BEFORE THE MONTANA BOARD OF NATURAL RESOURCES AND CONSERVATION

IN THE MATTER OF WATER RESERVATION APPLICATION NOS. LO77646-40S, LO77647-40Q, LO77749-40S, LO78651-40J, LO84482-40S, LO84483-40J, LO84484-39G, LO84485-39FJ, LO84486-40J, LO84487-41P, LO84488-40Q, LO84489-40J, LO84490-40J, LO84492-40R, LO84492-40P, LO84493-40J, LO84494-40G, LO84495-40O, LO84496-39E, LO84497-40Q, LO84498-39G, LO84499-40S, LO84500-40S, LO84501-40S LO84502-40R, LO84503-39G, IN THE LITTLE AND LOWER MISSOURI RIVER BASINS	)

DEPARTMENT OF FISH, WILDLIFE & PARKS' REBUTTAL TESTIMONY

Prefiled rebuttal testimony submitted in support of the Department of Fish, Wildlife & Parks' application for instream flow reservations in the Little and Lower Missouri River Basins

August 12, 1994

CURTIS E. LARSEN
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Attorney for Department of Fish, Wildlife and Parks

BEFORE THE MONTANA BOARD OF NATURAL RESOURCES AND CONSERVATION

IN THE MATTER OF WATER RESERVATION APPLICATION NOS. LO77646-40S, LO77647-40Q, LO77749-40S, LO78651-40J, LO84482-40S, LO84483-40J, LO84484-39G, LO84485-39FJ, LO84486-40J, LO84487-41P, LO84488-40Q, LO84489-40J, LO84490-40J, LO84492-40R, LO84492-40P, LO84493-40J, LO84494-40G, LO84495-40O, LO84496-39E, LO84497-40Q, LO84498-39G, LO84499-40S, LO84500-40S, LO84501-40S LO84502-40R, LO84503-39G, IN THE LITTLE AND LOWER MISSOURI RIVER BASINS	DEPARTMENT OF FISH, WILDLIFE & PARKS' REBUTTAL TESTIMONY

COMES NOW the Montana Department of Fish, Wildlife and Parks, and files the attached rebuttal testimony of Liter Spence, Scott Gillilan, Frederick A. Nelson, and Bruce Rehwinkel relating to the department's reservation applications for the Lower and Little Missouri River Basins.

DATED: August 12, 1994.

DEPARTMENT OF FISH, WILDLIFE & PARKS

By Curtis E. Larsen
Curtis E. Larsen
Agency Legal Counsel

CERTIFICATE OF SERVICE

I hereby certify that on the 12th day of August, 1994, a true and accurate copy of DEPARTMENT OF FISH, WILDLIFE & PARKS' REBUTTAL TESTIMONY was duly served upon all parties listed below by depositing the same, postage prepaid, in the United States Mail.

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% Mike Weber
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Curtis E. Larsen

PREFILED REBUTTAL TESTIMONY
OF LITER E. SPENCE
ON BEHALF OF
MONTANA FISH, WILDLIFE & PARKS (FWP)

Q. Please state your name and business address.

A. Liter E. Spence, FWP, 1420 E. 6th Avenue, Helena, MT 59620.

Q. By whom are you employed, and in what capacity?

A. I am employed by Montana Fish, Wildlife & Parks. My position is Water resources Supervisor in the Fisheries Division. My primary responsibility is to implement the Department's instream flow program, which includes obtaining and protecting instream flow reservations and other instream flow water rights.

Q. Have you previously prepared testimony in this proceeding?

A. Yes. I prepared written testimony as part of FWP's Prefiled Direct Testimony submitted June 30, 1994.

Q. Does that testimony include statements of your qualifications and experience?

A. Yes, it does, including a description of my instream flow training, experience and a biography.

Q. What is the purpose of this rebuttal testimony?

A. The purpose is to rebut the objector testimony of Roger Perkins, Dee Hansen and certain other objectors to FWP's reservations application.

Q. On page 3 of Mr. Perkins' objector testimony, he states that he is concerned that if FWP receives reservations it will gain objector status in the lower and Little Missouri basins and also the right to participate in the adjudication process. Are Mr.Perkins' concerns valid?

A. As I stated on page 6 of my prefiled direct testimony, FWP already has standing to object to new water permit applications. However, we must show that one or more of the permitting criteria are not met in order to sustain the objection (See Appendix A). This is no different a burden

than would be placed on any other objector to a new permit application. A similar burden would apply to FWP objections to change applications.

Granting instream reservations will not grant FWP any new standing in the adjudication process. We already have standing in all but one of the subbasins in the lower and Little Missouri river basins. This issue is addressed in my prefiled direct testimony on page 5.

Q. Mr. Perkins states on page 3 of his objector testimony that senior appropriators will have to spend considerable amounts of money to defend themselves against "changes to points of diversion after a flood or change of use to improve an irrigation system because of the FWP objecting to the amount of water diverted." What is your response?

A. Any change in point of diversion or change of use would not be approved by DNRC if it placed an additional burden on the stream. If an applicant wishes to increase the amount of water diverted, he or she should be seeking a new water use permit.

FWP's history of objections to changes in appropriation of water rights is shown in Appendix B. Our objections have been infrequent. Between July 1, 1973 and the date of this testimony, (August 10, 1994) 11 objections have been made. Two objections were made in the Yellowstone basin (one of those for an extension of time), one in the upper Missouri basin, and eight on Murphy Right and other streams in the state. These objections are insignificant when compared to the hundreds of change applications that have been approved since FWP was granted its Murphy Rights and Yellowstone basin reservations. Also, we do not believe the ability of a water right holder to protect a right by objecting to changes in water use by others is a reason to deny a water reservation which, in his testimony, Mr. Perkins is implying be done with FWP's requests.

Q. Mr. Perkins, on page 4 of his objector testimony, discusses storage as a means to solve water availability problems, including improving instream flows. What is your response?

A. As I stated in my pre-filed direct testimony (page 11), constructing new storage projects is currently not a state funding priority under the state water plan. Rehabilitation of existing dams for safety and improvement and expansion of existing storage projects are the number 1 and 2 priorities of the state, respectively. (See Appendix C). There may be some opportunities to build storage projects that would improve water availability, including that for instream flows.

However, because of the number of storage projects that would have to be built to provide instream flows in the several streams requested in the lower Missouri River basin, we do not believe that water storage is a substitute for acquiring instream flows through the reservation process.

Q. On page 5 of his objector testimony, Mr. Perkins states a concern that instream flows granted would become unreasonable standards for future storage projects. He uses as an example the upper inflection point flow requests from the wetted perimeter method as the basis to say that the overall feasibility of storage projects will be diminished by utilizing these flows as minimum releases. Please respond to this concern.

A. First of all, in this reservation process, the wetted perimeter method was utilized on only four coldwater streams that are tributaries to the Milk River and for part of the requests on the lower Missouri River. The high inflection point was not used on any other streams as a basis to establish flows. On the prairie streams, requested flows were grouped into two periods, December through March, and April through November. Then, the lowest mean monthly flow for each period (determined by the USGS) was used as the flow request.

Secondly, Mr. Perkins says that any new storage will likely evolve from a multiple use approach by a number of users, including recreationists (page 4). He then says that it is important to set any releases from the storage project at a level that will not hinder its development (page 5). Any storage project built under these circumstances would have to have sufficient environmental benefits to justify cost sharing by recreational users. One of those benefits could be instream flow releases below the project for fishery purposes. Those releases would likely have to be of sufficient quantity to benefit the fishery, not just enough for them to survive, as Mr. Perkins' statement would imply. We believe that these kinds of issues are best left to be addressed at the time of project feasibility studies where project size, water availability and environmental needs can all be considered.

