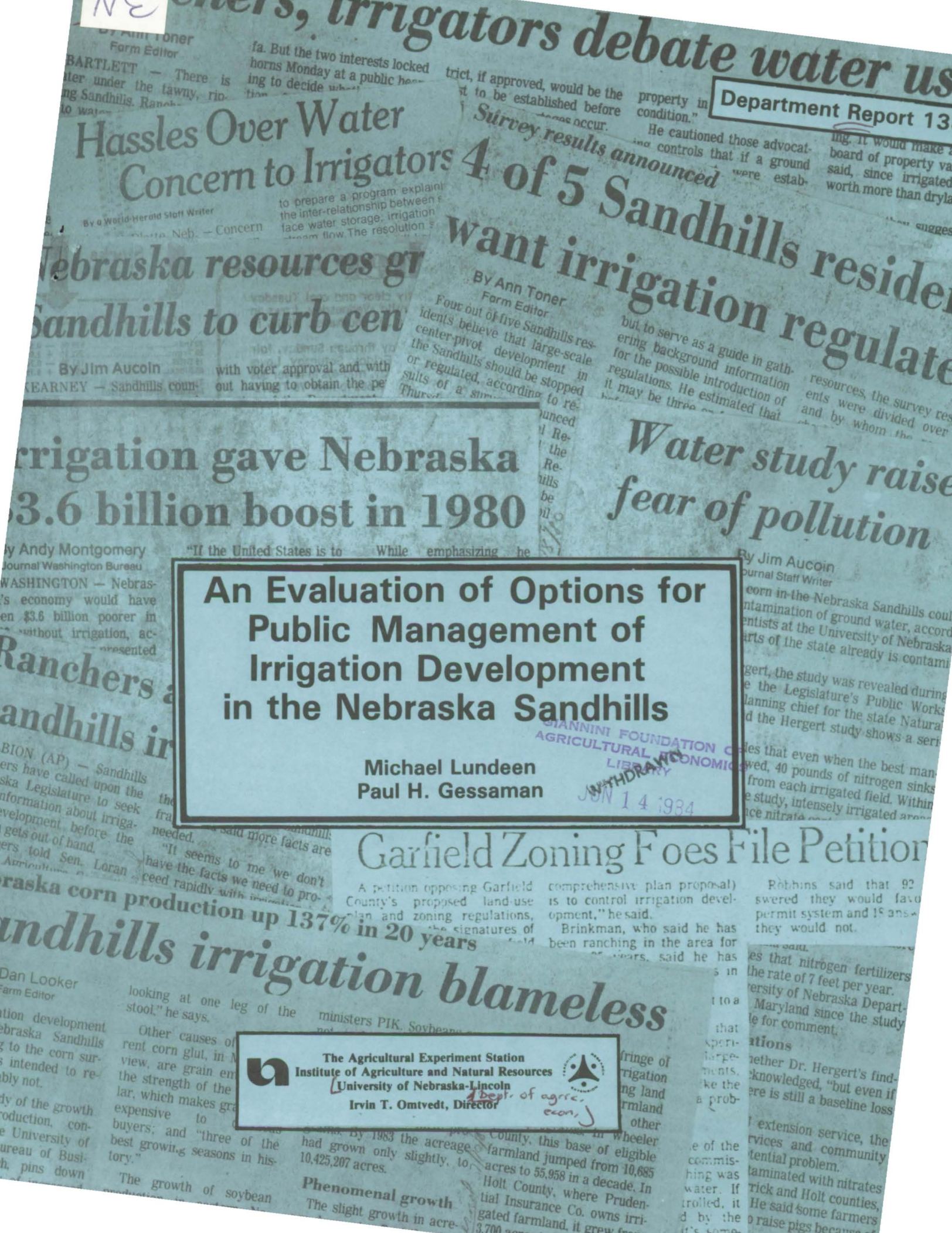

An Evaluation of Options for Public Management of Irrigation Development in the Nebraska Sandhills

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AN EVALUATION OF OPTIONS FOR PUBLIC MANAGEMENT OF IRRIGATION DEVELOPMENT IN THE NEBRASKA SANDHILLS

by

Michael Lundeen and Paul H. Gessaman

ABSTRACT

This research was undertaken to examine three statutory authorizations available to Nebraska local governments for the public management of irrigation development on Sandhills soils. Those options were: (1) the adoption of rural zoning by county governments; (2) the adoption of mandatory conservation practices by Natural Resources Districts (NRDs); and (3) the designation of ground water control districts or ground water management districts by NRDs and the Director of the State Department of Water Resources.

Statutory authorizations for each of the management options were reviewed and two surveys were conducted in carrying out this research. Personal interviews with state officials, University faculty, and representatives of special interest groups were completed during the first survey. Telephone interviews with NRD Managers and Directors and with County Commissioners having jurisdictions in regions with Sandhills or Sandhills-type soils were completed as part of the second survey.

The research indicated: (1) none of the public management options was originally intended for use in regulating irrigation development on marginal soils; and (2) none was viewed by survey respondents as fully appropriate as a response to the issues that have accompanied Sandhills irrigation development. The research: (1) identified suggested modifications of the legal authorizations for each management option; and (2) indicated legislative action will be needed if local elected officials are to have the capability of responding to problems and issues associated with Sandhills irrigation development by adopting, if they choose, one or more of the public management options.

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PREFACE

This research was undertaken due to a series of requests for assistance from persons who wished to understand the capabilities and limitations of legal mechanisms for public management of Sandhills irrigation development. These inquiries originated in concerns about the effects of irrigation development on the region's natural resources base. Private individuals and public officials wanted to more fully understand the institutional system within which irrigation development was occurring. Some were interested in regulating irrigation development. Others were interested in the institutional constraints that might modify the investment climate or alter the use, productivity, and profitability of existing or planned irrigation investments. Landowners with a variety of economic and philosophical beliefs wanted to know about management options that might be used in response to irrigation development on Sandhills lands. Local elected officials often asked for assistance in assessing the legal authorizations that might be used in responding to concerns expressed by their constituents.

This research was conducted as a direct response to these interests and concerns of Nebraska citizens.

