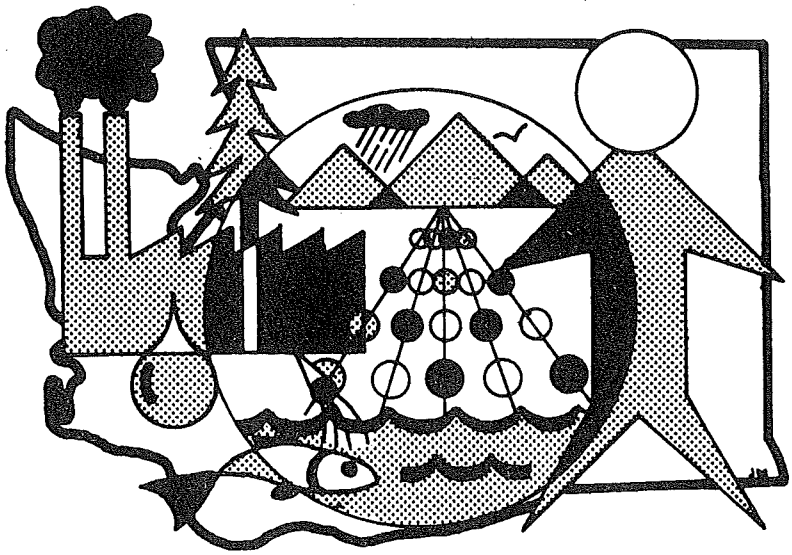
ENVIRONMENTAL IMPACT STATEMENT



State of Washington
Department of Ecology

FINAL ENVIRONMENTAL

IMPACT STATEMENT

Prepared in Accordance with the Washington

State Environmental Policy Act

Relative to Adoption of a Proposed Regulation,

Chapter 173-559, WAC by the

Department of Ecology concerning:

Colville River Basin

Water Resources Management Program

(Water Resources Inventory Area 59)

August 1977

Washington State Department of Ecology

Wilbur G. Hallauer, Director

STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY
Olympia, Washington 98504 206/753-2800

July 11, 1977

FINAL ENVIRONMENTAL IMPACT STATEMENT

COLVILLE RIVER BASIN
MANAGEMENT PLAN AND REGULATION

This statement together with the draft environmental impact statement which was published June 1, 1977 constitutes the final environmental impact statement. This abbreviated form is made possible by the fact that no comments critical of the scope or content of the draft EIS were received. Authority for this approach is given by WAC 197-10-570.

REQUIRED DISTRIBUTION:
- DOE Headquarters and Eastern Regional Office
- DOE SEPA Public Information Center
- Governor's Office of Program Planning and Fiscal Management
- Ecological Commission

The following brief points resulted from an extensive internal review of the draft EIS. They are meant to clarify issues which may be confusing:

-- The priorities which would be established by the regulation (1 - existing rights; 2 - domestic; 3 - base flow; 4 - all other) are meant to be used in case regulation is necessary. Number one (existing rights) would be regulated last.

-- There is some concern that readers might infer that the change from 60 to 33 cfs is an enlargement of existing rights. This would not be so since the existing rights with the 60 cfs low flow proviso contain a statement that they will be regulated at a lower level if a lower base flow is established.

-- It was not meant to imply that Washington Water Power could now require regulation to 200 cfs. They could require maintenance of 50 cfs due to their certificate but the extra 150 cfs would require the legal steps of adjudication of the river. It could be that a court would find against the 150 cfs claim. The EIS is not meant to prejudice any such proceedings.

-- There could be some confusion regarding the need for reservoir permits. The statement in the draft EIS ("Reservoirs larger than 10 acre-feet in storage capacity, or in excess of 10 feet deep, require permits from the department.") is correct. However if the reservoir is away from the stream and thus requires the diversion of water, a water right is always required.

Special Addendum to
Final Environmental Impact Statement

Colville River Basin Management Plan and Regulation

The attached letter from the Department of Game was submitted after the deadline for inclusion in the final environmental impact statement but does contain points worthy of comment and consideration. The Game letter and this note will be appended to the final EIS for consideration by the decision makers. The letter has been annotated with our numbers to facilitate response.