Q. On page 7 of his objector testimony, Mr. Perkins states that FWP did not follow the law when it requested more than 50% of the average annual flow on gaged streams. This same comment was expressed by Mr. Dee Hansen in his prefiled direct testimony (page 5). Are these statements correct?

A. FWP requested flows it believed would help maintain stream fisheries at a desirable level. The law does not prohibit us from doing that. 85-2-316 (6), MCA, says that the Board

cannot grant more than 50% of the average annual flow on a gaged stream. Our responsibility is to request flows we believe necessary to maintain the fisheries. We are fully aware that the Board cannot grant more than the average annual flow on these streams. We discussed the 50% limitation and its implications on pages 26-28 of our application.

Q. Testimony by Paul Kuhr, Secretary-Treasurer of the Havre Irrigation Co. objects to the FWP reservation requests on Beaver Creek (Hill County) because he believes the requests are too high and that FWP will gain more control over the water in Beaver Creek. Is his concern justified?

A. The Havre Irrigation Co.'s point of diversion, according to Mr. Kuhr, has been at Ft. Assiniboine since 1903. The FWP request on Beaver Creek is from the Rocky Boy's Indian Reservation boundary to Beaver Creek Reservoir, a distance of 17 miles. Havre Irrigation Co.'s point of diversion is well below Beaver Creek reservoir. Water use by the company would be unaffected if the Board were to grant FWP's request. In fact, it would seem that the instream flows, if granted, could be a benefit to Havre Irrigation Company if new water use permits were to be issued above their point of diversion after the reservations were granted. His concern seems unjustified from a factual standpoint.

Q. Objector Glasgow Irrigation District states that FWP reservations cannot be granted because existing water rights, including the water rights of the district, have priority and because there is insufficient water to fill these existing prior water rights, including the water rights of the district. What is FWP's response?

A. The district says they divert water from the Milk River at Vandalia and provide that water to the district members through a system of ditches and canals. The Vandalia diversion dam is located on the mainstem Milk River at Rivermile 117.3. FWP has not requested a reservation on the Milk River mainstem, but only on certain tributary streams. The most downstream tributary to the Milk River on which FWP has made a reservation request is Rock Creek, which enters the Milk River at Rivermile 129.6, approximately 13 miles upstream from Vandalia. Since instream flows would not alter any existing use of water from Rock Creek or the Milk River below the mouth of Rock Creek, the concerns of Glasgow Irrigation District appear to be unwarranted.

Q. Several individuals, in their objector testimony, expressed concern that the large investments they made in new irrigation

systems under new water use permits they obtained after July 1, 1985 will be jeopardized if FWP receives a water reservation because they are junior to the July 1, 1985 priority date established by the legislature. Please respond to their concerns.

A. Post-1985 permittees were made aware of the pending water reservation process in the lower Missouri River basin when they were issued their permits. When these permits were issued, DNRC attached a blue sheet of paper titled "NOTICE" that explained the forthcoming water reservation process and informed the permittee of certain points they should be aware of. (See Appendix D). One of those points stated, "Any financial investment made in reliance upon this permit does not create in the permittee any equity or vested right against the reservation." Thus, the permittee was made aware of the earlier priority date the water reservations would have, if granted, so that they could make a decision whether to financially invest in a new irrigation project.

The "NOTICE" also provided information about subordination of the reservations to the permits. Section 85-2-331(4), MCA, allows the Board to subordinate a granted reservation to a post-1985 permit if it finds that the subordination does not interfere substantially with the purpose of any reservation. The permittees will have an opportunity to take their case before the Board when it considers whether or not to subordinate any granted water reservations to those post-1985 permits.

Q. Mr. Dee Hansen, on page 17 of his objector testimony, raises several questions regarding the sauger spawning/incubation flow requests of FWP on the Missouri River below Ft. Peck Dam. Some of these questions relate to the reliability of the flows requested, whether lower flows would affect sauger spawning and whether releases from Ft. Peck Dam would be required to provide spawning flows in dry years. Can you respond to these questions?

A. Yes. Flows for sauger spawning have been addressed by Bill Gardner, FWP biologist in prefiled direct testimony. Mr. Gardner conducted the studies leading to these requests. For purposes of this rebuttal testimony, Mr. Gardner related to me several sources of information that verify the requested spawning requirements:

> Crance, J.H. 1986. Sauger Habitat Suitability Index Curves Developed by the Delphi Technique. US Fish and Wildlife Service, National Ecology Center, Ft. Collins, CO.

This publication summarized the known flow requirements for a number of fish species. For sauger, all life stages/all activities required at least three feet of water depth.

> Nelson, W.R. 1968. Reproduction and Early Life History of Sauger in Lewis & Clark Lake. Transactions of the American Fisheries Society. Vol. 97, pg. 159-166.

This tailwater sauger study on the Missouri River showed that viable sauger eggs were found at depths of 2-12 feet below the maximum water level in the river. No eggs were found at less than two feet. Also, the greatest survival occurred at four feet below minimum water level and 85% of all eggs were found 2 1/2 feet or deeper than the minimum water level in the river. When the water was less than two feet deep, eggs did not survive.

> Graham, P.J. and R.F. Penkal. 1978. Aquatic Environmental Analysis in the Lower Yellowstone River. Montana Fish & Game, Helena, MT. 102 pages.

This study involved determining spawning requirements for walleye, a related species to the sauger and showed that a two-foot minimum depth for walleye was required for egg survival.

In the FWP studies on the Missouri River below Ft. Peck Dam, a flow that provides a two-foot minimum depth over the sauger spawning bars does not provide for two feet of water over the entire bar, but only at the outer edges of the bar towards the center of the river. Thus, the remaining portions of the spawning bar would be shallower than the two-foot minimum. Mr. Gardner can testify about the specifics of sauger spawning requirements.

Regarding flows of lesser magnitude over the spawning bars and their effects, incremental analyses of flow reductions are not available and are very difficult to obtain without long term studies. We assume that since spawning bars are limited in the Missouri River and that the two-foot minimum depth has been determined, that flows less than those requested would have detrimental effects on the ability of sauger to complete their spawning activities and produce viable offspring.

The water reservations requested do not require the Corps of Engineers to release any more water from Ft. Peck Dam than they already release during normal operations, even in a dry year. Granting instream reservations to FWP would not compel the Corp to change its operation of Ft. Peck Dam.

Q. Mr. Hansen, on page 11 of his objector testimony, criticizes the channel maintenance flow requests on Battle Creek and the

Frenchman River, stating that these requests are 81% and 88%, respectively, of the annual instream requests. He also wonders how these large, short duration flows can be as beneficial as the lower flows requested for the remaining months of the year. What is your response?

A. First of all, Mr. Hansen has used the wrong instream flow requests for Battle Creek and the Frenchman River. Appendix C of my direct testimony shows the corrected instream flow requests for all of the streams in our original reservation application. Due to modifications by the USGS for Battle Creek and the Frenchman River, the channel maintenance flows are 72% and 87% respectively, of the annual instream flow requests. The reason these percentages are so high is because the channel maintenance flows are a relatively large flow that serves a specific purpose in maintaining channel morphology. The instream requests for the remainder of the year are much lower and, therefore, make up a smaller percentage of the total requests. Mr. Hansen seems to want to measure the benefits of these flows by their volume rather than by the function they serve.

Q. Mr. Perkins, on page 7 of his objector's testimony, utilizes Horse Creek as an example of where he believes a less frequent bankfull flow has not adversely affected a bass fishery below the Chinook Water Users Association Reservoir. What is your response to this testimony?

A. First of all, I asked Kent Gilge, FWP biologist stationed at Chinook what his knowledge was of this stream and its fishery. Mr. Gilge, from his knowledge of the area Mr. Perkins discusses, and from inquiring of other persons familiar with the area, knows of no stream named Horse Creek. Secondly, Mr. Gilge says that, although there are a few smallmouth bass present, there are no <u>populations</u> of bass anywhere in the area that he considers to be significant, or even good. Mr. Gilge has provided pre-filed direct testimony for FWP in this proceeding.

