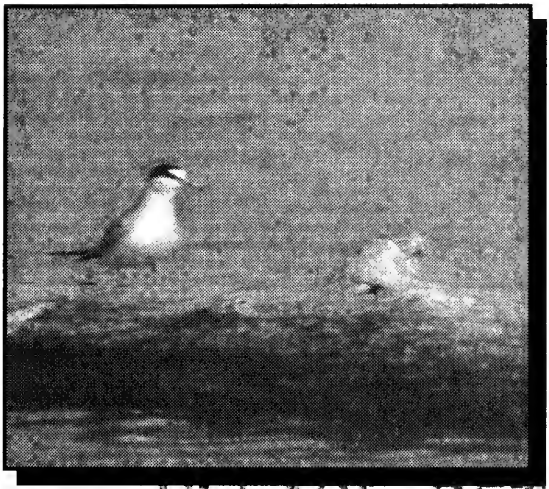
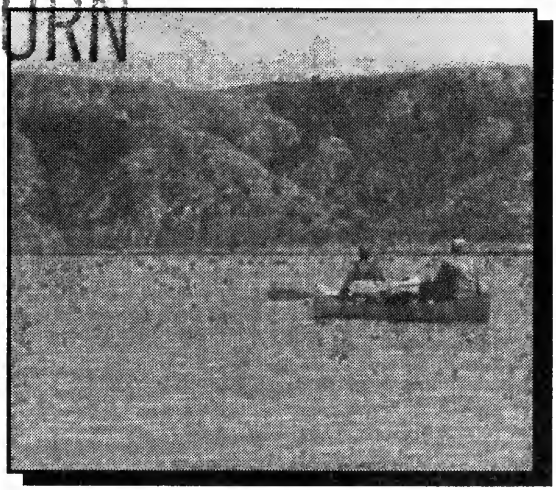
Missouri River Basin

FINAL ORDER

OF THE BOARD OF NATURAL RESOURCES AND CONSERVATION





Establishing Water Reservations on the Lower Missouri River, the Little Missouri River, and Their Tributaries

December 30, 1994

LOWER MISSOURI RIVER BASIN

FINAL ORDER

OF THE

BOARD OF NATURAL RESOURCES & CONSERVATION

Establishing Water Reservations on the Lower Missouri River, the Little Missouri River, and Their Tributaries

December 30, 1994

BEFORE THE MONTANA BOARD OF NATURAL
RESOURCES AND CONSERVATION

IN THE MATTER OF WATER RESERVATION APPLICATIONS:

40J L084490-00	40J L084493-00)	
40P L084492-00	39E L084496-00)	
40S L077646-00	40Q L084497-00)	
39FJ L084485-00	39G L084498-00)	
40S L077749-00	40G L084494-00)	
40J L084489-00	40S L084499-00)	**FINDINGS OF FACT,**
40J L084486-00	40S L084500-00)	**CONCLUSIONS OF LAW,**
41P L084487-00	40S L084501-00)	**ORDER, MEMORANDUM, &**
40J L084483-00	40Q L084497-00)	**ORDER OF ADOPTION**
40R L084491-00	40O L084495-00)	
40Q L084488-00	39G L084503-00)	
40Q L077647-00	40J L078651-00)	
39G LO84484-00	40S L084482-00)	

LOWER & LITTLE MISSOURI RIVER BASINS
WATER RESERVATIONS

CONTENTS

I. INTRODUCTION

The applications for reservations in the Lower and Little Missouri River Basins were considered by the Board of Natural Resources and Conservation. The procedure utilized the filing of written testimony, the opportunity for parties to cross-examine persons filing written testimony and public testimony. The Board was assisted in this process by Robert R. Throssell, who acted as the hearing examiner to the extent that he oversaw the scheduling of the process, coordinated the filing of written testimony, presided over the formal hearing, and conducted the public testimony sessions. The Board reviewed and considered all the applications, pleadings and briefs, pre-filed testimony, and the transcripts of the hearings in reaching its decision. From this review and deliberation, the Board has prepared the Proposed Findings of Fact, Conclusions of Law, Order, and Memorandum that follows.

The following parties appeared through counsel as indicated:

John Bloomquist	11 Conservation Districts
John Chaffin	U.S. Dept. of Interior, Bureau of Indian Affairs, Bureau of Reclamation, and the Fish & Wildlife Service
Ted J. Doney & Candace Torgerson	Lower Missouri Coalition, Olesons, and the Cities of Culbertson, Plentywood, Poplar, Scobey, and Wolf Point
Jack Jenks	City of Malta
Francis Gallagher	City of Fort Peck
Richard Harkins	City of Ekalaka
R. W. Heineman	City of Wibaux
Arnie A. Hove	City of Circle
Robert Hurly	Rock Creek Canal Co. Glasgow Irrigation District
Curtis Larsen	Dept. of Fish, Wildlife and Parks
Stuart MacKenzie	City of Chinook
David Rice	Hill County Water District
James Spangelo	City of Havre

The hearing in this matter was conducted in Glasgow, Montana, during the weeks of September 19th and 26th, 1994. The parties listed above were considered full parties. Public testimony was received at hearings in Baker, Glasgow, Havre, Plentywood, and Wolf Point, Montana. Persons offering testimony at these hearings were placed under oath and subject to cross examination. Person giving public testimony were considered parties for limited purposes.

The applications of the reservants, Draft and Final Environmental Impact Statements, pre-filed written testimony, accompanying exhibits, and testimony presented at hearing sessions were accepted into the record. The Board heard summation arguments by counsel for the full parties on October 26, 1994. The Board then deliberated and reached its decision which is contained in the Proposed Findings of Fact, Conclusions of Law, Order and Memorandum.

The Board will consider exceptions to the Proposed Findings of Fact, Conclusions of Law, Order and Memorandum, on December 15, 1994. Only full parties to the proceeding are entitled to file exceptions. Following its consideration of any exceptions, the Board will issue the final order in this matter by December 31, 1994.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF CHINOOK TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Chinook is an incorporated municipality and a subdivision of the State of Montana (Chinook, Application (Chin-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Chinook has applied for a water reservation of one well to provide 200 acre-feet/year (af/y) of water with a maximum diversion rate of 0.504 million gallons per day (mgd) to supplement existing surface diversions from the Milk River. Chinook also requests a secondary reservation of 600 AF of surface water from the Milk River to be diverted to storage during the winter period from September 30 to June 15 (Chin-App., p. 4).

3. The City of Chinook requested a water reservation to reserve water in the event that contracts for water with the U.S. Bureau of Reclamation (BOR) are not renewed (Chin-App., p. 20).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF CHINOOK (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Chinook seeks to provide municipal water for existing uses and future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Chin-App., p. 7).

5. The purpose of the reservation is to provide water for municipal and industrial uses (Chin-App., p. 1). Municipal and industrial uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a), ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CHINOOK (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. In 1936, Chinook entered into a forty-year contract with the BOR for 700 af/y. This contract was renewed for an additional 40 year term in 1976 (Chin-App., Appendix A, p. 1). The record indicates a reasonable likelihood that BOR will continue the city's water contract. In 1988, 400 af/y was used from this source, leaving a 300 af/y margin in the contract (Chin-App., p. 20).

7. The projected service area population for the year 2035 will require 606 af/y at a usage rate of 200 gpcd, which assumes a nine percent increase in consumption from the current usage rate of 184

gpcd., (Chin-App., p. 19). The City's current contract with the BOR exceeds the projected service area needs by 94 af/y.

8. The Milk River mainstem, downstream of Fresno Reservoir, is presently closed to new appropriations from June 15 through September 30 (Guenthner, Obj., Pre-filed Dir., p. 1).

9. Water held in contract by the City of Chinook is not available for appropriation by competing agricultural, industrial, and instream users (Chin-App., Appendix A).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CHINOOK (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

10. The method of determining the amount of water requested for a water reservation by the City of Chinook was based on a forecast of its future population to the year 2035 along with the estimated amount of water used per person (Chin-App., p. 19). The methodology used by the City of Chinook projected an average annualized, compounded population, growth rate of approximately .1 percent (Chin-App., p. 11). The 1990 population of the City of Chinook was 1,660 (Chin-App., p. 12). The City of Chinook's population forecast for the year 2035 was 1,829 people (Chin-App., p. 12; DEIS, @ K-3).

11. Chinook's average usage of 184 gallons per person daily is lower than the typical basin municipal use rate of 250 gallons per person daily (Chin-App., p. 14). Chinook presently meters 100 percent of its users (Chin-App., p. 36).

12. The water use efficiencies associated with the municipal and industrial uses by the City of Chinook are reasonable (ARM 36.16.107B(3)(b)).

13. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Chinook and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF CHINOOK IS NOT IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

14. Groundwater contributions to the Milk River to supplement diversions at Chinook's treatment facility may result in slight increases in Total Dissolved Solids (TDS) concentrations in the Milk River (Chin-App., p. 33).

15. Historically, groundwater has not been used as a municipal source in the Chinook area due to poor water quality and limited yields (Chin-App., p. 23).

16. Chinook is requesting a reservation of 600 af/y diverted to storage from the Milk River with annual diversions occurring from September 30, through June 15 (Chin-App., p. 3).

17. The Fort Belknap Indian Tribe is a senior water user on the Milk River and typically diverts water for the Fort Belknap Indian Irrigation Project (FBIIP) beginning April 15 annually (Davis, Obj., Reb., p. 1).

18. If the tribes developed 14,000 new acres under their reserved right, it is currently estimated that they would be short eleven percent on an average annual basis and eighty-two percent short during an extremely dry year (BOR, Obj., Pre-filed Dir., Exh. 2, p. S-1).

19. Milk River irrigators face significant water shortages in 6 years out of 10. These shortages will increase by an additional 28,000 acre-feet in the future when Canada and the Fort Belknap Reservation make use of their legal share of the water (BOR, Obj., Pre-filed Dir., Exh. 2, p. S-1).

III. CONCLUSIONS OF LAW

1. City of Chinook is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Chinook's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The City of Chinook has not established the need for the surface water diversion from the Milk River. The City's contract with the BOR for storage water in Fresno Reservoir is not at risk of consumption by other in-state water users. Chinook has not established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Chinook are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Chinook is not in the public interest. Water in the Milk River is typically unavailable to satisfy the needs of current users. This reservation may adversely affect the rights of senior water rights (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(8)).

6. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

7. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

8. The City of Chinook's water reservation, as applied for, may adversely affect senior water rights (ARM 36.16.107B(8)).

IV. ORDER

1. The water reservation for the city of Chinook is denied.

Application of the City of Circle
Water Reservation No. 40P LO84492-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF CIRCLE TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Circle is an incorporated municipality and a subdivision of the State of Montana (Circle Application (Cir-App.) p. 2; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Circle has applied for a water reservation of 78 acre-feet/year (af/y) of water with a maximum diversion rate of .40 millions gallons a day (mgd) to be diverted from one groundwater well located within the Circle city limits for year round use (Cir-App., p. 3).

3. The City of Circle requests a water reservation to meet future demands by municipal users (Cir-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF CIRCLE (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Circle seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Cir-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Cir-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CIRCLE (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The city has constructed four wells historically, two of those wells remain in service. Over time, these wells will continue to decrease in yield as the well screens becomes plugged with iron encrustation and bacteria growth. These wells will eventually require replacement (Cir-App., p. 17).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Cir-App., p. 5-6).

8. It is important that the City of Circle have a water reservation to meet future municipal water demands in order for the community to grow and develop (Cir-App., p. 6).

9. Competing water uses may prevent the City of Circle from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Circle may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The city of Circle could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users.(Cir-App., p. 18).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CIRCLE (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the city of Circle was based on the amount of water required to satisfy the needs of the historical peak population. Circle's historical peak population of 1,117 persons occurred in 1960 (Cir-App., p. 7).

12. The City of Circle's distribution system is in good condition and does not experience any significant loss in the system (Cir-App., p. 20).

13. The City of Circle's average water use rate is 137 gallons per capita per day (gpcd). Peak usage rate in Circle is currently 418 gpcd. The 137 gpcd use rate is less than the typical basin use rate of 250 gallons per person daily (Cir-App., pp. 10-11).

14. Circle is currently 87 percent metered. Expansion to 100 percent metering is planned (Cir-App., p. 33). The efficiencies associated with the municipal uses by the City of Circle are reasonable (ARM 36.16.107B(3)(b)).

15. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Circle and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF CIRCLE IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

16. Benefits of the City of Circle's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay (Cir-App., p. 27). Circle municipal users are currently paying $2.08/1,000 gallons (Cir-App., p. 27).

17. The additional water provided by the water reservation will cost approximately $2.80/1,000 gallons of water. This rate is lower than the assumed upper limit of $3.00/1,000 gallons (Cir-App., p. 29).

18. The direct benefits of the City of Circle's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

19. Indirect benefits of the City of Circle's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Cir-App., p. 29).

20. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Cir-App., p. 29).

21. There is no significant adverse environmental impact associated with the use of the City of Circle's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Cir-App., p. 29).

22. Net benefits of granting the City of Circle's water reservation exceed the net benefits of not granting the water reservation, and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

23. The City of Circle identified two alternative sources of water for future development, a surface water storage project and the development of alluvial wells in the Redwater River. These alternatives would not provide greater net benefits than the water reservation and are not reasonable (Cir-App., pp. 22-25); ARM 36.16.107B(4)(c)).

24. Failure to reserve water for future municipal use by the City of Circle is likely to result in an irretrievable loss of a resource development opportunity (Cir-App., p. 30; ARM 36.16.107B(4)(d)).

25. As conditioned, the City of Circle's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

26. The water reservation by the City of Circle will be used entirely within the state and within the Missouri River Basin (Cir-App., p. 3; ARM 36.16.107B(5) and (6)).

27. The City of Circle has identified a management plan for the design, development, and administration of its water reservation (Cir-App., p. 33-36).

28. The City of Circle is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

29. The priority date of the City of Circle's water reservation is July 1, 1985 (MCA §85-2-331(4)).

30. As conditioned, the City of Circle's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Circle is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Circle's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Circle has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Circle are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Circle has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Circle, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Circle is granted for the following amount and flow of water: 78 acre feet per year at a rate of .40 million gallons per day.

2. The point of diversion and place of use are set forth in the reservation application of the City of Circle and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF CULBERTSON TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Culbertson is an incorporated municipality and a subdivision of the State of Montana (Culbertson Application (Culb-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Culbertson has applied for a water reservation of 365 acre-feet/year (af/y) of water with a maximum diversion rate of 0.44 million gallons per day (mgd) to be diverted from the Missouri River mainstem (Culb-App., p. 3).

3. The City of Culbertson requested a water reservation to meet future demands by municipal users (Culb-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF CULBERTSON (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Culbertson seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Culb-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Culb-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CULBERTSON (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Culb-App., p. 5).

7. It is important that the City of Culbertson have a water reservation to meet future municipal water demands in order for the community to grow and develop (Culb-App., p. 6).

8. Competing water uses may prevent the City of Culbertson from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Culbertson may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (Culb-App., p. 5).

9. The City of Culbertson could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Culb-App., pp. 18-19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF CULBERTSON (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

10. The method of determining the amount of water requested for a water reservation by the City of Culbertson was based on the amount of water required to satisfy the needs of the historical peak population. Culbertson's historical peak population of 1,090 people occurred in 1980 (Culb-App., p. 8).

11. Ninety percent of water services in Culbertson are metered at present. The city is working towards one-hundred percent metering as well as the replacement of older mains to reduce leakage (Culb-App., p. 31). The City of Culbertson's average water use rate is 189 gallons per capita per day (gpcd), (Culb-App., p. 12). The 189 gpcd use rate is less than the typical basin use rate of 250 gallons per person daily (Culb-App., p. 15).

12. The water use efficiencies associated with the municipal uses by the City of Culbertson are reasonable (ARM 36.16.107B(3)(b)).

13. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Culbertson and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF CULBERTSON IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

14. Benefits of the City of Culbertson's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay. Culbertson municipal users are currently paying $1.03/1,000 gallons (Culb-App., 25).

15. The additional water provided by the water reservation will cost approximately $0.60/1,000 gallons of water (Culb-App., p. 25).

16. The direct benefits of the City of Culbertson's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

17. Indirect benefits of the City of Culbertson's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Culb-App., p. 27).

18. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Culb-App., p. 25).

19. There is no significant adverse environmental impact associated with the use of the City of Culbertson's water reservation (Culb-App., p. 27). The effects of individual municipal water reservation depletions on water quality have not been quantified, but

would likely be very small (DEIS, p. 126). Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified.

20. Net benefits of granting the City of Culbertson's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

21. The City of Culbertson identified one alternative source of water for future development. This alternative proposed development of a Ranney Well System. This alternative would not provide greater net benefits than the water reservation, (Culb-App., p. 21), and is not reasonable (ARM 36.16.107B(4)(c)).

22. Failure to reserve water for future municipal use by the City of Culbertson is likely to result in an irretrievable loss of a resource development opportunity (Culb-App., p. 27; ARM 36.16.107B(4)(d)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

23. The water reservation by the City of Culbertson will be used entirely within the state and within the Missouri River Basin (Culb-App., p. 1; ARM 36.16.107B(5) and (6)).

24. The City of Culbertson has identified a management plan for the design, development, and administration of its water reservation (Culb-App., pp. 28-31).

25. The City of Culbertson is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

26. The priority date of the City of Culbertson's water reservation is July 1, 1985 (MCA §85-2-331(4)).

27. As conditioned, the City of Culbertson's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Culbertson is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Culbertson's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Culbertson has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available

for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Culbertson are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Culbertson has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Culbertson, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Culbertson is granted for the following amount and flow of water: 365 af/year at a rate of 0.44 mgd.

2. The point of diversion and place of use are set forth in the reservation application of the City of Culbertson and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF EKALAKA TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Ekalaka is an incorporated municipality and a subdivision of the State of Montana (Ekalaka Application (Ekal-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Ekalaka has applied for a water reservation of 20 acre-feet/year (af/y) of water with a maximum diversion rate of 0.071 million gallons per day (mgd), from existing or replacement wells to provide for future growth. The proposed project includes the addition of a sand separator on well #5 to increase its capacity as well as construction of a 100,000 gallon storage facility (Ekal-App., p. 3).

3. The City of Ekalaka requested a water reservation to meet future demands by municipal users (Ekal-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF EKALAKA (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Ekalaka seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Ekal-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Ekal-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF EKALAKA (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Ekal-App., pp. 5-6).

7. It is important that the City of Ekalaka have a water reservation to meet future municipal water demands in order for the community to grow and develop (Ekal-App., pp. 5-6).

8. Competing water uses may prevent the City of Ekalaka from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Ekalaka may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

9. The City of Ekalaka could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Ekal-App., p. 19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF EKALAKA (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

10. The method of determining the amount of water requested for a water reservation by the City of Ekalaka was based on the amount of water required to satisfy the needs of the historical peak population. Ekalaka's historical peak population of 904 occurred in 1950 (Ekal-App., pp. 7-8).

11. Water services in Ekalaka are 90 percent metered at present. Expansion of metering to 100 percent is planned (Ekal-App., p. 30). The City of Ekalaka average water use rate is 145 gallons per capita per day (gpcd), (Ekal-App., p. 16). The 145 gpcd use rate is considerably lower than the typical basin use rate of 250 gallons per person daily (Ekal-App., p. 16).

12. The water use efficiencies associated with the municipal uses by the City of Ekalaka are reasonable (ARM 36.16.107B(3)(b)).

13. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Ekalaka and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF EKALAKA IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

14. Benefits of the City of Ekalaka's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1000 gallons of water the upper limit of the willingness to pay. $1.50/1000 gallons is a reasonable expression of the lower limit (Ekal-App., p. 24). Ekalaka municipal users are currently paying $1.87/1000 gallons of water (Ekal-App., p. 26).

15. The additional water provided by the water reservation will cost approximately $3.86/1,000 gallons. Combined with the current low cost of municipal water in Ekalaka, the future cost of water in Ekalaka would be $2.24/1,000 gallons which is less than the upper limit of $3.00/1,000 gallons (Ekal-App., p. 26).

16. The direct benefits of the City of Ekalaka's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

17. Indirect benefits of the City of Ekalaka's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Ekal-App., p. 26).

18. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Ekal-App., p. 26).

19. There is no significant adverse environmental impact associated with the use of the City of Ekalaka's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Ekal-App., p. 27).

20. Net benefits of granting the City of Ekalaka's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

21. Failure to reserve water for future municipal use by the City of Ekalaka is likely to result in an irretrievable loss of a resource development opportunity (Ekal-App., p. 27; ARM 36.16.107B(4)(d)).

22. As conditioned, the City of Ekalaka's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

23. The water reservation by the City of Ekalaka will be used entirely within the state and within the Missouri River Basin (Ekal-App., p. 1; ARM 36.16.107B(5) and (6)).

24. The City of Ekalaka has identified a management plan for the design, development, and administration of its water reservation (Ekal-App., p. 28-33).

25. The City of Ekalaka is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

26. The priority date of the City of Ekalaka's water reservation is July 1, 1989 (MCA §85-2-331(4)).

27. As conditioned, the City of Ekalaka's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Ekalaka is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Ekalaka's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Ekalaka has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Ekalaka are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Ekalaka has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Ekalaka, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Ekalaka is granted for the following amount and flow of water: 20 af/year and .071 mgd.

2. The point of diversion and place of use are set forth in the reservation application by the City of Ekalaka and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservations granted with a priority date of July 1, 1989. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF FORT PECK TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Fort Peck is an incorporated municipality and a subdivision of the State of Montana (Ft. Peck App., p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Fort Peck has applied for a water reservation of 100 acre-feet/year (af/y) of water with a maximum diversion rate of .216 millions gallons per day (mgd) to be diverted from the Missouri River mainstem below the Fort Peck Damn (Ft. Peck App., p. 4).

3. The City of Fort Peck requested a water reservation to meet future demands by municipal users (Ft. Peck App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF FORT PECK (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Fort Peck seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Ft. Peck App., p. 1).

5. The purpose of the reservation is to provide the water for municipal uses (Ft. Peck App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF FORT PECK (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Ft. Peck App., p. 6).

7. It is important that the City of Fort Peck have a water reservation to meet future municipal water demands in order for the community to grow and develop (Ft. Peck App., p. 6).

8. Competing water uses may prevent the City of Fort Peck from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Fort Peck may have to go through the process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

9. The City of Fort Peck could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Ft. Peck App., pp. 18-19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF FORT PECK (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

10. The method of determining the amount of water requested for a water reservation by the City of Fort Peck was based on a forecast of its future population using National Planning Association data. This information along with the estimated amount of water used per person was projected to the year 2035 to determine the reservation amount (Ft. Peck App., p. 8).

11. Water services in Fort Peck are 95% metered at present (Ft. Peck App., p. 32). The City of Fort Peck's average water use rate is 542 gallons per capita per day (gpcd) (Ft. Peck App., p. 16).

12. Government facilities in and around the City of Fort Peck are the largest users of municipal water. In addition, Kiwanis Park is maintained by the Army Corp of Engineers as a tourist facility (Gallagher, Pre-filed Dir., p. 2).

13. Although Valley County has declined in population in recent years, Fort Peck has grown. All housing units in the city are occupied and demand exceeds supply (Gallagher, Pre-filed Dir., p. 3).

14. A higher cost for water is planned to be implemented when the city assumes full operation of the water treatment plant currently operated by the Army Corp of Engineers. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Fort Peck and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

15. The water use efficiencies associated with the municipal uses by the City of Fort Peck are reasonable (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF FORT PECK IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

16. Benefits of the City of Fort Peck's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay. Fort Peck municipal users are currently paying $0.65/1,000 gallons. The cost specific to the reserved water is $2.04/1,000 gallons which is less than the assumed willingness to pay of $3.00/1,000 gallons (Ft. Peck App., p. 27).

17. The direct benefits of the City of Fort Peck's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

18. Indirect benefits of the City of Fort Peck's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Ft. Peck App., p. 28).

19. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Ft. Peck App., p. 27-28).

20. There is no significant adverse environmental impact associated with the use of the City of Fort Peck's water reservation (Ft. Peck App., p. 28). The effects of individual municipal water reservation depletions on water quality have not been quantified (Ft. Peck App., p. 28), but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified.

21. Net benefits of granting the City of Fort Peck's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

22. The City of Fort Peck identified one alternative source of water for future development. A proposal for the development of a Ranney Well System was reviewed. This alternative would not provide greater net benefits than the water reservation (Ft. Peck App., p. 21) and is not reasonable (ARM 36.16.107B(4)(c)).

23. Failure to reserve water for future municipal use by the City of Fort Peck is likely to result in an irretrievable loss of a resource development opportunity (Ft. Peck App., p. 29; ARM 36.16.107B(4)(d)).

24. As conditioned, the City of Fort Peck's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

25. The water reservation by the City of Fort Peck will be used entirely within the state and within the Missouri River Basin (Ft. Peck App., p. 1; ARM 36.16.107B(5) and (6)).

26. The City of Fort Peck has identified a management plan for the design, development, and administration of its water reservation (Ft. Peck App., pp. 30-33).

27. The City of Fort Peck is capable of exercising reasonable diligence towards feasibly financing the project and applying

reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

28. The priority date of the City of Fort Peck's water reservation is July 1, 1985 (MCA §85-2-331(4)).

29. As conditioned, the City of Fort Peck's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Fort Peck is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Fort Peck's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Fort Peck has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Fort Peck are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Fort Peck has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Fort Peck, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Fort Peck is granted for the following amount and flow of water: 100 af/y at .216 mgd.

2. The point of diversion and place of use are set forth in the reservation application of the City of Fort Peck and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the City of Harlem
Water Reservation No. 40J L084489-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF THE CITY OF HARLEM TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Harlem is an incorporated municipality and a subdivision of the State of Montana (Harlem Application (Har-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Harlem has applied for a water reservation of 200 acre-feet/year (af/y) of water with a maximum diversion rate of .504 million gallons per day (mgd) to be withdrawn from one groundwater well to supplement existing surface diversions from the Milk River. Additionally, Harlem requests a supplemental reservation to divert 365 af/y from the Milk River to storage from September 30 to June 15 (Har-App., p. 4).

3. The City of Harlem requested a water reservation to reserve water in the event that contracts for water with the U.S. Bureau of Reclamation (BOR) are not renewed (Har-App., p. 20).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF HARLEM (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Harlem seeks to provide municipal water for existing uses and future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Har-App., p. 7).

5. The purpose of the reservation is to provide water for municipal and industrial uses (Har-App., p. 1). Municipal and industrial uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF HARLEM (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. In 1962, Harlem entered into a forty year contract with the BOR for 500 af/y (Har-App., Appendix A, p. 1). In 1988, 200 af/y was used from this source, leaving a 300 af/y margin in the contract (Har-App., p. 4).

7. The projected service area population for the year 2035 will require 362 af/y assuming a usage rate of 200 gallons per capita daily, a 25% increase from the current usage rate of 150 gpcd (Har-App., pp. 18-19). The City's current contract with the BOR exceeds the projected service area needs by 138 af/y.

8. The Milk River mainstem, downstream of Fresno reservoir, is presently closed to new appropriations from June 15 through September 30 (Guenthner, Obj., Pre-filed Dir., pp. 1-2).

9. Water held in contract by the City of Harlem is not available for appropriation by competing agricultural, industrial, and instream users (Har-App., Appendix A).

10. A water reservation is one means to obtain an earlier priority date for water that may be needed to meet existing uses and projected municipal growth. Contractual agreements with the BOR should provide more than enough water for existing and future municipal growth.

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF HARLEM (MCA §85-2-316(4)(a)(iii) (1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Harlem was based on a forecast of its future population to the year 2035 along with the estimated amount of water used per person (Har-App., pp. 9-10). The methodology used by the City of Harlem projected an average annualized, compounded population, growth rate of approximately 0.1 percent (Har-App., p. 11). The 1990 population of Harlem was 882 (Har-App., p. 11). The City of Harlem's population forecast for the year 2035 was 1,127 people (Har-App., p. 12).

12. The populations recorded in the 1990 census indicate that Harlem's population remained stable between 1980 and 1990 (Har-App., p. 12).

13. The City of Harlem's average water use rate is 150 gallons per capita per day (gpcd) which is less than the typical basin use rate of 250 gallons per person daily (Har-App., p. 14). For the purposes of this application, Harlem assumed a usage rate of 200 gpcd (Har-App., p. 18). Harlem's distribution system is in good condition and usage is not likely to increase as a result of leakage (Har-App., pp. 15-17).

14. The city does not provide a reason for the 25 percent increase in per capita usage assumed in the application. Increased metering and higher water costs associated with the development of reserved water should discourage increased consumption. The water use efficiencies associated with the municipal uses by the City of Harlem are not reasonable (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF HARLEM IS NOT IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

15. Groundwater contributions to the Milk River to supplement diversions at Harlem's treatment facility may result in slight increases in Total Dissolved Solids (TDS) concentrations in the Milk River (Har-App., p. 32).