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April 1, 1984

AN EVALUATION OF OPTIONS FOR PUBLIC MANAGEMENT OF IRRIGATION DEVELOPMENT IN THE NEBRASKA SANDHILLS*

by

Michael Lundeen and Paul H. Gessaman**

INTRODUCTION

The Sandhills are a dunal grassland region of approximately 19,000 square miles in north central Nebraska (Keech and Bentall, 1978). The introduction of center-pivot irrigation has allowed ranchers to intensify their operations by adding center-pivot systems and raising irrigated grasses, alfalfa, and grain to supplement their grassland forage supplies. It has also allowed the establishment of large-scale rowcrop farming enterprises in the region. In the late 1970s, concern about the social, economic, and environmental consequences of establishing concentrated center-pivot developments for rowcrop production became evident.[1] Public management (regulation) of irrigation activity was called for in newspaper stories and other public arenas (Lincoln Star, September 7, 1979). The proponents of public management included Sandhills residents and persons from outside the region.

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* The research discussed here is more fully reported in Michael Lundeen, "Public Management Options for Irrigation Development in the Nebraska Sandhills," Unpublished master's thesis, Department of Agricultural Economics, University of Nebraska-Lincoln, 1983.

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[1] "Concentrated development" is used here to identify irrigation development in which a center-pivot irrigation system is installed on each quarter of land tracts containing one or more sections.

OBJECTIVES

Several Sandhills local governments[2] have considered using one or more of three public management options to regulate irrigation development. None has enacted regulation, which suggests there may be inadequacies in the statutes authorizing each of those management options (Gessaman, 1982). If such inadequacies exist, the enabling statutes need modification before local governments that wish to do so can adopt the public management options.

This research sought to identify the limitations (if any) of the enabling statutes under which local governments might regulate irrigation development and to evaluate suggested modifications of those statutes —— modifications that might broaden local government options when responding to the problems and concerns resulting from irrigation development. Specific research objectives were:

1. to describe three existing statutory authorizations under which local governments might attempt the public management of irrigation development, i.e., mandatory conservation practices, rural zoning, and ground water control and ground water management areas.

2. to identify the capabilities and limitations of those options as responses to public management issues resulting from Sandhills irrigation development.

3. to identify possible modifications that might make those options more suitable for local government regulation of irrigation development.

4. to draw inferences about the options and possible modifications based on evaluative responses from local government officials.

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[2] Counties and Natural Resource Districts and their respective governing boards are referred to as "local governments" and "local government units" throughout this report.

ECONOMIC RATIONALE FOR PUBLIC MANAGEMENT

Governments typically regulate the use of natural resources in order to minimize or prevent the social costs and externalities that can result from uncontrolled use of a resource. Social costs and physical externalities often identified as potential consequences of unregulated Sandhills irrigation development include (Nebraska Natural Resources Commission, 1982):

1. declines in ground water quantity leading to the drying up of adjacent stock and domestic wells and the lowering of the productivity of wet meadows,
2. declines in ground water quality resulting from the leaching of agricultural chemicals, particularly nitrate nitrogen, from surface applications to rowcrops,
3. increased soil erosion as a result of the plowing of native rangeland and the levelling of dunes to allow the operation of center-pivot irrigation systems for rowcrop production,
4. increased local government costs and tax levies to provide the additional roads and other public services needed in a region experiencing economic growth.

The extent to which these physical externalities and social costs are present in the Sandhills has not been documented. Concentrated center-pivot developments are limited to parts of a few counties, mostly in the eastern Sandhills (Conservation and Survey, 1983). Nonetheless, many residents and persons outside the region fear that serious physical externalities will arise if concentrated irrigation development is not regulated (Burwell, Tribune, July 16, 1981). Thus, local government officials are interested in the public management options that might be used to regulate Sandhills irrigation development.

METHODOLOGY

The data presented in this report came from a review of the enabling statutes for the three management options and from interviews with public officials at both state and local levels (see Table 1). The data presented here were compiled from responses to two survey schedules. One was used in personal interviews with state-level respondents (the first survey); the other was used in telephone interviews with local government respondents (the second survey).[3]

Table 1. Sequence of data gathering for this report.

Activity	Data Source	Reported In Section Titled
Compile descriptions of the three public management options	Enabling statutes & related sources	The Public Management Options
Identify suggested modifications of the management options (first survey)	Survey of University faculty, state agency personnel, and representatives of special interest groups	Suggested Modifications
Secure reactions to each suggested modification of public management options (second survey)	Survey of NRD Managers and Directors and County Commissioners	Evaluation of Suggested Modifications

[3] Potential respondents to the second survey included the County Commissioners of counties in the Sandhills region, the Managers of seven Natural Resources Districts with significant acreages of Sandhills-type lands, and a sample of the members of the Boards of Directors of those same NRDs. Twenty-two County Commissioners, seven NRD Managers, and 27 NRD Directors completed the second survey.

THE PUBLIC MANAGEMENT OPTIONS

County Zoning

County boards receive their power to adopt zoning from state enabling legislation. County zoning powers include regulation of the use of land for agriculture, forestry, recreation, residence, industry, and trade (Sec. 23-114).[4] To enact rural zoning, the County Board first appoints a planning commission representative of the geographic areas and populations served. Members serve staggered three-year terms. The initial responsibility of a planning commission is to prepare a comprehensive plan. After drafting the plan, the commission holds at least one public hearing, before recommending the proposed plan to the county board (Sec. 23-114.01).

After the County Board receives the comprehensive plan, it holds a public hearing before taking action (Sec. 23-114.01). If the comprehensive plan is adopted and if rural zoning is to be considered, the planning commission drafts proposed zoning ordinances consistent with the plan. It then holds public hearing on the proposed regulations. The County Board considers adopting the zoning regulations after receiving them by specific recommendation from the planning commission (Sec. 23-114.03). The Board must hold a public hearing before adopting, amending and adopting, or rejecting county zoning regulations (Sec. 23-168.01).