1) We are sorry that the copies became separated. Had we been contacted at the indicated phone numbers we would have been pleased to supply extra copies.

2) Noted.

3) The net effect of the proposed action will not be to lower the river flow from 60 to 33 cfs. Natural conditions combined with existing rights already stress the river below 33 cfs during dry years (it was 17 just last week). There could be some marginal effect during years when natural flows less existing appropriation would otherwise be between 33 and 60 cfs but these are not expected to be frequent. The risky nature of irrigation during these borderline conditions and the closure of the river to new appropriations during the dry period should serve to minimize adverse effects.

   Viewed another way, our estimate of consumptive use resulting from full utilization of those rights which were regulated at 60 cfs and would now be regulated at 33 cfs is less than 10 cfs. This is only an estimate but serves to emphasize our point that the proposed action would not significantly reduce stream flow.

   This being the case, arithmetic calculations based on a change in stream flow from 60 to 33 cfs are not appropriate.

   This program has been coordinated with Mr. Nielsen of your Spokane Office. He is in apparent agreement with our proposed action.

4) If ground water came from shallow aquifers, evapotranspiration could decrease return flow slightly, however, irrigation from deep aquifers may increase return flows.

5) Noted.

6) - 7) See #3 above.

8) Noted.

9) - 12) See #3 above.

DEPARTMENT
OF GAME

Game Commission
Claude Bolton, Seattle, Chairman
Glenn Galbraith, Wellpinit
Frank L. Cassidy, Jr., Vancouver
Arthur S. Coffin, Yakima
Elizabeth W. Meadowcroft, Tacoma
Archie U. Mills, Walla Walla

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600 North Capitol Way / Olympia, Washington 98504

July 7, 1977

Mr. S. K. Chung
Department of Ecology,
St. Martins College
Lacey, Washington 98504

Mr. Chung,

Your draft environmental impact statement -- Colville River Basin Management Plan and Regulation -- was reviewed by our staff as requested. We apologize for our late response. Comments follow.

We appreciate efforts of DOE to establish a wise management policy for the Colville River Basin. As we understand the technical supplements, ("Program Document" or "Water Management Program"), many concerns of WDG have been considered. However, we did have some problems with the draft EIS.

Agencies and individuals would be aided in their review if relevant sections of the supplements were summarized and presented in non-technical language. Although slightly less "streamlined and concise" (page 1), the resulting DEIS would go farther in producing "easy public evaluation" (page 1). For example, neither of the two DEIS's we received had the "attached water management program" (page 5). Consequently, a brief description of the Colville watershed -- valuable in understanding existing conditions -- was not easily available to the reviewer. (1)

Additional comments are organized according to presentation in the draft.

Page 4, paragraph 6. "The proposal...guards against adverse effects of appropriation." "Minimizes" may be more accurate. (2)

Page 9, Surface water quantity and quality. As you suggest, minimum water quality occurs at times of minimum flow. However, we disagree that the effect "should be very slight and...not considered significant..." Allowing diversions to decrease base flow from 60 cfs to 33 cfs could have substantial effects on aquatic resources. Our studies (Nielson, WDG fish biologist; Hunter, WDG fish biologist; USGS) indicate low flows may: (3)

1) raise water temperatures too high for use by rainbow trout;

2) reduce rearing areas up to 50%.

(4) Page 10, item d. Could increased ground water utilization reduce the return flows to the river? If so, this would reduce the quantity available for appropriation.

(5) Page 10, item e. Good farming practices may or may not minimize the possibility of decreased ground water quality.

(6) Page 10, item 2. Wetted area of a 33 cfs flow would be at least 45% less than the wetted area of a 60 cfs flow. Therefore, riparian vegetation may be reduced by 45% or more.

(7) Page 10, item 3a. Rainbow and brook trout have problems with high temperatures and may avoid the main river with a 33 cfs flow. Aquatic invertebrates may be reduced by 45% or more. If lost, clean water species of salmonid food chains (e.g., stoneflies, mayflies, and caddisflies) may not be replaced.

(8) Page 11, item 8. Public access is limited; however, sport fishing does occur (almost a trophy brown trout area!).