16. Groundwater has not been used, historically, as a municipal source in the Harlem area due to poor water quality and limited yields (Har-App., p. 22).

17. Harlem is requesting a reservation of 365 af/y diverted to storage from the Milk River with annual diversions occurring from September 30, through June 15 (Har-App., p. 3).

18. The Fort Belknap Indian Tribe is a senior water user on the Milk River and typically diverts water for the Fort Belknap Indian Irrigation Project (FBIIP) beginning April 15 annually (Davis, Obj., Reb., p. 1).

19. If the tribes developed 14,000 new acres under their reserved right, it is currently estimated that they would be short of water eleven percent on an average annual basis and eighty-two percent short during an extremely dry year (BOR, Obj., Pre-filed, Exh. 2, S-1).

20. Milk River irrigators face significant water shortages in 6 years out of 10. These shortages will increase by an additional 28,000 acre-feet in the future when Canada and the Fort Belknap Reservation make use of their legal share of the water (BOR, Obj., Pre-filed, Exh. 2, S-1).

III. CONCLUSIONS OF LAW

1. City of Harlem is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Harlem's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The City of Harlem has not established the need for the surface water diversion from the Milk River. The City's contract with the BOR for storage water in Fresno Reservoir is not at risk of consumption by other in-state water users. The City of Harlem has not demonstrated a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation. The City of Harlem's reservation is not needed (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Harlem are not suitable and accurate under present conditions. The 25 percent increase in per capita consumption is not supported in the record (ARM 36.16.107B(3)(a)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Harlem is not in the public interest. Water in the Milk River is typically unavailable to satisfy the needs of current users. This reservation may adversely affect the rights of senior water users (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(8)).

6. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

7. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. The water reservation for the city of Harlem is denied.

Application of the City of Havre
Water Reservation No. 40J L084486-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF THE CITY OF HAVRE TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Havre is an incorporated municipality and a subdivision of the State of Montana (Havre Application (Hvr-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Havre has applied for a water reservation of three wells to provide 475 acre-feet/year (af/y) of water with a total maximum diversion rate of 1,050 gallons per minute. Havre also requests a secondary reservation of 1550 AF of surface water to be diverted from the Milk River to storage during the winter period from September 30 to June 15 (Hvr-App., p. 4).

3. The City of Havre requested a water reservation to reserve water in the event that contracts for water with the U.S. Bureau of Reclamation (BOR) are not renewed. The reservation would provide a water diversion right for water from the Milk River (Hvr-App., p. 20).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Havre seeks to provide municipal water for existing uses and future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Hvr-App., p. 4).

5. The purpose of the reservation is to provide water for municipal and industrial uses (Hvr-App., p. 1). Municipal and industrial uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE GROUNDWATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. It is important that the City of Havre have a water reservation to meet existing and future municipal and industrial water demands in order for the community to prosper and develop Hvr., App., p. 8).

7. Without a reservation, the City of Havre may have to go through a costly process of buying or condemning existing water rights to meet increasing demand (DEIS, p. 187).

8. The Milk River Basin is presently closed to additional surface water diversions during the irrigation season. Havre is currently dependent on the BOR to supply water from Fresno. The City believes it is prudent to secure a groundwater reservation that will be adequate to supply projected peak demand (Hvr-App., pp. 21-23).

9. Havre currently supplements water supplied from Fresno with groundwater diversions. Historically the city has developed six wells. Four of those wells remain in service. Two of these wells are only adequate to provide emergency back-up service (Hvr-App., p. 20-21).

10. Prior to 1950, all of Havre's drinking water was supplied by municipal wells. Water from Fresno Reservoir eventually replaced this source of supply as water quality and quantity in the aquifer deteriorated. The groundwater reservations requested would replace this historical supply. The aquifer supplying the reservation is of sufficient quantity and quality to fulfill the reservation request (Grabofsky, Dir., Day 1, pp. 51-53).

11. Over time, existing wells will continue to decrease in yield as well screens are plugged with iron encrustation and bacteria growth. These wells will require replacement (Hvr-App., p. 21).

12. A reservation is the only means to obtain an early priority date for water that will be needed to meet existing uses and projected municipal growth. A developer has introduced plans to construct a golf course, hotel and motel near the city (Grabofsky, Pre-filed Dir., p. 5). In the future, water may be appropriated by competing agricultural, industrial, and instream users (Hvr-App., p. 7; ARM 36.16.107B(2)(a).

13. The City of Havre has depended on groundwater to satisfy its needs, and there is a reasonable likelihood this source may be appropriated in the future by competing agricultural and industrial users. (§85-2-316(4)(a)(ii); ARM 36.16.107B(2)).

14. The city of Havre could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Hvr-App., p. 22).

D. FINDINGS THAT THE SURFACE WATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE IS NOT NEEDED (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

15. The city holds no water rights or claims for direct flow from the Milk River at this time. Havre relies on a 40 year contract with the BOR for 2800 af/y stored in Fresno reservoir. Evidence presented by the City of Havre in their reservation application and pre-filed testimony, establishes that approximately 1,075 af/y of the BOR contract are used at present, leaving 1,725 af/y available from this source. An additional 475 af/y will be required in the current

planning period which leaves a 1350 af/y margin in the contract (Grabofsky, Pre-filed, p.2; Hvr-App., p. 4).

16. The record indicates a reasonable likelihood that BOR will continue the city's water contract. Havre entered into a 40 year contract with the BOR in, 1950, for 2800 af/y (Hvr-App., Appendix B). That contract was renewed in 1992 for an additional 40 year term (Grabofsky, Pre-filed Dir., p. 2). Water held in contract by the City of Havre is not available for appropriation by competing agricultural, industrial, and instream users (Hvr-App., Appendix B; ARM 36.16.107B(2)(a)).

17. There is a discrepancy in the record with respect to the amount of water currently used and required in the future to satisfy the needs of the City of Havre. Both the reservation application and pre-filed testimony filed August 5, 1994, state that of 2800 af/y contracted with the BOR, "[a]bout 1075 af/y [of the BOR contract] are used presently leaving 1725 af/y not used[.]" (Grabofsky, Pre-filed, p.2; Hvr-App., p. 4). The application further states that in the year 2035, a hypothetical service population of 16,040 using 150 gallons per capita daily will only require 2695 af/y (Hvr-App., pp. 19-20), 105 af/y less than the amount provided for in the BOR contract. At the Contested Case Hearing in Glasgow, however, it was stated that Havre is currently using most of the water in the BOR contract. The testimony at the Contested Case Hearing did not help to clarify this discrepancy (See Grabofsky, Cross, Tr. Day 1, pp. 64-66).

E. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

18. The method of determining the amount of water requested for a water reservation by the City of Havre was based on a forecast of its future population to the year 2035 along with the estimated amount of water used per person (Hvr-App., p. 19). The methodology used by the City of Havre projected an average annualized, compounded population, growth rate of approximately .1 percent. The projected population of the City of Havre for 1990 was 10,597. The City of Havre's forecasted peak population for the year, 2035, was 11,724 people using National Planning Association Data (Hvr-App., p. 11). Havre may annex North Havre, which would add an additional 2,000 persons to the service area (Hvr-App., p. 12).

19. Havre's average usage of 144 gallons per person daily is lower than the typical basin municipal use rate of 250 gallons per person daily (Hvr-App., p. 18).

20. The water use efficiencies associated with the municipal and industrial uses by the City of Havre are reasonable (ARM 36.16.107B(3)(b)).

21. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Havre and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

F. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

22. Benefits of the City of Havre's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay. Havre municipal users are currently paying $1.76/1,000 gallons (Hvr-App., p. 33).

23. The cost of water in Havre, after development of the reservation, will be approximately $1.65/1,000 gallons of water. This figure will vary depending on the schedule of expenditures (Hvr-App., p. 35). This cost is less than the $3.00/1,000 gallons which is considered the upper limit of the willingness to pay.

24. The direct benefits of the City of Havre's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

25. Indirect benefits of the City of Havre's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Hvr-App., p. 35).

26. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Hvr-App., p. 35).

27. There is no significant adverse environmental impact associated with the use of the City of Havre's water reservation (Hvr-App., p. 35). The effects of individual municipal water depletions on water quality have not been quantified.

28. Net benefits of granting the City of Havre's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

29. The City of Havre identified two alternative sources of water for future development in addition to the reservation request. Plans for a water storage project and participation in the Virgelle-Milk Canal Project were reviewed. These alternatives would not provide greater net benefits than the proposed water reservation and are not reasonable (Hvr-App., p. 28-33);(ARM 36.16.107B(4)(c)).

30. Failure to reserve water for future municipal and industrial use by the City of Havre is likely to result in an irretrievable loss

of a resource development opportunity (Hvr-App., p. 33); ARM 36.16.107B(4)(d)).

31. As conditioned, the City of Havre's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

G. FINDINGS THAT THE SURFACE WATER RESERVATION APPLIED FOR BY THE CITY OF HAVRE IS NOT IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

32. Havre is requesting a reservation of 1550 af/y diverted to storage from the Milk River with annual diversions occurring from September 30, through June 15 (Hvr-App., p. 3).

33. The Fort Belknap Indian Tribe is a senior water user on the Milk River and typically diverts water for the Fort Belknap Indian Irrigation Project (FBIIP) beginning April 15 annually (Davis, Obj., Reb., p. 1).

34. Natural Flows in the Milk River are currently inadequate to supply the FBIIP, and Havre's reservation may further increase FBIIP's dependency on storage water from Fresno to meet its needs (Davis, Obj., Reb., pp. 1-2).

35. Storage records for Fresno Reservoir indicate that the reservoir did not fill in 10 years of the last 21 (Guenthner, Obj., Pre-filed Dir., p. 2).

36. If the tribes developed 14,000 new acres under their reserved right, it is currently estimated that they would be short eleven percent on an average annual basis and eighty-two percent short during an extremely dry year (BOR, Obj., Pre-filed, Exh. 2, S-1).

37. Milk River irrigators face significant water shortages in 6 years out of 10. These shortages will increase by an additional 28,000 acre-feet in the future when Canada and the Fort Belknap Reservation make use of their legal share of water (BOR, Obj., Pre-filed, Exh. 2, S-1).

38. The City of Havre's surface water reservation, as applied for, may adversely affect senior water rights (ARM 36.16.107B(8)).

H. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5[A) through (8)).

39. The water reservation by the City of Havre will be used entirely within the state and within the Missouri River Basin (Hvr-App., p. 1; ARM 36.16.107B(5) and (6)).

40. The City of Havre has identified a management plan for the design, development, and administration of its water reservation (Hvr-App., p. 36-38/A)

41. The City of Havre is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

42. The priority date of the City of Havre's water reservation is July 1, 1985 (§85-2-331(4)).

43. As conditioned, the City of Havre's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Havre is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Havre's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the groundwater reservation for the City of Havre has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation. A groundwater reservation for the city of Havre is needed. (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The need for the surface water reservation for the City of Havre has not been established. The City's contract with the BOR for storage water in Fresno Reservoir is not at risk of consumption by other in-state water users. Havre has not established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its surface water reservation. A surface water reservation for the City of Havre is not needed (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

5. The methodologies and assumptions used by the City of Havre as applied to the surface water application are not accepted as suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). The Board recognized discrepancies in the methodologies and assumptions and adjusted them to make them suitable and accurate under present conditions. The City of Havre has not established the amount of water needed to fulfill its surface water reservation request. (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

6. The methodologies and assumptions used by the City of Havre as applied to the groundwater application are accepted as suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). The City of Havre has established the amount of water needed to fulfill its groundwater reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

7. Based on a weighing and balancing of the evidence, the groundwater reservation by the City of Havre, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

8. Based on a weighing and balancing of the evidence, the surface water reservation by the City of Havre is not in the public interest. Water in the Milk River is typically unavailable to satisfy the needs of current users. This reservation may adversely affect the rights of senior water users (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(8)).

9. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

10. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

11. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application for a groundwater reservation by the City of Havre is granted for the following amount and flow of water: 475 af/y from three wells with a total flow rate of 1,050 gpm.

2. The surface water reservation of the City of Havre is denied.

3. The points of diversion and places of use are as set forth in the reservation application of the City of Havre and by reference are made a part of this Order.

4. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE HILL COUNTY WATER DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Hill County Water District is a political subdivision of the State of Montana (Hill County Water District Application, (H.Cnty-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The Hill County Water District has applied for a water reservation of 110 acre-feet/year (af/y) to be diverted from an inversion gallery located adjacent to the Marias River. Additionally, the Hill County Water District requests a supplemental reservation to divert 542 af/y from the Milk River to storage from September 30 to June 15 (H.Cnty-App., p. 4).

3. The Hill County Water District requested a water reservation to reserve water in the event that contracts for water with the U.S. Bureau of Reclamation (BOR) are not renewed (H.Cnty-App., p. 3).

4. The Marias River is not located in any of the subbasins which comprise the Lower Missouri River Basin: the Milk River Subbasin, Lower Missouri River Subbasin, and the Little Missouri River Subbasin (DEIS, pp. 9-10).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE HILL COUNTY WATER DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

5. The Hill County Water District seeks to provide municipal water for existing uses and future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (H-Cnty-App., p. 5).

6. The purpose of the reservation is to provide water for municipal and industrial uses (H-Cnty-App., p. 1). Municipal and industrial uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE SURFACE WATER RESERVATION APPLIED FOR BY THE HILL COUNTY WATER DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

7. In 1966, the Hill County Water District entered into a forty year contract with the BOR for 600 af/y (H-Cnty-App., p. 19). It is unclear from the record how much, if any, of this contracted water is used annually. The projected service area population for the year 2035 of 4,300 persons will require 542 af/y. The District's current

contract with the BOR exceeds the projected service area needs by 58 af/y (H-Cnty-App., p. 18).

8. The Hill County Water District is requesting a 542 af/y diversion from the outlet at Fresno Reservoir from September 30th to June 15 to provide for future beneficial uses (H-Cnty-App., p. 3). This amount is less than the 600 af/y currently held in contract with the BOR.

9. The Milk River mainstem, downstream of Fresno reservoir, is presently closed to new appropriations from June 15 through September 30 (Guenthner, Obj., Pre-filed Dir., p. 1).

10. Water held in contract with the BOR by the Hill County Water District is not available for appropriation by competing agricultural, industrial, and instream users (H-Cnty-App., Appendix A).

11. A water reservation is one means to obtain an earlier priority date for water that may be needed to meet existing uses and projected municipal growth. Contractual agreements with the BOR should provide more than enough water for existing and future municipal growth.

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE HILL COUNTY WATER DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

12. The method of determining the amount of water requested for a water reservation by the Hill County Water District was based on a forecast of its future population to the year 2035 along with the estimated amount of water used per person (H-Cnty-App., pp. 7-10). The methodology used by the Hill County Water District projected an average annualized, compounded population, growth rate of approximately 1.2 percent (H-Cnty-App., p. 9). The 1990, projected population of the Hill County Water District was 3,292 (H-Cnty-App., p. 11). The Hill County Water District's population forecast for the year 2035 was 4,300 people (H-Cnty-App., p. 11).

13. The Hill County Water District's average water use rate is 96 gallons per capita per day (gpcd) which is less than the typical basin use rate of 250 gallons per person daily (H-Cnty-App., p. 17).

14. The water use efficiencies associated with the municipal uses by the Hill County Water District are reasonable (ARM 36.16.107B(3)(b)).

15. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the Hill County Water District and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE HILL COUNTY WATER DISTRICT IS NOT IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

16. The Hill County Water District is requesting a reservation of 542 af/y diverted to storage from the Milk River with annual diversions occurring from September 30, through June 15 (H-Cnty-App., p. 3).

17. The Fort Belknap Indian Tribe is a senior water user on the Milk River and typically diverts water for the Fort Belknap Indian Irrigation Project (FBIIP) beginning April 15 annually (Davis, Obj., Reb., p. 1).

18. If the tribes developed 14,000 new acres under their reserved right, it is currently estimated that they would be short of water eleven percent on an average annual basis and eighty-two percent short of water during an extremely dry year (BOR, Obj., Pre-filed, Exh. 2, S-1).

19. Milk River irrigators face significant water shortages in 6 years out of 10. These shortages will increase by an additional 28,000 acre-feet in the future when Canada and the Fort Belknap Reservation make use of their legal share of the water (BOR, Obj., Pre-filed, Exh. 2, S-1).

III. CONCLUSIONS OF LAW

1. Hill County Water District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The request for the Marias River diversion does not fall within the jurisdiction of the Lower Missouri Reservation proceeding and may be rejected by the Board for failure to satisfy this requirement (ARM 36.16.107A(1)).

3. The purpose of the Hill County Water District's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

4. The Hill County Water District has not established the need for the surface water diversion from the Milk River. The District's contract with the BOR for storage water in Fresno Reservoir is not at risk of consumption by other in-state water users. The Hill County Water District has not demonstrated a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993);(ARM 36.16.107B(2)).

5. The methodologies and assumptions used by the Hill County Water District are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)).

6. The Hill County Water District's water reservation, as applied for, may adversely affect senior water rights (ARM 36.16.107B(8)).

7. Based on a weighing and balancing of the evidence, the reservation by the Hill County Water District is not in the public interest. Water in the Milk River is typically unavailable to satisfy the needs of current users. This reservation may adversely affect the rights of senior water users (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(8)).

8. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. The water reservation for the Hill County Water District is denied.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF MALTA TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Malta is an incorporated municipality and a subdivision of the State of Montana (Malta-App., p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Malta has applied for a water reservation of 137 acre-feet/year (af/y) of water with a maximum diversion rate of .43 millions gallons a day (mgd) to be diverted from one groundwater well located within the Malta city limits for year round use (Malta-App., p. 4).

3. The City of Malta requests a water reservation to meet future demands by municipal users (Malta-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF MALTA (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Malta seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Malta-App., p. 6).

5. The purpose of the reservation is to provide water for municipal uses (Malta-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF MALTA (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The city has constructed five wells historically, four of those wells remain in service for municipal use. The remaining well is used only as an irrigation well due to poor water quality. Over time, these wells will continue to decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (Malta-App., pp. 20-21).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Malta-App., p. 6-7).

8. It is important that the City of Malta have a water reservation to meet future municipal water demands in order for the community to grow and develop (Malta-App., p. 7).

9. Competing water uses may prevent the City of Malta from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Malta may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The city of Malta could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Malta-App., p. 21).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF MALTA (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the city of Malta was based on the amount of water required to satisfy the needs of the historical peak population. Malta's historical peak population of 2,367 persons occurred in 1980 (Malta-App., p. 10).

12. In an effort to reduce overall leakage in the system, work is currently underway to replace the distribution system in the older parts of the city (Malta-App., p. 18).

13. The City of Malta's average water use rate is 360 gallons per capita per day (gpcd) (Malta-App., p. 17). The efficiencies associated with the municipal uses by the City of Malta are reasonable (ARM 36.16.107B(3)(b)).

14. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Malta and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF MALTA IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

15. Benefits of the City of Malta's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons to be an upper limit of the willingness to pay (Malta-App., p. 31). Malta municipal users are currently paying $.70/1,000 gallons (Malta-App., p. 31).

16. The additional water provided by the water reservation will cost approximately $1.98/1,000 gallons. This rate is lower than the assumed upper limit of $3.00/1000 gallons which is considered the upper limit of the willingness to pay (Malta-App., p. 31).

17. The direct benefits of the City of Malta's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

18. Indirect benefits of the City of Malta's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Malta-App., p. 32).

19. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Malta-App., p. 32).

20. There is no significant adverse environmental impact associated with the use of the City of Malta's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Malta-App., p. 32).

21. Net benefits of granting the City of Malta's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

22. The City of Malta identified two alternative sources of water for future development in addition to the proposed reservation. A surface water storage project drawing water from the Milk River and participation in the Virgelle-Canal Project were reviewed (Malta-App., pp. 24-28). The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (Malta-App., pp. 22-25);(ARM 36.16.107B(4)(c)).

23. Failure to reserve water for future municipal use by the City of Malta is likely to result in an irretrievable loss of a resource development opportunity (Malta-App., p. 33; ARM 36.16.107B(4)(d)).

24. As conditioned, the City of Malta's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

25. The water reservation by the City of Malta will be used entirely within the state and within the Missouri River Basin (Malta-App., p. 1; ARM 36.16.107B(5) and (6)).

26. The City of Malta has identified a management plan for the design, development, and administration of its water reservation (Malta-App., pp. 34-39).

27. The City of Malta is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

28. The priority date of the City of Malta's water reservation is July 1, 1985 (MCA § 85-2-331(4)).

29. As conditioned, the City of Malta's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Malta is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Malta's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Malta has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Malta are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Malta has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Malta, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Malta is granted for the following amount and flow of water: 137 acre feet per year at a rate of .43 million gallons per day.

2. The point of diversion and place of use are set forth in the reservation application of the City of Malta and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservations granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the City of Plentywood
Water Reservation No. 40R L084491-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF PLENTYWOOD TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Plentywood is an incorporated municipality and a subdivision of the State of Montana (Plentywood Application. p. 1, (Pltywd-App.,); MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Plentywood has applied for a water reservation of 235 acre-feet/year (af/y) of water with a maximum diversion rate of .72 millions gallons a day (mgd) to be diverted from one groundwater well located 2000 ft., northwest of existing well number ten (Pltywd-App., p. 3).

3. The City of Plentywood requests a water reservation to meet future demands by municipal users (Pltywd-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF PLENTYWOOD (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Plentywood seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Pltywd-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Pltywd-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a), ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF PLENTYWOOD (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The City has constructed ten wells historically, eight of those wells remain in service for municipal use. Over time, these wells will decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (Pltywd-App., pp. 18-20).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Pltywd-App., p. 6-7).

8. It is important that the City of Plentywood have a water reservation to meet future municipal water demands in order for the community to grow and develop (Pltywd-App., p. 6).

9. Competing water uses may prevent the City of Plentywood from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Plentywood may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The City of Plentywood could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Pltywd-App., p. 19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF PLENTYWOOD (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Plentywood was based on the amount of water required to satisfy the needs of the historical peak population. Plentywood's historical peak population of 2,804 persons occurred in 1984 (Pltywd-App., p. 9).

12. The City of Plentywood's average water use rate is 200 gallons per capita per day (gpcd). The average rate of consumption for municipalities in the region is 250 gpcd (Pltywd-App., p. 11). The efficiencies associated with the municipal uses by the City of Plentywood are reasonable (ARM 36.16.107B(3)(b)).

13. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Plentywood and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF PLENTYWOOD IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

14. Benefits of the City of Plentywood's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay (Pltywd-App., p. 31). Plentywood municipal users are currently paying $.77/1,000 gallons (Pltywd-App., p. 31).

15. The additional water provided by the water reservation will cost approximately $1.17/1,000 gallons of water. This rate is lower than the assumed upper limit of $3.00/1000 gallons (Pltywd-App., p. 31).

16. The direct benefits of the City of Plentywood's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

17. Indirect benefits of the City of Plentywood's reservation may include secondary economic benefits to the community and to the

state, expanding both the property and income tax base from increased population (Pltywd-App., p. 32).

18. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Pltywd-App., p. 31).

19. A groundwater-surface connection may exist between the City's well and the Big Muddy Creek alluvium (Pltywd-App., p. 13).

20. There is no significant adverse environmental impact associated with the use of the City of Plentywood's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Pltywd-App., p. 32).

21. Net benefits of granting the City of Plentywood's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

22. The City of Plentywood identified two alternative sources of water for future development in addition to the proposed reservation. A surface water storage project requiring construction of a dam in a tributary drainage and a rural water system from the Culbertson treatment plant were reviewed (Pltywd-App., pp. 25-30). The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (Pltywd-App., pp. 22-25; ARM 36.16.107B(4)(c)).

23. Failure to reserve water for future municipal use by the City of Plentywood is likely to result in an irretrievable loss of a resource development opportunity (Pltywd-App., p. 32; ARM 36.16.107B(4)(d)).

24. As conditioned, the City of Plentywood's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

25. The water reservation by the City of Plentywood will be used entirely within the state and within the Missouri River Basin (Pltywd-App., p. 1; ARM 36.16.107B(5) and (6)).

26. The City of Plentywood has identified a management plan for the design, development, and administration of its water reservation (Pltywd-App., pp. 33-38).

27. The City of Plentywood is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

28. The priority date of the City of Plentywood's water reservation is July 1, 1985 (MCA §85-2-331(4)).

29. The City of Plentywood and its groundwater reservation is located in the Big Muddy Creek alluvium upstream of the Fort Peck Indian Reservation (DEIS, p. 63).

30. The Fort Peck Montana Compact has established a schedule of instream flows for Big Muddy Creek and its tributaries. Existing streamflows on Big Muddy Creek are often insufficient to supply the tribe's compacted water right (Davis, Obj., Pre-filed Dir., p. 1).

31. As conditioned, the City of Plentywood's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Plentywood is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Plentywood's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Plentywood has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Plentywood are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Plentywood has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Plentywood, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Plentywood is granted for the following amount and flow of water: 235 acre feet per year at a rate of .72 million gallons per day.

2. The point of diversion and place of use are set forth in the reservation application of the City of Plentywood and by reference are made a part of this Order.

3. If at anytime in the future after this project is in place and when Fort Peck tribal instream flows on Big Muddy Creek cannot be met, then a call on Big Muddy Creek may be placed by the Fort Peck Tribes which may be enforced against this reservation.

4. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the City of Poplar
Water Reservation No. 40Q L084488-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF POPLAR TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Poplar is an incorporated municipality and a subdivision of the State of Montana (Poplar Application (Pplr-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Poplar has applied for a water reservation of 448 acre-feet/year (af/y) of water with a maximum diversion rate of 1.44 millions gallons a day (mgd) to be diverted from two groundwater wells located west of existing wells 3,4, & 5 (Pplr-App., p. 3).

3. The City of Poplar requests a water reservation to meet future demands by municipal users (Pplr-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF POPLAR (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Poplar seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Pplr-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Pplr-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a), ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF POPLAR (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The City has constructed five wells historically, three of those wells remain in service for municipal use. Over time, these wells will continue to decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (Pplr-App., pp. 18-20).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Pplr-App., p. 5-6).

8. It is important that the City of Poplar have a water reservation to meet future municipal water demands in order for the community to grow and develop (Pplr-App., p. 5).

9. Competing water uses may prevent the City of Poplar from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Poplar may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The City of Poplar could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Pplr-App., p. 19-20).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF POPLAR (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Poplar was based on a forecast of its future population using National Planning Association data. This information along with the estimated amount of water used per person was projected to the year 2035 to determine the reservation amount (Pplr-App., p. 7).

12. The Tribal Housing Authority is expected to continue developing housing units that will require city services. Current planning projections indicate construction of 45 units per year for the next three years (Pplr-App., p. 10).

13. The City of Poplar's average water use rate is 116 gallons per capita per day (gpcd). The usage rate for other municipalities in the region is 250 gpcd (Pplr-App., p. 16). The efficiencies associated with the municipal uses by the City of Poplar are reasonable (ARM 36.16.107B(3)(b)).

14. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Poplar and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF POPLAR IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

15. Benefits of the City of Poplar's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay (Pplr-App., p. 29). Poplar municipal users are currently paying $1.15/1,000 gallons (Pplr-App., p. 30).

16. The additional water provided by the water reservation will cost approximately $.42/1,000 gallons of water. This rate is lower than the assumed upper limit of $3.00/1,000 gallons (Pplr-App., p. 30).

17. The direct benefits of the City of Poplar's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

18. Indirect benefits of the City of Poplar's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Pplr-App., p. 30).

19. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Pplr-App., p. 30).

20. There is no significant adverse environmental impact associated with the use of the City of Poplar's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Pplr-App., p. 31).

21. Net benefits of granting the City of Poplar's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

22. The City of Poplar identified two alternative sources of water for future development in addition to the proposed reservation. A surface water diversion from the Poplar River and a Ranney well system adjacent to and beneath the Poplar River were also reviewed. The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (Pplr-App., pp. 24-29); ARM 36.16.107B(4)(c)).

23. Failure to reserve water for future municipal use by the City of Poplar is likely to result in an irretrievable loss of a resource development opportunity (Pplr-App., p. 31; ARM 36.16.107B(4)(d)).

24. As conditioned, the City of Poplar's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

25. The water reservation by the City of Poplar will be used entirely within the state and within the Missouri River Basin (Pplr-App., p. 1; ARM 36.16.107B(5) and (6)).

26. The Fort Peck Indian Tribes have negotiated and compacted their water rights under the Fort Peck Montana Compact. Though

located within the boundaries of Fort Peck Indian Reservation, the City of Poplar is not a tribal entity (Davis, pre-filed, Obj., p. 1).

27. The City of Poplar has identified a management plan for the design, development, and administration of its water reservation (Pplr-App., pp. 33-38).

