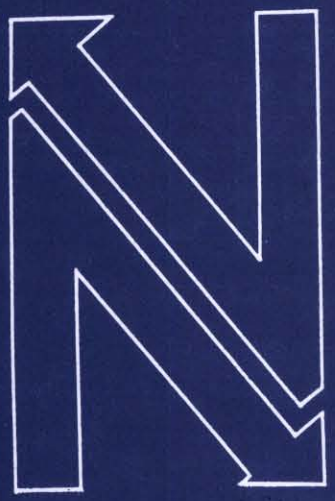
State of
Nebraska
Water
Management
Board



REPORT ON THE WATER AND WATER RIGHTS TRANSFER STUDY

NOVEMBER 1988

STATE OF NEBRASKA
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REPORT ON THE
WATER AND WATER RIGHTS TRANSFER STUDY

STATE OF NEBRASKA
Water Management Board

November 1988

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GLOSSARY

Many words used in this study are not common terms. Some even had different meanings to different people, so the following definitions were established:

1. Beneficial Use - Beneficial use shall include, but not be limited to, reasonable and efficient use of water for domestic, municipal, agricultural, industrial, commercial, power production, subirrigation, fish and wildlife, groundwater recharge, an interstate compact, water quality maintenance, or recreational purposes.

2. Compensation - Any measure, monetary or non-monetary, that fully replaces losses or offsets an adverse impact associated with a water or water rights transfer, or partially replaces losses to the satisfaction of the party responsible for that decision. Compensation may be one form of mitigation (defined below) of environmental impacts.

3. Consumptive Use - That portion of the water withdrawn from a source of supply, such as a stream, that is not returned to the source at any given point, either by surface or groundwater return flow.

4. Exchange - providing water at one location to substitute for water used at another location.

5. Impediment - Any social, legal, environmental, physical, or economic condition or impact that could obstruct, interfere with, or otherwise hinder a water or water right transfer.

6. Marginal Physical Product - the additional output that can be produced by one more unit of a particular input while holding all other inputs constant.

7. Mitigation - Complete or partial alleviation of potential environmental impacts by action (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

8. Salvaged Water - the amount of reduction in a surface water diversion made possible by delivery system improvements that eliminate or reduce seepage, evaporation, or other water losses without affecting the purpose for which the diversion is authorized. Such amount shall not include any reduction made through the reasonable exercise of good husbandry as required by section 46-231, R.R.S. 1943.

9. Surplus Water - water available for transfer, which is determined by the available supply at any given time, the needs of the user and the public, and policies established by law.

10. Water Right Transfer - a legal transfer of a right to use water so that either the place of use or the purpose of use are changed.

11. Water Transfer - Since no standard definition of the term exists, when used in this report, it means any movement of surface water away from its source, and any movement of groundwater away from the overlying land. Any statute intended to establish "water transfer" policy will have to specify what actions are subject to that policy. The Water Management Board's policy recommendations are contained in Chapter 5 and the draft legislative bill submitted to the Legislature and Governor.

Chapter 1. INTRODUCTION

Surface water and groundwater have been transferred within, into, and out of Nebraska for nearly a century, under the authority of many federal and state laws. Recent changes in the system have created concerns about the potential for future transfers, so this study was initiated to assess the seriousness of the problems and advise state officials on appropriate courses of action.

This study was organized to allow the Water Management Board to respond to the concerns and suggestions of legislators, administrators, and citizens. It was designed to meet the objectives and time constraints of the authorizing legislation. The amount and detail of the technical and legal information and results were determined by the time allowed and the expertise available within participating and cooperating agencies.

AUTHORITY AND NEED FOR THE STUDY

Legislative Bill 146, which authorized this study, was enacted during the first session of the 90th Legislature and signed by Governor Orr in June 1987. It stated that the Legislature "...finds that Nebraska ground water and surface water are currently being transferred from the land to which they are appurtenant to users both within and outside the state. Such transfers are likely to increase as other regions of the state and nation continue to experience shortages in local water supplies." The potential for problems associated with future transfers was accentuated by a U.S. Supreme Court decision that declared unconstitutional a portion of a Nebraska statute that restricted interstate transfers of groundwater. Their decision said that groundwater was an article of commerce, and states could not unreasonably restrict its movement across state lines. This decision also raised questions about the constitutionality of other statutes regulating interstate transfers of water.

Legislative Bill (LB) 146 also noted that transfers could promote economically efficient use of the state's resources, if they were properly balanced with the rights of the public. Allowing the transfer of water rights, and thereby permitting the transfer of that water to a new use or location, would be especially effective in reallocating resources. This could allow the water to go to its highest and best use.

Amending the statutes to eliminate constitutional questions and take advantage of new opportunities requires careful examination of current law and consideration of the many options for new policy direction. The occurrence, movement, and quality of water are all highly technical subjects and the law related to them is very complex. Faced with the need to make difficult changes on complex, technical subjects the legislature called on the Water Management Board to conduct a study in consultation with the Natural Resources Commission (NRC).

In LB 146, the Legislature directed the Water Management Board to study the transfer of surface water and groundwater within the state, and to other states, and report on the appropriate state role in regulating and facilitating transfers. Legislative Bill 817 was passed in the 1988 session to amend the study schedule. It changed the date for submittal of the final report to the Governor and Legislature to November 30, 1988. The portion of LB 146, as amended by LB 817, that relates to this study is contained in Appendix 1.

STUDY ORGANIZATION

Many people assisted the Water Management Board in this study. Some participated within the formal organizational structure established by the Board, and others contributed through less structured means. Assistance in the work on the study was provided by state agencies, University of Nebraska-Lincoln (UN-L) personnel, and consultants through the organization established for that purpose. Public input was received through organized committees and informal communications.

MANAGEMENT

The Water Management Board was responsible for the management of the study and the results. The Board received direction on the

goals and guidance on conducting the study from the Governor and the Legislature.

The Water Management Board has five members; three are gubernatorial appointees. The Director of Natural Resources, Dayle Williamson, was appointed by the Governor. He serves as the Chairman of the Board. Two members, Robert Raun of Minden and Robert Krohn of Omaha, were also appointed to the Board by Governor Orr. The final two members serve by virtue of their positions: Dr. Perry Wigley, Director of the UN-L Conservation and Survey Division and Rex Amack, Director of the Game and Parks Commission.

The Board and staff also conferred with and reported to the Legislature on the study. The Legislature's Natural Resources Committee held a public hearing on November 16, 1987. The Board Chairman and members of the staff of the NRC testified before the committee to report on progress and answer questions from legislators. The Chairman and staff also conferred with the Natural Resources Committee Chairman, Senator Loran Schmit, on a number of occasions to report on study activities. In addition, the Board and the staff had the benefit of input from several senators at public meetings held around the state.

The study was conducted in consultation with the NRC as provided in LB 146. The Board and the NRC held joint meetings in January, March, and May 1988. Problems and policy issues were discussed, options for policy changes were outlined, and alternative transfer policies were considered. In those meetings, the Board was given the benefit of NRC counsel prior to making decisions in their own meetings. Positions taken on specific policy questions by the NRC at June and July meetings were forwarded to the Board. They are included in the public comments in Appendix 2.

Early in the study, the Water Management Board reviewed the authorizing statutes and suggestions of officials familiar with LB 146 and the laws it affected. They then established the goals and objectives of the study, and modified and approved the study design prepared by the staff, consultants and work groups. As the study progressed, the Board reviewed the work group reports and decided on policies to be followed.

The Chairman of the Board served as Study Director. He directed the study activities, and named a Study Manager to oversee the daily activities of the staff and the four work groups. The Study Manager, Jerry Wallin, was a member of the NRC staff.

STUDY ACTIVITIES

The research, technical work, and writing in this study were done by the staff of the NRC with the assistance of consultants and work groups from state agencies and the university. Early in the study, four work groups were organized: technical, environmental, social/economic, and legal/administrative. Each was led by an NRC staff member or consultant. Work group members and the agencies they represented are shown below.

TECHNICAL

Jerry Wallin, leader	Natural Resources Commission
Lee Becker	Department of Water Resources
Dave Chambers	Department of Environmental Control
Vince Dreeszen	Conservation and Survey Division, UN-L
Jim Goeke	Conservation and Survey Division, UN-L
Bill Lee	Department of Health
Ron Smaus	Natural Resources Commission

SOCIAL/ECONOMIC

Merlin "Swede" Erickson, leader	Consultant
Stu Miller	Department of Economic Development
Susan Miller	Conservation and Survey Division, UN-L
Kris Reed	Natural Resources Commission
Steve Soberski	Natural Resources Commission
Ray Supalla	Department of Agricultural Economics, UN-L

ENVIRONMENTAL

Tom Pesek, leader	Natural Resources Commission
John Bender	Department of Environmental Control
Ann Bleed	Conservation and Survey Division, UN-L
Norm Dey	Game and Parks Commission
Martha Gilliland	Department of Civil Engineering, UN-L
Ed Peters	Forestry, Fisheries and Wildlife, UN-L
Donn Rodekohr	Conservation and Survey Division, UN-L
Wanda Schroeder	Natural Resources Commission
Gene Zuerlein	Game and Parks Commission

LEGAL/ADMINISTRATIVE

Jay Holmquist, leader	Natural Resources Commission
Jim Cook	Natural Resources Commission
Dave Fischer	Legislative Council
Bob Kuzelka	Conservation and Survey Division, UN-L
Tom Lamberson	Department of Water Resources

The work groups aided in the collection of data and preparation of work element reports. They also reviewed and provided comments on the drafts of papers submitted to the Board. Some members also contributed to policy discussions in Board meetings. The consultants on this study were Dr. Merlin Erickson, former USDA Economic Research Service economist, and Dr. Martha Gilliland, UN-L professor of civil engineering. They led or contributed to work groups, provided advice on study management, and aided in the preparation of reports.

PUBLIC INVOLVEMENT ACTIVITIES

The Water Management Board attempted to involve the public throughout this study. Suggestions on the direction of the study, problems associated with transfer policies, and options for transfers were sought shortly after the study was organized. Reactions to identified issues and options were also solicited. Later, results of technical investigations and proposals for potential user fees were presented for public questions and comments. Finally, a draft of the report was distributed for review and comments.

A newsletter was initiated to inform interested persons of activities as they were taking place. Six issues were published between November 1987 and June 1988. They were mailed to persons in Nebraska and other states who indicated an interest in receiving them. The newsletters reported on the activities and meetings of the Board, NRC, and public. They also provided information on the results of study activities to keep the public up-to-date.

Several methods were used to contact people and publicize the study and public meetings, in order to reach as many people as possible. First, a core group, comprised of representatives of organizations and individuals interested in water resources, was organized to help contact their constituents and inform them of their opportunity to be involved. This core group was briefed several times. Their comments and suggestions were sought in the meetings, and they were asked to notify their members of scheduled public meetings. Second, Natural Resources Districts were contacted, and they helped publicize meetings in their areas. Finally, press releases were sent to many newspapers and radio and TV stations across the state.

Many meetings were held to solicit public input. The core group was organized in October and it first met in Lincoln on November 13, 1987. Members of that group helped publicize a series of public meetings held in Ogallala, Thedford, Grand Island, and Omaha on November 30 and December 1, 2, and 3, 1987. On February 16 and 18, 1988 core group meetings were held in North Platte and Lincoln to brief members so they could relay information to others. Similar meetings were held in the same locations on April 13 and 14 to prepare for the second series of public meetings. That series consisted of eight public meetings held during the week of May 2-6, 1988 in Chadron, Scottsbluff, Ogallala, McCook, Thedford, O'Neill, Hastings, and Lincoln. A total of 208 people attended the May meetings.

On July 15, 1988 a draft of the report was distributed to the public for review and comment. Copies were mailed to public officials, state and federal agencies, the core group, and others who expressed an interest at the public meetings or through the mail. The date for submittal of comments was set for August 30, as specified in LB 817, but comments were accepted until the Board met on September 2. These comments were considered by the Board, and its responses are included in Appendix 2 with the comments.

PURPOSE AND OBJECTIVES

The purpose of this study was to identify the appropriate state role in regulating and facilitating water transfers and develop a statutory framework that, if enacted, would establish an improved system for transferring surface and groundwater and surface water rights. This framework was to protect the environment and the rights of other persons and provide compensation to those affected by transfers, including the state on behalf of the public, if appropriate. The objectives were to:

1. Identify current legal, statutory, physical, social, environmental, and economic impediments to transfers of groundwater and surface water.

2. Identify potential users of, and markets for, water and water rights transfers.

3. Identify potential locations and methods for surface water diversion and groundwater withdrawals and methods of transporting water of sufficient scale to be economically viable.

4. Identify physical, environmental, social and economic impacts.

5. Identify impacts that might require compensation and appropriate compensatory measures.

6. Develop policy options that would permit transfers while protecting the environment and the rights of landowners, the general public, and others directly affected by transfers.

7. Identify and develop the appropriate state role in facilitating and regulating transfers.

8. Develop a statutory framework to implement the roles and policy options while providing compensation for transfers to landowners, water right holders, persons adversely affected by transfers, and the state on behalf of the general public.

9. Prepare a report on the Board's findings and the appropriate statutory framework.

STUDY SCOPE AND PROCEDURE

The scope of this study, and the procedures used to complete it, were dictated by the objectives and deadlines in the legislative bills. This study covered all aspects of water and water rights transfers in varying degrees of detail. It covered:

1. Surface water and groundwater and integrated them as much as possible.

2. All types of uses, instream and out-of-stream.

3. Existing uses and potential tranfers.

The potential economic viability of some types of transfers was investigated. The impacts of transfers, compensatory measures for harmful impacts, and potential impediments to future transfers were also studied. The principal focus was on the policy of the state regarding transfers, and laws that would implement or permit transfers.

This was a statewide study, extended to other states for potential markets and prices that might be paid for water. It considered resources, uses, and needs everywhere in the state. Existing transfers, which presently occur at locations across the state, were researched and their applicability to potential transfers in all other areas was considered. Possible needs and demands in Kansas, Colorado, and Wyoming were considered to assess the potential for interstate transfers. The prices of water supplies from planned projects in those states was also checked, and some prices were obtained for cities in Arizona and California as well. The potential for transfers to these distant locations was not investigated further. Extensive research was conducted on the laws controlling transfers in most of the western states, however.

This was a policy study needed in a short time, so the degree of detail devoted to different activities was tailored to the time and funds available and their importance to final policies. The primary goal was to develop new policy and prepare a statutory framework to implement it. To meet this goal, the most detailed work was done in the legal area, and other areas were done only in sufficient detail to support the legal and policy work.

Chapter 2.

CURRENT LEGAL FRAMEWORK FOR TRANSFERS

Nebraska law contains many statutory provisions dealing with transfers of surface and groundwater, both intrastate and interstate, and also transfers of existing surface water rights. In this study, two types of transfers were considered: transfers of surface water and groundwater that could require new water rights or permits, and transfers of existing surface water rights. These transfers could be affected by federal law and the laws of other states as well as Nebraska statutes and regulations.

SURFACE WATER TRANSFERS

In Nebraska, surface water is declared to be the property of the public and is dedicated to the use of the people of the state. Rights to use surface water are obtained through the Department of Water Resources (DWR) under the prior appropriation doctrine. Once state permission is granted and the water is actually put to use, the "right to use" becomes a property right protected by and administered in accordance with state law.

Transfers of surface water away from the stream, but to lands within the state and within the "basin of origin" have occurred in Nebraska since before the appropriation system was adopted in 1889. Transfers of this type are treated the same as proposals to use water on lands that adjoin streams; they can be approved by the Director of Water Resources if unappropriated water is available, the proposed use is not detrimental to the public welfare, denial of the application is not "demanded by the public interest", and the proposed use will not violate the state Non-game and Endangered Species Conservation Act.

Transfers of surface water from one river basin to another have also been permitted by Nebraska statutes since 1981. The same criteria that are used to evaluate in-basin transfers are used to determine whether an interbasin transfer should be approved. However, the Legislature has instructed the Director of Water Resources to consider a number of specific factors when deciding whether disapproval of an interbasin transfer application is demanded by the public interest. These include both beneficial and adverse economic, environmental, and other impacts of a project. An interbasin transfer can only be approved if the benefits to the state and the applicant's basin equal or exceed the adverse impacts to the state and basin of origin. Only one interbasin transfer had been approved by DWR by July, 1988.

An "exchange" of surface water is another type of transfer allowed under current Nebraska law. Water to which senior appropriators downstream are entitled may be diverted to irrigate lands lying upstream of a surface water reservoir if water in storage is released to compensate the downstream appropriators. It is not known how many transfers of this type occur in the state.

Transfers of existing surface water rights are also permitted by DWR under limited circumstances by legislation passed in 1983. Existing rights cannot be transferred for use in a different river basin and the purpose of the use cannot be changed. For example, an agricultural right could be transferred to another agricultural user but not to an industrial user. In addition, other water users must not be harmed by the transfer. Seventy applications for transfers of existing water rights had been filed with DWR by July 1988.

Transfers of surface water from one type of use to another can occur only through the exercise of a "preference." Constitutional and statutory provisions give domestic use a preference over all other uses. Agricultural use is preferred over the use of water for manufacturing or power production. Under certain circumstances this preference allows a preferred but junior user to take surface water to which an "inferior" but senior user would otherwise be entitled if compensation is provided to the inferior user. This type of transfer is not a transfer of a right from one user to another. The preferred user must already have a right. The "preference" only grants the right to interfere with another's use and is normally temporary in nature, occurring only when water is insufficient for both users.

Lastly, Nebraska law also authorizes the transfer of surface water out of the state. The export of surface water can only be approved if the

Director of Water Resources finds the benefits to the state from approving an application outweigh its adverse impacts after considering economic, environmental, and other impacts, the impacts on Nebraska uses of water, and other factors.

TRANSFERS OF GROUNDWATER

The Nebraska Supreme Court has ruled that groundwater, like surface water, belongs to the public. The United States Supreme Court has also made it clear that public ownership of groundwater is not the same as state government ownership. The state acts as a trustee for the public and is responsible for management of the water.

Groundwater rights are not like mineral rights. Landowners do not own the groundwater, but they are authorized to make reasonable use of it on their overlying land. However, in times of shortage, users are required to share the available supply and all uses are subject to regulatory measures authorized by the state. For example, under present law the amount of groundwater that is withdrawn can be restricted by allocations and new groundwater uses can be prohibited in groundwater control areas.

Under current Nebraska law, groundwater can only be transferred off the overlying land if the Legislature has explicitly authorized it. This authority has been granted for only the four types of transfers described in the following paragraphs.

Since 1963, public water suppliers have been able to obtain permits from DWR to transport groundwater off the overlying land for municipal use. That authority was later extended to suppliers of water for rural domestic purposes. Permits are to be approved if, among other things, the proposed use will not be detrimental to the public welfare. Thirty-two public water systems had obtained permits under this Act by July 1988.

Groundwater may also be transferred for large-scale industrial use, over 3,000 acre-feet per year, if approved by DWR. Industrial transfers must be found by the director to be in the public interest after considering many factors, including adverse impacts on existing water users and the economic benefits of the transfer. No applications have been filed for industrial transfers of groundwater since the authority was granted in 1981.

Water which has been intentionally stored underground can be used just like surface storage in a water exchange to compensate surface water users downstream for the out-of-priority withdrawal of water upstream. There is some question about whether water stored underground is subject to other rules governing groundwater use.

Nebraska law also authorizes transfers of groundwater out of the state. Before the Director of Water Resources may approve a groundwater export permit a variety of factors must be weighed, including the impact of the transfer on in-state uses of water. Eight groundwater export permits have been issued by DWR since 1982, all involving transfers for agricultural uses in Colorado.

WESTERN STATES LAWS ON TRANSFERS

All western states in the continental U.S. allow transfers of water or water rights in one or more of the ways discussed in this study. However, their policies governing transfers vary greatly.

INTRASTATE TRANSFERS OF SURFACE WATER

Only two of the other western states have special regulatory provisions that may apply to some intrastate, in-basin transfers of surface water. Kansas requires a special permit for any transfer of 1,000 acre-feet or more outside a ten mile radius of the point of diversion. The state legislature can reject any permit approved by the state water administrator. In Nevada, if surface water will be transported out of the county of diversion, the state engineer must obtain recommendations from the affected county boards on whether to approve the transfer. Those recommendations are not binding on the state engineer, however.

Eight of the other western states have specific statutory provisions that apply to intrastate, interbasin transfers of surface water. In California and Oklahoma, inhabitants of the basin of origin have a right to water for their future needs which is superior to the right of any exporter of

water. In California and Colorado, water exporters can be required to construct facilities to supply water for the basin of origin before any water export can be approved. Idaho and Wyoming laws provide that the state engineer must consider the impact of an interbasin transfer on the area where the diversion will take place when deciding whether approval of the transfer is in the public interest. In Wyoming, project plans must include recommended measures to mitigate any adverse impacts from an interbasin transfer.

Kansas applies the same policy summarized in the discussion of intrastate, in-basin transfers to intrastate, interbasin transfers. In Montana, the state is responsible for undertaking any interbasin transfer. Water is then leased to users. In Texas, interbasin transfers are prohibited if they would "prejudice" any person or property in the basin of origin. State water development funds cannot be used for any project that would remove water necessary to supply the reasonably foreseeable water needs of the basin of origin for the next fifty years, except on a temporary basis.

INTERSTATE TRANSFERS OF SURFACE WATER

Eleven of the other western states have regulatory provisions that apply to interstate transfers of surface water. Some of these provisions precede the Sporhase opinion which is discussed in the following section, and are constitutionally suspect.

In Arizona, the state engineer is simply granted the discretion to deny an application for the export of surface water if it is determined such action is appropriate. California, Idaho, Nevada, and Washington generally allow interstate transfers if the other state grants reciprocal rights.

In Colorado, interstate transfers can only be approved if the proposed use is authorized by an interstate compact, credited as a delivery of water under an interstate compact or decree, or the use does not impair the ability of the state to meet its obligations under any decree or compact, among other conditions. Interstate transfers in Kansas are subject to the same regulatory provisions as intrastate transfers and, in addition, are subject to the condition that the appropriation can be revoked, modified, or suspended if that water should ever be needed to protect the public health and safety of the people of Kansas.

Montana and New Mexico require the state engineer to consider, among other things, whether there are present or projected water shortages within the state and whether the water proposed for export could feasibly be transported to alleviate those shortages, when deciding whether to approve an interstate transfer permit. In Oklahoma and Oregon, legislative approval is required for all interstate transfers. Utah law simply requires that the state engineer evaluate and make public the advantages to the state before approving any interstate transfer of surface water.

SURFACE WATER EXCHANGES

Seven other western states have statutory provisions regarding surface water exchanges and substitutions. These states are California, Colorado, Idaho, New Mexico, Oregon, Utah, and Wyoming. Generally, water exchanges can be carried out as long as no other appropriator is injured.

California actively encourages voluntary exchanges of surface water to promote efficient use by maintaining a list of parties interested in entering into exchange agreements and providing an expedited procedure to enable water right holders to enter into temporary water exchanges. Under Colorado law, the Water Conservation Board is specifically authorized to enter into exchange agreements to obtain water to maintain flow for instream uses.

SALE OR LEASE OF SURFACE WATER RIGHTS

All of the other western states in the continental U.S. authorize the sale of existing surface water rights. Some also provide for leases of existing rights. Generally, sales or leases of water rights are allowed as long as no other appropriators are injured and the transfer is in the public interest. However, a number of the western states have noteworthy, special restrictions or programs.

Under Arizona law, legislative approval is required to convert a water right from agricultural, municipal, or domestic use to power production under certain circumstances. In addition, irrigation districts and certain other districts must consent to transfers of water rights from within their boundaries or from within a watershed from which they derive their water supply.

In California, voluntary sales or leases of water rights are encouraged by the state. This includes maintaining a state information center for technical and other assistance regarding water right transfers. In Colorado, Oregon, Utah, and Wyoming, state agencies are explicitly authorized to buy or lease water rights in order to maintain instream uses. However, in Utah, legislative approval is necessary before the Wildlife Division can buy or obtain a long-term lease of a water right.

Under Idaho law, transfers of water rights cannot be approved unless it is in the local public interest and would not significantly affect the agricultural base of the area. Under certain circumstances, transfers of rights to large amounts of water must be approved by the legislature. The Idaho legislature has also created the State Water Supply Bank to facilitate transfers of water rights by allowing the state and local water districts to serve as an intermediary between persons desiring to lease and those desiring to rent water rights.

In Montana, the Department of Natural Resources and Conservation is authorized to buy, sell, and lease water rights, and arrange transfers of water rights between others. The Department can lease up to 50,000 acre-feet of its water for a period of 50 years. The intent of the Legislature is that the state act as a proprietor of water. Legislative approval is required for certain large scale water right transfers.

Under South Dakota law, it appears water rights for irrigation can only be sold or leased for irrigation or domestic use and fire protection. Wyoming law requires consideration of the economic loss to the community and the state if the existing use is discontinued before a transfer can be approved. Generally, transfers of water rights are to be to a use which is higher in the statutory order of preferences than the existing use.

SALVAGED WATER

Three western states allow the sale or lease of surface water which is saved through the use of conservation practices. In California, the state encourages voluntary transfers of conserved water by providing technical assistance in the identification and implementation of water conservation practices which will make additional water available for sale or lease.

The official state policy in Oregon is to aggressively promote conservation by allowing the sale or lease of water saved through conservation. The state can claim 25 percent of any water conserved, which it can then allocate to instream uses such as fish, wildlife, recreation, pollution abatement, or navigation. Texas law also authorizes persons who have conserved water to sell or lease that water.

GROUNDWATER TRANSFERS

Intrastate transfers of groundwater are permitted in all the other western states. Most have adopted the prior appropriation doctrine for the allocation of groundwater. Groundwater transfers are usually permitted as long as no prior appropriator is injured and the public interest is not affected adversely. If a groundwater right is transferred, no other appropriator, junior or senior, can be harmed, and it generally must be found to be in the public interest.

Several states do not follow the prior appropriation doctrine, and others have special provisions in their law which are worth noting. Arizona law contains a complex system for regulating transfers of groundwater. Transfers of groundwater within designated groundwater basins are generally not restricted while transferors of water across basin lines may have to pay damages to other landowners within the basin. More specific restrictions apply to transfers of groundwater within and from Active Management Areas.

In California, the legislature has prohibited the export of groundwater from certain basins unless the pumping is in compliance with groundwater management plans adopted by the county board and approved by local voters. In other parts of the state, groundwater which is surplus to the needs of the overlying landowners can be transferred out of the basin.

In Idaho, Kansas, Montana, and South Dakota, transfers of groundwater over a specified amount are subject to legislative approval or rejection, as well as being subject to approval by a state agency. Nevada law provides that if competing applications to appropriate groundwater are filed, the state engineer is to give preference to overlying landowners. In addition, if water will be transferred across county lines, the boards of the affected counties must be allowed to make recommendations on whether the transfers should be approved.

In North Dakota, groundwater cannot be transported to non-overlying land if overlying landowners would be injured. In Oklahoma, overlying landowners are entitled to a proportionate share of the maximum annual yield of the underlying groundwater basin which is equal to the percentage of land overlying the basin which they own or lease. Transfer of this water away from the overlying land is not prohibited, however.

In Texas, groundwater is owned by the overlying landowner and there are no statutory restrictions on transfers. Wyoming law authorizes the state engineer to consider whether the water will be transferred out of the area when deciding whether a proposed groundwater appropriation is in the public interest.

Eleven of the other western states have statutory provisions governing interstate transfers

of groundwater. In Colorado, Kansas, Montana, Nevada, New Mexico, Oklahoma, Oregon, Utah, and Washington, such transfers are subject to the same statutory provisions as interstate transfers of surface water. In Idaho, groundwater exports over a certain amount, and all groundwater exports in Wyoming, are subject to legislative approval.

FEDERAL LAWS AFFECTING TRANSFERS OF WATER IN NEBRASKA

Federal laws and regulations have varying impacts on water transfers in Nebraska and the way the state can regulate or implement them. The U.S. Constitution, international treaties, federal laws authorizing water projects and regulating environmental conditions, and regulations made by federal agencies can all affect the transfer of water and water rights. One case showed very dramatically the effects of the constitution and federal law on state actions.

The U.S. Supreme Court has held that state laws regulating transfers of water out of the state are subject to the commerce clause of the U.S. Constitution. This clause prohibits states from imposing unreasonable burdens on interstate commerce. To conform to the commerce clause, state statutes must regulate interstate transfers in an evenhanded manner, and the regulations must be intended to effectuate a "legitimate local public purpose". Also, the effects of the regulations on interstate commerce must only be incidental. If those requirements are met, a statute will be upheld unless the burden imposed on interstate commerce is clearly excessive when compared with the local benefits of the regulation.

"Evenhandedness" does not require that intrastate and interstate transfers be treated exactly the same. A state may provide its own citizens a limited preference in the allocation of water in times of shortage. However, the preference must serve a "legitimate local public purpose." The U.S. Supreme Court has made it clear that protecting local economic interests is not a legitimate local public purpose, but protecting health and safety is. In addition, a preference for a state's own citizens can only be exercised when there are realistic expectations of actual shortages occurring.

Nebraska's laws regulating interstate transfers of water could conflict with the commerce clause on a number of grounds. When evaluating applications for the export of surface water the Director of Water Resources is required to consider the adverse economic impacts of a transfer and the economic benefits of rejecting the application and preserving the water for in-state use. Denial of an application on either of these grounds would be inconsistent with the requirement that state regulation of interstate commerce serve a legitimate local purpose.

Nebraska law treats intrastate, in-basin transfers of surface water differently than interstate, in-basin transfers. Intrastate, interbasin transfers are also treated differently than interstate, interbasin transfers. This discrimination could only be upheld if it served a legitimate purpose, the statutes were narrowly tailored to that purpose, and adequate non-discriminatory alternatives were not available.

Although in some respects Nebraska law treats interstate transfers of groundwater more favorably than intrastate transfers, one portion of the groundwater export statute is of some concern. The Director of Water Resources is required to evaluate the impact of a withdrawal on future demands for water in the area of a proposed withdrawal. Denial of a groundwater permit based on indefinite future economic uses of water in the area of withdrawal or based on vague concerns over future shortages could be an unconstitutional application of state law.

Another action of the U.S. Supreme Court implementing a provision of the Constitution affects transfers in Nebraska. To settle a dispute between the states of Nebraska, Wyoming, and Colorado over the water in the North Platte River, the Supreme Court issued a decree in 1945. This decree apportions the water supply among the states and requires that the states regulate water use according to its terms. Future interstate transfers might be affected by that decree.

Interstate compacts that Nebraska has entered into according to another provision in the U.S Constitution could also have some effect on transfers in Nebraska. Nebraska is a party to compacts on the Big Blue, Little Blue, Republican, South Platte, and Niobrara rivers. The provisions of each one are different, so they could affect proposed transfers in different ways.

Several different types of laws enacted by Congress could affect transfers. Regulatory acts, such as those controlling pollution and protecting wildlife resources, can and will have an effect on the types of structures that can be used and

possibly the amount of water that can be transferred. The acts that authorized past projects could also affect future transfers. They place different restrictions on the use of water stored in reservoirs they authorized, and they required different contracts between the federal agencies and those using the water. The provisions of these laws, and the regulations of federal agencies that implement the laws and contracts may affect different transfers in different ways.

FUNDING POLICIES AND AUTHORITIES

Development of the state's water resources has been funded primarily by individual landowners and local districts with assistance from the federal government on larger projects. State assistance has been limited to smaller projects. Statutory authority may not be adequate for future state funding needs, and additional legislative action may be needed to continue project development and management in the future. Development by individuals will probably continue as the need occurs and it appears it will be profitable. The scale of individual developments will likely remain small and transfers will probably be over short distances. Total development could continue to be significant if individual projects are numerous.

FEDERAL PROJECT FUNDING

Agencies within the U.S. departments of Agriculture, Defense, and Interior have responsibilities for water resource development. The Farmers Home Administration, the Soil Conservation Service, the U.S. Army Corps of Engineers, and the Bureau of Reclamation have participated in the construction of numerous projects in this state at a cost of millions of dollars.

The Farmers Home Administration is a rural credit agency of the U.S. Department of Agriculture. It is authorized to provide financial assistance in the form of grants or loans for water and waste disposal facilities in rural areas and communities up to 10,000 people. Priority is given to rural residents or public entities smaller than 5,000 people to develop a new water supply and distribution system, restore a deteriorating water supply or improve, enlarge or modify an existing water facility.

The Soil Conservation Service, another agency of the U.S. Department of Agriculture, administers or participates in cost-sharing programs that help protect and develop land and water resources. Their projects have been built to develop water resources for agricultural, municipal, or industrial uses, and for recreation and wildlife. The Small Watershed Program (PL-566) has been a part of water development in Nebraska since the early 1960's. The Soil Conservation Service has spent over 60 million dollars on construction and technical assistance programs in the state since that time.

The primary purposes of the civil works program of the Corps of Engineers are flood control and navigation. The Corps has the authority to construct multipurpose projects that include provisions for municipal and industrial water supply, fish and wildlife, recreation, low-flow regulation for water quality control and irrigation.

The Bureau of Reclamation of the U.S. Department of Interior is responsible for another large water resources public works program. This includes planning, constructing, maintaining, and operating works of improvement for irrigation, hydropower development, municipal and industrial water supply, recreation, and fish and wildlife. In addition, the Bureau of Reclamation provides loans and technical assistance to local organizations for planning and construction of water distribution systems and small irrigation projects.

Large scale, public project development will be affected by recent federal policy changes. Over the last 30 years, federal participation in financing water projects has varied dramatically. Nationwide, federal funds provided only 10 percent of local and state public works investments in 1957; by the late 1970's, its share increased to over 40 percent. In the 1980's, federal water policy changed again, requiring significantly greater cost-sharing by state and local beneficiaries.

STATE FUNDING

At the present time, the State of Nebraska has the authority to provide loans and grants for water and related land resource development through three special funds: the Water Management Fund, the Resources Development Fund, and the Small Watersheds Flood Control Fund.

The Water Management Fund, administered by the Water Management Board, was established to assist sponsors of major water development projects costing in excess of 10 million dollars.

Financial assistance may be provided in the form of grants and/or loans for planning studies as well as construction of approved projects. Grants are limited to a maximum of 75 percent of the eligible local cost of a project. The upper limit of loans or grant/loan combinations is 90 percent of the cost of a project. Financial assistance from this fund can be provided only to political subdivisions of the state that have the legal authority to develop Nebraska's water and related land resources. The initial appropriation to this fund was transferred by the Legislature to other programs, and it has not yet been used to finance any project.

The Nebraska Resources Development Fund was created in 1974 to assist in the development and wise use of Nebraska's water and land resources. This fund can be used to provide grants and/or loans to political subdivisions of the state or an agency of the state. Also, the NRC can use the fund to acquire an interest in a project for the state. The Director of Natural Resources and staff review the economic, financial and technical feasibility and environmental acceptability of each project to determine if it is eligible for funding. The NRC has sole responsibility for determining funding priorities for eligible projects. By June 1988, over 18.75 million dollars had been expended on 37 approved or completed projects. Nearly 3.1 million dollars more had been appropriated and obligated to approved projects but not expended.

The NRC also administers the Small Watersheds Flood Control Fund. The purpose of this fund is to assist local sponsors in acquiring property rights, primarily for flood control structures.

The issuance of bonds is one of the means most widely used by governments for long-term financing of capital construction, including water development. General obligation bonds pledge the taxing power of the issuing government and all of its financial resources to retire the debt and interest. The Nebraska Constitution does not allow the sale of general obligation bonds for water projects. It would require voter approval of a constitutional amendment before general obligation bonds could be marketed for further water development.

On the other hand, the Nebraska Constitution and statutes already authorize the use of revenue bonds for water project financing. These bonds are retired by revenues generated from the projects financed by their use. The Water Management Board is responsible for administering revenue bonds issued by the state for financing water projects.

The State of Nebraska raises its general fund revenue primarily from sales and income taxes. Natural resources districts (NRDs) can finance water resources development through general taxation, revenue bonds, user fees and special assessments or taxes. Local and city governments can generate funds through similar means.

CONSTRUCTION AUTHORITY

In Nebraska, water resources projects are constructed primarily by local political subdivisions, generally in cooperation with federal agencies. Local entities with the authority to construct water projects include cities, counties, sanitary and improvement districts, the Metropolitan Utilities District, NRDs, irrigation, reclamation, and public power and irrigation districts. The primary federal agencies involved in the construction of water projects in the state are the Soil Conservation Service, the Bureau of Reclamation, and the Corps of Engineers.

No agency of the State of Nebraska has been given clear authority to construct water development projects. The NRC, as part of the State Water Planning and Review Process, has the statutory authority to plan and design water projects. However, this program has never received funding from the Legislature. The Nebraska Water Project Revenue Bonding Act gives the Water Management Board some powers necessary to undertake the construction of projects, such as the power of eminent domain. However, the Board's authority appears to be limited to assisting in the financing of projects and acquiring interests in water projects on behalf of the state.

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Chapter 3.

EXISTING AND POTENTIAL RESOURCES, USES, AND TRANSFERS

The vast supplies of surface water and groundwater in Nebraska led to the development of in-basin, interbasin and interstate transfers at many locations throughout the state. This development could continue in the future as demands in this state and other states grow. The type and pace of development will depend on the location and type of demand, available supplies, and the economics of transferring water. Assessing the potential for future transfer projects requires projections of future economic conditions in the face of great uncertainties.

NEBRASKA'S WATER SUPPLY

Abundant supplies of water are available in most places in Nebraska, at most times. Natural streamflow is variable and the supply is limited in some areas at some times. Stored surface water, naturally occurring groundwater, and groundwater stored as a result of surface water projects are often more dependable supplies. Water salvaged by conservation measures is also a potential resource. Both surface water and groundwater in Nebraska are generally of good quality.

SURFACE WATER

The surface water supply in Nebraska includes many streams and rivers, reservoirs of various sizes, wetlands, and natural lakes found in some areas. This water supply is derived principally from precipitation within the state, but there is also considerable inflow from other states. Streamflow in most areas varies considerably from season to season and from year to year.

Nebraska River Basins

Nebraska's streams and rivers generally flow to the east and south and eventually drain to the Missouri River. The Niobrara, Platte, and Nemaha rivers drain the greater part of the state and flow directly to the Missouri River. Numerous small streams along the eastern border also flow directly to the Missouri. The Republican, Big Blue, and Little Blue rivers are tributaries to the Kansas River which flows to the Missouri River at Kansas City. The northwestern corner of the state is drained by the White River and Hat Creek which flow to central South Dakota.

The 13 river basins shown in Figure 1 are used as planning units. They also serve as a frame of reference for some legislation. Some of these basins contain an entire river or river system. The Platte River was divided into several sections to reduce the units to more manageable size. Smaller drainage units were combined to form the White River-Hat Creek, Missouri Tributaries, and Nemaha river basins.

Seven river basins receive streamflow draining from about 56,490 square miles of land in other states. The areas of the river basins in Nebraska and the contributing drainage areas in other states are shown in Table 1. These areas in Colorado, Kansas, South Dakota, and Wyoming contribute an average of about one million acre-feet of water to streamflow in Nebraska each year. About 2/3 of this enters in the North Platte and South Platte rivers. In addition, the North Platte River Basin receives about 3/4 million acre-feet of water from Wyoming through interstate canals. Roughly half of the canal flows are natural streamflow and half are stored water.

Precipitation and Runoff

In an average year, about 86 million acre-feet of rain and snow fall on the state. The average annual precipitation varies from about 35 inches in the southeastern corner of the state to less than 16 inches in the western panhandle. The total rainfall varies considerably from year to year and the amount received by adjacent areas may vary widely during a given year. Severe droughts have lasted almost a decade, as in the 1930's, and for a few years, as in the mid-50's. In contrast, annual precipitation has been 25 to 50 percent above

Figure 1

RIVER BASINS AND CONTRIBUTING AREAS

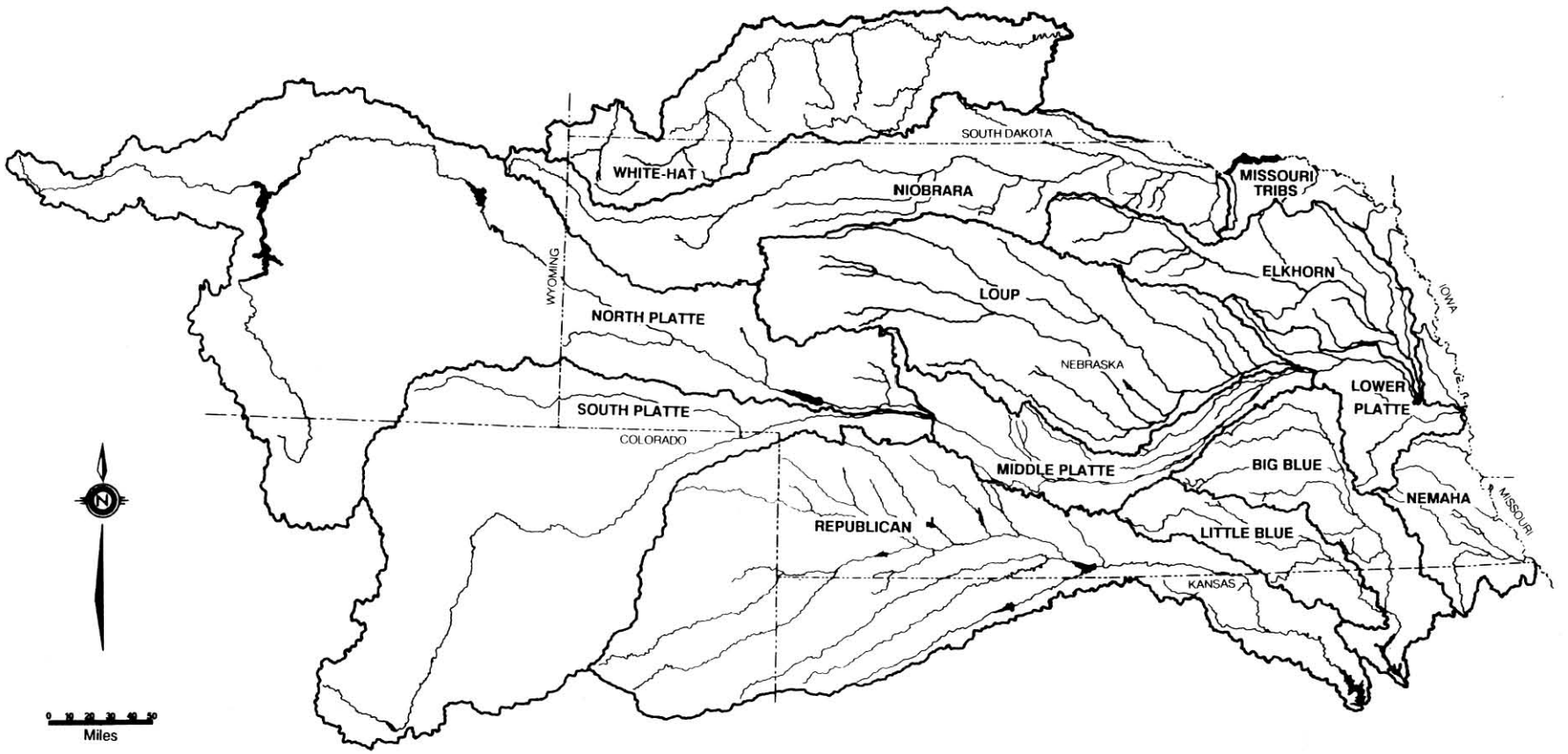


Table 1

RIVER BASIN DRAINAGE AREA

Basin	Drainage Area in Nebraska	Drainage Area Upstream of Nebraska	Percent of Combined Area in Nebraska
	(sq. miles)	(sq. miles)	(percent)
White River-Hat Creek	2,130	300	88
Niobrara River	11,870	2,230	84
Missouri Tributaries	2,950	--	100
North Platte River	7,140	19,170	27
South Platte River	3,150	21,300	13
Middle Platte River	5,130	--	100
Loup River	15,230	--	100
Elkhorn River	7,000	--	100
Lower Platte River	3,110	--	100
Republican River	9,650	12,780	30
Little Blue River	2,650	100	96
Big Blue River	4,570	--	100
Nemaha River	2,760	610	82
Total	77,340	56,490	

average for five or six years in the 1980's in some parts of north-central Nebraska. In the same period, it has been consistently below average in the southwestern corner of the state. About 80 percent of the average annual precipitation falls from April through September, but the seasonal distribution is also quite variable.

Most of the precipitation returns to the atmosphere by evaporation or transpiration before it can run off to a stream or percolate below the root zone. Only a small portion of total precipitation reaches the groundwater reservoir. Groundwater flow to streams, surface runoff, and interflow make up the total outflow from the state through streams. The total outflow from the 86 million acre-feet of precipitation in Nebraska is estimated to be about five million acre-feet, only six percent of the precipitation. The state's water supply from precipitation and streamflow is summarized graphically in Figure 2.

Amount and Variability of Streamflow

Overland runoff of rainfall and snowmelt, plus influent groundwater in this state, and streamflow and canal inflow from other states contribute to streamflow in Nebraska. Streamflow varies considerably seasonally and from year to year. It also varies by region. Streamflow is generally greatest where precipitation is greatest, in the eastern part of the state. Figure 3 shows the relative amount of flow in the major streams in 1975 by the width of the lines. Water development affects streamflow in most rivers and larger streams in the state. In Figure 3, for example, the abrupt decreases in width show major diversions from the streams. Flow data for selected stream gaging stations across the state are shown in Table 2.

The total streamflow discharging from the state averages over seven million acre-feet per year. The Platte River drains about half of the state and discharges a somewhat higher proportion of the total outflow. The Niobrara contributes about 15 percent of the outflow and the combined flows of the Big Blue, Big Nemaha, Little Blue, and Republican rivers make up about 20 percent of the outflow.

The annual flow in most Nebraska streams varies considerably from wet years to dry years. As shown in Table 2, the maximum yearly flow in the South Platte River was almost six times the average annual flow and the minimum flow was 18 percent of the average. The maximum annual flows of the Elkhorn River at Waterloo, Platte River near Grand Island, and Big Nemaha River at Falls City were over three times average annual flows. Annual flows in dry years for the Big Blue River at Barneston and Big Nemaha River at Falls City were, respectively, 16 percent and 14 percent of average annual flows. Annual streamflow for the Middle Loup River at St. Paul varies from only 144 percent to 75 percent of average flow. This river flows from the Sandhills region and receives a

Figure 2

NEBRASKA'S WATER SUPPLY

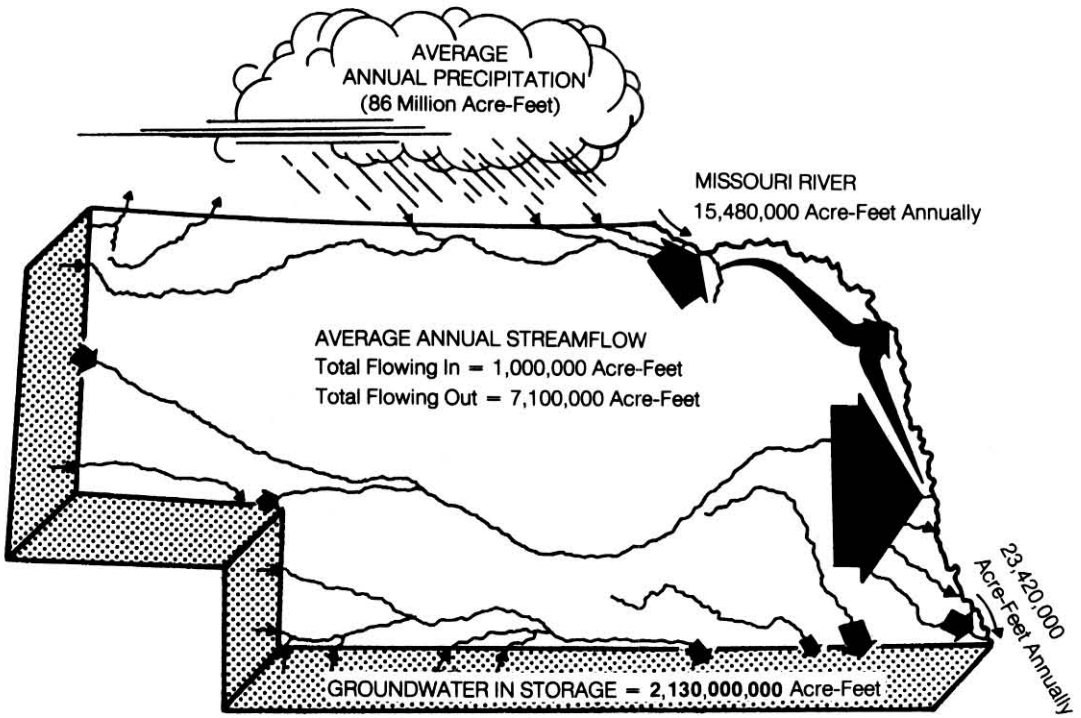


Figure 3

PRECIPITATION AND STREAMFLOW IN NEBRASKA

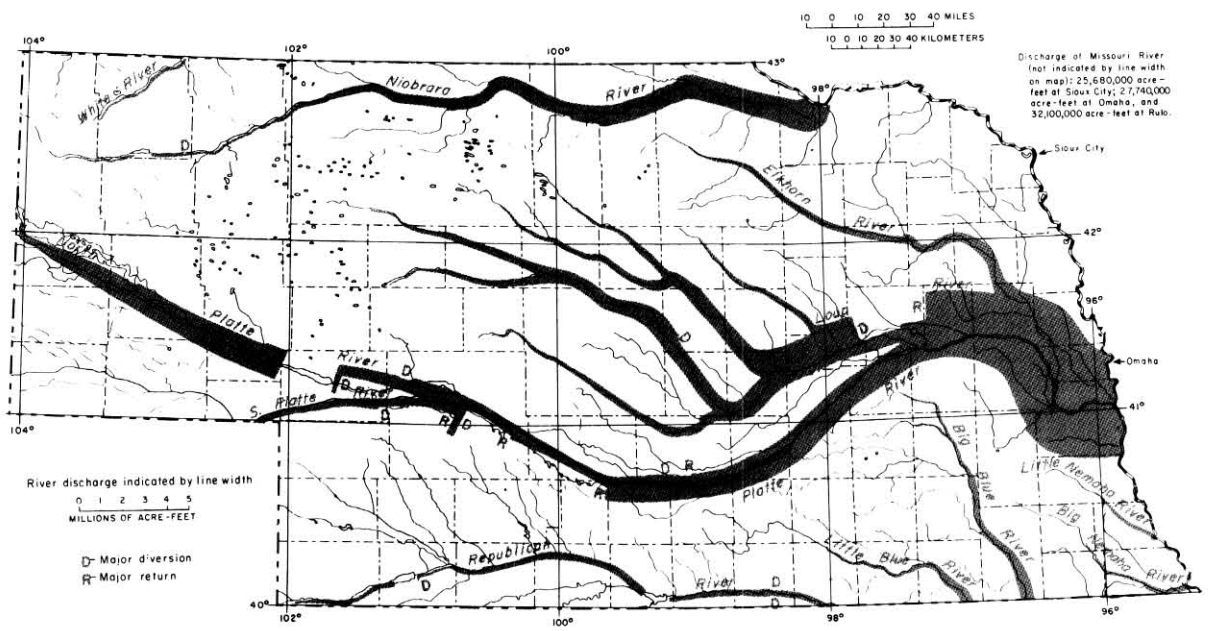


Table 2

STREAMFLOW IN NEBRASKA

Station	Annual Streamflow			Monthly Flow			
	Average Flow (AFA)	Percent of Average Flow Maximum (percent)	Percent of Average Flow Minimum (percent)	Maximum Flow Month	Percent of Annual Average (percent)	Minimum Flow Month	Percent of Annual Average (percent)
Big Blue River at Barneston	599,645	278	16	March	13.8	December	2.1
Big Nemaha River at Falls City	442,840	317	14	June	16.6	December	2.3
Elkhorn River at Waterloo	865,021	324	32	June	18.1	January	3.7
Little Blue River at Hollenberg, KS	371,684	194	45	June	16.2	December	2.8
Middle Loup River at St. Paul	800,178	144	75	March	12.6	August	5.2
Platte River at Louisville	4,686,363	263	46	June	13.8	August	4.5
Plate River near Grand Island[1]	1,128,000	375	22	March	13.9	August	2.2
Missouri River at Omaha	22,262,597	159	49	June	12.8	January	3.7
Niobrara River at Verdel	1,152,455	158	77	March	13.6	August	5.6
North Platte River at Lewellen	1,095,935	242	53	June	11.5	August	5.1
Republican River at Orleans	210,899	210	39	June	16.3	October	4.1
South Platte River at North Platte	308,915	577	18	June	23.0	August	3.4
White River at Crawford	14,679	155	81	March	11.3	July	5.4

[1]Annual Streamflow data is based on record after completion of Kingsley Dam.

nearly constant groundwater inflow; overland flow is limited to the lower portion of the river.

