okanogan and the Methow, both of which support spawning populations of anadromous fish. In addition, there is a federal fish hachery on the Methow River at Winthrop which releases chinook-salmon migrants. The Wells Reservoir has very little storage, thereby making Wells Dam a run of the river project which is dependent upon the federal dams located upstream for its inflow and discharge with a minor contribution from the Okanogan and Methow.

Douglas provides the facilities and funding for various fish programs which were designed to mitigate the effects of the Wells Hydroelectric Project on summer chinook, salmon, steelhead, trout and whitefish.

Over the past several years, Douglas, in cooperation with Chelan and Grant County Public Utility Districts has initiated studies relating to downstream migrant salmon and steelhead in the mid Columbia. Incidents of gas bubble disease in naturally migrating salmon and steelhead smolts in the mid-Columbia, sonar observation of smolt movement and timing at mid-Columbia dams and turbine mortality investigations are among the studies conducted by the technical staffs of the three mid-Columbia PUD's. In addition, the mid-Columbia PUD's have funded studies by the National Marine Fishery Service and the Washington Department of Fisheries on salmon and steelhead migrations in the mid-Columbia. These studies have resulted in an increased understanding of those factors influencing salmon and steelhead smolt migration in the mid Columbia. For the past several years Douglas has participated in discussions under the auspices of the Committee on Fishery Operations (COFO) to provide conditions for fish passage each year.

THE EIS DOES NOT ADEQUATELY COVER THE IMPACTS ON THE MID-COLUMBIA OF THE ACTIONS PROPOSED IN THE WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM AS A RESULT OF THE PACIFIC NORTHWEST COORDINATION AGREEMENT

86

By reason of Pacific Northwest Coordination Agreement, a copy of which is enclosed herewith and incorporated herein by reference, at certain periods of time Douglas exports energy to Western Washington power producers. In return for this energy, the Western Washington power producers store water which is used to produce energy for return to Eastern Washington on demand. The draft EIS does not sufficiently address the impact on the

storage of energy in Western Washington reservoirs and the resulting wide range effect on the management of Eastern Washington resources. These impacts must be identified and dealt with which the present draft EIS does not do, thus making it inadequate on its face. In order to adequately examine the impacts of the proposed DOE projects for the mid-Columbia and also for the Western Washington streams, the whole picture must be examined. A copy of the comments of Douglas on the draft EIS prepared by the State of Washington Department of Ecology on the Columbia River Instream Resource Protection Program is attached hereto and incorporated herein by reference for the information and use of the Department of Ecology in coordinating its programs and fully examining the potential impacts.

EVERGREEN LEGAL SERVICES
NATIVE AMERICAN PROJECT
320 SMITH TOWER, 506 SECOND AVENUE
SEATTLE, WASHINGTON 98104
(206) 464-5965

GREGORY R. DALLAIRE
DIRECTOR

JUN 4 12 14 PM '79

June 1, 1979

Tom Elwell
Environmentalist for
Washington State Department
of Ecology
Lacey, Washington 98504

Re: Comments on Draft Environmental Impact Statement for Western Washington History and Resources Protection Program

Dear Mr. Elwell:

87

These comments to the draft EIS should be read as supplemental to those comments submitted directly by the Skokomish Indian Tribe over the signature of Mr. Steve Johns, Tribal Chairperson. I would reiterate the concern of the Skokomish Tribe that the draft EIS does not consider as an alternative the possibility of an immediate moratorium on further water appropriations from those streams critical to the production and rearing of salmon. During the long process necessary to develop base flows (or minimum flows) it seems only logical that such a moratorium be utilized. Without such a moratorium it is quite possible that by the time the Department gets to particular streams they will already be fully appropriated to the detriment of the aquatic resources which are dependent upon adequate flows.

These comments will focus on three aspects of the draft EIS: (1) the failure of the DEIS to clearly state as a goal and guide the protection of the fish resource, and (2) the failure of the DEIS to develop and utilize a methodology which will allow for the utilization of new techniques and biological data which may become available in the future, and (3) the failure to invite participation of Indian tribes at an earlier stage.

The duty of the DOE to protect the fish resource is clear. This responsibility is made explicit in those statutes which give authority to the DOE to set either minimum or base flows. Indeed, the Water Resources Act of 1971, RCW 90.54 provides:

> Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental values, and navigational values.

90.54, 020(3)(a).

Nothing would indicate from the statute that those values articulated are to be averaged, conglomerated, or otherwise diluted. It is clear that base flows must be set to protect the weakest of those values which are set out in the statute.

88 Despite this clear statement of policy the DEIS does not make a clear statement that fish will be protected by the development of base flows which are sufficient to meet fish needs. Indeed, the recognition in the DEIS that there may be considerable debate amongst competing water users (page 4) indicates that fish preservation might well be subordinated to other uses.

The Skokomish Tribe's concern with the failure of the DEIS to clearly state that base flows will protect fish is aggravated by the method selected by the DOE to develop base flows. This method would average those factors set out in the Water Resources Act. Therefore, although fish may be rated high on a particular stream, the low rating of the other factors would result in base flows which could very well be insufficient to meet fish needs. The Skokomish Tribe believes that this methodology is not only unsound technically, but is contrary to the mandate which was given to the DOE by the legislature.

89 The Skokomish Tribe would request a clear statement that base flows determined will be sufficient to protect fish life in all streams and rivers. If such a statement is not to be included within the final EIS the Skokomish Tribe would request a detailed explanation of why, and under what authority the DOE is acting to not fully protect the fishery resource.

Secondly, the Skokomish Tribe is concerned with the methodology developed to determine the base flows. The methodology appears to lack flexibility. Furthermore, it fails to utilize any specific biological information or data which relates to the specific needs of aquatic habitat and animal life. Rather, a rather technical formula based upon an averaging of environmental factors and historic flows is utilized.

90

The failure of the DOE to develop a methodology which utilizes specific biological information and data relating to the particular needs of aquatic animals and habitat is a severe limitation in the methodology. As noted above, the averaging of environmental factors might well result in flows insufficient to protect fish. Furthermore, the failure to study and utilize biological information relating to the specific needs of fish life may well result in flow unnecessarily high or dangerously low to protect fish life.

90

Any method selected to determine base flows must be flexible enough to incorporate biological and other scientific information in the creation of those base flows. It is the opinion of the Skokomish Tribe that the present method selected does not have the necessary flexibility. Without a rewriting of the methodology to allow such flexibility the DOE might well find itself in the position of being unable to utilize scientific information which becomes available without re-implementing the environmental assessment process now being undertaken by the DOE. This would certainly be an unproductive use of the DOE's staff and time.

91

Third, the tribe is concerned that it has been excluded from the planning and development of the method now being proposed by the DOE. It is our understanding that other non-state governmental entities have been invited to participate in the planning process. While the Skokomish Tribe appreciates the opportunity to comment on the DEIS, it believes that all parties would benefit from a fuller participation at earlier stages. Therefore, the tribe would request that it be invited to participate as other governments in the planning process. With its management responsibilities for the salmon resource, the tribe is certainly in an unique position to participate fully in the development of base flow concepts.