28. The City of Poplar is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

29. The priority date of the City of Poplar's water reservation is July 1, 1985 (MCA §85-2-331(4)).

30. As conditioned, the City of Poplar's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Poplar is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Poplar's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Poplar has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Poplar are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Poplar has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Poplar, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Poplar is granted for the following amount and flow of water: 448 acre feet per year at a rate of 1.44 million gallons per day.

2. The quantity of water reserved to the city of Poplar is not in any way a measurable portion of the Fort Peck Tribes' compacted water right.

3. The point of diversion and place of use are set forth in the reservation application of the City of Poplar and by reference are made a part of this Order.

4. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the City of Scobey
Water Reservation No. 40Q L077647-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF SCOBEY TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Scobey is an incorporated municipality and a subdivision of the State of Montana (Scby-App., p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Scobey has applied for a water reservation of 168 acre-feet/year (af/y) of water with a maximum diversion rate of .72 millions gallons a day (mgd) to be diverted from one groundwater well located northwest of existing municipal wells (Scby-App., p. 3).

3. The City of Scobey requests a water reservation to meet future demands by municipal users (Scby-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF SCOBEY (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Scobey seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Scby-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Scby-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF SCOBEY (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The City has constructed five wells historically, three of those wells remain in service for municipal use. Over time, these wells will decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (Scby-App., pp. 17-19).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Scby-App., p. 5-6).

8. It is important that the City of Scobey have a water reservation to meet future municipal water demands in order for the community to grow and develop (Scby-App., p. 5).

9. Competing water uses may prevent the City of Scobey from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Scobey may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The City of Scobey could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Scby-App., p. 18-19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF SCOBEY (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Scobey was based on the amount of water required to satisfy the needs of the historical peak population. Scobey's historical peak population of 1,726 persons occurred in 1960 (Scobey App., p. 9).

12. Evidence indicates that demand for services in Scobey will increase in the future. In the spring of 1994, Nemont Telephone, located in Scobey, increased their employee pool from fifty-seven persons to one hundred twenty-one. In addition, there is currently a feasibility study underway to investigate the potential sighting of an Ethanol plant in Scobey (Audet, App., Pre-filed Dir., p.1).

13. The City of Scobey's average water use rate is 215 gallons per capita per day (gpcd). The typical usage rate for communities in the region is 250 gpcd (Scby-App., p. 12). The efficiencies associated with the municipal uses by the City of Scobey are reasonable (ARM 36.16.107B(3)(b)).

14. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Scobey and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF SCOBEY IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

15. Benefits of the City of Scobey's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay (Scby-App., p. 29). Scobey municipal users are currently paying $1.45/1,000 gallons (Scby-App., p. 28).

16. The additional water provided by the water reservation will cost approximately $.76/1,000 gallons of water. This rate is lower than the assumed upper limit of $3.00/1000 gallons (Scby-App., p. 28).

17. The direct benefits of the City of Scobey's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

18. Indirect benefits of the City of Scobey's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (Scby-App., p. 28).

19. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Scby-App., p. 28).

20. A groundwater-surface connection may exist between the city's wells and the Poplar River alluvium (Scby-App., p. 14).

21. There is no significant adverse environmental impact associated with the use of the City of Scobey's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Scby-App., p. 29).

22. Net benefits of granting the City of Scobey's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

23. The City of Scobey identified two alternative sources of water for future development in addition to the proposed reservation. A bedrock well in the Hell Creek Formation and a Ranney well system adjacent to and beneath the Poplar River were also reviewed. The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (Scby-App., pp. 22-28; ARM 36.16.107B(4)(c)).

24. Failure to reserve water for future municipal use by the City of Scobey is likely to result in an irretrievable loss of a resource development opportunity (Scby-App., p. 29; ARM 36.16.107B(4)(d)).

25. As conditioned, the City of Scobey's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B),(4)(a)(iv)(b),(5),(6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

26. The water reservation by the City of Scobey will be used entirely within the state and within the Missouri River Basin (Scby-App., p. 1; ARM 36.16.107B(5) and (6)).

27. The City of Scobey has identified a management plan for the design, development, and administration of its water reservation (Scby-App., pp. 30-35).

28. The City of Scobey is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

29. The priority date of the City of Scobey's water reservation is July 1, 1985 (MCA §85-2-331(4)).

30. The City of Scobey and its groundwater reservation is located in the Poplar River alluvium, upstream of the Fort Peck Indian Reservation (DEIS, p. 63).

31. The Fort Peck Montana Compact has established a schedule of instream flows for the Poplar River and its tributaries. Existing streamflows in the Poplar River are often insufficient to supply the tribe's compacted water right (Davis, Obj., Pre-filed Dir., p. 1).

32. As conditioned, the City of Scobey's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Scobey is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Scobey's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Scobey has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Scobey are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Scobey has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Scobey, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Scobey is granted for the following amount and flow of water: 168 acre feet per year at a rate of .72 million gallons per day.

2. The point of diversion and place of use are set forth in the reservation application of the City of Scobey and by reference are made a part of this Order.

3. If at anytime in the future after this project is in place and when Fort Peck tribal instream flows on the Poplar River cannot be met, then a call on the Poplar River may be placed by the Fort Peck Tribes which may be enforced against this reservation.

4. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF WIBAUX TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Wibaux is an incorporated municipality and a subdivision of the State of Montana (Wibuax Application (Wbx-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Wibaux has applied for a water reservation of 71 acre-feet/year (af/y) of water with a maximum diversion rate of 2.52 millions gallons a day (mgd) to be diverted from one municipal groundwater well. Wibaux also requests a reservation of 4 af/y with a maximum diversion of .036 mgd to be diverted from one shallow, alluvial well for park irrigation (Wbx-App., p. 3).

3. The City of Wibaux requests a water reservation to meet future demands by municipal users (Wbx-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF WIBAUX (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Wibaux seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (Wbx-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (Wbx-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF WIBAUX (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The City has constructed six wells historically, two provide service for municipal use and three provide irrigation service. Over time, these wells will continue to decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (Wbx-App., pp. 18-19).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (Wbx-App., p. 5-6).

8. It is important that the City of Wibaux have a water reservation to meet future municipal water demands in order for the community to grow and develop (Wbx-App., p. 5).

9. Competing water uses may prevent the City of Wibaux from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Wibaux may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The City of Wibaux could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (Wbx-App., p. 19).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF WIBAUX (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Wibaux was based on the amount of water required to satisfy the needs of the historical peak population. Wibaux's historical peak population of 782 persons occurred in 1980 (Wibaux App., p. 9).

12. The City of Wibaux's average water use rate is 94 gallons per capita per day (gpcd) (Wbx-App., p. 11). The efficiencies associated with the municipal uses by the City of Wibaux are reasonable (ARM 36.16.107B(3)(b)).

13. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Wibaux and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF WIBAUX IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

14. Benefits of the City of Wibaux's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons to be an upper limit of the willingness to pay (Wbx-App., p. 29). Wibaux municipal users are currently paying $1.94/1,000 gallons (Wbx-App., p. 28).

15. The additional water provided by the water reservation will cost approximately $3.08/1,000 gallons of water. Projected rates accounting for the current supply plus reservation water is $2.54/1,000 gallons. This rate is lower than the $3.00/1,000 gallons of water which is the assumed upper limit of the willingness to pay (Wbx-App., p. 30).

16. The direct benefits of the City of Wibaux's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

17. Indirect benefits of the City of Wibaux's reservation may include secondary economic benefits to the community and to the state,

expanding both the property and income tax base from increased population (Wbx-App., p. 31).

18. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (Wbx-App., p. 30).

19. There is no significant adverse environmental impact associated with the use of the City of Wibaux's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (Wbx-App., p. 31).

20. Net benefits of granting the City of Wibaux's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

21. The City of Wibaux identified two alternative sources of water for future development in addition to the proposed reservation. Plans for several shallow alluvial wells and a surface water storage system requiring dam construction in a tributary drainage were reviewed. The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (Wbx-App., pp. 23-28); ARM 36.16.107B(4)(c)).

22. Failure to reserve water for future municipal use by the City of Wibaux is likely to result in an irretrievable loss of a resource development opportunity (Wbx-App., p. 31; ARM 36.16.107B(4)(d)).

23. As conditioned, the City of Wibaux's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

24. The water reservation by the City of Wibaux will be used entirely within the state and within the Missouri River Basin (Wbx-App., p. 1; ARM 36.16.107B(5) and (6)).

25. The City of Wibaux has identified a management plan for the design, development, and administration of its water reservation (Wbx-App., pp. 32-38).

26. The City of Wibaux is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

27. The priority date of the City of Wibaux's water reservation is July 1, 1989 (MCA §85-2-331(4)).

28. As conditioned, the City of Wibaux's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Wibaux is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Wibaux's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Wibaux has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Wibaux are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Wibaux has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Wibaux, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case, may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Wibaux is granted for the following amount and flow of water: 75 acre feet per year at a rate of .288 million gallons per day.

2. The points of diversion and places of use are set forth in the reservation application City of Wibaux and by reference are made a part of this Order.

3. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1989. The reservation shall have equal priority with all other reservations granted to all municipalities.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the City of Wolf Point
Water Reservation No. 40S L084482-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATIONS OF THE CITY OF WOLF POINT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The City of Wolf Point is an incorporated municipality and a subdivision of the State of Montana (Wolf Point Application (WlfPt-App.) p. 1; MCA §85-2-316(1); ARM 36.16.107B(1)(a)).

2. The City of Wolf Point has applied for a water reservation of 504 acre-feet/year (af/y) of water with a maximum diversion rate of 1.44 millions gallons a day (mgd) to be diverted from two groundwater wells located near existing wells numbered seven, eight, & nine (WlfPt-App., p. 3).

3. The City of Wolf Point requests a water reservation to meet future demands by municipal users (WlfPt-App., p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY THE CITY OF WOLF POINT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b).

4. The City of Wolf Point seeks to provide municipal water for future growth in a cost-effective manner. Sound planning requires providing users with an adequate water supply (WlfPt-App., p. 5).

5. The purpose of the reservation is to provide water for municipal uses (WlfPt-App., p. 1). Municipal uses are beneficial uses of water in Montana (MCA §85-2-102(2)(a); ARM 36.16.102(3); ARM 36.16.107B(1)(b)).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF WOLF POINT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

6. The City has constructed nine wells historically, of which four remain in service. Wells seven, eight, and nine are used as the primary municipal source. Over time, these wells will continue to decrease in yield as perforations in the well screen plug with iron encrustation and bacteria growth. These wells will eventually require replacement (WlfPt-App., pp. 19-20).

7. A reservation is the only means to obtain an early priority date for water that will be needed to meet projected municipal growth. In the future, water may be appropriated by competing agricultural, industrial, and instream users (WlfPt-App., p. 5-6).

8. It is important that the City of Wolf Point have a water reservation to meet future municipal water demands in order for the community to grow and develop (WlfPt-App., p. 5).

9. Competing water uses may prevent the City of Wolf Point from obtaining or perfecting a water use permit in the future. Without a reservation, the City of Wolf Point may have to go through a costly process of buying or condemning existing water rights to meet increasing demands (DEIS, p. 187).

10. The City of Wolf Point could lose existing, unused water rights necessary for future beneficial uses in an adjudication between competing water users (WlfPt-App., p. 19-20).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY THE CITY OF WOLF POINT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

11. The method of determining the amount of water requested for a water reservation by the City of Wolf Point was based on a forecast of its future population using National Planning Association data. This information along with the estimated amount of water used per person was projected to the year 2035 to determine the reservation amount (WlfPt-App., pp. 7-9).

12. The Tribal Housing Authority is expected to continue developing housing units outside the city limits that will require city services (WlfPt-App., p. 11).

13. The City of Wolf Point's average water use rate is 172 gallons per capita per day (gpcd). The average use rate for communities in the region is 250 gpcd (WlfPt-App., p. 16). The efficiencies associated with the municipal uses by the City of Wolf Point are reasonable (ARM 36.16.107B(3)(b)).

14. No other cost-effective measure could be taken within the reservation term to increase the use efficiency by the City of Wolf Point and lessen the amount of water required for the purpose of the reservation (ARM 36.16.107B(3)(b)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY THE CITY OF WOLF POINT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

15. Benefits of the City of Wolf Point's water reservation were calculated on a willingness-to-pay basis. Communities in the Middle Missouri Basin consider $3.00/1,000 gallons of water to be an upper limit of the willingness to pay (WlfPt-App., p. 31). Wolf Point municipal users are currently paying $1.02/1,000 gallons (WlfPt-App., p. 31).

16. The additional water provided by the water reservation will cost approximately $.36/1,000 gallons of water. This rate is lower than $3.00/1000 gallons of water which is the assumed upper limit of the willingness to pay (WlfPt-App., p. 31).

17. The direct benefits of the City of Wolf Point's water reservation exceed the direct costs (ARM 36.16.107B(4)(a)).

18. Indirect benefits of the City of Wolf Point's reservation may include secondary economic benefits to the community and to the state, expanding both the property and income tax base from increased population (WlfPt-App., p. 31).

19. Indirect costs of the reservation may include loss of opportunity for other development and increased administrative costs. While not quantified, these costs are minor (WlfPt-App., p. 31).

20. There is no significant adverse environmental impact associated with the use of the City of Wolf Point's water reservation. The effects of individual municipal water reservation depletions on water quality have not been quantified, but should be very small. Resulting health risks have not been quantified. No other non-quantifiable benefits or costs were identified (WlfPt-App., p. 32).

21. Net benefits of granting the City of Wolf Point's water reservation exceed the net benefits of not granting the water reservation and the project is economically feasible (ARM 36.16.107B(4)(b); ARM 36.16.102(9)).

22. The City of Wolf Point identified two alternative sources of water for future development in addition to the proposed reservation. A surface water diversion from the Missouri River and a Ranney well system adjacent to and beneath the Missouri River were also reviewed. The two alternatives would not provide greater net benefits than the water reservation and are not reasonable (WlfPt-App., pp. 25-30; ARM 36.16.107B(4)(c)).

23. Failure to reserve water for future municipal use by the City of Wolf Point is likely to result in an irretrievable loss of a resource development opportunity (WlfPt-App., p. 32; ARM 36.16.107B(4)(d)).

24. As conditioned, the City of Wolf Point's water reservation will have no significant adverse impact to public health, welfare, or safety (ARM 36.16.107B(4)(e)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

25. The water reservation by the City of Wolf Point will be used entirely within the state and within the Missouri River Basin (WlfPt-App., p. 1; ARM 36.16.107B(5) and (6)).

26. The Fort Peck Indian Tribes have negotiated and compacted their water rights under the Fort Peck Montana Compact. Although located within the boundaries of the Fort Peck Indian Reservation, the City of Wolf Point is not a tribal entity (Davis, Obj., Pre-filed Dir., p. 1).

27. The City of Wolf Point has identified a management plan for the design, development, and administration of its water reservation (WlfPt-App., pp. 33-39).

28. The City of Wolf Point is capable of exercising reasonable diligence towards feasibly financing the project and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

29. The priority date of the City of Wolf Point's water reservation is July 1, 1985 (MCA §85-2-331(4)).

30. As conditioned, the City of Wolf Point's water reservation will not adversely affect any senior water rights (ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. City of Wolf Point is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the City of Wolf Point's application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the City of Wolf Point has been established. The City has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the City of Wolf Point are suitable and accurate under present conditions (ARM 36.16.107B(3)(a)). As modified, the City of Wolf Point has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. Based on a weighing and balancing of the evidence, the reservation by the City of Wolf Point, as modified herein, is in the public interest (MCA §85-2-316(4)(a)(iv); ARM 36.16.107B(4)).

6. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

7. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

8. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable modifications, conditions, and limitations (including but not limited to the conditions applied to consumptive use reservations in Exhibit A attached to this Order), the application of the City of Wolf Point is granted for the following amount and flow of water: 504 acre feet per year at a rate of 1.44 million gallons per day.

2. The point of diversion and place of use are set forth in the reservation application of the City of Wolf Point and by reference are made a part of this Order.

3. The quantity of water reserved to the City of Wolf Point is not in any way a measurable portion of the Fort Peck Tribes' compacted water right.

4. Relative to other reservations, the priority date of this reservation shall be ahead of any other non-municipal reservation granted with a priority date of July 1, 1985. The reservation shall have equal priority with all other reservations granted to all municipalities.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the Blaine County Conservation District
Water Reservation No. 40J L084493-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF BLAINE COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Blaine County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Blaine County Conservation District Application (B1-CD App.,) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY BLAINE COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Blaine County Conservation District has applied to reserve a maximum annual amount of 18,934 acre feet of water for three water storage projects. These projects are located on Milk River tributaries. The stored water would be used to develop 141 acres of new irrigation and to supply supplemental irrigation water to 6,000 acres of existing irrigated land (B1-CD App., pp. 4, 5 and 12). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Blaine County Conservation District.

3. The Blaine County Conservation District seeks to reserve water for future irrigation (B1-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3);(DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY BLAINE COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Blaine County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (B1-CD App., p. 7);

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (B1-CD App., pp. 7-8).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY BLAINE COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Blaine County Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the proposed projects (B1-CD App., pp. 10-11). The water use efficiencies associated with the diversionary uses are reasonable (B1-CD App., pp. 9-12; CD Methodology Manual as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY BLAINE COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Blaine County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (B1-CD App., pp. 13-15; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the Blaine County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all projects were found to be economically feasible in at least 15 percent of the 300 scenarios examined (B1-CD App., p. 15).

9. The Blaine County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2, pp. 11-15).

10. The Blaine County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Blaine County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the

minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1, p. 168).

12. The Blaine County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Blaine County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18), nor did they take into account the cost of moving an existing county road in the analysis of project BL-181 (Goroski, Redir., Tr. Day 6, pp. 64).

14. Blaine County CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100 percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Bl-CD App., pp. 19-20). Using these assumptions, the analysis indicates that the proposed projects would require subsidies (Bl-CD App., p. 23).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Blaine County CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities. (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances that could reduce the cost of

irrigating land may occur in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Longer term loans may also be available for water storage projects (Perkins, App., Dir., Tr. Day 2, p. 68). Furthermore, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

19. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

20. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

21. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

22. Water shortages occur in the Milk River Basin, and exceed 10 percent of demand 6 years out of 10 (Guenthner, Pre-filed Dir., p. 1). Some Milk River flows are stored downstream by the U.S. Bureau of Reclamation in Nelson Reservoir, and these diversions typically begin in mid-March (Guenthner, Obj., Pre-filed Dir., p. 2).

23. The Board takes judicial notice of the closure of the Milk River Basin, closed by DNRC pursuant to MCA §85-2-321. The Milk River Basin is presently closed to new appropriations during the irrigation season from April 15 through September 15.

24. The Board takes judicial notice of conditions on new permits issued in the Milk River Basin. These conditions are attached to all new permits issued in the basin at the request of existing water right holders (see DNRC, Water Rights Bureau, Provisional Permit #66213-540M).

25. The Fort Belknap Irrigation District is dependent on Milk River flows and typically begins diversions around April 15 (Davis, Obj., Pre-filed Dir., pp. 1-2).

26. Some years flows from smaller Milk River tributaries do not reach the Milk River. (Guenthner, Obj., Cross, Tr. Day 3, pp. 27-28). The storage projects proposed by the Blaine County CD would store water when flows are high and demands are low (Perkins, App., Dir., Tr. Day 2, p. 71). Storing runoff in the basin and releasing it during times of lower flows has the potential to provide benefits to other resources and other water users (Perkins, App., Pre-filed Dir., p. 7; Perkins, App., Redir., Tr. Day 2, pp. 157-158; Unruh, App. Redir., p. 262).

27. The benefits of granting a reservation for the Blaine County Conservation District exceed those of not granting a reservation.

28. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

29. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

30. There are adverse effects to other resources that may result from development of these projects (Blaine CD App., pp. 14-15; DEIS, pp. 128, 134, 141-143, 159, 160-161, 166-167, 169-171).

31. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

32. The Blaine County Conservation District has identified a management plan for developing and financing its water reservation projects (Bl-CD App., pp. 22-23) as required by ARM 36.16.107B(7)).

33. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

34. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Bl-CD App., p. 3; ARM 36.16.107B(5) and (6)).

35. As conditioned, and subject to existing water rights with an earlier priority date, the Blaine County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Blaine County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Blaine County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Blaine County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Blaine County Conservation District are suitable and accurate. Blaine County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Blaine County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Blaine County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)) The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Blaine County Conservation District is granted for the three irrigation/storage projects requested. The amounts of diversion, volumes of diversion, places of diversion and places of use are as set forth in the reservation application of Blaine County Conservation District for the projects and by reference are made a

part of this Order. The reservation allows the Blaine County Conservation District to store up to 18,934 acre-feet of water per year in three reservoirs. The reservation allows the district to divert up to 10,936 acre-feet per year from the reservoirs to supply irrigation water to 6,141 acres.

2. The reservation will be subject to the following conditions:

1) The water appropriated pursuant to this right shall only be impounded during the winter months; or during high runoff when the U.S. Bureau of Reclamation is spilling at Fresno and Vandalia diversion dams, and when the U.S. Bureau of Reclamation and the Fort Belknap Indian Irrigation Project, due to intervening natural causes, cannot reasonably make historic, beneficial use of flows proposed to be stored by the appropriator, and when the water rights associated with the Fort Belknap Irrigation project are satisfied. During all other periods, the appropriator shall allow the natural flow to pass his diversion to satisfy prior existing water rights.

2) The reservant shall contact the U.S. Bureau of Reclamation at Malta (PO Box R, Malta, MT 59538) and the Fort Belknap Tribes (Fort Belknap Indian Community, Water Resources Dept., RR #1, Box 66, Harlem, MT 59526) at the start of each irrigation season to determine current water supply conditions and the availability of water for its use. This contact shall be made by certified mail through the U.S. Postal Service with return receipt requested.

3) The conditions contained herein relating to the dam under (1) and (2) above may be modified by the Board upon petition of the U.S. Government and upon receipt of further evidence or determination by the Board pertaining to the water rights of the U.S. Government and the Fort Belknap Tribes in said reservoir.

4) This right is subject to all prior Indian reserved water rights of the Fort Belknap Tribes in the source of supply. It is the tribes' position that economic investments made in reliance upon this right do not create in the appropriator any equity or vested right against the tribes. The appropriator is hereby notified that any financial outlay or work invested in a project pursuant to this rights is at the appropriator's risk. The issuance of this right does not reduce the appropriator's liability of damage caused by the exercise of the right. It does not make the Board liable for damage caused by the exercise of the right. Nor is the Board liable for any loss to the appropriator caused by the exercise of senior reserved water rights. Any water right issued by the state in the absence of jurisdiction to issue the water right is void.

3. The Blaine County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Relative to other reservations, the priority date of the Blaine County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF CARTER COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Carter County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Carter County Conservation District Application (Ca-CD App., p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY CARTER COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Carter County Conservation District has applied to reserve an annual amount of 4,684 acre feet of water to supply irrigation water to 33 projects totaling 2,367 acres (Carter County Conservation District Application (Ca-CD App.) pp. 4, 5, and 12). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The projects are located on Little Beaver Creek, Boxelder Creek, the Little Missouri River, and tributaries to these streams. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Carter County Conservation District.

3. The Carter County Conservation District seeks to reserve water for future irrigation (Ca-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY CARTER COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Carter County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Ca-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Ca-CD App., pp. 7-8; Waterland, Pre-filed Dir., p. 2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY CARTER COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Carter County Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the proposed projects (Ca-CD App., p. 10). The water use efficiencies associated with the diversionary uses are reasonable (Ca-CD App., pp. 9-13; CD Methodology Manual) as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY CARTER COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed project was evaluated by the Carter County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Ca-CD App., pp. 14-18; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, Carter County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). The analysis found that the projects proposed by the Carter County Conservation District projects were economically feasible for at least 35 percent of the 300 scenarios examined (Ca-CD App., pp. 17).

9. Carter County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2. pp. 11-15).

10. Carter County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. Carter County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1 p. 168).

12. Carter County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. Carter County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. Carter County CD and DNRC analyzed the financial feasibility of the project based on the assumption that the project would be 100-percent debt financed and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Ca-CD App., pp. 26-27). This analysis indicated that many of the projects proposed by the Carter County CD projects would require subsidies (Ca-CD App., p. 27).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Carter County CD application but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Waterland, Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances that could reduce the cost of irrigating land may occur in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15; Obrigewitch, Pre-filed Dir., p. 2). Furthermore, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

19. DNRC compared water values for the project to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

20. The recreation values used by DNRC in the draft EIS are those derived for the Middle Missouri River Basin above Fort Peck Dam. In its final EIS, DNRC concluded that streams in the Little Missouri Subbasin have recreation values, but that the dollar values for the Middle Missouri Basin are not applicable (FEIS, p. 82).

21. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

22. The benefits of granting a reservation for the Carter County Conservation District exceed those of not granting a reservation.

23. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

24. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

25. There are adverse effects to other resources that may result from development of this project (Ca-CD App., pp. 18-25; DEIS, pp. 130-131, 136-137, 140-143, 152-171).

26. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

27. The Carter County Conservation District has identified a management plan for developing and financing its water reservation projects (Ca-CD App., pp. 26-30) as required by ARM 36.16.107B(7)).

28. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

29. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Ca-CD App., p. 3; ARM 36.16.107B(5) and (6)).

30. As conditioned, and subject to existing water rights with an earlier priority date, the Carter County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Carter County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Carter County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Carter County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Carter County Conservation District are suitable and accurate. Carter County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Carter County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Carter County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Carter County Conservation District is granted a reservation for all projects included in its application. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Carter County Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 4,684 acre-feet to serve a total of 2,367 irrigated acres.

2. The Carter County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1989.

3. Relative to other reservations, the priority date of the Carter County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF DANIELS COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Daniels County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316. (Daniels County Conservation District Application (Da-CD, App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY DANIELS COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Daniels County Conservation District has applied to reserve an annual amount of 3,047 acre feet of water to supply irrigation water to 21 projects totaling 1,439 acres (Da-CD App., pp. 4, 5, and 13). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The proposed projects are located in the Poplar River drainage. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Daniels County Conservation District.

3. The Daniels County Conservation District seeks to reserve water for future irrigation (Da-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY DANIELS COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Daniels County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Da-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints to near term development on a permit by permit basis. If

water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Da-CD App., pp. 7-8; Cromwell, Pre-filed Dir., p. 2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY DANIELS COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Daniels County Conservation District has established methodologies used to determine the amounts of water requested. Water was found to be physically available for the proposed projects (Da-CD App., p. 10). The water use efficiencies associated with the diversionary uses are reasonable (Da-CD App., pp. 9-12; CD Methodology Manual) as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY DANIELS COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Daniels County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Da-CD App., pp. 14-17; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the Daniels County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all proposed projects were found to be economically feasible in at least 21 percent of the 300 scenarios examined (Da-CD App., pp. 16-17).

9. The Daniels County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2, pp. 11-15).

10. The Daniels County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Daniels County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1 p. 168).

12. The Daniels County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Daniels County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The Daniels County CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100-percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Da-CD App., pp. 25-27). Under these assumptions, the analysis indicated that some of the proposed projects would require subsidies (Da-CD App., p. 26).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Da-CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Cromwell, Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App. Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15; Obrigewitch, Pre-filed Dir., p. 2). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

19. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

20. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

21. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

22. The Daniels CD projects lands are located on the Poplar River and its tributaries upstream of the boundaries of the Fort Peck Indian Reservation. The Fort Peck Tribes have a compacted water right with the state of Montana which includes a schedule of instream flows for the Poplar River and its tributaries (Davis, Obj., Pre-filed Dir., p. 1).

23. Existing streamflows on the Poplar River and its tributaries are often less than the amounts available to the Fort Peck Tribes through compact (Davis, Obj., Pre-filed Dir., pp. 1-2).

24. The reservation projects proposed by the Daniels County CD would deplete flows in the Poplar River and its tributaries (Da-CD App., pp. 18-22).

25. The benefits of granting a reservation to the Daniels CD exceed those of not granting a reservation.

26. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

27. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

28. There are adverse effects to other resources that may result from development of this project (Da-CD App., pp. 17-18; DEIS, pp. 130, 134, 141-143, 152, 159, 160-162, 165-167, 169-171).

29. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

30. The Daniels County Conservation District has identified a management plan for developing and financing its water reservation projects (Da-CD App., pp. 25-28) as required by ARM 36.16.107B(7)).

31. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

32. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Da-CD App., p. 3; ARM 36.16.107B(5) and (6)).

33. As conditioned, and subject to existing water rights with an earlier priority date, the Daniels County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Daniels County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Daniels County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Daniels County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Daniels County Conservation District are suitable and accurate. Daniels County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Daniels County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Daniels County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Daniels County Conservation District is granted for all projects requested. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Daniels County Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 3,047 acre-feet to serve a total of 1,439 irrigated acres.

2. If at anytime in the future after the irrigation projects are in place and when Fort Peck tribal instream flows on the Poplar River or West Fork of the Poplar River cannot be met, then a call on water on these streams may be placed by the Fort Peck Tribes which may be enforced against this reservation.