If zoning is enacted, the County Board provides for its enforcement, usually by requiring permits prior to the erection,

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[4] These citations refer to sections in the Reissues or Cumulative Supplements of the Revised Statutes of Nebraska, 1943. The specific editions referred to are the Reissues of 1977 and 1978 or the Cumulative Supplement of 1980.

construction, or conversion of nonfarm buildings or structures within the area subject to zoning. As a means of implementing the permit system, the Board can hire or appoint a county zoning administrator (Sec. 23-114.04). The Board must also appoint a Board of [Zoning] Adjustment to hear appeals arising from the enforcement of zoning, to interpret zoning maps, and to grant variances (Sec. 23-168.01). The Board of Adjustment has the power to grant variances for situations that are not of such a nature that they could be better remedied by amending the zoning regulations (Sec. 23-168.03).

Mandatory Conservation Practices

Nebraska statutes do not refer to a specific regulatory power entitled, "mandatory conservation practices." The statutes do state that each NRD "shall have the power and authority to formulate . . . rules and regulations governing the use of lands within the district in the interest of conserving soil and water resources and preventing and controlling erosion" (Sec. 2-3244). For purposes of convenience, this has been called the mandatory conservation practices authorization.

The procedures by which an NRD adopts mandatory conservation practices are relatively simple. The Board of Directors first drafts proposed conservation practices, then holds a public referendum seeking an approving vote on the proposal (Sec. 2-3244). The eligible voters in the referendum are "all owners of land" within the NRD. If seventy-five percent of those voting approve the proposed regulations, the Board may adopt mandatory conservation practices (Sec. 2-3246). Any adopted regulations must be uniform across the District for all lands of similar soil type, slope, and erodability (Sec. 2-3249).

Mandatory conservation practices can require particular cultivation

methods or cropping and tillage practices, the retirement of "highly erosive" land from cultivation, and other operations "as may assist conservation of soil and water resources and prevent or control soil erosion" (Sec. 2-3248).

Ground Water Control Areas and Ground Water Management Areas

Two approaches to the regulation of ground water use are authorized by the Ground Water Management and Protection Act, which was first enacted in 1975 and has been periodically amended since that time. Ground water control areas may be designated by the Director of the Department of Water Resources (DWR) after: (1) a request from an NRD for a control area hearing; and (2) hearing testimony that indicates uncontrolled development "has caused or is likely to cause" declines in ground water quantity or quality in the proposed control area which do, or will, make the ground water "unsuitable for the present purposes for which it is being utilized" (Sec. 46-658). The purposes of control areas are to "mitigate or eliminate" the ground water quantity or quality conditions which led to the designation of the control area and to encourage efficient use of ground water (Sec. 46-666). Pumping effects on subirrigation are to be considered in decisions on the designation of control areas.

The NRD Board is responsible for drafting regulations for a designated ground water control area. If the Board does not adopt regulations within 18 months of designation, the DWR Director specifies the control or controls the NRD must enforce (Sec. 46-666). The NRD must hold a public hearing before adopting regulations and before modifying or amending them (Sec. 46-665). All control area regulations must be approved by the DWR Director (Sec. 46-666).

The types of regulations allowed in control areas include the allocation of ground water withdrawals, rotation of ground water use, irrigation scheduling, and well-spacing requirements more restrictive than those set by statute. The regulations can also require the installation of flow meters on wells and, in instances of excessive ground water depletion or pollution, can prohibit the issuance of new well construction permits for one year. If the moratorium is to be continued, the need must be evaluated and the prohibition renewed annually (Sec. 46-666).

NRD Boards designate ground water management areas by complying with procedures established by the Legislature in 1982. The NRD must document the nature, extent, and condition of the ground water resource, and draft a management plan that includes a ground water reservoir life goal. The plan specifies ground water management objectives for the management area and proposes regulations consistent with the ground water reservoir life goal. The completed plan is submitted to the DWR Director for review. If the Director approves the plan, the NRD holds a public hearing on the proposed management area and controls. If not, the NRD must respond to the issues raised by the Director before holding the hearing. If the management area is to be designated, the Board must do so within 90 days of the hearing (Sec. 46-657).

The purpose of management areas is to ensure that withdrawals from a ground water reservoir support the attainment of the NRD's ground water reservoir life goal. The NRD may "manage the use of water" by allocating total allowed withdrawals among users, by requiring the rotation of ground water pumping among irrigators, or by establishing well-spacing regulations. The NRD can allow irrigators to carry over from one year to another (for up to five years) any unused allocation.

No management area controls can prohibit "new or additional uses of ground water" (Sec. 46-657).

SUGGESTED MODIFICATIONS

Each of the 21 first survey respondents was asked whether statutory or political barriers had prevented or would prevent local government use of the public management options. Their responses indicated an awareness of statutory or political barriers to regulating irrigation development through the adoption of mandatory conservation practices or rural zoning (Table 2). Their responses indicated much less agreement about similar barriers to designating ground water control areas or ground water management areas to regulate irrigation development.

Several respondents stated that one or more of the three management options could be implemented if local officials really wanted to regulate Sandhills irrigation development (i.e., if the social or political costs of unregulated irrigation development were high enough, local officials could and would act using the existing management options). Taken at face value, these statements implied there was little real need for modifying the existing regulatory authorizations.

In a second set of questions, all respondents were asked to suggest enabling legislation modifications that might overcome any barriers to use of the three public management options. Not all respondents suggested modifications of all three options. Even some who agreed barriers existed did not identify statutory modifications for a particular option. No respondent suggested modifications that might be expected to nullify any effects of not having legal and political precedents for regulation of Sandhills irrigation development.

Table 2. First survey responses to questions about possible barriers to the enactment of each public management option.

Questions	Responses	
	Yes	No
	--- Number* ---	
"Do you agree that . . .		
a. the statutory definition of eligible voters and the 75% approval requirement in the referendum are barriers to the adoption of mandatory conservation practices?"	19	6
b. the lack of precedents for the adoption of mandatory conservation practices is a barrier?"	13	7
c. the difficulty and cost of drafting, enforcing, and legally defending zoning are barriers to its adoption?"	16	6
d. the public dislike of rural zoning and the lack of a precedent for using zoning to regulate irrigation are barriers?"	19	1
e. the statutory quantity and quality criteria used in decisions about designating a control area are barriers to their use in the Sandhills?"	11	10
f. the lack of precedents for designating ground water management areas is a barrier to their use in the Sandhills?"	6	14

* The difference in the total number of responses to the questions results from some respondents replying both "Yes" and "No" to questions. They responded that one of the conditions described in a question was a barrier, but felt that another condition was not a barrier.