Streamflow in Nebraska is usually the highest in the spring and lowest in the fall or winter. Twenty-three percent of the average annual flow of the South Platte River at North Platte occurs during the month of March and only 3.4 percent occurs in August. June flows make up 18 percent of the annual flow in the Elkhorn River at Waterloo. Low flow months contribute about two percent of the flows in the Big Blue River at Barneston, Big Nemaha at Falls City, and Platte River at Grand Island. Several months of zero flows have been recorded on the Platte River at Grand Island. The Middle Loup River at St. Paul does not vary during the year to the same extent as these other rivers. Monthly flows range from 5.2 to 12.6 percent of average annual flows.

Natural streamflow sources for water transfers can be appropriated flows or unappropriated flows. Appropriated flows are already committed to existing water rights while rights to unappropriated flows could be obtained by application for a new water right junior to all existing water rights. The greatest amounts of appropriated flows are found in the North Platte and Platte River basins. Information published by DWR shows that nearly 800,000 acre-feet are

diverted for use by irrigators in the North Platte River Basin each year. This represents a significant quantity of water that could be transferred by transferring water rights.

At one time or another, most streams and rivers have inadequate flow to satisfy all potential users. Shortages occur primarily during the irrigation season in dry years, so unappropriated streamflow may not be a reliable source of significant amounts of water during that period, except from portions of the Niobrara River, the lower Platte River, and streams in the Elkhorn, Nemaha, and Missouri Tributaries river basins. During the non-irrigation season, there is often more streamflow and much less demand, so new appropriators would be much more assured of water at these times.

Stored Surface Water

Water is stored in impoundments for irrigation, production of hydroelectric power, flood protection, and recreation. There are about 100 reservoirs in Nebraska with a storage capacity of more than 1,000 acre-feet. Their combined storage capacity is about 3.4 million acre-feet of water. The capacity of Lake McConaughy is more than half of this total. The five large reservoirs in the Republican River Basin have almost 20 percent of the total storage capacity.

Surface Water Quality

The water in Nebraska streams and rivers is generally of good quality. Water quality in about 15 percent of the stream miles assessed in 1986 is rated excellent, being better than necessary to support most beneficial uses. These streams are located in the sparsely populated areas of western and north-central Nebraska. About 70 percent of the stream miles have water quality adequate to support most beneficial uses. The remaining stream miles exhibit some beneficial use impairment. The primary water quality concerns are (1) the failure to support primary contact recreation due to high levels of fecal coliform bacteria from nonpoint sources, (2) nonpoint source pollution which impairs aquatic life by contributing high sediment loads, and (3) the increasing concentrations of chlordane and other pesticides in fish tissue samples.

Water stored in impoundments in the state is generally of good quality. All reservoirs assessed in 1986 met water quality requirements for primary contact recreation. Several reservoirs, most in Lancaster County, had some problems meeting criteria to protect aquatic life. Dissolved oxygen levels are occasionally depressed as a result of eutrophication caused by nutrient enrichment by runoff from agricultural lands.

GROUNDWATER

Nebraska is underlain by more than two billion acre-feet of groundwater. Groundwater in storage in the principal groundwater reservoir is shown in Figure 4. Groundwater is most abundant in the central part of the state, especially in the Sandhills region. The saturated thickness of the groundwater reservoir exceeds 500 feet in almost one quarter of the state. Much of the saturated thickness is the Ogallala and associated aquifers. Figure 5 shows geologic cross-sections of the bedrock, aquifer, and overlying material at the locations shown in the map. The thinning of the aquifer in the Republican River valley on the southern border of the state prevents groundwater from flowing to the south. Groundwater is absent or of poor quality only in small areas in the extreme south, southeast, northeast, and west.

Stored Groundwater

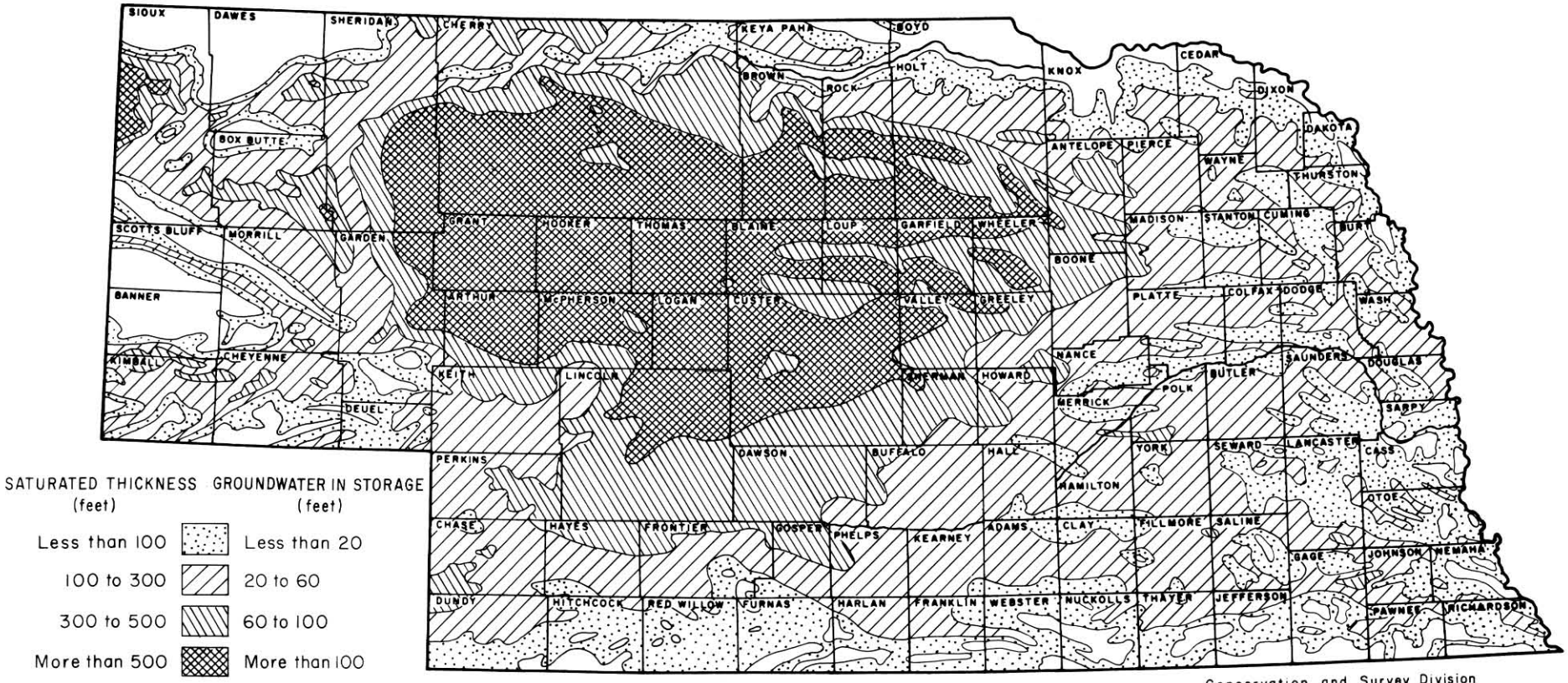
In some parts of the state, the groundwater in storage has increased significantly from estimated predevelopment levels due to seepage from reservoirs, canals, and surface water irrigation systems. Rises in the water table of 10 feet or more are shown in Figure 6 with areas of declines of more than 10 feet. Groundwater mounds are found near Lake McConaughy, Sutherland Reservoir and the Sutherland Canal, along the Tri-County Supply Canal and the Phelps County Canal, Sherman Reservoir and the Farwell Irrigation Project, and in some other locations in the state. The most extensive groundwater mound is located in Gosper, Phelps, and Kearney counties where the water level has risen ten feet or more beneath an area greater than one-half million acres. The greatest recorded rise is 96 feet. The volume of this mound is estimated at six to eight million acre-feet of water, which is three to four times the amount stored in the state's largest reservoir, Lake McConaughy.

Groundwater Quality

The quality of the groundwater available in much of the state is excellent, but in some parts availability is limited to supplies of lesser quality. This is particularly true in areas of southeastern, northeastern, and western Nebraska. Groundwater quality varies naturally in different aquifers because it is affected by geology, soils, and topography. Human land and water use activities have also affected groundwater quality in some areas. Widespread use of nitrogen fertilizer is a major cause of high levels of nitrate in

Figure 4

GROUNDWATER IN STORAGE IN THE PRINCIPAL GROUNDWATER RESERVOIR



White areas indicate principal aquifer is very thin or absent

Conservation and Survey Division
Institute of Agriculture and Natural Resources
The University of Nebraska—Lincoln
1981

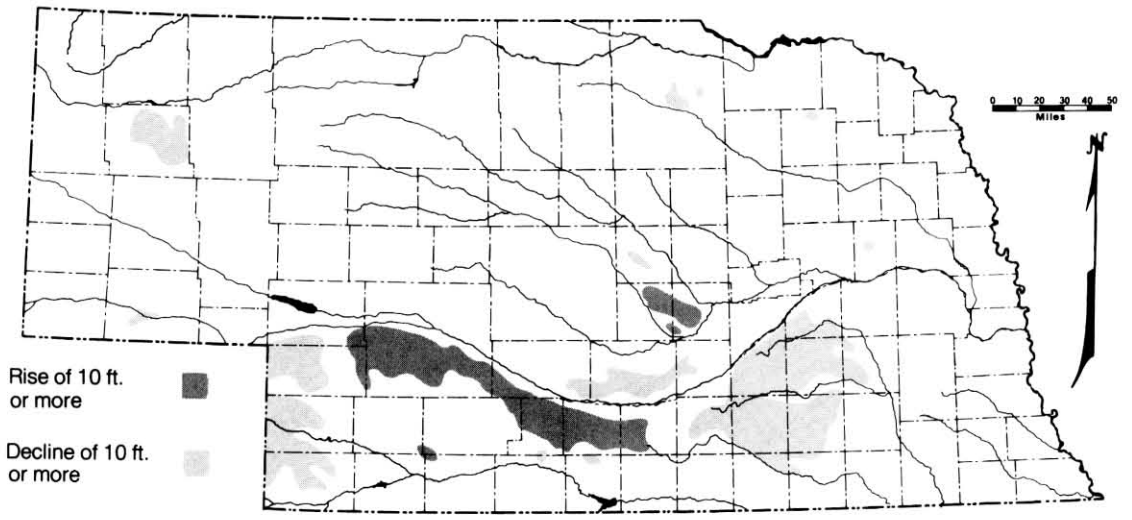
Figure 5

GEOHYDROLOGIC SECTIONS THROUGH THE PRINCIPAL AQUIFER

Scale 1:2,500,000

Figure 6

AREAS WITH WATER TABLE RISES AND DECLINES SINCE PREDEVELOPMENT



groundwater in the Buffalo-Hall-Merrick county area and in Holt County. More localized nitrate problems are found in various parts of the state. Pesticides are being detected with increasing frequency. Higher concentrations of dissolved solids and sulfate are found in the groundwater in areas recharged by irrigation return flows. Point source contamination of the groundwater, particularly with synthetic organic chemicals and hydrocarbons, is also a concern.

SALVAGED WATER

In most surface water development projects a significant amount of water is lost to groundwater through seepage. Diversions could be reduced if losses to seepage were reduced. For example, lining canals and improving distribution systems can reduce seepage losses by as much as 20 to 25 percent of the original diversion. The resulting "salvaged" water would be readily available for use.

EXISTING AND POTENTIAL WATER USE

Substantial amounts of surface water and groundwater are used for beneficial purposes in the state. These uses are diverse and include off- stream and instream uses. Nevertheless, many areas in Nebraska and neighboring states lack adequate supplies to meet existing or potential demands.

CURRENT WATER USE IN NEBRASKA

Water withdrawals are used for public water supplies, self-supplied industrial and commercial uses, power generation, irrigation, rural domestic and livestock supplies, and mining. Very little current data on actual water use is available in Nebraska, so estimates of use in 1980, shown in Table 3, must be utilized to approximate current use. The quantities shown for most uses are based on the amount of water withdrawn from wells or streams, not the amount consumed. Hydroelectric power use is defined by the discharge through the turbines.

In 1980, over 20 million acre-feet of water were utilized for beneficial purposes in the state. About 60 percent was surface water. Irrigation

Table 3

1980 WATER USE IN NEBRASKA

Use [1]	Surface Water	Ground-water	Total
	(1,000 acre-feet/year)		
Public Water Supplies	75.4	266.1	341.5
Self-Supplied Industrial Supplies	8.1	46.2	54.3
Thermoelectric Power Generation	2,833.6	28.2	2,861.8
Rural Domestic and Livestock Supplies	26.0	159.7	185.7
Irrigation	2,890.5	7,526.6	10,417.1
Hydroelectric Power Generation	6,669.1		6,669.1
Total	12,502.7	8,026.8	20,529.5

[1]Use is the amount withdrawn or discharged through turbines. No estimates are available for self-supplied commercial facilities and mining.

Source: Lawton, D., Veys, C., and Goodenkauf, O., 1983, An Inventory of Public, Industrial, and Power-gererating Water Use in Nebraska, 1979 and 1980, Conservation and Survey Division, University of Nebraska-Lincoln, Nebraska Water Survey Paper 54.

accounted for about one-half of all water use and over 90 percent of the groundwater use. Consumptive use by crops was only a portion of total use. Field losses to runoff plus deep percolation from canals, distribution systems, and fields was estimated to be as much as 50 percent of diversions.

Large quantities of water are used for the generation of power. Hydroelectric power was generated at five instream plants and seven plants supplied by diversions from streams in 1980. Most water used in thermoelectric power generation is used for once-through cooling and is then discharged at a slightly higher temperature. Little water is consumed at these plants, but there may be some seepage and evaporation losses. Public water supplies and other categories use considerably smaller amounts.

Recreation, fish and wildlife propagation, groundwater recharge, and waste assimilation are important instream uses of surface water. These uses are difficult to quantify. Minimum flows required to support some of these uses have been estimated and are discussed in the next section. Groundwater recharge is particularly important to communities such as Grand Island, Lincoln and Omaha that have municipal well fields located in river valleys where they can readily induce recharge.

Table 4

PROJECTED WATER REQUIREMENTS FOR NEBRASKA

Use	Future Requirement 1980	2020
	(1,000 acre-feet/year)	
Public Water Supplies	382.7	557.2
Self-Supplied Industrial Supplies	101.0	144.0
Thermoelectric Power Generation	1,986.3	2,321.0
Rural Domestic and Livestock Supplies	185.2	284.6

Source: Nebraska Soil and Water Conservation Commission, 1971, Report on the Framework Study, Appendix C, Land and Water Resources Problems and Needs.

PROJECTED WATER USE

Estimates of future water use, shown in Table 4, were made for the Report on the Framework Study, published by the Nebraska Soil and Water Conservation Commission (now NRC) in 1971. Total requirements for public water supplies, self-supplied industrial uses, thermoelectric power generation, and rural domestic and livestock use were projected to increase by 24.5 percent from 1980 to 2020. Projections of requirements for irrigation were not given in the framework report, but irrigation water use was estimated for the Six-State High Plains Ogallala Aquifer Regional Resources Study. This study, conducted between 1977 and 1981, projected that 14 million acre-feet of groundwater and 1.8 million acre-feet of surface water would be required by 2020. These water use estimates are considered to be very high because optimistic crop prices were utilized in the projections.

POTENTIAL FOR ADDITIONAL USES IN NEBRASKA

Water supplies in some areas are not adequate to meet the needs and desires of everyone. A few areas do not have a local source of water for municipal or rural domestic and livestock use. The only water available in some places is of less than desirable quality. There are irrigable lands in the state without a water supply or that are served by a water supply that is being depleted. Flows in many streams in the state are at times inadequate for the support of all desired instream flow uses.

Water quantity and quality problems affect public water supplies in the Republican and Middle Platte River Basins, and places in southeastern and northeastern Nebraska. A large area of the central Platte River valley north of the river is affected by groundwater nitrate contamination. It was estimated that municipal water systems in the area could require 5,000 to 10,000 acre-feet per year to replace contaminated supplies. Additional areas could be similarly affected. Communities in southeastern Nebraska may also require supplemental water supplies because this area has limited groundwater supplies of good quality. The water systems serving Lincoln and Omaha and rural water systems in the Nemaha River Basin and Knox County may require additional water supplies in the future.

Problems of inadequate water supplies for rural domestic and livestock uses occur in some parts of the state but are usually of limited area. Some problem areas in the White River-Hat Creek, Missouri Tributaries, Elkhorn, Lower Platte, and Nemaha river basins may be extensive enough to justify additional rural water supply projects in the future.

Several areas in the state contain large tracts of land that are suitable for irrigation that are not presently irrigated. Some of these lands have never had water supplies available. In the Six-State High Plains Ogallala Aquifer Regional Resources Study, it was estimated there are over 12 million acres suitable for irrigation that were not irrigated in 1980. Almost half of these 12 million acres were in the panhandle and southwestern Nebraska. The extreme eastern section and the northwestern corner of the state were not included in that study, and they might have added significantly to the total. The potential for developing projects to provide additional water supplies to many of these acres was shown to be very limited under economic conditions prevailing at that time.

Several areas of the state have experienced significant water table declines since irrigation well development began having an effect. Areas of decline are found in the upper Big Blue, upper Republican, and upper Little Blue river basins, and in Holt, Box Butte, and Buffalo counties. The areas with declines greater than 10 feet are shown in Figure 3. These declines are due primarily to withdrawals for irrigation, so supplemental irrigation and groundwater recharge are potential uses. If declines continue in the future, and in some cases, even if water tables are stabilized by regulations, these areas may not be able to support their current level of development without supplemental water.

A number of projects have been proposed to bring water to these areas. They include diversions of up to 300,000 acre-feet annually to the upper Big Blue River Basin, 20,000 to 40,000 acre-feet per year to the upper Republican River Basin, and about 100,000 acre-feet per year to the Buffalo County area. A project that would pump groundwater to the Box Butte area has also been included in planning reports.

Instream flows support a number of beneficial uses, including some that produce direct economic benefits, such as hydroelectric power generation, fishing, hunting, and recreation. By their nature, off-stream uses compete with instream uses for the water supply, which may be limited at times. Many perennial streams in Nebraska have historically gone through periods of low flow due to drought. However, the occurrence of especially severe low flow, and even no flow conditions in recent years in several important streams, including the Republican River

near Oxford, Little Blue River near Hebron, Cedar River near Fullerton, and Logan Creek near Bancroft, indicate the impact diversions for off-stream uses have had on streams. The flow of these streams, especially during the summer irrigation season, is determined by the use of existing water rights, because the amount appropriated exceeds the base flow of the stream.

Providing instream flows for many different purposes represents another potential use for water in Nebraska. Studies have shown that additional flows could be used in some locations for fishery resources, for canoeing on selected streams, and for instream hydroelectric power plants. Additional water could possibly be used to meet instream flow requirements for navigation on the Missouri River, for recharge of the aquifer for the Lincoln well field near Ashland and well fields in other areas, and for interstate compacts in the future. Instream flows have also been shown by the U.S. Fish and Wildlife Service and the Game and Parks Commission to be necessary for maintenance of critical habitat for threatened and endangered species. The flows in the Platte River are of primary concern.

POTENTIAL USES IN OTHER STATES

The potential demand for water is even greater in other states. Most states to the south and west are experiencing increasing competition for available water supplies. Competition for the available water is further complicated by Indian water rights and environmental issues. Development of energy resources in the western states would create added pressures on the scarce water supply.

In this study, the review of potential interstate water demands focused primarily on the nearby states of Wyoming, Colorado, and Kansas. Additional municipal water supplies for the Denver area, and smaller communities along the front range and in northeastern Colorado will be needed in the future. The Denver Board of Water Commissioners projected a water shortage of 166,000 acre-feet for 2035 based on firm supplies and projected demand. In 1988, it was seeking approval of a project which would provide a safe yield of about 100,000 acre-feet. Julesburg, Colorado was also looking for a dependable source of good quality water. Its water requirements were less than 1,000 acre-feet per year.

Municipal water supplies and energy development are potential water uses in Wyoming. The city of Casper has been investigating alternative sources of additional water for several years. There is great potential for energy development in Wyoming, including thermoelectric power generation and coal gasification and liquefaction. These processes require large volumes of water; one or two power plants could require 10,000 to 20,000 acre-feet of water each year.

There is also growing concern over the future water supply needs in the central Kansas area. Fifteen communities ranging in size from less than 2,000 to nearly 300,000 residents currently obtain their water supplies from both groundwater and surface water sources. Existing groundwater sources are being pumped faster than natural recharge in a few areas; some are of limited quality and could become contaminated. The potential for continued development of local groundwater sources appears limited. Potential supplies from existing sources of surface water are unreliable, especially during drought conditions, and are of poor quality in some areas.

Potential water demands for agricultural use are as great in other states as they are in Nebraska. The Six-State High Plains Ogallala Aquifer Regional Resources Study found millions of acres that could use irrigation water in the future in Colorado, Kansas and other states to the south, but no feasible transfer project was identified.

EXISTING AND POTENTIAL TRANSFER PROJECTS

In the past, the term "transfer" was applied to at least three types of activities: (1) a legal change in an existing water right, (2) a direct movement of water from one place to another, and (3) an indirect exchange of water in one place for water used in another. In many cases, the first type simply provides the authority to do the second, that is, move the water to a new point of use. Transfer projects included in this section are primarily of the second type, that is, those that transport water directly.

Current state laws impose different conditions on applicants for permits to transfer water based on the source of the water, the use of the water, and other factors. In the first section of

this chapter, sources of water are described by category: (1) natural streamflow, (2) stored water, (3) natural groundwater, (4) recharged groundwater, and (5) salvaged water. Transfers from the first four are treated differently in Nebraska water law. Salvaged water is not addressed in the statutes. State legislation also treats in-basin water use and water transported from one river basin for use in another basin differently. A distinction is also made between use in Nebraska and transfers of water to another state. Therefore, the source of water, type of use to which it will be put, and location of use with respect to origin have been considered in examining existing and potential transfers.

WATER TRANSPORT FACILITIES

Water transport projects have some common basic features. All must have a source of supply and some facilities for capturing it, some method of transportation to convey it from source to use, and a system for using the water. In addition, many projects have a storage facility to make the supply more reliable.

Surface water supplies can be withdrawn from streams or reservoirs by gravity flow or by pumping. Diversion dams on streams or outlet works in storage dams are usually employed to withdraw water by gravity. Permanent intake structures and pumping plants or portable pumps with temporary intake pipes are also used to withdraw surface water from streams and reservoirs. Groundwater is normally pumped from wells but gravity flow from drainage ditches or drain tiles can be used in some situations. Water can be conveyed to the desired location in canals, pipelines, or stream channels. Stream channels are often used to carry water from a reservoir to a downstream location where it is diverted into a canal. Pipelines are primarily used to transport water for municipal and domestic use or smaller quantities of water for irrigation and other uses. Pumping plants may be required along the route of longer pipelines. They may also be needed when canals must cross ridges.

EXISTING TRANSFERS

Existing water transfers in the state vary in size and complexity. They include many of the possible combinations of source, water use, and location classifications. Some examples of existing water transfers are listed in Table 5. The location of these transfers are shown in Figure 7 by numbers corresponding to those in the table. They use natural groundwater, stored surface water, and natural streamflow for public water supplies, irrigation, electric power generation, or power and irrigation. In-basin, interbasin, and interstate transfers are included. These examples range in size from the 37 acre-feet transferred from a well field in Kansas for the Byron, Nebraska municipal water supply to transfers of over one million acre-feet per year by the Central Nebraska Public and Irrigation District (CNPPID) and the Loup River Public Power District. Several of the projects utilize wells and pipelines, including the municipal water transfers and the Sporhase and Moss transfer from an irrigation well in Nebraska to land in Colorado. Groundwater from a well field near the Platte River is pumped about 25 miles for the Lincoln water supply.

A storage reservoir provides a dependable water supply for most of the example projects utilizing surface water; several projects use natural streamflow and stored water. The Loup River Public Power District diverts natural streamflow from the Loup River to the Loup Power Canal. Diversion dams which turn water from streams into canals also are used in a number of other projects. Water from Merritt Reservoir, a storage facility for the Ainsworth Unit, is released from an outlet structure to the Ainsworth Canal. The CNPPID Tri-County Canal carries up to 2,000 cubic feet per second a distance of 75 miles; most other canals carry smaller volumes of water. The Bostwick Division, CNPPID, Frenchman Unit, and North Platte Project are examples of projects which release stored water to the stream channel so it can be diverted to a canal downstream.

Estimates of the amount of water transferred by existing projects in Nebraska, based on proposed definitions in the statutory framework, are shown in Table 6. Estimated uses for public water supplies, irrigation, and power and irrigation are listed by the river basin in which the water is used.

POTENTIAL TRANSFER PROJECTS

Potential sources of water and a variety of potential uses in Nebraska and in nearby states have been described in preceding sections. Potential transfer projects would provide water supplies for these water demands. The potential transfer projects briefly described below include projects which have been studied and discussed for years and others which are little more than concepts. Most new transfers would be built with features and technology similar to existing transfers and would also be in the same size range.

Table 5

EXAMPLES OF EXISTING WATER TRANSFERS

Transfer	Transfer Facilities	Quantity Transferred in 1985 (acre-feet)	Transfer Classification		
			Source	Use	Location
1. Ainsworth Unit	Merritt Reservoir Ainsworth Canal	69,190	Stored Surface Water	Irrigation	In-basin
2. Bostwick Division[1]	Harlan County Dam Republican River Channel Superior-Courtland Diversion Dam Courtland Canal	48,060	Stored Surface Water	Irrigation	Interstate
3. Village of Byron	Wellfield in Kansas Pipeline to Village	37	Groundwater	Municipal	Interstate
4. Central Nebraska Public Power and Irrigation District[1]	Kingsley Reservoir North Platte River Channel CNPPID Diversion Dam Tri-County Canal	1,232,170	Stored Surface Water	Power Irrigation	In-basin
5. City of Chadron[2]	Wellfield near Niobrara River Pipeline to City	789	Groundwater	Municipal	Interbasin
6. Frenchman Unit	Enders Reservoir Frenchman Creek Channel Culbertson Diversion Dam Culbertson Canal	28,990	Stored Surface Water	Irrigation	In-basin
7. City of Lincoln	Wellfield near Platte River Pumping Plant Pipeline to City	33,554	Groundwater	Municipal	In-basin
8. Loup River Public Power District	Diversion Dam Loup River Canal	1,328,000	Natural Streamflow	Power	Interbasin

Table 5

EXAMPLES OF EXISTING WATER TRANSFERS (Continued)

Transfer	Transfer Facilities	Quantity Transferred in 1985 (acre-feet)	Transfer Classification: Source	Transfer Classification: Use	Transfer Classification: Location
9. Metropolitan Utilities District[1]	Wellfield near Platte River Pumping Plant Pipeline to City	47,800	Groundwater	Municipal	Interbasin
10. Nebraska Public Power District[1]	Kingsley Reservoir Korty Diversion Dam Korty Canal Keystone Diversion Dam Sutherland Supply Canal Sutherland Reservoir Maloney Reservoir	991,480	Natural Streamflow Stored Surface Water	Power	Interbasin
11. North Platte Project[1]	Pathfinder Reservoir North Platte River Channel Guernsey Reservoir Whalen Diversion Dam Interstate Canal	530,590	Stored Surface Water Natural Streamflow	Irrigation	Interstate
12. Sporhase and Moss	Well in Nebraska Pipeline to Colorado	Unknown	Groundwater	Irrigation	Interstate
13. City of Tecumseh	Wellfield Pipeline to City	1,034	Groundwater	Municipal	In-basin
14. Thurston County Rural Water District No. 2	Pumps Pipeline	47	Groundwater (From City of Pender Municipal Supply)	Rural Domestic & Livestock	Interbasin

[1]The transfer described is only part of a larger project which includes other facilities.
[2]Chadron also obtains part of its water supply from a surface water source.

Figure 7

EXAMPLES OF EXISTING WATER TRANSFERS

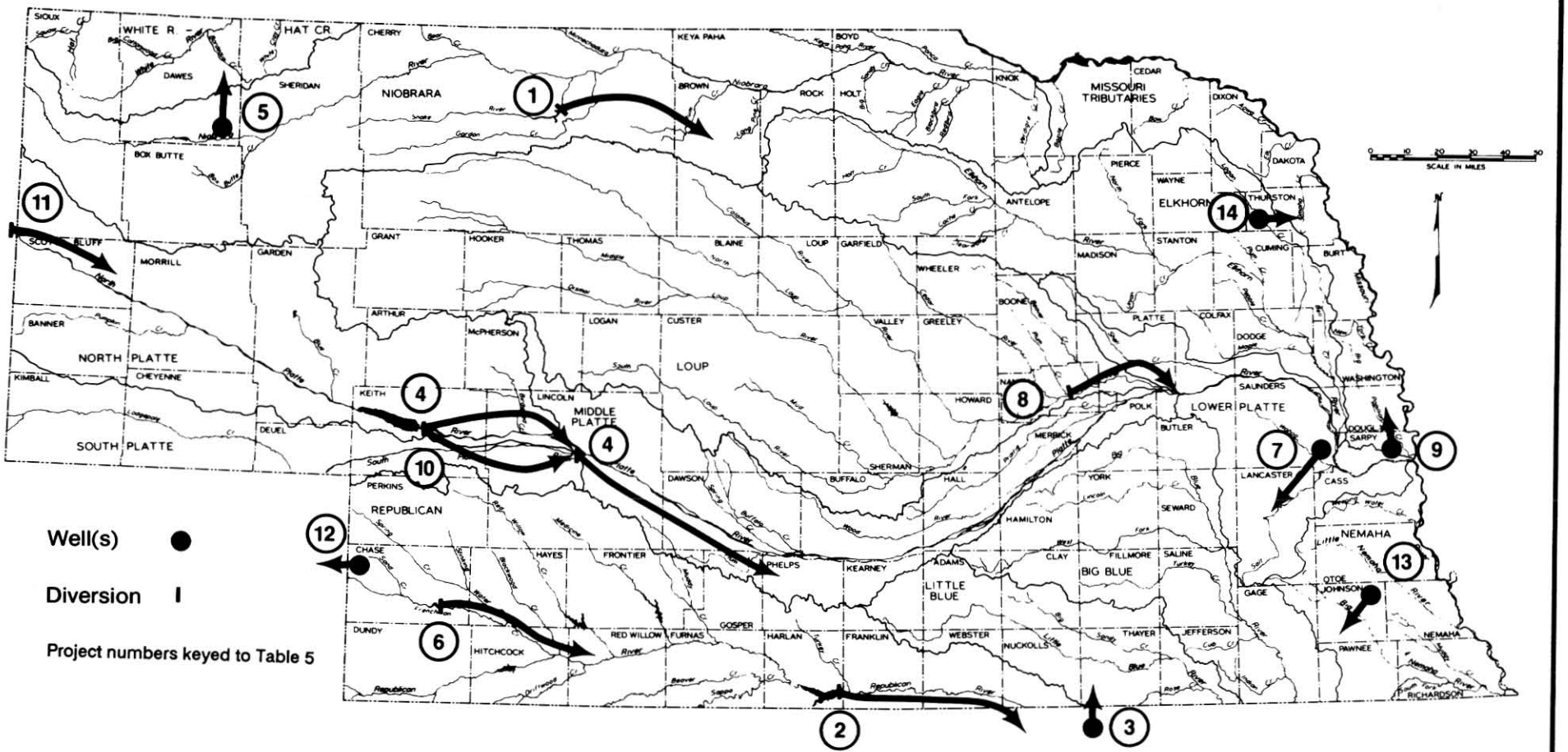


Table 6

WATER TRANSFER ESTIMATES

River Basin of Use	Public Water Supplies[1]	Irrigation[2]	Power Generation[2]
	(1,000 acre-feet)		
Big Blue	17.1	N.A.[3]	0.0
Elkhorn	13.8	N.A.[3]	0.0
Little Blue	2.4	N.A.[3]	0.6
Loup	6.1	195.0	270.3
Lower Platte	40.5	N.A.[3]	1,057.7
Middle Platte	19.3	209.9	1,338.3
Missouri Tributaries	100.3	N.A.[3]	1,287.1[4]
Nemaha	6.0	N.A.[3]	1,166.5[4]
Niobrara	6.3	91.7	0.0
North Platte	16.1	1,399.5	0.0
Republican	9.8	207.7	0.0
South Platte	5.8	43.3	991.5
White-Hat	1.8	N.A.[3]	0.0
State Total	245.3	2,147.1	6,112.0

[1] Surface and groundwater withdrawn in 1985.
[2] 1985 surface water diversions reported in Hydrographic Report; no data available to estimate transfers of groundwater for these uses.
[3] Not available; although many water right holders withdraw small quantities from streams, these surface water diversions are not reported in the Hydrographic Report.
[4] 1980 data.

Sources: Lawton, D., Veys, C., and Gordenkauf, O., 1983, An Inventory of Public, Industrial, and Power-generating Water Use in Nebraska, 1979 and 1980, Conservation and Survey Division, University of Nebraska-Lincoln, Nebraska Water Survey Paper 54.
Nebraska Department of Water Resources, Hydrographic Report 1985.
Conservation and Survey Division, University of Nebraska, Nebraska's Public Water Supply Data for 1985.

Surface Water Transport Projects

Appropriated and unappropriated streamflow, stored surface water, and salvaged water could be sources for projects in many parts of the state. Existing surface water rights in the Niobrara, North Platte, South Platte, and Republican River Basins could be transferred to different uses in Nebraska, Wyoming, Colorado, or Kansas. New diversion dams or storage dams could be constructed in any of those states to provide water to different uses, including irrigation in new locations, energy developments, or municipal uses.

Unappropriated water from the Niobrara, Elkhorn, Nemaha, Missouri Tributaries, and Lower Platte River Basins could also be utilized. Potential projects have been proposed that would transfer water by canal from the Niobrara, Loup, and Dismal rivers to the Platte; from the Platte to the Little Blue River Basin; and the Niobrara to the Elkhorn River Basin in northeastern Nebraska. Additional diversions could also be possible from the Republican and Big Blue River Basins to Kansas for irrigation or municipal use.

Potential transfer projects that would withdraw water from streams or reservoirs with pumps include a proposed interbasin transfer from the Platte River to the Big Blue River Basin. Other proposed projects include the Crofton Unit in northeast Nebraska and the Cass-Otoe Unit in southeast Nebraska, which would pump water from the Missouri River for irrigation. Potential projects that might divert water from storage reservoirs include a proposal to pump from Lake McConaughy to southwest Nebraska for irrigation, groundwater recharge, and supplementing surface water supplies in Enders Reservoir. This type of project could also be extended to Colorado or Kansas. These projects would pump water to a higher elevation through a pipeline. If the topography permitted, the water could be pumped to a greater elevation in a short distance and then allowed to flow by gravity through a canal to its destination. Large quantities

of water can sometimes be transported more cheaply through canals.

Transfers of existing water rights to instream flow uses would be a special kind of transport project. In that case, transportation of the water would be the intended use. One potential method of providing minimum desirable flows in these streams throughout the year would be to transfer, either via donation or purchase, existing water rights that have adequate seniority to ensure sufficient flow at a given point or stream reach. Part of the flow diverted under these rights could be transferred to instream flows if salvaging water were allowed. These types of actions could involve a transfer from one stream to another. High priority reaches would include those of major importance to threatened and endangered species, fish, furbearers, migratory waterfowl, and/or recreation use.

Groundwater Transport Projects

Potential groundwater transport projects could be located anywhere in the state, from the Missouri river flood plain in the east to Box Butte County in the west. Transfers of a mile or two with small quantities of water could occur nearly anywhere. Individual irrigators could transport water that far, and the city of Julesburg, Colorado certainly could transfer municipal water through a pipeline from a well field in Deuel County. In the future, other cities in Colorado from Sterling to Denver could also look to western Nebraska for municipal water supplies. Nitrate contamination of existing municipal water supplies could cause some communities in Nebraska as well as Colorado to consider groundwater transfers. A well field in the Sandhills or near the Platte River could provide a source for a cooperative transfer project for communities in the central Platte valley.

The O'Neill Alternative Project would be a transfer of groundwater from the Niobrara River valley to an area of declining groundwater in Holt County. A project proposed several years ago would have used a well field in the Sandhills to provide cooling water for a power plant near Hemingford. The North Dry-Lost Creek Project in the Middle Platte Basin would drain groundwater from the Tri-County irrigation area where recharge has created a vast groundwater mound. The land would be drained to make it useful for agricultural purposes, but the project could be designed to increase the drainage to provide flows in the Platte River for irrigation or instream uses.

Potential Water Transfers by Exchange

Several types of exchange projects could be built if there was a demand. For example, if the interpretation of federal laws and regulations were changed and it became necessary for water users in upstream locations to replace the depletions of Platte River flows caused by their withdrawals, this could be done by transferring existing water rights or securing new rights to transfer water. If large quantities of water should ever be needed for development of coal and energy in eastern Wyoming, and the value of the water increased enough, water rights could be purchased from Nebraska irrigators. Water could then be developed in Wyoming, by structures like the proposed Deer Creek Dam, and used in that state. The depletion to streamflow in the Platte River could be restored by transferring an irrigation right in the North Platte River to instream flow.

Exchange water could also be provided from several different sources of water. A well field could be constructed in a part of the Sandhills with few wetlands to pump water into Lake McConaughy, where it could be stored until needed in the Platte River. Other potential sources could be found in the area of the groundwater mound that extends from Sutherland Reservoir to southcentral Nebraska. Projects that would salvage water now lost from the canals or drain groundwater from the areas with high water tables could also provide replacement flows.

ECONOMICS OF WATER TRANSFERS

Potential water transfers cover a wide range of projects, including some that have been studied by others for years and some that are only in the conceptual stage. Of these potential projects, only a limited number will ever be implemented. In order to be implemented, a source of water must be available, the source must be matched with the use, and the overall project must be economically viable. The legislature specifically directed that transfers of sufficient scale to be economically viable be investigated in this study. In order to be deemed economically viable, the total economic benefits of a project must be greater than the total economic costs.

The economic viability of transfer projects can only be estimated in a study of this type. The type and size of projects that could be viable in the future vary widely. The distance that could be covered ranges from about one mile for irrigation to more than 1,000 miles for a coal slurry pipeline. The quantity of water that could be transferred ranges from 100 to 300,000 acre-feet per year. The type of projects examined in this study ranged from one mile to 250 miles, with the capability to deliver from about 100 acre-feet to more than 100,000 acre-feet. These potential projects could move water to higher elevations or to lower elevations. Since specific projects were not

identified, detailed designs could not be prepared and definite costs could not be estimated. Plans included typical features and average costs were used.

Potential Prices Users Might Pay For Water

If water rights were traded routinely in a market situation, a demand curve or schedule could be estimated showing the quantities of the item that would be purchased at various prices. Since there is no true market and this information is not currently available, the underlying concepts for prices used to assess economic viability of proposed transfers are "willingness or ability to pay" and "least cost alternatives".

In general, potential users would be willing to purchase water if they believed the transaction would be a sound investment and a better use of their capital than their current use. This purchase must be considered by the potential user the best choice among alternatives that range from acquiring additional water to doing without. The price that a user would be willing or able to pay for water is determined differently for each type of user, including agricultural, municipal, and industrial users.

The basis used for determining the price an irrigator could pay was a non-market approach comparing the net returns from an acre of irrigated land with the net returns from an acre of nonirrigated cropland. A potential buyer would expect an increase in net returns for changing from dryland to irrigated production. Theoretically, the price a buyer would be willing to pay for an acre-foot of irrigation water would be up to the price that would produce no net increase. A computer model developed for the NRC was used to estimate the net returns from dryland and irrigated crops in various hydrologic regions in the state. Results from the model indicate that the annual difference in net returns produced by an acre-foot of irrigation water delivered at usable pressure ranges from $17 to $96. This is the maximum price that irrigators would be willing to pay. Variations between regions in soil productivity, climatic conditions, cropping patterns, and other factors account for the range in difference in net returns.

The price that municipal users would pay cannot be determined by the same method. Municipalities generally pay whatever it costs to secure a suitable supply, including the cost of securing a water right and transporting and treating the water. Ordinarily, the price they would pay would not be greater than the price of water from the least cost alternative.

A number of communities located in the Republican and Platte River valleys in Nebraska have nitrate levels in their water supplies that exceed health standards. If an ion exchange plant, similar to an innovative plant recently constructed in California, were capable of removing the nitrates from the groundwater, costs could be about $67 per acre-foot. This estimate includes capital, operation, and maintenance costs. However, the total costs may well be higher because of the necessity of dealing with the highly concentrated waste brine produced by the ion exchange process.

Municipalities in Colorado have shown that additional water will be needed in the future. Projections in a report on the metropolitan water supply showed that Denver's demand for water would exceed developed supplies by 1990. Two Forks Dam and Reservoir was selected as the preferred alternative. This project would be built on the South Platte River upstream from Denver. It would provide a firm annual yield of 98,000 acre-feet. The draft environmental impact statement indicated that the cost of constructing, operating, and maintaining the project would range from $390 to $465 per acre-foot.

Julesburg, Colorado was also looking for a dependable source of good quality water. Julesburg, which is located only a few miles south of the Nebraska border, considered locating a well field in Deuel County, Nebraska. If a suitable source could be found, it appears that this interstate transfer could be economically viable. Other Colorado communities farther from Nebraska could find that transportation and related costs prohibit transferring water from Nebraska.

Casper, Wyoming has also been investigating alternative sources of additional water. One source from which they will obtain water is a local irrigation district. Canals and laterals will be lined to salvage water by reducing seepage losses. The costs that will be incurred have been estimated to be in the range of $50 to $75 per acre-foot of salvaged water.

Municipalities in central Kansas also share growing concerns over their future water supplies. Fifteen communities ranging in size from less than 2,000 to nearly 300,000 residents obtain their water supplies from both groundwater and surface water sources. Existing groundwater sources are being pumped faster than natural recharge in a few areas; some are of limited quality and could soon

become unsuitable for municipal use. Opportunities for continued development of groundwater sources appear very limited. Available supplies of surface water are also limited, and not reliable during drought conditions. The quality of some surface water supplies is poor, also.

The collective efforts of these fifteen communities produced a feasibility study of developing a delivery system from Milford Reservoir. The proposed system would deliver from 60 to 80 million gallons per day (67,200 to 89,600 acre-feet per year). The sum of capital, operation and maintenance, and water costs was estimated to be about $365 per acre-foot.

The price that industrial users are willing and able to pay for water will vary depending upon the type of industry and the extent water is used as an input in plant operations. An industry will initially locate at the most economically efficient operating site. Since water is relatively hard to transfer compared to most other inputs, the site chosen will normally include an adequate supply of water for the size and type of operation selected. Industries frequently connect to a municipal water supply system because the municipality often pays some of the costs in order to attract the industry.

An already established industry trying to expand will be the most common industrial user attempting to buy water. The price that an industry is willing or able to pay for water will be related to the additional profits expected from the increased production made possible with more water. The upper limit on the amount they would pay is dictated by the cost of building an entirely new facility at a site offering low cost.

Cost of Obtaining Water

The cost of obtaining water will be different for every transfer. When comparing alternative sources of water, all of the costs involved must be considered. The total cost will equal the sum of the costs of obtaining water rights; construction, operation, and maintenance costs; transaction costs; and any compensation for impacts that may be required.

Where unappropriated water is available, the cost of obtaining a new water right would probably be less than the cost of securing and transferring an existing right. The cost of this new water right would be the cost of the legal and administrative processes. One problem associated with acquiring a new right is that it would be junior to all other rights. The potential risk involved in not being able to get water at critical times would have to be considered part of the cost of obtaining that water. One way to reduce the level of risk would be to obtain a means to store that water and avoid some of the problems of low flow periods.

Where unappropriated surface water is not available, existing surface water rights and groundwater sources must be considered. In order to obtain surface water, a water right must be obtained. To gain access to groundwater the land on which the well is to be located, or some other legal form of access, must be purchased to acquire a "right to use". Regardless of the source, the method of valuing the water and water rights are similar. The price asked by a potential seller is based upon the value of the water in its original use. The first water rights available for transfer will be those with the lowest marginal physical product from the current use of the water. This will be the water providing the lowest level of economic returns to the current user. The minimum selling price asked will depend on the source and current use of the water. It will be at least equal to the value of the water if the right is not sold.

For agricultural uses of water, the decision to sell water rights would be made only when the user felt that he would be better off to sell than to continue his operation. If the irrigator were willing to forego use of this resource the price for that water right must sufficiently compensate him for decreased net returns over a period of years. The long-term value of irrigation water to a farmer is based on his expected returns over a number of years discounted into present values, i.e. his opportunity cost. If he believed it would be to his advantage, a farmer might be willing to trade water, future potential farm income, and related risks for less water, a smaller operation, fewer hours farming and secure dollars in the bank with no associated risk.

The cost of municipal or industrial water rights would depend on the long-term marginal return expected in its existing use. For example, to purchase water rights from hydroelectric use, the purchase price would have to be sufficient to offset long-term returns to the power producer. This type of transaction would be highly unlikely until the plant neared the end of its useful life. Once a generating facility is constructed, the water and water rights required to keep the plant operating are committed.

Similarly, industries would not be likely to give up water rights and water used in production since their plants are designed to use a fixed combination of inputs. While the cost of water is a relatively small share of total production costs for

most industrial plants, any reduction in the quantity of water available could have a substantial effect on production levels.

Municipalities would not be likely to forego water rights except in extreme emergencies. The value of water to a municipality would be related to its potential for future economic development and the related economic activity derived from each additional business or industry attracted. Municipalities frequently subsidize the cost of water in order to attract desirable industries.

In general, the minimum price asked by a potential seller for water rights would be the value of the additional output, of whatever type, made possible with that water. The actual price asked could be substantially higher depending on (1) how much incentive is necessary to get the seller to make a change, and (2) to what extent the seller thought he could take advantage of the situation and charge economic rent in addition to the actual value of the water or water right. If an alternative source of water, such as groundwater, were available to the seller, then the minimum asking price could be substantially lower. It might be only enough to cover the additional cost to the seller of changing water sources.

In addition to the expenditures necessary to secure water rights, several other costs would be included in of the total cost of a water transfer project. The magnitude of each different type of cost would vary depending on the specific project under consideration. If additional physical facilities were necessary, the cost of constructing the facilities and the operation and maintenance costs would be part of the total project cost. Transaction costs for items such as legal services, brokerage fees, technical and feasibility studies would also add to the cost of a water transfer. If adverse impacts could occur as the result of a transfer, compensation or mitigation required to negate the adverse effects of the project would add to the total cost.

Economic Viability of Potential Transport Projects

Many transfers have been given some consideration in Nebraska, and at least one to Colorado has been studied. The decisions on which ones may be implemented in the future will be based primarily on their economic viability. A project is considered to be economically viable when the economic benefits are greater than the economic costs. For strictly private investments, this means that the income from charges to those receiving the water must be greater than the costs of building and operating the project. Projects sponsored by governments or other public entities generally must also be economically viable, but the benefits may not always be defined by direct sales to the users. Other public economic benefits may be allowed, and it may not be possible to directly assess all who receive the economic benefits. As an example, in an area of groundwater decline, a project which halts that decline will benefit groundwater irrigators in general. However, it may not be possible to calculate the exact benefits to each irrigator and charge that person accordingly. Instead public funds (from taxes) may be used to offset those costs which otherwise could not be recovered. Occasionally, exceptions to the requirement for economic viability occur when projects are undertaken for the sake of public health or safety, that is, for the "good of society" even though economic benefits do not exceed the costs.

In order to estimate the potential viability of transfers within and out of Nebraska, a wide variety of representative projects was considered. They included some that have been studied by others for years, and some that were still in the conceptual stage. If available, information was obtained on the potential demand for water from these types of projects, or demands were estimated. Potential sources, demands, and project types were reviewed and the most representative type, a pipeline system, was selected for preliminary design and cost estimates to test potential viability. The range of potential demand in the foreseeable future could be provided by pumping water through pipelines, either from well fields or surface water reservoirs. Well fields were investigated first because the quality of groundwater is adequate in most areas of the state to be used for drinking water, as well as most other uses.

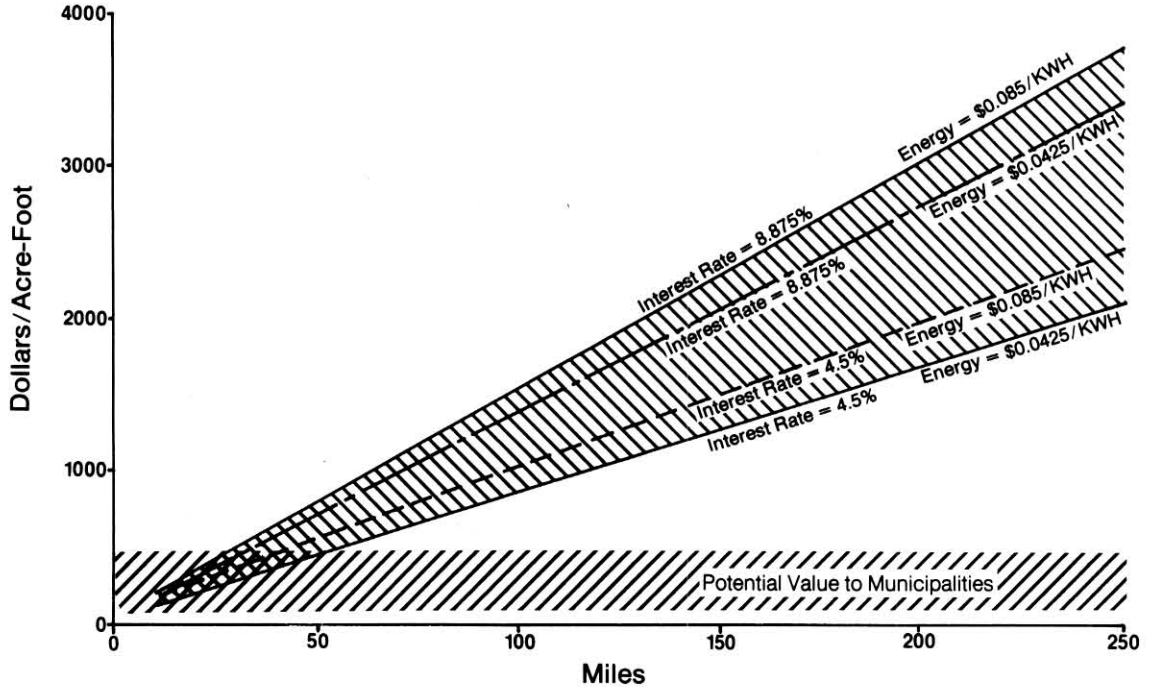
Preliminary designs for two situations were prepared. The first was moving water to areas at higher elevations than the source. A slope of about 1,000 feet in 100 miles was assumed. The second was transporting water to lower elevations at the same slope. Two variations of the transfer to higher elevations were studied. One pumped water all year, which would be required for municipal use, and the other pumped for only three months per year, as required for irrigation. Designs for three different pumping rates for each situation and variation were prepared for cost comparisons.