3. The Daniels County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Relative to other reservations, the priority date of the Daniels County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF LITTLE BEAVER CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Little Beaver Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Little Beaver Conservation District Application (LB-CD, App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY LITTLE BEAVER CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Little Beaver Conservation District has applied to reserve an annual amount of 1,548 acre feet of water to supply irrigation water to 14 water spreading projects totaling 1,548 acres and 300 acre feet of water per year for stockwater (LB-CD App., pp. 4, 5, and 12). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The projects are located on Little Beaver Creek, Beaver Creek, and tributaries to those streams. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Little Beaver Conservation District.

3. The Little Beaver Conservation District seeks to reserve water for future irrigation (LB-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY LITTLE BEAVER CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Little Beaver Conservation District has established a need for the reservation for water spreading projects pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1989, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (LB-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints

to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (LB-CD App., pp. 7-8; Menger, Pre-filed Dir., pp. 1-3).

5. The Little Beaver Conservation District has not established a need for its stockwater request.

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY LITTLE BEAVER CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

6. The Little Beaver Conservation District has established methodologies used to determine the amounts requested for its water spreading projects. Water was found to be physically available for the proposed water spreading projects (LB-CD App., p. 10). The water use efficiencies associated with these diversionary uses are reasonable (LB-CD App., pp. 9-12; CD Methodology Manual) as required by ARM 36.16 107B(3)). No methodology was established by the Little Beaver Conservation District in developing its stockwater request.

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY LITTLE BEAVER CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

8. The economic feasibility of the proposed water spreading projects was evaluated by the Little Beaver Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (LB-CD App., pp. 13-17; Dolan, Dir., Tr. Day 1, pp. 161-162).

9. For each water spreading project, Little Beaver CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). The analysis found that the water spreading projects proposed by the Little Beaver Conservation District projects were economically feasible for at least 35 percent of the 300 scenarios examined (LB-CD App., pp. 15).

10. Little Beaver CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2, pp. 11-15).

11. Little Beaver CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

12. Little Beaver CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual, p. 7; Dolan, Dir., Tr. Day 1, p. 168).

13. Little Beaver CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

14. Little Beaver CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

15. The economic feasibility of the stockwater request was not evaluated.

16. Little Beaver CD and DNRC analyzed the financial feasibility of its water spreading projects based on the assumption that a project would be 100-percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; LB-CD App., pp. 19-20). Under these assumptions, the analysis indicated that the water spreading projects proposed by the Little Beaver CD projects would require subsidies (LB-CD App., p. 23).

17. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Little Beaver CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

18. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Menger, Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point

Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

19. The DNRC economic analysis was based on current technology. However, technological advances that could reduce the cost of irrigating land may occur in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

20. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15; Obrigewitch, Pre-filed Dir., p. 2). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

21. DNRC compared water values for the project to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

22. The recreation values used by DNRC in the draft EIS are those derived for the Middle Missouri River Basin above Fort Peck Dam. In its final EIS, DNRC concluded that streams in the Little Missouri Subbasin have recreation values, but that the dollar values for the Middle Missouri Basin are not applicable (FEIS, p. 82).

23. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

24. The benefits of granting a reservation to the Little Beaver Conservation District for water spreading projects exceed those of not granting a reservation.

25. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

26. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

27. There are adverse effects to other resources that may result from development of this project (LB. CD App., pp. 18-25; DEIS, pp. 130-131, 136-137, 140-143, 152-171).

28. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

29. The Little Beaver Conservation District has identified a management plan for developing and financing its water reservation projects (LB-CD App., pp. 22-24) as required by ARM 36.16.107B(7)).

30. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

31. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (LB-CD App., p. 3; ARM 36.16.107B(5) and (6)).

32. As conditioned, and subject to existing water rights with an earlier priority date, the Little Beaver Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Little Beaver Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Little Beaver Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Little Beaver Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Little Beaver Conservation District to evaluate its water spreading projects are suitable and accurate. Little Beaver Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Little Beaver Conservation District has not established methodologies to determine the amounts needed for its stockwater requests (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

6. It has been established to the satisfaction of the Board that the amount requested by Little Beaver Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

7. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Little Beaver Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

8. Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

9. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

10. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Little Beaver Conservation District is granted for all water spreading projects requested. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Little Beaver Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 1,548 acre-feet to serve a total of 1,030 irrigated acres.

2. The Little Beaver Conservation District is denied its requested 300 acre-foot per year reservation for stockwater.

3. The Little Beaver Conservation District water reservations approved by the Board shall have a priority date of July 1, 1989.

4. Relative to other reservations, the priority date of the Little Beaver Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF LIBERTY COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Liberty County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Liberty County Conservation District Application (Li-CD, App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY LIBERTY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Liberty County Conservation District has applied to reserve a maximum annual amount of 310 acre feet of water to be diverted into storage on Lost Coulee in the Milk River drainage. The district would use 122 acre-feet per year of the stored water diverted at a maximum rate of .84 cfs to irrigate 50 acres (Li-CD App., p. 11). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Liberty County Conservation District.

3. The Liberty County Conservation District seeks to reserve water for future irrigation (Li-CD App., p. 5). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY LIBERTY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Liberty County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Li-CD App., p. 6).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints

to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Li-CD App., pp. 6-7; Duncan, Pre-filed Dir., p. 2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY LIBERTY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Liberty County Conservation District has used established methodologies to determine the amounts of water requested (CD Methodology Manual). Water was found to be physically available for the project (Li-CD App., p. 9). The water use efficiencies associated with the diversionary uses are reasonable (Li-CD App., pp. 8-11; Perkins, App., Pre-filed Dir., pp. 4-5) as required by ARM 36.16 107B(3).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY LIBERTY COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed project was evaluated by the Liberty County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Li-CD App., pp. 12-13; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For the project, the Liberty County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). The analysis found that project LI-241 was economically feasible for 22 percent of the 300 scenarios examined (Li-CD App., pp. 14).

9. The Liberty County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Direct, Tr. Day 2, pp. 11-15).

10. The Liberty County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Liberty County CD and DNRC assumed that water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1, p. 168).

12. The Liberty County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Liberty County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The Liberty County CD and DNRC analyzed the financial feasibility of the project based on the assumption that the project would be 100 percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Li-CD App., pp. 19-20). Under these assumptions, the analysis indicated that project LI-241 would require subsidies (Li-CD App., p. 20).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Li-CD application, but with some refinements (DEIS, pp. L3-L24). For the project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of the project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances that could reduce the cost of irrigating land may occur in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Longer term loans may also be available for water storage projects (Perkins, App., Dir., Tr. Day 2, p. 68). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

19. DNRC compared water values for the project to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3 thru L-25).

20. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

21. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

22. Water shortages occur in the Milk River Basin, and exceed 10 percent of demand 6 years out of 10 (Guenthner, Obj., Pre-filed Dir., p. 1). Some Milk River flows are stored downstream by the U.S. Bureau of Reclamation in Nelson Reservoir, and these diversions typically begin in mid-March (Guenthner, Obj., Pre-flied Dir., p. 2).

23. The Board takes judicial notice of the closure of the Milk River Basin, closed by DNRC pursuant to MCA §85-2-321. The Milk River Basin is presently closed to new appropriations during the irrigation season from April 15 through September 15.

24. The Board takes judicial notice of conditions on new permits issued in the Milk River Basin. These conditions are attached to all new permits issued in the basin at the request of prior water right holders (see DNRC, Water Rights Bureau, Provisional Permit #66213-540M).

25. The Fort Belknap Irrigation District is dependent on Milk River flows and typically begins diversions around April 15 (Davis, Obj., Pre-filed Dir., pp. 1-2).

26. Some years, flows from Lost Coulee do not reach the Milk River (Guenthner, Obj., Cross, Tr. Day 3, pp. 27-28). Project LI-241 would store water when flows are high and demands are low (Perkins, App., Dir., Tr. Day 2, p. 71). Storing runoff in the basin has the

potential to provide benefits to other resources and other water users (Duncan, App. Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., p. 7; Perkins, App., Redir., Tr. Day 2, pp. 157-158).

27. The benefits of granting a reservation for the Liberty County Conservation District exceed those of not granting a reservation.

28. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

29. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

30. There are adverse effects to other resources that may result from development of this project (Liberty CD App., pp. 14-15; DEIS, pp. 128, 134, 141-143, 159, 160-161, 166-167, 169-171).

31. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

32. The Liberty County Conservation District has identified a management plan for developing and financing its water reservation projects (Li-CD App., pp. 19-20) as required by ARM 36.16.107B(7)).

33. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

34. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Li-CD App., p. 3; ARM 36.16.107B(5) and (6)).

35. As conditioned, and subject to existing water rights with an earlier priority date, the Liberty County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Liberty County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Liberty County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Liberty County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Liberty County Conservation District are suitable and accurate. Liberty County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Liberty County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Liberty County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Liberty County Conservation District is granted for the following project: LI-241. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Liberty County Conservation District for the project and by reference are made a part of this Order. The reservation allows the Liberty County Conservation District to store up to 310 acre-feet of water per year in a reservoir. The reservation allows the district to divert up to 122 acre-feet per year from the reservoir at a maximum rate of .84 cfs to supply irrigation water to 50 acres.

2. The Liberty County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

3. The reservation will be subject to the following conditions:

1) The water appropriated pursuant to this right shall only be impounded during the winter months; or during high runoff when the U.S. Bureau of Reclamation is spilling at Fresno and Vandalia diversion dams, and when the U.S. Bureau of Reclamation and the Fort Belknap Indian Irrigation Project, due to intervening natural causes, cannot reasonably make historic, beneficial use of flows proposed to be stored by the appropriator, and when the water rights associated with the Fort Belknap Irrigation project are satisfied. During all other periods, the appropriator shall allow the natural flow to pass his diversion to satisfy prior existing water rights.

2) The reservant shall contact the U.S. Bureau of Reclamation at Malta (PO Box R, Malta, MT 59538) and the Fort Belknap Tribes (Fort Belknap Indian Community, Water Resources Dept., RR #1, Box 66, Harlem, MT 59526) at the start of each irrigation season to determine current water supply conditions and the availability of water for its use. This contact shall be made by certified mail through the U.S. Postal Service with return receipt requested.

3) The conditions contained herein relating to the dam under (1) and (2) above may be modified by the Board upon petition of the U.S. Government and upon receipt of further evidence or determination by the Board pertaining to the water rights of the U.S. Government and the Fort Belknap Tribes in said reservoir.

4) This right is subject to all prior Indian reserved water rights of the Fort Belknap Tribes in the source of supply. It is the tribes' position that economic investments made in reliance upon this right do not create in the appropriator any equity or vested right against the tribe. The appropriator is hereby notified that any financial outlay or work invested in a project pursuant to this rights is at the appropriator's risk. The issuance of this right does not reduce the appropriator's liability of damage caused by the exercise of the right. It does not make the Board liable for damage caused by the exercise of the right. Nor is the Board liable for any loss to the appropriator caused by the exercise of senior reserved water rights. Any water right issued by the state in the absence of jurisdiction to issue the water right is void.

4. Relative to other reservations, the priority date of the Liberty County Conservation District shall be subordinate to the

consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the McCone Conservation District
Water Reservation No. 40S L084499-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF MCCONE CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The McCone Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (McCone Conservation District Application (Mc-CD, App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY MCCONE CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The McCone Conservation District has applied to reserve an annual amount of 14,299 acre feet of water to be diverted at a maximum rate of 99.5 cfs to supply full-service irrigation water to 14 projects totaling 6,122 acres (Mc-CD App., pp. 4, 5, and 12-13). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. All the proposed projects would pump water from the Missouri River. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the McCone Conservation District.

3. The McCone Conservation District seeks to reserve water for future irrigation (Mc-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY MCCONE CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The McCone Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Mc-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by

competing uses in Montana or downstream states (Mc-CD App., pp. 7-8; Wright Pre-filed Dir., pp. 1-2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY MCCONE CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The McCone Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the proposed projects (Mc-CD App., p. 10). The water use efficiencies associated with the diversionary uses are reasonable (Mc-CD App., pp. 9-13; CD Methodology Manual as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY MCCONE CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the McCone Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Mc-CD App., pp. 14-16; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the McCone CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all proposed projects were found to be economically feasible in at least 82 percent of the 300 scenarios examined.

9. The McCone CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Direct, Tr. Day 2, pp. 11-15).

10. The McCone CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The McCone CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1 p. 168). The physical supply of water on the Lower Missouri River is excellent (Perkins, App., Pre-filed Dir., p. 4).

12. The McCone CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The McCone CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The McCone CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100 percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Mc-CD App., pp. 19-20). Under these assumptions, the analysis indicated that 5 of the projects would require subsidies (Mc-CD, App., p. 23).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Mc-CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Wright App. Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. The potential exists to grow other crops on irrigated lands along the Lower Missouri River such as sugar beets, barley, potatoes, and corn silage. These crops have the potential to offer greater

economic benefits than alfalfa (Perkins, App., Dir., Tr. Day 2, pp 65-66). Sugar beets grown on irrigated lands along the Missouri River are now providing economic benefits, and there is the potential that additional acres will be needed to support the needs of local sugar refiners in the future (Harmon, Dir., Tr. Day 7, pp. 267-269; Knudsen, Cross, Tr. Day 2, pp. 92-95).

19. DNRC did not consider government payments in its financial feasibility analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir. Day 2, pp. 24).

20. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3 thru L-25).

21. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

22. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

23. The benefits of granting a reservation to the McCone CD exceed those of not granting a reservation.

24. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

25. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

26. There are adverse effects to other resources that may result from development of this project (Mc-CD App., pp. 17-21; DEIS, pp. 128-129, 133-134, 137-146, 152-153, 159, 160-162, 165-171).

27. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

28. The McCone Conservation District has identified a management plan for developing and financing its water reservation projects (Mc-CD App., pp. 22-24) as required by ARM 36.16.107B(7)).

29. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

30. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Mc-CD App., p. 3; ARM 36.16.107B(5) and (6)).

31. As conditioned, and subject to existing water rights with an earlier priority date, the McCone Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. McCone Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the McCone Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the McCone Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the McCone Conservation District are suitable and accurate. McCone Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by McCone Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the McCone Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the McCone Conservation District is granted for all projects requested. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of McCone Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 14,299 acre-feet at a flow rate not to exceed 99.5 cfs to serve a total of 6,122 irrigated acres.

2. Relative to other reservations, the priority date of the McCone Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

3. The McCone County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF RICHLAND COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Richland County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Richland County Conservation District Application (Ri-CD App., p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY RICHLAND COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Richland County Conservation District has applied to reserve an annual amount of 25,349 acre feet of water to be diverted at a maximum rate of 186.9 cfs to supply full-service irrigation water to 16 projects totaling 11,141 acres (Ri-CD App., pp. 4, 5, and 12). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. All proposed projects would pump water from the Missouri River. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Richland County Conservation District.

3. The Richland County Conservation District seeks to reserve water for future irrigation (Ri-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY RICHLAND COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Richland County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2), based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Ri-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints

to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Ri-CD App., pp. 7-8; Buxbaum, Pre-filed Dir., pp. 2-3).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY RICHLAND COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Richland County Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for all the proposed projects (Ri-CD App., p. 10). The water use efficiencies associated with the diversionary uses are reasonable (Ri-CD App., pp. 9-12; CD Methodology Manual) as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY RICHLAND COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Richland County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Ri-CD App., pp. 13-16; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the Richland County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all proposed projects were found to be economically feasible in at least 81% of the 300 scenarios examined (Ri-CD App., p. 15).

9. The Richland County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs Direct, Tr. Day 2, pp. 11-15).

10. The Richland County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Richland County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1, p. 168). The physical supply of

water on the Lower Missouri River is excellent (Perkins, App., Pre-filed Dir., p. 4).

12. The Richland County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Richland County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The Richland County CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100-percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Ri-CD App., pp. 19-20). Under these assumptions, the analysis indicated that 5 of the projects would require subsidies.

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Richland County CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Buxbaum, Pre-filed Dir., pp. 4-5; Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. The potential exists to grow other crops on irrigated lands along the Lower Missouri River such as sugar beets, barley, potatoes, and corn silage. These crops have the potential to offer greater economic benefits than alfalfa (Perkins, App., Dir., Tr. Day 2, pp 65-66). Sugar beets grown on irrigated lands along the Missouri River are now providing economic benefits, and there is the potential that additional acres will be needed to support the needs of local sugar refiners in the future (Harmon, Dir., Tr. Day 7, pp. 267-269; Knudsen, Cross, Tr. Day 2, pp. 92-95).

19. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

20. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3 thru L-25).

21. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

22. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

23. The benefits of granting a reservation to the Richland County CD exceed those of not granting a reservation.

24. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

25. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

26. There are adverse effects to other resources that may result from development of this project (Ri-CD App., pp. 17-21; DEIS, pp. 128-129, 133-134, 137-146, 152-153, 159, 160-162, 165-171).

27. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

28. The Richland County Conservation District has identified a management plan for developing and financing its water reservation projects (Ri-CD App., pp. 21-23) as required by ARM 36.16.107B(7)).

29. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

30. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Ri-CD App., p. 3; ARM 36.16.107B(5) and (6)).

31. As conditioned, and subject to existing water rights with an earlier priority date, the Richland County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Richland County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Richland County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Richland County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Richland County Conservation District are suitable and accurate. Richland County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Richland County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Richland County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Richland County Conservation District is granted for all projects requested. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Richland County Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 25,349 acre-feet at a flow rate not to exceed 186.9 cfs to serve a total of 11,141 irrigated acres.

2. The Richland County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

3. Relative to other reservations, the priority date of the Richland County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the Roosevelt County Conservation District
Water Reservation No. 40S L084501-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF ROOSEVELT COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Roosevelt County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Roosevelt County Conservation District Application (Ro-CD App.), p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY ROOSEVELT COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Roosevelt County Conservation District has applied to reserve an annual amount of 73,115 acre feet of water to be diverted at a maximum rate of 558.8 cfs to supply full-service irrigation water to 21 projects totaling 24,979 acres (Ro-CD App., pp. 6, 7, and 15). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. All proposed projects would pump water from the Missouri River. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Roosevelt County Conservation District.

3. The Roosevelt County Conservation District seeks to reserve water for future irrigation (Ro-CD App., p. 8). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY ROOSEVELT COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Roosevelt County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Ro-CD App., p. 9).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints

to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Ro-CD App., pp. 9-10; Knudsen, Pre-filed Dir., p. 2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY ROOSEVELT COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Roosevelt County Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the projects (Ro-CD App., p. 12). The water use efficiencies associated with the diversionary uses are reasonable (Ro-CD App., pp. 11-15; CD Methodology Manual) as required by ARM 36.16 107B(3).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY ROOSEVELT COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Roosevelt County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Ro-CD App., pp. 16-18; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the Roosevelt County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all proposed projects were found to be economically feasible in at least 34 percent of the 300 scenarios examined (Ro-CD App., p. 18).

9. The Roosevelt County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2, pp. 11-15).

10. The Roosevelt County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Roosevelt County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1, p. 168). The physical supply of

water on the Lower Missouri River is excellent (Perkins, App., Pre-filed Dir., p. 4).

12. The Roosevelt County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Roosevelt County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The Roosevelt County CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100 percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Ro-CD App., pp. 25-27). Under these assumptions, the analysis indicated that the proposed projects would require subsidies (Ro-CD App., p. 26).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Ro-CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs, crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Knudsen, Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. The potential exists to grow other crops on irrigated lands along the Lower Missouri River such as sugar beets, barley, potatoes, and corn silage. These crops have the potential to offer greater economic benefits than alfalfa (Perkins, App., Dir., Tr. Day 2, pp 65-66). Sugar beets grown on irrigated lands along the Missouri River now are providing economic benefits, and there is the potential that additional acres will be needed to support the needs of local sugar refiners in the future (Harmon, Dir., Tr. Day 7, pp. 267-269; Knudsen, Cross, Tr. Day 2, pp. 92-95).

19. DNRC did not consider government payments in its financial feasibility analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir. Day 2, pp. 24).

20. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3 thru L-25).

21. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

22. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

23. The tribes of the Fort Peck Indian Reservation have negotiated a water rights compact with the state of Montana. Many of the Roosevelt CD projects lands are within the boundary of the Fort Peck Indian Reservation (Davis, Obj., Pre-filed Dir., p. 1).

24. Although the projects were designed to be on only deeded lands, small parcels may be on trust lands held by the Fort Peck Tribes and project water delivery systems, by necessity, often cross trust lands (Knudsen, Cross, Tr. Day 2, pp. 98-99).

25. Parcels in projects CBI-15 and CBI-19 contain lands that are held in trust for the tribes of the Turtle Mountain Indian Reservation (Davis, Obj., Pre-filed Dir., p. 1).

26. The benefits of granting a reservation to the Roosevelt CD exceed those of not granting a reservation.

27. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

28. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

29. There are adverse effects to other resources that may result from development of these projects (Ro-CD App., pp. 19-23; DEIS, pp. 128-129, 133-134, 137-146, 152-153, 160-162, 165-171).

30. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

31. The Roosevelt County Conservation District has identified a management plan for developing and financing its water reservation projects (Ro-CD App., pp. 25-29) as required by ARM 36.16.107B(7)).

32. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

33. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Ro-CD App., pp. 3-5; ARM 36.16.107B(5) and (6)).

34. As conditioned, and subject to existing water rights with an earlier priority date, the Roosevelt County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Roosevelt County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Roosevelt County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Roosevelt County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Roosevelt County Conservation District are suitable and accurate. Roosevelt County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Roosevelt County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Roosevelt County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Roosevelt County Conservation District is granted for all requested projects. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Roosevelt County Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 73,115 acre-feet at a flow rate not to exceed 558.8 cfs to serve a total of 24,979 irrigated acres.

2. The reservation will be subject to the following conditions:

a) The quantity of water reserved to the Roosevelt County Conservation District is not in any way a measurable portion

of the compacted water right of the tribes of the Fort Peck Indian Reservation.

b) The quantity of water reserved to the Roosevelt County Conservation District is not in any way a measurable portion of any future water rights that may be compacted to the tribes of the Turtle Mountain Indian Reservation.

3. The Roosevelt County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Relative to other reservations, the priority date of the Roosevelt County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

Application of the Sheridan County Conservation District
Water Reservation No. 40Q L084497-00

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF SHERIDAN COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Sheridan County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Sheridan County Conservation District Application (Sh-CD App.) p. 1).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY SHERIDAN COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Sheridan County Conservation District has applied to reserve an annual amount of 133,587 acre feet of groundwater per year to supply irrigation water to 308 potential projects totaling 42,600 acres (Sh-CD App., p. 1; DEIS, pp. 14-17 and 148). The reserved water will be available for future irrigation use by district cooperators (individual landowners and lessees) within the district (Sh-CD App., p. 4). The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Sheridan County Conservation District.

3. The Sheridan County Conservation District seeks to reserve water for future irrigation (Sh-CD App., p. 4). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190). The Sheridan County CD also seeks to protect the area's lakes and wetlands from excessive drawdown (Holte, Pre-filed Dir., p. 2).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY SHERIDAN COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Sheridan County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) To assure that groundwater resources are properly managed;

b) To assure future availability of irrigation water in Sheridan County and to stabilize and increase production of crops and land values;

c) To assure that increasing industrial water demands will not limit water availability for agricultural purposes;

d) To assess the potential environmental degradation that irrigation might cause and take steps to alleviate the problem before it begins;

e) To assure a more favorable economic timetable for farmers to accumulate capital to finance irrigation projects; and

f) To assure that future water demands are quantified to alleviate potential interstate or international water conflicts (Sh-CD App., p. 5).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY SHERIDAN COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Sheridan County Conservation District has established methodologies used to determine the amounts requested (Sh-CD App., pp. 78-84). The water use efficiencies associated with the diversionary uses are reasonable (Sh-CD App., pp. 78-84), as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY SHERIDAN COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Sheridan County Conservation District using procedures outlined in its water reservation application (Sh-CD App., pp.85-123).

8. For each project, the Sheridan County CD, estimated costs and benefits for various scenarios and compared these to the values of the existing agricultural operations. The scenarios included variations in well depths, pumping levels, crop types, soil types, and sprinkler systems. Analysis were conducted using a 5 percent discount rate, and also for a 8.125 percent interest rate. The sensitivity of projects to increases in electricity rates was also analyzed. All proposed projects were found to be economically feasible, and irrigation benefits exceeded those of the existing agricultural operation in at least some of the scenarios examined (Sheridan CD, App., pp.85-120).

9. The Sheridan County CD analyzed the financial feasibility of the projects for various scenarios. The scenarios examined assumed a 20-year loan at 12% interest, under various combinations of crops, soil types, water levels, and sprinkler systems. Scenarios that were not feasible at the 12% interest rate were re-examined at an 8.125% interest rate. All of the projects were financially feasible in at least some of the scenarios examined at the 12% rate (Sh-CD App., pp. 25-27).

10. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement (DEIS, pp. L3-L24) For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

11. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Holte, Pre-filed Dir., pp. 3-4; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

12. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

13. Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15.; Sh-CD App., pp. 139-140). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir. Day 2, pp. 24).

14. The Sheridan CD projects lands are located north of the boundaries of the Fort Peck Indian Reservation. The Fort Peck Tribes have compacted water rights which include a schedule of instream flows for Big Muddy Creek (Davis, Obj., Pre-filed Dir., p. 1).

15. The Sheridan County groundwater areas is underlaid by several aquifers. These include the following: (1) the Westby-Dagmar outwash including the Coalridge channel and other recharge channels, (2) preglacial Missouri River terrace gravels, (3) tributary outwash deposits, and (4) alluvium adjacent to Big Muddy Creek (DEIS, pp. 34-36 and 98-99).

16. The total amount of water requested by the Sheridan County CD is not available from the aquifers on a sustainable basis (Donovan, Pre-filed Dir., p. 4).

17. In 1988, the average annual depletions from irrigation activities in the Westby-Dagmar and associated glacial outwash aquifers was 4,821 af/y (Donovan, p. 70, 1988; DEIS, p. 118). In 1988, the lowest estimated sustainable yield of the Westby-Dagmar and associated glacial outwash aquifers, accounting for these annual depletions, was 7809 af/y. The highest estimated sustainable yield, accounting for these annual depletions, was 17,479 af/y (DEIS, p. 99). Since 1988, approximately 2000 af/y has been permitted in the Westby-Dagmar and associated glacial outwash aquifers. The Board obtained the information concerning the status of current permits from the Department of Natural Resources and Conservation, Water Rights Bureau, Permit Records and takes judicial notice thereof.

18. There are adverse effects to other resources that may result from development of the proposed projects (Sh-CD App., pp. 17-18; DEIS, pp. 130, 134, 141-143, 152, 159, 160-162, 165-167, 169-171).

19. The U.S. Fish and Wildlife Service manages the Medicine Lake National Wildlife Refuge and associated lakes and wetlands in Sheridan County. Over 90 percent of the refuge is underlaid by the preglacial Missouri River, Westby-Dagmar, or Muddy Creek aquifer (Gutzke, Pre-filed Dir., p. 2).

20. The Medicine Lake National Wildlife Refuge is an important waterfowl production area. It also provides habitat to endangered species such as the piping plover (Gutzke, Pre-filed Dir., p. 2). Sheridan County is the state's principal plover nesting area (Christopherson, Obj., Pre-filed Dir., p.6).

21. Many of the lakes and wetlands in Sheridan County are in hydrologic contact with the underlying aquifers. Water level observations and groundwater observations using continuous recording devices plainly show that groundwater and lake water are closely interconnected and fluctuate together, although not always in proportion (Donovan, Pre-filed Dir., pp. 3-4). As much as 100,000 acre-feet of the approximately 114,000 acre-feet of water stored in the lakes in the Medicine Lake drainage might be connected to the Westby-Dagmar aquifer (DEIS, pp. 119-120).

22. The U.S. Fish and Wildlife Service diverts spring flows from Big Muddy Creek into Medicine Lake (DEIS, p. 36). It is possible that these diversions stabilize groundwater levels in the southern portion of the Westby Dagmar aquifer (DEIS, p. 36).

23. Pumping groundwater for irrigation has the potential to lower aquifer levels and associated levels in hydrologically connected wetlands and lakes (Shapley, Pre-filed Dir., pp. 4-7).

24. A level of groundwater drawdown that is acceptable for irrigation purposes could have adverse effects to wetland water levels. Over most of the area, lakes will become dry before the aquifer will become unusable for irrigations (Shapely, Dir., Tr. Day 5, pp. 127-129).

25. The benefits of granting a reservation to the Sheridan CD exceed those of not granting a reservation.

26. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

27. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

28. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

29. The Sheridan County Conservation District has identified a management plan for developing and financing its water reservation projects (Sh-CD App., pp. 25-28) as required by ARM 36.16.107B(7)).

30. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

31. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Sh-CD App., p. 3; ARM 36.16.107B(5) and (6)).

32. As conditioned, and subject to existing water rights with an earlier priority date, the Sheridan County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Sheridan County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Sheridan County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Sheridan County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Sheridan County Conservation District are suitable and accurate. Sheridan County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Sheridan County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Sheridan County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Sheridan County Conservation District is granted a reservation for 15,479 acre-feet per year of groundwater, subject the condition outlined in IV (2). The water can be used on a first-come-first-serve basis for any of the projects included in the Sheridan County CD application form 610A. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Sheridan County Conservation District for those particular projects and by reference are made a part of this Order. The water is to be administered by the Sheridan County CD following the procedures outlined in the management plan of its application.

2. When the total volume of water permitted by the Sheridan County Conservation District reaches 5,809 acre-feet, the Sheridan

County CD will notify the Board and temporarily stop issuing authorization to use reserved water. At that time, notice will be given to all local water users and other interested parties including but not limited to the U.S. Fish and Wildlife Service, Fort Peck Tribes, and Montana Department of Fish, Wildlife and Parks. Before Sheridan County CD is allowed to resume issuing authorization to use reserved water, a hearing will be held before the Board to determine whether further groundwater development will adversely effect other water users or other resources. Persons and entities other than those who appeared in this proceeding, may be permitted to participate in any hearing conducted by the Board upon a showing that their interests may be impacted by further development of the reserved water. The Board will conduct a hearing in accordance with its rules and the Montana Administrative Procedures Act. Sheridan County CD has the burden of showing that continued development of its reserved water will not adversely affect other water users or other resources. If the Board finds that development by the Sheridan County CD has not resulted in adverse effects to other water users or resources, it may authorize the Sheridan County CD to continue development of its reservation subject to any appropriate conditions. If adverse effects are found, the Board may modify or condition the remaining portion of the Sheridan County CD reservation as appropriate.

3. The Sheridan County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Relative to other reservations, the priority date of the Sheridan County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. If at anytime in the future after this project is in place when Fort Peck Tribal instream flows on Big Muddy Creek cannot be met, then a call on Big Muddy Creek may be placed by the Fort Peck Tribes which may be enforced against this reservation.

6. The quantity of water reserved to the Sheridan County Conservation District is not in any way a measurable portion of any future water rights that may be compacted to the tribes of the Turtle Mountain Indian Reservation.

7. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF VALLEY COUNTY CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Valley County Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Valley County Conservation District Application (Va-CD App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY VALLEY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Valley County Conservation District has applied to reserve an annual amount of 7,668 acre feet of water to be diverted at a maximum rate of 54.1 cfs to supply irrigation water to 10 projects totaling 3,249 acres (Va-CD App., pp. 4, 5, and 13). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The proposed projects would pump water from the Milk and Missouri rivers, and groundwater. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Valley County Conservation District.

3. The Valley County Conservation District seeks to reserve water for future irrigation (Va-CD App., p. 6). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY VALLEY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Valley County Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1985, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Va-CD App., p. 7).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints

to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Va-CD App., pp. 7-8; Strommen, Pre-filed Dir., pp. 1-2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY VALLEY COUNTY CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Valley County Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the proposed projects (Va-CD App., p. 10-11). The water use efficiencies associated with the diversionary uses are reasonable (Va-CD App., pp. 9-13; CD Methodology Manual) as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY VALLEY COUNTY CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed projects was evaluated by the Valley County Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Va-CD App., pp. 14-16; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, the Valley County CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under these assumptions, all proposed projects were found to be economically feasible in at least 85 percent of the 300 scenarios examined (Va-CD App., p. 16).

9. The Valley County CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs Dir., Tr. Day 2, pp. 11-15).

10. The Valley County CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. The Valley County CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1, p. 168). The physical supply of

water on the Lower Missouri River is excellent (Perkins, App., Pre-filed Dir., p. 4).

12. The Valley County CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. The Valley County CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. The Valley County CD and DNRC analyzed the financial feasibility of the projects based on the assumption that the projects would be 100-percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Va-CD App., pp. 19-20). Under these assumptions, the analysis indicated that 3 of the projects would require subsidies (Va-CD App., p. 23).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Va-CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Strommen, App., Pre-filed Dir., p. 3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances could reduce the cost of irrigating land in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. The potential exists to grow other crops on irrigated lands along the Lower Missouri River such as sugar beets, barley, potatoes, and corn silage. These crops have the potential to offer greater economic benefits than alfalfa (Perkins, App., Dir., Tr. Day 2, pp 65-66). Sugar beets grown on irrigated lands along the Missouri River are now providing economic benefits, and there is the potential that additional acres will be needed to support the needs of local sugar refiners in the future (Harmon, Dir., Tr. Day 7, pp. 267-269; Knudsen, Cross, Tr. Day 2, pp. 92-95).

19. DNRC did not consider government payments in its financial feasibility analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15). Further, producers may have money that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir. Day 2, pp. 24).

20. DNRC compared water values for the projects to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

21. The recreation values used by DNRC are those derived for the Middle Missouri River Basin above Fort Peck Dam. These values represent an upper bounds of recreation values in the Lower Missouri River Basin (Goroski, Cross, Tr. Day 6, pp. 40-42).

22. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

23. Portions of project VA-03 are on lands within the boundaries of the Fort Peck Indian Reservation (Davis, Obj., Pre-filed Dir., p. 1).

24. The benefits of granting a reservation to the Valley CD exceed those of not granting a reservation.

25. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

26. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

27. There are adverse effects to other resources that may result from development of this project (Va-CD App., pp. 17-21; DEIS, pp. 128-129, 133-134, 137-146, 152-153, 159, 160-162, 165-171).

28. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

29. The Valley County Conservation District has identified a management plan for developing and financing its water reservation projects (Va-CD App., pp. 22-24) as required by ARM 36.16.107B(7)).

30. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

31. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Va-CD App., pp. 3; ARM 36.16.107B(5) and (6)).

32. As conditioned, and subject to existing water rights with an earlier priority date, the Valley County Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Valley County Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Valley County Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Valley County Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Valley County Conservation District are suitable and accurate. Valley County Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Valley County Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Valley County Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Valley County Conservation District is granted for all projects requested. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Valley County Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 7,668 acre-feet at a flow rate not to exceed 54.1 cfs to serve a total of 3,249 irrigated acres.

2. The quantity of water reserved to the Valley County Conservation District is not in any way a measurable portion of the compacted water right of the tribes of the Fort Peck Indian Reservation.

3. The Valley County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1985.

4. Relative to other reservations, the priority date of the Valley County Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in

priority with all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF WIBAUX CONSERVATION DISTRICT TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a)).

1. The Wibaux Conservation District is a public entity organized and operated under the State Conservation District's Act (MCA §76-15-101, et seq), and is a qualified reservant pursuant to MCA §85-2-316 (Wibaux Conservation District Application (Wi-CD App.) p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY WIBAUX CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(1993); ARM 36.16.107B(1)(b)).

2. The Wibaux Conservation District has applied to reserve an annual amount of 1,767 acre feet of water to supply irrigation water to 30 water spreading projects totaling 1,174 acres (Wi-CD App., pp. 4, 5, and 13). The purpose of the reservation is to reserve water that will be put to beneficial use by district cooperators (individual landowners and lessees) within the district. The locations, amounts of water requested, sources of water, and acreage of the individual projects applied for are as set forth in the application filed by the Wibaux Conservation District.

3. The Wibaux Conservation District seeks to reserve water for future irrigation (Wi-CD App., p. 7). Irrigation is a beneficial use as defined by ARM 36.16.102(3); DEIS, p. 190).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY WIBAUX CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The Wibaux Conservation District has established a need for the reservation pursuant to ARM 36.16.107B(2) based on the following:

a) Water use in the Missouri Basin and existing water rights together with new permits could leave little water available for future use by the District. A priority date of July 1, 1989, allows water use by the District. Furthermore, the potential exists for conflict with downstream states over water use in the Missouri Basin (Wi-CD App., p. 8).

b) The district desires to improve long-term planning for its water use, and there are, at present, economic constraints to near term development on a permit by permit basis. If water were not reserved, it could be appropriated by competing uses in Montana or downstream states (Wi-CD App., pp. 8-9; Obrigewitch, Pre-filed Dir., p. 2).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY WIBAUX CONSERVATION DISTRICT (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. The Wibaux Conservation District has established methodologies used to determine the amounts requested. Water was found to be physically available for the projects (Wi-CD App., p. 11). The water use efficiencies associated with the diversionary uses are reasonable (Wi-CD App., pp. 10-13; CD Methodology Manual) as required by ARM 36.16 107B(3)).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY WIBAUX CONSERVATION DISTRICT IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

6. To be in the public interest, the expected benefits of a reservation should be reasonably likely to exceed the costs.

7. The economic feasibility of the proposed project was evaluated by the Wibaux Conservation District with the assistance of DNRC using procedures outlined in the 1991 DNRC Methodology Manual (Wi-CD App., pp. 14-17; Dolan, Dir., Tr. Day 1, pp. 161-162).

8. For each project, Wibaux CD and DNRC estimated net present values for 300 scenarios over a 70-year planning horizon, accounting for variability in future crop prices, production costs and crop yields for each proposed project (Tubbs, Dir., Tr. Day 2, pp. 11-26; Tubbs, Cross, Tr. Day 2, pp. 27-33). The economic model assumed a typical farm and a 4.6% discount rate (Tubbs, Dir., Tr. Day 2, pp. 18-22). Under this analysis, all projects were found to be economically feasible in at least 35 percent of the 300 scenarios examined (Wi-CD App., pp. 17).

9. Wibaux CD and DNRC assumed that an alfalfa/small grain rotation would be grown on all the acres to be developed (Tubbs, Dir., Tr. Day 2, pp. 11-15).

10. Wibaux CD and DNRC assumed that alfalfa prices would not be depressed on account of an additional 158,000 acres of irrigated alfalfa production (Tubbs, Cross, Tr. Day 2, pp. 32-33).

11. Wibaux CD and DNRC assumed water would be available at least eight years out of ten, which is considered the minimum necessary for a profitable irrigation operation (Methodology Manual p. 7; Dolan, Dir., Tr. Day 1 p. 168).

12. Wibaux CD and DNRC assumed that a portion of the water diverted for a project would not be consumed by crops and could eventually return to the stream (Dolan, Dir., Tr. Day 1, pp. 199-202).

13. Wibaux CD and DNRC did not take into account the value of the present agricultural operation (present values of net revenue) in their economic analysis (Goroski, Cross, Tr. Day 6, pp. 12-18).

14. Wibaux CD and DNRC analyzed the financial feasibility of the project based on the assumption that the project would be 100 percent debt financed, and the bank would loan that money over ten years at 10 percent interest (Tubbs, Dir., Tr. Day 2, p. 23; Wi-CD App., pp. 19-20). Under these assumptions, the analysis indicated that the projects would require subsidies (Wi-CD App., p. 20).

15. The direct benefits of water for irrigation was determined by DNRC in the Draft Environmental Impact Statement, based on a similar analysis used in developing the Wibaux CD application, but with some refinements (DEIS, pp. L3-L24). For each project, DNRC estimated net present values for 300 scenarios, accounting for variability in future crop prices, present values of net revenue, production costs and crop yields, and power replacement costs for each proposed project (Goroski, Cross, Tr. Day 6, pp. 5-19). The benefits of each project to water on an acre-foot basis are set forth in the Draft Environmental Impact Statement in Table L-1. These are the median irrigation benefit values today of 70 years of returns, less costs (Goroski, Redir., Tr. Day 6, pp. 76-77).

16. There are other indirect benefits associated with irrigation development that merit consideration. These benefits include multiplier effects, business to equipment suppliers, government payments, tax benefits to local government, growth of agricultural production, community stability, and maintaining a diverse and healthy rural economy (Obrigewitch, Pre-filed Dir., pp. 2-3; Perkins, App., Pre-filed Dir., pp. 5-6). The equipment requirements for irrigated agriculture, which are much greater than what is needed for dry land farming, will generate revenue for equipment suppliers in local communities (Perkins, App., Pre-filed Dir., Tr. Day 2, p. 64). Irrigation provides stability to a farm or ranch by sustaining hay and grain yields during drought years when dryland crops and hay wither (Perkins, App., Dir., Tr. Day 2, pp. 65-66; Doornek, Dir., Wolf Point Public Hearing, pp. 23-24). Agriculture is the backbone of the economy in the Lower Missouri Basin (Knudsen, App., Pre-filed Dir., p. 2).

17. The DNRC economic analysis was based on current technology. However, technological advances that could reduce the cost of irrigating land may occur in the future (Perkins, App., Dir., Tr. Day 2, pp. 58-59).

18. DNRC did not consider government payments in its financial analysis (Tubbs, Dir., Tr. Day 2, pp. 23-24). Cost-share and agricultural financing programs are available for irrigation projects that could offer financial benefits (Perkins, App., Dir., Tr. Day 2, p. 23; Menger, App. Dir., Baker Public Hearing, pp. 13-15; Obrigewitch, Pre-filed Dir., p. 2). Further, producers may have money

that they can apply to a system without having to borrow all the necessary capital (Tubbs, Dir., Tr. Day 2, pp. 24).

19. DNRC compared water values for the project to instream water values in the DEIS. These include recreation and hydropower values (DEIS, pp. 166-171 and L-3-L-25).

20. The recreation values used by DNRC in the Draft EIS are those derived for the Middle Missouri River Basin above Fort Peck Dam. In its final EIS, DNRC concluded that streams in the Little Missouri Basin have recreation values, but that the dollar values from the Middle Missouri Basin are not applicable (FEIS, p. 82).

21. The hydropower losses would occur to electricity generated at dams in downstream states (DEIS, p. 169). Although decreases in downstream hydropower production could affect Montana ratepayers, these losses are offset in a substantial but unquantifiable amount. The agricultural use of water results in additional indirect benefits. It encourages economic diversity within the community and promotes the overall economic health of rural areas (Findings of Fact 15).

22. Projects WI-61, WI-201, WI-202, and WI-221 are located on Lamesteer Creek and its tributaries upstream of the Lamesteer National Wildlife Refuge (DEIS, p. 160). The projects would divert a maximum of 204 acre-feet per year (Wi-CD App., p. 13).

23. The Lamesteer National Wildlife Refuge has a water right claim to store 647 acre-feet per year of Lamesteer Creek water in a 105 acre wetland (Gutzke, Obj., Pre-filed Dir., p. 1). The refuge collects and holds spring runoff, but the wetland has only filled three times over the past ten years (Gutzke, Obj., Pre-filed Dir., p. 2). The 50-percent exceedence (median) volume of water available from the Lamesteer Creek Drainage above the refuge is 619 acre-feet per year (Estop-Johnston, Obj., Dir., Tr. Day 5, pp. 42-44). Diversions by the proposed projects listed in Finding #22 would result in less water available for storage in the wetland and would thereby decrease wildlife production (Gutzke, Obj., Pre-filed Dir., Dir., p. 2).

24. Project WI-93 would irrigate 6 acres on an unnamed tributary of Beaver Creek (Wi-CD App., p. 5). The average snow melt runoff for that drainage at the project is 15 acre-feet (Wi-CD App., p. 21). A user downstream of the project has a water spreading system with a right to 63 acre-feet per year. The water spreading system has filled only 2 years in 10 (Goroski, Dir., Tr., Baker Public Hearing, p. 11). The presence of saline soils on the proposed project lands is a concern (DEIS, p. 136).

25. The benefits of granting a reservation for the Wibaux Conservation District exceed those of not granting a reservation.

26. No reasonable alternatives to the projects that have reservations granted were identified that had greater net benefits.

27. Failure to reserve water for these projects will likely result in an irretrievable loss of natural resource development opportunities (Perkins, App., Pre-filed Dir., pp. 3-4).

28. There are adverse effects to other resources that may result from development of this project (Wi. CD App., pp. 18-23; DEIS, pp. 130-131, 136-137, 140-143, 152-171).

29. If conditioned that all projects must comply with all health and water quality laws, these reservations will cause no significant adverse impacts to the public health, welfare, and safety.

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8)).

30. Projects WI-191 and WI-235 would irrigate the same parcel of land (Wi-CD App., pp. 49 and 55).

31. The Wibaux Conservation District has identified a management plan for developing and financing its water reservation projects (Wi-CD App., pp. 24-27) as required by ARM 36.16.107B(7)).

32. The applicant district is capable of exercising reasonable diligence towards feasibly financing its project(s), and applying reservation water to beneficial use in accordance with the management plan (ARM 36.16.107B(7)).

33. The water reservation of the applicant will be used wholly within the state and only within the Missouri River Basin (Wi-CD App., p. 3; ARM 36.16.107B(5) and (6)).

34. As conditioned, and subject to existing water rights with an earlier priority date, the Wibaux Conservation District's water reservation will not adversely effect any senior water rights pursuant to ARM 36.16.107B(8).

III. CONCLUSIONS OF LAW

1. Wibaux Conservation District is a qualified applicant for a water reservation (MCA §85-2-316(1)(1993)).

2. The purpose of the Wibaux Conservation District application is a beneficial use (MCA §85-2-316(4)(a)(i)(1993); ARM 36.16.107B(1)(b)).

3. The need for the Wibaux Conservation District has been established. Specifically, the Conservation District has established that there is a reasonable likelihood that future in-state competing water uses would consume the water available for the purpose of its reservation (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2)).

4. The methodologies and assumptions used by the Wibaux Conservation District are suitable and accurate. Wibaux Conservation District has established the amount of water needed to fulfill its reservation (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3)).

5. It has been established to the satisfaction of the Board that the amount requested by Wibaux Conservation District as modified and conditioned herein is needed to fulfill the purpose of the reservation (MCA §85-2-316(4)(a)(iii); ARM 36.16.107B(3)).

6. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the reservation requested by the Wibaux Conservation District is in the public interest (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4)).

7. Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

8. The Board may grant, deny, modify or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA §85-2-316).

9. The Board has no authority under the reservation statutes or any other statutes to determine, or alter any water right that is not a reservation (MCA §85-2-316(14)).

IV. ORDER

1. Subject to all applicable conditions and limitations, the application of the Wibaux Conservation District is granted for the following projects: WI-41, WI-42, WI-43, WI-71, WI-72, WI-73, WI-74, WI-75, WI-91, WI-92, WI-121, WI-151, WI-161, WI-162, WI-171, WI-181, WI-191, WI-192, WI-211, WI-232, WI-233, WI-234, WI-236, WI-237. The amount of diversion, volume of diversion, places of diversion and places of use are as set forth in the reservation application of Wibaux Conservation District for those particular projects and by reference are made a part of this Order. The total amount of water reserved for this applicant is 1509 acre-feet to serve a total of 1006 irrigated acres.

2. The reservation application of the Wibaux Conservation District is denied for the following projects: WI-61, WI-201, WI-202, WI-221, WI-93, and WI-235.

3. Wibaux County Conservation District water reservations approved by the Board shall have a priority date of July 1, 1989.

4. Relative to other reservations, the priority date of the Wibaux Conservation District shall be subordinate to the consumptive use reservations granted to all municipalities, equal in priority with

all other reservations granted to conservation districts, and shall have priority over the reservations granted to the Montana Department of Fish, Wildlife and Parks for instream flows.

5. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

II. FINDINGS OF FACT

A. FINDINGS ON THE QUALIFICATION OF DEPARTMENT OF FISH, WILDLIFE AND PARKS TO RESERVE WATER (MCA §85-2-316(1)(1993); ARM 36.16.107B(1)(a).)

1. The Montana Department of Fish, Wildlife and Parks (DFWP) is an executive branch agency of the State of Montana established pursuant to MCA §2-15-3401, and is qualified to reserve water pursuant to MCA §85-2-316.

2. DFWP is the executive branch agency mandated by statute to provide for the protection, preservation and propagation of all fish and wildlife and their habitat within the state. The DFWP is the responsible agency of state government to apply for instream flow reservations for fish, wildlife and their habitat in the Little Missouri River Basin and Lower Missouri River Basin below Fort Peck Dam (Peterman, Pre-filed Dir., p. 2).

B. FINDINGS ON THE PURPOSE OF THE WATER RESERVATION APPLIED FOR BY DFWP (MCA §85-2-316(4)(a)(1991); ARM 36.16.107B(1)(b).

3. DFWP submitted an application in June, 1991, to reserve waters to maintain minimum flow levels throughout the year or during described portions of the year. In addition, DFWP applied for channel maintenance flows on 21 stream reaches in the Little Missouri River Basin and the Lower Missouri River Basin below Fort Peck Dam, including tributaries of the Milk River. The waters applied for, including the reach boundaries and amounts of water requested, are discussed in the application (DFWP App., pp. 32-141).

4. The instream reservations are for the benefit of the public for fish, wildlife and recreational uses (DFWP App., p. 6; Peterman, Pre-filed Dir., pp. 1-2).

5. A purpose of the reservations is to reserve flows for existing and future beneficial uses to maintain a minimum flow, quantity, and quality of water for fish and wildlife populations and for recreational uses (DFWP App., p. 6; Peterman, Pre-filed Dir., pp. 1-2).

6. A reservation will help maintain fish and wildlife habitat sufficient to accommodate a diversity of species at levels comparable to existing levels. The reservation will contribute to, and maintain a clean and healthful and desirable environment (DFWP App., p. 6).

7. A purpose of the reservations is to sustain adequate levels of water quality (DFWP App., p. 6; Peterman, Pre-filed Dir., p. 5).

C. FINDINGS ON THE NEED FOR THE WATER RESERVATION APPLIED FOR BY DFWP (MCA §85-2-316(4)(a)(ii)(1993); ARM 36.16.107B(2).

8. An instream flow for fish, wildlife, and recreational purposes cannot be obtained through a water use permit (DFWP App., p. 7; Peterman, Pre-filed Dir., pp. 3-5).

9. Water quantities, over and above existing rights, are available for future appropriation. These waters may be appropriated for future off stream use. Future appropriations would deprive the fish, wildlife, and recreational resources of the waters that are necessary to perpetuate them (DFWP App., p. 7).

10. Instream flows of water are necessary to preserve and protect the prairie streams included in this application. These prairie streams provide a diverse habitat for warmwater species of fish (DFWP App., p. 7).

11. Instream flow reservations would help maintain habitat for pallid sturgeon, paddlefish, sicklefin chub, shortnose gar, pearl dace and northern redbelly dace. These are the "Species of special Concern" as recognized by the DFWP and the Montana Chapter of the American Fisheries Society. The pallid sturgeon is listed as an endangered species under federal law (DFWP App., pp. 11-12).

12. Instream flows of water in the Lower Missouri and Little Missouri River Basins are needed to maintain flows necessary for the basic life requirements of the fish, wildlife, and other living organisms that depend upon the flow of these streams and rivers (DFWP App., p. 8).

13. Instream flows will help preserve the reproductive capacity of streams and rivers for fish. Stream riffles and side channels are typically the prime sites chosen for spawning and the rearing of young. These sites are also the stream habitats that are most sensitive to flow reductions. Consequently, the production of young recruits that is needed to sustain stream fisheries is strongly tied to the flows necessary to maintain riffle and side channel habitat (DFWP App., p. 9).

14. Instream flows are necessary to protect the food base for fish. The game fish living in the reaches under application are typically top predators within the stream environment. They depend on some lower form of plant or animal for food. These lower life forms have specific water requirements necessary to sustain their growth and reproduction (DFWP App., p. 9).

15. Instream flows will help protect the quality of water that is necessary to sustain aquatic organisms and will help prevent the further deterioration of water quality during low flow periods. Possible consequences of further lowering stream flows during normal low flow periods are: higher water temperatures, increased amounts of

dissolved solids, increased nutrient concentrations, and lower dissolved oxygen levels, all of which are potentially harmful to aquatic life (DFWP App., p. 9).

16. Instream flows will help preserve sport fisheries which contribute to the region's economy. Anglers spent about $1.7 million in 1985 fishing the waters of the Lower and Little Missouri River Basins. The total economic value of streams in the basin is slightly higher than the amount for fishing alone if other travel related expenses are included (DFWP App., p. 11).

17. Instream flows preserve instream values by protecting the status quo of stream and river flows up to the minimum flows necessary to provide a healthy fishery.

18. DFWP has applied for reservations on nine streams in the Milk River Subbasin. On five of the streams, the request is for instream flows in cold water streams. Those stream reaches are identified in the application as Beaver Creek (Hill County), Beaver Creek #1 (Phillips County), Clear Creek, Little Box Elder Creek, and Peoples Creek (DFWP App., pp. 55-88).

19. These streams support a cold water trout fishery of primarily brook trout, although some rainbow, cutthroat and brown trout are also present. These streams are among the few coldwater trout streams in the region (DFWP App., p. 55).

20. The riparian zone of each of the coldwater streams provides habitat for a variety of game and non-game animal and bird species. Elk, mule and whitetail deer, big horn sheep, pheasant, grouse and a variety of waterfowl utilize the area. In addition, fur bearers such as beaver, mink, muskrat, raccoon, bobcat and coyote are found in the drainage. Non-game wildlife, birds of prey, and songbirds are found in close proximity of the streams (DFWP App., pp. 60, 63, 66, 73, 76).

21. The requested flows are necessary to maintain resident trout populations and to help protect riparian habitat (DFWP App., pp. 60, 63, 66, 74, 76).

22. On the remaining 4 streams in the Milk River subbasin, the DFWP has requested instream flows and also channel maintenance/ dominant discharge flows. Those streams, as identified in the DFWP application, are Battle Creek, Beaver Creek #2 (Phillips County), Frenchman River and Rock Creek (DFWP App., p. 53).

23. The steams identified in the previous paragraph are characterized in the DFWP application as prairie streams. They are typically low-gradient streams consisting of slow, deep pools, long shallow runs, and intermittent riffles (DFWP App., pp. 55, 68, 77, 81, 85).

24. The streams support populations of sauger, walleye, northern pike, channel catfish, and small mouth bass. The natural production occurring in these tributaries contributes to the recruitment of sport fish in the Milk River (DFWP App., pp. 55, 56, 68, 82, 85).

25. The riparian zone of each of the warmwater streams provides habitat for a variety of game and non-game animal and bird species. Antelope, mule and whitetail deer, pheasant, grouse, and partridge utilize the area. The riparian areas provide winter habitat for game and upland game birds. In addition, fur bearers such as beaver, mink, muskrat, raccoon, bobcat and coyote are found in the drainage. Non-game wildlife and birds of prey and songbirds are found in close proximity of the streams (DFWP App., pp. 69, 78, 83, 86).

26. The requested flows are necessary to protect the habitat of walleye, sauger, smallmouth bass, and northern pike, and to maintain habitat for the fish community during low flow periods. The flows will also help protect riparian habitat (DFWP App., pp. 70, 79, 83, 87).

27. DFWP has applied for instream reservations on the Missouri River below Fort Peck Dam for the entire length of the river to the border with the state of North Dakota. The DFWP application divides the request to cover two stream reaches (DFWP App., pp. 26, 33-52).

28. Missouri River Reach #7 is a 10.7 mile stretch of the river starting directly below Fort Peck Dam to the confluence with the Milk River. The stream gradient is very low and averages 0.9 feet/mile. The river channel below the dam was substantially altered during construction of the dam. There are three, 40 foot deep pools, two large, off channel dredge ponds and an island complex with an associated side channel (DFWP App., p. 37).

29. The side channels are important fish habitats in Missouri River Reach #7. The side channels provide a majority of spawning locations for rainbow trout starting April 1 of each year. The side channels also provide habitat for the young of the year throughout the summer and fall until they move into the main channel. It is important to maintain the side channel flows through the end of September of each year for rearing rainbow trout (DFWP App., p. 41; Frazer, Pre-filed Dir., p. 3).

30. Reach #7 provide habitat for shovel nose sturgeon, paddlefish, northern pike, channel catfish, sauger, and walleye (DFWP App., p. 38).

31. The water levels in the side channels fluctuate due to the releases from Fort Peck Dam. The side channel complex provides the best rearing habitat for rainbow trout. It is important to maintain as much of this habitat as possible until the young of the year are large enough to contend with the fluctuating flow conditions that

occur in the side channels due to the operation of the dam (Frazer, Pre-filed Dir., p. 3).

32. Missouri River Reach #8 is from the confluence of the Milk River to the Montana-North Dakota border, a distance of approximately 171.9 miles. The stream gradient is very low, averaging 0.9 feet/mile. In the upper 55 miles of the reach, erosion is taking place due to the lack of sediment in the waters released from Fort Peck Dam. The remaining 117 miles of the river is in a depositional state (DFWP App., p. 46).

33. The game fish found in this reach include sauger, burbot, shovelnose sturgeon, paddlefish, northern pike, walleye, channel catfish, rainbow trout, small mouth bass, pallid sturgeon, and brown trout (DFWP App., pp. 46-47). Angler use on the Missouri River below Fort Peck Dam is lower than that on Montana's Blue Ribbon trout streams, but is a significant recreational activity, nonetheless (Nelson, App., Pre-filed Rebutt., pp. 3-4).