Liter E. Spence, being first duly sworn, states that the foregoing testimony is true.

DATED this 11th day of August, 1994.

Liter E. Spence

Liter E. Spence

Subscribed and sworn to before me this 11th day of August, 1994.

Debra K. McRae

Notary Public for the State of Montana
My commission expires: 5/11/98

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

STAN STEPHENS, GOVERNOR

APPENDIX A

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

HELENA, MONTANA 59620-2301

MEMORANDUM

TO: All Water Resources Regional Managers
Processing Unit Staff
Hearings Unit Staff
Records Section Staff

FROM: RJG. Ronald J. Guse, Supervisor
New Appropriations Program

DATE: September 23, 1991

SUBJECT: Senate Bill 266 - Final Administrative Implementation - Effective July 1, 1991

Although it states above this is a "Final," nothing is ever really final, it is, except _____. (Please no comments or questions as to what goes in the blank space.) What I'm saying is, although this memo is a formal "final" for the purpose of administratively implementing S.B. 266 requirements, I'm still open to comments, questions etc. concerning this memo and any other problem areas that we need to address a solution in this complicated and rapidly changing field of water rights law administration.

I again thank those individuals who commented on the Proposed Implementation memo of June 21, 1991. I have not made any "major" changes from the comments received from the proposed to this final. I would consider the changes contained in this memo as relatively minor with more clarification. The following sections have been noticeably altered from the proposed implementation memo: A-1; A-2a; A-3a, 3&4; B-4; and E-2.

Please have all your staff that work in the New Appropriations Program read the attached implementation of S.B. 266.

STANDING

APPENDIX A (Cont)

2.) Effective July 1, 1991 all qualifying Form 602's will require a filing fee of $20.00. (See memo of June 18, 1991 concerning new fees effective July 1, 1991).

3.) The Form 602 and Form 602/603 have been revised to reflect the Section 85-2-306(1) amendment and the increased filing fee.

4.) Section 85-2-306(1) MCA also provides that within 60 days of completion of the well or developed spring and appropriation of the groundwater for the beneficial use, the appropriator shall file a Notice of Completion, Form 602, with the Department.
Obviously you will encounter situations during this transition period (100 gpm to 35 gpm or 10 A.F.) where appropriators have completed and beneficially use a groundwater appropriation of less than 100 gpm. But due to the statutory change taking effect on July 1, 1991 it was impossible for them to file the 602 before July 1, 1991 in many cases. However, if they are filing the 602 within 60 days of completion and the beneficial use of the groundwater appropriation is less than 100 gpm we can accept the filing on or after July 1, 1991. We cannot accept the 602 filing for the less than 100 gpm groundwater appropriation if the 60 days has been exceeded. You should accept the completion and beneficial use dates of the appropriator unless you have an obvious reason not to believe their dates. Give the appropriator the benefit of doubt on close calls. Those 602's filed after the 60 days will need a permit if they exceed 35 gpm or 10 A.F. or any combination. Once again the filing fee for all 602s filed on or after July 1, 1991 is $20.00.

D. Amendments to Section 85-2-308, - Objections

1.) The Form 611 has been revised, reprinted and distributed for use.

2.) An objection to a permit (Form 600) application must state facts tending to show that one or more of the appropriate criteria in 85-2-311 are not met.

3.) An objection to a change (Form 606) application must state facts tending to show that one or more of the appropriate criteria in 85-2-402 are not met.

4.) An objection to a reservation of water (Form 610) application must state facts tending to show that one or more of the criteria in 85-2-316 are not met.

5.) New Subsection (3) states, "A person has standing to file an objection under this section if the property, water rights, or interests of the objector would be adversely affected by the proposed appropriation"
Standing means a person (or objector in this case) has the right or interest to come into the hearing process as a party even though they do not have a water right, but they must still state facts tending to show that one or more of the applicable criteria are not met.
Example: The Department of Fish, Wildlife and Parks could have standing to file an objection to an application on a source even though they don't have a water right, but they still must state facts tending to show that one or more of the applicable criteria are not met. This would be a valid objection that could result in a hearing and if FW&P can prove a criteria can't be met, the Department must deny the application, unless it can be modified or conditioned to eliminate the problem.

E. Sections 85-2-315, Certificate of Water Right - and 85-2-402, Changes in Appropriation Rights - have

part of ltr sent by DNRC
[illegible]

APPENDIX B

8/10/94

FWP Objections to Changes in Appropriation Rights, July 1, 1973 - August 10, 1994

Murphy Right and Other Streams

Change No.	Stream	Basin	Comments
24859-C76LJ	Dayton Creek	Flathead	Issued
G24550-41QJ	Missouri River	Missouri	Objection Withdrawn
G120477-41H G16060-41H G005666-41H G006162-41H	Gallatin River Gallatin River Gallatin River Gallatin River	Gallatin Gallatin Gallatin Gallatin	Issued. These four parties changed their POD on Clark Ditch to Keughen Ditch.
G3049-76D	Fallon Creek	Kootenai	Glen & Rose Wood/FWP water right change
G104747-76LJ	Flathead River	Flathead	Issued with Murphy Right condition

Yellowstone Basin Streams

G12416-43B	Yellowstone River	Yellowstone	Objection to 13-year extension of time to complete water right change. We agreed to 3-year extension.
G33167-43B	Area Creek	Yellowstone	Application terminated before issuance.

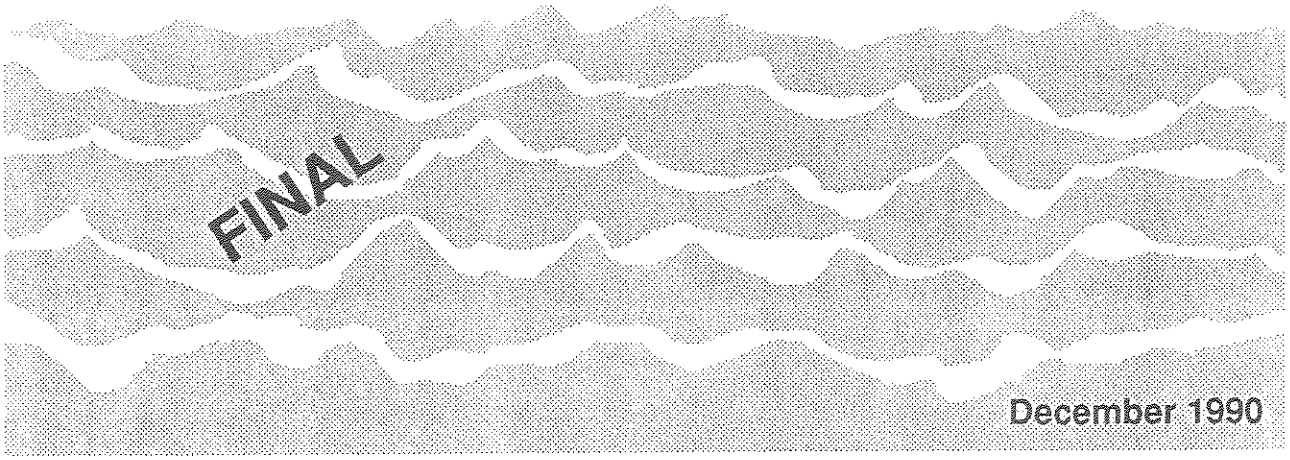
Upper Missouri Basin Streams

41H-G(P)072309	E. Gallatin River	Gallatin	Objection withdrawn following site review and discussion with applicant.

Source: DNRC water right objections log books Numbers 1-13, DNRC water rights microfiche files, and FWP files.