Annual costs of transporting water were estimated for a range of distances. They included the costs of the wells, well field manifold, pipeline, pumping plants, design and contract

Figure 8

POTENTIAL TRANSFER PROJECT WATER COSTS AND VALUES

(1000 Acre-Feet/Year to Municipalities at Higher Elevations)



administration, land, energy, and maintenance and replacement. Three different rates of flow, two energy costs, and two interest rates were used. The results are shown as the annual cost of an acre-foot of water at varying distances in Figures 8 through 12. For example, Figure 8 shows the costs of water in dollars per acre-foot for pumping 1,000 acre-feet distances ranging from 10 to 250 miles. These costs would apply to projects pumping water all year to municipalities at higher elevations. The width of the rising band of costs shows the effects that changing interest rates and electric power rates would have on water costs. For example, it shows that reducing the interest rate by about one-half would have a much greater effect on costs than reducing power rates by one-half. Figure 9 shows the costs of water from a similar project pumping 10,000 acre-feet per year, and Figure 10 shows costs for 100,000 acre-feet per year. In contrast, Figure 11 shows costs of pumping to lower elevations for municipal use, and all three quantities are shown on the same graph.

Pipeline costs were the largest portion of the fixed costs. Pumping plant costs were approximately one tenth of pipeline costs. Energy costs were the largest part of operations costs. Annualized construction costs exceeded annual operating costs in all but a few cases.

The cost of water from an alternative source was also estimated. If surface water was substituted for groundwater, the cost could be reduced as much as $30 to $40 per acre-foot. However, this estimate did not include any cost for the water or water right.

The range of prices, 50 to 465 dollars per acre-foot, that municipalities at higher elevations are considering paying for water are shown in Figures 8, 9, and 10 with the costs. Shown in Figure 11 is the range of prices (67 to 365 dollars per acre-foot) that municipalities at lower elevations might consider paying for water. In each case the upper line of the cost range shows the length of a transport project that might be economically viable at the range of potential prices under current economic conditions. The cross-hatched area where bands of costs and prices coincide give an indication of the size and length of project that could be viable if economic conditions change.

The range of prices ($17.00 to $96.00) that dryland farmers would be able to afford to pay for

Figure 9

POTENTIAL TRANSFER PROJECT WATER COSTS AND VALUES

(10,000 Acre-Feet/Year to Municipalities at Higher Elevations)

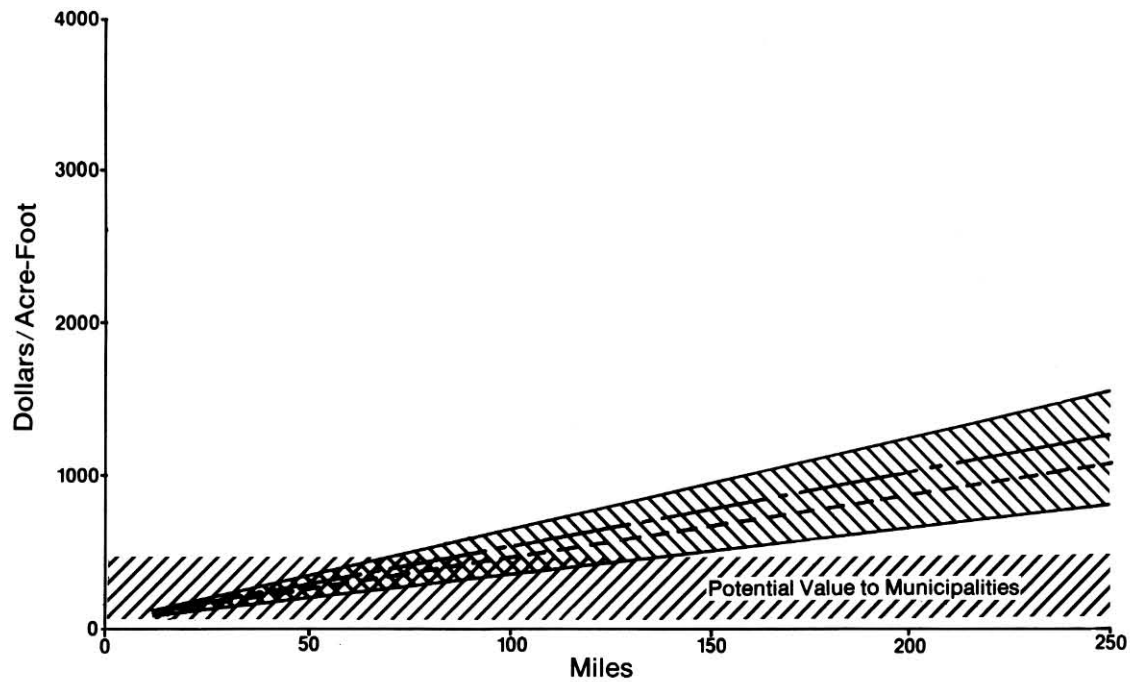


Figure 10

POTENTIAL TRANSFER PROJECT WATER COSTS AND VALUES

(100,000 Acre-Feet/Year to Municipalities at Higher Elevations)

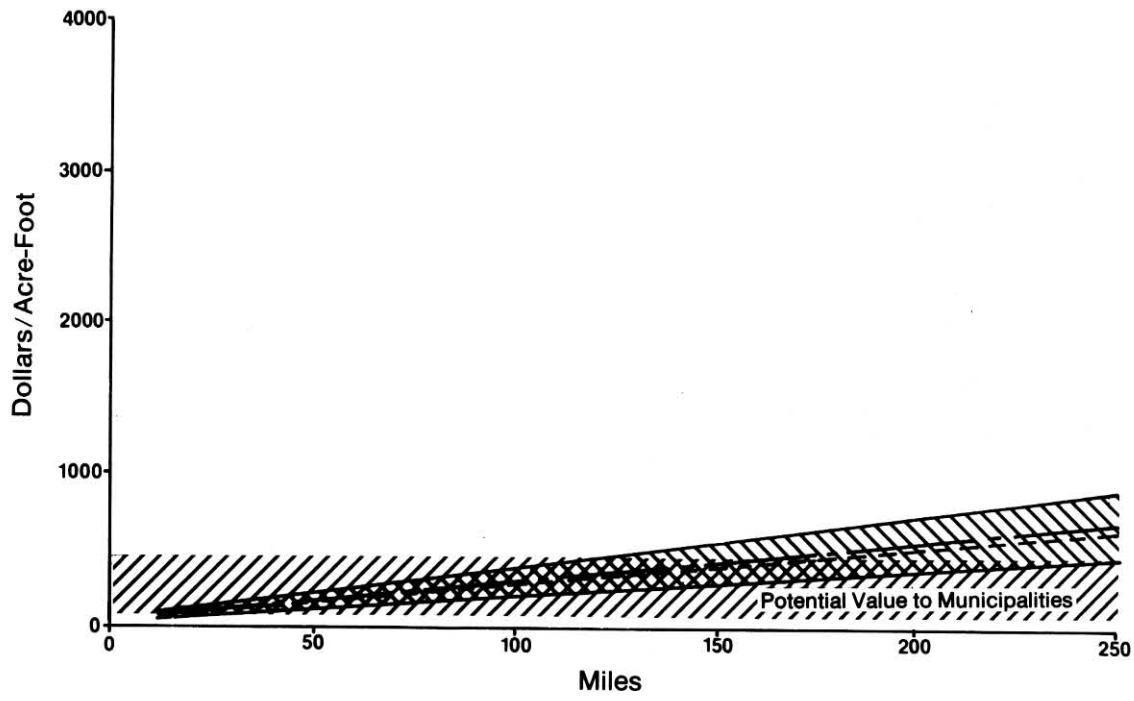
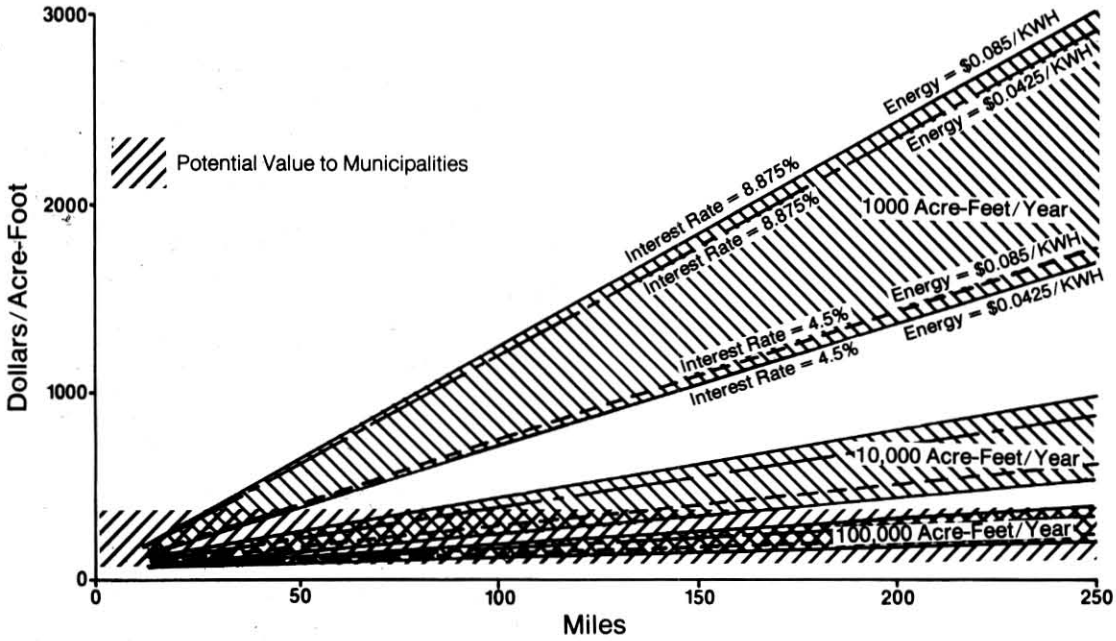


Figure 11

POTENTIAL TRANSFER PROJECT WATER COSTS AND VALUES
(To Municipalities at Lower Elevations)



an acre-foot of water to irrigate their cropland is shown as a flat strip in Figure 12. The places where the costs fall within the band of prices indicate the conditions under which transfers might be viable. It is readily apparent that only the single center pivot transferring water less than two miles would be viable at interest rates and power rates that have prevailed in recent years.

These graphs show that some projects that supply municipal users would be viable if fairly large quantities were transported short distances; otherwise, lower cost sources are likely to be available. With lower interest rates and energy prices, more projects would be viable.

It appears that the transfers to Omaha and Lincoln which pump about 40,000 acre- feet per year from 25 to 40 miles, would fall within the band of potential values, so they would be viable with 1988 interest rates and energy prices. The transfers by Joy Sporhase and others near the Nebraska-Colorado state line should also fall within the band of values in Figure 12, indicating they still might be viable. It also appears that a transfer to Julesburg, Colorado would be viable. The viability of extending a project to Sterling and Fort Morgan appears marginal, and extending it to Denver would be viable only if economic and energy conditions change greatly in the future.

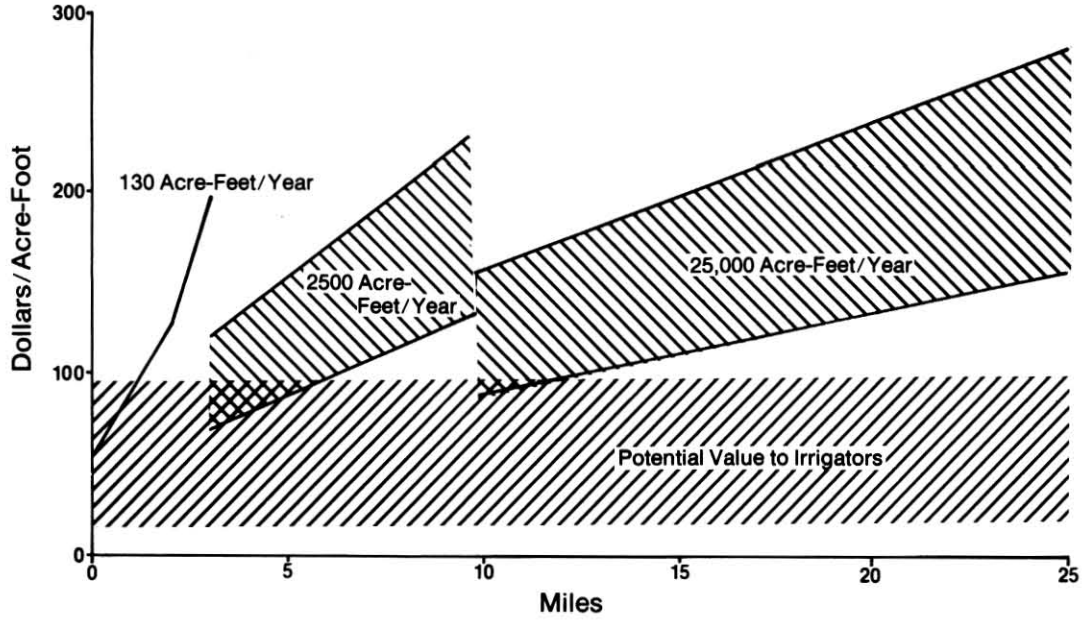
Factors Affecting Future Economic Viability

The economic viability of any proposed transfer project could be influenced by many factors. Projects which are not considered viable under current conditions could become economically attractive with certain changes in technology or economic conditions. The potential for economically viable projects to transport water for agricultural purposes is very limited at this time. A dramatic breakthrough in technology influencing construction or energy costs would be necessary before transfers serving more than individual irrigators would be justifiable. Even a large change in agricultural commodity prices would have only a slight impact on the viability of a project. Crop prices would have to increase substantially in relation to other prices in order to have a significant effect on viability. Transport projects that would serve municipal or industrial uses are viable at this time, but the amount of water and the distance that water can be transported are rather limited. Changes in technology would be required to make bigger projects viable.

Figure 12

POTENTIAL TRANSFER PROJECT WATER COSTS AND VALUES

(To Irrigators at Higher Elevations)



The rate of interest is one of the most critical factors in determining the economic viability of a project. A project with large construction costs is very sensitive to the cost of money. Higher interest rates result in higher construction costs. Interest rates also influence economic viability because they are used to discount flows of costs and benefits over the estimated life of a project, including operation, maintenance, and replacement costs. These costs are usually estimated during project planning, but actual expenditures for these items occur over the life of the project. If interest rates, energy costs or labor prices increase more than originally estimated, the viability of the project will diminish.

Health concerns could also make transfers more likely. In recent years, nitrate contamination of groundwater has become an increasing problem. As more areas of the state exceed maximum safe levels for drinking water, alternative sources of potable water will be sought. Water transfer projects may be the most economically efficient method of delivering adequate quantities of acceptable quality water.

Technological advances could have varying effects on the economic viability of a water transfer project. A significant breakthrough in solar energy technology could reduce the cost of pumping enough to make larger and longer transfer projects viable. However, it might also lower the cost of water from alternate sources and make them more attractive.

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Chapter 4.

IMPACTS, COMPENSATION, AND IMPEDIMENTS

Transfers of water and water rights could have direct and indirect physical, environmental, social, economic and legal/administrative impacts on people and resources. Transfers of water rights would have legal and administrative impacts, and they could have some physical, economic, and social impacts as well, if use of the water were discontinued. The physical transfer of water authorized by a new permit or transfer of a right could have many kinds of impacts, as one kind frequently causes another in a chain reaction. For example, building or changing a diversion structure, or constructing and pumping wells, would have a physical impact on the water and surrounding land. This could produce environmental impacts such as changing vegetation that serves as habitat for animals. The change in vegetation could also have economic impacts if it was grass used for hay in ranching operations. If economic losses were substantial enough, they could be legal impacts as well, if the people suffering losses sought relief through the courts.

It would be possible to compensate for some impacts that cause losses. Compensation could be monetary, or it could be some form of substitution. Monetary compensation is often provided by purchasing easements from persons owning land flooded occasionally by reservoirs. On the other hand, a new well could be substituted for a domestic well that might lose its water supply due to operation of a project. Both could be effective forms of compensation.

Impediments are basically factors that make it more difficult, or even impossible to accomplish a transfer. They may be existing conditions that stand in the way or they may be created by (1) changes in existing conditions (impacts) or (2) changes in proposed transfers due to existing conditions or potential impacts. These conditions or changes could constitute physical, environmental, social, political, administrative, legal, statutory, or economic impediments.

PHYSICAL IMPACTS

Physical impacts are direct or indirect effects of a transfer on the physical features surrounding it, including land, water, air and all the objects associated with them. They are produced by actions, or in some cases the absence of a customary action, intended to transfer water. Direct, visible impacts could be caused by the act of constructing dams, canals, and distribution systems. Direct impacts could be produced by inaction too. For example, a water right transfer from irrigation to instream flow might require no construction; the only change might be not turning on a pump during low flow periods. This inaction could have significant physical impacts downstream of the pump, including indirect impacts. For example, in a small stream or a larger stream reduced by upstream diversions, not turning on the pump would negate the customary flow depletion. This would maintain higher quality fish and wildlife habitat conditions and the stream's ability to assimilate wastes and recharge groundwater.

Potential impacts of transfer actions include:

1. changes in streamflow (an increase, decrease, or change in the seasonal distribution of flow),
2. changes in the streambed as a result of aggradation or degradation caused by the changes in flow,
3. channel modification with consequent change in channel capacity,
4. changes in reservoir storage capacity (rise or decline),
5. changes in the sedimentation rate of reservoirs,
6. changes in the groundwater table (decrease or increase) with possible changes in lake or wetland levels and land use,
7. changes in flooding potential,
8. changes in land use,
9. changes in energy use patterns brought about by changes in water use patterns,
10. changes in the potential for a dam breach.

The specific nature of the physical impacts depends primarily on: (1) the source of water, (2) the method of collecting the water, (3) the method of transporting the water, and (4) and the use of the water.

SURFACE WATER COLLECTION IMPACTS

The collection of surface water for transfer may require diversion dams, intakes, pumps, and storage dams with outlet works. The physical impacts of these types of facilities include those associated with construction, with changes in land and land use, and with changes in stream hydrology.

Construction of diversion and storage dams involves temporary disruption of streamflow, land, and support systems such as highways and roads. During the time work is being conducted within the streambed, construction may also produce temporary effects on water quality. Dams also have a permanent impact on the streambed, creating a barrier to the movement of water and materials in the water, including sediment and aquatic organisms. Storage dams also change the land on which they are built and the land that they flood. Storage causes sediment to settle out of the water and affects the temperature and chemistry of the water.

Dams also produce hydrologic effects, primarily changes in the quantity and timing of flow downstream. Removal of water from the stream by simple diversion dams diminishes flow downstream. Removal from storage in a reservoir also diminishes total flow, but it may not affect flows at any given time. Releases from storage can be varied to change the amount of flow downstream as needed. Flows can be reduced to control flooding or increased to maintain instream flows. Removal of water by diversion may also have indirect hydrologic impacts. Decreasing the streamflow downstream could decrease recharge to alluvial aquifers in those areas. Wells that derive their supply from those aquifers could experience changes in the quantity and quality of the water pumped.

If the diversion involves pumping, construction impacts may be less than those caused by a diversion structure that relies on gravity, because the entire streambed may not be disturbed. Pumping plants or portable pumps could be located on the bank of a stream or reservoir. However, the pumps themselves cause localized hydrologic impacts. Drawing the water into the intakes of the pumps changes the direction of flow and increases its velocity. Preventing small materials, including plants and animals, from going through the pumps is difficult.

GROUNDWATER COLLECTION IMPACTS

Physical impacts of well fields occur during construction and operation; they include primarily impacts on the land and the groundwater hydrology. Land use may be affected by drilling high capacity wells, which requires heavy equipment. Well fields also require land for the pipelines that connect individual wells and large projects require some for a pumping plant. Construction of these facilities can be disruptive to the land and the facilities themselves occupy some land. However, most of the land is only temporarily disturbed and the amount of land required for the facilities is generally small.

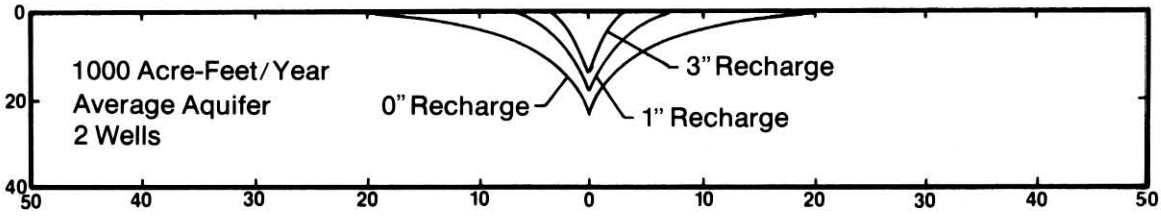
Hydrologic impacts are caused by the removal of groundwater. Pumping a well or a well field creates a cone of depression in the water table around the wells as water flows to them. The depth and diameter of the cone depend on many factors, including the amount of water pumped, the rate of pumping, the duration of pumping, the characteristics of the material in the aquifer, and the rate of aquifer recharge from rainfall. For example, the drawdown from a single municipal or irrigation well might affect an area with a diameter of one half-mile or less. On the other hand, a group of high capacity wells in a well field being pumped continuously over long periods of time could cause a water table decline for many miles in all directions. Accurate predictions of hydrologic effects require knowledge of the precise location and size of the well field, characteristics of the aquifer at that location, and quantity of water pumped.

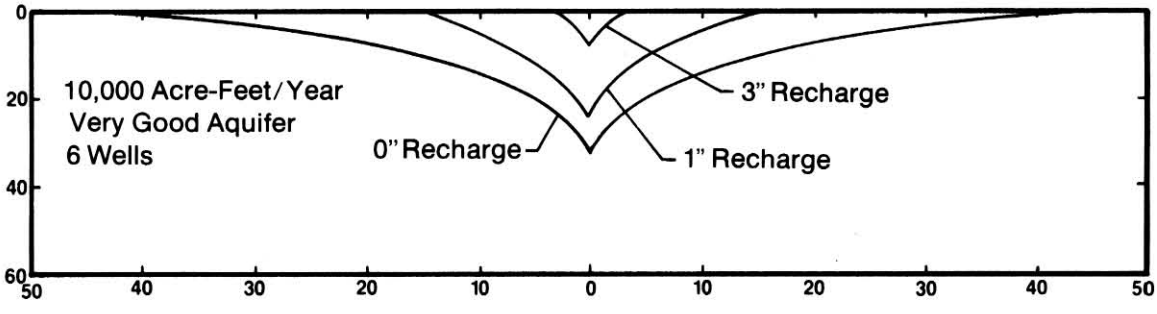
To show the possible extent of the impact of pumping groundwater, drawdowns from three hypothetical projects were estimated for a range of conditions: a small well field and pipeline that would serve a small town from an average Nebraska aquifer, a larger well field in very good aquifer that would be large enough to serve a city, and a large well field in a very good aquifer that would be adequate to serve several towns or a large city. Conservative assumptions were used so the results would show the impacts that could occur under the worst conditions that could reasonably be expected.

For the analysis of a small well field in an average aquifer, the size and capacity of the wells was assumed to be the equivalent of irrigation wells. With pumping spread throughout the year for municipal use, well field production would be about 1,300 acre-feet per year. As shown in Figure 13, for the worst condition of zero recharge to the aquifer from rainfall over the 25-year life of the project, drawdown would be a maximum of 22 feet at the wells and it would decrease to zero at a distance of about 20,000 feet (a little less than 4

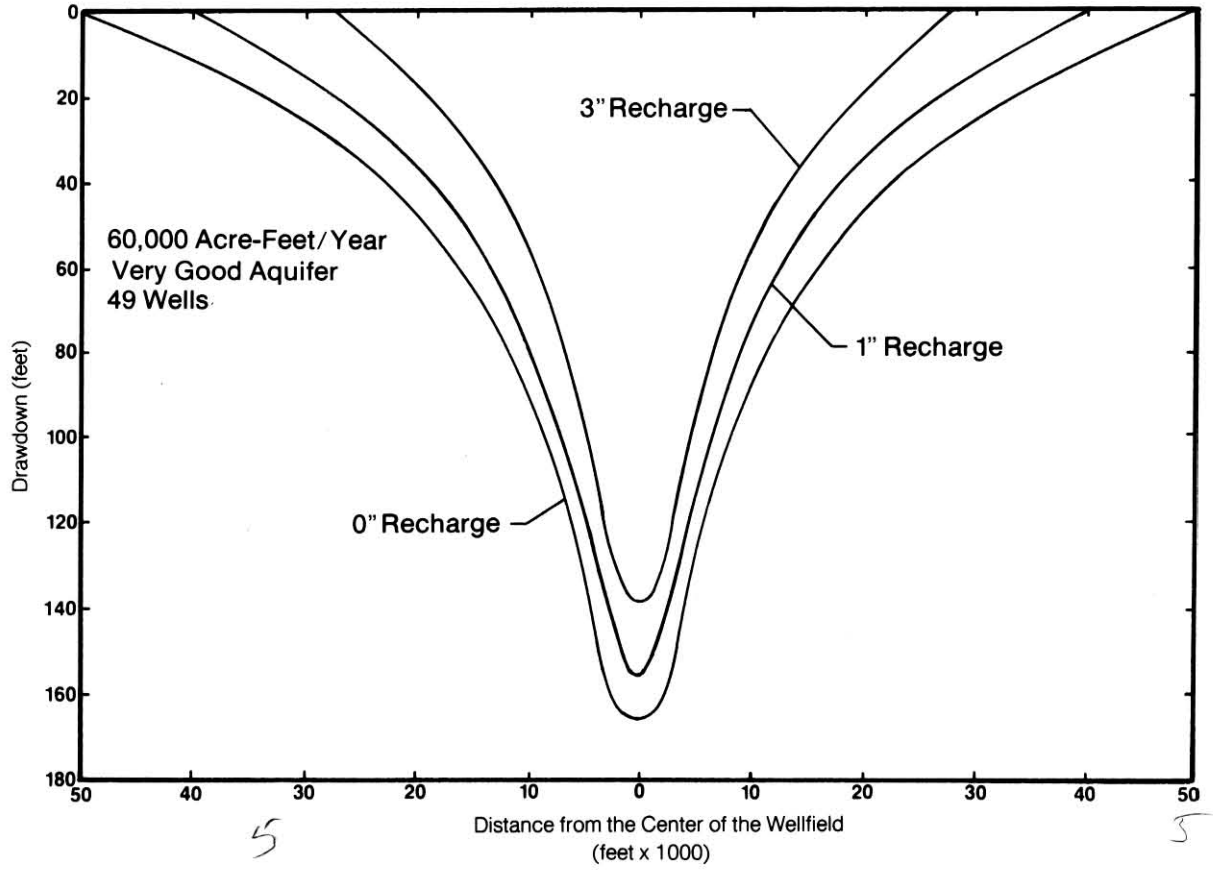
Figure 13

ESTIMATED DRAWDOWNS OF WELLS WITH VARYING RATES OF RECHARGE





$2\pi r \quad 2 \times 3 \times 5 = 30$



miles) from the wells. If one inch of rainfall reaches the aquifer as recharge each year, then drawdown at the wells would be just over 10 feet and decrease to zero at a distance of less than one mile. One inch of recharge is fairly common in most of the state.

For the analysis of a large well field in a very good aquifer, 49 wells with pumping capacity equivalent to that of very good irrigation wells were used. They would produce 60,000 acre-feet per year if pumped all year to serve municipal water demand. For the worst condition of zero recharge into the aquifer from rainfall over the 25 year life of the project, drawdown would be a maximum of 168 feet at the center of the well field and decline to zero between 9 and 10 miles from the center (Figure 13). The radius of the cone of depression would decline to almost five miles if recharge averaged three inches per year. The aquifer receives this much recharge in parts of the Sandhills and some areas with surface water irrigation projects. The extent of the area that would be impacted by a circle with a radius equal to that of the cone of depression with three inches of recharge is shown in Figure 14. The circle is shown on a grid representing the typical government survey map with sections of one mile on a side and townships of six miles by six miles.

Figure 15 shows the areas of Nebraska in which the aquifers are adequate to meet the conditions of this analysis. In some of these areas, the estimated drawdowns would have little impact on the overlying land. In much of the state the water table is more than 50 feet below the land surface and the impact of a drawdown would be minimal. In those areas of the state where the water table is at or near the surface, these projects could lower the water table below the roots of the plants dependent on it. This, in turn, would lead to changes in vegetation and land use. It could also dry up wetlands and reduce flows in streams that are connected with the water table.

WATER TRANSPORT IMPACTS

Surface and groundwater that is being transferred may be transported using lined or unlined canals, natural stream channels, or pipelines. Physical impacts may result from either construction activities or operation of the transfers. They include hydrologic impacts, land and land use changes, and the creation of barriers.

Construction of canals changes the form of the land, creating cuts and fills, and disrupts highways, roads, and utilities. The canal itself

Figure 14

AREA AFFECTED BY DRAWDOWN OF A WELLFIELD IN A RECHARGE AQUIFER

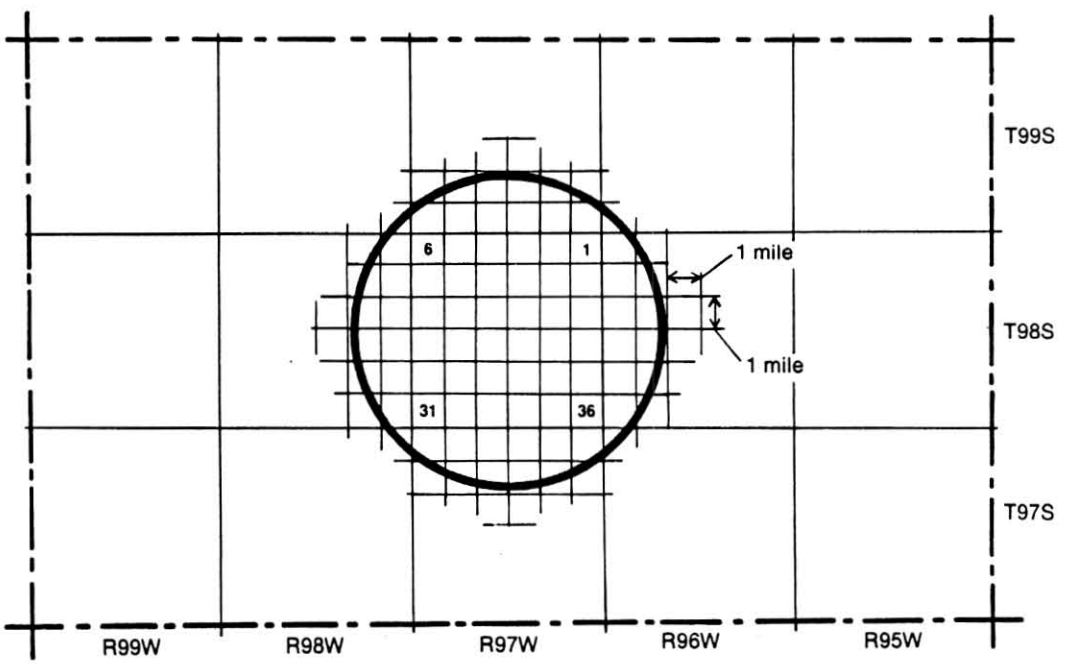
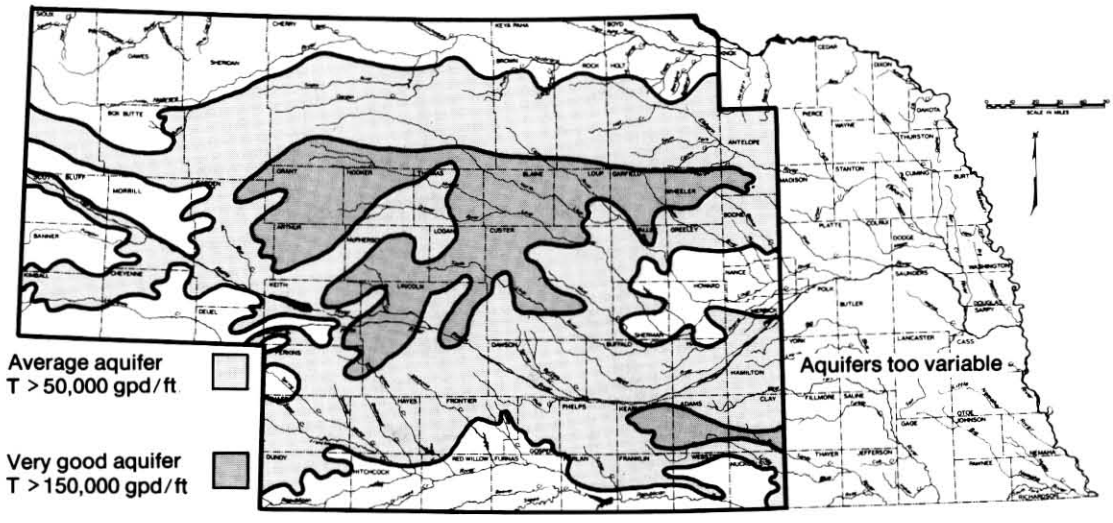


Figure 15
LOCATION OF EXAMPLE AQUIFERS



T = Transmissivity, the rate of flow through a one-foot wide, vertical strip of the entire aquifer under unit hydraulic gradient

forms a barrier to the movement of people, vehicles, and animals and creates open water that can be a hazard to people and animals. Pipelines create similar impacts except that no open water exists.

The physical impacts of projects using natural streams to transport water stem mainly from the hydrologic changes. An increase in streamflow might simply restore the stream to its former flow condition. If the reduction in flow due to previous diversions was substantial and had existed for a long period of time, the channel could have adjusted by narrowing and aggrading. In that case, additional water in the channel as a result of a transfer would cause streambank erosion and streambed degradation. Damage to downstream lands could result. In severe cases in which the channel capacity had been sufficiently reduced over time, new flows could cause flooding.

Changes in diversions from streams and transport through canals can also have indirect hydrologic impacts, including changes in groundwater recharge and surface return flows. In some places, water is diverted from streams to croplands through unlined canals. They allow substantial quantities of water to seep into the ground and recharge groundwater. Where conditions are right, this groundwater flows toward streams and increases their base flow after several weeks or months. In the North Platte valley, studies have shown a lag of about two months between the start of irrigation and the increase in base flow. In this way diversion and transport late in the summer indirectly provides greater flow in the fall, when streamflow is normally low.

Flows downstream of diversions and transportation systems are partially restored by surface water returns as well as base flow increases, and some irrigators downstream depend on those flows to fulfill their rights. If a transfer of a water right changed an upstream diversion and subsequently reduced return flows, it could have significant direct and indirect hydrologic impacts on downstream rights.

WATER USE IMPACTS

Finally, some physical impacts are associated with the use of the water or changes in its use. Construction of the facilities for using the water could produce temporary and permanent impacts. Operation of the facilities and use of the water could have direct and indirect physical impacts. The types of uses include: municipal and industrial, rural domestic, livestock, irrigation, groundwater recharge, electric power, recreation, fish and wildlife, instream flow maintenance, preservation of wet meadows, and wetland maintenance.

Irrigation uses would probably have the most extensive impacts. The use of surface water for irrigation requires construction, operation, and maintenance of canals, laterals, and farm ditches or pipes to distribute the water. Using it requires land leveling to spread the water, changes in vegetation to grow crops, and drainage ditches to return excess water to a stream. Seepage from canals and fields recharges groundwater and sometimes raises the water table. In some places, it also leaches agricultural chemicals to groundwater.

Municipal, industrial, and livestock uses could have substantial impacts, particularly if they provided the basis for land use changes. Municipal use has an impact on the chemistry of the water released as wastewater. It also has a significant impact on the land when used to water lawns.

ENVIRONMENTAL IMPACTS

Nebraska has some very important environmental resources, including some that are of national interest and significance. The central Platte River, the Sandhills region, the Rainwater Basin wetlands, and other more localized ecological complexes such as portions of the Niobrara River valley have been recognized as having national, and even international importance. The use of these resources by migrating birds and/or threatened and endangered species adds to the importance placed on them by the general public. It generally becomes more difficult to obtain public acceptance and official approval of adverse impacts to species or ecological complexes as they become rarer.

In addition to their aesthetic and natural value, Nebraska's environmental resources have significant economic value. The revenue resulting from the sale of hunting, fishing, and trapping permits, the value of Nebraska's annual furbearer harvest, the purchase of goods and services associated with fishing, hunting, canoeing, boating, camping and other outdoor activities, and the production of hay from subirrigated meadows total millions of dollars. This economic value depends on the condition and management of the state's environmental resources.

The biological communities within natural ecosystems are both complex and interrelated. An impact can result, either directly or indirectly, in many other impacts - positive or negative - within an ecosystem. In general, the potential environmental impacts associated with a project can be related to various project features. The project features and their associated environmental impacts listed in Appendix 3 are representative, but not all-inclusive. Some of these impacts were introduced in the section on physical impacts.

It is important to understand that the environmental impacts associated with a particular type of water transfer can vary greatly in different parts of Nebraska. This is due to the wide variation in climate, geology, soils, vegetation, hydrology, and the biota present in the land and water resources. For example, a certain percentage of flow reduction in a Pine Ridge stream or a tributary of the Niobrara River may adversely affect a trout fishery to a marked degree while the same percentage flow reduction in an eastern Nebraska stream may have little adverse affect on the channel catfish fishery it supports. A similar reduction in the flow of a very small perennial stream may have negligible effect on the minnow/shiner community it supports, but even in this last case, the stream's long-term biological integrity may be adversely affected if the reduction in flow is continued long enough.

Environmental impacts associated with water transfer and use can, in time, affect both water quantity and quality. For example, groundwater development has resulted in the conversion of thousands of acres of dryland farmland and rangeland in northern Holt County to irrigated cropland. Groundwater tables have declined, at least seasonally, and the flow of several tributaries of the Niobrara River in that area has diminished during the pumping season. This has reduced the capacity of some streams to support trout. The impact on trout has been made worse by the increasing nitrate concentrations in those streams which are a result of the nitrate contamination occurring in the aquifers that feed those streams.

The complexity of the systems and the interrelationships between individual species within a natural ecosystem could produce a chain of impacts if water were transferred. For example, if a well field were developed to produce a large volume of water for export, removal of large quantities of groundwater would lower the water table in the vicinity of the wells as shown in Figure 13. If the water table is at or close to the land surface, ecosystems dependent on the groundwater would be affected. Lowering the water table could reduce the productivity of subirrigated meadows and with sufficient lowering they could be converted to dryland range. Loss of these meadows would impact ranching

operations because they are important to domestic livestock. They are also important nesting areas for many species of waterfowl and other wild species. Marshes would be converted to subirrigated meadows but the loss of nesting and feeding areas for migratory waterfowl could be significant. Reduction in levels of lakes would convert them to marsh, but the loss of open water areas could reduce waterfowl nesting success because young waterfowl suffer higher mortality rates on land than in the open water. Fish populations in shallower lakes would be more susceptible to winter-kill under ice cover and to critically high summer temperatures and extreme fluctuations in dissolved oxygen and pH levels.

Declining groundwater levels in the affected area could diminish streamflows and habitat conditions necessary for fish and wildlife production could be degraded or lost. Cold water streams which support trout could be drastically impacted. Shallow water warms faster and the lower volume of spring water to offset the warming effects of the summer sun would almost certainly reduce the amount of suitable trout habitat in the affected stream. As streamflow is diminished, habitats that were important as nursery grounds or as food producing areas for fish and aquatic invertebrates would begin to disappear. In addition to the potential impacts on aquatic habitat, riparian habitat could be adversely affected. Also, the stream's ability to assimilate wastes would be impaired with reduced flow.

Individual ecological communities are not only complex and interrelated, they are often part of a broader, integrated system, not just a collection of different habitats. Impacts on one part of the system can have wide ranging impacts on other parts of the system. For example, the rainwater basin area is valuable because it contains a variety of types of wetlands that are important to waterfowl. Maintaining just one type of wetland will not be as beneficial as maintaining a certain complex of wetlands. Furthermore, there must be enough wetlands to support a large enough population for the long term viability of the population.

Sensitive species and significant habitats associated with the major drainages in the state are listed in Table 7. Specific sites are not identified for the sake of brevity and it is by no means a complete list, but it includes most of the areas and species that are currently of major concern. Any alteration of streamflows or water levels in lakes, marshes, or wet meadows would cause a modification in the environment associated with those habitats. Therefore, it could influence the integrity of the affected biological communities, regardless of how sensitive or unique they might be.

SOCIAL IMPACTS

The social impacts related to water transfers also cover a wide range of effects that are very difficult to predict or to compensate for. Social changes that occur in a community as a result of a water transfer are often expressed as changes in the quality of life. These changes are generally intangible impacts such as changes in family and interpersonal relations, general mental and physical health of a community, and level of satisfaction with the local culture. Tangible changes that are generally associated with large scale project development can also occur, such as the influx of construction workers into a community creating a housing shortage and placing a strain on local schools and social services.

The Bureau of Reclamation has developed a procedure for investigating a wide range of potential social impacts associated with their water project proposals. They have developed an extensive check list of parameters related to their projects that can be displayed in a social well-being account. This list is included in Appendix 3.

The social impacts that could be attributed to water transfers vary from site to site. A different set of impacts would be associated with the development of a well field in a remote section of the Sandhills compared to a transfer project in more heavily populated eastern Nebraska. The transfer of an existing surface water right would have some social impacts in addition to those resulting from the actual physical transfer of water. The magnitude of the transfer generally would determine the extent of the social impacts. One transfer could be of little consequence, but it could begin to create feelings of uncertainty and anxiety about additional transfers. The transfer of the water rights associated with a whole irrigation district could set in motion significant changes in the social structure of a community or region.

The more tangible social impacts could affect the local community adversely. For example, if an entire irrigation district transferred its water rights and water, a chain of events with some far-reaching social impacts could be set in motion. First, farmers would purchase fewer inputs, such as fuel, seed, and services, which could reduce

Table 7.

IMPORTANT SPECIES AND HABITATS IN MAJOR DRAINAGE AREAS

Drainage[1]	Fish	Game	Nongame	Threatened and Endangered	Significant Habitat
Elkhorn River	1. Channel catfish harvest, production & migration	1. Waterfowl production & harvest	1. Great Blue Heron		1. River oxbows 2. Sandhill wet meadows, marshes & lakes
Niobrara River	1. Channel catfish, harvest, production & migration 2. Walleye fishery 3. Snake River trout 4. Tributary trout streams	1. Waterfowl production	1. Great Blue Heron 2. Sandhill Crane migration 3. Brook Stickleback	1. Whooping Crane 2. Bald Eagle 3. Northern Redbelly Dace 4. Pearl Dace 5. Finscale Dace 6. Blacknose Shiner 7. Least Tern 8. Piping Plover	1. Sandhaill wet meadows, marshes & lakes 2. Cold water streams 3. Merritt Reservoir 4. White birch stands
Loup River	1. Channel catfish harvest, production, & migration 2. Dismal River headwaters trout 3. Trout fisheries	1. Waterfowl production 2. Waterfowl harvest	1. Great Blue Heron	1. Whooping Crane 2. Pearl Dace 3. Finscale Dace 4. Northern Redbelly Dace 5. Least Tern 6. Piping Plover 7. River Otter	1. Constant flow streams 2. Sandhill wet meadows, marshes & lakes
White River	1. Trout fisheries				1. Cold water streams 2. Brook trout streams
Missouri River	1. Paddlefish trophy fishery 2. Commercial fishery 3. Channel & flathead catfish overwintering 4. Walleye & sauger fisheries 5. Species diversity and production 6. Smallmouth bass in the river above Lewis & Clark Lake	1. Waterfowl migration 2. Waterfowl harvest		1. Bald Eagle 2. Least Tern 3. Piping Plover 4. Lake Sturgeon 5. Pallid Sturgeon	1. Natural channel river (Yankton - Ponca and above Lewis & Clark Lake). 2. Oxbow lakes 3. Lewis & Clark Lake

Table 7.

IMPORTANT SPECIES AND HABITATS IN MAJOR DRAINAGE AREAS (continued)

Drainages[1]	Fish	Game	Nongame	Threatened and Endangered	Significant Habitat
North Platte Wyoming to North Platte	1. Trout & channel catfish migration, production & harvest	1. Duck & Goose harvest 2. Duck & Goose wintering	1. Great Blue Heron nesting 2. Sandhill Crane migration	1. Bald Eagle 2. Whooping Crane 3. River Otter 4. Northern Redbelly Dace	1. Lakes McConaughy & Ogallala 2. Spring fed streams 3. River used for trout migration to breeding areas 4. NPPD Supply Canal trout fishery 5. Wet meadows 6. Johnson hydro plants return 7. CNPPID Supply Canal, canyon lakes, regulating reservoirs
South Platte Colo. to North Platte	1. Channel Catfish 2. Plains Killifish	1. Duck & Goose harvest 2. Duck & Goose wintering		1. Bald Eagle	1. Sutherland & Maloney Reservoirs
Central Platte N. Platte to Grand Island	1. Channel catfish migration & production 2. Sandpit lake fisheries	1. Duck & Goose harvest 2. Duck & Goose wintering 3. Duck & Goose migration 4. Waterfowl production	1. Great Blue Heron nesting 2. Sandhill Crane migration	1. Whooping Crane 2. Bald Eagle 3. Least Tern 4. Piping Plover	1. Wet Meadows 2. River roost sites for Sandhill & Whooping Cranes 3. Rainbasins south of river 4. Sandpit lakes
Lower Platte Grand Island to Mo. River	1. Channel catfish harvest 2. Flathead & channel catfish, walleye & sauger production, migration & over wintering 3. Sandpit lake fisheries	1. Duck & Goose harvest 2. Duck & Goose migration		1. Bald Eagle 2. Piping Plover 3. Least Tern	1. Tile drainage ditches 2. Sandpit lakes
Nemaha River	1. Channel catfish production, harvest & overwintering 2. Johnny Darter				
Big Blue and Little Blue Rivers	1. Channel & flathead catfish prodution, harvest & migration	1. Waterfowl migration 2. Waterfowl harvest 3. Waterfowl production			1. Rainwater basins and wetlands
Republican River	1. Trout harvest in tributaries 2. Walleye, white bass, channel and flathead catfish production & harvest 3. Channel catfish migration	1. Waterfowl harvest 2. Waterfowl migration 3. Waterfowl wintering	1. Great Blue Heron	1. Bald Eagle	1. Southwest Reservoirs

[1]Includes major river system and all land drained by that river.

income in the local community. Businesses would close or relocate and the population would decrease. Lowered property values would in turn reduce the local tax base, thereby affecting local governmental and educational services. Also, the people remaining in the area could be older and less financially secure. Assistance provided by the state in the form of increased welfare payments, educational aid, and unemployment compensation would represent real costs of the project.

Social impacts similar to the types resulting from the export of water could also occur in an area importing water. Water transferred from an agricultural to an industrial use could also cause significant social change to occur. As people moved into the area because of increased industrial growth there could be additional costs resulting from the inability of the local government to provide adequate services, such as fire and police protection, schools, and water. Health services, construction, and other service industries could also be strained. In addition, development of an industry could draw more people to the area than available jobs, placing a burden on social service agencies.

Even a single water transfer could have social impacts on individuals. For example, if an irrigator transferred his water right and quit farming, some of his hired help could be put out of work. If these farm laborers were unable to find other jobs, they could be forced to depend on the social services available in that community.

Changes in traditional culture, demographics, or the existing social order may occur as a result of water transfers that are difficult to measure. Many of these changes are subjective in nature and could be viewed either positively or negatively. For example, an increase in population in a community could be viewed negatively as disrupting the quiet rural character of the community or positively as creating a more active urban experience along with increased employment opportunities. It is this wide range of opinions of potential changes that could polarize groups in a community and cause significant social disruption. In some cases, lack of information or misinformation could reinforce existing attitudes to arouse opposition to a transfer.

This type of opposition could split the community and cause some disruptions. The impact on the community could be increased by special interest groups from outside the community. Regional, state and national groups could become involved by supporting local groups, broadening the scope of the conflict.

ECONOMIC IMPACTS

The economic impacts of water transfers cover a wide range of effects on most sectors of the state's economy. The actual type and extent of impacts will vary depending on the specific transfers involved. Some transfers may have practically no impacts except to benefit all parties involved. Other transfers may have major far reaching positive and negative impacts.

The potential economic impacts of water transfers can be categorized by the various stages of activity in the transfer process. These categories include the impacts of (1) obtaining the right to use water, (2) the cessation of the original use, (3) the actual transportation of the water, and (4) using the water in the new use.

ECONOMIC IMPACTS OF OBTAINING THE AUTHORITY TO USE WATER

Obtaining the authority to use water is one of the first steps in the transfer process. The procedures that must be followed and the size and complexity of the project largely determine the extent of the economic impacts. There are costs associated with fulfilling regulatory requirements, including preparation of applications and evidence for project justification. The costs of preparation increase with the size and complexity of the project, and the costs of the regulatory process generally increase with the length and complexity of the proceedings. The level of controversy over the project is an important factor in the length of the proceedings and the economic impacts.

The economic impacts of acquiring a new surface water right consist mainly of the expenditures necessary to apply for and secure that right, including the basic legal and administrative costs. The acquisition of an existing surface water right would entail similar administrative and legal expenditures. In addition, the original owner of the right may require a payment of some type in order to offset the economic loss associated with the loss of use of the water conferred by the surface water right.

Purchase of some land or acquisition of some means of gaining access to the land is necessary in order to obtain access to groundwater. The owner of the land would have

to be paid for any form of access acquired. Additional expenditures for surveying and legal costs could also be necessary. In the case of a municipality purchasing land, the economic impacts would be more extensive. The change in land ownership from private to municipal would reduce the tax base and revenue of the local governments and educational institutions.

One additional option for acquiring the right to use water would be to lease it on a conditional basis. An example would be to contract for surface water used for irrigation to provide instream flow whenever the flow past a given point falls below a specified amount. The economic impacts of such an agreement would be a relatively small payment to the original owner and a reduction in farm income for the irrigator only when the water is transferred from the original use.