(9) Page 12, paragraph 1. Since a 60 cfs base flow is already in effect, a lower base flow of 33 cfs would decrease long-term productivity.

(10) Page 12, paragraph 2. As we have shown, effects on aquatic habitat may involve more than "some minimal degradation."

(11) Page 14, item 7, paragraph 2. Since the proposed program closes nearly all water appropriation rights during periods of insufficient flow, the "result" of the proposed 33 cfs base flow would be similar to the "result" of the current 60 cfs base flow with no appropriation controls. However, this in no way suggests that 60 cfs may be "over-protective."

(12) Page 16, Water N/A. Will surface water movement and runoff/absorption rates be affected with increased water use for irrigation (during periods where flow rates are above 33 cfs)?

Thank you for the opportunity to review your draft environmental impact statement. We hope these comments will be helpful.

Sincerely,

THE DEPARTMENT OF GAME

Chris Drivdahl

Chris Drivdahl, Applied Ecologist
Environmental Management Division

CD:cv
cc: Agencies

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Prepared in Accordance with the
Washington State Environmental Policy Act

Chapter 43.21C RCW
Chapter 197-10 WAC
Chapter 173-800 WAC

For Actions by Washington State Department of Ecology

Colville River Basin
Management Plan and Regulation

DRAFT

June 1977
Washington State
Department of Ecology
Wilbur G. Hallauer, Director

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INTRODUCTION

This impact statement has been prepared in accordance with the Washington State Environmental Policy Act. Format and content conform with the CEP-SEPA Guidelines. The statement is designed to be streamlined and concise for easy public evaluation and as a convenient and understandable tool for agency decision making. This impact statement is designed to be read in conjunction with the Colville River Basin "Program Document" and the proposed regulation.

SPONSOR AND PROPOSAL

The Department of Ecology, in cooperation with a local citizens advisory committee, proposes to establish a water management policy for the Colville River System. The proposed policy calls for closing all tributaries to further consumptive appropriation, (with the exception of single domestic and stock watering) and closing the Colville River itself during the heart of the irrigation season. Priority of use would be established. This would be effected by adoption of a regulation. This basin is located in northeastern Washington almost entirely in Stevens County. It is tributary to the Columbia River at Kettle Falls.

LEAD AGENCY:

Department of Ecology
Olympia, Washington 98504

RESPONSIBLE OFFICIAL

Eugene Wallace, Supervisor
Water Resources Management Division

Comments, information and questions may be addressed to:

S. K. Chung
Department of Ecology
Olympia, Washington 98504
Phone: (206) 753-2807

STATEMENT AUTHOR

Tom Elwell
Department of Ecology

LICENSES REQUIRED

The action proposed is the adoption of the proposed regulation by the Department of Ecology.

DATA LOCATION

Technical information and background data for this document are located at: Department of Ecology, Headquarters Office, Olympia, Washington. Available information includes:

1. Northwest Alloys Magnesium Plant, Draft and Final Environmental Impact Statement. Washington State Department of Ecology, 1973.

2. Washington Water Resources - Recommendations to the Legislature - Washington State Department of Ecology, 1977.

3. Water Resources of Washington - A Biennial Report to the Legislature, Washington State Department of Ecology, 1975.

4. Review and Recommendations Concerning the Adoption of a General Water Resource Management Regulation - Proposed WAC 173-500, Washington State Department of Ecology, 1975.

5. Water Resources Management Program - Little Spokane River Basin, Washington State Department of Ecology, 1975.

6. Final Environmental Impact Statement for Proposed Water Resources Management Program - Okanogan River Basin, Washington State Department of Ecology, 1976.

7. Final Environmental Impact Statement for Proposed Water Resources Management Program - Methow River Basin, Washington State Department of Ecology, 1976.

8. Assorted background information - U.S. Army Corps of Engineers - 1975.

9. Preliminary Reconnaissance Report, South Fork Mill Creek Dam Site, Mill Creek Watershed, Stevens County, Washington, Soil Conservation Service Spokane, 1960.

10. Report of Field Examination, Mill Creek Watershed, Stevens County, State of Washington, Soil Conservation Service Spokane, 1957.