APPENDIX C

MONTANA WATER PLAN



Section: Water Storage

WATER RESOURCES DIVISION • DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1520 EAST SIXTH AVENUE • HELENA, MONTANA 59620 - 2301 • (406) 444-6637

and improved during rehabilitation efforts. However, it may be difficult to rehabilitate all existing dams due to the cost of such activities.

The estimated cost for rehabilitating several existing water storage facilities in Montana ranges from under $200,000 to over $5 million per site. Rehabilitating the Tongue River Dam alone will cost between $25 million to over $125 million, depending on the amount of risk to life and property the state and its citizens are willing to assume. The total cost for rehabilitating approximately 35 state-owned high-hazard dams, including the Tongue River Dam, is expected to exceed $200 million.

In light of the need to rehabilitate existing water storage projects, and the cost of such efforts, the state needs to decide which facilities should be rehabilitated first. One factor affecting the effort to prioritize such projects is the Montana Dam Safety Act. This act defines a "high-hazard" dam as any dam or reservoir that, if it fails, would likely cause a loss of life. The classification of a dam as high-hazard, however, does not determine nor imply whether the dam is structurally safe. Thus, the safety of a particular dam, in addition to its classification as high hazard, must be considered in any scheme to prioritize the rehabilitation of existing water storage projects.

Options

1. **Identify the high-hazard projects most needing repair based on the criteria listed under The Role of Storage in Water Management, those listed in Issue 1, and the following criteria:**
   a. **Protect public safety**
   b. **Impacts of not repairing project**
2. Breach high-hazard dams that cannot be repaired with a positive benefit-to cost ratio.
3. Rehabilitate all unsafe high-hazard dams by the year 2000.

Recommendation

Option 1. The priority of rehabilitation projects should be established according to which projects best satisfy the criteria outlined in Option 1, realizing that some of the criteria may not apply in some cases.

Issue 3 — Allocating State Funds

As mentioned above, water storage projects must compete with other water management activities in terms of state and federal assistance. In addition, water storage projects must compete among each other for limited state and federal financial and technical resources. Although the state has a limited ability to determine how federal resources are allocated, it can set priorities for allocating state funds. The question is, given the amount of state funding available for water storage projects, how should these funds be allocated? A related question, how to increase the amount of state funding available for water storage projects, is addressed in the next subsection on financing water storage projects.

Options

1. Allocate the state funds available for water storage solely to rehabilitate existing water storage projects, particularly unsafe, high-hazard facilities.
2. Allocate the state funds available for water storage solely to plan and construct new water storage facilities.
3. Allocate a certain percentage of the state funds available for water storage for onstream, offstream, and nonstructural types of storage.
4. **Allocate the state funds available for water storage based on the following order of preference:**
   a. **Resolve threats to life and property posed by high-hazard facilities that are in an unsafe condition.**
   b. **Improve and/or expand existing water storage facilities.**
   c. **Plan and/or construct new water storage facilities, including onstream, offstream, and nonstructural.**

Recommendation

Option 4. This approach recognizes the importance of rehabilitating unsafe, high-hazard dams, but also allows for other water storage activities.

PLAN IMPLEMENTATION

Legislative Action

The legislature needs to enact legislation that explains the role of storage in water management, including the generic problem-solving process outlined above. The legislature also needs to enact legislation outlining the criteria for prioritizing new storage projects and rehabilitation projects. The legislation should specify that the Governor's Office, in cooperation with the legislature,

Notice is being updated to correct date.

APPENDIX D

N O T I C E

The purpose of this notice is to inform you, as the holder of a provisional permit to appropriate water within the Missouri River Basin, that your permit will be junior in priority to water reservations granted pursuant to §85-2-331, Montana Code Annotated (MCA). This section allows agencies of the federal government and State of Montana to apply to the Board of Natural Resources and Conservation (Board) to reserve water in the Missouri Basin for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water. Such reservation applications are to be filed before July 1, 1989, except that applications for reservation of water below Fort Peck dam must be filed no later than July 1, 1991. The Board has until ~~December 31, 1991~~ JULY 1, 1992 to make a determination on all applications for reserved water above Fort Peck dam and until December 31, 1993 for reservations below the dam. All reservations approved by the Board and subsequently granted will have a priority date of July 1, 1985.

The Board may subordinate the reservation to your permit if it finds that the subordination does not interfere substantially with the purpose of any reservation. Subordination of a reservation to your permit will give your permit seniority over the reservation even though the reservation will have an earlier priority date.

Any financial investment made in reliance upon this permit does not create in the permittee any equity or vested right against the reservation.

You will have an opportunity to present testimony to the Board prior to any decision in the matter of subordination. The Department of Natural Resources and Conservation will contact you regarding this opportunity, which is not expected to occur before 1992.

If you have any questions concerning this notice, feel free to call the Department of Natural Resources and Conservation at 406-444-6610 for further information and explanation.

NOTICE

This notice is to inform Provisional Permit holders within the Missouri River Basin that your permit is junior in priority to water reservations granted pursuant to Section 85-2-331, Montana Code Annotated (MCA). This section allows agencies of the federal government and State of Montana to apply to the Board of Natural Resources and Conservation (BNRC) to reserve water in the Missouri Basin for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water.

The reservations above Fort Peck were granted on June 30, 1992. Applications for reservation of water below Fort Peck and in the Little Missouri River basin were filed July 1, 1991. The BNRC must make a determination on the applications below Fort Peck and in the Little Missouri River basin by December 31, 1994.

Reservations approved and granted by the BNRC in the Missouri River Basin have a priority date of July 1, 1985. Approved reservations in the Little Missouri River will have a priority date of July 1, 1989.

The BNRC may subordinate the reservation to your permit if it finds the subordination does not interfere substantially with the purpose of any reservation. Subordination of a reservation to your permit will give your permit seniority over the reservation even though the reservation will have an earlier priority date.

Any financial investment made in reliance upon this permit does not create in the permittee any equity or vested right against a reservation.

You will have an opportunity to present testimony to the BNRC prior to any decision in the matter of subordination. The Department of Natural Resources and Conservation will contact you regarding this opportunity.

If you have any questions concerning this notice, feel free to call the Department of Natural Resources and Conservation at (406)444-6610 for further information and explanation.

PREFILED REBUTTAL TESTIMONY OF SCOTT GILLILAN,
On Behalf Of
MONTANA FISH, WILDLIFE, & PARKS
(FWP)

Q. Please state your name and business address.

A. Scott Gillilan, 25 N. Willson Ave., Suite 5, Bozeman, MT 59715

Q. What is your present employment?

A. I am a hydrologist employed by Inter-Fluve, Inc.

Q. Please state your educational background and experience.

A. This information was presented in the pre-filed direct testimony that was filed for this reservation proceeding by FWP.

Q. What is the purpose of this testimony?

A. The purpose is to rebut elements of the objector's testimony of Mr. Dee C. Hansen and Mr. Roger Perkins.

Q. Do you have any general summations of Mr. Hansen's testimony?

A. Yes. While Mr. Hansen has many opinions regarding the effects of peak and regulated flows on fisheries and riparian vegetation, his main contention is that because natural stream systems are complex, conclusive values cannot be assigned to the magnitude and frequency of the dominant discharge. Further, he maintains that methodologies developed for management of regulated rivers, as reported by Reiser 1985, provide a better means to determine what flows are necessary to flush fine sediment from stream systems.

Q. Would you please address the first summation concerning the magnitude and frequency of channel maintenance flows?

A. Mr. Hansen's attempts to discredit FWP's 2-year peak flow request for channel maintenance, based on the complexity of natural systems, is oversimplified and seems to reject applied science. Applied science is the foundation of natural resource management. Relationships between channel form and discharge are based on empirical studies. If Mr. Hansen's rejection of empirical studies was universally applied to all

natural resource management, not just water resources, management decisions would be necessarily reduced to opinion. While we acknowledge that there is some variation around the 2-year dominant discharge value, this variation is not great.