Almost all respondents identified modifications of the mandatory conservation practices statutes. The suggested modifications derived from the interviews were:[5]

1. to reduce the referendum approval requirement to a simple majority of the votes cast in the referendum.

2. to allow all urban and rural registered voters in the NRD to vote in the referendum.

3. to limit the vote to rural registered voters.

4. to limit the vote to rural landowners.

5. to modify the mandatory conservation practices statutes so that such practices could apply to only parts of a NRD, defined either by soil or land type or by the legal boundaries of sections, townships, or counties.

6. to add enforcement provisions to the statutes.

7. to eliminate entirely the referendum requirement and incorporate procedures such as public hearings conducted by the NRD.

8. to empower a state agency to require that NRDs draft mandatory conservation practices and hold a referendum when soil erosion or irrigation density reach specified levels within their Districts.

About half of the respondents suggested modifications to overcome the political barriers to enacting county zoning in the Sandhills. Their suggestions were:

1. to specify in the statutes that rural zoning could be used to regulate irrigation development.

2. to specify in the statutes that rural zoning can be used to protect subirrigation, i.e., to protect the productivity of wet meadows.

3. to give county boards the statutory authority to develop zoning regulations which apply to only part of the county.

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[5] This list of modifications is a composite of the respondents' suggestions. It was prepared for use here and in the second survey form.

Less than half of the respondents suggested modifications of the Ground Water Management and Protection Act. Their suggested modifications included:

1. to specify in the statutes that potential ground water quantity or quality declines were an adequate basis for designating control areas.

2. to change the Ground Water Management and Protection Act to allow some land use controls in control or management areas.

3. to expand the list of management area controls to include an authorization for well-drilling moratoria.

4. to require NRDs to establish control areas whenever ground water declines or ground water pollution reach levels specified by statute.

5. to require NRDs to establish their own "trigger" levels of ground water quantity or quality declines at which they would be required to request a control area hearing.

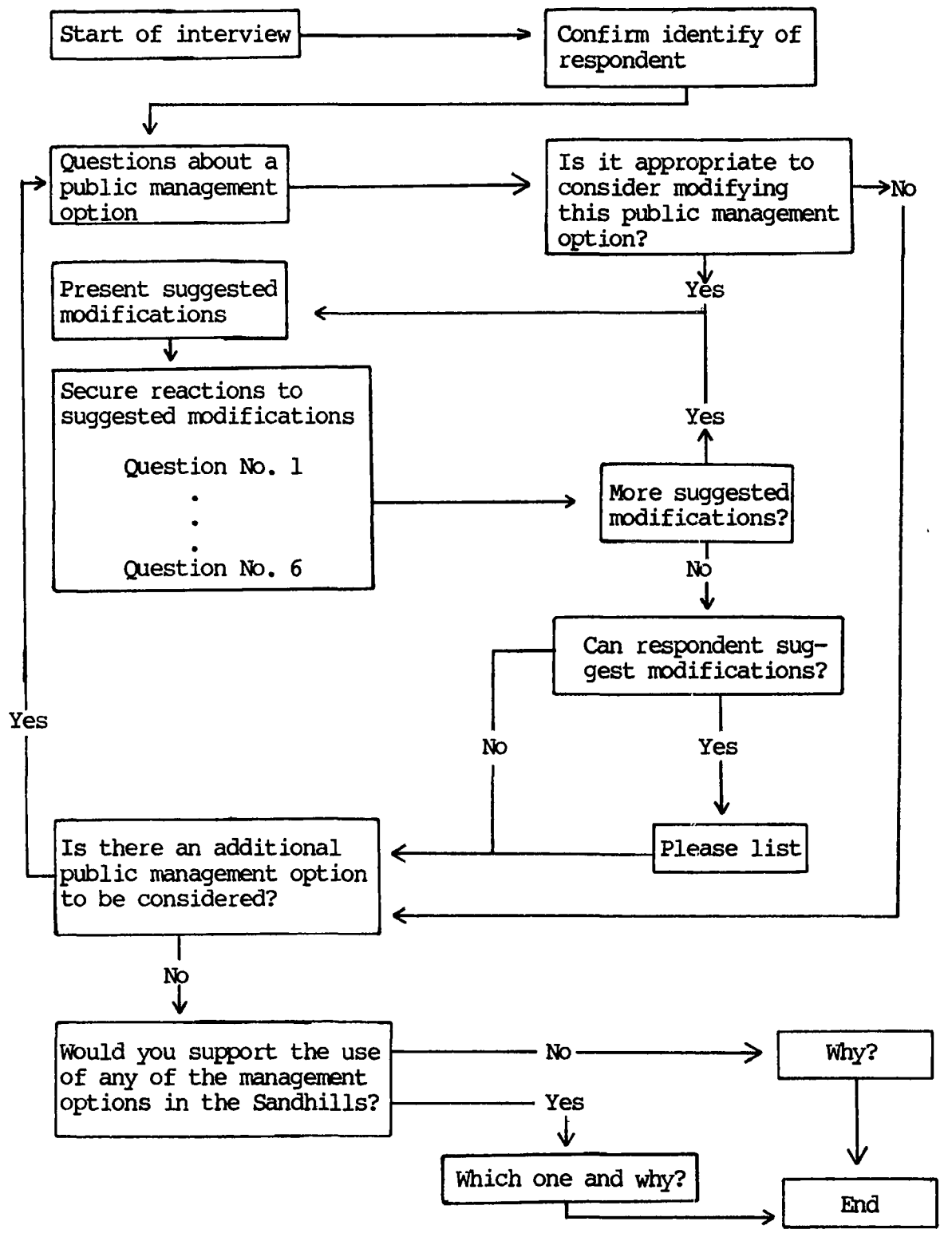
6. to allow state intervention to establish control areas if ground water quantity or quality declines reach levels specified by statutes and the appropriate NRD had not acted to designate a control area.

EVALUATION OF SUGGESTED MODIFICATIONS

In the second survey, respondents were asked to evaluate the suggested modifications of the three public management options as compiled from first survey responses. Second survey respondents were also asked to identify reasons for the lack of local government regulation of Sandhills irrigation development. Survey respondents included seven NRD Managers, 27 NRD Directors, and 22 County Commissioners.