11. Project File Containing Memos, Meeting - Minutes, Letters and other assorted information - Washington State Department of Ecology, 1976-77.

12. Water Quality Assessment Report, Volumes I and II, State of Washington Department of Ecology, 1975.

13. Administration of Instream Flow Laws, Kris G. Kauffman, Washington State Department of Ecology, in Proceedings of the Symposium and Specialty Conference on Instream Flow Needs, American Fisheries Society, 1976.

14. Washington State's Instream Flow Program Action - IBID.

15. Department of Ecology Streamflow Preservation Program, M. Edward Garling, Department of Ecology - WRIS Technical Bulletin No. 11, 1976.

16. Water Quality Management Plan (303e) for Water Resource Inventory Areas 52 and 54 through 62. Washington State Department of Ecology, 1976.

17. Correspondence with Jim Nielsen, Washington State Department of Game, Spokane.

18. Field Investigation of a Fish Kill on the Colville River - Washington Department of Ecology File, 1970.

COPIES AND COST — While supplies last copies of this Draft Environmental Impact Statement may be obtained from the Department of Ecology at no cost.

ISSUED — June 1, 1977.

END OF REVIEW PERIOD — Comments and remarks must be received by the Department of Ecology on or before July 5, 1977, to be used in the final impact statement.

DISTRIBUTION LIST — See Appendix

SUMMARY

The proposed action is to establish a "base flow" on the Colville River. This action will allocate water to instream uses. The base flow would vary seasonally with a low of 33 cfs in August at the Kettle Falls gauging station. Water available above base flows and existing uses is calculated and if greater than zero is allocated to out-of-stream consumptive uses. The purpose is to provide for consumptive use of the resource while protecting instream values. The net effect is total closure of all tributary streams to all but single domestic and stock watering and closure of the Colville River itself during the heart of the irrigation season.

A priority system would also be established. These priorities are for the purpose of regulating appropriations during low-flow periods.

1. Existing rights
2. Domestic (in-house) and stock use
3. Base flow
4. All other

There is currently a 60 cfs low flow proviso being written into permits granted on the Colville River. The proposed action would mean that these water rights would have a greater degree of certainty. They would be regulated at 33 cfs instead of 60.

Other than some minor degradation of aquatic habitat (due to reduction of instream flow) and the irreversible commitment of the water resource, there are not expected to be significant adverse impacts.

In addition to "no action," alternatives include the issuance of unrestricted water rights, closing the river to further appropriation, the use of different priorities, and the establishment of a different base flow scheme.

The proposal is designed to be a mitigative measure as it guards against adverse effects of overappropriation.

Potential sources of controversy are:

1. Status of Washington Water Power right of 50 cfs for instream use (power generation).

2. The wisdom of not issuing water rights if the probability of the water being available in any given year is less than 50 percent.

3. Closure of tributary streams to all multiple domestic appropriation but not to stock watering, this policy to apply for the entire year.

DESCRIPTION OF THE PROPOSAL

The proposed action is the implementation of the attached water management program by adoption of the proposed regulation. This is a "non-project" action and will not involve physical construction.

There is no zoning in the Colville Basin. A combination of the comprehensive plan and Shoreline Management Act Master Program is being drafted by the County. In the late 1960s a flood control zone was proposed for the Colville River pursuant to the Flood Control Zone Act of 1935. This was not adopted due to a lack of public acceptance.

The attached water management program document and the regulation describe the proposed action. The technical supplement provides additional information. The paper by Ed Garling (Stream Flow Preservation Program) describes the method of establishing base flows. The following is a brief summary of the method:

WHAT IS BASE FLOW AND HOW IS IT DERIVED?

Base flow is the amount of flowing water in a stream necessary to protect the following instream values:

fish (and the value of a stream for fishing)
wildlife (animals and birds)
scenic and aesthetic (the sights and sounds of natural beauty)
navigation (commercial and recreational boating)
water quality standards
other environmental values (including swimming and wading)

Base flows are set by the Department of Ecology, after consulting with local citizens, and in cooperation with a number of other agencies, which include the departments of Fisheries, Game, Natural Resources, Highways, and Interagency Committee for Outdoor Recreation.