If the right to use water were permanently obtained, the physical transfer of the water from one use to another might not take place at the same time. In many cases, the acquisition of the authority to use water is one of the earliest activities of a transfer project. There could be a long period between the water right transfer and the actual transfer of the water to the new use. During this period, the water could be leased back to the original owner, allowing operations to continue as before and easing the economic impacts of the transition.

ECONOMIC IMPACTS OF THE CESSATION OF THE ORIGINAL USE OF WATER

Once the authority to use the water was secured, the water could be transferred to its new use. When the original use ceased, a number of economic impacts could take place. The extent of the impacts would vary depending on the size of the transfer and the original use.

Direct and Indirect Impacts

Limited economic impacts would occur if previously unappropriated surface water was transferred. If this water had merely been flowing down a stream there could be some economic impacts if fishing, boating or other water related activities were adversely affected. If this flow provided recharge to groundwater, adjacent farmland could suffer from reductions in yields as well as increased irrigation costs. In an area with a high water table, the reduction in recharge could produce a positive economic impact by alleviating problems related to a high water table. If the unappropriated surface water was primarily stored in a lake or reservoir, the transfer of that water could cause fluctuations in the water level. If these changes were large enough, recreational use and the values of nearby properties could be adversely affected.

Many of the economic effects of the removal of appropriated surface water from original uses would be similar to those of the removal of groundwater from the same uses. The majority of the water dedicated to agricultural uses is used to irrigate crops. The initial direct impact of a transfer of irrigation water would be a decrease in the volume and value of crops produced. This in turn would affect net agricultural income and the amount of labor required. There also could be shifts in land use and/or crops grown, and land values could change.

In addition to any direct effects on producers, other businesses, governments and communities could be impacted by a water transfer. Credit institutions, suppliers of farm inputs (feed, seed, chemicals, petroleum products, machinery, etc.), markets, and other agriculturally related businesses could also be affected. Any changes in the agricultural community could set off additional changes in the general economy, such as purchases of food, clothing, and durable goods; tax receipts; the housing market; and savings rates. Ultimately all sectors of the economy could be affected.

Examples of Impacts of Surface Water Transfers

The specific economic impacts that might occur in the source area depend on the quantity of water transferred in relation to the total amount typically used for irrigation. Different degrees of reduction in the water available for irrigation could produce different changes in the farming practices on that land. Examples of impacts of four possible reductions in surface water use:

1. transfer of surface water where groundwater is available as a substitute,
2. transfer of a small part of the water normally used for irrigation,
3. transfer of a major portion of the water normally used for irrigation, and
4. transfer of all of the water normally used for irrigation,

are given in the following paragraphs.

In the first instance, groundwater would be substituted for the surface water sold. This type of transfer has occurred in the past and is the most likely to occur in the future. This would be the lowest cost water with the fewest noticeable impacts. The price of this surface water would have to cover only the additional costs to the producer of switching to groundwater. There would be few if any local economic impacts to the area surrounding the source of water.

In the second case, the quantity of water transferred would be small enough that the farmer would continue irrigating the same number of acres of the same crops. This could be done by managing the farm operation better and using the water more efficiently. With a lower irrigation rate, the same yields would still be maintained. Gross farm income would remain the same but overall net income would be increased by the compensation received for the water right and by savings in irrigation costs. The disposition of the additional income derived from the sale of the water would be important. It could be spent, saved or some combination.

Impacts on related sectors of the economy would be minimal since the same farming inputs (for example, seed, fertilizer, farm equipment, petroleum products, and irrigation equipment) would be purchased and the same farm outputs (grains, livestock, fibers, forages, or vegetables depending on the area of the state) would be produced. With no change in land use, the value of the land would not be expected to change. The local/county tax base and tax revenue would not be affected.

In the third situation, the quantity of water transferred would be large enough to make the farmer cut back on his farming operation: (1) by applying irrigation water at a lower rate per acre,perhaps with reduced yields, (2) by decreasing the total number of acres irrigated, (3) by growing less water intensive crops, or (4) by some combination of the first three options. These changes in the uses of land and water would result in decreased income from the farming operation. However, the farmer would only agree to the transfer if he felt that he would be compensated adequately to offset that decrease, thus increasing total income. Where this additional income would be used to purchase goods and services or invested would affect the local economy. If these activities occurred locally, the local and state economies would benefit. However, if the purchases or investments did not take place nearby or within the state, the overall effect on the state would be negative despite the fact that the individual farmer would be better off.

Related sectors of the agricultural economy would be affected by the reduction in farming activity. Different types of inputs or combinations of inputs would be purchased depending on the adjustments made by the irrigator. Some suppliers could be worse off and some better off. Changes in the types of outputs could adversely affect businesses the irrigator dealt with previously, while others could benefit.

The lack of water for irrigation would decrease the long-term production potential of the land and result in a decrease in farmland value per acre. This would erode the local and county tax bases, which are the major sources of revenue for local governments and educational systems. Once again, the disposition of the increase in total income derived from the transfer of the water right would be important.

The fourth possibility is that the farmer would transfer all of his irrigation water rights. The land could revert back to dry cropland or to rangeland depending on the area of the state involved. This change in land use could result in an extreme reduction in farming income. Related sectors of the agricultural economy serving as input suppliers or markets for products would be adversely affected as farming activity declined. However, other local businesses might show an increase in activities, but probably not of sufficient magnitude to offset the initial decrease. This switch to overall less intensive land uses would decrease the long-term potential of the land and result in a decrease in farmland value per acre. As in the previous case, this would erode the local and county tax bases. The effects of the disposition of the increase in total income derived from this transaction could be more intense than those discussed in the previous examples.

An extreme example of this case would occur if a farmer transferred all of his irrigation water rights and then enrolled his land in a government set-aside program such as the Conservation Reserve Program of the Food Security Act of 1985. The land could be planted to grass or trees for 10 years, and the farmer could move to another state. This would have a significant negative affect on the economy of the local area and Nebraska. Not only would the land go to a very low intensity use, but the additional income that the farmer received would be utilized outside the state.

Economic Impacts Of Indirect Physical Impacts

If a transfer of surface water resulted in the water being diverted farther upstream than the original diversion, there could be economic effects based on hydrologic changes to water courses. For example, if the current delivery system recharged the groundwater aquifer, this source would be lost. Streamflow would also be reduced below the new diversion point to the old diversion. This might adversely affect wet meadows and crops such as alfalfa dependent on recharge or stream levels.

Stored water may be the source of the surface water that is transferred. By removing water from the impoundment fish and wildlife areas and water based recreation could also be subjected to adverse economic impacts, such as changes in land values and income from recreation activities.

The transfer of a small quantity of groundwater would likely have few economic impacts at the source. As more water was withdrawn, the possibility of more adverse impacts would increase. The cone of depression caused by a well could extend until adjacent wells and subirrigated areas were affected. As the water table declined, the cost of pumping irrigation water would increase. If the decline was great enough, wells might have to be drilled deeper or replaced. Forage production on subirrigated areas could also decrease. On the other hand, areas with unusually high water tables could be positively impacted. Structural damages due to saturation would be reduced. Also, agricultural production and total farm income could increase as crop production conditions improved.

ECONOMIC IMPACTS OF TRANSPORTATION OF WATER

The economic impacts of transporting water would be associated primarily with the level and type of construction and financing. The extent of local impacts of expenditures for construction of water transfer projects would vary by area and type of project. The direct effects of construction expenditures on the local community, which could be a single county or many counties, typically would be a small portion of the total financial commitment and would be temporary in nature. The capital intensive nature of water project construction generally limits the amount of goods and services that can be purchased locally. Wages paid by the contractor to workers on the project are the major direct effect. Increased income to workers hired locally and income spent locally by nonresident workers will be the major benefit. Further, the construction phase of most projects is only a few years at the most, which represents only a temporary economic benefit, not development.

The source of capital used to fund a construction project would also affect the amount of economic impact. With the decline in federal support, the state would have to take a major role in providing construction funds. If the state undertakes the funding of water projects, these expenditures would represent only a redistribution of existing dollars within the system. From the state's perspective, construction expenditures represent a benefit only to the extent that funding for a project comes from outside the state. In the final analysis, the majority of benefits from a water project come from the utilization of the water, not the expenditures to build the project.

ECONOMIC IMPACTS OF USING TRANSFERRED WATER

The area receiving water from a transfer of water or water rights could experience considerable economic impacts. Once again, the types of impacts would vary according to the use of the water. If the transferred water was used for irrigation, the "new" supply of water would help in maintaining or expanding the current level of economic activity in the local area. Irrigated crop production probably would be stabilized or possibly expanded. The farmers' net income could be improved with the initiation or expansion of irrigation depending on changes in production costs, including water cost. Farm labor requirements could increase, but additional employees would not be required if farmer and family labor was not fully utilized previously.

Additional production inputs would be purchased for the additional irrigated land as well as for land returned to full irrigation. If the major portion of these items were purchased locally, suppliers, retail establishments, financial institutions and others would benefit as more capital is injected into the economy. These sectors would in turn purchase some of their stocks and labor from local suppliers. One of the limiting factors to the total multiplier effect would be the cost of the additional water.

If the imported water could be used for municipal, industrial, or domestic purposes, other economic impacts would occur. Economic development in towns and cities is dependent on adequate, high quality water supplies. The value of output from industrial plants could be enhanced and the economic activity in municipalities could be increased. The attraction of one industry by a good supply of water may in turn be incentive for related businesses to develop. The money invested in expanding the available water supply for a municipality can result in economic benefits many times greater than the original investment.

Water imported for domestic use through either a rural or municipal water system would have economic impacts also. On an individual user or household basis, water rates could increase because of the greater costs involved with a water transfer. The economic benefits could be less tangible, showing up instead as an increased quality of life, or increased residential development and the resulting economic expansion that occurs.

COMPENSATION

Development of a statutory framework that would, among other things, provide compensation to landowners, water right holders, persons adversely affected by transfers, and the state on behalf of the public was required by LB 146. Compensation could be any measures, monetary and non-monetary, that replace losses or offset an adverse impact of a transfer. In cases where it would be impossible to substitute exactly the same material as that which would be impacted, replacement in kind or payment in money satisfactory to the parties responsible for those decisions would constitute compensation. For example, if construction of a pipeline required removal of young trees, it might be possible to replace them in an adjacent area with no change in effectiveness. Mature trees might be impossible to replace exactly, but replacement with young trees and payment for the difference in commercial value might provide satisfactory compensation.

KINDS OF IMPACTS THAT COULD REQUIRE COMPENSATION

A variety of adverse impacts could require compensation. These could be physical, environmental, social, and economic impacts.

Physical

Physical impacts for which compensation might be appropriate are of two types: (1) loss of land and (2) reductions in water supplies. More specifically, they include:

1. The loss of land to facilities such as reservoirs, well fields, pumping plants, or canals.

2. The loss of land to streambank erosion caused by increased flows.

3. The loss of land use due to water-logging by rising water tables.

4. Reductions in surface water supplies to downstream users caused by a new diversion upstream or by a transfer of a water right to an upstream user.

5. Reductions in surface water supplies caused by groundwater withdrawals that reduce flow from the groundwater to a stream.

6. Reductions in groundwater supplies caused by a new well field, including lowering of the water table.

7. Reductions in groundwater supplies caused by surface water diversions that reduce the flow of surface water to groundwater.

Environmental

Environmental impacts that may need to be mitigated by providing compensation are of three types: (1) loss of natural habitats for plants and animals, (2) loss of cultural or archeological resources, and (3) degradation of water quality. The following is a partial list indicative of the range of potential impacts.

1. The loss or significant impairment of designated critical habitat for threatened or endangered species. This could include:
   - Any currently designated critical habitat areas in Nebraska for any species on the federal threatened or endangered species list.
   - Any identified habitat areas for any species on the state list of threatened or endangered plants, fish, or animal species.

2. The loss or significant impairment of a high value natural terrestrial habitat community. This could include:
   - Prime habitat areas of popular game species, species important for research purposes, and/or species that have recognized or potential medicinal value.
   - Areas of pristine plant communities in Nebraska that represent the different types of natural plant communities that occur in the state.
   - Terrestrial habitat areas located on federal refuges and forests, state parks, state recreation areas, state wildlife management areas, or county and city parks, and on other areas procured with public funds for public use and benefit.

3. The loss or significant impairment of a high value aquatic habitat/community. This could include:
   - Recognized trout streams and streams that support significant warmwater fisheries.

- Certain lakes, reservoirs, marshes, and wetlands.

4. Loss or significant impairment of certain cultural and archeological resources. This could include:
   - Structures or sites included in the National Register of Historic Places.
   - Certain structures or sites identified by the Nebraska State Historical Society.

5. The degradation of water quality. This could include:
   - Impairment of groundwater quality to make it unsuitable for, and in need of treatment for domestic, municipal, and industrial use.
   - Impairment of surface water quality so it needed treatment to be suitable for human, livestock, fish, wildlife, and agricultural use.

Social

Many social impacts would be difficult to compensate for. For example, changing the economic base in a community could cause changes in the quality of life, as measured by family and interpersonal relations, general mental and physical health, and satisfaction with the local culture. Most of these types of changes are nearly impossible to compensate for. However, some social impacts represent real social costs in monetary terms to individuals in a community. Compensation for these might be appropriate or required. They include:

1. Displacement of individuals and families because of loss of land to a project.

2. Closing of roads or bridges during construction which disrupts transportation and communications between parts of a community, especially for fire and safety vehicles.

3. Shortages of housing, infrastructure, and social services caused by an influx of people.
   - Infrastructure includes public facilities such as schools, parks, streets, water supply systems, and wastewater collection and treatment systems.
   - Social services include fire and police protection, health care, and welfare systems.

4. Underutilization of housing, infrastructure, and social services caused by the transfer of water rights and loss of activity associated with the use of that water.

Economic

Economic impacts that could require compensation are associated directly and indirectly with the loss of income or loss of revenue. They include:

1. Loss of personal income by parties directly involved in the transfer of a water right, and by those indirectly impacted. Specifically, users of water downstream of the transfer could be impacted if return flows were reduced.

2. Loss of revenue to local irrigation districts. Districts in which the irrigators hold the water rights could be affected if many irrigators transferred their water rights. Districts could then find it difficult to continue meeting their debt repayment and operations and maintenance obligations.

3. Loss of property value in the vicinity of reservoirs. If the water level in a lake or impoundment were lowered due to a water transfer, recreation access, year-round homes, second homes, and cabins could be adversely affected.

4. Loss of tax revenue to local governments. Productive capacity lost by agriculture or industries because of water transfers could reduce the taxable property base and reduce tax revenues, including those for schools, roads, and health and safety services. If the lost agricultural or industrial activity provided the major economic activity in the area, reductions in employment in the retail sector (e.g. grocery stores) would follow. Employment, personal income, and tax revenue would then decline further.

MEASURES THAT COULD PROVIDE COMPENSATION

Adverse impacts could sometimes be reduced by changes in project design or operation, but a certain amount of impact is often unavoidable. Compensation measures are needed to offset them. Compensation could be provided by:

1. Purchase of the land affected by new facilities or the land lost to streambank erosion.

2. Construction of a new water supply system or purchase of water that would substitute for the loss of a surface or

groundwater supply (e.g., drilling of a new well for a user whose groundwater supply was affected by a water transfer).

3. Enhancement of wildlife habitat by:
   - Enhancing and then preserving similar habitat tracts somewhere else.
   - Acquiring and then preserving similar habitat tracts somewhere else.
   - Creating similar habitat tracts.
   - Manipulating or altering existing habitat to make it suitable for the desired species.

4. Enhancement of instream flow by:
   - Acquiring an existing senior water right on the same stream and converting it to an instream flow right.
   - Applying for and obtaining an instream flow right on the same and/or a similar stream.
   - Providing additional flow (or volume of water) via groundwater pumping or from storage, existing or new.

5. Development of funding sources for habitat and instream flow enhancement by:
   - Creating a trust fund or contributing to an existing trust fund as part of the initial project costs, for example, a water rights trust fund or a habitat trust fund.
   - Establishing a usage or severance tax on the water transferred and designating it for habitat or flow enhancement.

6. Construction of water treatment facilities or development of new water supplies to provide suitable water quality for appropriate uses.

7. Relocation of individuals and families who are displaced.

8. Development of funding sources for housing construction, infrastructure expansion, and social services by:
   - Creating a trust fund as part of the initial project costs.
   - Establishing a usage or severance tax on the water transferred and designating it for housing, facilities, and services.

9. Replacement of roads or bridges affected by project construction.

10. Development of funding sources to replace lost personal income, lost revenue to irrigation districts, and lost tax revenue to local governments by:
    - Requiring the purchaser of water to offset the losses for some specified time period.
    - Establishing a usage or severance tax on the water transferred and designating it for losses until deficits are offset by long-term adjustments.

IMPEDIMENTS

Legislative Bill 146 directed the Water Management Board to identify and address current legal, statutory, physical, social, environmental, and economic impediments to transfers of surface and groundwater. Impediments are basically factors that make it more difficult, or even impossible to accomplish a transfer. These factors may be existing conditions, changes in proposed transfers because of existing conditions and potential impacts, or potential impacts of the transfer.

Existing conditions could be physical impediments to the design of a project, economic impediments to financing a project, or statutory impediments to the transfer of a water right. For example, deep river valleys like parts of the Niobrara are impediments to the design of canals for transferring water. High interest rates on revenue bonds are economic impediments. The existing law that prohibits the transfer of a water right from one use to another is a statutory impediment to the transfer of water from irrigation to municipal or instream use.

Changes in proposed transfers made necessary by existing conditions or potential impacts could also be impediments to transfers. For instance, if a canal must be designed to cross a deep valley, it can be done by changing that section to a pipeline. This change would probably make the project more costly, so overcoming the physical impediment would create an economic impediment. Changing a design to reduce a potential impact, such as routing a pipeline around a group of homes to alleviate the social impact, could create an economic impediment through cost increases also.

Changes in existing conditions (impacts) that might be caused by transfers could become impediments as well. Any impact requiring

compensation could become an economic impediment. If, for example, a pipeline were constructed through a group of homes, the compensation required for economic and social impacts would be an economic impediment. Impacts that adversely affected many people could become social impediments through the political process if an election was involved, or a legal impediment if a lawsuit was initiated.

Impediments differ not only in origin but in severity of effect. Some may cause only difficulty in design or negotiation, others may cause delays or additional costs, and some may be insurmountable. Physical impediments may be formidable, but most can be overcome with additional expenditures. They then become economic impediments, which can have serious effects on the project, even to the point of becoming an insurmountable obstacle. Those impediments capable of becoming insurmountable are economic, social (political), and legal.

Impediments are summarized here in two categories, but distinctions among categories are not entirely clear and overlaps exist. The first category includes those impediments associated with conditions that exist before the project is even proposed. The second category is those impediments caused by an impact of the project itself.

IMPEDIMENTS ASSOCIATED WITH EXISTING CONDITIONS

Some existing conditions present obstacles to transfers and, therefore, can be considered impediments. Many are impediments because they require changes in design and create economic impediments. Others are economic or legal impediments with the potential to be insurmountable.

Physical

1. The adequacy of the water source, including:
   - total quantity available,
   - the availability and reliability of the supply at given times, andstudy5
   - the adequacy of the aquifer (for example, flow rate and drawdown).
2. Suitability of soils and geologic formations.
3. The elevation difference between the source of water and the planned location of its use.
4. Presence of railroads, highways, pipelines, residential or commercial development, or rivers along the planned transfer route.

Environmental

1. Presence of historic sites or archeological sites.
2. Presence of threatened or endangered species.
3. Presence of critical habitat of threatened and endangered species.
4. Presence of habitat important to migratory bird species protected by international treaties.

Social

1. Presence of parks.
2. Presence of cultural features such as cemeteries.
3. Availability of an adequate labor force in the project area.
4. Availability of adequate housing in the project area.

Economic

1. High interest rates in the bond market.
2. Availability of capital for large projects (e.g. $100 million).
3. Provisions on discount rates and farm commodity prices, as specified by the National Economic Development regulations.
4. The constitutional limit on state indebtedness.

Legal/Administrative

Some provisions of state law, discussed in more detail in Chapter 2, can act as impediments to projects. Those components of the legal/administrative system that could, under some circumstances, be impediments to transfers are summarized as follows:

1. Nebraska has no provision for leasing water.

2. No state agency is clearly authorized to sponsor comprehensive water projects. The NRC has the authority to purchase storage space in reservoirs built by others, but not to sponsor projects on its own. The Water Management Board's authority to build and operate revenue producing water retention impoundments and related facilities is not adequately defined.

3. Transfers of unappropriated water are treated differently depending on whether the transfer is in-basin, inter-basin, or interstate. Because additional requirements must be met, interbasin and interstate transfers of water are more difficult to implement than in-basin transfers.

4. Surface water rights may not be transferred to a use with a different preference nor may they be transferred out of the basin of origin.

5. "Salvaged" water is not directly addressed in Nebraska law. In agriculture, consumptive use of water can be reduced without affecting crop yields, yet current law would not allow the sale of that saved water.

6. More restrictive permit requirements exist for industrial use of groundwater than surface water.

7. Instream flow use of water is also treated differently than other uses. Specifically, there are restrictions on who may obtain instream flow water rights and on the conditions under which such rights may be obtained.

IMPEDIMENTS CAUSED BY IMPACTS OF THE PROJECT

Impacts of transfer projects could become or create impediments. They could become impediments by forcing a change in design to reduce a potential impact, or they could simply be economic, political, or legal impediments.

Physical

1. Placing a structure or fill in navigable water creates a legal/administrative impediment because it requires a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. In turn, Section 401 of the Act is invoked requiring certification of water quality.

2. Flooding land with water in a reservoir requires ownership of, or an easement to, the land. If the owner is not willing to sell, the project developer must have the power of eminent domain, which requires a showing of public purpose for taking private property. Private developers ordinarily do not have the power of eminent domain.

3. Diminishing flow downstream becomes a legal impediment if there is a senior appropriator downstream.

4. Lowering the water table could produce a legal impediment if another person's well is affected and the damaged party files a lawsuit.

5. Lowering the water table could also produce a legal impediment if it reduced the groundwater contribution to streamflow. Under the Big Blue Compact, such impacts are restricted.

6. Changes in streamflow patterns that cause land erosion downstream could become legal impediments if the landowners filed a lawsuit.

7. Construction of canals could create legal impediments, if they created liability for damages caused by the barrier or liability for the safety of people near the water.

Environmental

Environmental impacts that are covered by environmental regulations are considered impediments by some people. Many times, though, the same environmental impacts can be beneficial to some and adverse to others. The lack of a system for identifying and resolving these conflicting views at the state level, and the failure to follow the national system objectively have produced more obstacles and delays than most of the impacts themselves. The real impediment is the lack of a system for assessing impacts and resolving conflicts expeditiously.

Before an assessment and resolution process can be effective, several actions are needed to provide an adequate foundation. Even before applications for transfer permits are accepted and the risks of detrimental impacts to an ecosystem are assessed, it is vital to establish clearly the relative importance of various ecological communities to the health and financial

well being of the citizens of the state. Once the importance is established, the extent of action needed to protect the affected resources can be considered.

First, it would be vital to identify those ecological communities that comprise critical habitat for officially designated threatened and endangered species. According to law, the critical habitat of these species must be protected. Second, those ecological communities that have particular economic value to the citizens of the state should be identified. Such areas might include important migratory waterfowl habitat in the rainwater basins and the Sandhills, habitat in the state's streams and rivers that support sport fisheries, and water resources that support recreation activities. The value of these habitats for generating income to the state should not be underestimated.

Third, those ecological communities that have value because they are unique or aesthetically important should be identified. For example, the Sandhills represent a very unique type of ecosystem. Fourth, there are archeological and cultural resources that might deserve special attention. Finally, the state could accelerate implementation of providing instream flows through legislative changes or by providing additional resources. This would help identify surplus water beyond state needs and would tend to improve conflict resolution between environmental groups and those proposing transfers.

Many of the environmental impacts that may be caused by a transfer project could become legal impediments to the project because they invoke federal and state environmental laws. Three examples are provided below. A list of environmental laws that could be considered impediments is included in Appendix 3.

1. Alteration of streamflows could create legal impediments, if it affected critical habitat or threatened or endangered species. Such effects would invoke the Federal Endangered Species Act and the Nebraska Nongame and Endangered Species Act.

2. Lowering the water table, if it allowed contamination of an aquifer with saline water from lower aquifers, could create a legal impediment because it would invoke the Nebraska Groundwater Management and Protection Act.

3. Transfer of water to hydropower, if it adversely affected the temperature, dissolved oxygen content, or other water quality parameter could also create a legal impediment. Such effects would invoke the Federal Power Act, the Clean Water Act, and the National Environmental Policy Act.

Social

1. Shortages of community facilities and services could be impediments. If construction of a transfer project required a large labor force in a sparsely populated area, adequate housing for workers may not be available, schools might become overcrowded, and compensation to the school district could be required. Other critical services and facilities could include fire and police protection, housing, and sewer and water service.

2. Formation of local opposition groups could lead to social impediments. Such groups could form political coalitions or start legal action. In addition, existing local, state and national groups could join the new groups in any action they might take. Opposition groups could delay transfer projects, add to the costs of the project or prevent the project by:
   - initiating lawsuits,
   - electing new representatives to local boards and the legislature who are opposed to the project,
   - changing laws through the initiative petition process, or
   - employing civil disobedience.

3. The lack of a social process which allows impacted parties to participate in decision-making about transfers could also be an impediment to such transfers. A process which provides the opportunity for parties-at-interest to participate, allows their value differences to be clarified, and allows the distribution of costs and benefits to be negotiated could reduce social resistance to transfers. At the national level the environmental assessment process formalized by the National Environmental Policy Act of 1969 provides such a social process. This assessment process is viewed by some as an impediment or obstruction to the project. However, if the process is followed correctly and the developer makes an objective assessment, simply having an established process can be beneficial to the decision-making process. In some cases, it can also prevent costly and time-consuming litigation.

Economic

Most of the physical, environmental, and social impacts of a transfer could become economic impediments because they could increase the cost of the project either directly by changing its design or indirectly by requiring compensation. Economic impediments could become insurmountable if they became too large or extensive. If project costs increased without offsetting increases in benefits, the economic viability of a project would be affected. Depending on the extent of the cost increases, the project could simply be slowed down or it could be halted and abandoned to minimize the sponsors' losses. Examples of project impacts which could become economic impediments include:

1. Social opposition to a project could result in lengthy legal or political conflicts. These would in turn increase costs to the project as efforts were made to defend the project and present the facts concerning the impacts of the project.

2. Installation of surface water collection facilities could have physical and hydrologic impacts which require compensation to adversely affected parties.

3. A project which transferred groundwater out of an area could result in a cone of depression which could in turn change the vegetation and land use in nearby areas. There could also be resulting environmental impacts if streamflows and habitats were affected. The cost of compensating those landowners adversely affected as well as providing substitute habitat areas could become major economic impediments to a project.

A small project transferring water across a roadway or railroad right of way could incur additional costs not initially anticipated by the project sponsor. These costs and the additional procedural requirements could cause the sponsor serious doubts about going ahead with the transfer.

Large projects could have additional problems due to any increase in costs. Investors could reconsider their support because of questions about the changing viability of a project.

Chapter 5.

WATER AND WATER RIGHTS TRANSFER POLICY RECOMMENDATIONS

Development of new state policy on transfers of surface water, groundwater, and surface water rights requires consideration of many, varied public policy issues and options for resolving them. In defining the issues, many questions on laws and statutes must be examined. Finally, state policy on transfers must be forged and expressed in statutes.

PUBLIC POLICY ISSUES

Water is a public resource, managed by the state for the benefit of the public. In establishing policies that will determine how that resource will be managed to benefit individuals and the public as a whole, many environmental, economic and social issues must be considered. In some instances, social, economic and environmental policies may conflict in their effect on water policy. For example, a social policy promoting the status of agricultural uses might impede transfers to municipalities or industries. If an industry could use the water to produce a product with a higher value, allowing social policy to control water policy could be inconsistent with economic policy promoting economic development and efficiency. Conflicting goals of social, economic, and environmental policy must be balanced to establish and apply water transfer policy that will provide the greatest benefits to the most people while protecting the rights and interests of others.

In defining the basics of its transfer policy the Water Management Board stressed acknowledgment of the physical realities of the relationship of surface water and groundwater. The Board also stressed the principle of equity among potential users of water, and gave consideration to policy that would encourage efficient resource use and economic development commensurate with the protection of private rights and public values. It also stressed the need for proper management of water resources at the state level.

INTEGRATION OF SURFACE WATER AND GROUNDWATER LAW

The Water Management Board reviewed the separate treatments of surface water and groundwater in Nebraska law, and noted that these laws were inconsistent with the physical realities of the hydrologic system. They discussed the relationship between the two in recharging aquifers and providing base flow to streams, among others. They noted that one drop of water could change from surface water to groundwater and back again several times as it moved across the state.

The Board decided that new policies on transfers of water and water rights should acknowledge the relationship between surface water and groundwater. New policy on transfers should integrate the statutes controlling them, and the treatment of them, as much as possible.

EQUAL TREATMENT OF TRANSFERORS

Water is a public resource that should be used in the best interest of the public. All members of the public should have equal opportunity to make use of it, to the extent possible. The Board decided that state policy should not discriminate against any potential users because of their location or accessibility to different sources of water, unless state interest demands it. An applicant for a right to use water should be judged on the merits of the proposed project without artificial constraints, and all applicants should be judged by the same standards.

To provide equality, the Board felt that criteria for evaluating proposed surface water and groundwater transfers should be the same. Likewise, criteria for evaluating transfers by the location of the source and the use should be the same. There should be no distinction between in-basin, interbasin, or interstate transfers unless it is in the best interest of the state as a whole.

EFFICIENT RESOURCE USE AND PROTECTION

Effective management of the state's water resources requires policy that tends to utilize the water for purposes that best serve the public interest. This requires identification and advocacy of the environmental, social, and economic values of the water and encouragement of proposals that would most enhance those values. In some instances, the water is best used where it is, but at times, permitting development and transfer of water would provide greater economic and social benefits and promote economic efficiency in water use.

Any system of permitting water and water rights transfers must make judgments regarding the acceptability of the environmental and social impacts. Existing legislation recognizes the importance of some environmental resources, such as critical habitat for threatened and endangered species, and requires comparison of their importance with the value of proposed projects that could have adverse effects on them. Future policy should expand on these precedents. Wise decisions on the value and development of water require knowledge of the impacts of its use; knowledge that should be gained through a systematic process of analysis and assessment.

State policy should regulate water and water rights transfers in a manner that would encourage those uses that provide the most net benefits. In addition, new policy should facilitate transfers whenever it is in the best interest of the state. If necessary to facilitate such transfers, the state should be an active participant in their development.

In order to utilize and manage its water most effectively Nebraska must do more than react to the initiatives of others, regulating proposed development and contesting development in upstream states. The state should take the initiative in developing its water, including the water in interstate streams, and committing it to legal uses, both instream and off-stream.

EFFECTIVE STATE RESOURCES MANAGEMENT

The resources of the state must be managed to protect human health and property and the environment, to protect and enhance economic opportunities, and to enhance the quality of life. Water must be regulated and used in a safe and equitable manner as defined by state law. The resource base must be protected from overuse and degradation. In order to form a better understanding of the resources, data needs to be collected and studied. Planning is necessary to evaluate the potentials for undesirable futures. Financial assistance must be provided for worthy projects. To be cost effective, management cannot be sporadic but must be a continuous process. Adequate funding is required to meet the challenge to protect what we have and make use of the opportunity for improving the state.

Management Needs

Resources management will be an even more important function of government in the future than it has been in the past. There are increasing demands on available water supplies and conflicts among proponents of different water uses. For example, the combined flow requirements of several proposed Platte River irrigation developments exceed existing flows in a stretch of the river. This area also contains critical wildlife habitat for threatened and endangered species and there is considerable support to preserve and enhance instream flows. Municipal water projects proposed upstream in Wyoming and Colorado would also affect flows in this reach. A greater state role will be needed to resolve conflicts and insure equitable allocation of its limited resources.

Development of water resources, and economic development of other resources, is reducing the quality of the water supply. Nonpoint sources of pollution, including chemicals used in agriculture, are threatening groundwater supplies. These concerns have lead to state and federal legislation and additional regulations and management responsibilities. Special Protection Area legislation has been enacted by the state to protect the groundwater in areas of particular importance. The 1987 amendments to the Federal Clean Water Act require states to develop programs to control nonpoint sources of pollution. Coordination among involved local, state, and federal agencies, and funding will be required to apply management practices and carry out these programs.

The 1986 amendments to the Safe Drinking Water Act establish additional responsibilities for municipalities and other public water systems. Other environmental programs, such as those addressing toxic spills, hazardous wastes, and disposal of solid waste, can have a great impact on water quality. These programs will also require more management by local and state agencies, and they will need some of the limited funds available for water management and development.

The state may need to become more involved in regulating and facilitating development, particularly as the federal government becomes less active in water development projects. The conflicts over the proposed Platte River developments need to be resolved. A central state

Table 8

SUMMARY OF WATER RESOURCES PROJECT FUNDING

Fiscal Years 1983-1987

Agency[1]	Project or Program[2]	Funding		
		Federal	State	Local
		(millions of dollars)		
NRC	Nebraska Resources Development Fund	[3]	9.3	3.1
	Small Watershed Flood Control Fund	[3]	1.9	0.3
	Soil and Water Conservation Fund	N.A.[4]	7.4	4.0
DEC	Nebraska Construction Grants Program	71.4	10.6	11.7
	Groundwater Contamination Cleanup	(EPA and Responsible Party - 12.0)		
DOH	Public Water Supply System Construction	8.2	0.0	N.A.
GPC	Fish and Wildlife Federal Aid Programs	14.0	(Non-federal - 4.6)	
SCS	P.L. 566 Watershed Projects	4.4	[5]	N.A.
ASCS	Long Pine Creek RCWP	0.6	[5]	N.A.
COE	Columbus Sec. 205 Flood Control Project	3.5	0.6[5]	0.2
USBR	North Loup Division	153.4	N.A.	[6]
	Farwell Unit	1.6		N.A.
	Nebraska Bostwick Division	0.1		N.A.
	Frenchman-Cambridge Division	1.6		N.A.

[1]NRC = Natural Resources Commission, DEC = Department of Environmental Control, DOH = Department of Health, GPC = Game and Parks Commission, SCS = Soil Conservation Service, ASCS = Agricultural Stabilization and Conservation Service, COE = U.S. Army, Corps of Engineers, USBR = Bureau of Reclamation

[2]Only major projects funded by these agencies are listed; some other programs also provide less funding for projects in this state

[3]Funding provided by related federal programs.

[4]N.A. = Not available.

[5]State contribution provided by NRC funds.

[6]A portion of the federal cost is to be repaid by the users.

role in construction of the most beneficial project may be found desirable. A need may also arise to facilitate the transfer of public water supplies to communities where local groundwater supplies have been contaminated by nitrate or other pollutants. Interstate transfers, such as a municipal water supply for Julesburg, Colorado or transfers by exchange to Colorado or Wyoming, may also necessitate a more active state role.

Funding Needs

The federal government has invested huge sums for water resources development and management, but the state may need to play a larger financial role in the future. Federal, state, and local funding for water resources projects in the past five years are shown in Table 8. Known expenditures totaled about 324 million dollars. Federal programs provided almost nine times as much as state funding programs. Federal assistance for some programs is currently being reduced or phased out, and it may be reduced for most programs because of the huge federal budget deficit. With the federal government reducing its share of funding, additional state funds will be needed to build wastewater treatment facilities, cost-share in agricultural management practices, and develop new supplies of water. If federal spending in Nebraska were reduced by only 10 percent, the state would have to nearly double its expenditures to maintain the current level of development and management.

Simply maintaining the current level may not be adequate. New requirements for water quality control and providing public water supplies will increase funding needs significantly in the future. In addition, future development of water conservation and use projects will become increasing more difficult and expensive.

Known requirements for construction of municipal wastewater treatments plants, for example, are a minimum of 136 million dollars over the next 20 years. As part of the federal deficit

reduction efforts, federal grants for this program will be phased out soon, so state and local governments will have to spend more. The recently created state loan fund will have to provide the majority of funds for those needs. It will not provide for other needs, however. Continuing the cleanup of groundwater at the six known sites in the state where groundwater is contaminated with hazardous substances might require 70 million dollars to complete, in addition to the 12 million dollars already spent. The state could be required to pay 10 percent of the costs of some cleanups under the national Superfund rules, and Nebraska has no superfund to cover these kinds of costs. Management practices to protect Special Protection Areas and implement nonpoint source pollution programs will also be expensive but no cost estimates are yet available.

The 1986 amendments to the Safe Drinking Water Act will require substantial increases in expenditures by municipalities, and perhaps the state, to continue to provide water supplies. Monitoring costs will increase significantly and new requirements for disinfection, surface water treatment, and lead and copper limits could require some systems to add facilities totaling 8 to 15 million dollars. Operation and maintenance costs could increase nearly 4 million dollars per year. National leaders of municipal organizations have estimated that small communities will simply not be able to afford to comply. To address this situation, a bill has been introduced in the U.S. Senate to amend the internal revenue code to establish new environmental taxes. The bill proposes a tax of two cents per thousand gallons of water delivered by systems supplying more than 500 service connections. These funds would be used to test, treat, repair and replace small communities' wells that have become contaminated.

In addition, many systems in Nebraska, especially in small communities, are outdated and in poor condition. An estimated 40 million dollars would be needed just to bring sub-standard public water supply systems up to current design standards.

Disposal of solid waste will also require additional activity and funding. The U.S. Environmental Protection Agency has initiated the process of imposing groundwater monitoring requirements on all municipal landfills in the country. They estimate it will cost the average landfill owner $43,600 per year to comply with the proposed requirements. No federal funding has been proposed to assist with this effort.

In the past five years, the federal government has spent about 166 million dollars on construction of water conservation and development projects, while the state has spent less than 19 million dollars. Continuing federal programs will probably contribute another 30 million dollars in the next five years, but federal expenditures could decrease to only 1 to 2 million dollars per year after that. However, five projects proposed and planned by NRDs, reclamation districts, and cities will require over one billion dollars for construction. These projects range in cost from about 130 million dollars for the Catherland Project or the Omaha Urban Stormwater Management project to 396 million dollars for the Prairie Bend Unit. Federal assistance may be available in some cases, but with the non-federal share increased, these projects will have to compete for local and state funding with water quality and drinking water programs. Unless some other means of funding are found, these dollars will have to come from local and state general tax funds.

Funding Systems

To be effective, water management programs must be assured of relatively stable funding levels over the years. Some programs will have fairly constant and predictable needs while others will be quite variable. For example, the cost of monitoring drinking water quality required by the Safe Drinking Water Act will increase dramatically as new regulations go into effect and then increase only gradually as additional testing becomes necessary. Every public water supplier will be faced with this need for funds at the same time. In contrast, some municipalities could also be faced with large expenditures to construct facilities to meet new standards for disinfection and lead and copper limits. Total funding requirements in any given year could vary widely, as they have for wastewater treatment plants. The wastewater treatment plant construction program has had variations in needs for individual projects but on the state level has operated at a fairly constant level.

Other programs will be highly unpredictable in their funding needs. Superfund projects can arise unexpectedly and they could require millions of dollars per year with little advance warning. Other types of projects such as development projects will be planned and prepared over several years but may require 10 to 100 million dollars for construction over a period of 2 to 7 years. In any one year the total funding requirements for water supply and water quality projects like these could vary from millions to tens of millions of dollars with no way to forecast how much might be needed.

One option that would provide the necessary flexibility to adjust to annual variations in financial needs would be to combine all of the funds for the various programs into a joint water resources fund. Payments could be made out of this joint fund to a number of programs for the non-variable anticipated expenditures, the unexpected

emergency expenditures, and finally for the less pressing projects that have some flexibility in scheduling. Another option would be to establish a number of separate funds with a fairly stable level of funding and provide the authority and responsibility to share funds as the needs dictate.

Funding Alternatives

Sources of revenue for the increased level of future activity are limited to a few basic types: general taxes, special taxes on select groups, or sales of the goods or services produced. Biennial appropriations to a joint water management fund, or to several separate funds, would have to come from the state's general fund. An alternative to biennial appropriations would be enactment of a system of user fees (special taxes) on goods and services regulated or permitted by state agencies that would be collected by an agency and deposited in a water management fund or funds. Bonds are a means of borrowing funds for large expenditures, but they must be repaid with money from one of the basic sources. General obligation bonds pledge the full faith and credit of the state, which would require repayment from the general fund. On the other hand, it is expected that revenue bonds will be repaid with the revenue from the sale of water for irrigation or from some other service. This might be some type of user fee such as a gate fee for admission to a recreational facility.

Funding alternatives differ in the uniformity of the level of funding available and they have certain advantages and disadvantages to be considered. One alternative would be for the state to issue bonds of some type. Bonds have the advantage of providing large amounts of funds as needed. However, general obligation bonds cannot be used for water management because the constitution does not allow it at the present time. Revenue bonds can be sold only for projects which produce revenue and are repaid with that revenue. Only a few types of public projects, including municipal water supply projects and irrigation projects, produce water for sale to customers, so this source would not be available for the majority of management programs.

Another alternative would be biennial appropriations from the state general fund, which is based primarily on the revenue generated through sales and income taxes. General appropriations to one or several funds for program activities could provide base levels of funding. Regular, project specific appropriations could also finance some projects. This source would spread out the burden of financing, effectively reducing each individual's share. Other advantages are that everyone would pay for benefits received, and proposals would receive more direct legislative review. However, it may be very difficult to use this means as the sole source of funding for highly variable levels of need. Other disadvantages to this source would be that it could raise general tax levels, there could be increased pressure on legislators from people for or against projects, very large appropriations could be ruled out because of the need for variations in tax rates, and there would be increased competition in the budget process with programs in other areas. Also, it does not generate any increased income from out-of-state sources, thus there is no real increase in economic activity within the state.

The appropriations process could be eased by adding special taxes or fees as a source of revenue. These fees could be added to the general fund for appropriations to water management programs or they could be collected by the Water Management Board and committed to the Water Management Fund. Some programs are already supported by taxes on unrelated items, such as cigarettes and liquor. Other programs are supported by a tax on the item used or a closely related item; for example, the gas tax is used to maintain the road system. Additional funds for water quantity and quality management could be generated by assessing fees for the production of hazardous wastes, use of fertilizers or pesticides, use of water, or other activities which might affect water quality or quantity.

There are three alternative sources of fees that might serve as a source of funding for water supply and management programs: new transfers, all transfers, and all users. Arguments in favor of a system of user fees include: it would provide a relatively stable source of income, with less competition and pressure in the legislature; those who benefit would be paying, including out-of-state users; and those individuals who have been exploiting this public resource for no cost in the past would be compensating others who no longer have the potential to use the water in the future. Some people argue against such special taxes for water use because it would require people to pay for a necessity of life and because it is nearly impossible to arrive at an equitable fee system for different uses. Others resent being expected to pay for projects in other areas from which they will not directly benefit, especially if they have already paid for similar projects in their own areas with no outside help. Irrigators oppose special taxes on the basis that they already pay more taxes due to the increase in assessed valuation of their lands when irrigated.

Water Management Board Funding System Proposal

The Water Management Board reviewed the needs for funds and optional funding systems and developed an alternative to appropriations from the general fund. Available information on past

expenditures and potential budget requirements for managing the state's water resources were reviewed. Programs regulating water quantity and quality were included with those for developing water supplies and enhancing environmental quality. This information suggested a reasonable level of annual funding that would be required for future management.

The amount of water used annually by various categories of users was considered by the Board. In addition, the rate of transfer project development and water use over the past 25 years was studied to provide an indication of the revenue that might have been generated in the past. This information was then used to develop several tentative fee schedules on different categories of users that would provide a reasonable level of funding.

This proposed system was presented to the public in draft form. It was opposed from the beginning by groups and individuals representing municipalities, irrigators, electric power producers, and farmers. Many comments giving reasons for this opposition were received, but four basic reasons seemed to be the most common. The proposed use of the fees and the lack of definition of the proposed uses and their benefits was the most common thread among the reasons given. The second most cited reason was the belief that the money should come from the general fund where projects would have to compete with other priorities and the Legislature would have direct oversight. Other reasons given frequently were the inequities in the fees and the probable impacts on the users. A number of municipalities indicated the proposed fees would raise their customers' water bills by 3 to 8 percent.

This type of opposition made it evident to the Board that, although fees are one of the few available means of being compensated for interstate transfers and many who are opposed would be the ones to benefit, it is unlikely any agreement could be reached in this study. Only the Legislature can resolve the problem, either by setting up a long-term funding program supported by biennial appropriations from the general fund, or by enacting legislation to impose fees. If a transfer fee system is established, the Legislature could attempt to reach agreement among parties on an equitable fee schedule, or assign that task to the Water Management Board. Should the Legislature find that it is imperative to act quickly for some reason, such as the emergence of a major interstate transfer, the system proposed by the Board could be used as a starting point. More detailed information on this user fee system and a draft of a bill that would implement it are in Appendix 4.

STATUTORY POLICY QUESTIONS

Much of the recommended state policy on transfers must eventually be translated into statutes and enacted by the Legislature and Governor in order to be implemented. Preparation of the statutory framework mandated by Legislative Bill 146 required answers to many basic policy questions and many questions on legal and regulatory details. In some instances, questions on details raised new questions on basic policy.

One of the basic questions was, "What is a transfer?" This question was debated extensively by the Board, the Commission, and the public. Both surface water and groundwater transfers were eventually defined, and statutory language defining transfers of surface water rights was prepared. After transfers were defined, it was necessary to consider whether any transfers should be allowed without state oversight, or permits. It was found that some would not have any significant effect on the resource, on neighbors, or on the general public, so it would not be necessary or productive to regulate them. Individual domestic wells have usually been exempted from most control regulations for this reason.

Another question was whether any types of transfers would have such adverse impacts that they should be prohibited entirely. Related questions included the methods of determining and assessing impacts. Several questions arose concerning criteria that should be used to judge whether transfers should be permitted or not: (1) should adverse impacts be prohibited completely, (2) should they be allowed if they could be balanced by substitution of similar features, (3) should they be allowed if their impacts are outweighed by beneficial impacts of another kind, or (4) should compensation or mitigation be required for all adverse impacts?

RECOMMENDED TRANSFER POLICY

In the past, use of groundwater on "overlying land" was not considered a transfer, but that term had not been defined previously. The Board recommends that the concept be retained, and the term be defined as all land in the same government survey section as the well. This would provide fixed boundaries in the same system in which ownership is defined. The maximum amount of overlying land would vary, but generally would be 640 acres. Any transportation of groundwater away from the section in which the source is located would then be considered a transfer.

Under this definition, some transfers would be too small and have too little effect to warrant regulating them as fully as large projects. For example, a system piping water under a road to a farm house from a well in an adjacent section would be considered a transfer. Such domestic wells, stock water facilities, and normal irrigation wells would probably have too little impact on the public interest to justify complicated regulatory proceedings. Therefore, transfers for individual domestic uses, and transfers of groundwater to an adjacent section for irrigation of 160 acres or less, should be exempted from requirements for permits. Short distance transfers of small quantities of groundwater for other uses should be required to secure a permit, but with a minimum of regulatory requirements. Discretion should be given to the administering agency to decide how much analysis is needed before a permit is granted.

A similar approach to defining and regulating transfers of small quantities of surface water would be appropriate. In general, however, new off-stream uses of surface water should be considered transfers subject to the recommended policy, as are all transfers of water rights. Permits to store and use water from storage, and to exchange water should be treated in the same manner.

At the opposite end of the spectrum are transfers so large that the impacts probably cannot be defined accurately at this time, especially very large transfers of groundwater. Aquifer characteristics vary widely across the state, making it difficult to compare the effects of a project in one area to another area, to extend the effects of a small project in any area to a much larger project, or to predict the effects of an extensive project. Therefore, no applicant should be allowed future transfers of more than 60,000 acre-feet of groundwater in a year.

Applicants for transfer permits should be required to apply to the Department of Water Resources. The applicant should be required to prepare an impact assessment statement and to provide sufficient information on the project and its impacts to satisfy the Director that all requirements of statutes, rules, and regulations that implement the criteria set forth in the recommended statutory framework have been, or can be met. Procedures and requirements should be sufficiently flexible to allow the Director to specify the amount of detail that must be provided by the applicant. Applicants with small projects likely to have little or no impact should not have to prepare a detailed statement.

The Director should be required to provide copies of the application and impact statement to other interested state agencies for their review. If any agency has valid reason to believe there might be important impacts not considered or reported by the applicant, the Director should obtain adequate information from the applicant or any other suitable source. Interested persons should also be notified of the application and given the opportunity to review the accompanying information.

The procedures and requirements of the impact assessment should be similar to those used in the national environmental assessment process to take advantage of the knowledge and experience that has been gained through it in the past 19 years. It should be adapted to fit conditions and potential projects in Nebraska and expedite the process. Full disclosure of all potential social, economic, environmental, and physical impacts should be required.

Applicants should provide adequate information to:

(1) show their financial capability to complete the project,
(2) assess the economic viability of the transfer,
(3) assess the physical and environmental impacts,
(4) assess the social and economic impacts,

and any other information required to show any other impacts the Director finds to be relevant. The applicant and the Director would be required to comply with other statutes and regulations that apply, including the Non-game and Endangered Species Act. Reviewing agencies and any party potentially impacted by a proposed transfer should have the opportunity for a hearing on the application.

Sales, leases, donations, and other means of transferring water rights should be permitted. All permits should be limited to a specific term, not to exceed 50 years, with the opportunity for renewal,

with special consideration for the current owner at the end of the term. In no case would the term be less than the payback period of the project, unless that period exceeds 50 years.

The same standards for approval should be used in deciding whether to approve all types of transfers, including surface water and groundwater; in-basin and interbasin; out-of-stream and instream. In determining whether the permit should be granted, the Director must determine that the project would comply with the Nebraska Non-game and Endangered Species Act and other statutes that specifically require compliance. The Director must also consider the beneficial and adverse physical, environmental, social, economic, and legal impacts of the proposed transfer. Where possible, compensation or mitigation measures should be employed to offset adverse impacts and such measures should be required as conditions of any approved permit. When there are adverse impacts that cannot be avoided or negated effectively through compensation or mitigation, the permit should be granted only if the beneficial impacts of the transfer clearly outweigh the remaining adverse impacts. The state should also retain the right to rescind the permit if the water later becomes necessary for health and safety.

A permit should be conditioned on compliance with conditions specified by the Director if he or she finds it is necessary to protect the public interest, private rights, or the terms of other applicable contracts, statutes and regulations. The Director could grant a permit for as much water as requested, or reduce the amount as necessary. In permitting the transfer of surface water rights, the Director should limit the transfer so the amount of depletion from the original source will be no more than the amount consumed in the past, that is, the amount diverted minus the amount returned to the stream. If the proposed transfer is of "salvaged" water, the transfer should be limited to the portion of the historically consumed amount that can be saved through conservation. In all cases, the amount permitted should be the maximum that will be consistent with the standards for all approvals, up to the amount requested by the applicant.

In all cases, application fees need to be high enough to cover the administrative costs of processing applications. Since the conditions and terms of the permit would require periodic administrative and management costs, annual continuation fees should be charged to cover those costs. These fees should be graduated, based on the size of the project.