The second survey schedule included a series of questions about each suggested modification of the management options (see Table 3). Respondents were asked whether they believed that enactment of a suggested modification: (1) would reduce the costs of public management; (2) would be politically acceptable; (3) would increase the effectiveness of public management; and (4) would be desirable.

Table 3. Flow chart of second survey interviews.



Most second survey questions gave respondents an opportunity to answer "Yes," "No," or "Uncertain." Since there appear to be at least three possible meanings of a response of "Uncertain," the count or percentages of such responses is reported, but is not discussed.[6]

Mandatory Conservation Practices

When respondents were asked to identify reasons for NRDs' non-use of mandatory conservation practices to regulate Sandhills irrigation development, the two most frequent responses were: (1) lack of penalties for failure to comply with enacted practices (15 of 54 responses); and (2) lack of political support for the enactment of conservation practices (17 responses) (Table 4). NRD Directors identified "lack of political support" more frequently than County Commissioners. Other reasons for the absence of local regulation were identified as: the referendum requirement (12 responses) and no need for regulation (6 responses).

First survey responses suggested the definition of eligible referendum voters ("all owners of land") is a potential barrier to the use of mandatory conservation practices as a public management option. Responses to a second survey question indicated little support for that definition. When asked to identify ". . . the most appropriate definition of eligible voters," 16 of 40 respondents identified "only rural landowners," and 13 identified "all rural registered voters" as the most appropriate definitions (Table 5). Other selections were: "all registered voters" (5 responses) and "all landowners" (6 responses).

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[6] Responses of "Uncertain" could mean: (1) the consequences of a modification cannot be predicted; (2) the respondent could not decide between responding "Yes" or "No" to a question; or (3) the respondent was ambivalent about the utility or appropriateness of the suggested modification.

Table 4. Second survey responses identifying ". . . the most important factor in NRD decisions not to adopt mandatory conservation practices to regulate irrigation development."

Responses	Respondent Category			Totals
	NRD Managers	NRD Directors	County Comm.	
	- - - - Number of Responses* - - - -			
a. Referendum requirement	3	6	3	12
b. Lack of penalties for failure to comply with practices	2	5	8	15
c. Lack of political support	2	11	4	17
d. Lack of precedent			1	1
e. No need		2	4	6
f. Other		2		2
Totals	7	26	20	53

* Two County Commissioners and one NRD Director responded "No Opinion" to this question.

The responses to the questions about the suggested modifications of the mandatory conservation practices statutes indicate four were perceived as useful and desirable (Tables 6, 7, 8, and 9). These modifications are inter-related in that enactment of any one alone would probably not remove the barriers to NRD adoption of mandatory conservation practices. For example, adding penalties for violators would be pointless, if the referendum approval requirement were not

changed to make adoption of conservation practices politically possible.

Table 5. Second survey responses identifying ". . . the definition of eligible voters that you believe is most appropriate" with regard to a mandatory conservation practices referendum.

Definitions	Respondent Category			Totals
	NRD Managers	NRD Directors	County Comm.	
	- - - - Number of Responses - - - -			
a. All registered voters	1	2	2	5
b. Only rural landowners	1	8	7	16
c. All rural registered voters	2	5	6	13
d. All landowners (no change)	1	4	1	6
Totals	5	19	16	40

The effect of these four modifications, if enacted, would be to localize regulation and increase local control over the adoption of mandatory conservation practices. Allowing the regulation of part of a NRD, either defined by soil resource or by legal boundaries or both, could limit regulation to areas experiencing or particularly susceptible to soil erosion. Regulations based on legal boundaries might be easier to implement, but could include areas with limited need for management. Limiting the referendum vote to the part of an NRD affected by proposed regulations would prevent persons not resident to the affected area from imposing regulation on those in the area bearing most of the costs of regulation.

Table 6. Evaluation responses re suggested modification of the mandatory conservation practices statutes to allow regulation of part of an NRD as defined by a particular soil resource.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	63	15	22
improve legal defensibility . . .	68	15	17
reduce adoption costs . . .	51	32	17
reduce administration costs . . .	51	32	17
be desirable . . .	71	12	17

Table 7. Evaluation responses re suggested modification of the mandatory conservation practices statutes to allow regulation of part of an NRD as defined by legal boundaries.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	54	19	27
improve legal defensibility . . .	41	20	39
reduce adoption costs . . .	46	34	20
reduce administration costs . . .	37	27	36
be desirable . . .	51	12	37

Table 8. Evaluation responses re suggested modification of the mandatory conservation practices statutes to limit referendum to part of NRD affected by proposed regulations.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	61	24	15
improve legal defensibility . . .	43	18	39
reduce adoption costs . . .	54	27	19
reduce administration costs . .	54	27	19
be desirable . . .	56	12	32

Table 9. Evaluation responses re suggested modification of the mandatory conservation practices statutes to add penalties for violations of mandated practices.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	41	27	32
improve legal defensibility . . .	59	12	29
reduce adoption costs . . .	27	37	36
reduce administration costs . . .	24	37	39
be desirable . . .	68	10	22

The responses to the other three suggested modifications indicate little support from the second survey respondents (Tables 10, 11, and 12). Most respondents apparently do not support a more active role by the state nor statutory changes that would fundamentally alter the current methods of adopting mandatory conservation practices. One NRD Manager interviewed emphasized this by noting mandatory conservation practices are a "pretty serious" type of regulation, so the 75 percent approval requirement should not be lowered.

Only two of the seven suggested modifications received a majority of "Yes" responses to the questions about reducing costs. And, those majorities were comparatively modest. Some insight into that pattern of responses can be gained from the comments of several respondents, who noted regulation of soil erosion would be an expensive undertaking for Sandhills NRDs. Those comments, and the pattern of responses noted above, indicate that no statutory modifications were perceived as making regulation less costly.