Q. Could you comment on the concept of uncertainty in applied hydrology and fluvial geomorphology?

A. There is, and always will be, some uncertainty surrounding hydrologic and fluvial behavior because they are reflective of open systems, subject to a number of interrelated, difficultly measured variables. However, the science of hydrology and fluvial geomorphology does recognize patterns in systems. These patterns are documented by empirical studies. As an engineer, Mr. Hansen undoubtedly understands the statistical difficulty in modeling natural systems, and that, in general, empirically derived values are frequently used for engineering design decisions. For example, when engineers design bridge pilings, formulas are used to determine the depth of scour so that pilings aren't undermined and fail. These formulas are ultimately based on empirical studies, just as are the ones which identify the 1.5 to 2-year peak discharge as the dominant discharge.

Q. Mr. Hansen refers to research by Andrews, 1980 to support his contention of variability around the 2-year peak flow and its relationship to bankfull discharge. Are you familiar with this research?

A. Yes. I read this paper in preparation of my direct testimony and again after reading Mr. Hansen's testimony. The research in question concluded that 50% of the bankfull recurrence intervals were greater than 1.75-years and 50% were below 1.25-years. Further, the bankfull discharge was closely correlated with the effective, or dominant discharge. Given natural variability, this research does not suggest that FWP's use of the 2-year peak flow requests is inappropriate, since it falls about in the middle of the range observed in this study and numerous others.

Q. Can you clarify the relationship between bankfull discharge and dominant discharge as it relates to flow frequency?

A. Mr. Hansen cites Andrews' 1980 paper to contend that FWP's 2-year peak flow request may not actually represent the bankfull flow in all of the channels listed in the flow reservation request. First, there is a large body of evidence supporting the relationship between the peak flow occurring every 1.5 to 2 years and the dominant, or in Andrews' terms, effective

discharge. Obviously, variability in channel shape within a single stream channel and between channels, will tend to tilt this relationship to more frequent or less frequent levels of recurrence.

If the resources were at hand, studies could be implemented on every channel in the reservation request to more accurately determine the needs of each channel. However, this would take enormous resources that are not presently available. If a study was conducted, it is equally likely that the bankfull channel discharge would be higher (such as the 5 to 10 year peak flow) than the requested 2-year peak flow. Mr. Hansen fails to consider this distinct possibility. Given the current state-of-the-knowledge, the 2-year peak flow request is entirely reasonable, and further, is likely to correspond with bankfull flow in most of the channels under discussion.

Q. Do you have any general comments regarding the second point of Mr. Hansen's arguments concerning Reiser's 1985 flushing flow methodology as a means to regulate flows for channel maintenance?

A. My first observation is that Mr. Hansen is inappropriately mixing the concept of so called "flushing flows" with dominant discharge theory, and tends to use them interchangeably throughout his testimony. A "flushing flow" is not recognized as a discrete hydrologic flow event, such as the bankfull discharge. Instead, it usually describes a desired flow in diverted or dammed channels to help off-set undesirable results of flow regulation. While many different names have been assigned to "flushing flows" (Batelle Environmental 1986), they have in common the fact that they are remediative descriptions. FWP is requesting dominant discharge flows which, through sediment mobilization and bed scour, actually shape a channel and give it unique and natural characteristics. FWP is not requesting remediative flushing flows, which is an entirely different concept.

Q. Can you provide a specific example of Mr. Hansen's apparent misuse of flushing flows and the nature of FWP's dominant discharge requests?

A. An example of this misuse, regarding the difference between remediative flushing and dominant discharge is found on page 11 of his objector's testimony. Here, he misinterprets the objectives of FWP's peak flow request by narrowly defining their purpose to "(1) cleansing gravel beds of mountain streams... and (2) removal of sediments and sand which have the potential to fill up pools in prairie streams...". Again, the purpose of the dominant discharge request is to preserve

existing stream function, including fluvial, hydrologic, and vegetative components. Removing fine sediment from gravels and pools is merely one element of channel shaping flows.

Q. Can you comment on Mr. Hansen's suggestion that Reiser's 1985 methodology is perhaps more appropriate to determine flows necessary for channel function?

A. While Mr. Hansen is willing to adopt Reiser's report, a survey of 15 different remediative flushing flow strategies for regulated rivers, he does not refer to the large body of evidence suggesting the 1.5 to 2-year peak discharge is the flow most responsible for natural channel geometry. Further, to a much greater degree than with the 1.5 to 2-year dominant discharge concept, an accepted methodology to determine flushing flow regimes is far from being resolved within the scientific community. In fact, Reiser, 1985, page. 80, states:

> "Overall, it can be concluded that there is no present state-of-the-art methodology or approach for flushing flow needs. Moreover, the few methods which are in use today are largely untested, and may be providing unrealistic recommendations."

Again, FWP is requesting the dominant channel discharge, not remediative flushing flows, using the logic that natural hydrologic regimes result in naturally functioning channels.

Q. Do you agree with Mr. Hansen's statements concerning adjustments a stream will make to regulated conditions?

A. No. On page 6 of his testimony, Mr. Hansen states, in reference to regulated rivers, that "the downstream river will simply adjust to the new flow regimes occasioned by release patterns from the reservoir... [and] New stream vegetation is quickly established and the stream channel finds equilibrium within this context". This statement is not supported by the literature and does not take into account the complexity surrounding the geomorphic definition of equilibrium channels. An equilibrium channel is one that is self-regulating, and that, if disturbed, will tend to return approximately to its previous state over various time scales. Mr. Hansen envisions equilibrium as a static state that is "quickly established". Knighton, 1984, describes 5 possible types of equilibrium, (with, incidentally, the static variety discounted as largely inapplicable to open channel systems), with channel adjustment time scales ranging from tens to ten thousand years. Further, research (Williams and Wolman 1984) suggests that channel disequilibrium, not equilibrium, is a typical channel response

to damming.

Q. Mr. Hansen implies that stream regulation, with subsequent adjustments to a new flow regime, is beneficial. Is this implication substantiated?

A. Mr. Hansen's testimony implies that channel adjustment to a new equilibrium condition will quickly result from flow regulation, a point I contest. Further, there is a failure in his argument to link new channel forms with a fisheries benefit. He loosely implies a benefit through his description of the emergence of tailwater trout fisheries, such as below Flaming Gorge Dam. Here, he fails to cite the documented ill effects of Flaming Gorge Dam on native fish (Miller et.al. 1982) and significant morphological channel changes downstream (Andrews 1986), resultant of that dam. Further, the effects of dams on channel form are numerous (Williams and Wolman 1984), from accelerated erosion directly below dams to aggradation in reaches further downstream. To my knowledge, there is no evidence which supports that these channel changes benefit native fisheries.

Q. Mr. Hansen also directly contends, throughout his testimony, that flow regulation is beneficial to channel, riparian and floodplain condition. Do you agree with this contention?

A. No. This contention is not supported by the literature. Hill et. al. 1991, Lotspeich 1980, Platts 1979, and many others, have reported for years on the detrimental effects of flow regulation on channel form and fisheries. For example, Hill et. al. report:

> "We can broadly describe watershed changes that occur when fluvial processes are altered by reducing natural flood flows: (1) valley floors no longer flood, (2) local water tables are no longer recharged, (3) stream bar and channel areas no longer become inundated and scoured (4) sediment accretes in bars and channel edges, (5) side channels and backwater areas become disconnected from the main channel... (6) tributary channel confluences with main stems locally aggrade and push into the main channel, and (7) the ratio of pools and riffles is significantly altered (Morisawa 1968; Platts 1979; Leopold and Emmet 1983)."

Q. Can you summarize and comment on Mr. Hansen's arguments relating to FWP's duration requests for the 2-year peak discharges?