Draft legislation that would define and authorize the regulatory activities recommended above is contained in Volume II, Proposed Legislation. The draft legislative bills also cover the fees associated with regulation, including application and continuation fees.

In addition to the basic regulatory role, the state should take steps to improve the efficiency of water markets and transfers, expedite development of water, and promote economic development of its resources. Transferring water rights should allow the water to go to higher economic uses, and promoting desirable transfers of water could produce greater benefits to the state, economically and environmentally. Draft legislative bills that would implement this role are also contained in Volume II.

The first step should be to facilitate development and transfers by establishing a clearinghouse for water right transfers. The Water Management Board should be given the authority to set up that clearinghouse. It should publicize the changes in statutes and inform current holders of water rights of their opportunity to make changes. It should seek out parties interested in purchasing rights also, and help in matching buyers and sellers. The staff of the Natural Resources Commission, aiding the Board in carrying out this mission, should be authorized to bring parties together for negotiations and help them in assessing the impacts for their application to the Department of Water Resources as much as staff, time, and funds permit. Part of the continuing administration fees charged by the permitting department on transfers granted permits under this program should be used to help defray the costs of the clearinghouse. Funds should also be made available to other state agencies required to assist project sponsors in preparing impact assessments.

In addition to helping applicants by aiding in the assessment process, the Board and the NRC staff should take the initiative in identifying potential transfers, encouraging cities, districts and other entities to form cooperative ventures, and negotiating with federal agencies on participation in potential federal projects. The services of the NRC staff and the Water Management Fund should also be used to aid in employing the revenue bonding capacity already provided in statutes. After viable projects are identified, the fund should be used for the administrative and legal costs in preparing a bond issue. In addition, the Water Management Fund could continue to be used to promote and help market those bonds.

If the Water Management Fund was expanded sufficiently, the Board could be given the authority to use it for compensation or mitigation beyond that required for a permit. This might provide the means to compensate local

governments for land taken off the tax rolls, for loss of tax base if irrigated land reverts to dryland, or for other such indirect impacts.

The Water Management Fund could also be used by the Board and the NRC staff to identify and plan potential projects, enlist the participation of sponsors and federal agencies, and lead in the implementation of transfer projects if sufficient funding were provided. The state should take the lead in project design and construction only when necessary to maximize benefits of transfers.

Finally, the Legislature should take action to provide adequate funding on a long-term basis for a broadened water management fund. Funding should be provided either by establishing a regular budget item and making biennial appropriations from the general fund, or by enacting some type of transfer fees to put into it. The Legislature could resolve to set up a fee system and try to reach some agreement among opposition groups, or assign the task of convening those groups and seeking consensus to the Water Management Board. Should the Legislature decide to proceed without further study, because of an imminent interstate transfer or some other reason, the Board recommends consideration of the draft bill contained in Appendix 4 as a starting point.

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Appendix 1.

LEGISLATION ON THE WATER AND WATER RIGHTS TRANSFER STUDY LB 146 (1987) as Modified by LB 817 (1988)

Section 2-15, 118. The legislature finds that Nebraska ground water and surface water are currently being transferred from the land to which they are appurtenant to users both within and outside the state. Such trasfers are likely to increase as other regions of the state and nation continue to experience shortages in local water supplies.

The Legislature further finds that Nebraska enjoys abundant supplies of water and that certain areas of the state suffer from a chronic overabundance of water resulting in drainage problems and flooding which cause damage to homes, businesses, roads, crops, and livestock.

It is a proper and necessary function of state government to provide mechanisms for the orderly transfer of water and water rights from areas of surplus to areas of shortage, to establish a means whereby individual landowners and the public in general are compensated for such transfers, and to ensure that the rights of individual landowners and the welfare of the citizens of this state are balanced against the free market forces that compel the dedication of water to its highest and best use.

Section 2-15, 119. The Legislature hearby directs the Water Management Board, in consultation with the Nebraska Natural Resources Commission, to:

(1) Identify and address current legal, statutory, physical, social, environmental, and economic impediments to transfers of ground water and surface water;

(2) Develop a statutory framework to permit such transfers while protecting the environment and the rights of landowners, the general public, and others directly affected by such transfers;

(3) Develop a statutory framework to provide compensation for such tranfers to landowners, water rights holders, persons adversely affected by such transfers, and the State of Nebraska on behalf of the general public;

(4) Identify potential users of and markets for water and water rights transfers;

(5) Identify potential locations and methods for surface water diversion and ground water withdrawals and methods of transporting water of sufficient scale to be economically viable;

(6) Identify and develop the appropriate state role in facilitating and regulating such water and water rights transfers; and

(7) Solicit and accept comment from the general public on such issues until August 30, 1988.

The Water Management Board shall submit a report to the Governor and the Legislature on or before November 30, 1988. Such report shall include findings of the board relating to all factors identified in this section.

Section 2-15, 120. The Water Management Board may request assistance from the Department of Economic Development, the Department of Environmental Control, the Department of Water Resources, the University of Nebraska Instutute of Agriculture and Natural Resources, the Conservation and Survey Division of the University of Nebraska, or any other state agency if necessary to carry out its duties pursuant to section 2-15, 199.

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Appendix 2.

PUBLIC COMMENTS AND RESPONSES

Section 1. Water Management Board Responses to Comments

Comment Process

Approximately 600 copies of the draft report and five draft legislative bills were mailed on July 18, 1988. Copies were sent to all members of the Core group, all those who had attended at least one of the twelve public meetings and had indicated an interest in receiving the draft report, and other persons identified as interested in the study. The comment period was held open until August 30 as required by statute. Since the Water Management Board did not meet until September 2, all comments received until the time of the meeting were reviewed. They are included in this appendix.

A total of 47 comment letters were received by September 2. While not all suggested changes were accepted by the Board, all comments were reviewed and considered as the Board finalized its conclusions and recommendations.

Summary of Comments

Nearly all significant issues raised in the report or in the draft legislation were addressed by one or more comments. It is not possible to categorize every comment, but the majority fit into one of eleven categories. A summary of the comments and the Board's response to those comments appears below.

1. Concerns about the timing of the study and/or overall concept of water transfers and water marketing. A few of those commenting felt that the timetable for the study had not allowed sufficient time for full consideration of the issues either by the study participants or by the public. The Board concluded that the study should stay on schedule, and that the November 30, 1988 statutory deadline for submission of the report should be met. In addition, the Board disagreed with the comments. The members felt there had been sufficient time for the Board to consider the issues and to develop its recommendations. Also, there will be significant opportunity for additional public input as the discussion moves to the legislative arena.

Related comments questioned the wisdom of allowing water transfers or water marketing and opposed any changes in existing state policies in that regard. The Board did not agree that it could ignore the legislative request for the study or that making no changes in current policies would be desirable.

2. Water use fees. The issue that was the subject of the most comments was the Board's proposal that water user fees be assessed on some existing and future water uses. This proposal was contained in a draft legislative bill which set forth specific criteria for the kinds of transfers that would be subject to fees and specific fees for different kinds of uses.

While a small number of comments supported the idea of some sort of user fee, many more were opposed either to the fee in a any form or to specific elements of the fee as it was proposed. Opposition to fees of any kind being imposed on municipalities was received from the League of Municipalities and a number of cities and villages. Some of those also commented negatively on the proposed higher rate for municipal use than for agricultural or industrial use. A large number of comments also questioned the Board's lack of specificity about how funds raised through a user fee would be spent. Several suggested that priorities needed to be established and that those asked to pay be given some assurance that they could expect some return from the fees. Finally, a few comments noted the Board's reference in the draft report to the possibility of fees on all water users, not just those meeting the Board's definitions of transfers. All but one of those comments was in opposition to a fee on all users.

In response to the comments, the Board revised its recommended policy. It decided not to forward a water user fee bill as part of its recommended legislative package. The recommendations in the report have been revised to emphasize that the Legislature should provide some long-term funding source to enable the state to pay future water development and management costs. The bill was amended to clarify that those who make multiple use of the same water (such as

power companies with more than one power plant on the same system) should only pay the fee once rather than for each separate facility. The draft bill has been included in Appendix 4 for informational purposes.

3. Determining what water uses would be subject to the recommended policy. These comments included a variety of suggestions about how to modify the list of new water uses that would be subject to the regulatory policies recommended by the Board. The suggestions include the following: (1) exempt any municipal wells located within the municipal service area; (2) exempt all municipal and domestic use of groundwater; (3) eliminate the section line criterion for groundwater transfers and substitute the concept of single contiguous ownership; (4) allow any quantity of groundwater use on adjacent sections for domestic or agricultural use; (5) exempt groundwater pumping into wetlands; and (6) add pumping from sand pits to the list of uses requiring permits. After reviewing the suggestions, the board decided only to clarify the domestic use exemption so that only individual domestic uses and multiple party domestic systems which are not "public water supply systems" (as that term is defined in statute) would be exempt. It was felt that the other changes suggested would promote inequity between different types of users, would not be in the public interest, or were beyond the scope of the study.

4. Maximum 50 year limit on permits. Several comments were received on the Board's draft recommendation that all new permits be subject to reevaluation at the end of a specific time period no longer than 50 years. The comments received were of all types, ranging from a suggestion that the permits be granted in perpetuity to a suggestion that 50 years was much too long. Others expressed concern about the effect that the limit might have on financing and long term water supply planning. No changes were made by the Board in the recommended policy. It was felt that 50 years was sufficient for financing purposes and that the advantage given the applicant for a renewal permit was sufficient to balance the concerns about long term supply.

5. Procedural issues concerning the permitting process. Several specific revisions in the permitting process were suggested. The lack of a clear permit revocation authority for noncompliance with permit conditions was noted and the Board agreed to include such authority. Also accepted was a suggestion that legislative bill REQ 0020 be more specific in requiring public notice of applications for new transfers and in allowing an opportunity for a public hearing. The recommendation that an administrative appeal process be added was not accepted as the current appeal process from Department of Water Resources decisions is felt to be adequate. Also rejected was a suggestion that none of the recommended new policies apply to surface water use and that all existing surface water policies remain intact. The Board felt that changes definitely are needed in current surface water policy. Finally, concern was expressed in one comment about the overlap between the federal process for relicensing hydropower facilities and the proposed water power lease renewal provisions. In this regard, the Board felt that it was appropriate that the state apply the recommended regulatory policies to state leases of water for power purposes and that the language in the draft legislation about maximizing the compatibility of state and federal processes would be sufficient to eliminate undue burdens on the applicants.

6. The Impact Assessment System. The inclusion of a recommendation for a state impact assessment of transfer projects also was the subject of some comments. At least two comment letters opposed the concept in its entirety and at least one more expressed concern about duplicating the requirements of the National Environmental Policy Act. The Board decided to retain the requirement for such an assessment, believing that excessive duplication with federal requirements could be avoided.

The majority of the comments suggested that the assessment process be strengthened or clarified. These suggestions included the following: (1) the state, not the applicant, should prepare the assessment; (2) the assessment should be completed before any project coming before the Water Management Board is approved; (3) specific water uses should be exempted from the assessment requirement or the Department of Water Resources should be given more definitive direction about when detailed assessment statements are not necessary; (4) the assessment should include analysis of the cumulative impacts of the project together with other existing or anticipated projects; and (5) the statement should identify the measures proposed to be used to mitigate or compensate for adverse impacts. Only the last suggestion was accepted by the Board and modifications were accordingly made in legislative bill REQ 0020. Also discussed at some length was the suggestion that an analysis of cumulative impacts be required. The Board believes that the process as currently structured would require analysis of cumulative impacts in connection with existing projects, but expecting an applicant to assess the impacts of projects that were only "anticipated" was asking for too much speculation and would be an unreasonable burden.

7. The Criteria for Issuing Permits. Several specific suggestions were made for ways to change the criteria for permit issuance. Two

were accepted by the Board. The first was a suggestion that the statute direct as much preference for use of water in Nebraska as is permissible under the United States Constitution. Modifications were also made to direct consideration of an applicant's opportunities to improve its water supply through conservation. Not accepted was a suggestion that the general "health and safety" condition be eliminated because of the uncertainties it would create. Those uncertainties are recognized by the Board but it felt that future "health and safety" needs were important enough to justify a permit condition both for interstate transfers and for instate uses. A more detailed definition of what constitutes the "public interest" was also recommended, but the Board felt that the requirements already in the draft legislation would insure sufficient consideration of all public interest values. Finally, no change was made in response to a comment that the burden of proof should be placed on the applicant. While the draft legislation does not place the burden of proof on any one specific party, the regulatory requirements concerning the treatment of impacts and the requirement that the project benefits must "clearly outweigh" any remaining adverse effects was viewed as effectively establishing a burden of proof on the project proponents.

8. The 60,000 acre-foot annual limit on groundwater transfers. Only a few comments were received on this issue, but they differed considerably in nature. Some said the limit ought to be removed entirely while at least one indicated that 60,000 acre-feet was too much. A motion to remove the limit failed. The only change made was to add language to make it clear that the limit applied to any combination of permits held by a single applicant, not just to a single transfer proposal.

9. The application and permit continuation fees. A few commented that the application fees in REQ 0020 were too high and that they would be in excess of the costs to the state for processing the application. The Board disagreed, noting that state costs of reviewing the impact assessments could be significant. Only one or two comments addressed the permit continuation fee that would be annually paid by new permittees. Those comments were in opposition, but the fee was retained by the Board.

10. State facilitation of transfers and state project sponsorship. The majority of the comments on this issue were opposed to the state being more active either in encouraging transfers or in serving as a project sponsor. However, the Board did not make any changes in this regard, believing that water use efficiency could be improved through state assistance in transfers and that the magnitude of some water projects may require a higher level of state involvement than has been true in the past.

11. General editorial suggestions. A considerable number of specific editorial suggestions were made for both the report and the legislative bills. Most of those were accepted and have been incorporated into the final report and the final version of the recommended legislation.

Section 2. Public Comments

The following letters containing comments on the review draft of this report were received prior to the Water Management Board meeting on September 2, 1988. These comments were considered by the Board in making their decisions on the content of the final report.

PAUL E. PRITTS, MANAGER

BOSTWICK IRRIGATION DISTRICT
In Nebraska
BOX 446
RED CLOUD · NEBRASKA

July 25, 1988

Mr. Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
Box 94876
Lincoln, Nebraska 68509

Mr. Williamson:

I have just finished reading the Review Draft on the Report On The Water and Water Rights Transfer Study and the accompanying proposed legislation. After reading this material I have a few questions that I would like clarafied.

These are listed below:

1. What would the financial impact be on an irrigation district such as ourselves?

2. What would the financial impact be on the irrigators receiving water from our irrigation district?

3. Would the irrigation district be liable for fees for transporting water from Harlan County Dam through and to our various canals to be used for irrigation?

4. Would the irrigation district be liable for fees for transferring water and storage rights within our district besides the fees that we already pay to Mike Jess's office when we make such transfers?

I realize that this report is a preliminary one, but in order to make comment to your office by August 30, 1988, relating to the Review Draft, I feel it would be much easier to make comment after receiving answers to the questions outlined above.

~~Thank~~ you,

Paul E. Pritts
Manager
Bostwick Irrigation District
in Nebraska

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Dept. of Ag. Economics
217 H. C. Filley Hall
East Campus
Lincoln, NE 68583-0922
Phone (402) 472-3401

JUL 27 1988

Mr. Dayle Williamson
Water Management Board
State Office Building

July 23, 1988

Dear Dayle:

I am writing you to congratulate you and your staff regarding the water transfers study and particularly the water transfers bills. The bills were thoughtfully prepared and would establish a reasonable water transfers policy. I may have some specific comments on the bills (e.g. why wasn't sec. 41 of REQ0020 extended to management areas as well) but overall everything looks very carefully done.

I probably will try to prepare a temporary extension publication (we call them campaign circulars) on the water transfers study and bills given the high degree of public interest in the issues. Summarizing the issues and bills in a few pages will be difficult but probably should be done. If you are intending to distribute any similar summary of the study and/or bills I would appreciate knowing of your plans to avoid possible duplication. I might elect to publish a campaign circular in any event simply to suggest some alternatives not discussed in the study or bills, e.g. restrictive state ground water allocations applying to instate and export uses; instream flow requirements to restrict instate and export uses; etc. But in any event I would appreciate being informed of your plans. I will not be in the office until August 1.

Once again, congratulations on a job well done. Special congratulations are due to those who prepared the legislation.

Sincerely yours,

J. David Aiken

J. David Aiken
Associate Professor
(Water and Agricultural Law Specialist)

cc: Jim Bushnell
Jim Kendrick
DeLynn Hay
Roger Gold
Jim Cook
Jay Holmquist

NeRWA
1978 *10th Anniversary* 1988
NEBRASKA - RURAL - WATER ASSOCIATION
THE - GOOD - LIFE
PLUS - GOOD - WATER
1978

AUG 01 1988

July 28, 1988

Dayle Williamson, Director
Natural Resources Commission, State of Nebraska
301 Centennial Mall South
Lincoln, Nebraska 68509

Dear Mr. Williamson;

Thank you for keeping our organization informed on LB 146 relating to water transfers and user fee proposals.

Perhaps you are aware that this is our tenth anniversary. We began in 1978 with eight members. Today we have 407 water systems as members.

This membership is obtained by a yearly contribution of $50.00 to $150.00 depending on the population served. We limit membership to systems with up to 10,000 population.

We are very concerned about Nebraskas water systems ability to generate enough revenue to contend with mandated EPA testing, as well as implementing new techniques in the water industry.

We are strongly opposed to the water management boards recommendations on annual use fees. Much more could be said.

We think that all involved with this issue should be aware of our memberships concern.

Sincerely,

James L. Hunzeker
Executive Director

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

REPLY TO
ATTENTION OF

Planning Division

August 5, 1988

Mr. Dayle E. Williamson
Chairperson, Water Management Board
P.O. Box 94876
Lincoln, Nebraska 68509-4876

Dear Mr. Williamson:

We have reviewed the draft report on the Water and Water Rights Transfer Study and find it to be comprehensive and well written and we have only one comment to offer.

The document adequately describes Corps of Engineers' authority and responsibilities under the Clean Water Act, but it does not address other Corps' programs that may be affected. Although potential impacts such as increased streambank erosion and potential increases in flooding have been described, the document should address the various Corps activities that could be indirectly affected by these impacts. The document could also identify those Corps programs that could be associated with water and water transfer planning and studies.

The Corps is authorized to provide technical assistance to local communities and to states to support their efforts to control flooding, reduce erosion and otherwise plan for wise use of water and related land resources. Included in the Corps' Technical Assistance and Small Project Construction Programs are:

a. Shore and Streambank Protection (Section 55 of Public Law 93-251) to help design projects to prevent or repair damages that occur from shoreline and streambank erosion.

b. Planning Assistance to States (Section 22 of Public Law 93-251) to help plan solutions to water resources development, use, and conservation problems.

c. Flood Plain Management Services (Section 206 of the Flood Control Act of 1960, as amended) to help local communities identify flood hazards and plan for wise use of flood plain lands.

d. Channel Renovation (Section 942 of the Water Resources Development Act of 1986) to provide designs, plans and specifications, and other technical assistance for renovation of navigable streams and tributaries of navigable streams.

e. Small Flood Control Projects (Section 205 of the Flood Control Act of 1948, as amended) to construct small flood control projects to prevent flooding with focus on solving local flood problems in urban areas, towns and villages.

f. Emergency Streambank and Shoreline Protection (Section 14 of the Flood Control Act of 1946, as amended) to construct emergency streambank and shoreline protection to prevent erosion or flooding from damaging highways, bridges, hospitals, churches, schools, and other nonprofit public facilities.

g. Channel Clearing for Flood Control (Section 208 of the Flood Control Act of 1954, as amended to clear stream channels to increase channel capacity, decrease flooding, and reduce damage from debris carried by floodflows.

h. Small Marina and Navigation Projects (Section 107 of the River and Harbor Act of 1960, as amended) to construct small projects to improve navigation.

Information describing these programs is enclosed.

We have no comments on the draft legislation.

Thank you for the opportunity to review the draft report. If we can assist you further, please do not hesitate to contact us.

Sincerely,

Richard D. Gorton
Chief, Environmental Analysis
Branch
Planning Division

Enclosures

CITY OF SCOTTSBLUFF • NEBRASKA •

1818 Avenue A

Scottsbluff, NE 69361

308-632-4136

August 9, 1988

Nebraska Water Management Board
P. O. Box 94876
Lincoln, Nebraska 68509-4876

Attention: Mr. Dayle E. Williamson
Director of Natural Resources

Dear Mr. Williamson:

Thank you for providing the City of Scottsbluff copies of the draft report on Water and Water Rights Transfer Study. We have reviewed the draft and have the following comments.

The report proposes a permit fee structure related to the volume of water proposed to be transferred. Traditionally, a permit fee is based on the premise that the applicant is paying for services rendered and that the fee is not a general revenue producing tool. It is not clear that the cost of processing a permit changes with the volume of water proposed to be transferred. If there is such a change that fact ought to be explained. Otherwise, the cost of the permit fee should be uniform and should reflect only the actual cost of processing the application and issuing the permit. If there is to be an annual fee, it would only be appropriate if the State agency actually made some review of the permit and, if so, it can be assumed that the review would be less costly than the initial review in granting the permit and, therefore, that any annual fees ought to be considerably less than the initial fee.

The definition of transfers as it applies to "municipal" use appears to be more restrictive than in the earlier draft. Since municipal use includes both domestic and industrial/commercial uses, the exemption of "domestic" use in REQ 0020 does not appear to include municipal use. I would suggest that it would be appropriate to consider that any water which is taken from the groundwater under the municipality and its service area is being used within the same service area and that it is, therefore, immaterial from which surveyed section of land the water was originally pumped. I recommend that the report be revised to exempt municipal use of water within the municipality and its service area.

The City is continues to be concerned with the proposal to assess a user fee which against all water users. Although, the rates for municipal use have been modified, they still appear arbitrary and no showing has been made or

purported to be made as to the comparative value of water used for the different categories. The City continues to be opposed to support of this program by a water use fee structure applied to all water users. If the program is, in fact, desired by the Legislature then the Legislature should provide appropriations for that purpose. The proposed rate applied to all users would cost City water users approximately $20,500 per year - a rate increase of 2.9% which represents an indirect tax on the taxpayers of specific locations rather than a general tax applied to all who benefit. The City is also concerned that if a user fee is established that some users, whose benefit may be as great or greater than others, would be exempt from the user fees.

As we have previously indicated, the policies on transfer of irrigation water or water rights would have indirect but significant effects on the community to the extent the policies encourage or discourage the sale of water and/or water rights. For example, encouraging the transfer of water away from the North Platte River basin could result in farm lands becoming totally idle reducing the crops produced and the number of families supported by farming. This would directly effect retail activities in valley communities and would require more "industrial" development to retain our population base. Encouraging the "salvaging" of water lost by the irrigation canals for sale on a transfer basis would probably reduce the water available in the aquifer which serves the City of Scottsbluff as well as the other municipalities in the valley. It may also adversely effect domestic wells on farms and in suburban subdivisions.

Sincerely yours,

Frank U. Koehler
City Manager

c. League of Nebraska Municipalities

LEAGUE OF NEBRASKA MUNICIPALITIES
UTILITIES SECTION

August 12, 1988

NEBRASKA UTILITIES SECTION
AN ASSOCIATION OF MUNICIPAL WATER, ELECTRIC, GAS AND SEWER DEPARTMENTS

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Dear Dayle:

I have read with great interest the review draft of the State Water Management Board's "Report on the Water and Water Rights Transfer Study" and appreciate the opportunity to comment on its contents. On behalf of Nebraska municipal public water supply systems, I have several concerns with the study and accompanying proposed legislation.

I have particular concerns with the water use fee proposed in the draft of the study and REQ 0024. This particular user fee request is illogical and flawed from its inception. The Water Management Board is asking for municipalities to create a fund which would be used to finance municipal projects. Would it not be simpler and more logical for a municipality to use the funds it would pay into the water management fund to finance its own water projects. If a municipality is in need of a water project, an $8.00 per-year-per-service connection fee would probably be better spent financing a local bond issue rather than being sent to the Water Management Board. As suggested by the review draft, municipalities are concerned about increasing regulation and associated costs imposed by the Clean Water Act, Safe Drinking Water Act and other state and federal environmental laws, however, paying an additional user fee does very little to convince a municipal official that his financial burden is being eased. Without some funding from an outside source, a fund derived from user fees to assist those users who have contributed to the fund is of little financial benefit to those users.

As I suggested in an earlier letter of April 18, 1988, perhaps there are some water projects that would necessitate the creation of a water management fund. However a project of this magnitude is of benefit to all Nebraskans and should be paid for by all Nebraskans through a legislative appropriation or similar source. There is little logic or excuse to isolate water users as a source of funding when the benefits are of a much larger scope.

Assuming, for the sake of argument, that there is a need for a water management fund financed by water users, there are still many problems with this particular fee structure. First, the fee is inequitable. Although public water supplies would be responsible for less than 3% of the total quantity of water transferred, those same public water supplies would be

responsible for financing almost 15% of the water management fund. A hydroelectric generation facility which discharges used water back into its original source almost immediately is responsible for double the water use fees of an irrigator. The fees that the Water Management Board has recommended seem to be arbitrary. Until a study is done to substantiate the different amounts of user fees for public water supplies, irrigators, industrial and power users, this fee structure should not be part of any Water Management Board recommendations.

In addition, the Water Management Board has provided very little guidance as to how and where the water management fund would be used. There are no guarantees that any class of user would receive equal treatment when competing for water management funds, nor is there any guarantee that once a user or class of user pays into the water management fund that the user or class of user will even be entitled to any of the funds. Funding for "future water management and development" is a vague concept. Very few banks would lend money on such a vague concept and Nebraska water users should not be forced to do so either. There is absolutely no accountability to the public under such a vague definition. Most municipal public expenditures must go through a public hearing or a vote of the public such as a bond issue. Having a substantial amount of your water bill being sent to the Water Management Board provides very little opportunity for the average water customer to influence how those particular public funds will be spent. Until the Water Management Board clearly articulates the need and uses for a water management fund, it seems illogical and unaccountable to proceed with such a concept.

REQ 0024 states that "Ground water and surface water belong to all the people of the state, and the use of those resources includes an obligation to assist financially in the management and development of those water supplies for all the people." If this is indeed the case, all the people of the state should be responsible for financing the water management fund, not just three classes of water users. Again this calls for a legislative appropriation. All the people should pay for projects that benefit all the people.

Other than the water management fund financed by water use fees, I have several other concerns with the review draft and accompanying legislation. The narrow definitions of water transfers will surprise many municipal officials. Most people have traditionally thought of transfers as interbasin transfers and not necessarily as a transfer of groundwater off of a 640 acre section. There may be merit to this definition of water transfer, but I do feel that this is an issue that deserves much more study and public input.

As I expressed earlier in a letter of April 18, 1988, I also have some concerns with the impact assessment concept. There probably is some need to evaluate the impact of a power plant or an irrigation district, but for a small municipal transfer or an individual irrigation transfer, an impact assessment is nothing more than a bureaucratic hurdle. Most water transfers, especially small transfers are beneficial to all of the parties involved. A complicated impact assessment will only serve to discourage some of these transfers.

Water transfer impact costs could be built into the cost of a water transfer, but at a certain point a governmental entity will be determining the cost of the water transfer, especially with small transfers. Although regulation of transfers is important it may not be wise policy to stray too far from the free-market concept of placing value on water use and transfers, especially if it is going to be the policy of the state to promote water transfers. A detailed impact assessment again might be an idea with some merit, but it is also an idea that needs to be approached with extreme caution.

I was very surprised to see the excessive application fees included in REQ 0020. A $200.00 minimum application fee must far exceed any administrative costs in processing a water transfer application, especially for smaller transfers. I am sure that an irrigator who drills a well to irrigate 320 acres in the adjoining section will be quite surprised to find that he needs to pay a $200.00 water transfer application fee. Until these fees are reflective of actual processing costs, they will only serve as a deterrent to productive and efficient use of the State's water. Any costs above processing the applications should be funded by legislative appropriations, not an unsuspecting water user.

I do appreciate the time and thought that the Water Management Board and Natural Resource Commission staff have put into this study. The study has certainly brought to the surface many important issues which the State of Nebraska needs to address. However, these are also issues which will affect Nebraska natural resources law well into the future, and these issues deserve even more attention than this study has given them. I do hope that the study will serve as a catalyst to initiate discussions of Nebraska water issues which will eventually lead to a comprehensive state water policy which will place Nebraska well ahead of the other western states.

If you have any questions, please feel free to contact me at (402) 476-2829.

Sincerely,

Leon L. Chaffin
Utilities Coordinating Manager

LLC/jdg

OFFICERS:

Phillip Hort
President

William Groskopf
Vice-President

Donald O. Winchell
Manager

Julia Hawley
Secretary-Treasurer

GERING-FORT LARAMIE IRRIGATION DISTRICT

1011 Rundell Road P. O. Box 541
Gering, Nebraska 69341

308-436-7144

DIRECTORS

Melvin Heimbouch, Gering, Nebraska
Robert F. Thomas, Mitchell, Nebraska
Phillip Hort, Lyman, Nebraska
William Groskopf, Gering, Nebraska
Howard Allison, Mitchell, Nebraska
Bruce Kaman, Morrill, Nebraska

August 16, 1988

Water Management Board
P. O. Box 9487
Lincoln, Nebraska 68509

Attention: Dayle Williamson, Chairman

Dear Mr. Williamson:

The Gering-Fort Laramie Irrigation District, which represents 658 waterusers and approximately 55,000 acres of irrigated acres in Western Nebraska under the North Platte Project is opposed to the entire concept of Legislative Bill LB 146.

Even with the passage of LB146, the report may have to go to the Legislature, but we feel that any Draft Legislation at this time is premature within the time period allowed to prepare the study.

The Gering-Fort Laramie Irrigation District has paid all construction cost on our project and we feel it would be unfair to add any charge to our waterusers to help pay for any new projects or for any study by the Water Management Board as we have paid all our cost ourselves.

Sincerely,

Phillip Hort
President

RONALD L. JENSEN
Legislative Relations • Association Management

August 17, 1988

Mr. Dayle Williamson, Director
Nebraska Natural Resources Commission
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Mr. Williamson:

I would like to take this opportunity to comment on the "Water and Water Rights Transfer Study Report" of the Water Management Board, on behalf of the Nebraska Chapter of the Sierra Club.

The Sierra Club appreciates the opportunity to offer comments on this important policy document, as well as the earlier opportunity to comment on the previously released "Partial Draft-Policy Highlights. We commend the high level of effort, which the report so obviously reflects, as well as the Board's actions to solicit and respond to public comment on these most important policy issues.

It is obvious that the "Recommended Transfer Policy" taken together with the fee system proposed by the Study, attempt to accomplish two major public policy objectives. One of these objectives, quite obviously, would seek to protect through regulation of water transfers, Nebraska's water resources from harmful and exploitive appropriation. Just as obviously, the other major thrust of the proposals of the Report is to, through transfer fee assessment, replace diminishing federal funding for water development projects.

Taking these matters in turn, we feel that the regulatory framework suggested in the Report is by-and-large a sound one. We are most especially pleased that it includes what amounts to a state-level environmental impact review for all proposed transfers. We would further suggest that this type of review be required for any water development project to be undertaken with the financial assistance of the Water Management Board, whether or not said project constitutes a transfer within the meaning of the law.

In addition, we would observe that recent Supreme Court actions which tend to underscore the importance of Nebraska developing a new regulatory framework for water transfers, leave open to a certain degree a state's ability to favor its own interests in its regulation of such transfers. It would be our position that

any regulatory mechanism finally put in place in Nebraska seek to exploit to the maximum extent feasible that latitude which the Court seems to have granted.

The inclusion of "state interest" as a basis for discriminating among potential users in the review of proposed transfers, seems to get near this concept, but we believe that it could be expanded, for example, by further discriminating on the basis of impact and intended use. This could include the allocation of water to environmental purposes (such as in-stream flows) and placing tight restrictions on groundwater depletion in certain areas of Nebraska, which restrictions need not be the identical throughout the State. Such measures could, to continue the example, provide regulatory protection for the Sandhills area, which many persons feel is vulnerable to exploitation of its presently abundant groundwater resources, by requiring the maintenance of certain minimum water tables to support grazing uses and nesting habitat for waterfowl.

In making this recommendation, we are in full agreement with the Board's finding that water policy needs to be much more thoroughly integrated in its treatment of surface water and groudwater, recognizing the interelationship which exists between the two. Further, we feel the types of regulatory provisions herein suggested are entirely consistent with the Board's findings in this regard.

In our earlier comments on the regulatory aspects of the preliminary policy highlights, we recommended that the definition of a transfer be narrowed with respect to groundwater to include any transfer that leaves the tract of land (defined as a contiguous parcel of land under single ownership) where the well is located, and which meets quantity definitions. We continue to support that position and were quite pleased to note that the final report recommends, with the exception of certain small quantities, that any new off-stream uses of surface water be regulated. We take this statement to mean the transfer would be subject to review, regardless of the distance involved, as opposed to the two mile exemption expressed in the earlier draft. On that basis, we applaud this provision.

Turning now to the provision for the assessment of transfer fees and the utilization of those funds for future water projects, we note that the seeming inconsistency in the assessment of fees for various uses, expressed in the preliminary draft, has been narrowed in the final Report. Whether the fee structure proposed will be found acceptable by the various interests affected seems an open question. We suspect that municipalities, as well as the

power industry, will continue their opposition occasioned by the earlier proposal. Nevertheless, we are pleased that the Board obviously has sought to respond to the input they have received on this issue.

With regard to the proposed uses for the Water Managemet Fund, to be created from the fees assessed on water transfers, we feel that the Report could have profited from setting out the priorities which would be assigned to potential undertakings. Recently, former Arizona Governor Bruce Babbit stated publicly that, "The day of the grandiose reclamation project is over."

We would suggest that the recent and forthcoming reductions (to the point of virtual elimination) of federal water project funding have not come about solely in response to the need to control the federal budget deficit. Rather, we believe that such reductions have occurred in at least partial recognition that after almost a half-century of reclamation-type projects, our society is reaching the point of diminishing social and economic returns from this sort of undertaking.

Grain producton, for example, has over the years reached the point that certain economists have stated that the world is "awash" in it. Flood control continues to be a mater for attention in certain localized situations, but at the same time, it is a problem which could to a large degree be avoided in the future by more enlightened municipal planning and development.

In making these observations, we are not suggesting that traditional water development projects be excluded from receiving support from the Water Management Fund. We are, however, proposing that environmental uses...and particularly the clean-up and future protection of Nebraska's groundwater from both point and non-point-source pollution...be given first priority for both financial and technical assistance.

Finally, it should be noted that we do not, in these comments, intend to address the draft legislative measures included with the Report. We feel, in this regard, that the appropriate mechanism through which to express a positon on the measures is the legislative process itself, and if the draft bills are actually introduced, we will at that time be taking an active role in their review and consideration.

We would like to conclude our comments as we began them, by commending the Water Management Board and the Director and staff of the Natural Resources Commission for the time and effort, as well as the thoughtful deliberation, which have so obviously been

invested in getting to this point. The Sierra Club is pleased to have been involved in this public process and looks forward to a continuation of that involvement as the issue of regulation of water transfers is further refined and resolved.

Sincerely,

Ronald L. Jensen
Sierra Club Lobbyist

LOUP BASIN SURFACE WATER DEVELOPMENT ASSOCIATION

MEMBER DISTRICTS

Farwell Irrigation District
Middle Loup Irrigation District
North Loup Irrigation District
Sargent Irrigation District
Twin Loups Irrigation District
Cedar Valley Reclamation District
Loup Basin Reclamation District
Twin Loups Reclamation District

OFFICERS: Donald J. Mankee, President, Ord, Nebraska 68862
Al Schmidt, Vice President, Arcadia, Nebraska 68815
Ron Wolf, Secretary-Treasure, Scotia, Nebraska 6887

August 18, 1988

Mr. Dayle Williamson, Chairperson
Water Management Board
P.O.Box 94876
Lincoln, NE 68509-4876

Re: Water and Water Right Transfer Study

Dear Mr. Williamson:

The Loup Basin Surface Water Development Association, at its regular meeting of August 15, 1988, voted unanimously to oppose recommendations of the Water Management Board regarding implementation of fees to surface water irrigation districts, on existing or future applications, for ground water or surface water transfers.

In your cover letter of July 18, 1988, to persons interested in water transfers, you indicated that Nebraska needs to "protect its water supplies for its own citizens". Rest assured, the surface water irrigation districts of the loup basin are comprised of dedicated citizens of Nebraska and represent a vital link of the ag economy.

Legislation, approved by the governor in 1983, has already established the procedures by which persons, with appropriative water rights, may transfer active water rights to other lands, thus preserving the seniority of those rights. Imposing additional fees on such transfers would make them prohibitive, which, in turn, would impair the status of in-state water use.

We understand the protection of water supplies, strictly for the citizens of Nebraska as you have stated, to be the fundamental reason for the creation of the Water Management Board and yet, surface water irrigation districts have no representation on that board. We strongly recommend that a representative of surface water irrigation interests be included on the Water Management Board as soon as possible.

Sincerely,

LOUP BASIN SURFACE WATER
DEVELOPMENT ASSOCIATION

Donald J. Mankee

Donald J. Mankee, President

DJM:amc

Madsen's Well Service
213 MAIN - P O BOX 98 - TRENTON, NEBRASKA 69044

August 22, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876

Dear Mr. Williamson:

It was with much interest and concern that I read and studied the review draft of the State Water Management Board's "Report on the Water and Water Rights Transfer Study" and accompanying legislative bills; REQ 0020, REQ 0023, REQ 0024, REQ 0025, and REQ 0026.

I feel there are inconsistencies in the five legislative bills. For example; REQ 0020 sec.1, line 19, states: "The legislature further finds that it is neither desirable nor necessary to establish different policies for different kinds of water uses and water transfers." REQ 0024 sec. sets different fees for different uses of transfered water. Since the Supreme Court of Nebraska has declared that water is an article of commerce, or inother words, a commodity, the inconsistency lies in the differing prices. It is my belief that a price should be set on water that would be fair and equitable to both seller and buyer, but primarily to protect the people of Nebraska, both now and in the future. The price should be great enough to cover any adverse economic impact of a transfer which may show up later. Perhaps the price should be reviewed periodically, say every ten years.

The buyer should be the judge as to the economic feasibility of the purchase or transfer. For water to be transfered and used for irrigation to be priced so much less than that intended to be used for municipalities or industry is wrong. It would encourage entites to be formed for the sole purpose of buying water for irrigation and selling it for a profit, for municipal or industrial use. I can find nothing in the bills that would prevent this. There should be a means to revoke a transfer permit at any time. Part of line 4 starting with "but", all of lines 5, 6, and 7, REQ 0020, sec. 10 should be striken.

A sixty thousand acre-feet limit on transfers of groundwater may be somewhat restrictive, but it can at the same time promote conservation. I see nothing that would prevent any one entity from applying for more than one transfer permit. REQ 0020, sec. 9 somewhat addresses this, but I am sure this could be circumvented.

There needs to be a means of monitoring the water transfered, both intrastate and interstate, and the transfer permit revoked if found the water is being used for a purpose different than

that granted by the transfer permit.This right to monitor and inspect should be written into the agreement.

Any and all water transfers, whether interstate, in-basin, or interbasin will have an impact on the people of the state of Nebraska, therefore, all transfers must first consider the welfare of the people of the state. This must be especially so when it involves interstate transfers.

Sincerely,

Wayne Madsen

Wayne Madsen

Jirdon Wyoming Livestock

Rt. 1, Box 55
Torrington, WY 82240

(307) 532-4094

August 22nd, 1988

Mr. Doyle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Dear Doyle:

I would like to offer a few suggestions to the Water Management Board on the water and water rights transfer study.

FIRST - In the glossary No. 3 consumptive use. This is backwards. Consumptive use should be that water consumed by the use it was diverted for. The difference between that water drawn from a source of supply and that returned is the consumptive use or that consumed.

SECOND - And this is very important. Irrigation districts must be protected when any water is transferred. If half of the water is transferred from any irrigation district with no compensation to the district or to the remaining water users in that district, the cost of maintaining the ditch and other expenses would probably break the other water owners and the district.

If someone purchases water from storage or from stream flow and diverts that water at another location, then the irrigation district loses the water as well as the assessments for handling that water.

This must be addressed in all transfers of surface water.

The next issue I would like to address is water use.

The first and primary use of Nebraska water should be beneficial to the citizens of Nebraska and the Water Management Board should bear that in mind at all times.

Nowhere in all of the material submitted by the board of study does it show that the first concern of the board shall be to administer all water transfers for the betterment of the State of Nebraska and its citizens.

Nowhere do I see studies proposed to accertain where our water can be better used to promote industry and profitable growth for the state.

As presented all that is desired is how to sell and finance the sale of our water out of the state.

The board would sell water to Denver that if transferred to Scottsbluff would bring the industry needing it in Denver to Scottsbluff if Denver couldn't get the water and we would sell water to Greeley and Fort Collins when Sidney and Kimball could have used the water to attract the same industry.

I realize that it is difficult for members of the Water Management Board to think people in Western Nebraska exist at times, but we do.

In your literature you mention a possible sale of water to Wyoming for power production. The national distribution center for electrical power is south of Stegal, Nebraska. Why sell the water to Wyoming to employ Wyomingites to produce the power when that power will probably be diverted to Stegal for distribution? Why not think lets build the power plants in Western Nebraska, import Wyoming coal, and employ Nebraskans to generate the power?

And the board should not think about taxing power generating units and increasing the cost of electricity but should be thinking how to use our water to generate inexpensive power to attract industry to Nebraska to process our farm commodities as well as industry to employ Nebraskans.

I do not know how to measure the width of a state line, but that is how far we are from Wyoming and that is how far the people from South of Kimball are from the Colorado line. I realize the distance to Lincoln is farther, but please remember we vote and pay taxes also.

Colorado, Wyoming, Kansas, and South Dakota are getting short on water. Most other western states, such as Texas, Arizona, and California have large populations and are definitely looking for sources of water not only to wash diapers but to feed their growing populations. The water management Board should recognize we have the water to grow the crops and feed the cattle and hogs to feed these people in the future, and should take a leading role in promoting our water to do these things and not exporting it to make jobs for people out of our state.

And to finance the Board and its needs for capital:

It is extremely difficult to determine just how many acre feet of water each irrigator uses, especially if they pump their water.

Many pivots have been shut down so I do not know the exact number of irrigated acres in Nebraska but it should be between 8,000,000 and 9,000,000 acres and any and all irrigators should pay, not just the larger operators. A flat fee of $1.00 per acre would be easy to administer and collect. And perhaps a charge of $10.00 per registered well per year should be charged.

While Successful Farming lists us as one of the nations top 400 farms, we have sold off most of our Nebraska holdings. What we have left would not be taxable under your program, but we should be, if you are going to tax any irrigators, you should taxthem all, surface or groundwater, and at a flat fee per acre.

Hold down taxing industry that will use large volumes of water to process Ag. commodities and do not impose large fees on energy producers. Help bring industry to Nebraska with our water, do not make it hard for industry to locate here. I would rather you taxed all clothing store clerks and state employees a few cents a year and hold down the tax on power generators.

Sincerely,

Don Steen

Don Steen

City of West Point

Business, Industry, Agriculture . . . Partners in Progress

444 South Main
West Point, NE 68788
(402) 372-2466

August 23, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resource Commission
301 Centennial Mall South
P O Box 94876
Lincoln, NE 68509

Mr. Williamson:

I read with much alarm and disbelief excerpts from the review draft of the State Water Management Board's "Report on the Water and Water Rights Transfer Study".

The water use fee proposal borders on the ridiculous. To charge all municipal users a fee to use for some unknown and/or future projects that are suppose to benefit the entire State goes against all logical reasoning. If the project is that important than a legislative appropriation across the entire State is the logical and proper method of payment. An $8.00 per year per service connection fee simply means our residents get higher water rates so funds can be sent to another agency for which we have no say or control.

To quote REO 0024 - "Ground water and surface water belong to all the people of the state, and the use of those resources includes an obligation to assist financially in the management and development of those water supplies for all the people." This simple statement says all the people of the state should pay, not selected classes of water users.

Several of the other provisions are very disturbing, however, rather than go into that I suggest you review the letter from Lash Chaffin of the League of Nebraska Municipalities and I further suggest you regroup, back up, and rethink and change some of these obvious unfair and ridiculous proposals.

Thank you.

Sincerely,

Howard C. Parrott
City Administrator

HCP/klf

cc: League of Nebraska Municipalities
Stan Schellpeper

VILLAGE OF PILGER

P. O. BOX 306
PILGER, NEBRASKA 68787
PHONE (402) 396-3563

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P. O. Box 94876
Lincoln, NE 68509

Dear Mr. Williamson:

I have received a letter from the League of Nebraska Municipalities outlining the proposed legislation concerning water usage and rights. Although the entire study and proposed material was not included in the letter, I am greatly concerned about the proposed user fee for the water system for our village.

The village is presently looking at updating and improving our system to provide our people with better water through a possible filtration and new piping system. The cost of the study and work on this system will probably mean higher rates for our people. To add to this a user fee in order for your organization to manage water quality and quantity would place our work in a very difficult situation.

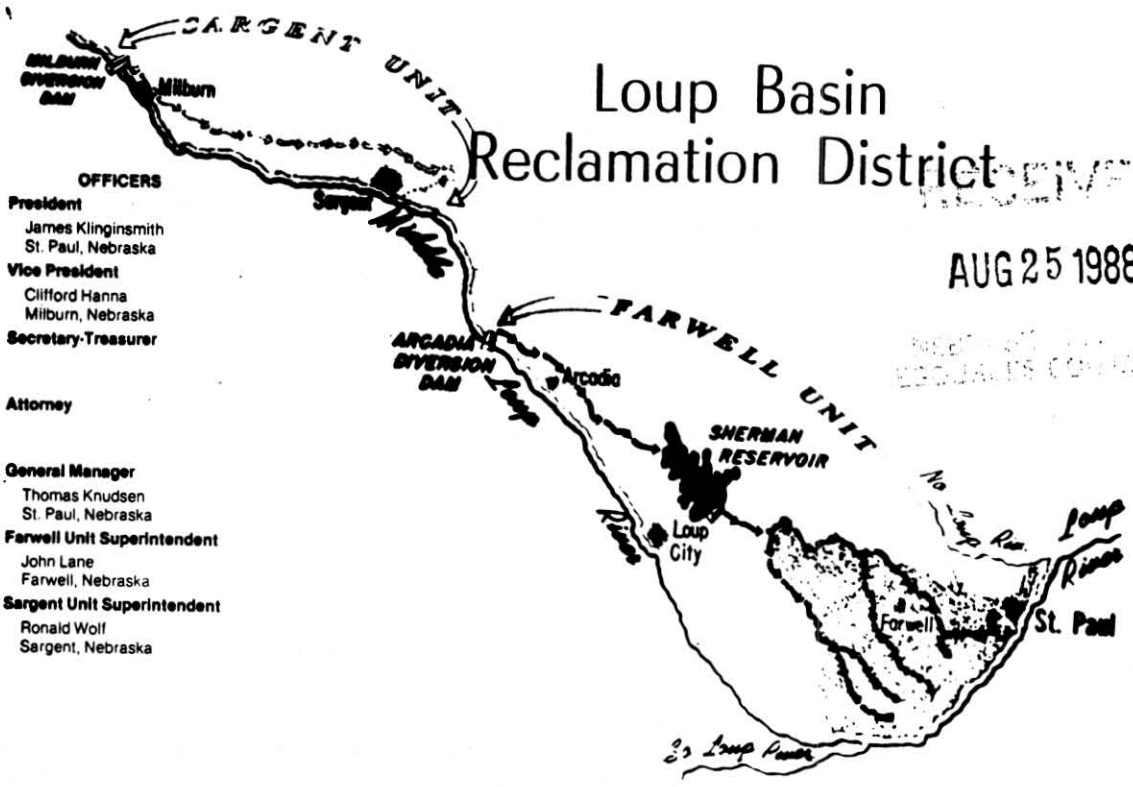
For us, it is a catch-22 situation. Without our study of the system, we will not have the usage to support your study. Yet, if we add the fee suggest for your study, we will not be able to do our own work on the system, due to the higher rates we must impose.

We support the comments of the letter of the Utilities Section of the Nebraska League of Municipalities.

Sincerely yours,

Michael Gruhn

Michael Gruhn
Chairman, Village Board of Trustees



Loup Basin Reclamation District

August 24, 1988

Mr. Dayle Williamson, Chairperson
Water Management Board
P.O. Box 94876
Lincoln, Nebraska 68509-4876

Dear Mr. Williamson:

On behalf of the Loup Basin Reclamation District, the Farwell Irrigation District and the Sargent Irrigation District, we wish to express strong opposition to the Water Management Board's recommendation to pass legislation that would create a water users fee on surface water irrigators.

These Boards, which represent about 700 water users recognize the burden that the extra fees would put upon their users. Therefore, they strongly urge the Board not to submit this recommendation to the legislature.

Sincerely,

Thomas Knutson

Thomas Knutson
General Manager

City of
VALLEY
VALLEY, NEBRASKA 68064
402-359-2251

"A Community On The Way Up"

John L. Sullivan
Mayor

Barbara Pforr
City Clerk/Treasurer

Councilmen
David Williams
John Gates
Herman Lambrecht
Joseph Roberts

August 24, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Mr. Williamson:

After reviewing a summary of the draft of the "Water and Water Rights Study", the City of Valley is against the recommendations and legislation in its entirety.

Communities cannot afford, nor have the need to set user fees for projects which may never benefit them. Any additional monies collected from water users should be used by the community for water projects. I feel Nebraska communities are cable of their own water management and do not need any further State regulation.

If the State feels there are water projects which are of benefit to all Nebraska residents, then the State should fund them.

Again, we are totally opposed to the State Water Management Board's recommendations.

Sincerely,

John L. Sullivan

John L. Sullivan
Mayor

UPPER BIG BLUE
Natural Resources District

105 Lincoln Ave.
York, Nebraska 68467
(402) 362-6601

August 24, 1988

Mr. Dayle Williamson
Chairman of the Water Management Board
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Dayle:

The Upper Big Blue District's Budget and Planning Committee reviewed the draft of the Water Management Board's Water and Water Transfer Study. The committee has some concerns with Chapter 5, the Recommendations Chapter.

The committee agrees that a transfer permit should be for a specific term. However, a permit that is issued for less than the full payback period for the project will jeopaordize financing. We suggest that the phrase "unless that period exceeds 50 years" be dropped from the final report. Permits that may be rescinded for health and safety reasons also cloud the financing issue. Lenders want to be assured that projects will be able to meet their financial obligations. A revoked permit will, of course, cause the shutdown of a water transfer project and stop its revenues. Maybe if the health and safety criteria for revocation are narrowly defined, the lenders will be more at ease.

The Upper Big Blue board has long been concerned with any efforts to tax water use in this state. The board remains opposed to water use fees. They feel that since irrigated lands are being taxed at a higher rate than dryland, the landowners are in effect paying a water tax of sorts. The board is concerned that once a water use fee or transfer tax is established for specific uses, general water use fees are not far down the road. The committee therefore recommends that the second paragraph on page 5 - 6 not contain any reference to the legislature being asked to consider collecting compensation from all existing users of water. Such discussion is beyond the scope of LB 146 anyway.