The interested agencies use their expertise to look at streams and rate them on a numerical scale. Water quality standards are incorporated by using a scale based on stream classification. The desires of residents for instream flow protection are assessed, and these desires influence the setting of the base flows.

The rating for each stream is transformed into a flow level through a mathematical computation and adjusted with actual flow conditions. The resulting base flow level is not constant throughout the year, but changes according to seasonal fluctuations of the stream under natural conditions.

HOW DOES BASE FLOW OPERATE?

The Department of Ecology monitors stream levels at certain control points. When the stream level drops to the base flow level, persons with water rights (except for in-house domestic and stock water rights) granted after the adoption of the management regulation have to cease their use until the flow increases to a level above base flow.

"In-house domestic" is distinguished from "domestic" in this sense. An ordinary domestic water right may include both in-house use and one-half acre of lawn and garden irrigation. Under the proposed action, future water rights would have their lawn and garden irrigtion curtailed when the river was below base-flow.

WHAT ARE THE "PRIORITIES" AND HOW DO THEY WORK?

When water in the stream diminishes to the point where the amount is insufficient for all anticipated uses, the water is regulated according to the following priorities:

PRIORITY I (highest priority, last to be regulated and not subject to base flow) ... existing rights for water appropriated prior to effective date of this program

PRIORITY II (2nd highest priority and not subject to base flow) ... domestic (in-house) and stock water use

PRIORITY III (3rd highest priority) ... instream values established within the base flow appropriation

PRIORITY IV (lowest priority, first to be regulated and subject to base flow) ... irrigation, and all other uses not included under other priorities (industrial, agricultural-industrial, etc.)

IF THE QUANTITY OF WATER IN A STREAM BECOMES LOW ENOUGH SO THAT EXISTING RIGHTS (PRIORITY I) HAVE TO BE REGULATED, HOW IS THIS ACCOMPLISHED?

Regulation within Priority I will be governed, as presently practiced, by the date of priority on the permit or certificate. In other words, those who were first in time will be first in right.

HOW ARE "AVAILABLE WATERS" DETERMINED?

The following steps are taken to arrive at the amount of water available in a stream for consumptive use:

1. Determine natural streamflow from historical flow records.

2. Determine upper appropriation limit (50 percent exceedence level or the median flow).

3. Determine amount of water depleted under existing rights (permits, certificates, actual use).

4. Determine base flow necessary to protect instream environmental values.

Thus, from the natural historical streamflow, determine upper appropriation limit ... subtract the actual use under existing rights AND the amount needed for base flow ... the remainder is the amount available for future consumptive use. This amount is to be calculated monthly.

HOW ARE STREAMS CLOSED?

When all water in a stream is being utilized by those uses listed above under Priorities I to IV, it is considered that the "available water supply" has been fully appropriated. When this happens, the Department may take action to close the stream to further issuance of water rights.

Special conditions may exist where water is plentiful during part of the year and below base flow during the remainder of the year. On the main stem, the Department may issue 'limited' rights for use during those periods of the year when the amount of water in a stream exceeds base flow. This would not apply to the tributaries which would be closed to all consumptive appropriation except single domestic and stock watering.

EXISTING ENVIRONMENTAL CONDITIONS

Existing environmental conditions are described in the attached program document. Where this discussion is deemed too weak for an understanding of the "impacts" section, additional information is presented within the "impact" discussion. In addition, the Environmental Impact Statement prepared by the Department of Ecology for the Northwest Alloys Magnesium plant at Addy provides an excellent description. Reference 18 provides information on fish species and numbers.

THE IMPACT OF THE PROPOSAL ON THE ENVIRONMENT

The program document contains considerable information on the effects of the proposed action. The "List of Elements of the Environment" (Appendix) has been marked "NA" to show those elements upon which no effect is expected. The other elements are discussed below.

A very basic question is what effect the proposed action will have on irrigation development. On the main stem, no new permits will be written for surface water during the driest portions of the irrigation season. An exception is made for domestic supplies, both single and multiple and for stock watering. Tributaries will be closed to all except single domestic and stock watering. Recently issued permits which have a low flow proviso of 60 cfs will be regulated not at 60 but at the new base flow of 33 cfs. Persons holding these recent rights may be more disposed to use them. This would not be "new irrigation" since these lands have legitimate permits, but may add to the total acreage actually irrigated on a regular basis.