92

The Skokomish Tribe supports the efforts of the DOE to, after long delay, establish base flows. However, the establishment of base flows which do not protect fish life would result in an exercise of futility. Furthermore, if the method selected is one which fails to incorporate scientific information or methodology and does not contain the flexibility to incorporate new information and methods in the future the resulting process will certainly not serve to protect fish or other instream values.

90

Therefore, the Skokomish Tribe urges the DOE to modify the DEIS at least in the following respects:

93 (1) Consider and accept as a reasonable alternative the immediate imposition of a moratorium of future appropriations of water from those streams considered to be critical to the production of fish.

94 (2) Provide a clear statement in the EIS which is unequivocal in its commitment to establish base flows which will be sufficient in of themselves to protect fish life, notwithstanding other competing interests of the water users or a balance of those factors set out in the statute.

95 (3) Develop a methodology which provides for the utilization of scientific information and procedures which will insure that the actual needs of fish and other instream interests are protected.

The failure of the DOE to take these actions now, especially as they relate to the development of a methodology flexible enough to incorporate scientific methodology and information, might well make it impossible for sufficient base flows to be established in the future without a second environmental assessment.

Sincerely,

Alan C. Stay

ALAN C. STAY
Attorney for the Skokomish
Indian Tribe

cc:

Steve Johns, Chairman
Skokomish Indian Tribe

Arpad Mattley, Chairman
Washington Ecological Comm.

Georgette Valle, Co-Chairman
House Ecology Committee

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
2625 Parkmont Lane, S.W., Bldg. B-3
Olympia, WA 98503

June 1, 1979

Eugene Wallace
Division Supervisor
Water Resources Management
Department of Ecology
Olympia, WA 98504

Dear Mr. Wallace:

We have reviewed your department's draft environmental impact statement and program interview for the Western Washington Instream Resource Protection Program (WWIRPP) and offer the following comments for your consideration.

General Comments on Proposed Program:

96 We commend your stated policy of maintaining flows in Washington streams in sufficient quantities to protect instream fish and wildlife resource values. These resources are important not only in their own right, but make major economic, social, recreational, and aesthetic contributions to the citizens of this state.

97 Review of the "base flow" concepts of flow recommendation indicates it is a non-technical approach that is not tied to requirements of aquatic organisms. The rating system is subjective and must be considered highly variable between individuals and agencies. Flow recommendations, therefore, are judgmental and provide no assurance of aquatic resource

98 protection. This approach also overlooks the fact that periodic high flows are necessary to move bed loads, flush sediments, and generally maintain desired stream channel characteristics. We are particularly concerned about DOE's preoccupation with determining "the smallest amount of water necessary for fish", and how this attitude will influence the resolution of potential differences in base flow determinations by WDF/WDG and DOE. Our experience on the Columbia River

99 indicates that DOE tends to use "the smallest amount of water necessary for fish" as a starting point for negotiating volume/flow tradeoffs with other beneficial water users. The program document should state whether DOE is providing survival level flows for fish and wildlife or a flow regime capable of providing self-sustaining, fishable populations. It is the position of the Fish and Wildlife Service that naturally-producing

99 stocks should be brought up to full production potential, with hatchery-reared fish used only for enhancement purposes. Many Puget Sound and coastal stocks have already been reduced to critically low levels, with spring chinook salmon being of priority concern to the Service.

While we share your desire to move quickly to set base flows, we do not believe the program as proposed has adequate triggering mechanisms to guarantee consideration of biologically-based flow regimes that may be determined for priority systems following adoption of base flow regulations. 100 Therefore, we request that each basin flow administrative regulation contain the following paragraph: "At such time as the Departments of Fisheries and/or Game provide specific information substantiating the need for flows higher than the flows set forth in WAC [this regulation], the Department of Ecology agrees to proceed with revising the flow regime described in WAC [this regulation] within one year from the time of said request, unless agreement to another time frame is reached between parties." We also request clarification of the statement made on page 11 of the draft program document that "minimum flow regulations 101 may be promulgated under authority of Chapter 90.22 RCW to supersede base flow regulations..." This is contrary to recent statements by DOE personnel that, once base flows are set under the proposed program, use of 90.22 by the Departments of Fisheries and/or Game is no longer an option.

102 We also suggest that the Director make a commitment to expedite procedures to temporarily withdraw waters for further appropriation (pursuant to RCW 90.54.050(2)) at the request of the Director of Fisheries and/or Game if, in the course of setting base flows, it appears that a given river is nearing full appropriation. Such a withdrawal would of course be temporary pending formulation of a Basin Management Plan. This 103 action, if needed, would reduce the likelihood of exceeding the upper limit for allocations. This upper limit is extremely important to effective protection of instream resources.

The program needs to specifically address withdrawal monitoring and 104 enforcement procedures that will be used following adoption of base flows. DOE itself has stated "It has become increasingly apparent that a satisfactory water management program can be carried out only if surface and ground water withdrawals are closely monitored and accurately measured." (WAC 508-64-010).

Specific Comments on EIS:

105 p.1. para 1. In third sentence, change "...nor would operation of..." to "...nor would present operating licenses of..."

106 p.2. para 2. Change third sentence to: Base flows are legally defined as "flows necessary to provide for preservation of wildlife, fish,

scenic, aesthetic, and other environmental values, and navigational values" (90.54.020 RCW). The present sentence is correct in its listing of instream values, but misleading to imply that the intent of the legislature in calling for base flows was to protect hydropower. This was not the case.

107 P.3. 1. Surface Water (Quantity). Add to end of first sentence: "and dictates operation of future in-stream water projects capable of regulating flows."

108 Surface Water (Quality). Add to end of sentence 5: ", fish and wildlife, riparian vegetation, and aesthetics."

p.4 We believe your environmental checklist (P.I-1) is incorrect in 109 considering impacts of the proposal to Flora as N/A. Therefore a section needs to be added between 3. Public Water Supplies and 4. Agricultural Crops entitled: "4. Flora. Adoption of a base flow will help protect both streambank and aquatic vegetation from drying out and sloughing. This will in turn protect the many species of fish and wildlife that depend on this vegetation for food, cover, nesting, etc. Base flows also contribute to overall ecosystem maintenance, including freshwater recruitment to estuaries and floodplain wetlands."

110 p.5. para 1. Change second sentence to "If water itself or water-dependent habitat is destroyed, the animals dependent on that habitat, even if they need it for only short periods of time each year, will also be destroyed." It is a very well documented fact that the theory of "displaced wildlife" is a myth.

111 p.5. 6. Land Use and Population. Add: "With guaranteed base flows, it is likely that an area will support many user-days of fish and wildlife-oriented recreation, with a potential increase in nearby restaurants, boat-launch ramps, sporting goods stores, motels, etc.

112 p.6. para 2. Eliminate "short-term" from first sentence. Water rights are granted "in perpetuity."

113 p.6. para 4. Add "or relinquishment" to end of second sentence.

114 para 6. Add to end of paragraph "This is not really an alternative because the Department has been directed by the State Legislature to make a legal provision for the maintenance of instream flows (90.22,90.54 RCW)."