A. Mr. Hansen (page 15) contends there is little scientific evidence to support the idea that channel maintenance flows should mimic natural hydrographs, but that he does not know

himself what the durations of these flows should be. I have two responses to his position.

First, one need not look any further than naturally functioning streams to conclude that natural hydrographs produce channels with natural habitat. Mr. Hansen states on page 16, that " 'the natural flow must be best' is not well founded in scientific knowledge". Yet, he does not provide supporting evidence which suggests managed flows are better at providing fish habitat, preserving natural channel function, and recreational opportunities. FWP is requesting flows that would naturally occur; they are not seeking to "improve" natural processes. Until evidence warrants flow durations different than those that naturally occur, those in FWP's application are the best possible.

Secondly, there <u>is</u> ample scientific evidence which suggests that channel scour, suspended sediment and bedload transport occurs variously throughout a normal peak flow hydrograph (Sidle 1988, Besctha 1985). While most concur that fine sediments are preferentially mobilized on the rising limb of the hydrograph, acknowledgment is also made that bedload transport associated with scour is variable and difficult to predict within a given hydrograph. Therefore, emulation of a natural hydrograph, both in terms of magnitude and duration, is a logical approach to insure the channel has the opportunity to transport its total sediment load.

Q. Leaving Mr. Hansen's testimony, how would you summarize Mr. Perkins' objector testimony regarding channel maintenance flows?

A. Mr. Perkins has three main arguments relating to channel maintenance flows: (1) his opinion that the effects of regulated flows on channel processes are not well enough understood to warrant the requested water reservations, (2) his opinion that a peak flow occurring once every 5 years (5-year recurrence interval) is adequate to maintain channel form, and (3) that there is debate over how pools, from a mechanistic perspective, are formed.

Q. Can you address Mr. Perkins' opinion on the effects of regulated flows on channel processes?

A. Mr. Perkins does not cite research which supports his contention that the effects of regulated flows on streams is not well understood; he offers only an opinion. A survey of the literature available on this topic indicates otherwise. There are clear and documented effects on channel form resulting from flow regulation.

Q. What evidence does Mr. Perkins offer to support his opinion that a 5-year peak flow, implemented as a form of management, will sufficiently maintain desirable channel attributes?

A. Mr. Perkins offers no evidence for this contention. In preparation of this rebuttal and previous direct testimony, I conducted an extensive literature review, contacted colleagues, and researchers regarding channel form and frequency of peak flows. In this process, I have not found a single reference which would support Mr. Perkins' contention.

Q. Could you please comments on Mr. Perkins' third argument relating to pool formation?

A. I agree that the exact mechanism for pool formation, for the wide range of river and stream systems throughout the world, is not reduced to a single factor. However, we have enough knowledge to recognize that pools are formed by scour of the bed and subsequent deposition in other areas, such as point and lateral bars, and riffles. It is also recognized that pool habitat is maintained by dynamic processes and is frequently lost when changes in flow and sediment regimes are imposed. Mr. Perkins offers anecdotal evidence of pools maintained by large, infrequent flow events below a reservoir on Horse Creek, and his opinion that large woody debris is another causative pool forming agent. I do not dispute either observation; they are of no relevance to arguments regarding the role of the dominant discharge in maintaining channel form.

Q. Do you have any concluding comments?

A. The arguments presented by Mr. Hansen and Mr. Perkins are largely based on their personal opinions, and not on the extensive body of literature relating to these topics. Further, the channel maintenance flows requested by FWP are no more than a reasonable attempt to limit future degradation of the fisheries and recreational base in the lower Missouri River basin. Many of these drainages already experience natural peak flow regimes which result in the habitat currently observed. Both Mr. Hansen and Mr. Perkins seem to assume, or at least paint the picture, that these flows are in some way detrimental or can be improved by reducing them. These views are not widely held in the professional community.

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Scott Gillilan, being first duly sworn, states that the foregoing testimony is true.

DATED this 10 day of August, 1994.

Scott Gillilan

Subscribed and sworn to before me this 10th day of August, 1994.

Notary Public for the State of Montana
My commission expires: 11/30/94

PRE-FILED REBUTTAL TESTIMONY

OF FREDERICK A. NELSON

on behalf of

MONTANA FISH, WILDLIFE & PARKS (FWP)

Q. Please state your name and business address.

A. Fred Nelson, FWP, 1400 South 19th Avenue, Bozeman, Montana 59715.

Q. What is your present employment?

A. I am a fisheries biologist employed by Montana Fish, Wildlife & Parks.

Q. Please state your educational background and experience.

A. This information was already presented in previous testimony I filed for this reservation proceeding on behalf of FWP. That testimony included a description of my training and a vita.

Q. What is the purpose of this testimony?

A. The purpose is to rebut elements of the prefiled direct testimony of Dee C. Hansen, Roger J. Perkins, and certain other objectors to the instream flow application of FWP.

Q. Mr. Perkins, on page 3 of his testimony, uses the FWP's instream flow request for Battle Creek as an example of the "vast amounts of water which are being claimed

by the FWP for instream flow use." Is the information that Mr. Perkins presents in his testimony accurate for Battle Creek?

A. Mr. Perkins' testimony contains inaccurate information. He states that "FWP has requested 7,624 acre feet of water in a 14-day period from March 1st to April 30th of each year" and that "base flow requests would require up to 10,524 acre feet per year." FWP's instream flow request for Battle Creek is not 7,624 AF plus 10,524 AF, as Mr. Perkins suggests. FWP's request totals 10,524 AF, which includes both the channel maintenance and base flow requests (see Appendix D in the Prefiled Direct Testimony of Liter Spence).

Q. How does FWP's instream flow request for Battle Creek compare to the available flow?

A. As Mr. Perkins states in his testimony, Battle Creek has an estimated average annual flow of approximately 32,000 AF at its mouth. Battle Creek at or near its mouth is the approximate site where FWP intends to monitor any future instream flow reservation. FWP's instream flow request of 10,524 AF is only 33% of the creek's average annual flow at its mouth. If FWP's reservation request is granted in full, approximately 67% (or 21,476 AF) of the creek's average annual flow will be available for future storage and new consumptive uses.

Q. Certain objectors have testified that there's no available water or that there's insufficient water to satisfy FWP's instream flow request for certain waters, notably

Rock Creek and the Frenchman River. In addition, Mr. Perkins, on page 7 of his testimony, states that "water is not available for instream use as requested in several of the drainages (Poplar River, Battle Creek, and the Little Missouri Basin)." Is this testimony accurate?

A. This testimony is inaccurate. Flow data in Table D-1 on pages D-6 and D-7 of the draft EIS and on pages 19-24 of the USGS publication (Exhibit No.4) in FWP's Prefiled Direct Testimony demonstrate that water is available for instream allocation. Table D-1 in the draft EIS shows that, on average, about 32,000, 94,000 and 101,000 AF of water annually flows in Battle Creek, the Poplar River and the Little Missouri River, respectively. The USGS report shows that about 54,000 and 67,000 AF annually flows in the Frenchman River and Rock Creek, respectively. FWP's instream flow requests equal from 31 to 48% of the average annual flow for each of these five waters. Clearly, water is currently available for instream use on these five waters. The amounts being requested by FWP comprise only a portion of the average annual supply.

Q. Certain objectors have testified that there is little or no recreational use on streams where FWP has requested instream flow reservations. Is this testimony accurate?

A. This testimony is inaccurate. FWP, in Table 17 on page 147 of its application, presented angler-use estimates for 1985 for the streams in the lower and Little Missouri River basins. This information was gathered through FWP's statewide angling pressure mail surveys, which are now conducted every two years by FWP.

This table, which I expanded to include angler-use estimates for 1989 and 1991, is shown in Appendix A of this testimony.