The committee also feels that the report recommendations should more closely follow the majority of comments received at the Public Hearings.

Sincerely,

John C. Turnbull,
General Manager

JCT:js

pc: Senator Scott Moore

CITY OF KEARNEY

BOX 1180, KEARNEY, NEBRASKA 68847, 308/237-5133
OFFICE OF THE CITY MANAGER

August
25
1988

Mr. Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
Lincoln, NE 68509

Dear Mr. Williamson:

The City of Kearney wishes to thank you for an opportunity to comment on the draft of the State Water Management Board's "Report on the Water and Water Rights Transfer Study." We wish to again state our comments from a letter written to you dated May 11, 1988, and also add some additional thoughts.

We indicated to you in our May 11, 1988, letter that we feel it is a very worthwhile effort to develop a water transfer study and future process to plan for transfers. There should be a reasoned approach to water transfer policy that all Nebraskans can understand and perceive as fair to all citizens. It is a good idea to try and move ahead on a well-reasoned policy.

We also are opposed to any proposed fee on our municipal water system to provide funding. The original proposal was for a $10 per acre foot fee which meant an increase in expenses for our water system, and therefore, our water customers. We indicated that to use a fee is not the appropriate way for funding to be handled. Funding should come from State General Fund Appropriations, State Revenue Bonds or some other State of Nebraska funding mechanism.

We note now that the proposed base fee for public water systems in the latest draft would be $5.00 per acre foot or $8.00 per residential connection - whichever we would choose. As stated, we oppose a use fee on our municipal system and, of course, the user fee concept has met with much opposition so far, and we notice that the State Natural Resources Commission voted 12 - 3 to reject this fee proposal.

It also is not clear as to how and where the water management fund would be used. There seems to be no clear cut indication that any class of water user would receive any of the funds for projects. A particular user may pay into the fund, but there is no guarantee that the user will be entitled to any of the funds. Funding for "future water management and development" is too vague for collecting user fees.

If it is true that ground water and surface water belong to all people of the State and the use of those resources includes an obligation to assist financially in the management and development of those water supplies, then all the people of the State should be responsible for financing the water management fund. The legislature should, therefore, appropriate funding for necessary projects.

Again, we thank you for an opportunity to provide our comments.

Sincerely yours,

CITY OF KEARNEY

Thomas H. Palmer
City Manager

THP:kj

CITY OF ORD
NEBRASKA

AUG 29 1988

August 26, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Dear Dayle,

I would like to express my opinion concerning the recently released review draft of "Water and Water Rights Study" and the recommended legislation by the State Water Management Board. I am in complete opposition to the recommended legislation.

I am in agreement with Lash Chaffin of the League of Nebraska Municipalities Utilities Section who voiced his concerns in a recent letter to you.

As the director of the Natural Resources Commission, please oppose this legislation.

Sincerely,

Gene Baugh
Light & Water Commissioner
City of Ord

Village of Elm Creek

ELM CREEK, NEBRASKA 68836

August 26, 1988

AUG 29 1988

Dayle E. Williamson
Director of Natural Resources
Nebr. Natural Resources Commission
P. O. Box 94876
Lincoln, Ne. 68509

Dear Sir:

Please be advised the Village Board of Trustees of Elm Creek, Ne., is opposed to the user fee concept proposed by the Water Management Board.

We do not feel in small towns that a fee of approximately $3,000. would be fair to residents that already feel they pay more than enough in utility rates and taxes.

Surely there can be an alternative to either funding of a water management fund or some existing state agency being responsible for this type of fund.

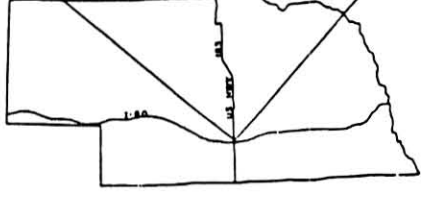
Respectfully,

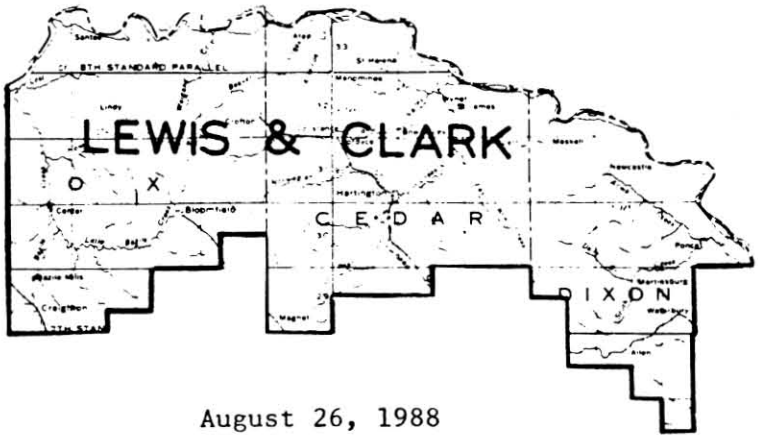
Earl Joy

Earl Joy
Chairman, Board of Trustees

ah

ELM CREEK





Lewis & Clark
Natural Resources District

P.O. Box 518 Hartington, Nebraska 68739 Telephone: 254-675

August 26, 1988

AUG 29 1988

Dayle Williamson
Water Management Board
Natural Resources Commission
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Dayle:

Thank you for the opportunity to comment on the draft report; "Water and Water Rights Transfer Study". The Lewis and Clark NRD appreciates the work put into the document as well as addressing the issue of water transfer policy, prior to it being settled for us through economic channels as your letter suggests. We also recognize the need for better Water Policy for Nebraska and the nation as well, and support stronger education efforts on conservation and efficient use of water.

You might correct a statement on Page A2-3 because the Cedar Knox Rural Water Project also uses Missouri River surface water to serve our 340 customers which include Crofton and St. Helena (Crawford?). We would also propose a slight change in REQ0020 Sec 14 2-3226 to include "Issuance or re-issuance of revenue bonds. . . to clarify deficient language.

Our district raised concerns about the water use fees from the standpoint of irrigation usage and public water supply. The NRD has a DWR appropriation right from the Missouri River to use 4.68 cfs from two permits at the same location for our water system. In FY 87-88 we pumped 67,554,000 gallons or 207 Acre Feet from that source. As we read the proposed bill REQ0024 we would not be required to pay fees under Section 2(1)(c) but likely would under 2(1)(e). If this is correct that would mean at least a payment of over $1000 per year for our rural water system.

We do not however oppose use of a fee system if kept reasonable and if charged above a set maximum to discourage waste. We would suggest the permit system be simplified and required, to provide a measure of water use in the state. We feel annual fees should be assessed as suggested. We find problems in the equitability of defining transfers by section lines and believe any use beyond the point of withdrawal should be deemed a transfer. Perhaps a grandfather clause exempting present use in the next section would be a good compromise.

The actual permit process for minimum users if left to DWR discretion could become elaborate and complex...ref. REQ0020 Sec 5(2). Before proceeding to legislation, clarification of who would and would not be required to go through the detailed permit processs would seem to be essential.

We have very serious reservations on the usage of revenues however. We object to usage of the fees being used to "promote transfers of water rights and assist in developing projects to transfer water" pg 5-6. We also strongly oppose control of the fund by the Water Management Board without any legislative oversight. This places the cash fund at the whim of a Governor-appointed and unaccountable committee. Likewise there appears to be confusion in REQ0020 Sec 18(9) and Sec 22 over DWR's expenses (not half surely?)

If you wish clarification of our comments, feel free to call.

Sincerely,

Tom Moser

Tom Moser
General Manager

ms

cc Jim Wortmann
Harold George
Jim Sheldon
NARD

VILLAGE OF STRATTON
409 BAILEY
P.O. BOX 116
STRATTON, NE 69043-0116

August 25, 1988

Mr. Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P. O. Box 94876
Lincoln, NE 68509

Dear Dayle:

I would like to comment on the State Water Management Board's report on the Water and Water Rights Transfer study and thank you for the opportunity.

Our main concern is for the proposed water use fee. We understand that the Safe Drinking Water Act and other recent environmental laws need funding, but this proposed fee is clearly another attempt to rob money from where the problem exists and will, therefore, create more problems and solve none. It would make more sense to get the money from the source of the problem (chemical sales, chemical equipment sales, fines, etc.). This would serve as a deterrent and benefit future generations instead of fueling the fire by giving incentive for use of more chemicals. It is possible that the revenue from this source (as stated above) would be less than a user fee. In the report it says ground water and surface water belong to all the people of the state and all should pay. I am in agreement with this, so why not be straight forward about it and simply appropriate and collect the money through the system that is already set up, the tax system.

I thank you for your time and hope you will give this issue further study.

Sincerely,

Eugene A. Jesch

Eugene A. Jesch
Chairman, Board of Trustees

CITY OF FRANKLIN

FRANKLIN, NEBRASKA 68939

AUG 29 1988

August 26, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE. 68509

Dear Mr. Williamson:

This letter concerns LB 146 that was passed by the 1987 Nebraska State Legislature, Directing the State Water Management Board to examine issues concerning water rights and water transfers.

We the City of Franklin realize the necessity of an ample supply of good clean, pure, and high quality water, and certainly would not want to do anything to hinder this goal.

The City of Franklin received a copy of the letter sent to you from Mr. Lash Chaffin of the League of Nebraska Municipalities, Utilities Section.

The Mayor and Council of the City of Franklin requested that I write to you and confirm that the letter cover many questions, and that they wish to affirm there feelings along with Mr. Chaffin's concerning the Nebraska State Water Rights.

We realize that you and your board have put many deligent hours into this project and we commend you for this.

Very truly yours,

Dean Gartin

Dean Gartin
City Clerk

27 Aug. 78

Dear Mr Williamson,

I am writing to give my views on the proposed water transfer legislation. I realize we don't own the water under our land but without that water we could not survive. I think the survival of the sandhills ranchers is more important than recreation for the eastern section of Nebraska. If we lose our water the sandhills desert will affect the rest of the state as well as the reduction in beef production.

Please Save Our Water.

Mrs Don Schroeder
HC 32 Box 36
Valentine NE 69201

CENTER FOR HOLISTIC RESOURCE MANAGEMENT
NEBRASKA BRANCH

August 24, 1988

Mr. Dayle Williamson, Chairperson
Nebraska Water Management Board
P.O. Box 94876
Lincoln, NE 68509-4876

Dear Mr. Williamson:

We appreciate the opportunity which has been afforded us to review the "Water and Water Rights Transfer Study", and to express our thoughts and concerns about its content.

A word about us: Ours is a young organization, having become formally incorporated and independent of our parent organization only this year. Our purposes are: To advance and promote the management of natural resources, human resources, and financial resources in a fully integrated manner toward predetermined goals: To advance underlying scientific premises regarding the use of lands, the preservation of the land for future generations and generally, land management.

We realize that the report was authored by the Natural Resources Commission staff under the guidance of an interdisciplinary team. We note the usual superlative quality which is the hallmark of NRC staff products and extend our most sincere complements. We further realize that policy pronouncements contained in the study are not NRC staff products but originate from the mingling of the enabling legislation with the philosophies of the members of the Water Management Board.

It is, naturally, with some of these policies that we now express our concerns. One is that there seemed to be an *a priori* acceptance by those setting policy that it is the state's best interest to expedite economic growth, economic diversification, and urbanization, almost without regard to negative impacts on individuals and communities, so long as compensation in money or in kind can be made. We believe that resource management can be undertaken only after a strenuous effort at goal-setting has taken place. We further believe that economic goals are inseparable from what might be termed quality-of-life goals and environmental goals. We were dismayed at the complete

lack of rationale for chosing economic growth as the central goal of your whole exercise.

Probably the most objectionable aspect of policy is the bias against sparsely-populated, rural agricultural regions of the state, to the benefit of urbanites. In one section of the study, the authors decry the fact that "... Nebraska's most abundant resources are water and fertile land, which are difficult to utilize for economic development other than agriculture." Throughout the chapter on impacts, it is clear that the policy-makers envision transferring water from rural areas to urban and industrial sites, and perhaps to large-scale irrigation projects. In relation to this thought, and the preceeding paragraph, we know of very few people who choose to live in Nebraska because they believe they can achieve financial goals quicker here than anywhere else. Instead, we believe most people live here because of the primarily rural character of the state that exists today, not the one envisioned by the policy makers of your study.

Another aspect of policy we oppose is that which proposes to take the state beyond the role of regulation and into the business of advocacy. We perceive two negative results. One is that this would put the state in a role which would accelerate the deterioration of the quality and fabric of rural life. We believe this is unacceptable. The second is that the temptation is great for any agency involved with promotion and advocacy to propose projects of dubious benefit in addition to "good" ones in order to perpetuate itself and extend its sphere of influence.

Another policy proposal we are opposed to is the tax on all water users. The cost to the state of overseeing the beneficial use of groundwater on overlying land by the owner of that land is vanishingly small and should not be taxed at all. In comparison, all transfer projects and systems which have the potential of substantial negative impact on individials and communities will require extensive state agency oversight and regulation, and their beneficiaries may justifiably be taxed. We further assert that money needed by the state to maintain water quality can be generated most equitably through a tax on products and processes leading to water quality deterioration.

We differentiate between offering input on policy formulation and influencing the intent of legislation. The latter is specifically excluded from our organizational goals. Therefore we are not offering comments on the draft bills included with the study.

Thank you for considering our comments as you refine the study and make recommendations to members of the Nebraska Legislature.

Respectfully,

Ron Ellermeier, for:

Pat McNitt, Chairperson
Box 512
Valentine, NE 69201
(402)376-1420

American Fisheries Society
ORGANIZED 1870 | INCORPORATED 1910
Nebraska Chapter organized 1970

August 29, 1988

Mr. Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
PO Box 94876
Lincoln NE 68509

Dear Mr. Williamson:

I have reviewed the draft report on the Water and Water Rights Transfer Study and the associated legislation proposals. The following comments are offered on each:

DRAFT REPORT

p. iv. The definition for consumptive use does not appear to be correct. The word "not" should be inserted after "is".

The term "unappropriated water" or "unappropriated flow" is used several places in the report. Please define this term in the glossary.

3-1 Surface Water For clarification I suggest inserting "wetlands" after 'reservoirs of various sizes...' I also suggest adding the following sentence to the paragraph; High groundwater tables also contribute to many streams, wetlands and natural lakes.

3-13 Potential For Additional Uses In Nebraska

Paragraph 5, sentence 4 - I suggest adding "unless adequate regulation of groundwater withdrawals are implemented."

Paragraph 7, sentence 1 - I suggest adding "fishing, hunting and recreation" to this sentence. Businesses and individuals that supply bait, fishing tackle, canoe rentals, waterfowl hunting equipment, hunting leases, trap furbearers, etc. receive direct benefits from the resource supported by instream flows.

The Republican River near Oxford and the Loup River below Genoa can be added to the list of other streams listed.

3-14, Paragraph 1 In the second sentence I suggest replacing the words "fishery flows" with "fishery resources". It might be worthwhile to mention in the same paragraph water needs for migratory waterfowl which are protected under international treaties.

3-14 Potential Uses For Other States Other states are providing instream flow protection to some of their streams. Such actions may contribute to their need to seek water supplies from Nebraska sources. Other states may even consider water transfer from Nebraska sources to mitigate instream flow impacts of water projects on their own states.

3-15 Surface Water Transport Projects Paragraph 4, I believe that application of salvage water to instream flow needs or dedication to fish and wildlife in reservoirs may have potential.

P. 3-22, Paragraph The second sentence stating that to obtain appropriated surface water, the water right must be purchased implies there is no potential to obtain the right through donation.

P. 4-1 Physical Impacts Paragraph 1 In my opinion the example used to describe impacts of inaction is poor. It would be very difficult to imagine that there is any place in Nebraska where not starting a pump would cause significant impacts as described.

P. 4-6, Paragraph 1. I suggest inserting "natural lakes and reduce flows in streams" after "wetlands" in the last sentence.

Environmental Impacts, Paragraph 2. I don't feel that economic value of hay production should be included with economic values of fish, wildlife and recreational resources.

P. 4-7, Paragraph 5. The last sentence describing problems to fish populations in shallower lakes would be more complete if stated "Fish populations... critically high summer temperatures, and extreme fluctuations in dissolved oxygen and ph levels.

In my opinion the section on Environmental Impacts does not adequately stress the long term impacts that can result from even short term flow depletions. When stream flow depletions become severe, even for only a few days (or even hours), significant impacts can last for several years. For example, one yearclass of channel catfish can provide recreational fishing over several years. If a yearclass of channel catfish is seriously reduced due to low flow during spawning or rearing seasons, they will not contribute to the adult population in later years.

Table 4-1 Unique habitats in the Niobrara drainage should include Merritt Reservoir and white birch stands in the river valley. I also suggest adding Musquellunge (Merritt Reservoir) and trout in the upper Niobrara.

Unique habitat in Loup River Drainage should include Calamus Reservoir.

In the Missouri River fish column I suggest clarifying item 5-species production.

In the Republican River fish column I suggest adding walleye and white bass. Trout harvest should be changed to "tributary trout streams harvest".

P. 4-17. Environmental - I believe that the presence of habitat important to migratory bird species protected by international treaties and the presence of valuable recreational resources (fishing, boating) should be added to the list of environmental impediments. Each can contribute to a demand by the public interest for denying a water right application.

P. 4-18, Environmental, Paragraph 3. The fourth sentence includes wet meadow hay production which seems inappropriate in this section. Paragraph 5, Item 3 - I recommend rewriting the first sentence as follows: Transfer of water and hydropower, if it adversely affected the temperature, dissolved oxygen content or other water quality parameter, could also create a legal impediment.

P. 5-1, Efficient Resource Use and Protection - The last sentence on this page does not make sense.

P. 5-4, Recommended Transfer Policy, Paragraph 3. Care must be used in assuming small quantity surface water transfers would have impacts too small to warrant regulating. The quantity and quality of the water supply must also be considered.

P. 5-5, Paragraph 4, Donated water rights should be permitted along with the sales and leasing.

P. 5-6, Paragraph 2, I believe sentence five should read as follows: To treat all who use the state's water equally, the Board recommends that the legislature consider collecting compensation from all existing users of water, except individual domestic users, and users of public resources held in trust by the state (i.e. fish and wildlife) for the public, for the water they use in the future.

P. 5-6, last paragraph - Monies in the Water Management Fund should also be made available to state entities required to provide assistance to project sponsors in preparing applications.

DRAFT LEGISLATION BILL REQ. 0020

P. 3, Line 2 - I disagree that the "waters of the state must often be moved..." I recommend "often" be replaced with "occasionally" or "sometimes".

Lines 9-23 - I believe that it is desirable and necessary for the state to have a different policy for water uses and water transfers dedicated to natural resources held in trust by the state for the people. Fish and wildlife are such resources and require unique public policy considerations. Line 19-22 should be as follows: The Legislature further finds that it is

neither desirable nor necessary to establish different policies... except for those applications made under provisions of Section 46-2,107 to 46-2,119.

P. 9, Lines 5-11. By the same reasoning the following should be added to line 11: ", or because applications are made under provisions of Sections 46-2,107 to 46-2,119."

P. 12, Section 10. Language should be added that instream flow uses shall be exempt this section except as provided in Section 46-229.04.

P. 21 Language should stipulate that water dedicated to fish and wildlife resources held in trust by the State for the public will be exempt from these fees.

P. 43-44, Section 35. The changes proposed for Sec. 46-2,108 appear to deny the Game and Parks Commission or a natural resources district the authority to secure an instream flow appropriation from a transfer of an existing water appropriation permit or from conserved water. On the other hand, the proposed changes appear to allow individual to secure instream flow permits from such sources. If this is intended, I object! I recommend that all entities have at least equal opportunities to utilize the same water supplies for instream flows. I believe all references to "unappropriated water" should be deleted from the existing instream flow statutes.

DRAFT LEGISLATION BILL REQ 0023

P. 2, Section 1, Line 11 - should include allowing the "donation" as well as sale or lease of such a right.

DRAFT LEGISLATION BILL REQ 0024

The bill is silent regarding a fee from instream flow appropriations. Nevertheless the bill states the intent is to establish annual fees including in Sec. 2(c) from "any person with a direct flow surface water right in excess of 5 cubic feet per second..." This legislation should clarify that there should be no fees for water used in maintaining or enhancing natural resources held in trust for the public by the State.

DRAFT LEGISLATION BILL REQ 0025

P. 2 Section 2. The intent and language behind this section needs to be clarified. The Legislature has already charged the Nebraska Game and Parks Commission and NRD with the mission of identifying streams with a need for instream flows and has given these two entities the legal means to obtain instream flow rights for fish, wildlife and recreation. Yet no streams have been granted any such appropriations. The point here being - should the Game

and Parks Commission be encouraging water transfers if there are detrimental impacts to resources they have a charge to protect?

DRAFT LEGISLATIVE BILL REQ 0026

P. 10, Lines 7-14. Monies from the fund should be made available to all agencies for costs incurred in assisting water project sponsors with their project applications.

In closing, I thank you for the opportunity to review this draft report and hope our comments will be beneficial to helping you refine the final report.

Sincerely,

J. Larry Hutchinson, President
Nebraska Chapter AFS

CENTER FOR RURAL AFFAIRS

Post Office Box 405
Phone (402)846-5428

Walthill, Nebraska 68067
Population 900

August 29, 1988

Dayle Williamson
Chairperson, Water Management Board
P.O. Box 94876
Lincoln, Nebraska 68509-4876

Dear Mr. Williamson:

Please accept the following comments on the July 15, 1988 draft of the Nebraska Water and Water Rights Transfer Study.

DEFINITIONS: The proposed definitions for groundwater and surface water transfers are generally clear and reasonable. However, REQ 0020, sec. 5(2) "relatively small quantities of water", is vague, and the identification of impacts of such a transfer is entirely subjective.

IMPACT ASSESSMENT: We strongly support the concept of project impact assessment as an orderly and consistent tool for project evaluation. One additional criterion for evaluation of a proposed transfer would be the cumulative effect of transfers within a region.

Preparation of the impact assessment should be done by the state so that each project has consistent technical expertise. Impact assessment development by the Natural Resources Commission should be paid for by the party requesting a permit, rather than as REQ 0020, sec. 18(9) suggests that staff of the Natural Resources Commission "bring parties together for negotiations and help them in assessing the impacts for their application to the Depatment of Water Resources as much as staff, time, and funds permit." The Natural Resources Commission would be acting as a neutral party in the assessment process in contrast to the applicant who has a vested interest in minimizing impacts and maximizing benefits in order to obtain a permit.

There should be a clear and consistent policy for interested or affected parties to be informed of opportunities to participate in the impact assessment process, whether a public hearing is held or not. REQ 0020 sec. 5(c) is not clear in defining how the interested or affected persons will be notified or how the Director of Water Resources will determine the need for public participation.

There should be some administrative appeal process added for any county, party or parties affected by a decision to grant a new water transfer or right.

REQ 0020 sec. 11 should require any permit renewal to reassess the impact of the water use or transfer to date, the current language states only that the Director of Water Resources may require such a reassessment.

50 YEAR TERMS FOR SALES AND LEASES OF WATER RIGHTS: Limiting water rights terms to not more than 50 years allows for a more flexible system of water use. Recognizing that not all environmental impacts of some water transfers are not easily anticipated, a shorter time limit of 10 years for some water transfer projects could be used as an assessment tool, and after the 10 year period a second impact assesment should be used to determine whether a transfer project should be extended.

ROLE OF THE WATER MANAGEMENT BOARD: Facilitating the process of obtaining new water rights, water rights sales and water transfers would be achieved by the creation of an information clearinghouse service administered by the Water Management Board. Broadening the Water Management Board's role to include development of water transfer projects would seem to set up a conflict of interest.

ANNUAL USE FEES: Any comprehensive water management program obviously needs to be funded and user fees are not an unusual method of raising revenue, however there seems to have been minimal analysis done on this issue. Small rural communities have increasing demands on limited revenues to provide basic services, yet there has been no discussion of the impact user fees would have on these already stressed communities. There is a similar lack of impact analysis for the agricultural, industrial, commercial and power user fees.

A second criticism of the user fee proposal is the vague way the funds are to be used, management of water quantity and quality are mentioned in the same sentence. The entire document deals with water quantity, but in what way and by what agency would water quality be dealt with by these funds? It would appear that water quality needs are being used to sell the user fee proposal.

INCENTIVES TO INSTALL AND USE WATER SAVING MEASURES: We support this proposal to encourage surface water rights holders to install and use water saving measures. It would be in keeping with the goal to treat surface and groundwater use on an equal basis if a complementary proposal to conserve groundwater use were also adapted.

RESOURCE MANAGEMENT THROUGH MARKETING: The Water and Water Rights Transfer Study is based on the assumption that in a free market system a resource will reach it's "highest use". Although this is currently a popular strategy it is not universally accepted and there should be a discussion of the pro and con arguements for this approach. There is no such discussion in this document and recommendations of the study are limited by that bias.

RESOURCE DATA: There is no strategy outlined in this document to build a unified data base that could be used to assist in water management decisions.

A comprehensive ongoing study of groundwater and surface water information across the state would be tremendously helpful in assessing impacts of all types of water transfers. When considering how impacts can be mitigated it is always preferable to have baseline information before evaluating impacts of new transfers.

Thank you for the opportunity to comment on the Nebraska Water and Water Rights Transfer Study.

Sincerely,

Kristie Thorp

Kristie Thorp

PAUL E. PRITTS, MANAGER

BOSTWICK IRRIGATION DISTRICT
In Nebraska
BOX 446
RED CLOUD - NEBRASKA

August 26, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
Box 94876
Lincoln, NE 68509

Dear Mr. Williamson:

I wish to thank you for the timely reply from Mr. James R. Cook regarding some questions we wished clarified regarding the Water and Water Rights Transfer Study. After reading Mr. Cook's letter we wish to offer the following comments for your consideration:

1. Reference is continuously made in the report to "fees" to water users. From our perspective the proper word should be "tax" and I am sure that our irrigators would also consider this to be the case.

2. In noting the members of the Water Management Board and the personnel who were members of the four committees (Page 1-1 and 1-2) we find that surface water irrigators i.e., Irrigation districts that are located within the boundaries of the state and that comprise a portion of the total irrigation picture were not very well represented. Most of these districts were built by using funds provided by the Federal Government and each has the responsibility of generating enough money from their irrigators to provide funds for operation and maintenance as well as repaying to the Federal Government construction costs as provided in their contracts, so our assessment to the irrigators is quite considerable.

3. At the time the Water Management Fund, administered by the Water Management Board, was established it was my understanding that this Fund was to be funded by the State Legislature, which it did originally, but then transferred the funds to other programs. What has become of this original obligation? Page 2-6.

4. On table 3-5, it states that the Bostwick Irrigation District in Nebraska used (transferred) 48,060 acre feet of water from Harlan County Dam during 1985. We have in our files a letter from the Bureau of Reclamation dated 14 November 1985 that officially establishes the acre feet amount used by our District as 51,553 acre feet. Would this error be carried through some of the other tables and charts included in this report?

5. On page 4-10, paragraph three it states "The transfer of the water rights associated with a whole irrigation district could set in motion-". The water rights and storage rights for the Bostwick Irrigation District in Nebraska are held in the districts and the U S Government's name and not in the individual irrigators name. We cannot imagine the circumstances that would exist to cause our water and storage rights to be transferred en masse.

6. Now we come to the nitty-gritty part of the report. We will touch on the proposed irrigation fees first. In the reply from Mr. Cook to my questions (copies of both letters enclosed) he states as part of the answer to question 1 "That would require that you pay annually a fee of 50 cents per acre foot or $1.00 per acre irrigated (your choice)". Our irrigation district assesses approximately 23,000 acres per year. These acres have been classified as irrigable by the Bureau of Reclamation, however, all 23,000 are not irrigated in any given year, so the acres irrigated totals would not be available until the latter part of any year when the crop census reports are completed. We also wonder how long it would be before "your choice" was changed to read "whichever is higher" as a method of generating more fees.

7. I also asked in my letter what fees for transferring water and storage rights within our district would be (question #4) and the answer was "-with a minimum of $200.00. Also, a permit continuation fee of 5% of the application cost-". These fees would be charged on top of the monies that we have to spend when changing locations of water and storage rights within our district through the Department of Water Resources (Mr. M. Jess's office). This is ridiculous.

8. It also appears that this proposal is designed to put the irrigation district's in Nebraska into the roll of tax collector for the State of Nebraska whether we like it or not, and no consideration being given to the added cost to the districts for performing this service. As always, any additional cost will have to be passed on to our customers, the farmers.

9. In closing, I wish to tank you for the oportunity to comment briefly on the Water and Water Rights Transfer Study, and we realize that this letter is negative through-out, but we feel that we cannot in good conscience support any proposed legislation that is going to put an additional financial burden on the irrigation districts or the irrigators.

Thank you,

Paul E. Pritts
Manager, Bostwick Irrigation
District in Nebraska
President, Nebraska State
Irrigation Association

Enclosures

1- letter to Mr. Williamson, dtd 25 July, 1988
1- letter from Mr. Cook, dtd 16 August 1988.

CITY OF OGALLALA

411 EAST SECOND STREET OGALLALA, NEBRASKA 69153

CAROLYN S. ARMSTRONG	PAUL FISHER	JOE K. HUMPHREY	VIRGIL BEAVERS	RICHARD SHERICH
CITY MANAGER	CITY CLERK	POLICE CHIEF	FIRE CHIEF	STREET SUPERINTENDENT
(308) 284-6001	(308) 284-3607	(308) 284-2024	(308) 284-2024	(308) 284-6574

August 29, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

RE: Water and Water Rights Study

Dear Dayle:

We would offer the following comments regarding the recommended legislation on the above:

1) As stated in our letter of May 4, 1988, we would oppose any funding means which would assess municipal water use. We have approximately 2100 service connections which would mean an annual fee of $16,800.00.

2) The City would like to go on record as supporting the comments made by the Nebraska League of Municipalities Utilities Section.

Thank you once again for your consideration in this matter.

Yours truly,

Earl J. Cook
Mayor

Carolyn Armstrong
Carolyn S. Armstrong
City Manager

EJC/CSA/sb

cc: City Council
League Utilities Section

3408 W Street
Lincoln, Ne 68503
August 26, 1988

Dayle Williamson, Chairperson
Nebraska Water Management Board
P.O. Box 94876
Lincoln Nebraska 68509-4876

Dear Mr. Williamson,

I recently requested and received a copy of the draft report on the Water and Water Rights Transfer Study. I have reviewed the study, particularly chapter five concerning policy recommendations and the five legislative bills associated with the study. I have some comments on the study and one of the legislative bills REQ0024 which I hope you will seriously consider in your public review process.

First, I would like to address comments to a paragraph on page 5-5 of the report under the subheading Recommended Transfer Policy: "Both

sales and leases of water rights should be permitted. All permits should be limited to a specific term, not to exceed 50 years, with the opportunity for renewal, with special consideration for the current owner, at the end of the term."

I agree that permits should be limited to a specific term but feel allowing a permit life of 50 years is excessive. I believe the permit life, particularly for ground water, should not exceed five years for the following reason. As you may know both the quantity and quality of groundwater in the Ogallala Aquifer is declining. Recent articles I have read estimate the aquifer may be dropping three feet a year and in drought years, such as this one, very little if any recharge happens. Also, I am sure you are well

permitting will result in more frequent analysis of where our water should be allocated

Next, I would like to address some comments to another paragraph on page 5-5, which I disagree with in its entirety: "In addition to the basic regulatory role, the state should take steps to improve the efficiency of water markets and transfers, expedite development of water and promote economic development of its resources. Transferring water rights should allow the water to go to higher economic uses, and promoting desirable transfers of water could produce greater benefits to the state economically and environmentally."

I truly wish you would temper your confidence that "expediting development of water and promoting development of

aware that increasing amounts of nitrates and pesticides are showing up in our groundwater. The point I am trying to make is that the Nebraska Legislature may be wrong in their statement, ~~"Nebraska has an abundant s~~ which you included in your descriptive memo of July 18: "The Legislature recognized that Nebraska has an abundant supply of good quality water, more than our neighboring states".

I believe Nebraska may be in short supply of pure water for domestic use in the near future; therefore, I recommend you maintain shorter terms on at least all groundwater transfer permits so Nebraska Communities will be insured adequate supplies of pure domestic water before long term transfer permits are granted for agriculture or industrial use in or outside Nebraska. Short term

its (water) resource" is the best thing for our state. Has or is the Nebraska Water Board and the Nebraska Legislature addressing the water demands of the people and wildlife of Nebraska! I realize LB 146 was designed by the Legislature to charge you with the responsibility of finding out how our water could be "transfered" (sold) but in my opinion you need to first give priority consideration on how to keep plenty of high quality water in Nebraska and your report does not address this concept.

Finally, I will address a few comments to Draft Legislative Bill REQ0024. The main language of the bill would basically require users of Nebraska surface and groundwater

to pay a specific fee per acre foot of water transfered depending on the water use. I see no problem with this concept, but I am concerned about what these fees collected will be used for.

The only statement ~~which~~ I can find in the bill, which pertains to what the collected fees will be used for is for, is found in the bills summary of contents: "The fees would be collected by the Water Management Board and placed in the Water Management fund for future water management and development funds". I believe this statement is much to vague and gives the Water Management Board to much latitude as to how the money could be used.

I hate to make accusations but historically water development

projects in Nebraska have been water impoundment projects. We have enough reservoirs in Nebraska and they are not necessarily the best use of water for all citizens and species of wildlife in our state. What we need now are more water quality studies and ways/means of improving the quality of our surface and ground water now that we have polluted it.

Sincerely
A Concerned Conservationist

Michael R. Groenewold

nebraska farm bureau federation
1401 Cushman Drive, P.O. Box 80299, Lincoln, Nebraska 68501, Telephone: (402) 423-2822

August 29, 1988

Dayle Williamson, Chairman
Water Management Board
P.O. Box 49876
Lincoln, NE 68509-4876

Dear Dayle and Members of the Water Management Board:

The Nebraska Farm Bureau Federation would like to take this opportunity to submit comments in regards to the proposals on water transfers.

Nebraska Farm Bureau has had a long-standing policy to develop Nebraska's water resources to the greatest benefit for the citizens of this state. The rewards of Nebraska's commitment toward the development of water projects are evident in the light of the effect of the 1988 drought on the majority of the grain producing belt.

The Nebraska Farm Bureau applauds the Water Management Board for doing a fine job researching the water transfer issues. However, at this time the Nebraska Farm Bureau feels that the proposals are too far reaching to implement at this time.

We agree that it is in the best public interest to impose some regulatory oversight on water transfers. However, we disagree with the Board's proposed definition and exemptions to the definition of water "transfers". Farm Bureau recommends that the irrigation exemption should be broadened to include any "agricultural use" and should be amended to eliminate the 160 acre maximum. In other words, transfers for domestic uses and for irrigation or agricultural uses, to an adjacent section, regardless of the amount of water transferred, should not be required to obtain a permit or meet any other regulatory transfer criteria.

Farm Bureau supports the Board's contention that it is in public interest to require some regulatory oversight on water transfers. We cannot support the Board's proposal to require extensive and costly impact assessment statements for all water transfers besides those granted specific exemptions. We also oppose providing the administering agency the discretion to decide how much analysis is needed before granting a permit for short distance transfers of small quantities of groundwater for other uses.

We believe the need exists for a full disclosure of all potential social, economic, environmental and physical impacts for large scale inter and intra basin transfers. We also recognize and understand the varying differences in characteristics of underground aquifers and the impact small withdrawals may have on an already depleted aquifer. However, we do not believe small-scale, short distant transfers should be held to the same standards of approval as large scale transfers. Of special concern, is the arbitrary and capricious manner these standards will be applied if the administering agency is given the discretion to determine how much analysis is needed before allowing a transfer or diversion.

We would urge the Board to consider the possibility of establishing a registration process in which the standards are less restrictive, costly and burdensome for small scale and short distant transfers which do not meet the exemptions as we proposed above. We believe this alternative review process would be in the best public interest, implemented in a manner which a court would not consider to be arbitrary and capricious, and most importantly, would not deter future beneficial water development uses.

In addition, we would suggest a one-time graduated permit application fee be imposed to offer some regulation. We would oppose an annual continuation fee for the permit.

We urge you to review the constitutionality and future legal problems of limiting sales and leases of water rights to 50 years. For instance, the state or party selling or leasing water may have difficulty in rescinding a contract or lease if the water is being used for domestic or higher priority use. The party who purchased or leased the water may be able to claim that it would not be in the best public interest and could possibly jeopardize the health or safety of the users if the contract or lease was terminated.

The Nebraska Farm Bureau would oppose splitting water rights under the conservation proposal. The language in the draft does not address how an original holder of the conserved water could retrieve their rights to the conserved water. Furthermore, the draft does not address water non-use under set aside and other farm programs.

We would also oppose authorizing the Water Management Board and other state agencies to provide assistance, or act as a clearinghouse for water right transfers to facilitate water development and transfers. Our opposition to this measure stems from concern about the possible future consolidation of state agencies and the change of their respective roles (LB 1043 in 1988).

In addition, by placing the Water Management Board in this position, we feel this would expand the powers of the state too far. At the present time, the committee felt this is not needed.

Furthermore, we do not feel the Water Management Board should have the power to plan, sponsor, construct and own water projects. We oppose the proposal on the basis that the board would also have the power to acquire property by eminent domain, acquire water rights by appropriation, fix charges and rates for water and/or power. This would grant the state to much power and authority over water use in the state.

Finally, we oppose the implementation of water use fees on all water users to fund water projects. We feel that the money needed to finance water projects should come from the general fund and/or revenue bonds, not from water use fees on all water users.

Nebraska Farm Bureau's opposition to the majority of the proposals brought forth by the sale of water study should not be interpreted to mean the idea of selling water will always be wrong. We believe there needs to be regulatory oversight over large scale and distant transfers. However, at this time we can not justify to production agriculture that the regulations would be in the best interest for all Nebraskan's.

Respectfully submitted,

NEBRASKA FARM BUREAU FEDERATION

Bryce P. Neidig
President

BPN:pjw

City of
FREMONT
Nebraska
68025-1266
Post Office Box 1266

August 29, 1988

Mr. Dayle E. Williamson
Chairperson, Water Management Board
P. O. Box 94876
Lincoln, NE 68509-4876

RE: Report on The Water and Water Rights Transfer Study

Dear Dayle:

I have reviewed the Study, and Fremont will object to its thrust and purpose. The many uses of water in the State of Nebraska is a matter of statewide concern. What we have here is a scheme to charge municipalities for their use of water to raise money to promote water sales. The proceeds of these sales will be used to build water projects which will exhaust surface and groundwater supplies of the state. This is the latest attempt to strip Nebraska of its water.

Instead of this program, what should be high on the legislative agenda is how the state will meet the requirements of the United States Safe Drinking Water Act. This act will affect all citizens in Nebraska and the cost will be very high.

The only comment I will make on the draft legislative bills found in the Study is this: they are wordy, legalistic and confusing. They will create a widespread bureaucracy. Fremont urged the Legislature not to pass LB 146 in the past and will do the same with these proposed bills. Fremont has fought against draining the Platte River for eleven years and will continue to do so in the future.

Very respectfully,

Lyle B. Gill
City Attorney

LBG:r

cc: Mayor and Council
Jack Sutton
Chairman and Members of
Board of Public Works
Jon McCafferty
Tom Wurtz
Joel Christensen
Steve Huggenberger
Jerome G. Obrist

LINCOLN CITY ATTORNEY

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Police Legal Advisor
JOHN C. McQUINN II

August 30, 1988

Dayle Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Mr. Williamson:

After having reviewed the draft Report on the Water and Water Rights Transfer Study and accompanying legislation from Lincoln's perspective, there are several comments I would like to make. An examination of the public policy issues enumerated in Chapter 5 of the Report reaffirms many of the concerns that Lincoln has had for some time. We have also attached, as part of our submittal, a letter dated August 24, 1988 from TZA - (A consultant retained by the Lincoln Water System, MUD and City of Fremont to perform a study on Proposed Water Diversions on the Platte River) addressing the Water and Water Rights Transfer Study.

The separate treatment of surface water and ground water in Nebraska law has been and is, as stated in your Report, inconsistent with the physical realities of the hydrologic system. Your proposal to treat all transfers, in-basin, interbasin or interstate, the same would go a long way to correcting that inequity. However, the legislative proposals seem to have fallen a bit short of accomplishing that. There is still unequal treatment. Example, Req. 0020, ground water transfers limited to 60,000 acre feet per year. Surface water is not similarly limited. This example becomes even more inequitable when viewed from Lincoln's perspective. Lincoln's wellfields are located along the Platte River. The recharge from the river is the major source of supply for those wells. If Lincoln attempts to plan for growth through the creation of a new wellfield, we are limited to 60,000 acre feet per year. Yet we have no limitation on quantity if we divert directly from the river. It would be imprudent for Lincoln to attempt to rely on the surface flows from the river because of the low flow and no flow tendencies of the Platte. This situation is probably very similar for Fremont and MUD in Omaha. The Report contains many statements which agree wholeheartedly with Lincoln's position. The Report correctly identifies the fact that the demand for water is shifting from agricultural to urban and that increased development will be required not only in western states but in Nebraska also. There will undoubtedly be an increase in the requirement for public water supplies. With these thoughts in mind, an across-the-board prohibition on ground water transfers larger than 60,000 acre feet per year would work against the public interest.

While there are many statements in the report explaining that water quality will be a significant factor in the future, there is very little in the legislative proposals to address this issue. Since nonpoint sources of pollution have become much more threatening and water quality control measures have and are becoming extremely expensive, we are very concerned about this area. It is undisputed that agriculture is major source of such pollution (i.e. Nitrates, Pesticides, Herbicides, etc.). As such, it would seem prudent to attempt to regulate the irrigation aspect more, the only reference in the legislative proposals addressing this problem are the examinations made pursuant to evaluating the public interest. Nothing specific is mentioned. For this reason as well as others, we would encourage some kind of greater enumeration of what all is encompassed in the examination of the public interest. The Army Corp of Engineers has a very detailed enumeration of what must be considered in an examination of the public interest. Part 320 of the Corps General Regulatory Policies states "All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general the needs and welfare of the people." This area is of much concern to us because of the limited examinations that are occurring under the present system regarding the same term "public interest". The Director of Water Resources is currently giving every indication that evidence on what will be allowable in an examination of public interest will be very restricted. For that reason, we would encourage some greater statutory enumeration on the examinations required under "the public interest".

One element contained in Req. 0020 is sorely missing from current law. That element is found in Section 7 Subdivision 3. In the evaluation of various permit applications, requiring the director to examine the reasonable probabilities for future uses and their cumulative effects on water quantity and quality is critical to the planning of this state. If we are to successfully meet the policy issues that your Report addresses, continued growth in industry and urban areas, a recognition of this factor is a must. This has been one of Lincoln's goals as we are finding ourselves involved more and more as objectors to applications for diversions from the Platte River. We urge you to insist on the inclusion of this item in your final legislative draft.

Finally, we simply have to oppose the annual fee schedule in Req. 0024 for a variety of reasons.

1. Domestic water use is stated in the Constitution of Nebraska to be the state's top priority. It does not appear just that the top priority of use should also be the highest taxed component, especially in light of the fact that the public water systems are not the greatest user of water quantity-wise.

2. The fee schedule does not treat domestic users equally. An urban domestic user finds that he has to pay an annual fee for his water use, while a rural user, not on a public water system, does not.

3. Agricultural use of water is becoming the greatest single factor in increasing the costs of water to domestic users. Agricultural use is becoming a cost factor because of its contribution to the pollution of the rivers and ground waters of this state. It seems imprudent to make the greatest single threat to our water supply also the least taxed. Not only is agricultural use the greatest polluter but it is also the greatest user. In short, it is the inequity of this part of the fee schedule that strikes us.

Thank you for the opportunity to respond to your Report and for any consideration you give these comments.

Sincerely,

Steven Huggenberger
Assistant City Attorney

SH/bak

c: Mayor Harris
City Council
Dick Erixson
Jerry Obrist

TZA TED ZORICH & ASSOCIATES, INC.
CONSULTING ENGINEERS IN WATER RESOURCES

906 LAKE FOREST
BONNER SPRINGS, KANSAS 66012
(913) 441-8875

August 24, 1988

Mr. Jerome G. Obrist
City of Lincoln
2021 North 27th Street
Lincoln, NE 68503

Re: Review of Draft Report on the Water and Water Rights Transfer Study

Dear Jerry:

In response to your request, I have conducted a quick review of the above referenced report. Water rights transfers often involve social, economic and legal issues, as well as technical issues related to the hydrologic impacts. This letter addresses only the technical issues. The opinions presented are based upon previous experience with water rights transfers gained primarily in Colorado, where the practice of buying, selling and relocating water is long established.

In general, it is my opinion that an administrative and legal system which allows transfer of water from one location to another, change of type of use, and sale of the right of use is desirable to allow equitable allocation of water among competing users. However, such a system must include adequate safeguards to ensure that existing water rights are not adversely impacted. The administrative/legal system must also allow for the protection of water supplies which are not currently required, but are realistically needed for future beneficial purposes (such as increased municipal use due to population and industrial growth).

The report states that the separate treatment of surface and ground water in Nebraska law is inconsistent with the physical realities of the hydrologic system, and that new policies on transfers of water and water rights should acknowledge the relationship between surface and ground water. In order to protect the water supplies of municipalities which rely upon alluvial well fields, it is imperative that Nebraska's water law and administrative procedures treat surface water and alluvial ground water as one and the same. Any future water rights

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changes or transfers should then be prevented from adversely affecting existing water rights, including municipal well fields which rely upon maintenance of certain river flows.

The report defines a ground water transfer as any transportation of ground water away from the section in which the source is located. The report then states on pages 5-4 and 5-5:

> "Aquifer characteristics vary widely across the state, making it difficult to compare the effects of a project in one area to another, to extend the effects of a project in one area to another area, or to predict the effects of an extensive project. Therefore, no applicant should be allowed to transfer more than 60,000 acre-feet of groundwater in a year."

This statement and conclusion is entirely without foundation. Current knowledge and understanding of ground water occurrence and movement allow relatively accurate predictions of the effects of pumping large well fields. Variations in aquifer characteristics across the state are irrelevant because characteristics for the specific aquifers of concern are often available or can be obtained by site investigation. There is nothing inherently more difficult in predicting the effects of large ground water transfers than in predicting the effects of large surface water transfers. Both require a thorough analysis, based upon numerous assumptions, by competent hydrologists. The arbitrary limitation on the amount of ground water transfers should be eliminated. As stated before, ground water should be treated in the same manner as surface water.

The report recommends that annual use fees should be levied on all water users. The recommended fees for public water supplies are 10 times the amount recommended for irrigation supplies, and 5 times the amount recommended for power and industrial supplies. The use fees are to be used to manage water quantity and quality, promote transfers of water rights, and assist in developing projects to transfer water. Unless activities contemplated in this regard will disproportionally benefit municipalities, I can see no reason why each type of use should not be assessed the same fee.

Furthermore, it is my opinion that the state should not be involved in "promoting transfers of water rights" or "bringing parties together for negotiations and to help them in assessing

the impacts for their application to the Department of Water Resources..." Why should existing water users pay fees to subsidize the activities of those who wish to transfer water rights? Potential buyers and sellers of water rights will find each other quite naturally without the state's help, and they should be required to provide their own technical evaluation of the impacts of their application for review by the DWR.

I hope these comments will be helpful. Please do not hesitate to call if you have any questions or if we can be of further assistance in this matter.

Sincerely,

Bruce E Kroeker

Bruce F. Kroeker, P.E.

cc: Joel Christensen
Lyle Gill
Steve Huggenberger
Jon McCafferty
Tom Wurtz

BEK/bak

413 obrist.1

Nebraska Game and Parks Commission

2200 North 33rd Street / P.O. Box 30370 / Lincoln, Nebraska 68503

August 29, 1988

AUG 30 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O.Box 94876
Lincoln, Nebraska 68509

Dear Dayle:

Thank you for the opportunity to review the Water Management Board's review draft of the Report on the Water and Water Rights Transfer Study. Since the Legislature has charged the Nebraska Game and Parks Commission with the responsibility of managing fish and wildlife resources and since these resources depend on water, the future of water, and the laws that pertain to it are of the utmost concern to the Game and Parks Commission.

As per your July 18, 1988 letter we are enclosing our comments in writing. They are as follows:

1. Page 3-13 of the report, column 2, 3rd paragraph - irrigation will should read irrigation well.

2. Page 3-13 of the report, column 2, 3rd paragraph - the paragraph basically refers to areas of the state suffering from water table declines. The fourth sentence states these declines are due primarily to withdrawals for irrigation, so supplemental irrigation and groundwater recharge are potential uses. We recommend that some reference be given to the State Goals for Water Resource Use because no reference to them is found anywhere in the report. For example, Goal #6 states "Projects to provide supplemental water to replenish or replace dwindling groundwater supplies shall be approved only if the area to be served is included in a groundwater control or management area and water conservation practices are being employed effectively".

3. Page 3-13 of the report, column 2, 5th paragraph, last sentence - the question we have is -- is the fact that many streams are routinely appropriated below their base flow consistent with the Principles and Goals for Water Resources Management in Nebraska? Has this question ever been pursued on the basis of consistency with the state's public trust responsibilities?

4. Page 3-17, table 3-5 -- Inland lakes should be added to the Transfer Facilities for the North Platte Project.

5. Page 4-7, column 2, 4th paragraph, 2nd sentence - this sentence would read better as follows: Specific sites are not identified for the sake of brevity and it is by no means a complete list, but it includes most of the areas and species that <u>are currently of</u> major concern.

6. Page 4-8 and 4-9, Table 4-1 - consideration should be given to standardizing the table contents. This is an editorial aspect and a xerox copy is attached for your staff evaluation.

7. Page 4-12, paragraph 1, 1st sentence - Difference should read <u>Different.</u>

8. Would an instream flow appropriation be subject to <u>annual continuation fees</u> as covered on page 5-4 and 5-5? Page 5-4, column 2, paragraph 2 states ". . . as are all transfers of water rights". Since the Nebraska Game and Parks Commission is very much interested in instream flow issues, a payment for Chapter 46, Article 2 (Surface Water) could be construed to be similar to a state agency/commission paying state sales tax to itself. Similarly, if an annual fee is ever implemented for appropriations, would the Game and Parks Commission or a NRD be subject to this assessment, since an instream flow appropriation would essentially leave water in a stream or river?

9. Page A2-2, paragraph D, 1b - chemicals such as C1 should read . . . Chemicals such as Cl.

10. REQ0020, page 5, line 22 - consideration should be given to inclusion of "drains" along with ditch.

11. REQ0020, page 9, line 1 - we recommend the word <u>may</u> be changed to <u>shall.</u> We believe this will cause less confusion in the long term.

12. REQ0020, page 11, Sec. 9 - our comments here are the same as those stated in comment #8.

13. REQ0020, page 19, line 20 - after the word property we recommend the following phrase be added -- "so long as it shall remain in the public interest".

14. REQ0025, page 3, section 4(3). Comment - the Game and Parks Commission could update its 1978 Stream Evaluation Map to assist with the informational need.

We appreciate the opportunity to comment on the review draft and those involved in addressing a very difficult issue. This report should be a solid stepping stone for many discussions in the months ahead. And finally, we look forward to receiving the final report.

Sincerely,

William J. Bailey, Jr.