34. There are eight spawning and incubation sites used by sauger along the reach. The spawning and incubation sites are confined to those areas where hard sandstone formations border the river. The scarcity of spawning and incubation sites limits the sauger population and makes it important that adequate flows are maintained through these areas (DFWP App., p. 49).

35. It is necessary to maintain a two-foot minimum water depth over the spawning areas for sauger to successfully reproduce. The requested flows are necessary to maintain the existing resident game fish population and to meet the spawning and incubation flow requirements of sauger (DFWP App., p. 50).

36. In both Missouri River Reach #7 & #8, the riparian zone provides diverse habitats which support many wildlife species. Populations of both mule and whitetail deer occupy the bottomlands. Game birds such as ring-necked pheasants, sharp-tailed grouse and morning doves live along the river. Canada geese and several species of ducks use some of the reaches year round and others when ice free. There is a winter concentration of bald eagles immediately downstream of Fort Peck Dam. Small fur bearers are commonly found along the river corridor (DFWP App., pp. 39-40, 49).

37. The requested flows are necessary to maintain existing resident game fish populations. These flows will: protect the habitat of fish species of "special concern", including the federally listed, "endangered" pallid sturgeon, meet the flow requirement for spawning and incubation of sauger, protect the habitat of the rainbow trout population, and help protect riparian habitat (DFWP App., pp. 42, 50).

38. The DFWP has requested reservations on the Redwater River and Poplar River Subbasins. This request includes the Redwater River Reach #1 and #2 and the East, Middle and West Forks of the Poplar

River and the Poplar River (DFWP App., pp. 91, 92, 95 100, 102, 109, 115, 118).

39. The game fish present in these streams are the northern pike, walleye, sauger, channel catfish, burbot, and smallmouth bass. There exists in all these streams, in varying numbers, non-game forage species including goldeye carp, creek chub, northern redbelly dace, flathead chub, lake chub, emerald shiner, fathead minnow, longnose dace, river carpsucker, shorthead redhorse, white sucker, stonecat, brook stickleback and Iowa darter (DFWP App., pp. 92, 95, 102, 103, 109, 115, 116, 118).

40. Estimates of fishing pressure and harvests for most of these stream reaches are unavailable. Fishing pressure is probably low due to the low human population in the region. However, the streams are fished by local anglers (DFWP App., pp. 92, 95, 109).

41. The Poplar River and its tributaries provide habitat for migrating and breeding water fowl. A variety of duck species and Canada geese nest and use the rivers for migration. Several species of upland game birds, including pheasants, partridge and grouse rely on the riparian habitat. Whitetail deer are the principal big game species and a few mule deer and antelope are found throughout the area. Beaver, muskrat, mink, raccoon and coyotes are the common fur bearers in the area (DFWP App., pp. 103, 104, 109, 116, 119).

42. The Redwater River and its tributaries provide habitat for mule and whitetail deer. Antelope are common throughout the area. The area is frequented by migrating and breeding waterfowl. A variety of duck species and Canada geese nest along the river. Several species of upland game birds, including pheasants, partridge and grouse are found in the drainage (DFWP App., pp. 92-93).

43. The flows requested on these stream reaches are necessary to maintain habitat for game fish during the low flow months, protect spawning and incubation habitats, and to protect the riparian habitat. Studies of biolcgical flow relationships on the Middle Fork of the Poplar River have revealed a strong correlation between minimum stream flows during April and May and the spawning and incubation needs of walleye (Stewart, 1981). Because the West Fork of the Poplar is much like the Middle Fork, similar flow requests were made for April and May to protect walleye spawning and incubation (DFWP App., pp. 93, 96, 107, 110, 116, 119).

44. The DFWP has requested reservations for instream flow for streams in the Little Missouri River Basin on the Little Missouri River, Box Elder Creek, Little Beaver Creek and Beaver Creek (Wibaux County). These are prairie streams with long deep pools separated by short riffles. Comprehensive information on stream flows and hydrology in the basin is limited (DFWP App., pp. 123-124).

45. The game fish species found in these streams are channel catfish, sauger, walleye, and northern pike. The streams support forage species including goldeye, flathead chub, and creek chub. The fisheries are valued locally for sport fishing (DFWP App., pp. 124, 126, 130, 134, 138).

46. These streams provide a unique riparian habitat that contrasts with the surrounding semi-arid, short-grass prairie. Whitetail and mule deer are abundant. Antelope are found in the surrounding farm and rangeland. Upland game birds found within the drainage include various species of grouse, pheasant, partridge and wild turkey. Some species of water fowl are seasonally present. Great blue heron are also found in the drainage. In particular, the Box Elder Creek drainage provides nesting and rearing habitat for great blue heron, Canada geese and other waterfowl. Fur bearers are common and include mink, muskrat, beaver, raccoon, red fox and coyote (DFWP App., pp. 127, 131, 135, 140).

47. The requested flows are necessary to maintain survival habitat for the game fish and other fish during critical low flow periods and to help protect riparian habitat (DFWP App., pp. 127, 131, 135, 140).

D. FINDINGS ON THE AMOUNT OF WATER NEEDED FOR THE WATER RESERVATION APPLIED FOR BY DFWP (MCA §85-2-316(4)(a)(iii)(1993); ARM 36.16.107B(3).)

48. The instream flows requested by DFWP are intended to maintain fishery values. Several methods were used to determine the requested amounts of water. The DFWP utilized the Wetted Perimeter Inflection Point Method, Fixed Percentage Method, Base Flow Method, biological/flow relationships, and the Dominant Discharge/Channel Morphology Concept (DFWP App., pp. 14-22).

49. The most accurate means for deriving minimum flow requests is to directly observe the relationships between stream flows and aquatic populations. This use of biological-flow relationships was not possible for each stream reach due to the extensive commitment of resources required (DFWP App., p. 14).

50. The Wetted Perimeter Method was selected by DFWP to derive minimum instream flow requests for the following cold water streams: Beaver Creek (Hill County), Little Box Elder Creek, Clear Creek, and Peoples Creek) and for certain flows in the Missouri River Reaches #7 and #8 in DFWP's application (DFWP App., p. 14; Nelson, Pre-filed Dir., p. 3).

51. DFWP has completed a comprehensive survey of the instream flow methods literature (Leathe & Nelson 1989). This survey discussed the significance of existing methods to Montana's history of instream flow development, a survey and analysis of instream flow methods, the relationship between instream flow methods, and why Montana uses the

Wetted Perimeter Method in its instream flow program. This synopsis offers the scientific basis for the use of the Wetted Perimeter Method and other methods to determine the amounts of the requested flows. (DFWP App., pp. 20-21).

52. The Wetted Perimeter Method is based on the assumption that food supply can significantly influence the number and size of fish that can be maintained in the stream. The principal food of game fish are aquatic invertebrates which are produced in the stream riffles. A riffle is a section of stream where water is less deep, and flow is more rapid. Aquatic invertebrates live in the substrate of the riffle areas and require flowing water supplies to live. As the riffled area is more wetted, there is a greater abundance of aquatic invertebrates and more food for game fish (DFWP App., p. 15; Nelson, Pre-filed Dir., p. 4).

53. Wetted perimeter is the distance along the bottom and sides of a channel that is in contact with water when the stream is viewed in cross-section (DFWP App., p. 15; Nelson, Pre-filed Dir., p. 6).

54. The relationship between wetted perimeter and flow for stream riffles generally shows two inflection points where the rate of increase of wetted perimeter changes. Below the lower inflection point, flow spreads out horizontally across the stream bottom, causing the wetted perimeter to increase rapidly for very small increases in flow. A point is eventually reached (at the lower inflection point) where the water starts to move up the sides of the active channel and the rate of increase of wetted perimeter begins to decline. At the upper inflection point, the stream is approaching its maximum width and the water begins to move up the banks as flow increases. Large increases in flow beyond the upper inflection point cause only small increases in wetted perimeter (DFWP App., pp. 18-19; Nelson, Pre-filed Dir., pp. 5-6).

55. The upper inflection point flow is derived from the plot of the relationship between wetted perimeter and flow for the stream riffles of interest. These plots are generated using DFWP's wetted perimeter computer program, which is calibrated using surveyed channel measurements that are taken at different flows for each stream of interest (DFWP App., pp. 20-21; Nelson, Pre-filed Dir., pp. 5-6).

56. Wetted perimeter field data, used to calibrate the wetted perimeter computer program, were collected by two or more DFWP personnel. The field data for the cold streams reaches was collected by one team consisting of two persons. The field data on Missouri River Reaches #7 and #8 was collected by a second team of up to four persons (Nelson, Tr. Day 6, p. 86).

57. DFWP personnel were trained in the use of the Wetted Perimeter Method at workshops conducted by DFWP, often in conjunction with the United States Geological Survey. Training included: theory of the Wetted Perimeter Method, surveying and field techniques,

selection of study sites, data coding, flow measuring procedures, and field exercises (Nelson, Pre-filed Dir., p. 2).

58. Application of the Wetted Perimeter Method by DFWP's field personnel was governed by procedures and standards set forth in DFWP's publication titled "Guidelines for Using the Wetted Perimeter (WETP) Computer Program of the Montana Department of Fish, Wildlife and Parks", (Nelson 1989), (DFWP App., p. 20; Nelson, Pre-filed Dir., p. 2).

59. Riffles are areas of streams that are most sensitive to flow reductions. Therefore, a flow request that wets most of the riffle area will also help to protect a stream's pools and runs - areas where adult fish normally reside (DFWP App., p. 15; Nelson, Pre-filed Dir., p. 5).

60. The Wetted Perimeter Method provides a range of flows from which a single flow recommendation is selected. Professional judgment plays a role in selecting a final flow recommendation using all instream flow methods, including the Wetted Perimeter Method (DFWP App., pp. 18-20; Nelson, Pre-filed Dir., pp. 5-6).

61. The Wetted Perimeter Method used by DFWP to determine the amount of water needed for fishery resources is generally accurate and suitable. It offers a reasonable estimate of the amount of water needed to protect aquatic habitat as it has been applied to the streams in this portion of the DFWP's reservation application.

62. The DFWP used the Fixed Percentage Method to derive its instream flow request for Beaver Creek #1 (Phillips County). This particular stream reach is a coldwater stream which supports brook trout. Due to time constraints and the remoteness of the area, the Wetted Perimeter Method was not used (DFWP App., pp. 21, 75-76; Nelson, Pre-filed Dir., p. 7).

63. The Fixed Percentage Method uses an average of the high inflection point as determined by the Wetted Perimeter Method on known streams. This amount is expressed as a percentage of the average annual flow. The fixed percentage that was used for Beaver Creek #1 (Phillips County) was obtained by using the high inflection point flows derived for the four cold water streams in the Bears Paw Mountains that are part of DFWP's application for reservation (DFWP App., p. 21; Nelson, Pre-filed Dir., p. 7).

64. The Fixed Percentage Method used by DFWP to determine the amount of water needed for fishery resources is generally accurate and suitable. It offers a reasonable estimate of the amount of water needed to provide instream benefits on the streams in this portion of the DFWP's reservation application.

65. DFWP selected the Base Flow Method to determine the instream flow requests for the following waters: Battle Creek, Beaver Creek #2

(Phillips County), Frenchman River, Rock Creek, Redwater River Reach #1 and #2 and the East, Middle and West Forks of the Poplar River, Poplar River, Little Missouri River, Box Elder Creek, Little Beaver Creek and Beaver Creek in Wibaux County (DFWP App., pp. 70, 79, 83, 87, 93, 96, 106, 112, 116, 119, 127, 131, 135, 140).

66. The Base Flow Method was selected to determine the instream flow requests on the warmwater, or prairie streams, because it best reflected the naturally occurring flows. In late summer, fall, and winter the flows in these streams virtually ceases for long periods of time. The flow that exists helps exchange water between pools, freshening the pools and oxygenating the water which is critical to support fish (DFWP App., p. 22).

67. The flows requested by the DFWP are for two time periods during the year. Those two periods are the winter months of December through March and the non-winter months of April through November. For each of these periods the DFWP selected the lowest mean monthly flow for each period. The mean monthly flows were calculated by the U.S. Geological Survey (USGS) (DFWP App., p. 22).

68. DFWP contracted with the Helena office of the USGS to conduct a study to determine the monthly flow characteristics and Dominant Discharge Hydrographs for streams in the Lower and Little Missouri River basins. Estimates were made for 21 sites, 17 in the Lower Missouri River Basin and 4 in the Little Missouri Basin. This report is denominated as Water-Resources Investigations Report 94-4098 (USGS Report) and was made part of the direct testimony of Charles Parrett (Parrett, Pre-filed Dir., p. 2).

69. The USGS Report provides estimates of stream flow characteristics of the mean monthly discharges that are exceeded 90, 80, 50 and 20 percent of the years of extended record (1937-86) and the mean monthly discharge for each month (USGS Report 94-4098).

70. The 1937-86 base period of record was selected and the general study approach used was the same as the previous study done by the USGS in the upper basin of the Missouri River (USGS Report 94-4098).

71. The USGS Report lists the 21 sites for which stream flow estimations were made. Sites identified in the Report as numbers 1, 16-21, are those for which there is gaged streamflow information. The gaged streamflow information at each site did not necessarily cover the base period selected for the Report. To adjust for any differences, a streamflow-record extension statistical program was applied to the data (USGS Report 94-4098).

72. For those gauge sites where the period of actual streamflow record includes the 1937-86 base period, the estimates of monthly streamflow characteristics are based on recorded stream flows and are considered reliable. For those gauge sites where the streamflow

record was augmented by the application of the streamflow-record extension program, the data is considered reliable (USGS Report 94-4098; Parrett, Pre-filed Dir., pp. 2-3).

73. Estimates of stream flow at ungauged sites, were based on two methods, Concurrent Measurement and the Drainage-Area-Ratio Adjustment methods. The Concurrent Measurement Method was used to estimate the stream flows on the West Fork of the Poplar and on the Poplar Rivers (Sites 14 and 15 in the Report). The Drainage-Area-Ratio Adjustment Method was used on the remaining sites (Sites 2-13 in the Report). These two estimation methods are generally considered reliable (USGS Report 94-4098; Parrett, Pre-filed Dir., pp. 2-3).

74. The Base Flow Method used by DFWP to determine the amount of water needed for fishery resources is generally accurate and suitable. It offers a reasonable estimate of the amount of water needed to provide instream benefits as it has been applied to the streams in this portion of the DFWP's reservation application.

75. The DFWP also requested channel maintenance instream flow reservations on the warmwater, or prairie streams, (Battle Creek, Beaver Creek #2 (Phillips County), Frenchman River, Rock Creek, Redwater River Reach #1 and 2 and the East, Middle and West Forks of the Poplar River, Poplar River, Little Missouri River, Box Elder Creek, Little Beaver Creek and Beaver Creek (Wibaux County)) based on the Dominant Discharge/Channel Morphology Concept (DFWP App., pp. 68, 77, 81, 85, 92, 95, 102, 109, 115, 118, 125, 129, 133, 137; Nelson, Pre-filed Dir., pp. 7-8).

76. The streams in question are characterized by long, deep pools separated by widely-spaced riffles. The pools provide refuge for game fish and other fish species from late summer through the winter when flows in the streams decrease. The maintenance of this system of riffles and pools is believed to be critical to survival of the fish species (DFWP App., p 23).

77. It is believed that a bank full discharge at some interval is needed to maintain the morphology of the prairie streams. Flowing water provides the energy to erode and aggrade (deposit) the alluvial material that makes up the bed and banks of prairie streams. This process of erosion and aggradation that occurs during bank full discharges forms and maintains the long, deep pools characteristic of prairie streams (Gillilan, Pre-filed Dir., p. 3).

78. It is not known how long the bank full flow must be present to accomplish the channel shaping that is necessary to maintain the characteristic pools and riffles of prairie streams. Because this fact is unknown, the DFWP, in its application, requested a one-day high flow amount with a stair-step increase up to and a similar stair-step decrease down from that amount (DFWP App., p. 24).

79. In order to assure that the reservation included the high flow that may occur in any given year, the DFWP requested an amount of water which incorporated the stepping up and stepping down to the high flow. This approach resulted in reservations requests for dominant discharge for time periods of 14 to 21 days (DFWP App., p. 24).

80. The stair stepping approach to formulating the DFWP reservation request for the dominant discharge flow is intended to mimic the natural hydrograph of the stream. A hydrograph is a plotting of discharge over time (Gillilan, Pre-filed Dir., p. 5).

81. To arrive at the dominant discharge for the streams included in this portion of the DFWP application, calculations of the two year recurrence interval peak flow by the USGS were used to determine the channel maintenance/dominant discharge reservation request (DFWP App., p. 25).

82. The DFWP did not measure or in any other manner actually observe a bank full discharge on any of the streams at any location for the stream reaches covered by this portion of its application (Nelson, Tr. Day 6, p. 120).

83. The DFWP did not determine, by survey or other measurement at any point, the physical characteristics of cross sections of the stream reaches in this portion of its application. There were no studies on any of the streams reaches covered in this portion of the application to determine the type, origin, or nature of the materials making up the stream bed and banks (Nelson, Tr. Day 6, p. 120).

84. The DFWP selected one site, usually at the mouth or base of a stream reach, to calculate the dominant discharge or bank full flow. The stream reaches on which the DFWP requested instream flow reservations based on the dominant discharge method range in length from 15 to 90 miles. The bank full flow information at one site may or may not be accurate throughout the entire stream reach.

85. The dominant discharge concept is generally accepted within the scientific community. There is, however, a debate about the appropriate methods to determine the dominate discharge and its recurrence interval. DFWP's requested channel maintenance flows may not be an accurate estimate of the dominant discharge or its recurrence interval (Hansen, Obj., Pre-filed Direct, pp.9-11).

86. For the Missouri River reaches #7 and #8, a combination of methods were used in arriving at the instream reservation request. For Missouri River reach #7, the Wetted Perimeter Inflection Point method was used. It was applied to three representative riffles between the Fort Peck Dam and the confluence of the Milk River. It was also used on two riffles in the east side channels within 2.5 miles below the dam. It was also used on two riffles in the 2.5 mile-long eastside channel below the dam (DFWP App., pp. 40-41).

87. Two riffle cross-sections were measured at sites identified as spawning and rearing areas in the east side channel. The data collected was analyzed by use of the WETP computer program. It was determined that a side channel flow of about 250 cfs, would almost completely cover the riffles. A main channel flow that would provide a side channel flow of 250 cfs, is about 7800 cfs. The spawning and rearing period for rainbow trout is April 1 to September 30 of each year (DFWP App., p. 41).

88. For the Missouri River reach #8, the Wetted Perimeter Inflection Point method was also applied on three riffles between the confluence of the Milk River and Wolf Point (DFWP App., p. 49).

89. In the Missouri River reach #8, the DFWP identified 8 sites that were known sauger spawning/incubation reefs. Based on a prior study (cited in the application as Gardner and Stewart (1987)), successful sauger reproduction requires a two foot minimum water depth over the spawning areas (DFWP App., p. 49).

90. In formulating its request for instream flow, the DFWP monitored the river stage heights at two representative sauger spawning reefs located between Poplar and the North Dakota border. The flows needed to satisfy the two foot minimum necessary to cover the spawning/incubation reefs were calculated from the stage height data using options in the WETP computer program (DFWP App., p. 50).

91. The spawning period for sauger is from May 11 to June 30 of each year. A flow of 11,497 cfs is needed to satisfy the two foot minimum criteria at the one of the monitored reefs in Reach #8. This amount represents the largest instream flow request for this time period (DFWP App., p. 50).

92. The DFWP in its application requested instream flows throughout the year. The two periods of the greatest magnitude flow are as has been discussed. The total acre-feet per year for Reach #7 is 5,620,361 and for Reach #8 is 5,522,972 (DFWP App., pp. 43, 51).

93. The requested instream flow exceeds 50% of the annual flow. One-half of the average annual flow of the Missouri River below Fort Peck Dam at Reach #7 is 3,263,500 ac/ft per year and 3,748,500 ac/ft per year at Reach #8 (DEIS, p. 94).

94. The one-half annual flow limitation is applied to the following streams or reaches (FEIS, p. 163).

Stream or Reach	50% Annual Flow (cfs)	Acre/feet/ year
Missouri River #7	4508 cfs	3,263,500
Missouri River #8	5178 cfs	3,748,500

95. Granting the total requests of the various conservation districts for reservations of water from the Missouri River below Fort Peck Dam would have minimal impact on the fisheries in Reaches #7 and #8 (Nelson, Tr. Day 6, p. 129).

E. FINDINGS THAT THE WATER RESERVATION APPLIED FOR BY DFWP IS IN THE PUBLIC INTEREST (MCA §85-2-316(4)(a)(iv)(1993); ARM 36.16.107B(4).)

96. The direct benefits of reserving the requested instream flows include: the preservation of the fisheries resources in the basin, maintenance of wildlife dependant on stream flow, existing riparian communities, and water quality (DFWP App., pp. 142-159).

97. Fisheries resources would be protected by DFWP's reservations.

98. Several Species of Special Concern and Endangered Species reside in streams in the Little and Lower Missouri River Basin. An instream flow reservation would help to protect the habitat for these species.

99. Instream flows maintain the riparian areas and provide habitat for wildlife and birds.

100. A direct cost of reserving the requested instream flows is the cost of administering the reservations if granted (DFWP App., p. 159).

101. The indirect benefits of reserving the requested instream flow are the recreation and tourism associated with fishing, hunting and other outdoor activities and the aesthetic values associated with rivers (DFWP App., pp. 169-170).

102. The indirect costs of reserving the requested instream flow are the lost resource development opportunities (See in general transcript of public hearings). There will not be any indirect costs to any senior water right holders as a result of these reservations, unless that senior user elects to undergo a change of use. In that case, DFWP or any other junior user may elect to object to that change of use. A valid objection by a junior user may result in additional costs to the senior user (MCA §85-2-402(2)).

103. Instream flow reservations will have an effect on the use of existing irrigation water rights if the reservants object to changes in existing rights. These are indirect costs to existing water right holders. All junior water right holders, including reservants, have the right to object to changes in senior water rights (Spence, Pre-filed Dir., p. 5). Such objections do impact existing water rights, by allowing the reservant to object to changes. These costs have not been quantified by the applicant.

104. DFWP's history of objections to changes in water rights with respect to its "Murphy" rights and Yellowstone Basin reservation rights, shows that it objects infrequently to such changes (Spence, Pre-filed Dir., pp. 5-6).

105. The applicant's costs of applying for the reservations and of conducting the contested case hearing are not direct or indirect costs.

106. There are no other reasonable alternatives with greater net benefits (ARM 36.16.107B(4)(c)).

107. Depending on the location, timing, and amount of water diverted, incremental development of new water use permits could cause an irretrievable loss of water quality, fisheries, and opportunities for recreation (ARM 36.16.107B(4)(d)).

108. Stream flow depletions could reduce components of the natural environment, including fishery resources, wildlife riparian areas, and water quality (DFWP App., p. 184).

109. Reservations for instream flow are the only way to protect stream flow for water quality, fisheries and recreation on nearly all streams where such reservations are requested (Peterman, Pre-filed Dir., pp. 3-4; Spence, Pre-Filed Dir., pp. 10-11).

110. The Board approved all of the conservation districts' applications for reservations thereby protecting the future irrigation potential in the counties of the Lower and Little Missouri River Basins. Those reservations will help preserve the local tax base that is fostered through irrigation projects (see Board Order, pp. 76-144 supra). DFWP's instream flow reservation would not have adverse impacts to public health, safety and welfare (ARM 36.16.107B(4)(e)).

111. The instream flows requested by DFWP will: help to maintain the existing resident fish populations, protect spawning and rearing habitats, protect the habitats of game fish and "Species of Special Concern", including the pallid sturgeon. The flows will also help protect the habitat for those wildlife species which depend on the streams and their riparian zones for food, water and shelter (ARM 36.16.107B(4)(f)).

F. OTHER FINDINGS RELATING TO BOARD DECISION (MCA §85-2-316(3)(B), (4)(a)(iv)(b), (5), (6), and (9)(e)(1993); ARM 36.16.107B(5) through (8).)

112. The water reservation by DFWP will be used principally within the state and only within the Little and Lower Missouri River Basins (ARM 36.16.107B(5) and (6)).

113. DFWP has proposed a management plan for measuring, protecting, and reporting on instream reservations (DFWP App., pp. 193-198).

114. The management plan presents an adequate framework for measuring, protecting, and reporting on reservations for minimum instream flows derived using the Wetted Perimeter, Biological Flow, Fixed Percentage and Base Flow methods (DFWP App., pp. 193-198).

115. DFWP is capable of exercising reasonable diligence towards measuring, protecting, and reporting its minimum instream water reservations in accordance with the management plan for instream reservations derived using the Wetted Perimeter, Biological Flow, Fixed Percentage and Base Flow methods (DFWP App., pp. 193-198)(ARM 36.16.107B(7)).

116. The management plan presented by DFWP does not provide an adequate framework to monitor and measure any reservation granted for channel maintenance\dominant discharge method. DFWP has not proposed any method to monitor at multiple points along a given stream reach to take into account any variations that occur in the flow, topography, channel morphology or any other unique characteristics of a particular stream. Existing technology does not allow DFWP to predict when a dominant discharge flow is likely to occur (DFWP App., pp. 193-198).

117. It may be difficult to predict when a snowmelt or other climactic phenomena triggering the dominant discharge event will occur. This unpredictability is indicative of the difficulty in managing the channel maintenance flows applied for by the DFWP (Perkins, Re-dir., Tr. Day 6, p. 230).

118. DFWP is not capable of exercising reasonable diligence towards measuring, quantifying, protecting, and reporting its channel maintenance reservations in accordance with the management plan (ARM 36.16.107B(7)).

119. The water reservation as conditioned would not adversely affect any water right with a priority date before July 1, 1985, in the Lower Missouri Basin and before July 1, 1989, in the Little Missouri Basin (MCA §85-2-316(9)(e); ARM 36.16.107B(8)).

III. CONCLUSIONS OF LAW

1. DFWP is a qualified applicant for a water reservation (MCA §85-2-316(1)(1991).

2. The purpose of the DFWP application is a beneficial use (MCA §85-2-316(4)(a)(i)(1991); ARM 36.16.107B(1)(b)).

3. The need for the DFWP application has been established (MCA §85-2-316(4)(ii)(1991); ARM 36.16.107B(2)).

4. The Wetted Perimeter, Fixed Percentage, and Base Flow methodologies used by DFWP are generally accurate and suitable for determining the amounts necessary for the instream flow reservations. (ARM 36.16.107B(3)(a)). DFWP has established the amount of water needed to fulfill its reservation as set forth in Table 1 (MCA §85-2-316(4)(a)(iii)(1991); ARM 36.16.107B(4)).

5. The Dominant Discharge Methodology used by DFWP to compute channel maintenance flows as applied to the streams on which channel maintenance flows were requested is not suitable (ARM 36.16.107B(3)(a)).

6. The benefits of granting minimum instream flows requested as modified and conditioned herein exceed the direct and indirect costs of those reservations. Upon a weighing and balancing of the evidence, it has been established to the satisfaction of the Board that the water reservation requested by DFWP as modified and conditioned herein is in the public interest (MCA §85-2-316(4)(a)(iv)(1991); ARM 36.16.107B(4)).

7. Upon a weighing and balancing of the evidence, it has not been established to the satisfaction of the Board that the water reservation requested by DFWP for channel maintenance flows herein is in the public interest (MCA §85-2-316(4)(a)(iv)(1991); ARM 36.16.107B(4)).

8. The specific occurrence of the channel maintenance flows applied for by DFWP are sufficiently unpredictable that the Board finds the reservations for channel maintenance flows are not in the public interest (ARM 36.16.107B(4)(f)).

9. The Lower Missouri River water reservations approved by the Board shall have a priority date of July 1, 1985. The Little Missouri River water reservations approved by the Board shall have a priority date of July 1, 1989 (MCA §85-2-331(4)). The Board may determine the relative priorities of all reservations (MCA §85-2-316(a)(e)).

10. The Board may grant, deny, modify, or condition any reservation applied for. In no case may the Board make a reservation for more than the amount applied for (MCA s85-2-316).

11. The Board has no authority under the reservation statutes or any other statutes to determine, or alter, any water right that is not a reservation (MCA §85-2-316(14)).

12. This reservation does not guarantee DFWP minimum flows.

IV. ORDER

1. Subject to all applicable conditions, and limitations (including but not limited to the conditions applied to instream reservations in Exhibit A attached to this Order) the application of DFWP is granted as set forth in Table 1.

2. The Lower Missouri River instream flow reservations, as set forth in Table 1 of this order, shall have a priority date of July 1, 1985. The Little Missouri River instream flow reservations, as set forth in Table 1 of this order, shall have a priority date of July 1, 1989.