In 1985, the warmwater streams of the lower and Little Missouri River basins supported an estimated 28,667 angler-days of use. In 1989 and 1991, estimated use of these streams was 25,476 and 17,774 angler-days, respectively. While angling pressure on these warmwater streams is not of the magnitude of that on some of Montana's world famous trout rivers, use by anglers is still noteworthy. For example, the 125-mile-long Smith River, which is one of Montana's "Blue Ribbon" trout rivers and is also nationally recognized for its recreational floating, supported an estimated 125 angler-days of use per mile of river in 1991 (Montana Statewide Angling Pressure Mail Survey, 1991). In contrast, the section of the Missouri River from Fort Peck Dam to the North Dakota border supported an estimated 33 angler-days per mile in 1991. On a per mile basis, angler-use of the lower Missouri River is about 1/4 of that for the "Blue Ribbon" Smith River. The Middle, North and South forks of the Flathead River, three other "Blue Ribbon" trout waters in Montana, supported an estimated 32, 81 and 29 angler-days of use per mile, respectively, in 1991 (Montana Statewide Angling Pressure Mail Survey, 1991). Relative to angler-use on some of Montana's more famous rivers, angler-use of the lower Missouri River is significant.

Q. Mr. Perkins, on page 9 and 10 of his testimony, criticizes the Wetted Perimeter Inflection Point Method (WPIPM), which was used by FWP to derive instream flow

requests for four cold water streams and the Missouri River in its current application. He states that "the Board should seriously question" the use of this instream flow method by FWP. Is his statement justified?

A. The WPIPM was the primary method used by FWP to derive the instream flow requests in its reservation application for the streams of the Missouri River Basin above Fort Peck Dam. Mr. Perkins' current criticisms of the WPIPM are a reiteration of those that he and others voiced in 1992 during the hearing for the upper Missouri basin reservation. The Findings of Fact for the upper Missouri water reservations (see pages 162-168 in the Final Order of the Board of Natural Resources and Conservation Establishing Water Reservations above Fort Peck Dam, July 1, 1992) support the validity of the WPIPM. The validity issue currently being raised by Mr. Perkins has already been resolved by the Board in favor of the WPIPM as a suitable means for providing reasonable estimates of the amount of water needed to sustain fishery values. Furthermore, a recently completed study conducted at Montana State University provides further scientific support for the WPIPM. The results of this scientific study are summarized on page 6 of my prefiled direct testimony.

Q. Mr. Perkins, on page 8 of his testimony, quotes a paragraph on page 12 of Exhibit No. 2 in FWP's Prefiled Direct Testimony to support his opinion that winter habitat alone is regulating fish populations in Montana's prairie streams. Is the quote presented in Mr. Perkins' testimony accurate?

A. The quote is inaccurate. Page 12 of Exhibit No. 2 states "The severity of the winter environment on trout survival has been discussed by a number of authors." Mr. Perkins, in his testimony, replaced "trout survival" with "the fish populations".

Q. Does Mr. Perkins' misquote alter the intended meaning of the quoted paragraph?

A. Yes. The paragraph, as presented in Exhibit No. 2, was intended to focus on headwater trout streams where mountain snowpack is the primary year-round contributor to streamflows and where well-developed riffles are an important component of the stream habitat. The statement was not intended to blanket all of Montana's rivers and streams.

Q. Can summer streamflow in headwater trout streams replace winter habitat as the ultimate regulator of trout populations?

A. Yes. Page 15 of Exhibit No. 2 states:

"The amount and availability of physical habitat may limit fish populations during the non-winter months in streams that are depleted for irrigation. The habitat reductions that result when irrigation water is removed, especially in late summer and fall when natural flow levels have dropped considerably, become more limiting to the population than the food supply and, if flow depletions are severe, replace winter habitat as the ultimate population control. Data collected for the Gallatin, Big Hole and Shields Rivers - Montana streams that are severely depleted for irrigation - suggest that the summer low flow has become the ultimate population regulator on

portions of these streams (Nelson 1984b and Clancy 1985)."

Q How do summer flows in prairie streams compare to winter flows?

A. Examination of the monthly streamflow data on pages D-6 and D-7 of the Draft EIS and on pages 19-23 in Exhibit No. 4 of FWP's Prefiled Direct Testimony shows that for many prairie waters the low flows of late summer are often similar in magnitude to the low flows. An example is Beaver Creek near Trotters, N.D. (see page D-7 of the Draft EIS). Here mean monthly flows for August and September are 3.5 and 0.6 cfs, respectively. During the winter months of December and January, mean monthly flows are 1.1 and 2.1 cfs, respectively. Another example is the Poplar River near Poplar (page D-6 of Draft EIS), where mean monthly flows in August and September are 6 and 18 cfs, respectively, while those in December and January are 21 and 9 cfs, respectively.

The low flows of late summer in many prairie waters are often similar in magnitude to the winter low flows. These low summer flows, whether a reflection of the natural state, a result of irrigation depletions or a combination of both, can contribute to the regulation of fish populations. Mr. Perkins' contention that winter habitat alone is regulating fish populations in prairie streams is incorrect.

Q. Mr. Dee Hansen, on page 4 of his testimony, states that "it would be wise for the Board to find a balance between irrigation, municipal, and industrial needs vs.

instream needs than is presented in the current application for the Fish, Wildlife & Parks Department." Mr. Hansen implies that the balance will shift in the direction of instream values if the Board grants FWP's requests. Is his opinion substantiated?

A. Mr. Hansen's opinion is not substantiated by data presented in the draft EIS, which indicate that the so-called "balance," particularly for the lower Missouri River below Fort Peck Dam, has already shifted in favor of consumptive uses. State sanctioned water allocation processes have already allotted large blocks of river water to future consumptive uses. The compact with the Fort Peck Indian Tribe allots a substantial volume of flow that can be diverted year-round from the Missouri River and certain of its tributaries (see pages 41-42 of the Draft EIS). For example, the maximum allowed rate of diversion from the Missouri River for the entire month of August is 2,928 cfs, which is about 31% of the river's average August flow at the North Dakota border and 89% of the August flow in a drought year (see page D-6 of the Draft EIS). In addition, the state continues to issue new water use permits in the basin. Since 1985, 17 new irrigation permits, totalling 118 cfs, have been issued for the river below Fort Peck Dam (see page A-5 of the Draft EIS). These amounts are in addition to any consumptive reservations that may be granted by the Board in the current reservation process. On the other hand, there has been no allocation of water for instream use in these waters.

The flows already allocated to the tribe and to new permit holders, when combined with those requested for consumptive reservations, add up to a substantial portion of

the river's flow. Appendix B of this testimony demonstrates the cumulative effects of these current and potential consumptive water allocations on the flows of the Missouri River.

The first column in Appendix B shows the August flows in the Missouri River at the North Dakota border if all consumptive reservation requests (including those already granted for the basin above Fort Peck Dam) are developed (see page D-8 of the Draft EIS). (The 10th percentile is the flow that could be expected in a very wet year; the 90th percentile is the expected flow in a drought year). Column 2 lists the maximum August diversion rate allocated to the Fort Peck tribe; Column 3 lists the diversion rate for new post-1985 irrigation permits; and Column 4 shows the flow that would remain if all current and potential consumptive allocations are fully developed. Based on this analysis, current and potential consumptive allocations would account for virtually the entire flow of the river in a drought year under current operating regimes for Ft. Peck Dam.

Column 4, which admittedly represents a worst case scenario based on a number of theoretical assumptions, demonstrates the direction in which water allocation in the lower Missouri River is headed if this reservation process fails to set aside adequate flows to protect instream values. Under this scenario, the Corps of Engineers would have to significantly alter current operations to prevent the occurrence of these low flows.

Frederick A. Nelson, being duly sworn, states that the foregoing testimony is true.