Table 10. Evaluation responses re suggested modification of the mandatory conservation practices statutes to authorize adoption through simple majority vote in referendum.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - -	Percentage	- - - -
increase local support . . .	39	37	24
reduce adoption costs . . .	17	46	37
be desirable . . .	49	27	24

Table 11. Evaluation responses re suggested modification of the mandatory conservation practices statutes to substitute public hearing for referendum.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	22	51	27
improve legal defensibility . . .	27	49	24
reduce adoption costs . . .	35	35	30
be desirable . . .	29	41	30

Table 12. Evaluation responses re suggested modification of the mandatory conservation practices statutes to authorize a state agency to require a referendum when specified conditions exist.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	41	35	24
improve legal defensibility . . .	46	24	30
reduce adoption costs . . .	15	51	34
be desirable . . .	39	39	22

County Zoning

When respondents were asked to identify the reasons no County Board has adopted rural zoning to regulate irrigation development, the most frequent response was, "Lack of political support" (16 of 49 responses). Other responses were: the difficulty of drafting regulations (5

responses); the difficulty of monitoring regulation (6 responses); the potential legal costs of regulation (11 responses); and no need (6 responses) (Table 13).

Table 13. Survey responses identifying ". . . the most important factor in County Board decisions not to use rural zoning for the public management of irrigation development."

Responses	Respondent Category			Totals
	NRD Managers	NRD Directors	County Comm.	
	----- Number of Responses -----			
a. Difficulty of drafting	1	4		5
b. Difficulty of monitoring	1	4	1	6
c. Legal costs	1	5	5	11
d. Lack of precedent		1	2	3
e. Lack of political support	3	7	6	16
f. No need		2	4	6
g. Other		2		2
Totals	6	25	18	49

The evaluation responses indicated only one of the suggested modifications of the county zoning statutes was perceived as useful and desirable (Tables 14, 15, and 16). That modification was specifying in the statutes that rural zoning could be used to regulate irrigation development. The responses indicated that modifying the statutes to specify that zoning could be used to protect subirrigation was perceived

as potentially useful, but not necessarily desirable. None of the three suggested modifications was perceived as reducing the costs of adopting and administering zoning.

Table 14. Evaluation responses re suggested modification of the rural zoning statutes to specify zoning can be used to regulate irrigation development.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	59	26	15
improve legal defensibility . . .	67	15	18
reduce adoption costs . . .	21	46	33
reduce administration costs . . .	18	49	33
be desirable . . .	56	18	26

Table 15. Evaluation responses re suggested modification of the rural zoning statutes to specify zoning can be used to protect subirrigation.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	59	15	26
improve legal defensibility . . .	59	26	15
reduce adoption costs . . .	23	46	31
reduce administration costs . . .	15	51	34
be desirable . . .	46	21	33

Table 16. Evaluation responses re suggested modification of the rural zoning statutes to allow zoning of only part of a county.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - -	Percentage	- - - -
increase local support . . .	44	38	18
improve legal defensibility . . .	36	36	28
reduce adoption costs . . .	31	46	23
reduce administration costs . . .	28	44	26
be desirable . . .	41	38	21

Ground Water Management Areas and Ground Water Control Areas

When the respondents were asked to identify the reasons for non-use of ground water control or management area designations as a means of regulating Sandhills irrigation development, the responses were: (1) the apparent need for actual declines in ground water quantity prior to designation (21 of 53 responses); (2) the lack of clarity in the quality requirement (12 responses); (3) the lack of precedent for management areas (7 responses); (4) the lack of political support (9 responses); and (5) no need (3 responses) (Table 17).

The second survey responses indicated the respondents perceived as desirable two suggested modifications of the ground water control and management area statutes (Tables 18 and 19). Only the suggested modification, to specify potential declines in ground water levels as a basis for designating control areas, was identified by a majority as increasing local political support and improving the legal defensibility of public management through control areas. The responses indicated a general

perception of some benefit from permitting some land use regulation in control and management areas (Table 19). Authorizing well-drilling moratoria in management areas received over 60 percent "Yes" responses to the question about improving the effectiveness of ground water control and management areas (Tables 20).

Table 17. Second survey responses identifying ". . . the most important factor in decisions not to designate ground water control areas or ground water management areas to regulate irrigation development."

Responses	Respondent Category			Totals
	NRD Managers	NRD Directors	County Comm.	
	- - - - - - - - - - Number - - - - - - - - - -			
a. Interpretation of quantity declines	3	13	5	21
b. Lack of clarity in quality requirement		6	6	12
c. Lack of precedent for management areas		3	4	7
d. Lack of political support	3	3	3	9
e. No need			3	3
f. Other	1			1
Totals	7	25	21	53

The responses indicated two of the other three suggested modifications were apparently perceived as increasing local political

support for the designation of control areas (Tables 21 and 22). Those modifications were: (1) having the state, or (2) having the NRD set some predetermined decline levels at which the NRD would initiate the control area process. The last suggested modification, having the state designate control areas, was identified as improving the legal defensibility of control areas, but not as desirable (Table 23). None of the six suggested modifications was identified as reducing the designation or administration costs of ground water control or management areas.

Table 18. Evaluation responses re suggested modification of the ground water control and management area statutes to specify potential declines as a basis for designating a control area.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - -	Percentage	- - - -
increase local support . . .	56	23	21
improve legal defensibility . . .	59	23	18
reduce designation costs . . .	15	39	46
be desirable . . .	64	13	21

The last question of the second survey schedule asked the respondents which of the three management options they preferred. Twenty of 37 responses were for ground water control and management areas (Table 24). A higher proportion of County Commissioners than NRD Directors indicated a preference for mandatory conservation practices.

Table 19. Evaluation responses re suggested modification of the ground water control and management area statutes to permit control and management area regulation to include some land use controls.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	36	33	31
improve legal defensibility . . .	18	51	31
reduce administration costs . . .	11	56	33
improve effectiveness . . .	67	10	23
be desirable . . .	54	15	31

Table 20. Evaluation responses re suggested modification of the ground water control and management area statutes to authorize well-drilling moratoria in management areas.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	49	31	21
reduce administration costs . . .	15	46	38
improve effectiveness . . .	62	18	21
be desirable . . .	44	15	31

Table 21. Evaluation responses re suggested modification of the ground water control and management area statutes to have the state set the decline levels at which to designate control areas.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	64	23	13
reduce designation costs . . .	18	49	33
be desirable . . .	46	15	31

Table 22. Evaluation responses re suggested modification of the ground water control and management area statutes to require an NRD to set "trigger" levels at which it would request a control area hearing.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	56	21	23
reduce designation costs . . .	15	44	41
reduce administration costs . . .	13	41	46
be desirable . . .	41	13	46

Table 23. Evaluation responses re suggested modification of the ground water control area statutes to have state designate control areas.