William J. Bailey, Jr.
Assistant Director

WJB/GZ/dw

Working for the Nature of Tomorrow™

NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

August 30, 1988 AUG 30 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, Nebraska 68509

Dear Mr. Williamson:

The National Wildlife Federation (NWF) submits these comments on the Review Draft of the Report on the Water and Water Rights Transfer Study prepared by the Nebraska Water Management Board. We appreciate your agreement, conveyed by Ms. Cheryl Byler, that we might submit these comments by overnight courier tonight.

With over 5 million members and supporters nationwide, including the members of 50 state and territorial affiliates, NWF is the nation's largest private conservation-education organization. NWF has a longstanding interest in the wise use and conservation of our national water resources. On behalf of NWF members in Nebraska and other states, NWF has encouraged state adoption of water resources policies that take into account environmental values. NWF applauds the Water Management Board's endeavor to recommend a state water transfer policy that will take into account all benefits and impacts of water transfers. We would like to suggest some further policy changes to refine the Board's initiatives in this direction.

The Report and legislative proposals should suggest a revision of Nebraska law to make instream use of water for fish and wildlife habitat and recreation a beneficial use equal to other beneficial uses, for which water rights may be owned by any government entity or by private parties.

The Draft Report and the legislative proposals are inconsistent in their treatment of instream uses for the benefit of fish and wildlife or recreation, creating some ambiguity regarding whether

instream flows will be treated equally with other beneficial uses. The proposals should be revised to establish that transfers of instream flow rights have the same validity as other water transfers.

In many ways, the report and proposed legislation treat instream flows for fish and wildlife and recreation equally with other beneficial uses. The report and proposed legislation mention in passing that some potential water transfers would be transfers to instream flow uses. See Report at p. 5-5; REQ 0023 § 10. The Report acknowledges that one purpose for such instream flow transfers would be for fish and wildlife habitat and recreation. Report at p. 3-20. The legislative water transfer proposal adopts straightforward provisions for beneficial use of instream flow for fish and wildlife and recreational purposes, although it does not recommend repeal of the existing law that new appropriations of previously unappropriated water for fish and wildlife or recreation may only be obtained by the Game and Parks Commission or a natural resources district.[1] Neb. Rev. Stat. § 46-2,108; see REQ 0020 § 35. And the proposal recognizes that any person may obtain by transfer instream flow rights for fish and wildlife and recreation. REQ 0020 § 35.

Yet the legislative proposal to promote conservation and use of conserved water, while allowing rights for conserved water the same legal standing as other water rights, REQ 0023 § 11, provides that only the Department of Water Resources may administer conserved water purchased or accepted by state agencies and political subdivisions for instream uses. Id. § 10. This provision leads to potentially anomalous results.

For example, a farmer choosing to sell half of an existing water right, reducing by one-half the amount of land irrigated, would be able to transfer that water, under the procedures of sections 3 through 10 of REQ 0020, to someone wishing to put the water to a beneficial instream use. By repealing existing law and providing procedures for transfer to "a different use," REQ 0020 removes existing restrictions on water transfers between varying uses. REQ 0020 § 2(a). Thus, under section 35 of REQ 0020, the proposed transfer to instream use could be made to any entity, public or

[1]The failure to recommend a modification of existing law to permit instream flow appropriations by private parties is presumably the result of the Board's interpretation of its legislative mandate for the Water Transfer Study, which allows recommendations regarding changes in water transfer law, but not changes in appropriative doctrine.

private, with no restriction on "administration" of the water right by the entity holding it for beneficial use instream.

On the other hand, if the same farmer conserves half the water used for irrigation, and obtains a right to conserved water, a public entity obtaining that conserved water right will not be allowed to administer the right. Again, the right may be transferred to any entity, public or private, under section 35. And under section 11 of REQ 0023 the conserved right is to be treated like any other water right. If the conserved right is transferred to a public entity, however, section 10 of REQ 0023 allows the right to be administered only by the Department of Water Resources, not the public entity.

This inconsistency in the treatment of beneficial rights to instream flow for fish and wildlife and recreation should be eliminated. It ignores the possibility that a state or municipal park authority might acquire an instream flow right for recreational purposes, or for preservation of habitat. Such a flow right would best be administered by the park authority, which would have greatest familiarity with the resources at issue. Recognizing that any state agency or political subdivision that acquires water rights for instream use may have an interest in administering that right for fish and wildlife or recreational purposes, the second sentence of section 10 of REQ 0023 should be deleted.[2]

The content of statements by applicants for water transfers should include cumulative impacts of known and anticipated water transfers in the same basin and possible measures to mitigate impacts of the proposed transfer.

The legislative proposal for water transfer applications and permits is exemplary. It requires examination of the full range of effects and benefits of a water rights transfer before a permit for the transfer may be issued. The statement required of an applicant for a transfer permit under section 4 of REQ 0020 will provide much information necessary for a determination whether the proposed transfer is in the public interest. The statement should include information on cumulative impacts of transfers within the same

[2]This deletion would also clarify any potential confusion over whether private parties could administer their own instream flow rights -- a result that is clearly indicated under REQ 0020 § 35 and REQ 0023 § 11, but clouded by the restriction on administration of instream rights by state agencies and political subdivisions.

basin and measures that would compensate for adverse effects of the proposed transfer, to give the Director of Water Resources more information necessary to the decision on each water transfer permit.

Information on the cumulative impacts of water transfers within a basin will allow the Director to determine whether additional transfers out of a basin, or out of surface flows within the basin, should be prohibited. The proposed requirement that an applicant's statement delineate all effects of the proposed transfer might uncover cumulative effects of water transfers, but such effects also might be ignored by localized accounts of many small transfers having minor incremental effects on wildlife habitat, recreation, or other amenities. The legislative proposal should require that the applicant's statement describe the cumulative effects of the proposed water transfer with other past and anticipated future transfers within the basin. This requirement would not place too great a burden on the applicant, because it may rely on the expertise of state agencies under the terms of the legislative proposal. Incremental adverse impacts can be addressed in transfer permit decisions only if the cumulative effects are presented to the Director.

In addition, the applicant's statement should include an account of proposed measures to mitigate adverse impacts of the proposed water transfer. The proposed legislative language requires a statement of adverse effects that cannot be avoided, but it does not require a statement of the mitigative measures to be adopted. The description of such measures in the applicant's statement would allow the Director to weigh the effectiveness of the proposed measures and determine which adverse impacts are in fact unavoidable. The legislative proposal should be revised to require the applicant to describe mitigative measures and provide assurances that those measures would indeed be adopted if the water transfer is permitted.

The applicant and the Director of Water Resources should consider water conservation as an alternative to water transfers to new consumptive uses.

Many new water diversions might be avoided if water appropriated and diverted for existing uses were conserved. Often, water conservation and demand management (in water supply systems) is a more economical source of water than the new diversion. The legislative proposal for creation of water rights in

conserved water is a major step toward encouraging conservation of water. Conservation of water should be further encouraged by requiring explicit consideration of conservation as an alternative to proposed water transfers.

In order to assure that water conservation is considered as an alternative to diversions, the proposal for water transfer legislation should include water conservation among the required considerations for both the applicant and the Director. Among the factors that the Director would consider in determining whether to grant a permit to a project having unmitigated adverse effects, similar to the factors considered for proposed interbasin transfers of water under existing law, the Director would consider alternatives to the proposed project. REQ 0020 § 7(4). Water conservation should be explicitly included as a required alternative to be considered under section 7(4). The applicant should be required to include water conservation among the alternatives for the proposed water transfer under section 4(3) of REQ 0020. Only if water conservation is considered as an alternative to each permit can the legislature assure that the public interest is served by permitted water transfers to new consumptive uses.

Fees for transfers of ground water and appropriations of surface water should be devoted to conservation and management of Nebraska's natural resources.

The imposition of fees for the use of ground water and surface water acknowledges that water is a public resource, and that the public should be compensated for its use. The proposal for legislative imposition of fees on certain ground and surface water uses will encourage more rational use of this public resource. See REQ 0024. The money collected from such fees, however, should be placed in a fund for use by the Game and Parks Commission or other state resources agencies to improve and conserve Nebraska natural resources, in compensation for the use of water resources, or alternatively be placed in general funds. For example, the funds might be used to enhance stream fisheries or purchase conserved water rights for instream use. The proposal that fees be placed in a Water Management Fund that will be used for development of new water projects, REQ 0026, would simply deplete Nebraska's natural resources further, and would relieve future users of water from new projects from paying for the cost of those projects and the associated damage to natural resources.

The burden of proof should be placed on applicants for new water transfer permits.

Existing Nebraska water law places the burden of proof on applicants for new water appropriations. Legislative proposal REQ 0020 substantially modifies existing law, without stating where the burden of proof shall lie. In addition to requiring the applicant to provide the Department of Water Resources with information regarding the proposed transfer, the legislation should also place on the applicant the burden of proof to establish that any proposed transfer with unmitigated adverse effects is in the public interest.

The Draft Report on the Water and Water Rights Transfer Study takes important steps toward wise use of Nebraska's water resources. Modifications to give equal status to water rights for instream flow uses, to enhance the content of applicants' statements on the effects of proposed water transfers, to require consideration of water conservation as an alternative to water transfers, to allocate water transfer fees for conservation of Nebraska's resources, and to place the burden of proof on water transfer applicants will improve the legislation proposed under the study.

Thank you for your consideration of our views.

Sincerely,

S. Elizabeth Birnbaum
Counsel
Water Resources Program

AMERICAN CONSULTING ENGINEERS COUNCIL OF NEBRASKA, INC.
A Member Organization of
American Consulting Engineers Council

FERD E. ANDERSON, JR., P.E.
Executive Director

(402) 476-2572
1630 K St., Suite D
Lincoln, Nebraska 68508

August 30, 1988

Water Management Board
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Dear Sirs:

These are the comments of our Council on the Draft Report on the Water and Water Rights Transfer Study.

In general we support the report and the accompanying draft legislative bills. We believe that the Water Management Board should be authorized to plan, sponsor, construct and own water projects.

Inevitably, funds for projects will be hard to obtain. Federal funds are being reduced. Therefore we believe that a fee system for use, sale, and transfer of water is necessary. We recognize that such a proposal generates considerable controversy and will be difficult to specify in detail to assure fairness to all users, but we support the concept.

We commend the Water Management Board and staff for a well conducted study and report.

Sincerely,

Ferd E. Anderson, Jr., P.E.
Executive Director

cc: Lee Baker
Mel Cerny

Thedford, Nebraska
August 29, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
Lincoln, NE 68509

Dear Mr. Williamson:

On potential water transfers the state needs to proceed with much caution to be absolutely sure that irreparable damage is not done to the area from which the water is being transferred.

I also feel that we should protect our water resources as much and as long as possible. The WMB should do everything that it can to stop contamination and pollution of water that is now clean and pure and also to prevent further contamination and even improve water conditions as much as possible. This should be a priortity because water that is unfit for human or livestock use has very limited value.

The task before the agencies involved in water management in the state of NE is almost overwhelming. I think it is very important that we do not create a monster organization that will be mired in politics, litigation, dictatorial power, etc. and become a cumbersome tax burden to the people of Nebraska.

I also feel that we should conserve and protect our water for the residents of our state as much as possible.

All the areas of the state should have good representation on any board that determines any major water transfer.

In reference to Legislative bill Reg. 0024. #1 Summary of contents (a) ground water irrigators who irrigate more than 160 acres off of the section where the water is withdrawn. Does this include (accross state lines)? Does it in section (c) mean the right holder is charged even if they don't use the water? Who will be responsible for and actually do the checking to see if all regulations are being followed? How will you determine how much water is being transferred by various means?

I appreciate the opportunity you have given me to read all the information you have compiled. Also the bills to be presented to the legislature, etc.

Water management, water rights, water transfers past and future, conservation and any other areas such as keeping water, clean, etc. are very important to me and if I can be of any help or you can keep me informed of any further developments I would very much appreciate it. Thank you for compiling all this information and giving me an opportunity to study it. You are to be commended for the work you have done so far, but the task ahead of you is great.

Sincerely,

Joseph D. Madron

Joseph D. Madron

(308) 436-7111

North Platte
Natural Resources District

P.O. Box 36 • 1054 Rundell Road • Gering, NE 69341

August 29, 1988

Mr. Dayle Williamson, Chairman
Water Management Board
P.O. Box 94876
Lincoln, NE 68509

Dear Dayle:

Thank you for the opportunity to provide comments on the Water Transfer Study. We have several comments we would like to make, first, it appears Nebraska is moving too fast on this issue. When discussing an issue as far reaching as this, more time should be spent in discussing the issue and the ramifications of the policies developed. We are not convinced all situations which might arise have been carefully considered. When establishing new policy we need to make sure the policies are going to work for us and are going to be good for the State of Nebraska.

It also seems to us instead of working on ways to sell our water we should be working on ways to develop the water for our own use and our economic well being. We have several proposed water development projects in the State. We also have areas in the State that are short of water. In the Panhandle such areas as the Mirage Flats, Lodgepole Valley and Pumpkin Creek Valley are short of water.

We do not understand why 60,000 A.F. was picked as the maximum transfer. It appears this limitation applies to both a surface water and a groundwater transfer. Should the maximum transfer be the same for both a surface water transfer as for a groundwater transfer. Sixty-thousand acre feet for a groundwater transfer seem to be a very large amount of water. The maximum allowed annual transfer should not be more than the annual recharge for a groundwater transfer.

In the Sandhills it may be difficult to determine when a transfer exists and many times it is even difficult to know what section you are in. We often do not know where the section line is.

All transfers must be subject to not only state law but also to local rules and regulations such as in the case of a control area. The transfer must be not only subject to existing local rules and regulations but also any future rules and regulations adopted.

The concept of the sale of salvage water needs a great deal more thought. The current system of return flows to the North Platte River could be changed significantly if enough water users decide to transfer any salvage water. We can not alter the existing system of return flows which make the whole system work. This concept needs a great deal more thought before any new policy is adopted.

Thank you for considering these comments.

Sincerely,

Ronald D. Cacek
Manager

RDC/vw

City of SEWARD
Government of, by, and for the people
Phone 402-643-2928 • P.O. Box 38 • 537 Main Street • Seward NE 68434

August 31, 1988

Dayle E. Williamson, Director
Nebraska Natural Resource Commission
Box 94876
Lincoln, Nebraska 68509

Dear Mr. Williamson:

After reviewing the report and the draft legislative bills as contained in the Water and Water Rights Transfer Study I felt as if I had been looking into Pandoras box. It is hard to believe that out of Legislative Bill 146 the Water Management Board could come up with this, a way to rape the citizens of Nebraska. The overall appearance of the program is to raise moneys for the Water Management Board with the public water users picking up the largest percentage of the bill. Refer to the section on page 3-20 Potential prices users might pay for water "willingness or ability to pay" and the fourth paragraph "Municipalities generally pay whatever it costs to secure a suitable supply".

The citizen of Nebraska do not need another bureaucracy nightmare. Presently we have the Department of Health, Department of Enviornmental Control, Natural Resources Commission and the Water Management Board all involved in water.

At a meeting of the Southeast Utilities Section it was stated that some of the money received from the permits and fees would go to clean up water pollution if so, why not charge fees for the sale and use of nitrates and other chemicals that presently are causing pollution and increase the fees for farmers that use chemigation.

Draft Bill REQ0026 could set the state up in the business of providing water to all users. If this is what could happen then why not have the state take over the job of supplying water to all municipal customers and they can be concerned with all the new regulations from the federal government and maintaining a cost effective water supply for drinking and fire protection for the tax payers of Nebraska.

The limit of 50 years for permits to transfer water could place the growth of the Nebraska cities and industries in jeopardy. Long term planning is necessary in both industries and cities but if the cost or even if the possibility exists that a permit to transfer water would not be renewed, then what?

The study has brought many important issues to the surface and raised many questions but I can not believe that attaching inequitable fees and charges to municipal water supplies as proposed is what the legislature wanted.

Sincerely,

Paul E. Dammann
Water/Wastewater Superintendent

PED/dks

METROPOLITAN UTILITIES DISTRICT
1723 HARNEY STREET
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AREA CODE 402

August 30, 1988

Mr. Dayle Williamson, Chairman
Water Management Board
P.O. Box 94876
Lincoln, Nebraska 68509-4876

Re: Comments On Proposed Legislation - Water and Water Rights Transfer Study

Dear Mr. Williamson:

Thank you for the copy of the report on the Water and Water Rights Transfer Study and copies of proposed draft legislation.

As you know, M.U.D. is the public utility which serves water to the Omaha metropolitan area. In 1987 the District had 135,836 customers as we sold approximately 27 and one-half billion gallons of water. Our net revenues approximate 22 and one-half million dollars and we have 1,823 miles of main in service.

M.U.D. is the largest public water supplier in the state of Nebraska. Presently, we receive approximately one-half of our water supply from our Florence Plant which utilizes direct flow from the Missouri River. The other half of our water supply comes from our Platte South wellfield from which we pump groundwater which is recharged by the Platte River. Presently, the District has plans to build a third plant near Leshara, Nebraska, which will be located on the west bank of the Platte River.

The District, because of its heavy reliance on induced recharge for its present and proposed wellfield, is greatly concerned of the need for a substantial flow of Platte and Loup River water. In the past, the District has opposed legislation which would, in our opinion, lead to the diminishing of Platte and Loup River flow. The District has also intervened as an interested party in many proceedings before the Department of Water Resources in which NRD's are attempting to receive appropriative rights to divert Platte River water for irrigation

use sometime in the future. Although the District has not objected to outstate water projects in the past, it and other eastern Nebraska cities are becoming increasingly concerned that the building of numerous proposed water irrigation projects on the Platte River in the future may in fact dry up the river which would cause irreparable injury to our wellfields. Therefore, it is with this background that we have viewed legislation in the past and will continue to so view it in the future.

Rather than comment specifically on each portion of the Water Rights Transfer Study and proposed legislation, I would say generally that the District is opposed to any legislation which we believe would lead to large scale water transfers which would have a negative impact upon the Platte and Loup Rivers. We would also oppose any legislation which would force the District to pay for water that it now takes from the Platte and Missouri Rivers. We would also strongly oppose any legislation which would force our ratepayers to pay any type of water use fee which would in effect subsidize the building of water projects in other parts of the state. The District has no objection to water projects in the state which are funded with other types of revenue provided that such water projects would not seriously impact minimum stream flows to the point that the District's wellfields would suffer irreparable harm.

With these general comments in mind, we will now offer some more specific comments on some of the proposed legislation you have forwarded to us. These comments are not intended to be a line by line analysis of the legislation and it must be understood that we are not attempting to give you a comprehensive analysis of the legislation. Any failure on our part to comment on certain aspects of the legislation does not imply that we either disagree or agree on certain aspects of the legislation. It is quite difficult in our view to assess the impact, either positive or negative, that such widespread and major changes in Nebraska's water law will have upon the rivers of Nebraska and the District in general. We certainly commend the Water Management Board for its work in this area particularly because it highlights the issues that water users in general are being and will be confronted with in the future.

DRAFT LEGISLATIVE BILL NO. 0024

This bill requires the payment of water use fees by some users of groundwater who transfer water across section lines and by surface water users who divert in excessive of five cubic feet per second or use in excess of 1,000 acre feet annually. Water use fees would be collected by the Water Management Board and placed in a Water Management Fund for future water management and development purposes. The District has opposed legislation of this type for the past two sessions and will continue to do so. The District feels it quite unfair to charge its own ratepayers water use fees to fund irrigation projects in other parts of the

state. Historically, the District has taken no position on such water projects provided that they do not severely impact the Platte or the Loup Rivers. We feel strongly that such water projects should compete for funds along side of other funding requests before the Appropriations Committee of the Legislature. We believe that such water projects will then come under closer scrutiny as to whether or not they are economically feasible. It is interesting to note that some water projects have actually been turned down by the voters of natural resource districts when the question is put to them as to whether or not they wish to spend their own tax money for the project, even though they would be the primary beneficiaries. The potential exists if such legislation were to be passed that the ratepayers of M.U.D. would be funding a large majority of the irrigation projects in the state which would then have the potential for hurting those same ratepayers if these projects caused a diminished flow in the Platte and Loup Rivers.

DRAFT LEGISLATIVE BILL NO. 0020

This bill includes the primary regulatory criteria and procedures for approval of new transfers of groundwater and new out-of-stream uses of surface water and transfers of surface water rights. As we interpret the bill, water diverted for domestic purposes would be exempt from the regulations. Although much of our water is utilized for domestic purposes, it is impossible to discern the exact amount which is used for domestic, industrial or agricultural. For this reason, we strongly believe that water used solely for municipal purposes should also be exempt from regulation. If this were done, the District obviously would have no objection to parts of the bill. It seems to us only logical that municipalities should also be excluded. If the same is not done however we would object to the Legislation particularly the 60,000 acre feet per year transfer requirement as this could have an impact on our proposed Platte West Water Treatment Plant which may be operable by 1995. The District would also object to any application fees which would be assessed for water withdrawal.

DRAFT LEGISLATIVE BILL NO. 0023

This bill would provide an incentive for voters of surface water rights to install and use water saving measures. Although the District has always promoted the efficient use of water, we are still analyzing the possible effect this bill may have on reduced stream flow and therefore would reserve any comments at this time.

DRAFT LEGISLATIVE BILL NO. 0026

This bill would authorize the Water Management Board to plan, sponsor, construct and own a water project. This bill in essence

allows the Water Management Board to build water projects with water user fees. Since the metropolitan area of Omaha has approximately 35 to 40 per cent of all the water meters in the State, we roughly estimate that the Water Management Board may in fact be having domestic and municipal water users in Omaha funding outstate irrigation projects. We have opposed this in the past and we will continue to do so. We feel strongly that irrigation projects should compete before the appropriations committee for other dollars and at the same money, and if the money is not available from general appropriation funds, then the direct beneficiaries of the irrigation projects should pay the bill. As we have seen in the past many of the proposed irrigation projects are not economically feasible as NRD voters have voted projects down when the funding was coming only from them. If the Water Management Board is allowed to collect large amounts of money from water users and build up vast sums of money, we can see a scenario developing where projects that would be otherwise not economically feasible may be built at the expense of the District's ratepayers.

DRAFT LEGISLATIVE BILL NO. 0025

The District has no comments on this legislation.

The water system of the Metropolitan Utilities District was built and is presently operated for and paid for by the ratepayers of the District. No state funds have been utilized for the building of any reservoirs, wellfields, or water treatment plants. It is anticipated that the new Platte West wellfield to be in service in 1995, will be constructed, paid for and maintained by the ratepayers utilizing our water system. Again, no state funds will be used for its construction. The District will not ask any state agency or any Department of Water Resources or Water Management Board to help in its funding. This is essentially how the majority of the municipal water users help the state run their systems. It therefore seems a bit incongruous for the District's ratepayers to have to fund other water projects throughout the state which would be financed with user fees from the District's ratepayers. M.U.D. and the municipalities of eastern Nebraska are not against water projects per se. Provided that large scale irrigation projects will not seriously diminish river flows, and if other funds are sought other than water user fees from our ratepayers then the District would certainly have no objection to the Water Management Board's proposed plans for development.

Again, the District sincerely appreciates the hard work that the Water Management Board has put into the Water Rights Transfer Study and proposed legislation, and the opportunity you have given us for comments. If there is any way the District can assist the

Water Management Board in this, or any other study, please feel free to contact us.

Very truly yours,

Thomas A. Wurtz

TAW:jn

cc: Messrs. J. P. Laferla
W. L. Strong

University of Nebraska Lincoln
Institute of Agriculture and Natural Resources

Dept. of Ag. Economics
217 H. C. Filley Hall
East Campus
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Phone (402) 472-3401

August 30, 1988

To: Dayle Williamson, Chairperson
Nebraska Water Management Board
From: Dave Aiken, Water Law Specialist
Re: Comments on Draft LB 146 Study Recommendation

I am responding to your request for comments regarding the draft LB146 study and study recommendations. My schedule has not allowed me to review the draft study report in detail so I cannot comment thereon. I have reviewed the legislative proposals, and congratulate your staff on the excellent job they have done in drafting the legislative proposals. Given the LB146 constraints as well as the uncertainty attending the issue of water exports, the legislative proposals are very well crafted.

REQ0020: water exports, right transfers, and transfers. This bill is a major change in Nebraska water law, and any comments must be preliminary. One substantive change is the addition to page 11 line 4 the following: "In making this public interest determination the Director shall favor instate water uses to the maximum extent possible under article I, §8 of the U.S. Constitution." The addition of this language impresses upon the DWR director that he/she is required to favor instate uses to the maximum extent possible given then current interpretations of the federal commerce clause as applied to water exports. While this may be implied in the current language, insertion of the new language would clarify that this indeed is the legislative intent. I realize that this goes somewhat against the philosophy of LB146.

At page 10 line 18, insert "fiscal," between "economic" and "environmental". This would clarify e.g. that if local property tax revenues would be reduced as a result of water right transfers or exports due to a reduction in local irrigation, those local revenue losses could be considered in determine whether the benefits of the proposed transfer or use outweigh the adverse effects.

At page 52 lines 7-9 NRDs are authorized to establish more restrictive ground water transfer policies in ground water control areas. Such authority could also be given to NRDs administering ground water management areas.

At page 23 line 23 to page 24 line 2, one half the fees collected for water appropriations are credited to the Water Management Fund. Given the uncertain economic viability of

irrigation and the uncertain future of federal feed grain production subsidies, allocating additional monies to encourage additional production of surplus feed grains is questionable to say the least. Better uses for these funds would include ground water quality protection and instream flow maintenance and enhancement. This comment applies also to REQ0024.

More radical alternatives include state ground water allocations to reduce the quantity of water available for export, state instream reservations, and state reservation and leasing of water quantities withdrawn above some stated level. See Tarlock, Law of Water Rights & Resources §10.07 (copy enclosed). State ground water allocation policies a minimum depletion period (e.g. 40 years) with local options to establish more restrictive depletion periods (e.g. 100 years, sustained yield/no depletion, etc.) would severely restrict the quantities of ground water available for export (and perhaps for instate use as well). State instream appropriations or reservations would have the same effect. State leasing water sought to be appropriated above some minimum quantity might give the state the opportunity to sell water for export similar to the proposed ETSI pipeline, and also to discriminate in favor of instate uses largely free of commerce clause concerns. This latter option is worth serious investigation and consideration.

I have also enclosed a copy of the page proofs of my article on the economic impacts of water exports which you may wish to cite in the final report.

Thank you for the opportunity to comment. If you have any questions or comments please call me.

Enc.

cc: Roger Gold
Dave Fischer

STATE OF NEBRASKA

NATURAL RESOURCES COMMISSION

KAY A. ORR
GOVERNOR

DAYLE WILLIAMSON
DIRECTOR

August 30, 1988

TO: Water Management Board

FROM: Gayle Starr, Administrative Officer

SUBJECT: Natural Resources Commission Comments on the Draft of the Report on the Water and Water Rights Transfer Study

In the process of consulting on the Transfer Study, the Commission has provided many comments on policy questions, including those resulting from the special NRC meeting on June 22 discussed by the Board on July 1. At its meeting on July 28, 1988 the NRC officially acted as a body on comments on the draft report. A copy of the relevant portions of the minutes of both meetings follows:

Excerpt from July 28, 1988 Natural Resources Commission Meeting

WATER & WATER RIGHTS TRANSFER STUDY

Dayle Williamson explained that the draft report of the Water Management Board regarding the Water and Water Rights Tranfer Study had been made available to the Commission and a large number of other interested individuals in mid-July and that comments on the draft report were due on or before August 30, 1988. He added that the Water Management Board had requested that the comments be in writing and that any comments would also include suggested changes in the report. Williamson called upon Gerald Wallin and Jay Holmquist who noted some of the differences between the positions of the Commission and the Water Management Board on several issues included in the draft report. Holmquist noted that chapter 5 of the draft report outlined the Water Management Board recommendations and that one significant difference between the Commission and the Water Management Board related to water use fees.

There was considerable discussion of the advantages and disadvantages of water use fees, how any funds generated by fees might be used and how they might be fairly levied. Several members expressed their opinion that some source of funding was needed for water development in the state. A need for funding for water quality measures was also noted. It was also pointed out that the vast majority of individuals appearing at the public meetings on the study opposed water use fees and that the municipalities also opposed fees. Several Commission members also indicated their opposition to any type of water use fee system. Motion was made by Schrock and seconded by

P.O. BOX 94876, LINCOLN, NEBRASKA 68509-4876, PHONE (402) 471-2081

Gifford that the Commission oppose water use fees as presented in the Water Management Board draft report on the Water and Water Rights transfers. Motion carried.
Aye: Gifford, Knobel, Olson, Schrock, Bartak, Kopf, Cook, Schroeder, Rutt, Fricke, Harlan, Welsh
Nay: Kramper, Janda, Larson
Not Present: VonSeggern

The meeting was adjourned for lunch from approximately 12:30 to approximately 1:40.

After reconvening the water use fee proposal was discussed additionally and several Commission members expressed a desire to provide the Water Management Board with a more positive response. After discussion a motion was made by Olson and seconded by Kramper that the Natural Resources Commission recognizes the need for water management in Nebraska, the need to control water transfers, the need to provide water resources development, the need to preserve water quality, and the need to provide for funding to accomplish these ends. The Natural Resources Commission supports funding even to the extent of user fees provided these monies are specifically designated for water projects and provided the fees are assigned in a fair and equitable way. Motion failed.
Aye: Larson, Olson, Kramper, Bartak, Kopf, Schroeder, Fricke
Nay: Gifford, Rutt, Welsh
Present, Not Voting: Cook
Not Present: VonSeggern, Knobel, Schrock, Harlan, Janda

Excerpt from June 22, 1988 Natural Resources Commission Meeting

WATER AND WATER RIGHTS TRANSFER STUDY

Chairman Welsh explained that the primary reason he had asked for the special Commission meeting was to give the Commission an opportunity to further discuss the Water and Water Rights Transfer Study and the numerous questions relating to that study.

Staff attorney Jim Cook explained that after the Commission had reviewed various aspects of the study at their May 26 meeting, the Water Management Board had discussed the same issues and had arrived at a different position on seven specific issues and that the Commission had been provided a memorandum summarizing those differences. Cook reviewed and explained the definitions being considered for surface water and ground water transfers and the various considerations involved with those definitions. Motion was made by Schrock and seconded by Cook that the Commission go on record in opposition to requiring a permit for transfers of groundwater to adjacent sections irregardless of the quantity of water involved. Motion carried.
Aye: Gifford, Olson, Schrock, Bartak, Cook, Rutt, Fricke, Janda, Larson, Welsh
Nay: None
Present, Not Voting: VonSeggern
Not Present: Knobel, Kramper, Kopf, Schroeder, Harlan

The meeting was adjourned for lunch at approximately 12:00 noon and was reconvened at approximately 1:15 p.m.

Staff attorney Jim Cook distributed a copy of the provisions of LB 146 that relate to the Water and Water Rights Transfer Study and discussed and reviewed the various aspects of the legislation.

After an extensive discussion of municipal use of groundwater and how it should be treated with respect to transfers a motion was made by Janda and seconded by Rutt that the municipal use of groundwater be considered a transfer under the same criteria as utilized for other users of groundwater. Motion failed.
Aye: Rutt, Fricke, Janda, Larson
Nay: Olson, Schrock, Bartak, Cook, Gifford, Welsh
Not Present: VonSeggern, Harlan, Knobel, Kramper, Kopf, Schroeder

The Commission next discussed the application of the Water Management Board's tentatively recommended policies to the use of surface water and the transfer of surface water rights.

Motion was made by Gifford and seconded by Cook that the Commission recommend that no changes be made in existing law concerning surface water use and surface water right transfers. Motion carried.
Aye: Schrock, Bartak, Cook, Rutt, Fricke, Janda, Larson, Gifford, Welsh
Nay: Olson
Not Present: Kramper, Kopf, Schroeder, VonSeggern, Harlan, Knobel

The Commission then considered the question of compensation for speculative future impacts at the time of action on a transfer permit. It was the Commission's consensus at the May meeting that these types of speculative impacts should be considered. Motion was made by Schrock and seconded by Gifford that the Commission's previous consensus not be changed. After discussion Schrock and Gifford asked that their motion be withdrawn and the chairman declared it withdrawn. Motion was then made by Schrock and seconded by Olson that the Commission leave this question to the decision of the Water Management Board. Motion failed.
Aye: Cook, Rutt, Fricke, Larson, Olson, Schrock, Bartak
Nay: Janda, Gifford, Welsh
Not Present: Kramper, Kopf, Schroeder, VonSeggern, Harlan, Knobel

Motion was made by Janda and seconded by Rutt that the Commission's position be that compensation not be considered with respect to future impacts at the time of action on the transfer permit. Motion failed.
Aye: Cook, Rutt, Janda, Larson, Olson
Nay: Fricke, Gifford, Bartak, Welsh
Present, Not Voting: Schrock
Not Present: Kopf, Schroeder, VonSeggern, Harlan, Knobel, Kramper

The Commission then considered the term length for transfer permits. After discussion motion was made by Schrock and seconded by Larson that the Commission's position be that the term of permits for groundwater transfers be variable based on project pay back period, that the term not exceed 50 years, that the permits be renewable, and that the applicant for a renewal permit would have an advantage over others proposing to use the water. Motion carried.

Aye: Rutt, Fricke, Janda, Larson, Gifford, Olson, Schrock, Bartak, Cook
Nay: Welsh
Not Present: VonSeggern, Harlan, Knobel, Kramper, Kopf, Schroeder

The Commission then discussed the desirability of giving a state agency the authority to sponsor, design, and build water projects and when possible to market the water from such projects. It was noted that the previous Commission consensus on this issue had been that a state agency should not be given this authority and that the Water Management Board had said that an agency should be given that authority, but only as a last resort when there was no local sponsor sufficient to handle the project because of its size or impact. Motion was made by Fricke and seconded by Rutt that the Commission's position be in agreement with that of the Water Management Board that a state agency be given authority to sponsor, design, and build water projects and when possible to market the water from them, but only as a last resort when there was no local sponsor sufficient to handle the project because of its size or impact. Motion carried.

Aye: Fricke, Janda, Larson, Gifford, Olson, Schrock, Bartak, Cook, Rutt, Welsh
Nay: None
Not Present: Harlan, Knobel, Kramper, Kopf, Schroeder, VonSeggern

The Commission then discussed the question of annual fees for the use of water that is being transfered. Motion was made by Schrock and seconded by Larson that the Commission support water use fees for new and existing surface water and groundwater transfers. Motion failed.

Aye: Janda, Larson, Fricke
Nay: Gifford, Olson, Schrock, Bartak, Cook, Rutt, Welsh
Not Present: Knobel, Kramper, Kopf, Schroeder, VonSeggern, Harlan

As of this date, no further written communication has been received from any of the NRC members.

Gayle Start, Administrative Officer

Nebraska Public Power District

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GENE D. WATSON
GENERAL COUNSEL

JOHN C. McCLURE
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BONNIE J. HOSTETLER
DAVID G. DALES
ATTORNEYS

September 1, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Re: Report on the Water and Water Rights Transfer Study - Review Draft

Dear Mr. Williamson:

Earlier this week, I spoke with Jim Cook regarding comments on the above-referenced study and the proposed legislative bills relating thereto. I was informed that comments would be accepted by the Commission any time prior to the meeting of the Water Management Board on Friday, September 2, 1988. The study and draft legislative bills address a myriad of complex water-related issues. Although we have attempted to provide meaningful comments, we are continuing to review the study and bills and may raise additional concerns if the bills are submitted to the legislature for consideration next year.

Although we have not had an opportunity to exhaustively review the study, it appears that there are several misstatements of fact in the study which should be corrected. The definition of "consumptive use" in the glossary on page iv appears to be missing one or more words. Information on Attachment 2 (A2-3) is also inaccurate and incomplete regarding hydro power plants in Nebraska. The Kingsley Hydro plant is owned by Central Nebraska Public Power & Irrigation District, not NPPD. If the description of hydro projects is intended to be comprehensive, it should be noted that several hydro plants have not in fact been identified. Finally, generating capacity of thermoelectric power plants is incorrectly stated in the study. Gerald Gentleman Station consists of two units rated at 630 MW and 648 MW. Cooper Nuclear Station is rated at 778 MW.

REQ 0020

This proposed bill contains a number of provisions which we find most troublesome. Among other things, the bill appears to establish a state environmental review very similar to the federal NEPA process. If our interpretation is correct, this process will not facilitate further development of water projects but will impede their development by unnecessarily adding a state proceeding that will parallel federal requirements for many water projects. We believe this is an unnecessary and unreasonable regulatory duplication.

Section 29 of this proposed legislative bill contains new language which is unclear. What type of relicensing by the federal government is contemplated? Would this also apply to the licensing of a project by the federal government? Furthermore, it is unclear what "procedurally and substantively compatible. . . with relicensing requirements of the federal government" means. Does this mean that a completely parallel proceeding must be conducted at the state level to answer all issues also addressed in a federal proceeding? Assuming that the intent is to provide state authority for water projects which is parallel to that of the Federal Energy Regulatory Commission under the Federal Power Act, there is a strong argument that the Federal Power Act may preempt any such attempt by the State of Nebraska.

REQ 0024

NPPD believes that the revenue raising provisions of this bill are totally inequitable. The assessment of $1.00 per acre foot on water used in the generation of electric power by any means would impose an unfair burden on the ratepayers of the District and place an inequitable tax on the generation of electricity in this state, especially hydropower generation. If this is the case, preliminary estimates indicate that NPPD could pay in excess of $2.5 million for water used in hydro generation and thermal cooling at its power plants. However, it is unclear how the assessment would be applied. For example, NPPD utilizes water from the Sutherland Supply Canal as thermal cooling water for the Gerald Gentleman Station. The water is then conveyed to the North Platte Hydro. It appears that NPPD's ratepayers could be charged twice for use of the same water. In fact, the same acre foot of water (less evaporative and transport losses) could flow through Kingsley Hydro, Gerald Gentleman Station, North Platte Hydro, Jeffrey Hydro and Johnson Hydros #1 and #2. Under this example, Nebraska electric consumers could be charged up to $6.00 for the use of the same acre foot of water. This unfairly penalizes efficient use of water.

NPPD has been informed that the Central Nebraska Public Power & Irrigation District and the Loup Public Power District have also made estimates of the burden that this tax would impose upon their hydro systems. Preliminary estimates by those districts indicate that the cost of hydropower generation could be increased by 45-90% under REQ 0024.

In addition, it should be noted that the once through thermal cooling utilized by NPPD's largest power plants conserves water. On the other hand, a closed system utilizing cooling towers would substantially reduce the volume of water for cooling but consumption of the water would increase appreciably. Consequently, our large power plants are being penalized for conserving water.

We believe that the Board will recognize the unfair impact of this proposed tax and seek more equitable means to raise the revenue. Finally, as a legal matter, we believe that Section 11 of Article VIII of the Nebraska Constitution creates a question as to the constitutionality of the proposed tax.

REQ 0026

It is NPPD's understanding that this proposed bill would authorize the Water Management Board to own and operate hydroelectric power plants. The study contains limited evidence that there is presently any reasonable potential for the construction of hydroelectric power plants in the state. Also, there is no reason stated for expanding the authority of entities authorized to own and operate hydroelectric power plants beyond those entities currently authorized by law to do so. Another concern is that as currently drafted, it appears that a handful of electric utilities would provide the bulk of the money for this fund. It appears that the money in the fund could be used to construct hydroelectric power plants which could then be sold to utilities which have not contributed one dime to the fund. It is unfair to require the ratepayers of a few utilities in the state to subsidize other utilities. There is also a question whether the authority to own and operate hydroelectric power plants and the requirements relating thereto may conflict with existing regulatory authority of the Power Review Board. Our last comment involves Section 8 of this bill. It is unclear whether the Board could force some entity to accept ownership of a facility. We believe that it should be explicit that a facility could not be transferred to any particular entity unless the entity receiving the facility does so voluntarily.

In conclusion, we believe that the proposed bills which have been discussed above go too far in imposing new taxes and environmental regulation without adequately assessing the base from which the revenue comes and the need for and impact of these legislative proposals. We appreciate the opportunity to comment on the proposed bills and would be happy to respond to any questions which the Board or Commission may have regarding these comments or related matters in which NPPD has experience or expertise.

Very truly yours,

John C. McClure

John C. McClure

/rh

cc: The Honorable Loran C. Schmit
Michael Jess

United States Department of the Interior
FISH AND WILDLIFE SERVICE
2604 ST. PATRICK, SUITE 7
GRAND ISLAND, NEBRASKA 68803

September 1, 1988

Mr. Dayle Williamson, Chairperson
Water Management Board
P.O. Box 94876
Lincoln, Nebraska 68509-4876

Dear Mr. Williamson:

The Fish and Wildlife Service's comments and recommendations on the draft Water and Water Rights Transfer Study are provided below. Our comments are not page and paragraph specific because the issues which concern the Service often and necessarily are mentioned in at least two places in the material we reviewed.

Comments and Recommendations

1. Any forthcoming legislation should clearly state that water right transfers can be used exclusively for instream and out-of-stream fish and wildlife purposes as well as the other mentioned purposes. Also, the donation of water rights for fish and wildlife preservation and/or restoration should be allowed.

2. Subjecting "salvaged water" to a new consumptive use can result in adverse impacts to fish and wildlife resources even though such use appears to be benign.

3. We strongly recommend that user fees not apply to water rights used to preserve and/or restore fish and willdife habitat. Furthermore, we believe at least a small portion of the user fees collected from other sources should be used to mitigate adverse fish and wildlife impacts caused by consumptive use and/or diversion by some existing water users.

4. We recommend an additional groundwater transfer exemption. This would exempt from the permitting process pumping into a stream or an existing or restored wetland for preservation and/or enhancement of fish and for wildlife habitat.

5. Pumping from any sandpit which could impact streamflows or wetlands should be included in the water rights and transfer process.

6. Water transfers (involving adverse fish and wildlife impacts in Nebraska) to other States whose desires for Nebraska water are at least partially caused by their protection of needed instream flows should be prohibited. If not prohibited, certain Nebraska fish and wildlife resources would be sacrificed for the preservation and/or enhancement of those resources in other States.

7. We recommend adding the Migratory Bird Treaty Act to the list of Environmental Laws cited in the report.

We deeply appreciate and thank you for the opportunity to comment on this extremely important subject.

Sincerely,

Gene Miller

for Jerry J. Brabander
Nebraska State Supervisor

GDM:JJB:jh

LOUP POWER DISTRICT

box 988 • columbus • nebraska • 68601 • telephone 564-3171

September 1, 1988

Mr. Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resource Commission
301 Centennial Mall So.
P.O. Box 94876
Lincoln, NE 68509

Re: Report on The Water and Water Rights Transfer Study

Dear Mr. Williamson:

The Loup River Public Power District just recently became aware of Draft Legislative Bill REQ 0024. Bill REQ 0024 would have a very negative impact on the electric ratepayers of utilities who operate hydroelectric power plants.

The Loup District annually diverts approximately 1,300,000 acre feet of Loup River water and runs the water through two hydroelectric power plants. The proposed $1.00 per acre foot fee would increase the cost of the power from these plants by 43%. If the intent of the proposed legislation is to charge each time the water passes through a hydro plant, the cost increase would be 86%.

The State of Nebraska uses the low cost of its electric energy as an inducement for economic development. This proposal is counter-productive to our economic development efforts.

If the Water Management Board requires funding to manage the State's water, the funding should come equally from all the citizens of the State. Ratepayers of utilities who generate with hydroelectric plants would be paying through the public water system as well as electric bills. This is not an equitable method.

Sincerely,

Robert E. White
General Manager

C: Sen. Loran Schmit
Sen. Helen Campbell

Wednesday, August 31, 1988

To: Dayle Williamson, Chairman
Water Management Study Board
Natural Resources Commission
301 Centennial Mall South
PO Box 94876
Lincoln, Nebraska 68509

From: Greg Heiden
RR 2, Box 172
Bertrand, Nebraska 68927

Dear Dayle,

Enclosed is the typed version of my comments. Hopefully it is an improvement. I had hoped the quality would be better but, it should suffice. Please excuse any errors, both corrected and overlooked. Time again isn't on my side. I wish I'd been able to do it on the word processer now.

There really weren't any deletions from my rough draft. I just thought you might appreciate having some time to work with my thoughts before the last meeting. I even found the rough hard to work with. But it has been rearranged some and there were a few additions and, clarifications. But basicly it remains unchanged.

And I appologize for some of the material that doesn't deal directly with the study. But it is all interrelated and intertwined. Its hard to seperate and really needs to be considered together to gain a truer perspective and scope. And they have been brought and considered together at times like the Grand Island hearing. The inner relationship does make it difficult.

I guess Nebraskans tend to be a trusting lot, almost to the point of seeming naive at times. I'd hate to get in a situation a few years down the road like the nuke dump. It doesn't do much good to wonder and question why people didn't come forward sooner. Or to be addressing things that might have been taken care earlier. Maybe people thought the Ogallala would protect Nebraska. Or that a more logical place would be the salt caverns of Louisiana. Since the feds found this to be a safe place to store fuel. At least its closer to the sea and tends to be our actual final dumping grounds. Our our remote location in proximity to the neighboring states. Whatever, hindsight seems unfair and expensive.

I feel that Nebraskans at large remain in a kind of state of bliss. To few realize or understand much about at all our water problems. We've been in a problemshed for quite a while. And they believe that since our water has usually been more than adequate in quanity and quality it will always be this way.

As Ever,

Greg Heiden

Greg Heiden

August 25, 1988

To: Dayle Williamson, Chairperson
Water Management Board, Water Management Study Board
Natural Resourses Commission, State of Nebraska
301 Centennial Mall South, 4th Floor
P. O. Box 94876
Lincoln, Nebraska 68509

From: Gregory L. Heiden
RR 2, Box 172
Bertrand, Nebraska 68927

Subj: Report on the Water and Water Rights Transfer Study

Ref: PERSPECTIVES ON WATER Uses and Abuses; by David H. Speidel, Lon C. Ruedisili, and Allen F. Agnew; Copyright 1988 by Oxford University Press, Inc; 200 Madison Avenue, New York, New York 10016; ISBN 0-19-504247-6, ISBN 0-19-504248-4 (pbk)

Encl: Pg (7B), North Platte Telegraph, July 9, 1988, North Platte, Nebraska
Pg (4), The Summit Sentinel, July 22, 1988, Frisco, Colorado

Dear Mr. Williamson,

I really can not believe that the study is complete or finished. At least as it is expressed in this report. Or that is should be used to compose initial and final legislation. I would find it difficult to work with, much less vote with, in good conscious.

But I will say that in some areas it is more thorough than I anticipated. Often it only brings up some of the points and issues. Sometimes they are omitted. Too often it does not address them nor offer any concrete solutions. It doesn't really help out or protect and individual or small person much. It does not do all it could to enable and encourage intrastate rights and transfers. It tends to only support and effect large, probably interstate, transfers. As I guess, it set out to do.

I'm not sure what all it needs, maybe some more time at least. I think more, different, diverse and comprehensive; facets, people, individuals, organizations, opinions, etc, must be mentioned and considered. I think we must report and study what we find, not just report on what we wish or try to find. If it was that good it would probably be getting much more media attention. Through out the process from conception to this point, people would be sharing and discussing their new discoveries, old and new ideas, etc. People and more people would be getting involved. Participants, those making the study, concerned people and the medias would all be interacting. We would have more press releases, the media would be delving and reporting. Everyone likes a solid, on going, and developing, happening and story. Not just a simple after the fact accounting. Things should flow, most unintentionally, to wherever they go.

Probably most important and incomplete are the economic impacts. And a few other points that seem to be done out of convenience rather than common sense.

But it certainly does provide a good example.

One of my bigger points of contention is the fifty year time period. This is by far too long. Five years would be nice, ten maybe more likely. Maybe we should look at five or ten year leases renewed at the most, twenty years in advance. They should be staggered when coming from within a close or small area. Or a large area if large quantities are involved. But this twenty to thirty time frame should be more than sufficient. The shorter time periods are critical for and to Nebraska for a number of reasons.

We have proved in this state, and in others, that it only takes thirty years, or less, to critically deplete an aquifer. And we do not know how, or how long it will take to replenish them for sure. And what will the final product be like? We only know that it takes thirty years to mine an aquifer that was established millions of years ago over a long period of time. And current works show that we are mining the whole Ogallala. All but the northern portions, about three percent of the entire state, immediately adjacent to South Dakota are being depleted faster than it can recharge. And this area has never been reknowned for an over abundance of water. So all and all, overall we can't be too overly optimistic.

Even in the area here, covered in Central's recharge zone, the last five years or so we have had wells decline. Water yields are down. Wells draw down, air is pumped and wells surge. Maybe Central's program that started about ten years ago to narrow and compact canals was too effective. Weather like this year's is not helping. So I would say without a doubt, it is impossible to predict water's status, our or mother nature's cause - effect relationship, one, five or ten years in advance, much less fifty.

Another major factor in the fifty year time period being too lengthy are mortage terms and periods. They usually are for twenty, twenty five or thirty years. Agriculture has just gone through a time period that tended to reduce time periods. It has to be a good, low risk property with a very stable, qualified, younger borrower to qualify for a thirty year period. Irrigated ground is not the only type that is directly valued, appraised, held and tied to the availability of water. It is taken into consideration for most real estate loans. Most financal and lending instutions or entities, within the entire state should or should be concerned about the aspects a possibilities contained here. It is probably unwise to tie up and/or limit the income potential of a piece of property for an extended period of time.

The physical life of a well and pump is generally considered to be around thirty years. Not that this is a real big deal, only about ten thousand dollars. One could probably figure on two being needed to coincide with a fifty year period. They are really just unpredictable, some last only around twenty years, a few less. While others go for fourty, maybe more if one is exceptionally lucky. There are just a lot of variables that come into play. Casing material and quality, geologic factors, water composition are but a few. And even if all of these work favorably something like sedimentation or a lighting strike can render a good well useless.

Then we have the natural recharging effects of nature. The meteorological and climatical conditions that are really totally unpredictable and unreliable. We don't do a one hundred percent job of predicting weather one day in advance, much less a week or month. And anything longer is like throwing ashes to the wind. Bring in the direction and predictions that the greenhouse effect is now leading our weather towards, I don't think anyone can make an accurate forecast one year in advance, much less fifty. And one making such a prediction would

probably have to lean towards a drier, with less favorable conditions for moisture and transfers.

Then there are the many concerns of water quality, especially in reguards to groundwater. We are just starting to learn about many of them. It has really only taken less than twenty for our major kinds of non-point contaminates to show up where showed any concern at all. Agricultural concerns are primarily nitrates and trizenes, along with a few other chemicals showing up from heribicides, insecticides and fertilizers. Some of the nitrate problems in both ground and surface waters are attributed to feedlot runoff. And we pick up some of the carbon complexes and a host of other things from urban disposal and runoff. But the agricultural ones have only recently made an appearance or showed up in higher concentrations. Many of them have only been applied recently or used at today's higher levels. I would define recently at around twenty years. Coinciding with the trend to larger feedlots and higher yields, requiring higher ammounts of nitrogen. Back in the days of natural and dry fertilizers, not that long ago, it was almost impossible to apply acute ammounts. Or they simply didn't exist yet.