Dated this 8th day of August, 1994.

Frederick A. Nelson

Subscribed and sworn to before me this 8th day of August, 1994.

Notary Public for the State of Montana
Residing at Bozeman, Montana
My commission expires 8-21-95

Appendix A

Angler use of streams in the lower and Little Missouri River basins during 1985, 1989 and 1991 (from Montana Statewide Angling Pressure Mail Survey, 1985, 1989 and 1991).

Stream	Angler-days[1]		
	1985	1989	1991
Missouri River (Fort Peck Dam to North Dakota border)	9,525	10,747	5,966
Milk River and tributaries	15,187	11,712	9,188
Redwater River	1,215	1,882	162
Poplar River	987	696	2,212
Big Muddy Creek	105	88	---
Little Missouri River and tributaries	1,648	351	246
Total	28,667	25,476	17,774
State Total (warm water, non-salmonid streams only)	78,713	101,080	87,612
Percent of State Total (warm water, non-salmonid streams only)	36.4%	25.2%	20.3%

[1] Total use is underestimated because only licensed anglers were sampled in the mail surveys that generated pressure estimates.

APPENDIX B

Missouri River at North Dakota Border

	August Flow (cfs) Consumptive Alternative [a]	Fort Peck Compact (cfs)[b]	Post-1985 Irrigation Permits (cfs)[c]	Remainder (cfs)[d]
Ave.	8,822	2,928	118	5,776
10th	13,229	2,928	118	10,183
20th	12,396	2,928	118	9,350
50th	9,091	2,928	118	6,045
80th	4,283	2,928	118	1,237
90th	3,053	2,928	118	7

a) Page D-8 of Draft EIS. Flows remaining in August if all consumptive use reservations were granted and developed.

b) Page 41 of Draft EIS. Fort Peck tribe was granted a maximum August diversion of 2,928 cfs from the Missouri River.

c) Page A-5 of the Draft EIS. Seventeen irrigation permits, totalling 118 cfs, have been issued for the Missouri River below Fort Peck Dam since 1985.

d) Predicted August flows in the Missouri River at the North Dakota Border after all existing and potential consumptive allocations of water are subtracted.

PRE-FILED REBUTTAL TESTIMONY
OF BRUCE REHWINKEL

on behalf of
MONTANA FISH, WILDLIFE AND PARKS (FWP)

Q. Please state your name and business address.

A. Bruce Rehwinkel, FWP, 1420 East Sixth Avenue, P.O. Box 200701, Helena, MT 59620-0701

Q. What is your present employment?

A. My principal responsibilities are to coordinate the statewide acquisition, capital development and maintenance of FWP's fishing access site program.

Q. Please state your educational background and experience.

A. I have a B.A. in general biology from Wartburg College (Iowa), a B.S. in fish and wildlife management from Montana State University, and a M.S. in fish and wildlife management from Montana State University.

I worked as a fisheries biologist from 1975 to 1990 in Dillon, Montana; Page, Arizona; Miles City, Montana; Whitehall, Montana; and Townsend, Montana.

I have been the Assistant Management Bureau Chief of the Fisheries Division since 1990. The majority of this position's responsibilities deal with statewide fishing access. During the last four + years in this position, I have been involved in the acquisition of 16 sites using fee title, lease and easement. Additionally, I have secured federal funds to construct improvements on 77 fishing access sites.

Q. What is the purpose of your testimony?

A. The purpose is to explain the history of the Department's efforts to secure public fishing access sites on the lower Missouri River and explain future plans for access in the area.

Q. What is the history of fishing access site acquisition by the Department on the lower Missouri River?

A. The Department's first site acquisition in this area was the Fort Peck Dredge Cuts, located just below Ft. Peck Dam. This site has been secured from the Corps of Engineers under an easement since 1962. More recently, the Department cooperated with the City of Wolf Point to maintain Bridge Park for access to the river. This site is made possible through an annual payment of $2,000 by the Department to the city for the operation and maintenance costs of that access. An attempt to purchase land for river access was unsuccessful at the Culbertson Bridge in 1988.

In general, the Department is active in securing fishing access sites throughout Montana that meet our program criteria. The main point in these criteria limits site spacing to a distance of a four hour float, or greater. In eastern Montana, the criteria for site spacing is commonly greater. These greater distances are the result of the availability of cost effective access points, and lower use levels than in other areas of the state.

The lower Missouri River is potentially an attractive alternative to many of the relatively crowded floating streams in western Montana. The Missouri in this reach also offers predictably good stream flows throughout the summer. Additionally, the Department attempts to acquire sites that offer good quality bank fishing. The lower Missouri appears to offer good recreational opportunity for both of these purposes.

Q. What plans, if any, are in place to improve public recreational access to the lower Missouri River?

A. In May of 1991, communications were initiated with Jerry Kaiser of the BIA concerning access on the Ft. Peck Indian Reservation. The conversation included discussions regarding site spacing and possible approaches to funding. The most likely access will be from the north side of the river and U.S. Highway 2. The south side of the river is quite isolated and access roads would be more costly to construct and maintain. This selected approach would require cooperation with the Fort Peck Tribe. The Department needs exact properties identified by the tribe and proposed to Department regional staff in Glasgow for development as a Department operated access site.

In April of 1992, the Corps of Engineers published a Lower Missouri River Recreation Development Plan. This plan simply identifies likely river access sites. There does not appear to be any long term cooperative commitment by the Corps of Engineers to proceed in implementing the site development.

Five sites were identified as likely possibilities for access points. The Wolf Point Bridge Park is one of the five identified. Also, the property identified as Site 1 - just below the mouth of the Milk River - is currently being reviewed for inclusion into the Department's Fishing Access Site program. This property was under the jurisdiction of the Corps of Engineers. The property had to be transferred to the BLM before cooperative recreational development could be initiated. This transfer has been completed and discussions between the Department and the Miles City Office of the BLM have been initiated. Now, the Department can proceed in securing this site, if all legal and design concerns can be properly addressed.

The other identified sites could be procured in a number of ways. The Department will consider fee title acquisition, lease (with another agency), easement or MOU. Once site control is established, the Department will develop the sites as soon as it is financially able. Maintenance of the sites is of some concern. Since this area is a considerable distance from Department regional offices, travel costs to the sites are very high. Alternative means of effecting maintenance will be considered. These alternative means could include interagency agreements, cooperative partnerships and contracted services.

The Department supports the Corps of Engineers approach to river access. The exact sites identified may not be available, but sites located in those general areas appear appropriate. This support does have some limitations. It is Commission Policy that the Department pay no more than the appraised value for property. The Department depends on a willing seller. We cannot condemn land for fishing access sites. Once a property is acquired, the development time may seem excessive. The long development times are the result of the biennial appropriation process and the numerous laws and regulations with which we must comply. A minimum development period is about four years.

The statements made in objector testimony regarding the Department's refusal to cooperate with groups representing the lower Missouri River are incorrect from the Helena perspective. Periodically, I have been contacted regarding access on this reach of the Missouri. These contacts have not provided sufficient information upon which our agency could act. Additional information regarding land ownership, willingness to sell and Department regional support are the minimum needed to initiate action.

The Department has laws and regulations with which it must comply. Development projects are commonly funded with federal Fish and Wildlife Service funds. Before we can secure federal funding, control of the property must be secured by the Department for the usable life of the improvements. If some group is earnestly interested in assisting the Department to secure access, we are very interested in its help. To accomplish this task, a long term commitment is needed and all laws must be followed.

Bruce J. Rehwinkel, being duly sworn, states that the foregoing testimony is true.

Dated this 10th day of August, 1994.

Bruce J. Rehwinkel

Subscribed and sworn to before me this 10th day of August, 1994

Debra K McRae
Notary Public for the State of Montana
Residing at Helena, Montana
My commission expires May 14, 1998