In your opinion, would this change:	Responses		
	Yes	No	Uncertain
	- - - - Percentage - - - -		
increase local support . . .	31	46	23
improve legal defensibility . . .	51	23	26
reduce designation costs . . .	21	51	28
reduce administration costs . . .	18	51	31
be desirable . . .	28	44	28

Table 24. Second survey responses to a question asking respondents to identify the public management option they would support for use in the Sandhills.

Options	Respondent Category			Totals
	NRD Managers	NRD Directors	County Comm.	
	- - - - - - - - - Number - - - - - - - - -			
Mandatory Conservation Practices	1	2	6	9
Rural Zoning		5	3	8
Ground Water Control Areas		3	1	4
Ground Water Management Areas	2	6		8
Both Control & Management Areas	2	6		8
Totals	5	22	10	37

SUMMARY

This research examined three options for public management of Sandhills irrigation development: (1) mandatory conservation practices, (3) rural zoning, and (3) ground water management and ground water control areas. None of these management options has been used for public management of irrigation development by local governments with jurisdictions that include Sandhills lands, despite numerous public expressions of concern over alleged externalities resulting from concentrated irrigation developments on Sandhills soils. Authorizations for local government regulation of the use of soil and water resources as contained in enabling statutes for the three public management options, and suggested modifications of those authorizations, were examined, described, and evaluated in the course of this research.

Each respondent in an initial survey of 21 persons knowledgable of Sandhills irrigation development was asked: (1) to identify barriers to local government use of each of the three public management options, and (2) to suggest modifications of enabling statutes that might, if enacted, reduce those barriers. The survey responses were used to compile eight suggested modifications of statutes authorizing mandatory conservation practices, three suggested modifications of rural zoning authorizations, and six suggested modifications of the authorizations for ground water management areas and ground water control areas.

In a second survey, elected officials of local governments with jurisdiction over Sandhills lands were asked: (1) to identify reasons for local governments' non-use of existing public management authorizations, (2) to evaluate the suggested modifications of enabling statutes compiled from the first survey responses, and (3) to indicate

which, if any, of the public management options they would support for use in the Sandhills.

The existing referendum requirement (75 percent approval of those voting in a referendum of "all owners of land" in the NRD), lack of political support, and lack of penalties for non-compliance were the principal reasons identified for non-use of the mandatory conservation practices public management option. Survey responses indicated few respondents were concerned about the lack of precedents for public management through adoption and enforcement of mandatory conservation practices.

A majority of supporting responses was received for each of four suggested modifications of the enabling statutes for mandatory conservation practices. If enacted, these modifications: (1) would result in redefinition of voter eligibility for referendums on proposals for mandatory conservation practices, (2) would allow the enactment of mandatory conservation practices applying to only a part of an NRD that would be defined by soil resource characteristics or by legal boundaries such as county, township, or section lines, and (3) would authorize penalties for failure to comply with mandatory conservation practices. None of the suggested modifications was perceived to be a means of reducing the costs of adopting and administering mandatory conservation practices.

Lack of political support and the expected level of legal costs were identified as principal reasons for local governments' decisions not to use rural zoning as a means of public management of irrigation development. Lack of need was cited as the most important factor by several respondents, as were difficulties of drafting zoning regulations

and of monitoring compliance.

Only one of the three suggested modifications of enabling statutes for rural zoning received an appreciable number of approving responses in the second survey. If enacted, it would result in enabling statutes that contained specific authorization for the use of rural zoning as a means of public management of irrigation development. A suggested modification that would, if enacted, authorize the use of rural zoning to protect subirrigation received a lesser number of approving responses. Less than a majority of those responding indicated that enactment would be desirable. None of the suggested modifications was perceived to be a means of reducing the costs of adopting and administering rural zoning.

The most frequently identified reasons for non-use of the ground water control area authorization were: (1) declines in groundwater supplies were required prior to designation of ground water control areas, and (2) lack of clarity in the requirements for designation of control areas based on ground water quality considerations. (The survey responses indicated many respondents believed that absolute declines in groundwater supplies were required prior to designation of a ground water control area even though the enabling statutes indicate "reasonably foreseeable" declines can be the basis for designation.) The lack of precedents for public management of irrigation development and lack of political support were each identified as principal reasons by much smaller numbers of respondents.

The survey responses indicated two of the suggested modifications of the enabling statutes for ground water control areas and groundwater management areas were perceived to be desirable by majorities of the respondents. These were: (1) specification that potential declines in

groundwater supplies were an adequate basis for designation of a ground water control area, and (2) allowing some land use controls in ground water control or ground water management areas. Suggested modifications that would, if enacted, shift to the state the responsibility for initiating procedures leading to regulation, but were not identified as desirable by majorities of those responding. No clear-cut pattern of preferences was evident in the responses to suggested modifications of authorizations for ground water control areas and ground water management areas. None of the suggested modifications was identified as having potential for reducing the costs of adopting and administering these public management powers.

In response to a final question asking for identification of the public management option that each respondent would support, more than half of the respondents indicated ground water control areas or ground water management areas as the preferred choice. Mandatory conservation practices and rural zoning received approximately equal, but much smaller numbers of affirmative responses.

CONCLUSIONS

Nebraska statutes contain three authorizations for local government regulation of the use of soil and water resources. Natural Resources Districts are given primary responsibility in the exercise of two powers: mandatory conservation practices and ground water control or ground water management areas. County governments have exclusive power to enact and enforce rural zoning. Conclusions derived from this research with respect to these authorizations include:

— Regulation of Sandhills irrigation development appears to be reasonably consistent with enabling statute provisions for each of these public management options, though none specifically authorizes such regulation (These regulatory authorizations were not intended as a specific response to natural resource management needs resulting from Sandhills irrigation development).

— Local elected officials perceive that public management of irrigation development is not needed or is lacking in political support or generally is not feasible to implement under present conditions.