115 P.7. para 3. Eliminate "somewhat narrow" from first sentence. We strongly disagree with the sentiment expressed in this sentence and are very concerned with how it will affect DOE's posture in carrying out the resolution of differences called for in the last sentence

116 of this paragraph. We suggest that DOE either hire a biologist or rely on the professional expertise of natural resource agency personnel in resolving differences in flow proposals deemed necessary to protect fish and wildlife resources.

p.7. para 5. Sentence 4. It is difficult to see how the same statutory requirements for a public hearing in each county affected by a proposed flow regulation could result in one straightforward adoption process (90.54) and one that is hopelessly cumbersome (90.22). It seems that DOE's professed concern with instream resources would lead to the streamlining of internally-imposed requirements for adoption of a minimum flow under 90.22. Please send us a copy of your present procedure for setting minimum flows. 117

p.8. para 4. Previously adopted basin plans have exempted future domestic and stock-watering requirements from base flow provisions. In western Washington, domestic withdrawals may become a primary use on smaller streams. Does the department intend to subject future domestic and stock-watering withdrawals to base flows promulgated under the proposed program? 118

Our Fisheries Assistance Office is now compiling a list of western Washington rivers with the greatest actual or potential natural salmon production capabilities. They will be requesting a meeting with you to see how optimum fish flow regimes can best be obtained for those rivers. We will, of course, continue to work with the Washington Departments of Fisheries and Game in this endeavor. 119

Sincerely,

George L Capp

George L. Capp
Field Supervisor

...MISSIONERS
LEONARD M. ALLEN, Pres.
ARNOLD JAMES, Secretary
JOHN L. KOSTICK, Vice-Pres.

OFFICERS
GARY H. KALICH, Manager
DONALD M. WORKMAN, Supt.
RONALD A. MILLER, Treas.
JACK SCHAEFER, Auditor

Lewis County
PUBLIC UTILITY DISTRICT
321 N.W. PACIFIC AVE., CHEHALIS, WASH. • PHONE: (206) 748-4461
Mailing Address: P. O. Box 330 • Chehalis, Washington 98532

June 1, 1979

Mr. Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

Dear Mr. Slattery:

We have reviewed the draft Environmental Impact Statement for Western Washington Instream Resources Protection Program which was received at our District on May 17, 1979. We feel adoption of base flows for western Washington streams, as proposed, would be detrimental to future development of the remaining hydroelectric sites for this area. The "no action" alternative (page 6) is the preferred alternative in our opinion in that each alternative is considered on a case by case basis with individual stream parameters and needs considered at the time of application. Individual EIS's should be required on all applications for water rights above a specified amount. 120 121

Some specific concerns and comments follow.

1. Once an established base flow is reached, water is reserved for instream uses only. There may be those who have critical water needs during an extended dry period, but under the presented criteria they would receive no water. Allocation based on need should continue below the base flow level until a critical minimum flow is reached. 122

2. The hydrograph, Figure D-3 of Appendix D, page D-8, does not consider the size and other characteristics of the stream in setting the 95% flow as the lower limit for all seasons of the year. The stream rating system is arbitrary and needs further input. 123

3. The statement on page 5, paragraph 10, Energy, relating to environmental effects of the proposal states "adoption of base flows must maintain a certain amount of water flowing in the stream at all times." Is this to mean that users who may wish to divert water and discharge back a short distance downstreaam would not be able to do so? This would impact proposed small hydroelectric projects where short diversions out of stream are necessary to gain 124

head and thus avoid larger dams and reservoirs.

125 4. Once regulations are set, they are difficult to change. Therefore, affixing base flows to a stream should not precede development of complete basin plans.

126 5. Concerned citizens, utilities and other water users should be involved in the methods of setting base flows rather than only the Departments of Fish, Game and Ecology.

127 It is our suggestion that requests for water uses be studied and analyzed on an individual basis through the present SEPA process rather than by arbitrary base flow administrative procedures.

Very truly yours,

Gary H. Kalich
Manager

GHK/cb

cc: Washington P.U.D. Association

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Region 6
P.O. Box 3623, Portland, Oregon 97208

1950

June 7, 1979

Mr. Ken Slattery
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

Gentlemen:

We appreciate the opportunity to review the Draft Environmental Impact Statement of Western Washington Instream Resources Protection Program of April 1979.

We support such a program and feel that it will also help meet National Forest needs for maintaining favorable instream flows for many of our streams.

128 The approach for small streams (as discussed on page 10 of Appendix IV) seems reasonable and should adequately address many of the streams found on the National Forests of Washington.

We would hope to have the opportunity to participate throughout the program in the development of scheduling for new basins or streams. Also, we hope you are considering a similar instream flow program for streams East of the Cascades.

A minor correction may be warranted in the method used to compute suspension of a diversion so as to meet the "upstream control" flow for base flow regulation, as shown in item 1.b., page 11. This would be achieved by incrementally reducing the quantity of 129 flow of the diversion in question, rather than suspending it completely at one time. As presently written, the suspension would result in a surplus above the "upstream control" flow. This adjustment of the method of computation could be significant when the diversion in question is a large quantity of water.

130 Table D-3 on page D-8 of Appendix IV seems to be in error in that the higher stream rating, the less the percent flow duration. It would seem this is reversed.

R. E. WORTHINGTON
Regional Forester

6200-11 (1/69)

STATE OF WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF FISHERIES
115 General Administration Building, Olympia, Washington 98504 206/753-6600

June 1, 1979

cc: Spencer Buchanan

Mr. Wilbur G. Hallauer, Director
Department of Ecology
St. Martin's College
Lacey, Washington 98504

Dear Mr. Hallauer:

We have reviewed your Draft EIS of April 1979 entitled, WESTERN WASHINGTON INSTREAM RESOURCES PROTECTION PROGRAM, and offer the following comments.

131 We believe it is a well-written document and wish to commend you for your accurate portrayal of and concern for the fisheries resources under our jurisdiction.

132 We have a specific comment regarding page 3, paragraph 2, line 3 of the Overview section. The sentence implies that methodology developed failed to settle technical difficulties with the procedures. This implies that the methodology developed jointly between Washington Department of Fisheries and U.S.G.S., is not adequate or technically sound. We believe that the methodology is technically sound considering the "state of the art". Possibly, what you are trying to say is that the hearing procedures under RCW 90.22 are more time-consuming and cumbersome than a similar proceedings would be under RCW 90.54.

Again, we would like to commend you for the excellent presentation and we have committed our department to this cooperative effort.

Sincerely,

William Reed

Gordon Sandison
Director

kn

STATE OF WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF GAME
600 North Capitol Way/Olympia, Washington 98504 206/753-5700

June 7, 1979

Ken Slattery
Department of Ecology
Olympia, Washington 98504
(Mail Stop PV-11)

DRAFT ENVIRONMENTAL IMPACT STATEMENT:

Western Washington Instream Resources Protection Program

Mr. Slattery:

Your document was reviewed by our staff as requested; comments follow.

133 In the introduction (page 1, paragraph 1), it is stated that, "A base flow is a legal limit which may restrict future appropriation..." We are concerned with the phrase "may restrict". If this program does not guarantee restrictions for future appropriations of waters, a great deal of effort could be expended with little real protection for fishery resources. Also in this paragraph, last sentence, we feel that this type of provisioning is dangerous. As occurred in Oregon, over-approriating a stream can still occur. During a drought year, court decisions ruled in favor of diverters and overturned permit conditions to the detriment of fish and wildlife resources. The only way that this situation can be avoided is to issue water rights only on a "firm" water suppy which would be established above individual base flows.