In the program document, it is shown that 15,386 acres currently have permits to irrigate from surface water, whereas only 9,500 acres are actually irrigated on a regular basis. Assuming a diversion rate of 0.013 cfs/acre, lowering control from 60 to 33 cfs could irrigate (27 ÷ 0.013 =) 2,077 acres of additional land. This would then total over 11,577 acres. However, this may be offset by the lack of available water. It is estimated that in a year with medium flow, existing irrigation would lower the river below the proposed base flow.

Therefore, it is unlikely that this proposed action will cause any significant increase in irrigation. Conversely, it should not curtail future irrigation since ground water will still be available.

1. Water

    a. Floods

        Although this proposed action should not affect flooding, local citizens have expressed concern about recurrent flooding of the Colville River. They seem to favor structural means such as reservoirs on tributaries and/or channel alteration. The Soil Conservation Service and the Corps of Engineers have done preliminary investigations in this area. For a combination of reasons, no early action is expected.

Nonstructural means of controlling flood damage have also been explored. In the late 1960s the Department of Ecology proposed several basins, including the Colville River, as flood control zones. Local opposition developed in some basins and none of the proposals were implemented.

b. Surface water quantity

Consumptive allocations on the main stem will result in the lessening of streamflow. The proposed base flow of 33 cfs is less than the current limitation of 60 cfs. It should be understood, however, that if nature does not provide the water and existing rights are exercised fully, base flow will not be achieved. This is because existing rights are exempt from the base flow.

An interesting factor in the existing rights issue is the Washington Water Power right to 50 cfs at the Meyers Falls Dam (priority date 1965) and a claimed right to 150 cfs (priority date 1915) at the same location. A certificate has been issued on the 50 cfs. The 150 cfs claim has not been adjudicated but appears substantiated. These are rights to an instream flow. If exercised in time of low stream flow, junior water rights would have to be regulated in favor of power generation. In 1973, WWP requested DOE to regulate upstream appropriations in favor of its 50 cfs certificate.

If WWP exercised its 50 cfs right, the 33 cfs base flow would be somewhat meaningless. Insistence on the full 200 cfs would mean the cessation of most irrigation during the entire irrigation season.

The proposed action would allow the diversion of water into reservoirs during periods when base flows were being exceeded. This includes the otherwise-closed tributaries. If citizens decided to use this method to tide them over the dry season, more reservoirs could be expected. Reservoirs larger than ten acre-feet in storage capacity, or in excess of ten feet deep, require permits from the Department. Proposals would be investigated for environmental significance, safety and water availability before permits issued. The program document discusses reservoirs.

c. Surface water quality

The Colville River is currently classed A (Excellent) by the State. The only water quality problems identified are due to nonpoint sources, and these may be natural. The Water Quality Managememt Plan contains additional information.

The smaller amount of water flowing in the stream means less dilution and more exaggerated temperature, turbidity and pollutant levels. This effect should be very slight and is not considered significant relative to existing conditions.

d. Ground water quantity and movement

As more land is brought under irrigation, and established base flow restricts withdrawals from surface water, ground water will be used in increasing quantity. Recharge is expected to be sufficient in the foreseeable future.

e. Ground water quality

It is possible that increased irrigation could lead to decreased ground water quality. Good farming practices should make this possibility minimal.

f. Public water supplies

The Department expects that, in most areas, ground water supplies will be available in the foreseeable future. The Department advocates its use where available. Multiple domestic water supplies will not be available from closed streams. In lakes and on the main stem of the Colville River, public water supplies will not be subject to base flow.

The exact results of this policy are not certain. Since multiple domestic supplies will not be available on the tributary streams, subdivision-type developments may be discouraged. On the other hand, several residences could be built and each apply for an individual right. Each would then insert its individual pump in the stream. Not only could the end-result be the same total depletion, but single domestics are not subject to health department regulation and water quality could suffer.