We are faced with problems that have manifested much more quickly than fifty years. And we don't know how much worse it will get. We know that if we completely witheld today they are still going to rise, just through the leaching and recharging processes. So even with reduced use we are going to see gradual increases. And incidents such as hail and storms can take it out of anyone's hands. And again we have no idea how long it will take to reduce and correct it. And it is interesting to note that the state has recently identified an area of high nitrate groundwater that appears to be almost exactly within the bounds of the Tri-County Recharge Zone. And it encompasses a good portion of the zone.

The fifty year period may harmonize well with what the feds want or feel a reasonable time period is. But just because they feel it is what the payback period of a project should be is no reason for us to be tied to such a long commitment. There are many other possibilities. It is one of those situations where foresight is hard to foretell and hindsight could look back at calamity. What looks good on paper and sounds good on the phone does not really pan out well in the field in Nebraska.

Our recent experience with Kansas and the Blue River is a fairly appropriate example of time periods and situation. We went along for at least twenty years in a state of bliss thinking we were rich in water. There had never been a recent problem with current levels. But the problem popped right up suddenly only six months into a dry or drouth period. It didn't show up slowly or over a long period. Water levels drew down immediately.

We don't know if shutting some or how many Nebraska irrigators will have to ease up or shut down to correct the problem. We don't know how long it will take to recharge the draw down to get back to where we started from much less ahead. How would the involved people feel if all we could say is sorry? You have enjoyed twenty good years, and, it will be another thirty years before we can even start to rectify things. Pray for rain. Sometimes prayers don't put food on the table. Did we allow and register too many wells, transfer too much surface water and/or groundwater? No one has the power to try and out guess mother nature for one year let alone fifty.

Especially since the study wants to compenste out all of the negative effects, we should try to identify all or as many of these as possible. We need to have a good comparison of all the positive and negative aspects. We need to make cost/

benefit ratios, formulas, and the like, as realistic and meaningful as possible. We want to be able to affix as true a value to anything before it is represented and sold. Otherwise we will wind up short changing ourselves or wind up with a product that is unsalable and/or uneconomical. I imagine it will be tough to close a contract that is continually rising, but interest rates are allowed to fluctuate and be periodically readjusted. And if word ever gets out, this sounds like one of those deals that everyone is going to want to jump on the bandwagon with. The people who sell fuel, fertilizers, etc, will all claim lost or loss of income. Every eldery lady who has a petunia or tree expire will file a claim. And people who see a rise in their electric, water and/or sewage bills might attribute them to transfers, etc, etc. We'll find the better job done now will result in a better final product.

A good example of a major economic problem, not covered, is energy. Ten to fifteen years ago no one could have forecast today's energy costs and problems. If we could have we'd all be rich in many ways. How can one try to forecast or place any price on energy fifty years in advance? What will the actual final cost (s) really be?

We should look at the many changes that will occur. There are many angles to consider in the continued use and/or shuffle between ground and surface water. Around here many people would give up their REA powered electrical pumps, that are small booster pumps for surface water. The deep well units would probably be powered by natural gas or other fossil fuels. So funds would wind up in Loveland, Colorado with KNE rather than eventually in Columbus with the NPPD. This will effect a lot of people within the whole state as we'd most likely see higher electric rates.

On one quarter section alone of ours, we would be faced with a one hundred percent plus rise in energy and associated costs. Since the surface water system provides us irrigation water gravitationally. And something I value is that this provides very carefree water. I have no problems, service, maintenance, etc, of any pumps, motors, etc. Its hard to place a value on mother nature and universal law.

I was impressed that we are at least going to mention the, or an, inner relationship between ground and surface waters. We more or less, or not for long, can't have one without the other. If we remove a unit of groundwater we may well remove a unit of surface water. And visa versa as well. If one pumps a well too hard, one will require more surface water in the area to maintain the status quo for both.

In utilizing both surface and groundwater jobs are created. I probably would have to be partial to surface water since it directly creates jobs in and around this community. But state wide many jobs are created by them both. Sprinkler or center pivot systems are probably the biggest ticket items. But there are many dollars spent on such things as pipe, above and underground, gates, gated pipe, electrical components, engines, etc. But these don't really create many local jobs around here. And we do need jobs in the bigger cities also. Especially since we seem intent on moving more people off the farm. But everyone will feel the pinch, as cropping pratices and water even effect things in Lincoln and Omaha.

There is grain bought, sold, stored and traded in the metropolitan areas, as well as the small towns, as a direct result of water. Scoular handels a lot of extra grain, Nebraska Engineering manufactures many components out of Omaha alone. Square "D" from Lincoln, directly or indirectly, handels quite a few extra panels due to irrigation. I buy quite a bit of chemical yearly from Con Agra. Many of the pivots, plastic and aluminum pipe, accessories, etc, come right from Nebraska.

And this doesn't begin to hit all of the inputs effected such as fertilizer, seed, equipment, etc, that are impacted. These are large industries out state and throughout Nebraska. The switch from one form of water to the other is bad enough. A change from irrigated to dryland farming could be disastrous.

At least the feds in all their proper prior planing and with some foresight try to take care of such things, sometimes. In reguards to the CRP or ten year reserve they limited the ammount of ground elegible to twenty five percent of a county and state. So around seventy five percent of the income and economy is protected. Such measures and protection should be contained in this legislation. Through the turn of the dollar, in reguards to the status of all the facets, this becomes most important to us all. Especially with new ideas and concepts like these we should be cautious. We are working with a lot of theroy, quite a few unknowns and little proven fact. An ounce of prudence and heed could be worth far more than a pound of cure condeming foresight when hindsight somes into play. No more than twenty five percent of ground, surface, or combination of water should be transfered out of a county.

I imagine that the near eighty percent of Nebraskans that voiced an opposition opinion to the Two Forks project might also be opposed to transfers, especially out of state transfers. Most people probably did not, and still don't, realize that Two Forks could be a primary facility. And the net effect will be the same here with both. An acre foot of water that costs in the neighborhood of twenty five dollars to obtain, is easily worth hundreds of dollars to Nebraska's economy by the ripple effects and roll. This must be recoginized. And should be used in any attempt to value or set a price on water. It wouldn't surprise me at all if out of state interests would just be satisified seeing Nebraska's waters used to appease wildlife's interests. They probably feel that this would be some of the least expensive routes to go, especially with today's agricultural situation. They might then be free to sell water anywhere in the western United States simply by not using means of conveyances. Water that they already own. Water that might even help the feds out. Water that already is in place. Water that could be competing with ours. Nebraska could easily be left holding the bag. It might behoove us all to give a priority to or, to use water here in Nebraska first.

Maybe some things like contacting the Public Service Commission should be done. I see the distinct possibility for windfalls to occur. We should be looking at substaining, reducing or controling such areas energy. Much more work should be done in a lot of areas. We should make sure we don't price ourselves out of the water bussiness. Hook up, tap, use/non use fees, and the like, should be examined. Maybe all it will take is a special class for extension of existing services or a new one.

We need concrete solutions in many areas. Not just opinions, generalizations, and statements. We need such black and white things as the water right, ground or surface, being retained by the property of orgin or initial destination. A piece of real property, tangible, and an asset to it.

This piece of legislation could easily help out an individual if worked with some more. Maybe we need some change in the terms and/or wording of contracts to deliver and receive water. Maybe the phrase "when available" could be modified to also include "when needed or necessary." We also need to work with the procedures involving charging for water that isn't taken or delivered. Especially if there is a secondary need or beneficial use. Right now this kind of leads to involuntary and possibly unethical transfers. This should promote better use and conservation of water. Individuals should be able to hold, delay, carry over, and use at a later date, their water if necessary. This would only promote conservation and could lead

to more "salvaged" water.

There are probably as many poor reasons for irrigating as good ones. It is not really to anyone's benefit, usually, to irrigate through or immediately after a rain of one inch or more. In fact it can hurt one by leaching fertilizers and/or chemicals past the root zone. This takes it towards the aquifer or out the end of the field. We start into the relm of water quality issues. We might have a cool, damp, wet, and/or delayed spring and maybe planting. This could make very extensive irrigating unnecessary, especially with later timely rains.

This could eventually lead to a fairly large block or group of "temporarily available" water. It might be used for any of a number of things, including minimum and/or scouring flows. But one must protect himself and others. And keeping on schedule, the reservoir may run dry, I've got to pay for it anyway, there is no way to catch up, etc, are all poor reasons for not using water to its fullest or most potential. I am still at least intrigued by the concept of "water upon demand." But it will take better management, more effort, etc, to put water to its fullest potential rather than convenience.

To facilitate this an individual must be given more freedom and latitudes. He should be able to use, move, temporarily transfer, lease, purchase, etc, water where it does him the most good. It might only be a week, weekly, monthly, annual, biannual, etc, need. But it should enable him to better conserve and manage both surface and groundwater. The time period might involve only two years, maybe one, possibly three. It might be tied to the length of lease or rental agreements. It might only be to wait out service or repairs. It might only be to aid entering into and compliance with USDA programs. It might involve a distance of a mile or less. But it could easily be six to ten miles within a district or canal system. It could be greater still if more than one canal or district are used. And how is the distance measured? Is it from property to property, headgate or well to property, place of storage to use or actual use, etc?

And I believe that we have been focusing or assuming we are only trying to transfer water in place or location. But we must also realize that we are also transfering water in time. It should be noted that this has been praticed in the past, and assume it is beneficial, and probably will occur more in the future. In theroy it is possible to transfer water anywhere in the continental United States west of the Appalachian Divide with relative ease. Who knows, by utilizing the Great Lakes we can probably get it to the east coast too. So if my water can be transfered to Arizona or California, I can surely transfer it to another district or to myself.

Draft Legislative Bill REQ. 0026; This little bit should be immediately abandoned. Right off the bat it violates the role the State said they were going to maintain as a facilitator only. It jepordizes the "guardian," "trustee," and "grantor" status the State maintains, and the spirit in which LB 146 was carried out in. This compromises the study in that it changes the whole perspective.

Let us just quit beating around the bush and be honest, upfront, and open. There is just one Nebraska project that is viable and can really effect transfers. And that of course is Plum Creek Reservoir. There may be four or five other projects in the books somewhere, but they deal primarily with flood control, maintenance, local in scope, etc. They aren't of real interest to the Water Management Study Board. They don't really aid in the transfer of water, protect endangered species, minimum stream flows, etc.

I think we have some pretty good examples of what happens, or could happen, when a few try to run a river or the water. Things might come about that could really be unfair, unappropriate, unjust, etc. The further away from politics water transfers are the better off we will be. The political processes often deal with compromises, trade offs, and the like, that can't really be fully equalized. Our country grew out of and because of a capitalistic society functioning within a democratic government. Our society has recoginized the need and obligation to support government. And tries to work towards a fair and just means. The state becoming involved with the physical transfer of water undermines this. This leads us towards government supporting itself. And I find this rather socialistic. And leads us away from democratic lines to ones of an oligarchy with maybe some shades of tyranny.

Plum Creek Reservoir (s) are and have been in the plans and master plan of a responsible division of the State of Nebraska for over fifty years. It is run by an elected board of directors and very capable staff. That is not overly politically inclined. They are proven and more than qualified to carry out and run this project. It could benefit them by enabeling them to conserve, save and possibly salvage water. It could benefit all most likely by helping to use "excess" water that might come in. Probably from the South Platte during heavy rains. It probably could help lessen some of the low land flooding that occasionally occurs in the Brady and Maxwell areas, others too, that they seem to get blamed for. At least the time lag between Lake Mc Conaughy, Johnson Lake, Elwood Reservoir and/or the users could be honed. And it will require a great deal of coodination and management between these points. If nothing else they will be aided in their expanding roll they play with wildlife.

There appears to me that there is probably a fair ammount of room involved with Plum Creek Reservoir. It might even be increased by about ten thousand acre feet by building the actual dam downstream, in a narrower location, envisioned in the original location. There is probably enough room for the Landmark Project, a little room for Central, some for wildlife and maybe some even for Prarrie Bend. And if I'm going to store water in my backyard, I'd just as soon be storing some of my own rather than having it someplace else. And it should be obvious to anyone by now that the states and feds have axcess to most any water they want with a little paper shuffleing. I can only see a desire and not a real reason or need for the Water Management Board to construct.

It really only facilitates making government unnecessairly larger. And I thought that the state was looking to consolidate, make things smaller, and more efficient. At least that is what I assumed was happening with efforts to combine the smaller units into one department. From Washington I've heard claims that the federal levels have grown smaller and we are experiencing less government. If this is fact it is no justification to increase state levels. At first I thought the state consolidation could only be good. But now I see many reasons that the present diversified system holds that are very good. There is a weak process of checks and balances that tends to keep people on their toes. And it seems to be very beneficial to us all to get more, and more diverse opinions, input, etc. The varying perspectives are refreshing at least, and a little reassuring.

The state probably should be active and involved though. There does need to be some control, organization, definition, etc. But it can be proven, rather conclusively, that individuals and/or the private sector is often much more efficient than governments. It could lead to some healthy competition for everyone involved. The closer we keep things to bussiness and economic terms and away from political and bureaucratical channels the better off we will be. We will acheive a

truer fair market value. It won't just serve as a political inducement or tool. I think the state's position as a protector, guardian, trustee roll is compromised enough as agent, developer, facilator.

It kind of gets down to consistency. I think even the feds are starting to realize this. Here they are out on all the small farm sized projects requiring a 401 or 404 permit regulating. And I guess that they're trying to work with people to some degree. But even an individual must gaurantee water quality in the end. So its good to see that we're starting to handel this as a matter of mutual concern. As I've said before it deals with all consumptive water users. And it involves people who are nonconsumptive users also. Even people who just recreate or rely upon some of the hydro electric generation, etc, are touched.

In the Denver Post Woody Paige hit the nail on the head a couple of months ago. In reguards to Denver's new convention center and airport he said that Denver didn't really need either. But what Denver actually needed was jobs. And with the plans for Two Forks and some of their highway work, all I see are projects to pour a lot of concrete. A couple of weeks ago a prominent Denver financialist said that Denver had enough water, enough schools. The airport is probably the only one that comes close to creating any permanent jobs. These types of things generate jobs in the inital and construction phases. But then employment drops off to near nothing upon completion. It doesn't take much help to run and maintain these. The super collider/accelerator would probably do more than all of these put together. Concrete does not really create a strong economy. But, economies are strong that have a good demand for concrete.

It may be that Two Forks is the best solution, as far as Nebraska is concerned, to water problems that could exist. It has been promoted here as bringing west slope water across the continental divide to the front range. But people on the west slope are being told that their reservoir levels will remain higher and more stable. They are even starting to plan some waterfront development there. True, they too can probably save some water with better controls. But from where and at who's expense is the water really going to come from? I believe we are in another one of those contridictory positions where someone may be talking differently out of both sides of one's face. It just can't be both ways.

The Denver Water Board never has had a reputation that I've held in high reguard. I don't feel its really the kind of organization I care to deal with or through. And if I were, I'd want to be on real solid ground. The harder the better. They have already told us, right or wrong, they intend to reduce flows to the lower limits of the 1923 compact. And once they have the means I'm sure they will. They won't want to pay for any drop they don't have to. They aren't very concerned about Nebraska, its wildlife needs or anyone else. At least it appears no more than they have to or are compelled to. If Nebraska has to throw in an unfair ammount from our ammount of water for wildlife, it is only more for them. Look at what Colorado has done to the Arkansas River. So much water is diverted upstream that the river bed itself is farmed in parts of Kansas. And this only shifts more pressure to the Platte and Nebraska. Partially due to the abuses of other waters Nebraska is paying the price. Places like Boulder and Colorado Springs should also be interested in seeing an adequate ammount of water in the Platte. And I assume this is possible via transfers, purchasing and working with Denver alone, or even ourselves. It is possible for anyone to aid in the cause and do their part. I'd bet that if we get a year with above normal snow pack we'll never see any of the surplus. The natural scouring flows will be gone. People might have looked at a depressed agricultural value and thought it might work. One little dry spell kind of changed things, and we went into it prepared. But in the end Nebraska could

easily just get stiffed and left in the dark. I think they have demonstrated that they will take care of their own first. Maybe what Nebraska should do is to rent or lease some of Two Forks' capacity. We could pay associated costs, and handel and conduct our own bussiness. I can see the state getting involved with something like this. Some Nebraska water is already stored out of state. We could always send the water home if need be.

Trans divide aqueducts exist and probably can be added to any project. So I would think that automaticly any water used upstream really should reflect the higher west slope values to individuals. I'm sure the Denver Water Board realizes this since they seem to want to act as some kind of a water broker. But it should carry a higher value reguardless of use, even if for minimum stream flows or wildlife here. That is one reason it is most unfair for Nebraska or any Nebraska division to contribute an unproportionant ammount of water for wildlife alone. It really only drives down the value of our product. Right off the bat there is less water available to Nebraskans and/or eligible for transfer. And I don't think we are the straw that broke the camel's back. But Two Forks may be the best project as far as we're concerned. If water is going to be transfered, it probably behooves all concerned to get it into the highest or best market area available. The east probably got hit harder by the drought than we did. Most of the rivers and streams are experiencing situations like the Blue's. Even with returns to normal rainfall they are predicting it will take over a year for them to recover. And if it continues, with the east's higher population densities, water could well be worth more there.

I guess I'm skeptical of national economic development or economic manipulation. Are we really developing anything? Is it only some process for redistributing the wealth? And at who's expense? Are we only robbing Peter to pay Paul? Are economies actually stimulated or did they only receive a brief and temporary influx? Might we not be better off in the long run to let economies find their own natural or substaining levels? When we look at three to five years construction time with a moderate stimulus, isn't fifty years too long a period to foresee? Especially when foundation financing may be of a rather weak basis. And actual future demand questionable. It doesn't really matter what the trade offs are, a dam here for a road there, throw in a school, another dam, highway, maybe a runway and through all this construction we may not have solved or built anything really permanent. I think we need to be flexible.

Another way is evident that we are getting two different stories. The logic is simple and flowing. If Deer Creek is only going to remove about one percent of flow from the Platte, Two Forks is good for two to three percent, especially with all the west slope water moving east. Therefore there is plenty of water left in the river for all concerned. Therefore wildlife is not threatened. Therefore it should be no problem at all for Central to have their license reissued under previous conditions. At most all they should have to do is buy a quarter section of alkali ground somewhere and clear it. And if this was the case, I know I wouldn't have much trouble finding volunteers to purchase it and clear it.

The varying interpretations of the flows for Deer Creek alone is reason for concern. The difference between one percent and ten is a great deal. Its a pretty good margin for error. Half of this would probably be too much room. This is not just around a nine percent difference. It is nearly a one hundred percent difference in the flows worked with. And it is even more significant when looked at in the light that its been said that nearly seventy percent of the Platte's historic flow may already be diverted, leaving only thirty percent to play with. If this water and resource is so valuable it certainly should be worth protecting. And we should

all probably be as objective as possible. Its encouraging to see we're getting some representation and we are willing to take a firmer stand. It should well be worth appropriating some public funds for. Especially when the money is there and it really doesn't have to be committed to be spent. But we should show we are serious and have all options open. The flows should be paramount since they will probably set the parameters in which and by which the river is run. Evidently the feds haven't done their own work and are relying on these. I'd hate to see everyone scrambeling and saying we all agreed to this. They might even provide a defense and used to hold or claim water. We here in Nebraska should know that the best offense is a good defense.

There also probably need not be any filings, no objections. If there are every consumptive water user, every storage facility, every old project, every new project up and down the line should be treated accordingly. I think its a little discriminatory to single one out.

And along the same lines why isn't the state looking at all resources? They could consider all natural, renewable, and/or man made, oil, timber, hay, coal, gas, uranium, portland, prarries, people, bluegrass, gravel, asphalt, etc. Speaking of gravel, what is it going to cost individuals, contractors, counties and the state in the future? It could get expensive if one organization controls a large portion south of the river and another north.

And what about the cost of more encroachment over the long run? It appears to be in a delicate balance now. It supports populations of deer, turkey, beaver, duck, quail, etc. And yet seems to be suitable or at least tolerable for cranes and other waterfoul. There are a lot of miles of river channel out there to protect. Will Game and Parks do it for habitat? Roads do it to protect bridges? Or NRDs do it to maintain adequate drainage? Over the long haul this could be one of the largest expenses. And Nebraska taxpayers could wind up footing the bill. No one else is readily volunteering to pitch in. Nebraska proposals do make quite a commitment. In fact Nebraska must commit quite a bit in theirs. They tie up a good portion of storage for wildlife and the water itself. Is Nebraska really only mitigating out a lot of the environmental damage for other projects? And at who's expense? I'd say they all can get water through the critical areas for critical reasons.

It would be hard for anyone who knows much about the Platte at all to deny that Colorado might be entitled to about as much water that could be squeezed behind the Narrows project. This wouldn't really take care of Two Forks. But it could fill it, especially if little water was released downstream. We should probably realize that water uses and concepts have changed over the years. Evidently someone sees that things have changed. And I don't think that plans are keeping abreast with actual conditions. Maybe its just the long time periods involved. Two Forks was conceived with two 69,000 KV hydro electric generators. Later this was scaled down to two 40,000 KV generators. The last drawing I saw had no hydros at all, only a simple valve box. And I'm not sure of it's size. It might only be capable of releasing enough water for Denver's needs. And the water also was being taken from the bottom of the structure. The dead pool, that provides minimum water for wildlife, recreation, and a higher head for more efficient electrical generation, etc, was not shown. In this state we found out in a hurry that aquatic life seems to do much better with water coming from the upper levels of a reservoir. The Rocky Mountain News called the whole Two Forks thing corrupt. They are dealing with cooler water and climatical temperatures than we do already. And from what I understand about temperatures and disolved oxygen this holds true in most cases. The capabilities of hydro electric generation would tend to indicate a substantial and substained, fairly steady release of water downstream.

I used to find it rather amazing to think of the cycle of water in the Platte. And to know that there is still more potential there. A snow flake falling in Colorado could provide many kinds of recreation there. Then generate a kilowatt of electricity in Colorado. It then could head downstream well into Nebraska nurturing the river along the way. The same drop might then generate electricity at least twice in Nebraska, tend to flows through the critical habitat area, be used to irrigate crops, return and make it to the mouth. It might even perform more functions along the way. It might disappear into the river bed, get pumped and return a number of times. The possibilities are almost endless.

With recent recognition of such matters as holes in the ozone, nuclear waste, the greenhouse effect, etc, I would think the more hydro capabilities we have the better. But even this year, with fairly good reserves, the NPPD decided not to use some of their capacities due to reduced flows. And it doesn't appear it will get better. In fact it would have been nice if someone in the know would have told us that the early summer low flows are what were headed for, low, slow, and continual. A glimpse of what the future holds. The normal beneficial ups and downs gone, replaced with a static, monotonous minimum flow. As even now the channels seem to be reflecting a stronger than usual green cast and tinge as the grasses start to grow. Not that this tint is an unusual phenomenon for this time of the year. I would think that the people in Lincoln, Dawson, etc, counties would have a fairly good and sufficient voice in the way the river is run through the NPPD already. After all they deliver a lot of water also, to many people. I don't care to actively be involved in their bussiness. And I don't care to go to other NRDs, etc, and tell them how to run their lakes. And I doubt if the Denver Water Board will appoint me as their Nebraska liaison or representative.

Hopefully by now many and all key people have read the reference. It looks like it may have served as the basis for the study and probably LB 146. At least it probably was where the term "facilitate" was coined from, since it was mentioned about a dozen times. Its not really complimentary of our track record with water. And is especially critical of the feds past preformance. But it manages to touch upon most all aspects of water especially uses, location, quality, quanity, concepts, etc.

The forementioned reference also has another aspect. Throughout the book there were quite a few instances where farmers, landowners and irrigators were mentioned to possibly sell and/or transfer water. Not once was there a mention or even a hint of any governmental body or agency doing the same directly. It only called for governments to aid in the social change necessary, educate, and to open the legal channels. Never once was it implied that any governmental arm should be physically involved. I'd say the experts more than assumed that politics should be avoided.

And I'm not sure compensate is a good term or way in all instances. It sure does help though. Private enterprise is what our country functions best by. As in any good bussiness situation one must be given the opportunity to recoup his investment in a reasonable time period and possibly show a profit. And to do this one must realize all expenses incurred. Even the feds try to stay as uninvolved as possible, usually, by contracting, the civil service, etc. And this should immediately show up as income and provide revenue, as I'm sure the feds and the state will tax it. But I find the concept of compensation a little vague. I guess sometime I'd like the idea of adequate environmental compensation explained to me. Not that I am adamantly opposed to it, I don't fully comprehend it. I assume compensation is some form of making things right or fair with all involved. So it has to be more than ends justifying the means. Right now I probably have at least

have argument for claiming that the water I use is secondary water and not from the main stream itself. Mainstream water must be primary and carry primary responsibility. So by using water from tributaries I am relieved or shirk some obligation. And we could keep going in circles. And everyone can keep playing Robinhood trying to pay the piper or keep him paid.

Limiting transfers to ammounts of 60,000 acre feet doesn't provide much protection. As the actual numbers of transfers becomes more important. And keeping them in larger blocks for extended time periods limits and/or curtails the market (s). It tends to exclude uses, locations, etc, and probably tends to hold values down. It doesn't make for a free market. We might see situations where we determine that large, short scouring flows are needed and beneficial every other or fifth year. So shorter time frames and smaller ammounts might open up more possibilities, uses, etc. A truer and current market, and, fair market value might be determined. And if a true need and demand is there, the water should wind up there in an actual competative situation anyway. It might be five years, it could well be fifty, or it could go on for five hundred.

I remain very skeptical about the whole thing. I think I'm probably still ahead if no changes are made period. And Nebraska probably the same also. I can't say its such a good deal. If Nebraska, Colorado and Wyoming all build dams is Nebraska going to have enough water to put behind it? Is our's just some grandiose scheme to offset their's? If more water is diverted upstream and we transfer more, where will it come from?

I only have to consider the situation of my own domestic well, from where I drink. I have a growing nitrate problem myself. A neighbor's was bad enough he was loosing calves. And not far from us a pig operation was loosing baby pigs. It looks like were trying to take care of the bigger cities. The recharge points of the smaller Prarrie Bend project are in relation to Grand Island similarly as ones I've seen proposed for the Hastings area. And some people think Adams county shouldn't be represented on the Central board. But what happens to the small towns and individuals? Are we sacrificing or tying up this state's best source of potable water for the future?

When my well went down around 1975 it tested in the twos for nitrates. We last had it checked four years ago and it tested 8.3 PPM. I guess I'd be afraid to have it checked today. And the surface water we have now could be the only reasonable solution in the future. So I couldn't, in good conscious, just transfer off our surface water without reservations. Hopefully domestic water does recieve some kind of priority. And any other water right issued after the big four federal acts should probably be recognized as totally junior. The acts are after the fact to most rights, but new ones have to fall directly under their regulation. They also kind of draw the line on some of the share concepts.

And I have to be a little doubtful just in the cost involved in switching from surface to groundwater and/or salvaging. Here it would cost a minimum of ten thousand dollars a quarter section. And it could cost more if underground pipe, sprinklers, etc, are needed. It could go fifty to sixty thousand dollars without batting an eye, if energy sources aren't near, etc. I would have to proceed with caution.

All resources should be conserved, natural or otherwise. They are not merely trading stock or something to be exploited and/or squandered. With game, water, forests, soil, and a host of others we have recognized a substainable level and try to harvest them accordingly. We already have such things as seasons and water control areas. We don't want to wind up like other parts of the country. We want to nuture them and use them only at the level they may replenish themselves at. We

don't want to see years of conservation work and trends go down the drain.

Some areas seem to be handeled well. But I think we need to find and recoginize all of the angles, avenues, possibilities, impacts, consequences, etc. Simple things such as effects on the tourism and recreational areas should be considered. To more obscure subjects such as pumps, right on down the line, made here in Nebraska. We need to know that there are choices and what they are. The more information and input we have to work with the better our final decisions and out come will be. Overall I find the study a little to shallow, hollow and superficial.

Respectfully Submitted,

Gregory L. Heiden

Gregory L. Heiden

GLH:gh

pc: R. Michael Jess, Dir DWR
William E. Barrett, Sen Dist 39
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CENTRAL
Nebraska Public Power
and Irrigation District

September 1, 1988

Dayle E. Williamson
Director of Natural Resources
Nebraska Natural Resources Commission
301 Centennial Mall South
P.O. Box 94876
Lincoln, NE 68509

Re: Report on the Water and Water Rights
Transfer Study - Review Draft

Dear Dayle:

The reference study is an effort toward making recommendations for a complex issue and has extremely important future implications. The Water Management Board and the NRC are to be commended for considering the topics. Due to the broad application and implications of this endeavor, however it is suggested that neither the time nor expertise has been utilized in attempting to accomplish the objectives of the study. Realizing that there are time limitations provided by legislation to such a study, completing a report over such broad and encompassing issues should be done with extreme care and deliberation or the study should be limited to fewer issues.

A new philosophy offered by the Water Management Board on use of water in Nebraska, as we view it, broadens the possibilities of use while at the same time creates new road blocks that practically guarantee it won't be used. This new philosophy is being sold on the premise that other states will be taking Nebraska's water as the United States Supreme Court has declared water

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to be an article of commerce, and the road blocks alluded to above will make such out-of-state use extremely difficult and, should another state succeed, it would pay taxes to Nebraska. Making all of this constitutional requires that all Nebraska Water users operate under these same onerous laws.

With some direct reference to the report itself we wish to provide the following comments:

1. Generally speaking the report raises many questions and appears to be inconsistent and difficult to follow. This is understandable due to the complexity of the subject.

2. Under glossary of terms we take issue with Items 3, 8 and 11.

(a) Consumptive Use - This is contrary to the normally accepted definition. Why not use another term to represent the definition given?

(b) Salvaged Water - A whole separate report could be written on the subject. This definition would encourage the reduction of return flows and essentially hamper or eliminate existing projects downstream. Please refer to the report itself on the bottom of page 5-1 - the definition appears to be contrary to the purpose of the report.

(c) Water Transfer - Here the definition combines groundwater, groundwater recharge, diversion and storage into one category. It adds difficulty in the process of tracing the scope of the report.

3. Public Involvement - Until now the public has had very little substantive material with which to become involved and therefore very little input.

4. "Study Scope and Procedure" Page 1-4 - Under this topic the first item is on "surface water and groundwater and integrated them as much as possible" and it appears that this topic was disregardad. (See other items relating to Chapter 5.)

5. Chapter 2, Under Funding and Authorities - It is of sincere concern that another fund developed from whatever source would be expended with very little economic return to the State of Nebraska.

6. Chapter 3, Table 3-2 - It appears that flows shown for the South Platte at North Platte are misleading and do not include South Platte water diversion at Korty. Also, the period of record is not given but assumed to begin in 1941.

7. Chapter 3 - "Salvaged Water" - The inference is given that reduction of seepage by 20 to 25 percent of the original diversion "would be readily available for use" This is a misconception since most of this water returns to the source and is reused downstream for existing projects and provides other instream uses.

8. Chapter 3 - Table 3-3 and Table 3-6 - There appear to be inconsistencies - Refer to irrigation water, 2,890,500 acre feet vs. 2,1[illegible] acre feet.

9. Chapter 4 - There are several portions of this ch[illegible] difficult to follow, eg. page 4-2 "Removal from st[illegible] diminishes total flow"...How does this diff[illegible]

10. Chapter 4 - Table 4-1 - North Platte river under FISH includes "Trout potential with some better flows". This is the only area that "potential" is addressed and therefore is inconsistent with other parts of the table. Therefore it should be removed.

Central Platte from North Platte to Grand Island should add under UNIQUE HABITAT the following: (a) J1 and J2 power returns because of the large concentration of bald eagle that use the area each winter; (b) CNPP&ID Supply Canal, Regulating Reservoirs and Canyon Lakes because of their significant contribution to game and non-game species.

11. Chapter 5 - Page 1 states that "The Board decided that new policies on transfers of water and water rights should acknowledge the relationship between surface water and groundwater." However, page 5-5 and subsequent legislation allowing for transfer of salvaged water is contrary to the stated acknowledgement. CNPP&ID depends on the return flows from the North Platte Project and the Platte River Big Bend area depends on the return flows from CNPP&ID. To allow for the marketing of "salvaged" water ignores the important relationship between surface water and groundwater.

12. Chapter 5 - Page 5-6 - Regarding funding, page 5-6 is confusing, however it states that "The Board considered this action (collecting fees from existing water users) to be beyond the scope of Legislative Bill 146, so proposed legislation for such action was not prepared". Nevertheless Draft Bill 0024 goes on to charge fees for existing water users.

13. Chapter 5 - Funding - Funding for the Board will come from municipal water users ($8.00 per year per meter) and through taxing generators of electric energy.

Central District with four hydroelectric plants would pay $4,492,420.00 per year based on average water usage (1985-87). This "fee" is $1.00 per acre foot used in each plant annually. Loup Power District, with two hydro plants, annually averaged 1.9 million acre feet of water through them, and at $1.00 per acre foot, their "fee" will be 3.8 million dollars. The two largest producers of hydropower in Nebraska will, under the proposed WMB laws, pay over $8,000,000 each year to the Water Management Board.

Taxing of water used in production of electric energy will remove some of the edge Nebraska now enjoys in economic development because of this state's low electric rates.

In our review of the Report on the Water and Water Rights Transfer Study and related legislative bills, the term "annual use fee" quickly raises constitutional eyebrows because of Article VIII, Section 11, of the Constitution of Nebraska.

This constitutional provision, together with its implementing legislation, authorizes a public corporation, such as Central District which is organized primarily to provide electricity or irrigation, to make certain in lieu of tax payments to governmental subdivisions. A portion of this constitutional provision reads as follows: "The payments in lieu of tax as made in 1957, together with any payments made as authorized in this Section

shall be in lieu of all other taxes (emphasis added), payments in lieu of taxes, franchise payments, occupation and excise taxes, but shall not be in lieu of motor vehicle licenses and wheel taxes, permit fees, gasoline tax and other such excise taxes or general sales taxes levied against the public generally.

As the drafters of the report and proposed legislation know, the initial legal determination to be made is whether the "annual water fee" is intended to be a tax. After that, the question becomes can this fee avoid being a tax. The third and final determination is perhaps the easiest, because the six taxes or fees exempt from the constitutional provision are all levied against the public generally. As written, of course, the "annual water fee" would not be levied against the public generally.

In conclusion, Central District appreciates the opportunity to present some of its view and concerns, and also expresses the willingness to work with the Commission and Water Management Board on the various issues involving water and water right transfers.

Sincerely,

Frank J. Dragoun, P.E.
General Manager

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Appendix 3.

SOCIAL AND ENVIRONMENTAL IMPACTS AND IMPEDIMENTS

Section 1. ENVIRONMENTAL IMPACTS

A. Features to Collect Water

1. Well fields, including Infiltration Galleries

- Alteration of groundwater levels
- Reduction of streamflow and backwater areas
- Reduction of lake level if connected to water table
- Alteration of physical and chemical parameters in streams, e.g. temperature and dissolved oxygen
- Effects not always localized
- Timing of pumping (daily and seasonally) can be an important factor
- Water quality impact possible, e.g. if water available for dilution is reduced
- Fish and wildlife impacts are species dependent; the biotic community needs to be identified before impacts can be determined
- Water quality impacts resulting from mixing of water from different aquifers can occur
- Indirect impact on extent and quality of recreation use

The City of Lincoln well field along the Platte River near Ashland is an example of a well field installed for municipal water supply. The Foxley center pivot development near Bartlett is an example of a large number of high capacity wells installed in an area for agricultural water supply.

2. Diversion from Stream, Lake, Marsh or Reservoir

- Can block movement of migrating fauna
- Alteration of water flow or water levels
- Alteration of retention time in lakes and reservoirs
- Water quality impacts relating to physical and chemical parameters and to dilution
- Alteration of channel morphology
- Alteration of riparian vegetation
- Effects on fish and wildlife, including benthic flora and fauna
- Effects on groundwater recharge and quality
- Potential change of a "gaining" to a "losing" stream

The Loup Public Power District diversion dam near Genoa diverts the Loup River into the Loup Power Canal in order to produce hydroelectric power. Large and small diversion dams in central and western Nebraska and numerous pumps on streams throughout the state are used to divert streamflow for agricultural use.

B. Features to Convey Water

1. Pipelines

- Construction impacts, possibly long-term in fragile environments
- Can act as a low-head dam, and therefore a barrier, at stream crossings
- Potential leakage and seepage

2. Canal (lined and unlined)

- Can support a seasonal or permanent aquatic community relative to flow regime

- Potential for groundwater mounding and creation of wetlands due to seepage

- Barriers to deer and other terrestrial wildlife

- Established right-of-way, therefore potential for terrestrial habitat development and management

- Potential water quality impacts depending upon water quality of source

3. Natural Channel (Instream)

   - Alteration of flow regime

   - Alteration of stream channel morphology

   - Alteration of water quality in stream

   - Other impacts similar to diversion from stream

Pipelines are used by cities and rural water districts to convey water for municipal and domestic purposes. Lined canals, such as the Ainsworth Canal, and unlined, such as the Western Canal, are generally used to convey irrigation water. Portions of the Frenchman Creek channel and the Republican River channel are used to convey stored irrigation water to downstream irrigation project lands.

C. Features to Store Water

1. Reservoir

   - Creation of new aquatic (lentic) habitat

   - Loss of existing stream habitat

   - Loss of existing terrestrial habitat

   - Potential for recharge and rising groundwater levels

   - Potential change in groundwater flow pattern

   - Barrier to fish movement upstream

   - Some loss of water via evaporation

2. Aquifer

   - Alteration of groundwater levels, groundwater mounding potential

   - Possible effect on streamflows

3. Lakes and Marshes

   - Alteration of water levels and surface areas

   - Some loss of water via evaporation

   - Potential for increased flow in outlet

4. Streams/Canals

   - Alteration of flow and water levels

   - Some loss of water via evaporation

5. Tank

   - Negligible environmental impacts

Reservoirs are used throughout Nebraska to store water for various purposes. They range in size from Lake McConaughy, which was constructed to store water primarily for irrigation and hydropower production purposes, to numerous farm ponds of an acre or less in size that store water for livestock and fish and wildlife purposes.

Aquifers, whether confined or unconfined, are the natural "storehouses" for most of Nebraska's water supply. In several areas of Nebraska, the aquifers have been augmented by water development projects. For example, groundwater mounding has resulted in the Tri-County Project area, the Farwell Project area, and near Sutherland Reservoir.

Natural lakes and marshes have not historically been used to store water but their levels have been augmented by groundwater pumping to make them more suitable as fish and wildlife habitat. Examples include Goose Lake in Holt County and several of the rainwater basins in the south-central part of the state.

Although streams and canals basically convey water, they also store water to some extent. The total volume of water in a stream or canal can be considerable, e.g. the Missouri River or the Tri-County Canal.

Tanks are generally used to store limited amounts of water by municipalities and rural water districts.

D. Features to Utilize Water

1.a. Hydropower

   - Basically a nonconsumptive use

- Can affect water quality, e.g. temperature and dissolved oxygen

- Water level fluctuations if storage is involved

- See diversion from stream for other impacts

1.b. Thermopower

- A consumptive use of water

- Effect upon water temperature and dissolved oxygen

- Microclimatic changes due to evaporative cooling

- Chemicals such as Chlorine used for cleaning can affect water quality

- Potential for impingement and/or entrainment of larval fish

2. Irrigation

- A highly consumptive use of water

- Associated change in land use and/or cropping patterns

- Water quality impacts due to agricultural chemicals

- Topographical changes due to leveling and shaping of land to be irrigated

- Groundwater recharge

- Potential water quality impacts to aquifer

- Change in crop diversity

- Potential for eventual abandonment of land due to salinization, excess seepage, or economics

- Other agricultural enterprises such as feedlots and aquaculture can be associated

- Water quantity and quality impacts

- Potential disease transfer to native fish and wildlife populations

3. Municipal

- A consumptive use but lower than irrigation (about 33% to 67%)

- Water quality impacts relating to chemicals and B.O.D. (Biochemical Oxygen Demand)

4. Industrial

- Similar to municipal but differs according to specific industry

- Thermal effects along with chemical effects to water quality

5. Recreation

- Non-consumptive use of water

- Little or no impact on water quality

- Generally limited impact on fish and wildlife populations

6. Instream

- Fish and wildlife habitat

- Riparian vegetation

- Ecosystem integrity

- See diversion from stream for other impacts

The utilization of water to produce electricity occurs at a few hydropower plants in Nebraska. These include the NPPD plants at Kingsley Dam and Spencer Dam on the North Platte and Niobrara Rivers respectively, the Johnson #1 and #2 plants on the Tri-County Supply Canal, the Loup Public Power District plant on the Loup Power Canal, and the City of Spalding plant on the Cedar River

Thermoelectric power plants in Nebraska have generating capacities of up to 600 megawatts. These plants include the Gerald Gentleman Plant near Sutherland (coal-fired) and the nuclear power plants near Fort Calhoun and Brownville. Over seven million acres in Nebraska are irrigated with groundwater or surface water. Most of this irrigated land has been developed by individual owners or operators but several irrigation districts that utilize surface water (natural flow and/or stored water) have been established in the central and western parts of the state

Nearly all municipalities in Nebraska use groundwater as their sole source of municipal supply. Omaha diverts water from the Missouri River and Crawford diverts from the White River for part or all of their supplies. Crofton and St. Helena receive their supplies from the Missouri River through the Cedar-Knox Rural Water Project.

Many industries in Nebraska are connected to municipal water systems but some have wells of their own.

The surface waters of Nebraska are greatly used for recreation. Several streams in western and northern Nebraska, for example, Ninemile Creek, the White River, and Long Pine Creek, support a coldwater fishery (trout) while most other perennial streams support warmwater species such as channel catfish and carp. Use of several streams for canoeing has increased markedly in recent years and air boating is popular on the Platte and Elkhorn Rivers. The reservoirs and lakes of Nebraska support several warmwater fish species and Lake McConaughy and Lake Ogallala support trout as well. Power boating, sailing, and water skiing are popular on many lakes and reservoirs in the state. Instream uses of water include the provision of fish and wildlife habitat, the support of various recreation activities, waste assimilation, groundwater recharge, and the maintenance of riparian vegetation including subirrigated land. The quantity of flow needed to sustain the various instream uses in individual streams varies during different times of the year.

Section 2. STURCTURE OF THE SOCIAL WELL-BEING ACCOUNT

Components	Evaluation Categories
I. Individual, Personal Effects	A. Life, Protection, and Safety B. Health C. Family and Individual D. Attitudes E. Environmental Considerations F. Other (specify)
II. Community, Institutional Effects	A. Demographic B. Education C. Government Operations and Services D. Housing and Neighborhood E. Law and Justice F. Social Services G. Religion H. Culture I. Recreation J. Informal Organizational Groups K. Community and Institutional Viability L. Other (specify)
III. Area, Socioeconomic Effects	A. Employment and Real Income B. Welfare and Financial Compensation C. Communications D. Transportation E. Economic Base F. Planning G. Construction H. Other (specify)
IV. National Emergency Preparedness Effects	A. Water Supplies B. Food Production C. Power Supplies D. Water Transportation E. Scarce Fuels F. Population Dispersion G. Military Preparedness

H. International Treaty Obligations
I. Other (specify)

V. Aggregate Social Effects

A. Quality of Life
B. Relative Social Position
C. Social Well-Being
D. Other (specify)

Section 3.

ENVIRONMENTAL LAWS THAT COULD BE IMPEDIMENTS

Environmental resources are considered to have significant importance and value in our society. Various state and federal laws have been passed to protect our environment and some of these laws could serve as impediments to water transfer projects in Nebraska. These laws include:

(1) National Environmental Policy Act (NEPA)

This law requires that the environmental consequences of proposed water projects or transfers in which the federal government is involved be considered through the Environmental Impact Statement process.

(2) Fish and Wildlife Coordination Act

This act calls for the coordination of action by federal agencies with the appropriate state wildlife agencies in order to conserve fish and wildlife resources affected by the development of water resources projects.

(3) Clean Water Act

This act requires users of water that also discharge water (other than irrigation) to a stream to obtain a National Pollutant Discharge Elimination System (NPDES) permit for that discharge from the Department of Environmental Control. This would primarily apply to municipal, industrial, and/or power users but it could also apply to some agricultural uses.

Section 404 of this act requires that a permit be obtained from the Corps of Engineers for fill activities in essentially all significant streams, lakes, and wetlands.

(4) Endangered Species Act

This act provides protection to federally listed threatened and endangered species and their critical habitats. Any proposed water development or transfer projects that would affect these species in Nebraska would be affected by the provisions of this act.

(5) Safe Drinking Water Act

The 1986 amendments to this act call for the establishment of state programs for wellhead protection within three years. This could possibly affect any water transfer project proposed in the vicinity of a well field.

(6) Nebraska Nongame and Endangered Species Act

The act requires consultation between project sponsors and the Game and Parks Commission regarding the impact of any proposed project or transfer on any threatened or endangered species or on their critical habitat.

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Appendix 4.

WATER TRANSFER FEES

The Water Management Board recognized that in the future there will be a greater need for state funding for water management and resources development. Since sources of state funds are limited and an increase in state sales and income taxes would not be appropriate, new sources of funds are needed. Following the principle that the beneficiary should pay, eapecially if using a public resource, the Water Management Board felt that the state should charge, in some way, for water that will be transferred.

The Water Management Board considered an annual use fee on water transfers with the funds generated to be used for state management, development and protection activities. These fees could be based on the amount of water used each year. They could be levied on new transfers and existing transfers as well.They could easily be made a condition of permits for new transfers. They also could be extended to all existing projects that would qualify as transfers. To treat all who use the state's water equally, the Board believed that the Legislature should consider collecting compensation from all existing users of water, except individual domestic users, for the water they use in the future. The Board considered this action to be beyond the scope of Legislative Bill 146.

The Water Management Board considered charging the following kinds of transfers different fees:

(a) groundwater irrigators who irrigate more than 160 acres outside the section from which the water is withdrawn,
(b) other groundwater users who transport more than 250 acre-feet per year across section lines,
(c) surface water right holders with rights for more than 5 cubic feet per second or 1,000 acre-feet per year,
(d) owners of on-site recharge reservoirs with annual recharge in excess of 1,000 acre-feet,
(e) storage use right holders with rights for more than 1,000 acre-feet per year.

The Water Management Board considered the following schedule for annual use fees:

(a) for public water systems, $5.00 per acre-foot or $8.00 per residential connection (user's choice),
(b) for agricultural use, $0.50 per acre-foot or $1.00 per acre irrigated (user's choice),
(c) for industrial, commercial, and power uses, $1.00 per acre-foot.

The fees could be collected by the Water Management Board and placed in the Water Management Fund.The types of uses that could be affected, the number of transfers that could qualify, and the fees that could be due under the Board's proposal are shown in Table A.

Table A

POTENTIAL FUNDS FROM ALL WATER TRANSFERS

Type of Transfer	Number of Transfers	Total Quantity Transferred[1] (AFA)	Use Charge Rate ($/AF)	Transfer Fees ($/Year)
Public Water Supplies	124	245,268	5.00	1,226,340
Irrigation[2]	67	2,140,675	0.50	1,070,338
Power (and Irrigation)[2]	11	6,112,000	1.00	6,112,000

[1]1985 data.
[2]Surface Water Only

This fee system met with extensive and widespread opposition from many individuals and entities who would have had to pay the fees. The comments received from the public review of the draft report gave many, different reasons for this opposition. As a result, the board concluded that this issue could be resolved only by the Legislature. They decided to include this system in the appendix to the report and recommend that the Legislature provide some form of long-term funding, either from the general fund or from fees.

The following is a draft of the legislation considered by the Water Management Board. It could be used as a starting point for discussion by the Legislature if immediate action were necessary for some reason.

A BILL

For an Act relating to water; to state intent; to establish water use fees; and to provide powers and duties.

Be it enacted by the people of the State of Nebraska,

Section 1. The Legislature finds that state funding for the management and development of Nebraska's water resources has not been sufficient in the past. Ground water and surface water belong to all the people of the state, and the use of those resources include an obligation to assist financially in the management and development of those water supplies for all the people. The intent of this act is to establish annual fees on water use to generate additional funds for such purposes.

Sec. 2. (1) Beginning January 1, 1990, an annual water use fee shall be charged to the following water users:

(a) Any person using ground water to irrigate more than one hundred sixty acres in a government-surveyed section different from the section where the water is withdrawn;

(b) Any person who transports more than two hundred fifty acre-feet of ground water per year across section lines or into a distribution system that crosses section lines for purposes other than irrigation;

(c) Any person with a direct flow surface water right in excess of five cubic feet per second or for an annual quantity in excess of one thousand acre- feet, except that no fee shall be charged to a public entity for an instream appropriation of water for fish, wildlife, or recreation purposes;

(d) Any owner of a surface water storage facility with a purpose of onsite ground water recharge in an amount in excess of one thousand acre-feet per year; and

(e) Any person who has a right for use of more than one thousand acre-feet of stored water per year, except that no fee shall be charged to a public entity for a storage use right for use of water instream for fish, wildlife, or recreation purposes.

(2) Unless the Water Management Board is provided with adequate evidence of lesser use by the water user, in establishing use quantities, the quantity used shall be assumed to be:

(a) Equal to the maximum quantity authorized in any applicable water use permit; or

(b) Two acre-feet per acre for any use described in subdivision (1)(a) of this section for which no water use permit exists.

Water uses described in subdivision (1)(b) of this section for which no water use permit exists shall be actually measured and reported to the board. (3) Any water use whose use is at least partially nonconsumptive and who therefore is able to and doe make more than one use of the same water once diverted or withdrawn shall not be charged separately for each use but shall be charged only on the basis of the original diversion or withdrawal even if a natural stream is used to transport some or all of the water from one use to another. If all multiple uses of the same water are not subject to the same payment rate specified in section 3 of this act, the fee paid shall be based on the highest applicable rate.

Sec. 3. (1) The amount of fees to be paid each year by any person subject to section 2 of this act shall be determined as follows:

(a) For public water supply systems subject to section 71-5302, the fee shall be five dollars per acre-foot used or eight dollars per residential connection, whichever method is chosen by the system owner;

(b) For agricultural use, the fee shall be fifty cents per acre-foot used or one dollar per acre irrigated, whichever method is chosen by the user; and

(c) For manufacturing, industrial, commercial, and other similar uses, including generation of electric power by any means, the fee shall be one dollar per acre-foot used.

(2) All quantities used shall be measured on a calendar-year basis, and all fees shall be due and payable to the State of Nebraska before March 1

of the year following the water use. All receipts generated by the fees shall be paid to the state treasury and credited to the Nebraska Water Management Fund created in section 2-15,117. Unpaid fees shall draw interest at the rate of one and one- half percent per month after March 1 of the year due.

Sec. 4. The Water Management Board shall be responsible for the collection of the water user fees. The board may contract with the Department of Water Resources, the Department of Health, natural resources district, irrigation districts, reclamation districts, or any other person for the actual collection of the fees and may authorize such person to retain a percentage of the fees or a specified minimum amount as reimbursement for the collection costs.

Sec. 5. The Water Management Board may bring suit in the district court of any county where the water was withdrawn, diverted, or used in order to collect delinquent fees. Upon a determination by the court that such fees are due and payable, the court, in addition to any other available remedies, may enjoin the further use, withdrawal, diversion, or transfer or water by or on behalf of the responsible party until all fees, including interest, have been paid.

Sec. 6. The Water Management Board may adopt and promulgate rules and regulations as necessary to carry out this act.