134 On page two we concur with the statement that, "The purpose of a base flow is to protect the instream values including fish, recreation, navigation (where applicable), water quality, hydropower, wildlife, and aesthetics." These values can be protected only if base flows are established at high enough levels to provide for drought years. If this cannot be done, the base flow program could directly and indirectly sanction resource destruction. Difficulties and cost in fishery management and resource maintenance could become overwhelming state liabilities.

135 A section discussing impacts on native flora should be included on page four. If base flows are too low, severe and irrepairable impacts on stream associated wetlands could occur.

This would affect a great number of species and numbers of wildlife. The carrying capacity of wetland habitat types could be diminished. This would affect the overall wildlife base of western Washington. Similar comments should be added to the last paragraph in fauna section, page five. If adequate water is not available, a reduction in wildlife numbers and kinds should be expected. This also occurs when wildlife are forced to "migrate" (page five). 135

On page four it is stated that, "Since determination of smallest amount of water necessary for fish is not an exact science, a strong argument can be made for setting the base flow high enough to include a margin for error. If a base flow is set too low and water is appropriated to that level, the water cannot be easily retrieved." We strongly agree with this statement. However, base flows are very often set at levels below the recommendation of fisheries agencies. It has been our experience that flows recommendations are made first at bare minimum levels necessary to support fish and then must be negotiated from there. This allows very little or no margin for error. Base flows are seldom, if ever, optimum fish flows. 136

In the fauna section (page four), third paragraph, last sentence, this one sentence does not adequately cover the importance of stream bank vegetation or riparian habitat, and this program's potential impacts on it. Riparian zones typically feature well established vegetative types and have specialized ecological significance because many forms of wildlife are dependent on it for food, shelter, and nesting and rearing. If flow levels are depleted, riparian habitat will be lost. Replacement of recovery, if possible, could be expensive and long-term. If base flows are set too low, impacts on flora and fauna could be major and result in widespread resource damage. 137

In the mitigation section (page six) it is stated that, "Once over-appropriated, there is no way to replenish water in the stream..." We very decidely agree with this statement. Base flows must be established high enough to avoid any possible over-appropriation. Fish hatcheries cannot off-set fish losses from habitat destruction. 138

We are concerned with your discussion of trade offs as mitigation (page six). It is implied that "less than desirable" fish streams could be afforded less protection. What criteria would be used to determine whether a stream is "desirable"? Because, as you state earlier, once over-appropriated water cannot be replenished it would seem that just as much care should be taken to protect whatever fishery and habitat remains. If even marginal fish bearing capabilities of a stream are removed, raptors, otter, raccoons, and other wildlife depending on fish and other aquatic wildlife as part of their food source could be adversely affected. 139

It should be noted that on page seven the proposed base flow method does not provide for the margin of error discussed in the fauna section on page four. Also on page seven, 140

second paragraph, it is indicated that once a base flow is established, lower base flows could be set as better information on biological requirements becomes available if appropriate. What is meant by "if appropriate"? Could higher base flows also be set? And, would biological data be the only factor allowed in redetermining the established base flow? 141

We take exception to the subjective statement on page seven that, "The Department of Ecology feels that higher base flow methods are based on the somewhat narrow objectives of providing optimum spawning and rearing conditions for anadromous fish." (emphasis added) Higher base flows are needed not only to protect anadromous fish, but also resident species, aquatic insects, benthic and attached organisms, riparian vegetation and all wildlife species dependent on or associated with streamside vegetation. Gravel recruitment and normal processes of accretion and avulsion can also be affected. In addition to directly impacting fish and wildlife, lack of high enough base flows would impact recreation, sports and commercial fishing, raw materials availability for construction, and the present economics of fishery industries and tourism. We do not feel that these are narrow objectives. 142

It is also mentioned on page seven that if streams are damaged by excessive diversion of waters, considerable time may pass before they can re-establish. It should also be noted that some streams may never recover. 143

We agree that use of minimum flow technique would provide a margin of safety for aquatic resources. We do not agree, however, that this technique has to be overly complex. In reference to the Cedar River Project, it could be noted that special difficulties were present. One of which involved local government insisting that they had unlimited rights to the waters of the Cedar River. You mentioned administrative burdens in performing this task in all twenty-six basins. Cannot this be done on a basin by basin basis as with your proposed base flow program? It is not necessary to deal with each stream individually as in the Cedar River Project. 144

On page three for appendix IV, another reference is made regarding technical difficulties in the minimum flow technique. We feel that this technique is "artifically complex". In view of better resource protection, the option of simplifying minimum flow procedures or methods should be more fully evaluated.

145 Also, in this appendix (page ten, first paragraph), the items not provided for in the proposal represent serious deficiencies. If water availability is not determined, and limits or closures set to restrict further appropriation, it would appear to be extremely easy over-appropriate. As stated earlier, at that point damaged resources would result and water could not be replenished. Lack of adequate monitoring and enforcement are also substantial difficulties. If these are not provided, the program is seriously weakened.

146 Because of our concerns with the adequacy of this document, and the proposed program's ability to provide sufficient resource protection, we wish to retain all authorization as provided for in Minimum Water Flows and Levels, RCW 90.22, to protect fish, game or other wildlife resources.

Thank you for the opportunity to review your document. We hope you find our comments helpful.

Sincerely,

THE DEPARTMENT OF GAME

Fred H. Maybee, Applied Ecologist
Habitat Management Division

FHM:mjf

WASHINGTON Public Utility Districts ASSOCIATION

JIM BOLDT-Executive Director

June 12, 1979

Mr. Ken Slattery
Washington State Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Slattery:

147 I want to express the Washington PUD Association's appreciation for the opportunity to submit written comments on the Department of Ecology's draft Environmental Impact Statement and Program Overview for the Western Washington Instream Resource Protection Program. We are especially grateful for your willingness to consider our views despite the end of the formal comment period.

Our only interest in the draft EIS and Program Overview is to ensure that the Department of Ecology balances fish and wildlife, scenic, aesthetic and recreational interests against competing needs for water resources to satisfy irrigation, domestic, industrial and community water supply demands and the demand for increased hydroelectric and thermal power production. Although the Department repeatedly emphasizes the importance of balancing competing interests and potential adverse impacts, we are not convinced that it has successfully done so.

In fact, we do not believe that it is possible to balance adverse environmental impacts for the greatest public good, which is the Department of Ecology's stated goal, while ignoring the significant direct or indirect effects of base flow restrictions on the energy and water subsets of utilities, which is a category under Elements of the Human Environment. By the same token, although we are pleased to note that consideration has been given to the impact on the source and availability of energy, we remain concerned about the relative weight assigned to this consideration.

According to R.C.W. 90.54.020, "Allocation of waters among potential uses and users shall be based generally on the securing of the maximum net benefits for the people of the state." Maximum net benefits are defined as "total benefits

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less costs including opportunities lost." Although the Department does admit that base flows will impose a significant direct or indirect impact on the source and availability of energy, both the EIS and Program Overview pass over this point quickly.