2. Flora

Numbers or diversity of species: Aquatic plants will be protected by the maintenance of a base flow.

3. Fauna

a. Numbers or diversity of species

Brown, rainbow and brook trout live in the Colville river. They tend to concentrate near junctions with tributary streams. Irrigation depletions have already affected fish. Base flows should protect fish and other aquatic fauna.

b. Fish and wildlife habitat

Aquatic habitat will be protected although not to the current 60 cfs level.

4. Natural Resources

Instream flows will be protected at a level of 33 cfs.

5. Population and Land Use

Closure of tributary streams to multiple domestic appropriation may reduce growth along those streams. Population and land-use trends may be affected by the lack of water. Areas with good ground water supplies will be preferred for subdivision-type development. Property values should reflect this.

6. Energy

Source/availability

Maximum power generation at the Meyers Falls powerhouse is about two megawatts. If Washington Water Power does not exercise its rights under its 50 cfs certificate or its 150 cfs claim, less electric power will be produced.

7. Utilities - Power

As discussed under "Energy."

8. Recreation

Because of the lack of public access, sport fishing is not of major importance on the Colville. The maintenance of base flows will maintain recreation values.

9. Economic

a. The program effect on long-range economic trends is not expected to be significant.

b. The priorities given to the various water uses and the closure of tributary streams to multiple domestic supplies will probably affect future growth and speculation to a limited extent.

c. This will tend to influence the location, size and type of developments that use the water.

d. The program's policies may result in restraining overdevelopment in areas of water shortage within the Basin.

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

and

IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

Water rights have commonly been considered to be issued "in perpetuity." In this sense, the issuance of water rights down to a base flow level will irretrievably commit the resource. Conversely, the establishment of a base flow will help prevent allocating the river to a dry bed and will thus maintain long-term productivity.

UNAVOIDABLE ADVERSE EFFECTS

Other than the allocation of the water resource, and some minimal degradation of the aquatic habitat, there are not expected to be any unavoidable adverse environmental effects, resulting from this action.

In a nonenvironmental sense, the program will restrict those interests desiring to use surface water. Also affected are those with future rights subject to base flows which would be regulated under the priority system when stream levels drop below established base flow.

Inconveniences and restrictions are unavoidable if prior rights for consumptive use are to be protected and if water is to be allocated for instream environmental values.

ALTERNATIVES AND MITIGATING MEASURES

The development and selection of alternatives so as to minimize and mitigate adverse effects is the purpose of this planning process. The involvement of the public and governmental agencies at meetings, hearings, and in review of this document is designed to achieve this end.

There are nearly an infinite number of alternatives available. The following discussion is designed to summarize the major categories:

1. DO NOTHING

   If the Department did not adopt a basin plan, the Colville River system would still be governed by the 60 cfs low flow at the mouth and other low flow limitations on individual streams. Water rights which have been issued with the 60 cfs proviso would continue to be subject to that level. Future water rights would contain this

proviso. Instream values would be protected somewhat better than the proposed 33 cfs.

2. UNRESTRICTED WATER RIGHTS

Another alternative is to issue water rights automatically without restrictions until the water resource is depleted. This would lead to elimination of the fishery resource and severely damage riparian habitat. Water quality problems would become severe. Legislative change would be required to implement this alternative.

3. CLOSE COLVILLE RIVER AS WELL AS TRIBUTARIES

The proposed action will close the Colville in late July, August and September. Water rights will be issued during the other months. There would be no reason to close the Colville during these other months since water is available.

4. APPLY BASE FLOW TO ALL WATER RIGHTS PAST AND FUTURE

This would require a retroactive legislative change to the 1917 water code. Even then, litigation would likely follow.

If this alternative could be implemented, a basin management plan such as the one proposed could be much more effectively managed. This would eliminate the likelihood that existing water rights issued without low flow provisos, if fully exercised could fully deplete the stream during the normally dry periods. This alternative would not be popular with those holding existing water rights but would guard against overuse of the resource.

5. ALTER PRIORITIES

The proposed action calls for the establishment of a list of priorities. These are for regulation during low flow periods and are not allocation priorities. They are:

1. existing water rights
2. domestic (in-house) use and stock watering
3. base flow and
4. all other uses.