3. Relative to other reservations, the priority date of the DFWP shall be subordinate to the consumptive use reservations granted to all municipalities. Further, on those waters where the Board has granted consumptive use or storage reservations to any Conservation District, the priority date of the DFWP instream reservation shall be subordinate to those reservations.

4. Any and all liability arising from the reservation or the use of the reservation is the sole responsibility of the applicant. By granting such reservations, the Board, on behalf of itself and the Department of Natural Resources and Conservation, assumes no liability.

TABLE 1

Montana Department of Fish, Wildlife and Parks Instream Reservations.

Stream	Reach	Dates	—Amount— (cfs)	(af)	(af/yr)
Milk River Subbasin					
Battle Creek	International boundary to mouth	Jan., Feb., Mar., Dec. Apr. through Nov.	2.0 5.0	480 2,420	2,900
Beaver Creek (Hill County)	Reservation boundary to Beaver Creek Reservoir	Year-round	7.0	5,068	5,068
Beaver Creek #1 (Phillips Co.)	Headwaters to reservation boundary	Year-round	0.2	145	145
Beaver Creek #2 (Phillips County)	Highway 191 to mouth	Jan., Feb., Mar., Dec. Apr. through Nov.	7.0 11.0	1,679 5,324	7,003
Clear Creek	Headwaters to Clear Creek Road	Year-round	5.0	3,620	3,620
Frenchman River	International boundary to mouth	Jan., Feb., Mar., Dec. Apr. through Nov.	2.0 5.0	480 2,420	2,900
Little Box Elder Creek	Headwaters to Clear Creek Road	Year-round	1.0	724	724
Peoples Creek	Headwaters to Barney Olson Road	Year-round	1.0	724	724
Rock Creek	International boundary to mouth	Jan., Feb., Mar., Dec. Apr. through Nov.	2.0 8.0	480 3,872	4,352
Lower Missouri River Subbasin					
Missouri River #7	Fort Peck Dam to Milk River	Year-round	4,508		3,263,500
Missouri River #8	Milk River to state line	Year-round	5,178		3,748,500
East Fork Poplar River	International boundary to Middle Fork	Jan., Feb., Mar., Dec. April May June through Nov.	3.0 15 10 4	719 893 615 1,452	3,679
Middle Fork Poplar River	International boundary to East Fork	Jan., Feb., Mar., Dec. April May June through Nov.	1.0 30.0 20.0 2.0	239 1,785 1,230 726	3,980
Poplar River	Junction of Middle and East Forks to reservation boundary	Jan., Feb., Mar., Dec. April May June through Nov.	8.0 70.0 50.0 11.0	1,920 4,165 3,074 3,993	13,152
West Fork Poplar River	County bridge south of Peerless to reservation boundary	Jan., Feb., Mar., Dec. April May June through Nov.	3.0 30.0 20.0 4.0	719 1,785 1,230 1,452	5,186
Redwater River #1	Circle to East Redwater Creek	Jan., Feb., Mar., Dec. Apr. through Nov.	2.0 3.0	480 1,452	1,932
Redwater River #2	East Redwater Creek to mouth	Jan., Feb., Mar., Dec. Apr. through Nov.	2.0 4.0	480 1,936	2,416
Little Missouri River Subbasin					
Beaver Creek (Wibaux County)	Lamesteer Creek to state line	Jan., Feb., Mar., Dec. Apr. through Nov.	1.0 0.7	239 340	579
Boxelder Creek	One mile west of Belltower to state line	Jan., Feb., Mar., Dec. Apr. through Nov.	4.0 7.0	960 3,388	4,348
Little Beaver Creek	Russell Creek to state line	Year-round	3.0	2,171	2,171
Little Missouri River	Montana-Wyoming border to Montana-South Dakota border	Jan., Feb., Mar., Dec. Apr. through Nov.	5.0 8.0	1,199 3,872	5,071

af - acre-feet af/yr - acre-feet per year cfs - cubic feet per second

EXHIBIT A

1. Reservations granted in the Order are subject to all prior existing water rights in the source of supply, including storage rights, and any final determination of existing water rights as provided by Montana law. Reservations are also subject to all prior Federal and Indian reserved rights. The reservants may use the reserved water only when such use will not adversely affect prior water rights.

2. The reservations are subject to all Federal, State and local laws.

3. Pursuant to MCA §85-2-316 (10) (1993), the Board shall review water reservations granted in this order at least every 10 years to insure the objectives of the reservation are being met. Where the Board determines the objectives are not being met, it may, after notice and hearing, extend the term, modify, or revoke the reservation.

4. Any proposed changes of the reservation in point of diversion, place of use, purpose of use, or place of storage, from that originally granted by the Board, shall be made in accordance with the requirements of MCA §85-2-402 (1993). Further, the Board shall not approve the change unless the provisions of MCA §85-2-316 (1993) are met.

5. The reservations are subject to all water uses which do not require a permit under MCA §85-2-306 (1993) that were beneficially used prior to the date of the Order granting the reservations.

6. The reservations may be subordinated pursuant to MCA §85-2-316 (9)(d)(1993).

7. Conditions of this Order may be added, modified or deleted by the Board after notice and hearing.

8. All decisions made by the Board regarding water reservations granted in this Order are appealable under the provisions of the Montana Administrative Procedure Act.

MEMORANDUM TO THE CONTESTED CASE & PUBLIC HEARINGS

In the course of the preliminary proceedings, the hearing itself, and the Board's deliberation in adopting the proposed Findings of Fact, Conclusions of Law, and Order, and in addressing the exceptions submitted by the parties, several legal issues were raised. Some of these matters were addressed in preliminary orders, rulings made at the time of the hearing, and by the Board in adopting its Proposed and Final Order. The Board believes that the basis for the various rulings and decisions should be addressed by a Memorandum. This Memorandum explains the reasoning behind various rulings and decisions made in the course of this proceeding.

In the course of the Contested Case Hearing, the hearings examiner ruled on several Motions that dealt with procedural issues. The Department of Fish, Wildlife & Parks (DFWP) moved at the time of the hearing to amend its application. The time, set in the scheduling order for such amendments, had passed and the Conservation Districts objected to the amendment. The DFWP had, however, provided the information contained in its amendment through pre-filed testimony. The amendments requested by DFWP went to the amounts of water associated with particular reservation applications. This information was available only upon the completion of studies by the US Geological Service. The hearings examiner granted a Motion to Amend.

The Motion to Amend was granted because the amendments did not substantially change the application, and the granting of the

amendments did not place objectors at a disadvantage. The amendment only addressed the volume of water requested and did not materially alter the original application. While it can be argued that any amendment to a reservation involving change in the amount of water is material and granting such an amendment would place the objectors at a disadvantage, in this instance the objectors were aware of and had access to the same streamflow information available to the DFWP. The amendment simply went to a refinement of streamflow data. While streamflow information is critical to the application, the objectors challenged the overall scientific theory behind DFWP's application. The specific numbers in the amended instances were not critical to the objectors having an opportunity to adequately prepare their case.

The Department of Interior, Bureau of Reclamation, moved at the time of hearing to be added as an objector to the application of the City of Havre. The Bureau of Reclamation appeared as an objector to other applicants, including two other municipal applicants requesting reservations from the Milk River similar to that of the City of Havre. The City of Havre applied for both a groundwater reservation and a surface water reservation from the Milk River. When legal notice was given of the application for the reservations, however, only the groundwater reservation request of the City of Havre was published. As a result, the Bureau of Reclamation did not file an objection even though it had objected to other municipal applicants request for reservations of surface water from the Milk River.

The City of Havre objected to the Motion of the Bureau of Reclamation. It is true that the City of Havre, in its pre-filed

testimony and in its presentation at the Contested Case Hearing, did not have an opportunity to address the Bureau of Reclamation objection. The Bureau of Reclamation's objection was the same as entered against the other two municipalities. Its objection was not to the granting of the reservation but requested the imposition of the conditions upon any reservation of surface water from the Milk River.

The Bureau of Reclamation's Motion challenged the sufficiency of the notice as to the City of Havre's application. To avoid any question about the sufficiency of the published notification as it pertained to the City of Havre, the hearings examiner granted the Bureau of Reclamation's Motion. So as not to disadvantage the City of Havre, it was granted an opportunity to address the objection by filing additional written testimony to address the objections of the Bureau of Reclamation. The City of Havre took advantage of this opportunity and did file testimony addressing the Bureau of Reclamation's objection.

At the contested case hearing, DFWP objected to the substance of the live testimony provided by those individuals who had pre-filed written testimony. Their concern was that the individuals testifying not be given an opportunity to augment or diverge from pre-filed testimony. Such enhanced testimony would place opposing parties at a disadvantage of not being aware in advance of the hearing of the substance of the testimony. The hearings examiner overruled the Motion with the caveat that at any time during testimony if a witness deviated from or attempted to expand on their pre-filed testimony that an appropriate objection could be entered.

As the Contested Case Hearing progressed, it became obvious that the parties respected the use of the pre-filed testimony but took advantage of the opportunity to present witnesses live to clarify and explain various aspects of their application or pre-filed testimony. Except for a few objections, all parties accepted the live testimony of the various witnesses and used the opportunity to effectively examine and cross-examine witnesses.

In general, the public hearing portion of the reservation hearing process went well. One issue did come up at public hearings which the parties addressed in a subsequent Motion. Several individuals appeared at the public hearings and presented testimony concerning the Sheridan County Conservation District Application. Several individuals, testifying at the public hearing sessions, alluded to settlement discussions that had taken place among the applicant, objector, and other affected water users in Sheridan County. The Department of the Interior, Fish and Wildlife Service (F&WS) moved to exclude this testimony from the record.

Because of the way the public hearings were structured, the F&WS did not make its objection at the time the individuals offered their testimony. As a practical matter, it would have been difficult in a public forum to address such a Motion. The F&WS made its Motion the next day before the start of the contested case hearing. The other parties to the contested case hearing did not object to the Motion. At that time the hearings examiner ruled that such references to settlement discussions would not be used by the Board in reaching its decision in this matter. The hearings examiner also ruled that any

subsequent testimony at the public hearings regarding settlement discussions would not be considered by the Board. Given the format of the public hearing sessions, the parties agreed that this was an acceptable way of addressing the problem.

In its deliberations, the Board considered the objections of the Department of the Interior, Bureau of Indian Affairs (BIA) on behalf of the Fort Peck, Fort Belknap, and Rocky Boy's Indian Reservations. The BIA appeared as a party at the contested case hearing in its capacity as trustee for the tribal entities. No party objected to BIA's standing to participate in this procedure. In general, the BIA's objections to several municipal applicants and several conservation district applicants concerned the relationship between federal reserved water rights associated with the Indian Reservations and the reservations to be granted by the Board in this matter.

The BIA did not object either to the granting of specific reservations or to the amount of water requested. Its objections were in the form of conditions it asked to be placed on any reservation granted in this process which is upstream of an Indian Reservation. It also entered an objection asking that where tribal lands or tribal members could possibly be the users of water developed under reservations granted in this process, those reservation waters not be counted as part of any tribal reserved water rights.

The BIA conditions were generally four or five in number. Three of the requested conditions were similar in all instances. The first was that any water reserved in this process was subject to all senior Indian and federal water rights in the source of supply by fully

recognizing Winters v. United States. The Board considered this condition in its deliberations and believed it was not necessary to impose this condition.

The statute creating the reservation process specifically provides that the Board has no authority to alter a water right that is not a reservation, MCA §85-2-316(14). The Board's own rules further expand on this limitation. The Board is aware of this statutory provision and, in reaching its decision, took every precaution to avoid making any decision which in any way could adversely effect all senior Indian or federal water rights. The Board believes, however, that the conditions requested by the BIA are redundant to all existing law concerning the legal rights of senior water right holders, including Indian tribes and the federal reserve water rights as established under court decisions.

The BIA also asked that a condition be placed on any reservations granted in sources which may be subject to senior Indian and federal water rights. The condition would provide that any economic investments made by the reservant is made at its own risk and create no equitable rights against the United States. Again, the Board believes that this is simply a restatement of the existing law of prior appropriation whether it would be an individual, Indian tribe, either as an entity or through its individual tribal members or the federal government. Any water reservation granted in this process is subject to all senior water rights. This condition is stated in the statute and also in a general statement of conditions placed on all

the reservations granted herein. The Board believes that it has adequately addressed the BIA's concerns relevant to this issue.

The final general condition that the BIA requested in all situations where there was a senior Indian or federal water right in the source of supply, was that any subsequent legal decision holding that the State did not have jurisdiction to grant water reservation permits near or within the exterior boundaries of an Indian Reservation or allotted lands would void that reservation grant. Again, the Board believed that as a matter of law, it went without saying that if some subsequent decision withdrew the authority to grant reservations, the reservation permits would, by operation of law, become void. The Board believes that such a decision would void the actions in this matter and that the condition requested by BIA was not necessary.

The BIA requested specific conditions applicable to the Blaine and Liberty Counties Conservation District applications. The Board has placed conditions on those two reservations which it believes incorporates the BIA's concern. The BIA also identified areas of concern regarding the municipal applications of Plentywood and Scobey and the applications of Daniels County and Sheridan County Conservation Districts. Again, the Board adopted specific conditions in those four instances. The BIA also had concerns regarding the applications of Valley County and Roosevelt County Conservation Districts and the municipalities of Wolf Point and Poplar. The Board recognized these concerns with specific conditions relating to those four situations. The Board believes that the reservations granted to

these particular applicants is not to be considered part of or counted against the amounts of water granted the tribes under the Fort Peck tribal compact with the State of Montana.

The Board appreciates the fact that the BIA, on behalf of the Fort Peck, Fort Belknap, and Rocky Boy Indian Reservations appeared in this matter. The BIA's participation in the hearing process clarified for the Board the concerns of the Native American peoples and assisted the Board in reaching its decision. The Board adopted conditions that dealt with the BIA's specific concerns. This is not to say that the other concerns, as expressed by the additional conditions, are not legitimate concerns. Those concerns, in the Board's judgment, however, are addressed by existing law which provides more than adequate protection for all senior water right holders, including the various Indian tribes.

The final issue the Board wishes to address in this Memorandum concerns the overwhelming public opposition to the granting of reservations to DFWP. The public's objections to the DFWP applications can be put in two categories. The first, is that granting of reservations for fish and wildlife purposes would preclude any future development of water. The second category is best characterized as an inherent distrust of granting a government entity the right to participate in the water permitting process.

The decision that instream flows for fish and wildlife purposes is a beneficial use of water was made by the Legislature in adopting statutes under which the Board is now proceeding. That decision was made by the duly elected legislative body and reflects the policy of

the State of Montana. There is nothing the Board can do to reverse that policy decision. If the citizens believe this policy is incorrect, the avenue for change is through their elected representatives.

The particular question of whether DFWP should be granted reservations in this matter is to be determined by the Board in the process it followed in adopting this Order. That process allowed for the consideration of facts put into the record through the hearings process. Those facts established to the satisfaction of the Board that DFWP had established that a reservation for instream flow provided a public benefit in the form of enhanced fish and wildlife habitat.

The Board recognized the public's concerns by first reducing the reservations requested by the DFWP and then by placing them in a subordinate position to the other reservations. It is true, however, that granting the DFWP reservations will make those reservations senior to any subsequent permits issued. Also, by granting the reservations, DFWP will have a reservation permit which will allow them to participate in any permit hearings, including applications for new permits and applications for change of place of use and point of diversion of existing rights or permits.

The sentiment expressed by public testimony was that under no circumstances should DFWP be given an opportunity to tie-up water that could be used for future agricultural and economic development. This public sentiment is in direct conflict with the text of the statute which recognizes instream flows as a beneficial use. In addition, the

reservation process allowed all government entities who believed that there was a possibility of future consumptive use within their jurisdiction to apply for a reservation. The cities and counties were entitled to apply for reservations to accommodate future population growth and industrial expansion. The conservation districts, on behalf of the agricultural community, did apply for large reservations for agricultural purposes. The Board granted in total these applications, finding that the future economic development of the region was contingent upon access to water. The DFWP reservation was only granted after the recognition of consumptive uses of water and potential economic development that hopefully will follow from that use.

The Board fully understands the public's concern about the DFWP becoming actively involved in the permitting process on streams in which it was granted a reservation. There is considerable debate whether or not DFWP already has this authority under MCA §85-2-308(3). This section gives a person standing to file an objection to a permit application or application for change if the property, water rights, or interest of the objector would be adversely affected by the proposed appropriation. DFWP would be considered a person under the definitions used in the statute. Also, DFWP, under a variety of other laws regarding fish and wildlife matters, could rely on one of those statutes to base an objection to a permit application or some type of change. The Board, while sympathetic to concerns of the public and the objectors in this matter, believes that this line of argument is not valid.

The Board granted a portion of the DFWP's application because it believes a sufficient showing of facts was made that the granting of the reservation was warranted and in the public interest. The Board hopes that water users in the Lower Missouri and Little Missouri Basins recognize that it is the policy of the State to maintain fish and wildlife populations for the benefit of all residents. The Board's decision, however, clearly recognizes the priority for development of water for agricultural purposes. This was the overriding concern of people in the region. The Board considered and balanced the conflicting interests in arriving at its decision.

MEMORANDUM TO EXCEPTIONS TO THE PROPOSED ORDER

The Board of Natural Resources and Conservation (Board) received several exceptions after circulating the Proposed Order on November 15, 1994. The Board received written exceptions and heard argument on those exceptions on December 15, 1994. The Board takes this opportunity to address those exceptions and identify changes made to the Proposed Order as a result of the exception process. It will also discuss those exceptions which it did not address by way of changes to the Proposed Order.

The City of Havre (Havre) filed an exception from that portion of the Proposed Order in which the Board denied its reservation of surface water from the Milk River. While Havre's filing contained numerous exceptions to specific findings and conclusions in the Proposed Order, all of its exceptions went to the Board's decision to deny Havre's request for a reservation of surface water from the Milk River. It is Havre's contention that it had presented facts to support the granting of this portion of its reservation request. Havre maintains that its projected population growth and current water usage support the granting of the reservation.

In response to the exception, the Board reviewed Havre's application for a reservation filed in 1991, its pre-filed testimony filed in August, 1994, and its witness's testimony at the hearing in September of 1994. The water usage and population projections in its application and pre-filed testimony do not support the granting of a reservation in the amounts requested. Havre's witness testified at

the hearing to water usage different from the figures submitted in its application and pre-filed testimony. At the Contested Case Hearing, Havre presented testimony for the first time that it was currently using all of the water in its contract with the Bureau of Reclamation (BOR).

In its application and pre-filed testimony, Havre stated it was using approximately 1075 acre feet a year out of a contract for 2800 acre feet year with the BOR. Havre stated its existing wells were being used on an emergency basis. At the hearing, Havre's public works director testified that it was using its wells only in emergency situations and it was using the entire amount of the BOR contract. This would mean that in a three year period Havre's water use had more than doubled. The Board did not find this testimony credible.

The Board did grant Havre's reservation for additional wells with a capacity of up to 475 acre feet a year. This reservation should be adequate to replace the existing wells which are being phased out. The Board recognizes that municipal water service may be extended to the area referred to as North Havre in the near future. This would add approximately 2000 people to the municipal system. Even using Havre's most optimistic population projections, at the average daily per capita consumption rate, it would only use all of its BOR contract amount by the year 2035. The Board believes that its decision to grant the groundwater portion of Havre's request is sufficient to meet its future needs.

The Blaine County and Liberty County Conservation Districts (Blaine CD and Liberty CD) filed exceptions directed to the conditions

the Board placed on the reservations granted them for storage projects on tributaries of the Milk River. The Board deleted two modifiers, "extreme" and "spring" from the first condition but chose to leave the conditions in place. The conditions the Board placed on the reservations were in response to objections filed by the BOR and the Bureau of Indian Affairs (BIA) on behalf of the Fort Belknap Indian Irrigation Project (Fort Belknap). Both the BOR and Fort Belknap utilize the Milk River as the source of water for their irrigation projects.

The Milk River is closed to further permits during the summer months. The BOR has senior water rights for filling its storage projects on the Milk River. Fort Belknap has one of the earliest rights on the Milk River for its irrigation project. These projects rely on the spring run off to store water for the irrigation season. The Milk River is not closed during the time of spring run off.

The conditions the Board put on the Blaine CD and Liberty CD reservations are similar to those put on all permits issued in the basin by the Department of Natural Resources and Conservation (DNRC). The BOR and BIA requested the conditions be placed on the reservations so that there is no misunderstanding about the priority of their senior rights. The language suggested by the Blaine CD and Liberty CD in their exceptions is a correct statement of existing water law. The BOR and BIA hold senior water rights and all junior water right and permit holders take water subject to the senior water rights. The Board chose to impose the conditions so the priority of the BOR and Fort Belknap appropriations is clear to the reservants.

The Daniels County Conservation District (Daniels CD) filed an exception to the Board's granting of a reservation to the DFWP on the Poplar River tributaries. The basis of the exception is that the Fort Peck Tribes currently hold an instream flow right that guarantees flows on the Poplar River and its tributaries. Daniels CD argues that this tribal flow right serves the same purpose as would be achieved by the DFWP reservation. The Board does not believe that the Fort Peck right provides a substitute for the DFWP reservation.

Except in one instance, the DFWP reservation does not increase the amount of water preserved for instream flows above that previously recognized by the tribal right. As to the amount of water, the DFWP reservation for instream flow is concurrent with the tribal flow right. The DFWP's interest in the instream flow is different from the tribe's. The granting of the DFWP reservation on the Poplar River and its tributaries for the purpose of maintaining the fish and wildlife habitat is a separate purpose from the tribe's interest in assuring a certain flow into the Fort Peck Indian Reservation. For this reason the Board rejects the Daniels CD's exception.

The Fish and Wildlife Service (F&WS) of the U.S. Department of the Interior and the Montana Department of Fish, Wildlife and Parks (DFWP) filed exceptions to Board's decision granting a reservation to the Sheridan County Conservation District (Sheridan CD). The DFWP joined in the exceptions filed by the F&WS. The exceptions went to the amount of water granted in the reservation and to the management plan presented in the application and approved by the Board. The

Board considered the exception of the F&WS even though it was received late and no representative appeared at argument.

The F&WS exception to the amount of water granted in the reservation concerned the amount of water permitted for development after the date of the of the reservation. By statute all reservations in the Missouri River Basin have a priority date of July 1, 1985. The F&WS believes that approximately 4800 acre feet of water have been permitted since that date. It further argues that the Board did not consider these groundwater withdrawals in granting the Sheridan CD reservation.

The Board relied on the estimates of available groundwater identified in the Draft Environmental Impact Statement (DEIS). The DEIS identified a range of groundwater available for sustainable development. The upper limit of this amount was suggested to be 17,479 acre feet. The lower limit was identified as 7809 acre feet. The information in the DEIS concluded that between these two amounts, water was available for development without mining the groundwater resource. The Board relied on this evidence in setting the upper limit of the Sheridan CD reservation. It used the lower number to establish a point for a review of the development of the groundwater resource to determine if the area could sustain further development.

The F&WS in its exception argues that the amounts of water used in the reservation does not take into account the groundwater development that has occurred since the start of the reservation process. Outside the reservation process, various entities and individuals have obtained groundwater permits in the aquifer in

question. Some of this water has been developed and put to use. In other cases, permits have been issued but the diversion has not been completed. The Board recognized that the numbers in the DEIS may be out of date. Following receipt of the F&WS exception, the Board asked the DNRC staff to review the groundwater permits issued in the area to determine the amount of water which has been permitted since July of 1985.

The DNRC staff reported to the Board that the numbers in the DEIS include water permits issued through 1988. Since 1988, permits for groundwater development have been issued for approximately 1900 acre feet. Based on this information, the Board reduced the amounts in the Sheridan CD reservation by 2000 acre feet. The upper limit is now 15,479 acre feet and the lower amount of 5,809 acre feet triggers further review. The Board believes this reduction accurately reflects the permit activity in the groundwater area.

The second portion of the F&WS exception requests that the Board condition the Sheridan CD reservation on the appointment of a groundwater oversight committee to control the development of the groundwater resource in the area. The Board does not doubt its authority to condition the granting of any reservation. The Board declines to condition the Sheridan CD reservation on the creation of an oversight committee.

The management of the State's water resources is an issue that comes up frequently in any discussion of water matters. What mechanism of management is appropriate, who is to participate in the management, what is the geographical extent of the management plan,

what are the guidelines for any management plan are some of the basic questions that arise about any suggested management scheme. The F&WS is asking the Board to create, as a condition on the Sheridan CD reservation, a special oversight committee. Because there was not an opportunity for all affected individuals to participate in the creation of this committee, the Board elected not to create one.

There appears from the record, evidence which would support the creation of some type of regulatory oversight mechanism in the area. The continued development of the groundwater resources will undoubtedly lead to conflicts. The groundwater users in the area may well be advised to create a regulatory system now before problems develop in the future. But the Board believes the local users are the key to resolving the problem. The groundwater users in the area should be the ones to address the situation.

There exists, in statute, mechanisms to close the basin to future appropriation and through that process institute controls. There is also a statutory procedure to create a groundwater control district. Under either scheme, the local groundwater users would be involved in the creation and organization of the oversight body. Also, by adopting a mechanism already authorized by statute, the groundwater users would have the directions they need to operate an oversight entity. Under either process, all of the affected groundwater users would have an opportunity to be heard on the issue of the creation of any type of oversight entity. This would not be the case with a committee created as a condition of the granting of a reservation.

The Board believes that it has limited the amount of the Sheridan CD reservation so as to avoid depletion of the resource. The review procedure, now set when 5809 acre feet of the reservation is developed, should prevent any adverse impacts to the groundwater resource. If parties continue to obtain permits outside the Sheridan CD procedures, they will proceed at their own risk. The F&WS is not without the means to protect its interests in the area. It is to the F&WS credit that it is advocating the creation of an oversight committee to head off problems in the future. The Board does not believe, however, that the reservation process is the vehicle to address the broader concerns associated with the creation of such a committee.

The DFWP filed exceptions dealing with several aspects of the Proposed Order. The first exception concerned all the conservation districts' reservations. The DFWP noted that unlike the reservations granted the conservation districts in the Upper Missouri Basin, the reservations in the lower basin did not specify that development was to be completed by the year 2025. The DFWP is apparently concerned that without a deadline, the conservation districts will not develop their reservations. The Board considered this exception and recognized it was not consistent with its decision in the upper basin. The Board believes, however, that the statutory requirement that all the reservations be reviewed every ten years takes care of the concerns the DFWP may have about the conservation districts' diligence.

The DFWP filed exceptions to that portion of the Proposed Order granting reservations to the Carter County and Daniels County Conservation Districts (Carter CD and Daniels CD) for full service irrigation projects. The basis of the exception was that these projects would divert water during low flow, summer periods. The Board believes that in these specific cases the public interest is best served by granting reservations for the development of water for agricultural purposes.

The next issue raised by the DFWP in its exceptions concerned the largest storage project reservation granted to the Blaine County Conservation District. The DFWP believes that the evidence does not support the need for this project. This particular project has been discussed for over thirty years and still there has no progress toward construction. The Board in granting the reservation considered the economic feasibility of this project.

The Board granted this and the other conservation districts' reservations and prioritized them ahead of the DFWP reservations because of the overwhelming statement of public interest in favor of developing water for agricultural use. The projects granted reservations, including the one questioned by the DFWP, still have many hurdles to clear before they are developed. The Board believes the evidence shows that all projects have some chance of being economically feasible and has elected to let the market place make the final determination.

The DFWP joined in the F&WS's exceptions to the Sheridan CD reservation. The F&WS's exceptions were addressed earlier in this

memorandum. The DFWP also entered exceptions intending to clarify portions of the Proposed Order concerning its reservations. The Board made the changes to that portion of the Proposed Order granting reservations to the DFWP in consideration of these exceptions. The Board did not make any changes to the Proposed Order as requested by the DFWP where the requested changes might be construed to support the granting of reservations for channel maintenance flows. The next section of this memorandum discusses the Board's position on the exceptions regarding the DFWP's request for channel maintenance flows.

The DFWP, through a number of exceptions, objected to the Board's denial of its requests for reservation of water for channel maintenance flows on numerous prairie streams. The DFWP, in its oral argument on the exceptions, acknowledges the dilemma faced by the Board in quantifying the reservation when it suggested any reservation for this purpose be based on a one day peak flow. This concession by the DFWP was offered to overcome the Board's concerns about how the channel maintenance reservations would be managed. Even with the DFWP's willingness to compromise, the Board decided not to grant reservations for channel maintenance flows.

The Board does not reject the scientific theory on which the DFWP based its reservation request for channel maintenance/dominant discharge flows. The evidence in the record supports a finding that dominant discharge flows are necessary for the maintenance of prairie streams. The problem in granting such a reservation comes in applying the scientific theory to the real world situation. Water users, including the DFWP, must deal in dates and amounts of water in order

to conduct their affairs. Something as ephemeral as high spring run-off or a summer thunderstorm which cause a bank full flow do not lend themselves to measurement or monitoring. Without accurate measurement or enforceable monitoring, the public interest is not served by granting reservations for channel maintenance flows.