As you know, the Klickitat County PUD has submitted an Application for Preliminary Permit to the Federal Energy Regulatory Commission for priority on study and development of the White Salmon River. Problems and delays in the construction of nuclear power plants and the difficulty of obtaining adequate supplies of petroleum from abroad will undoubtedly provide an incentive for other utilities, public and private, to consider the feasibility of small scale hydro facilities. The timing of the draft EIS and Program Overview, coming just as the Administration and Congress begin to clear away regulatory roadblocks to the licensing and construction of low head hydro projects, causes us considerable concern. The passing references to energy considerations and planned hydroelectric power projects on page 5 and to economics on page 6 are not reassuring from our vantage point, especially since none of these factors appear to have any bearing on the rating process for individual streams as explained in Appendix D.

We also question the Department of Ecology's ability to balance competing interests when coordination with other agencies extends only to the Departments of Fish and Game and public participation is solicited only after the process, tasks, sequence and technical procedures for the program have been decided upon. Coordination, if the term is to have any real meaning, must extend to agencies with responsibilities beyond the narrow confines of those delegated to the Fish and Game Departments. If energy is truly a consideration in the Department of Ecology's determination of base flows, then we cannot understand why the Department failed to consult and coordinate its efforts with the Washington State Energy Office.

Although the Department's plans to involve the individuals, organizations and entitites in the development of base flow regulations for the 26 individual Water Resource Inventory Areas are extensive and commendable, this opportunity for participation would be far more meaningful if we were allowed to provide input into the development of the stream rating system, tasks, technical procedures, etc., that collectively make up the program. The process used to consider a proposal often contributes as much to the outcome of a decision as the facts under consideration. To exclude the public from an advisory role in the development of this process is to unilaterally establish the ground rules and effectively bias the outcome of deliberations.

Accordingly, we urge the Department to consider the development of a revised environmental assessment with input from water and electric utilities, various state agencies and other interested individuals and organizations. Since the Department of Ecology presently possesses adequate authority to prevent over-appropriation of water resources, the delay in approving a final EIS and Program Overview will allow the Department to develop a more equitable and balanced evaluation program without resulting in further degradation of the environment.

Thank you, again, for your willingness to consider our views. I trust that the foregoing will provide you with additional insight into the perspective of

Washington State's Public Utility Districts, including the 22 Districts operating electric systems and the 16 which operate water systems, alone or in conjunction with electric responsibilities.

Sincerely,

Jim Boldt
Executive Director

JB/drp

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124

NPSEN-PL-ER

13 JUN 1979

Wilbur G. Hallauer, Director
Department of Ecology
State of Washington
Olympia, WA 98504

Dear Mr. Hallauer:

We have reviewed the draft environmental impact statement on Western Washington Instream Resources Protection Program with respect to the U.S. Army Corps of Engineers' areas of responsibility for flood control, navigation, hydropower and regulatory functions. Our comments are attached as inclosure 1.

Confirming the telephone conversation between Mr. Ken Slattery of your office and Ms. Jean McManus of my staff, the due date for receiving comments was extended to 8 June 1979.

Thank you for the opportunity to review on this statement. If you have any questions regarding our comments, please feel free to contact Dr. Steven F. Dice, telephone (206) 764-3624, of my staff.

Sincerely,

SIDNEY KNUTSON, P.E.
Asst. Chief, Engineering Division

1 Incl
As stated

NPSEN-PL-ER 8 June 1979

COMMENTS: Western Washington Instream Resources Protection Program
Draft Environmental Impact Statement

148 1. Although base flows and minimum flows are defined in Appendix IV, we suggest including the definition at the beginning of the document and expanding it. The differences and similarities are neither clearly nor precisely stated.

149 2. Page 1, first paragraph, third sentence: Change the sentence as follows: "Existing . . . hydroelectric plants, flood control, or navigation projects."

150 3. Generally, the statement does not address the effects of the proposed action in enough detail, considering the importance of protecting instream resources.

Incl 1

APPENDIX VI

Responses to Comments

Responses are keyed by numbers which appear on the comment letters.

Responses to U.S. Geological Survey:

1 - Agreed, the potential for error in stage discharge relationships at lower level discharges is noted and would have to be considered if a real-time monitoring system such as CROHMS was used.

2 - This is a good point. The relationship between ground and surface waters is acknowledged. Detailed information on ground water is limited to areas where specific problems have developed and detailed studies have been made. Such information will be considered in areas where it is available, however, complete information on ground water may never be available and the proposed instream flows for surface waters are needed now.

3 - The method used to determine a "first-cut" at base flows uses runoff data sorted on a 10-day averaged basis. This is averaged for every ten days and the values for the ten-day averages are assumed for the 5th, 15th and 25th day of each month. Frequency analysis is performed for each of these 10-day average data sets to obtain the discharge related to given frequencies of occurrence. These frequencies are plotted as a hydrograph on semi-log paper per Figure D-4 in the overview. This is standard frequency analysis, although not limited to the very lowest levels of flow. Frequencies are given for the entire range of flows. As a result of this analysis, the probability of occurrence or nonoccurrence can be easily estimated from the hydrograph. The department does not consider a statewide low flow analysis to be necessary to accomplish instream resource protection. Many of the state's streams have altered flow regimes as a result of storage and diversions. It is our collective experience that each stream is different in its flow characteristics, water uses and instream resources and that those characteristics should determine appropriate instream flow levels.

Responses to Skagit County Planning Department:

4 - The department is required under state administrative procedures and statutes applicable to the state water resources management program to conduct a hearing regarding a proposed regulation in each county in which affected waters occur. We will, therefore, hold at least one hearing in Skagit County prior to adoption of any measures for the Skagit River. We are committed to additional appropriate contact with local interests.

5 - The department will be most happy to meet with the Skagit County Planning Department, and any other agency or entity interested in one of the basin programs during the course of development of that program.

Responses to Muckleshoot Indian Tribe:

6 - Table 1 is a list of streams in Western Washington for which minimum flows have been requested by either the state departments of Fisheries or Game, and is not intended as a complete or partial list of streams and tributaries to be studied. Virtually all western

Thermal generating plants, either oil fired or nuclear are consumptive users of water. Generally, about 30 cubic feet per second of water is lost to evaporation during operation of a 1,000 megawatt unit. Such plants are generally located on large streams such as the Columbia River (Trojan Nuclear Power Plant) the Chehalis River (Satsop Nuclear Power Plants) and the Skagit River (Skagit Nuclear Plant). New facilities would be subject to previously adopted instream flows.

Responses to Jefferson County Planning Department:

10 - There is an apparent typographical error in your RCW citation. Chapter 90.50.010 RCW authorizes a bond issue for financing construction and improvement at municipal water pollution control facilities, and has no section (3); an apparently unrelated citation.

The comment probably means to reference Chapter 90.54.020(3) RCW (See page C-2, overview). If so, we disagree strongly with the comment. The objectives provided by the legislature in this statute and in administrative rules adopted pursuant to this chapter were the major elements used in development of the methodology. The instream values cited in the statute are precisely the values used to determine the instream flow for all streams through the base flow methodology. Working meetings with instream interests regarding the base flows are held to assure that instream resources are adequately protected. The agencies and the public may submit comments in writing or at hearings regarding the adequacy of proposed flow levels. We believe this is a more fully adequate process. Whether to continue reviewing water rights is still a legal perogative of the departments of Fisheries and Game. A process is provided which limits the necessity for these departments to reivew every application.