These priorities could be altered. -

Existing rights are given top priority. This is required by law.

- Single domestic and stock watering could be made subject to base flows (switch priorities 2 and 3.) This would result in some of these uses being regulated during dry periods while base flows would have greater protection.

- The effect of moving "other uses" to a higher priority than base flow would effectively be the same as the issuance of unrestricted water rights (No. 2 above).

6. USE DIFFERENT BASE FLOWS

The base flows selected are a compromise between the preservation of instream values (fish, wildlife, scenic and aesthetic, navigation, water quality and other environmental values) and consumptive uses (irrigation, domestic, stock watering, industrial, etc.). Compromise implies a less than optimal allowance for each. In general, larger base flows will give added protection to instream values and provide less for consumptive uses while smaller base flows will give less protection for instream values and provide more for consumptive uses.

There is an aspect of this alternative that deserves close attention. This is the method of determining available waters.

The upper appropriation limit has been set at the 50 percent nonexceedence level. This is a somewhat arbitrary number implying that the public interest would not be served by allocating water if it would be available only one year in two or less.

This could be set at a more restrictive level. If this was done, the Colville River might have to be closed entirely.

The opposite alternative is to not set a level at all but let the water right holder assume the risk associated with his permit. Fairness would require that an applicant be made aware that his was a tenuous right, but if he wished to take the risk it was up to him. This would mean abandoning the concept of "available" water. Regulation of the stream could develop into an administrative headache.

Another variable is the selection of an estimated utilization percentage. Not all land which could be irrigated with existing rights is used. A factor is applied to potential depletions to get actual depletions. The proposed action uses 50 percent. If a higher figure were used, less water would be available. If a lower percentage were used, more water would be available.

7. SET BASE FLOW AT 60 CFS

One possibility is to arbitrarily limit base flow at 60 cfs. In the table showing proposed base flows, Kettle Falls would show 60 cfs for July, August and September.

This would conform to the present policy of writing a 60 cfs low flow proviso in all permits. Instream values would be protected better than under the proposed action. Since the Department of Game has indicated that 33 cfs may be sufficient for instream values, 60 cfs may be over protective. Water which could be put to beneficial out-of-stream uses would not be so used.

There would be no question about the status of the 50 cfs Washington Water Power generation right. It would not only be protected but provided with a 10 cfs buffer.

8. Close Tributaries to all Domestic Supplies

Under this alternative, some or all of the tributary streams could be closed to both single and multiple domestic appropriations.

Although individually very small, single domestic appropriation can add up to significant totals. Under the proposed action; small tributary streams could be lowered far below base flow by too many single domestic appropriations.

Department policy prefers the installation of multiple service public water supplies over single domestic supplies. This decreases the number of individual pumps in the stream and allows jurisdiction by health authorities. The tributary streams do not have enough water to support public supplies. The Department would prefer that ground water be used instead.

If total closure was effected, base flow would be better protected and there would be no proliferation of single-domestic pumps in the stream. On the other hand, in those areas where ground water is not readily available, property values would be lowered and development effectively stopped.

9. ADJUDICIATE THE COLVILLE RIVER AND ALL TRIBUTARIES

While not an alternative in the strict sense, this would certainly make management of the river an easier task. It would be a simple matter of arithmetic to determine total withdrawal potential.

Unfortunately, this would take several years and a great deal of money. However, if not done soon, eyewitness testimony of pre-1917 conditions will be unavailable.

APPENDIX

The SEPA GUIDELINES stipulate that every EIS shall have appended to it a list of the "Elements of the Environment." The following elements marked N/A (not applicable) will not be affected by the proposal and, therefore, are not discussed in the body of the EIS:

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

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

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

N/A Noise

N/A Light and glare

Land use

Natural resources
- Rate of use
- Nonrenewable resources

N/A Risk of explosion or hazardous emissions

ELEMENTS OF HUMAN ENVIRONMENT

Population

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

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

Energy
- Amount required
- Source/availability

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

N/A Human Health (including mental health)

N/A Aesthetics

Recreation

N/A Archeological/historical

Economic

N/A Social and cultural

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

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