The DFWP by way of an exception argues that there are no lost resource opportunities if the other reservation requests are granted and given a higher priority. This is only partially correct. The granting of the other requests encourages the development of the water resources by governmental entities. It does not deal with the lost opportunities for resource development incurred by private parties. This was an area of overwhelming concern expressed at the public hearings.

The Lower Missouri Coalition (Coalition) filed an exception that was a blanket objection to the granting of any reservations to the DFWP. The first exception, and the one that sets the tone for all the others entered by this party, is that instream reservations are not in the public interest. This contention by the Coalition was phrased and re-phrased many times throughout the hearing by this party and all the individuals who testified at the public hearings. The Coalition believes that the interests of agriculture are more important than the instream use of water for the maintenance of fish and wildlife resources.

The public interest the Coalition seems to be challenging, is the underlying decision to recognize instream flows as a beneficial use of water. The decision to consider instream flow reservations as part of

this process was made by the Montana Legislature when it adopted the reservation statute. It specifically included instream reservations as one of the uses for which reservations could be sought. The decision to recognize instream reservations and to allow governmental entities to apply for them as part of the reservation process was a policy decision by the legislature. It is not within the Board's authority to reject the applications for instream flow without due consideration.

The Board is required to consider public interest as it applies to specific reservation requests. This takes on a two tier analysis. The first step is to determine if the reservation request, in and of itself, is in the public interest. The Coalition did challenge each DFWP instream reservation request. It offered testimony that questioned the methodology used to determine the instream flow request, challenged the scope of the request, emphasized the importance of water for agriculture, and, finally, proposed alternatives that might make water available to support fish and wildlife resources. The Coalition did not offer testimony to rebut the general proposition that maintaining the fish and wildlife resources was in the public interest.

The bulk of the Coalition's testimony on public interest, and the testimony at the public meetings, went to the contention that the use of water by agriculture is more important to the region than the instream flows for fish and wildlife purposes. The Board weighed this expression of public interest when it analyzed the conservation districts' applications, when it considered the DFWP's application for

channel maintenance flows, and when it established the reservation priorities. The Board granted in full, with minor exceptions, the conservation districts' requests for reservations for agricultural use. It granted these reservations ahead of the instream reservation of the DFWP. In addition, it rejected the DFWP request for the channel maintenance flows. The Board's decision reflects the public interest expressed by the Coalition and those persons who testified at the public hearings as it applies to the evaluation of each specific reservation request for instream flow.

The Coalition's next contention is that below the Fort Peck Dam the granting of instream reservations is pointless since the flow of the Missouri River is controlled by the Corp of Engineers. It is true that the amount of water and when its is released from the dam is controlled by a party that is not bound by the Board's Order. Once that water is released, however, state law applies to its use and the Board's Order does have an important role to play in allocating its use. The Board had before it the record of releases from the dam. It based its decision on the granting of reservations below the dam in part on this record. Again, below Fort Peck Dam, after all senior rights are fulfilled, the conservation districts have the first opportunity to use the water. Taking the Coalition's argument to its logical conclusion would mean that the Board should not have granted the conservation districts reservations below the dam since theoretically the Corp of Engineers could restrict flow to make them impractical also.

The Coalition believes the instream reservation on the cold water streams will cause water to flow out of the state. To begin with, instream flow reservations granted on the cold water streams higher in the drainage will have no effect on water usage lower in the basin. It may even cause more water to flow downstream to be used at other places in the basin. It does not follow that this water will be lost to development.

A review of the record shows that on those cold water streams where instream reservations were granted, there were no competing reservation requests for agricultural development. It is true that the granting of the instream reservation may limit the future development of water by a private party. However, there is still the opportunity to develop storage projects that would rely on high spring run-off.

The reservation process was open to all conservation districts who could have worked with a private party to propose storage projects. No storage projects were proposed on any of the cold water streams in question. Without a specific project to analyze, it is impossible for the Board weigh the relative merits of instream flow reservations versus a storage project on the same stream. The merits of storage projects, as presented by the Coalition in a vacuum, does not provide the basis for the Board to reject the instream flow reservation request.

The Coalition's next argument deals with water availability on the prairie streams. This is a difficult argument to follow given the wording in the Coalition's exception. Water availability is an issue

in the management of prairie streams. The flow regime of this type of stream is highly variable. The use of averages can only go so far in helping to allocate the water. The averages were used to grant the reservations to the conservation districts and were used to grant instream flow reservations. The Board recognizes that in those years when the flow is below average, not all the reservations will be satisfied. The Board can only work with the information it has and apply it uniformly to the situation.

The Coalition excepts from the Board's finding that the use of the Wetted Perimeter Method for determining the amount of water for instream flow is generally accurate and suitable. It further excepts to its use for the purpose of determining the amount of water for instream flow on the mainstem of the Missouri River. By extension, the Coalition excepts to the use of the Fixed Percentage Method because it is an extension of the Wetted Perimeter Method. The Coalition challenges the use of the Wetted Perimeter Method as not being the only factor controlling fish population and reproduction.

The DFWP presented, through competent testimony, the merits and limitations of the various methods available for determining the instream flow needed for fisheries purposes. The DFWP use of the Wetted Perimeter Method and its variations, was not offered as the only factor controlling fish populations. The Wetted Perimeter Method is a measurement technique, which competent testimony supported, as a way of determining the level of instream flows which benefit fish populations and reproduction. On the mainstem of the Missouri River, the DFWP used a combination of methods to arrive at its reservation

request. The Wetted Perimeter Method was only one of the methods used. Further, the Coalition did not offer testimony of a competent witness to challenge the DFWP methodology.

The Coalition took exception to various findings and conclusions by the Board regarding the impact of granting instream flow reservations on existing water rights. The Coalition contends that instream flow reservations would have an adverse impact on senior water right holders. This position is incorrect and does not reflect existing water law. A senior water right holder is afforded protection only so long as he continues to use that right in the manner in which it was acquired.

The existence of a junior right can have no impact on a senior right so long as the senior right does not change. This was the law before the granting the reservations and is the law after the reservations are granted. When a senior right holder decides to change his use of the water, he is subject to challenge by any junior right holder. This is a risk that has always been present in the law. The granting of the instream flow reservations does not change this risk. The granting of an instream flow reservation does add another junior right holder that may object to a change.

The record shows that the number and frequency of challenges by the DFWP as an instream flow reservant to changes requested by a senior right holder do not warrant the concerns expressed. Even under existing law, a senior right holder does not have unlimited power. The addition of another junior right holder further defines the extent of the senior right, it does not limit it.

The Coalition's exception to the finding that the issuance of new water permits could cause a loss of water quality and fisheries is rejected by the Board. The evidence the Coalition cites is of the historic effects of granting new permits. The reservation process is a prospective one and deals with the future use of the water resource. It is in this context made the particular finding of fact that is challenged.

The Coalition also argues that the development of water storage projects enhances instream flow. The Board denied the channel maintenance flows requested by the DFWP in order to preserve the opportunity to develop storage projects to capture spring run-off in the future. The instream flows granted to the DFWP were considered the minimum necessary to maintain aquatic habitat. The Board did grant all of the reservation requests for storage projects that were submitted.

The Board considered the public welfare in reaching its decision. The public welfare is synonymous with the public interest in this proceeding. The importance of agriculture to the region was recognized by the granting of all the conservation districts requests for reservations and the rejection of the DFWP request for channel maintenance flows and the lowest priority it received for those reservations that were granted.

The Coalition believes the DFWP management plan is defective because it fails to place a limit on its ability to be involved in the water permitting process. The Board's position on this argument has been discussed previously. The Board recognized that in granting the DFWP reservations it would have all the rights afforded by statute to participate in the permit process. It is not necessary for the DFWP

to spell these rights out in its management plan. It was the Board's prerogative to condition the DFWP reservations by limiting its participation in the permit process and it elected not to do so.

Both the Coalition and the DFWP at this late date suggest the procedure followed by the Board in conducting the hearings is improper. Neither of these parties raise the issue in a fashion which requires the Board to rule as it has on the formal exceptions. Both parties are obviously aware the procedure the Board followed in reaching its decision was outlined early in the process and all parties were given an opportunity to object. None did.

It is disingenuous of these two parties to mention their dissatisfaction with procedure at this point. The DFWP was granted the majority of its reservation requests as it requested. The Coalition was not successful in blocking the granting of the DFWP reservations but it played an important role in the Board's decision in setting priorities and denying the channel maintenance portion of the DFWP request. Each having prevailed to a large degree in meeting their objectives, the Board does not believe it failed to adequately consider the evidence each party put into the record.

The Board believes it has addressed all the exceptions filed in this matter. While not addressed by number citation, the foregoing discussion in a general fashion deals with all the exceptions. Any exception not specifically addressed is denied. The Board changed various findings and conclusions in response to the filed exceptions but did address those changes in the memorandum. The changes to the findings and conclusions constitute the Board's response.

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

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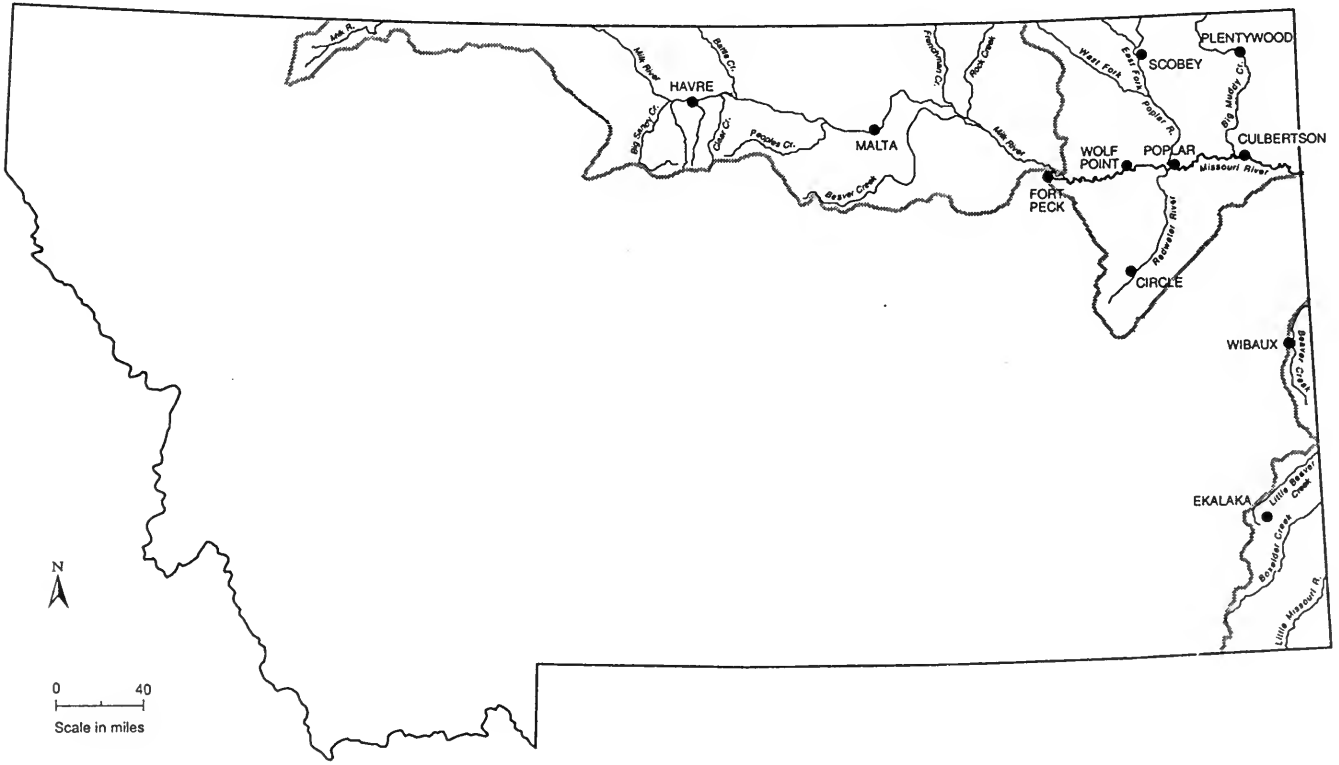
The foregoing Findings of Fact, Conclusions of Law, Order, and Memorandum were adopted by the Board of Natural Resources and Conservation and the reservations granted herein became effective on December 15, 1994.

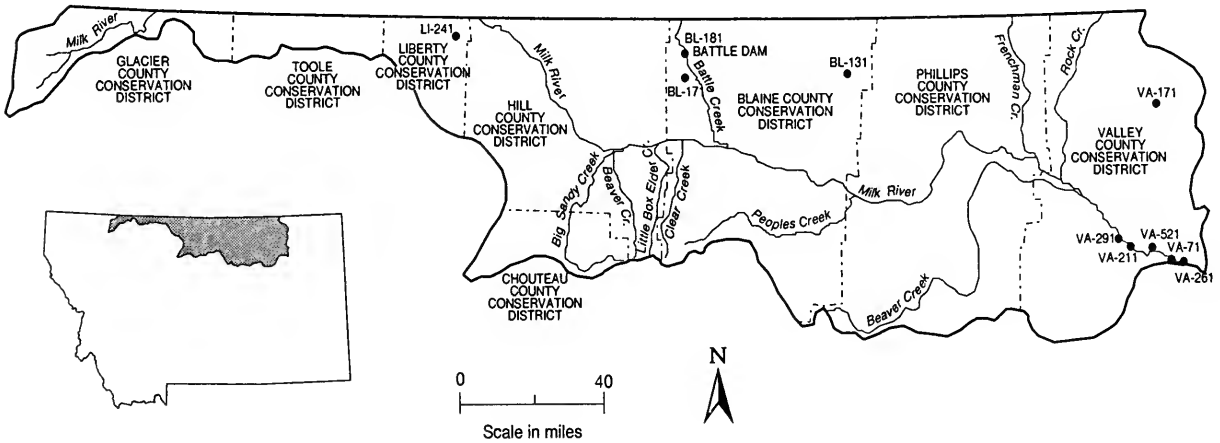
DATED this 30th day of December, 1994.

Jack Galt, Chairman
Board of Natural Resources and
Conservation

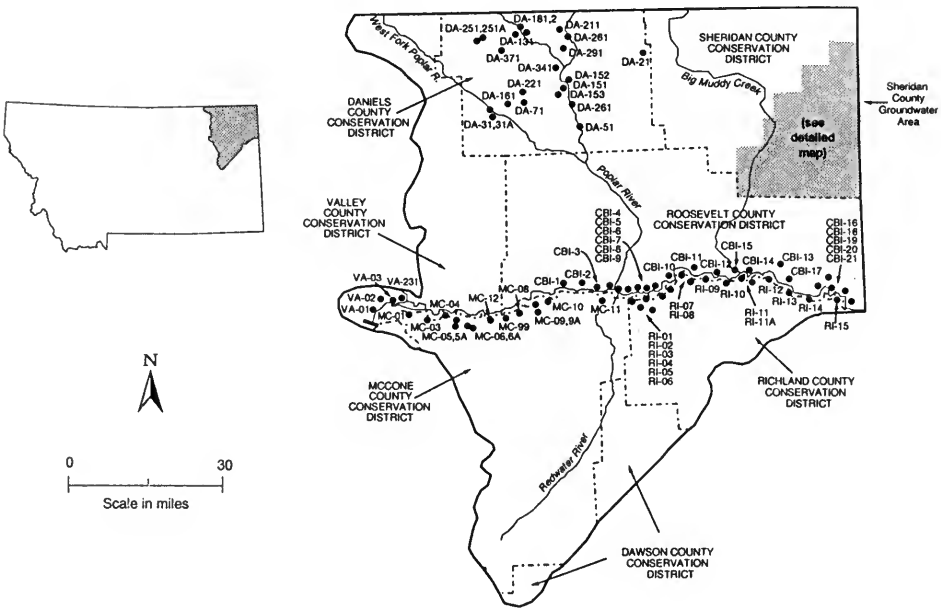
Municipalities Awarded Water Reservations in the Lower Missouri River Basin



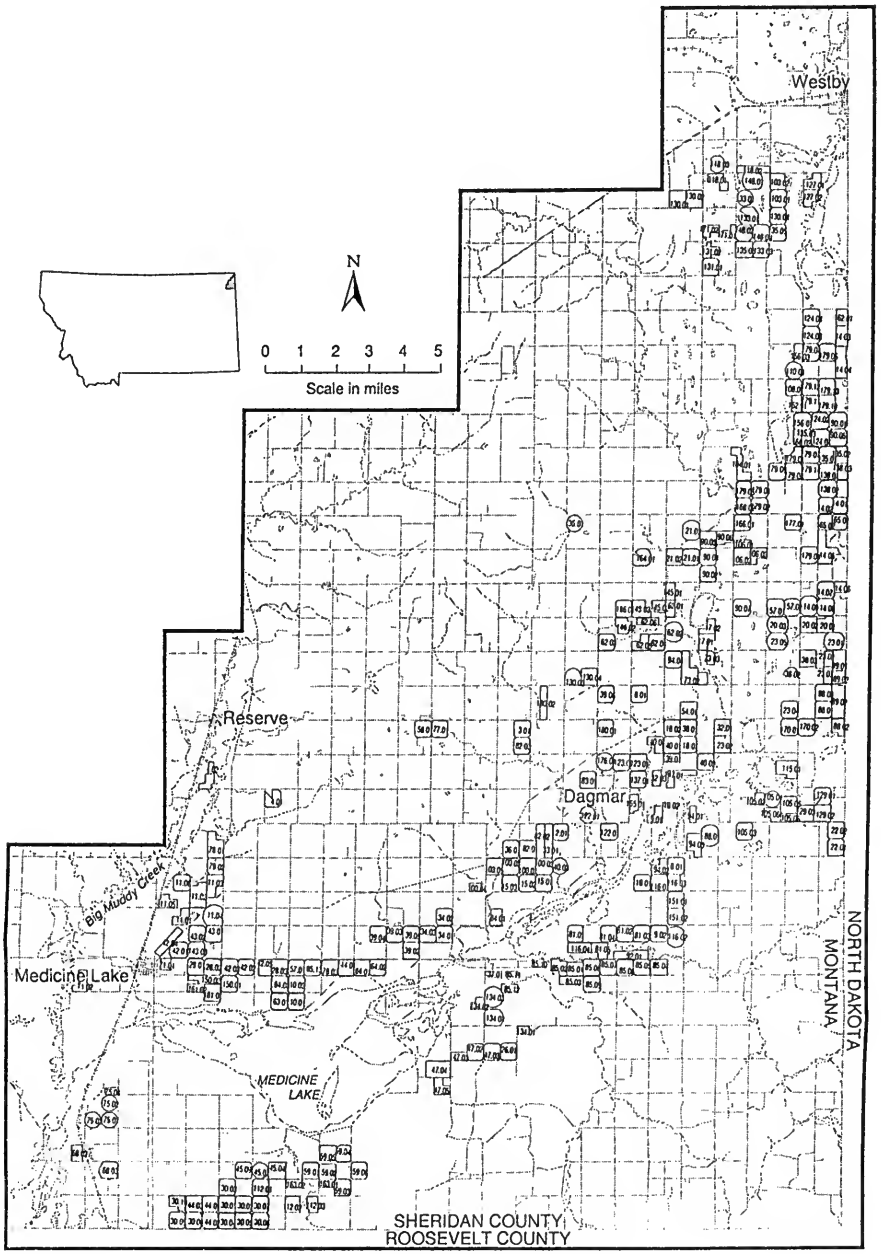
Conservation District Projects in the Milk River Subasin



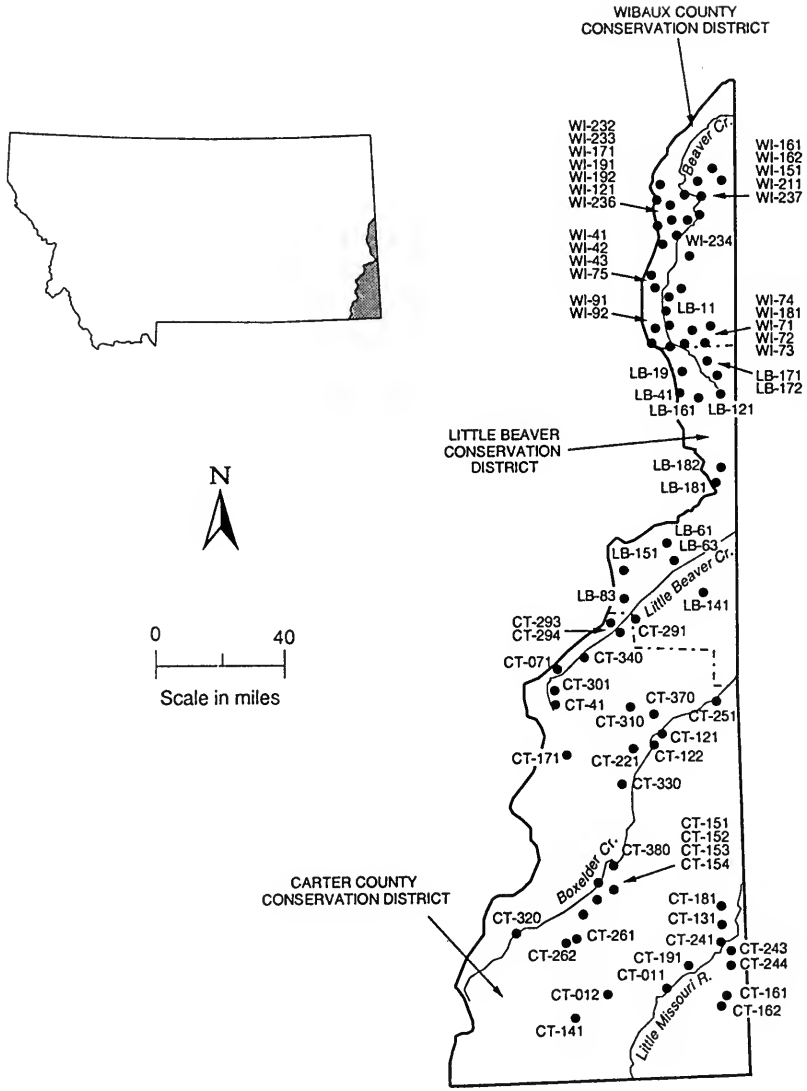
Conservation District Projects in the Lower Missouri River Subbasin



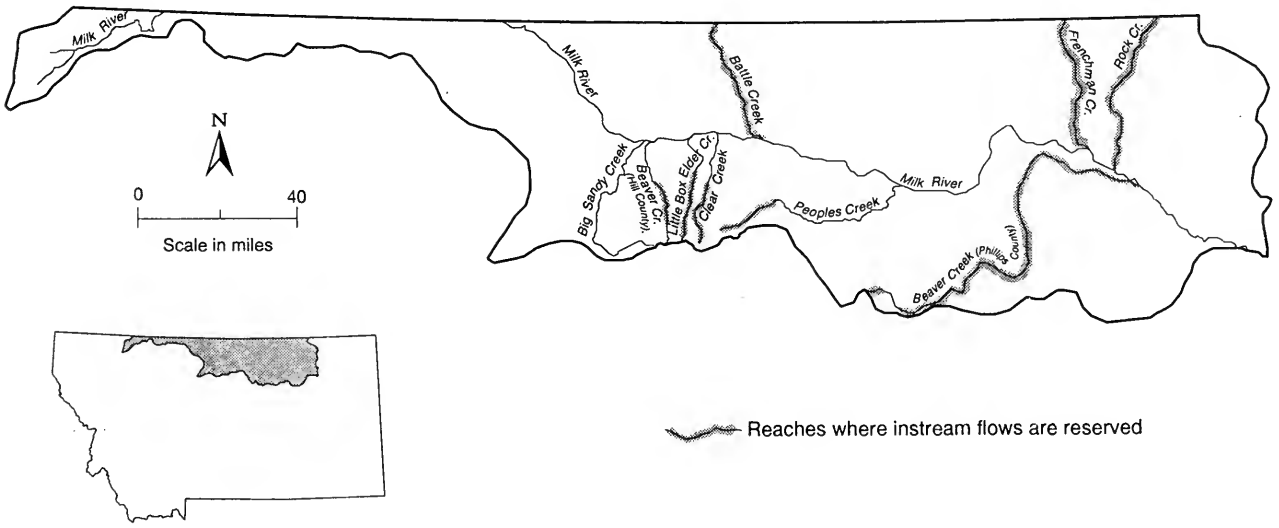
Groundwater Development Projects Proposed by the Sheridan County Conservation District



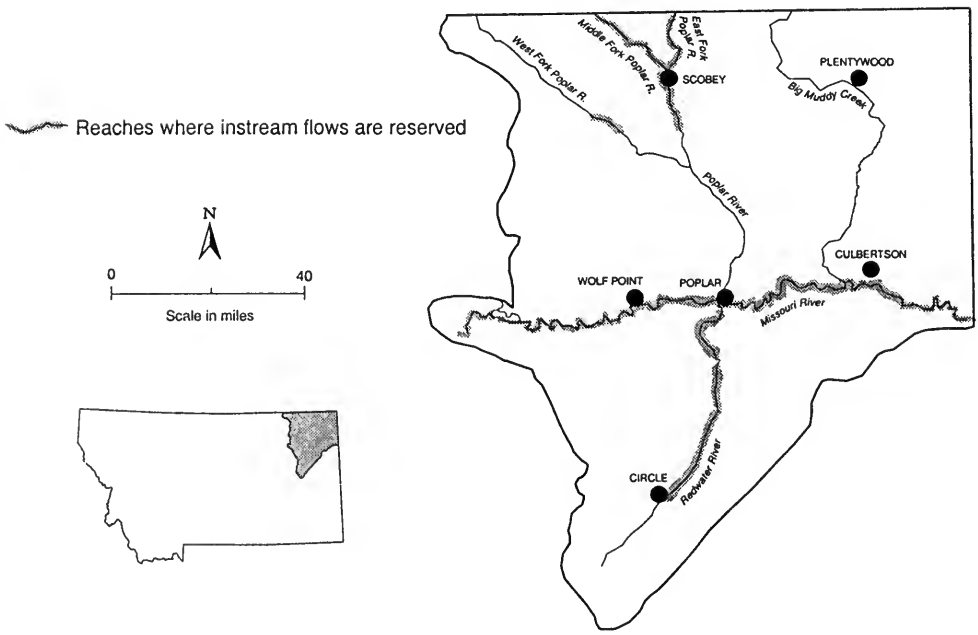
Conservation District Projects in the Little Missouri River Subbasin



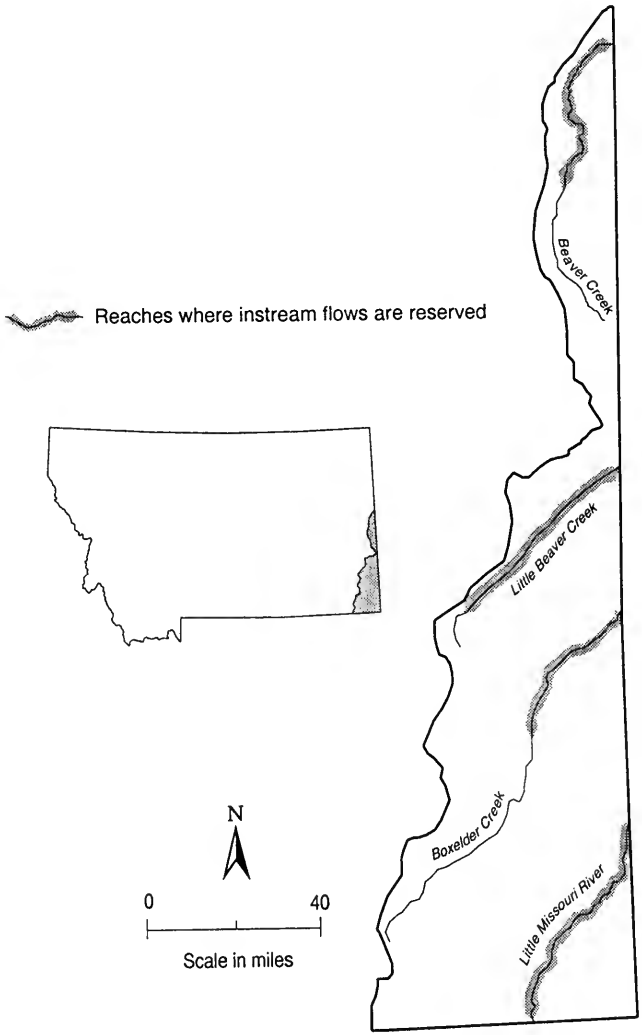
Location of Instream Flow Reservations in the Milk River Subbasin



Location of Instream Flow Reservations in the Lower Missouri River Subbasin



Location of Instream Flow Reservations in the Little Missouri River Subbasin



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