11 - Mr. Darden is correct that salt water intrusion may increase if flows are significantly less than under natural conditions. This depends on the bathymetry of the particular river mouth and will have to be considered on a "case-by-case" basis. In general, this should not be a significant problem. The proposed regulations will help the situation, if anything, in that without low flow limitations, future diversions may deplete streams to the point where salt water intrusion might become significant.

Responses to Klickitat County PUD:

12 - There appears to be considerable confusion about the meaning of the "Energy Required" and "Utilities" sections of the "List of Elements of the Environment" (Appendix I). These sections are applicable to projects such as housing developments which require energy and utilities. The proposed regulations will not require energy or utilities but may affect the supply. These items are addressed under other headings within the EIS. Also see response No. 9.

The department recognizes that this EIS does not cover all situations and conditions in all of the basins to be considered in this program.

Each basin program will include a determination of whether this program EIS adequately covers the significant potential environmental impacts in that particular basin program. If not, the EIS will be supplemented with additional basin-specific analysis.

13 - The specific exceptions for the White Salmon River in RCW 75.20.030 from the provisions of sections 010 and 020 of the chapter are noted. It is also noted that FERC proceedings are in progress to consider Klickitat PUD's project study application. The provisions of RCW 90.22 and RCW 90.54 regarding minimum or base flow would seem to apply nevertheless.

The potential for low-head hydroelectric development on many streams in Western Washington is recognized. Many of those streams also have important inherent instream values that must be considered in evaluating any proposed development.

Imminent or proposed hydroelectric projects or water supply development are considered in development of the basin programs. In some cases, it is necessary to establish a critical period instream flow as well as a normal instream flow. In drought years, when it may be impossible for a project to adhere to the normal year or better instream flow, a critical period may be declared by the director of the Department of Ecology, and the required flows may, upon consultation with the departments of Fisheries and Game, be lowered to a level no lower than the critical period flow. You are referred to the new section on critical year flows in the program overview. Response No. 9 also applies.

14 - We agree that the proposal could have a significant effect on future requests for public water supply diversions. Existing water rights will not be affected. Detailed information will be developed regarding the public water supply situation as each basin is individually analyzed in its own program document. The PUD is correct in asserting that this is an important issue. Also, see response No. 12.

15 - The base flow methodology as described in Appendix D does not include rating values for water supply, agriculture, power or other instream uses, because those are not among the statutory objectives of protecting and preserving instream uses as achieved by retaining instream flows in the state's perennial lakes and streams.

Until the establishment of protected instream flow levels, instream uses are generally viewed as impact categories that may or may not be mitigated or compensated. Protecting an increment of stream flow adequate to preserve and protect fish, wildlife, recreation, scenic and aesthetic values is a primary guiding principal in Washington State water law. It is the position of the department that the method and process used to determine these flows is appropriate.

16 - We disagree. We believe the information presented regarding the conversion curve is adequate to indicate its origin and use. The

use of the curve results in an approximation of the water requirements for instream uses, as is its intent. The intent of this program is not to write-off instream values, or to provide excessive protection of them, but to achieve a balance among uses by first providing water for these uses in accordance with state law.

17 - See response 16.

18 - The PUD's comments are noted. Regarding the need for more detailed analysis, the department fully intends to perform such an analysis of each individual basin. There will be public review and comment as well as at least one public hearing on each of these basin documents.

19 - The department will not issue a new draft EIS for the overall program. This document is the final EIS for this purpose.

It is the department's intention that during development of individual basin programs, all interested parties will be consulted, to the extent possible, prior to public distribution of the department's basin-specific proposals. This EIS will be supplemented as necessary where the program EIS does not discuss impacts in sufficient detail.

Responses to Faye Ogilvie:

20 - Generally, streams in the national forests will be treated as any other stream. Instream flows will be established at appropriate control points, and subsequent consumptive water rights subject to the flows will be permitted to the extent the flows are not violated. Obviously, many small streams will not have control stations on them. Nevertheless, any future consumptive water rights would be subject to flows at a downstream station. Modifications (i.e.: additions) to the stream control network will be made in the future as needed if smaller tributary streams experience pressure for water supply development.

The Skykomish River has been designated a state scenic river, but has not been designated a national wild, scenic or recreation river. As a result, the U.S. Forest Service is not involved in management of the river for those purposes. The Skykomish is, however, widely recognized for its scenic and recreational values.

21 - Mrs. Ogilvie questions the source of the brown water sometimes seen in the Columbia. We suspect that what she observes is turbidity resulting from a variety of sources both natural and manmade. Extensive efforts are now underway to control agricultural runoff. These are being undertaken in cooperation with the Soil Conservation Service, Extension Service, State Conservation Commission, and others.

Responses to City of Seattle:

22- Noted. Each basin will receive individual analysis in its own program document, and, where necessary, EIS supplement.

23 - Seattle's support for the concept of settling instream flow protection levels is noted with thanks.

24 - Indeed there may be an impact on Seattle's future water supply. This will be discussed in the basin documents for the Cedar-Sammamish Basin and the Snohomish Basin as well as in EIS supplements specific to those basins.

25 - The issue of establishing a moratorium on specific basins pending further study is discussed as an alternative in this final EIS. (See alternatives section).

26 - More than adequate data exists in water resource inventory areas of interest to Seattle (the Cedar-Sammish, Snohomish and Green River basins). Numerous studies of water supply, hydroelectric use and fishery needs have been completed for these basins. Such reports will be utilized and referenced in the basin programs and supplemental EISs for these basins.

27 - Data availability varies between basins. This will be considered as each individual basin is addressed and decisions made accordingly.

28 - This is a good point. EIS supplements will be prepared where appropriate. See response 24 above.

29 - The department is required by statute to represent the state's interest before federal agencies and authorities regarding water resources in the state. We may develop and adopt instream flows even where a FERC licensed project is potential, existing, or imminent. FERC is free to make its own judgments based on existing information including alternative proposed flow regimes.

30 - This is true. Individual basin documents will address this issue in more detail.

31 - We propose to automatically review all regulations at least every five years. This would be required in the regulations themselves. State administrative rules can be amended at any time.

32 - Noted. Such out-of-stream uses as public water supply will be addressed where appropriate and where existing information is available.

33 - The so-called minimum flow technique was used only in one case, i.e., for the Cedar River Basin. The method was patterned somewhat after the adjudications procedures used by the department in resolving and determining the legal status of water rights in the state. At least for the Cedar River example, it had one unfortunate characteristic of such legal procedures: a great deal of time and effort was required to arrive at the minimum flow levels.

The base flow methodology was subsequently developed which provides a means of determining hydrologically-based flows. These flows provide a basis for further discussions and can be influenced by

other factors including biological information and practical management experiences. Prior to adoption, proposed flows are subject to public hearings and oral and written comments for all interests.

The administrative procedures required for minimum flow are identical to those for base flow. Proposed rules must be published in the state register, an EIS may be prepared if appropriate, copies of proposed rules and other information are made available to all interested persons, public hearings are held in each county in which the affected water's occur, written testimony is taken over a one month period as a minimum, revisions in the proposed regulations, EIS and other information are made as appropriate, the state ecological commission submits advice and guidance to DOE regarding the proposed rules, an adoption proceeding is held for consideration of adoption of proposed rules, and rules are adopted only if the director of the department gives final approval.

