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; B1-CD App., pp. 19-20). Using these assumptions, the analysis indicates that the proposed projects would require subsidies (B1-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.

Application of the Carter County Conservation District
Water Reservation No. 39E L084496-00

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.

Application of the Daniels County Conservation District
Water Reservation No. 40Q L084497-00

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.

Application of the Little Beaver Conservation District
Water Reservation No. 39G L084498-00

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.

Application of the Valley County Conservation District
Water Reservation No. 40O L084495-00

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.

Application of the Wibaux Conservation District
Water Reservation No. 39G L084503-00

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).