The advantage of the base flow method is in the development of the first-cut flows. Frequency analysis is performed on stream flow records. This frequency information is very helpful in analyzing proposed instream flow measures because some idea is provided of how often proposed flows would or would not be available under natural conditions. Protected flow levels generally have a natural occurrence of at least once in four years during low flow periods. Exceptions are made during extreme drought years where storage projects exist.

The minimum flow method used in developing the Cedar River flows is not considered a viable method for determining and adopting necessary instream resources protection measures. The base flow methodology as described in the program overview accomplishes the same objectives in a more direct manner. Therefore, instream flows developed under this program will be adopted under the authority of both the statute that provides for minimum flows (RCW 90.22), and the statute for base flows (RCW 90.54). These flows will be known generically as "instream flows."

34 - Our intention is to review each basin as we come to it. If an EIS supplement is appropriate, one will be prepared. EIS supplements for the Cedar-Sammamish and Snohomish basins are under preparation.

35 - Within each basin, we intend to coordinate our analysis with the major water users. They will be relied upon to supply information on their present uses and future plans. Economic impact analysis will be based on available existing information.

36 - Regulated streams are those with storage. The existence of the storage results in an altered flow regime from what would be present without storage. Thus gaged flow records, which are used in the base flow analysis, do not represent flows under natural conditions. However, this does not preclude use of natural flow information. If an adequate period of gaged record preceed the storage, then this pre-project period can be used for a data base. If this is not the case, then the gaged records can be adjusted to negate the

effects of the storage, provided adequate data is available regarding water stored and released by the storage project. Either of these methods would provide a hydrograph of "natural" flow conditions that would be useful in evaluating instream flow alternatives. When the license for the storage project is reviewed by FERC, this information could be helpful.

It would not be equitable to require a diverter to be subject to a base flow based on natural conditions, if the flow of the river is actually controlled by a storage project. In this sort of scenario, the project must be taken as a given, and water right decisions, including instream flow requirements have to recognize the altered flow conditions of the stream. These problems will have to be considered on a "case-by-case" basis.

37 - Evaluation of recommended instream flows will be accomplished on a basin-specific basis and will be detailed for each basin. We do not intend to do so within the context of this program overview and programmatic EIS.

38 - Hydroelectric power production is an instream use, however, it is not an instream use listed as an objective in either of the statutes authorizing the department to establish instream flows. (See RCW 90.22.010 and 90.54.010(3)(a).)

39 - See response 38 above in answer to the first part of this paragraph. It is the department's view that the objectives are provided very clearly in the statutes authorizing the establishment of instream flows. See response 9 and the RCW sections cited in response 38.

40 - See Response No. 16.

41 - The median flow is the 50 percent exceedance frequency flow on an average annual basis computed from daily average flow records.

42 - We agree, and will attempt to provide information on minimum and maximum recorded flows in the individual basin programs.

43 - The seeming irrigularities cited in this case are probably due to two factors. The base flow hydrograph (the curve representing base flow levels) is approximated from the family of curves on the hydrograph. This is done to simplify the curve and allow a description of straight line segments. In addition, the base flow figures appearing in Table D-1 are final base flows reflecting public and agency input.

Responses to City of Tacoma:

44 - See Response Nos. 8, 38, and 39.

45 - See response 12.

46 - See Response Nos. 8, 38, and 39. In addition, see the new section in the overview (appendix D) regarding the critical year flow provision.

47 - See Response Nos. 8, 9, 38, and 39.

48 - We intend to prepare an EIS supplement for the Green River Basin.

Responses to Snohomish County PUD:

49 - Noted. See response 9.

50 - Noted. The department agrees as to the importance to the region of hydroelectric power generation, and generally supports additional environmentally sound hydro-power development where it is feasible to protect and preserve other instream uses as provided by state law.

51 - You will note that a major change in the program overview and EIS is the provision, in the case of major water resource projects, of providing a critical flow level, below the normal instream flow, below which the flows will not in any case be allowed to fall. This provision will be considered for streams where a project incorporating storage exists or appears probable.

52 - Noted. See response 9.

53 - We disagree that the method is arbitrary. Each stream is considered on its own merits regarding biological and hydrologic resources. Neither do we think it is unreasonable in most cases to protect a winter-time flow that is present (or exceeded) in the river at least 19 years out of 20 under natural conditions.

54 - Such a use is not a nonconsumptive one in the bypassed stream reach. See also Response No. 9.

54 - See response 9.

55 - See response 31.

56 - This is an interesting concept. It is a subset of the "No Action" alternative. It is our opinion that the "No Action" alternative is not open to us, since the state law requires us to act. Interestingly, the Legislature has already seen fit to exempt private irrigation of less than 50 cfs from SEPA. Although one might assume that any project requiring a large diversion of water would have an impact statement written on it, this cannot be assured. Actually, an accumulation of small projects may be more troublesome. Streams could be "nickeled and dimed to death". This argues well for the programmatic approach proposed.

57 - The object is to balance interests for the greatest public good. You are correct in that the primary purpose of instream flows is to protect instream resources. However, other factors are considered.

58 - We do not agree. A base flow can be lowered by amending the administrative rules. See response 31.

59 - Noted. See response 9.

60 - Noted. See response 56.

61 - This document is meant to serve part of that goal. Within each basin major users will be involved directly.

62 - Noted. There is a real question about whether to proceed before streams are fully allocated or to delay awaiting better information which may or may not be forthcoming.

63 - Noted. We agree that complete basin plans would be preferable given unlimited time and resources which we do not have. We do not agree that adopted flows are "set in concrete." See responses 31 and 58.

64 - See response 16 regarding the first sentence. See response 53 for the response to the balance of the paragraph.

65 - The derivation of the discharge-duration hydrograph family of curves is described in response 3. We apologize that the numbers associated with the curves on the hydrograph were not clear. We have attempted to impove the readability of the hydrograph in the final version. The original sheets are available at department headquarters for viewing.

Responses to Skokomish Indian Tribe:

66 - We have apparently failed to adequately convey our point. We have no intention of "trading-off" entire fisheries. We are simply trying to recognize the fact that some streams or stream segments have a greater potential for fish production than others. Any balance of interests has to take this into account.

67 - "Somewhat narrow objectives" is meant to convey that fisheries interests may desire a high flow which they calculate to be the optimum for fish. At the same time a water department may argue for a very low flow (or indeed no flow) so as to maximize their use. A Kayaker may desire a very large flow for his sport. Our job is to balance all competing interests with a "bottom line" of providing minimum acceptable flows for instream resources.

68 - Ground water is recognized as an alternative for consumptive uses. It is not an alternative for nonconsumptive uses such as hydropower, recreation, and fish. Also see response No. 2.

69 - The department's view is that the base flow metholodology is the best alternative available to work toward establishing insteam flows. As outlined in response 33, we consider minimum flow and base flow to be the same and as such we intend to adopt instream flows under the authority of both RCW 90.54 and 90.22.

70 - This is a good point. A moratorium is considered as an alternative in the final EIS.

Regarding a statement that base flows will be sufficient to protect fish, a new section in the program overview provides program objectives including an objective to protect fish with sufficient flows.

90 - See response 89. You will note that a major element identified in program development is, "Refine base flow figures by incorporating instream flow needs of fishery interests determined by alternative methods." We do not start with biological habitat criteria, however, the departments of Game and Fisheries, using such information, make recommendations concerning how the department's hydrologically-based flows can be modified. Since the biological community has adapted itself to a range of natural flows and the low flow which will be preserved is within that range, there is a relationship between methods used to determine flow requirements. Fisheries and Games recommendations will be fully considered in development of flows that are proposed for adoption. In all cases, it is our goal to come to agreement with these agencies regarding proposed flow level in order to provide a unified state position.

91 - We fully intend to use scientific information. We will not only assemble existing information ourselves, but also rely on other agencies to provide their best scientific evaluations.

92 - The base flow methodology is 6 years old and has been used successfully in both Eastern and Western Washington basins. Our apologies are due that you were not involved in development of the method at that time. We feel the method is particularly responsive to fishery needs with the incorporation of biological information developed and utilized by the state departments of Game and Fisheries. The full involvement of Indian tribes is anticipated for streams for which an Indian fishery interest exists.

93 - Noted. See response 87.

94 - See response 89.

95 - See response 89, 90, 91.

Responses to U.S. Fish and Wildlife Service:

96 - Noted, we fully agree as to the importance of such uses.

97 - See responses 33, 89, 90, 91.

98 - Your point is noted. The proposal will generally affect the low flow aspects of a river. Little effect is foreseen on the flood flows. A flood control structure would be necessary to prevent the peaks from occurring. In the case of such a proposed structure, specific operational rules can be negotiated to allow periodic flushing flows.

99 - See response 8. Existing state laws provide direction to the department in the matter of establishing instream flows.

Bringing natural stocks up to full production is more than a matter of simply providing the water. Sufficient water will be protected by this program. Improved harvest management would appear helpful in guaranteeing adequate escapement to bring natural stocks up to full production.

100- See responses 89, 90, 91. We provide for program review at any time with mandatory review at least each five years rather than the language you have suggested. Biological criteria is being incorporated in each basin as provided by the departments of Game and Fisheries.

101- Flows are to be adopted under the authority of both Chapter 90.54 RCW, the Water Resources Act of 1971, and Chapter 90.22 RCW, Minimum Water Flows and Levels. See response 33.

102- The department is certainly concerned about overallocating water resources. Note that the waters of the Little Klickitat River are currently with drawn from appropriation pending further determination of water availability.

103- Noted. A partial or total moratorium is now considered as an alternative in the EIS. This could be coupled with the option of developing complete basin plans.

104- Within the constraints of manpower allocations, the department will continue to monitor appropriations and actively enforce rules regarding withdrawals including instream flow protection provisions. A future activity of the department, for all of these streams, is the determination of available firm water (if any) for appropriation beyond existing rights and instream flows. This is not likely to begin, however, until after completion of this program for adopting instream flow protection measures.

105- Good point, correction made. Also see response 9.

106- Agree, correction made. See response 9.

107- Correction made but "dictates" changed to "provides constraints on".

108- Correction made.

109- Good point. Addition made.

110- Agree. Change made.

111- Agree. Addition made.

112- Correction made. This is a matter of ones definition of "short-term".

113- Correction made.

114- Addition made.

115- Comment noted. See response 67.

116- As outlined previously, professionals from the departments of Game and Fisheries are intimately involved in helping to develop proposed flows.

117- Agreed. See response 33.

118- This will depend on the particular stream and will have to be considered on a "case-by-case" basis. Generally however, we plan to exempt single in-house domestic uses, and stockwatering directly from the stream.

119- We look forward to this. See also response 8.

Responses to Lewis County PUD:

120- See response 9.

121- We note your opinion and will consider it. See response 56.

122- See response 13 and new section in overview regarding critical year provisions.

123- See response 8.

124- See response 9.

125- Comment noted, however, we disagree. Even in complete basin plans, determination of instream flow needs is the first step.

126- See responses 8, 92.

127- See response 56.

Responses to U.S. Forest Service:

128- Comments noted. Your continued participation is welcomed. In Eastern Washington, complete basin plans have been adopted (including instream flows) for the Little Spokane, Colville, Okanogan, Methow, and Walla Walla basins. Basin plans eventually will be developed for the Wenatchee, San Poil, Yakima and perhaps other basins as needed.

129- Thank you, we agree that that section is technically inaccurate. It has been changed.

130- The correct interpretation of percent flow duration is that flows associated with a given percent flow duration are exceeded that

percent of the time. For example, a 95 percent flow duration is exceeded 95 percent of the time for the given date or time, and not exceeded 5 percent of the time.

Responses to State Department of Fisheries:

131- Comments noted, thank you.

132- The implication you bring up is regrettable and unintended. That sentence has been changed. The USGS method is "state of the art." We are confident, however, that new methods will evolve which will more precisely define fishery flow needs. We recognize the validity of the use of the method by your agency in making flow recommendations for this program. The cooperation between the departments of Fisheries, Game, and Ecology on this program has, to date, been gratifying.

Responses to State Department of Game:

133- Comment noted and will be considered. Water law is very complex. We do not contend that the proposed regulations will solve all the problems you present but they should help.

134- The program is designed to include drought years. In fact the regulations will be most important under these conditions.

135- Comments noted. A "Flora" section has been added as provided by the USFWS.

136- Comment noted. See response 8. Existing state laws provide direction to the department in establishing instream flows. We agree that base flows are not necessarily optimum fish flows. We do not have the authority to establish optimum flows, but we do have authority to protect and preserve instream resources.

137- Comment noted. A "Flora" section has been added.

138- Comment noted.

139- These are good points and will certainly be considered. Also see response 66. Wildlife is a recognized parameter in establishing instream flows.

140- We disagree. The "margin-for-error" is still there. It is a matter of degree, in this case the size of the margin.

141- Higher base flows could be set if justified by new information. We assume that all germane information will be considered when regulations are reviewed. Review would occur within five years after adoption and every five years thereafter.

142- You make good points. See response 67. Since Department of Game personnel will be involved in determining the base flows, we assume that their advice will take your points into consideration.

143- We do not mean to imply a short time, but "never" is a very strong word. The difference may be philosophical. Your comment will be considered.

144- The complexities involved in the setting of minimum flows for the Cedar River are acknowledged. Our approach now is that instream flows will be adopted under the authority of both RCW 90.22, (minimum flow) and 90.54 (base flow) utilizing the base flow methodology with the strong participation of state fishery experts.

145- Comments noted, however, we believe this is a good first step toward completing basin plans for these basins. The difficulty with monitoring and enforcement is recognized.

146- Your comment is noted and has been referred to our assistant attorney general. As previously stated, we intend to adopt the flows under both RCW 90.22 (minimum flow) and 90.54 (base flow). This would not appear to preclude your requesting amended flows, however. Recently passed legislation does provide that this department is soley responsible for determining and adopting flows. Your participation and recommendations are, as always, welcome.

Responses to Washington PUD Association:

147- This comment was received just in time to be included. It will be considered. Your letter reemphasizes comments made by others. The responses to comments made by member PUDs cover points made.

Responses to U.S. Army Corps of Engineers:

148- This comment was also received late. We've added new material defining base flows and minimum flows.

149- Additions made.

150- Program documents will be prepared for each basin. EIS supplements will be prepared where appropriate. Please excuse us if we don't hide our irritation at receiving a late comment which makes a vague request for a fatter document. One of the prime reasons for the comment period is for you to assemble and provide information which you feel is relevant.