— If Natural Resources Districts are to use the mandatory conservation practices authorization as the basis for management of Sandhills irrigation development, modifications of enabling statutes consistent with those supported by respondents to the second survey portion of this research will be required. Enactment of a "package" of changes would be required as no single change in the statuatory authorization would remove barriers to the use of this public management option. Redefinition of those eligible to vote in a referendum on mandatory conservation practices, and authorization for defining the subject area or district on the basis of soil resource characteristics or legal boundaries that approximate the boundaries of a particular soil resource appear to be the minimum changes that would be required.

— Legal authorizations for enactment and enforcement of rural zoning by counties appear to be appropriate and not in need of change. Amendment of enabling statutes to specifically identify regulation of irrigation development as a function of rural zoning appear to be of questionable value as such changes: (1) might make the zoning power less suitable for its principal intended uses (i.e., separation of incompatible land uses and prevention of urban intrusions into agriculturally productive lands), and (2) appear unlikely to remove or reduce the political onus associated with the zoning power (identified by respondents as the principal barrier to use if zoning in public management of irrigation development).

— Little need for modification of the authorization for ground water management areas and ground water control areas (the Ground Water Management and Protection Act) was identified by this research.

— If public management of Sandhills irrigation development is to occur, it appears that supplemental funding of local government units will be needed. Public management activities will result in substantial public costs, and none of the suggested modifications of existing management authorizations was identified as likely to reduce the costs of adopting and administering the public management options examined in this research.

REFERENCES

Conservation and Survey Division. (1983) Institute of Agriculture and Natural Resources. University of Nebraska-Lincoln. "Center-Pivot Irrigation Systems in Nebraska, 1981." March, 1983.

Gessaman, Paul H. (1982) "Irrigation in the Sandhills: Public Management Alternatives." NEBGUIDE, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, GS82-606.

Keech, C.F. and Bentall, Ray. (1971) Dunes on the Plains: The Sand Hills Region of Nebraska. Conservation and Survey Division, University of Nebraska-Lincoln, Resource Report No. 4.

Laws. Passed by the Legislature of the State of Nebraska, 1977, 1978, 1982. Published under the authority of the Secretary of State.

Lundeen, Kenneth Michael. (1983) "Public Management Options for Irrigation Development in the Nebraska Sandhills." Unpublished master's thesis. University of Nebraska-Lincoln.

Nebraska Natural Resources Commission. (1982) Policy Issue Study on Groundwater Reservoir Management: Appendix. State Water Planning and Review Process.

Revised Statutes of Nebraska, 1943. Cumulative Supplement of 1980. Published by the Revisor of Statutes.

Revised Statutes of Nebraska, 1943. Reissues of 1962, 1970, 1977, and 1978. Published by the Revisor of Statutes.

APPENDIX: DISTRIBUTION OF RESPONSES TO SURVEY SCHEDULE II

The following tables provide tabulations of responses to questions on the second survey schedule. As noted above, 56 respondents (NRD Directors and Managers and County Commissioners) participated in second survey interviews. However, several of those respondents did not complete all sections of the schedule. Some did not respond to all questions within a particular section. The following tables report the actual number of responses to each question.

Persons not completing parts of the survey schedule, or not responding to particular questions, generally explained their lack of response by explaining they had no knowledge or experience upon which to base responses to the subject question(s).

MANDATORY CONSERVATION PRACTICES

Table A-1. Responses to questions about modifying mandatory conservation practices to allow regulation of part of district defined by a particular soil resource.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	13	11	26
No	3	1	2	6
Uncertain	1	5	3	9
b. improve legal defensibility?				
Yes	3	14	11	28
No	1	3	2	6
Uncertain	2	2	3	7
c. reduce costs of adopting?				
Yes	2	11	8	21
No	3	6	4	13
Uncertain	1	2	4	7
d. reduce costs of administering?				
Yes	4	12	5	21
No	2	5	6	13
Uncertain		2	5	7
e. be desirable?				
Yes	1	17	11	29
No	1	1	3	5
Uncertain	4	1	2	7

Table A-2. Responses to questions about modifying mandatory conservation practices to allow regulation of part of district defined by boundaries of sections, townships, or counties.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	11	9	22
No	4	3	1	8
Uncertain		5	6	11
b. improve legal defensibility?				
Yes	2	9	6	17
No	2	4	2	8
Uncertain	2	6	8	16
c. reduce costs of adopting?				
Yes	4	9	6	19
No	2	7	5	14
Uncertain		3	5	8
d. reduce costs of administering?				
Yes	4	9	2	15
No	1	6	4	11
Uncertain	1	4	10	15
e. be desirable?				
Yes	2	11	8	21
No	1	2	2	5
Uncertain	3	6	6	15

Table A-3. Responses to questions about modifying mandatory conservation practices to limit referendum to the part of an NRD affected by proposed conservation practices.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	13	10	25
No	4	3	3	10
Uncertain		3	3	6
b. improve legal defensibility?				
Yes	1	8	8	17
No	3	2	3	8
Uncertain	2	9	5	16
c. reduce costs of adopting?				
Yes	4	11	7	22
No	1	4	6	11
Uncertain	1	4	3	8
d. be desirable?				
Yes	2	12	9	23
No	1	1	3	5
Uncertain	3	6	4	13

Table A-4. Responses to questions about modifying mandatory conservation practices to permit a simple majority of the votes in the referendum to authorize adoption.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	7	8	16
No	3	8	4	15
Uncertain	2	4	4	10
b. reduce costs of adopting?				
Yes	1	1	5	7
No	3	10	6	19
Uncertain	2	8	5	15
c. be desirable?				
Yes	4	9	7	20
No	2	5	4	11
Uncertain		5	5	10

Table A-5. Responses to questions about modifying mandatory conservation practices statutes to add penalties for violations of mandated practices.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	6	9	17
No	2	6	3	11
Uncertain	2	7	4	13
b. improve legal defensibility?				
Yes	4	10	10	24
No		5		5
Uncertain	2	4	6	12
c. reduce costs of adopting?				
Yes		6	5	11
No	4	7	4	15
Uncertain	2	6	7	15
d. reduce costs of administering?				
Yes		5	5	10
No	4	6	5	15
Uncertain	2	8	6	16
e. be desirable?				
Yes	5	11	12	28
No		2	2	4
Uncertain	1	6	2	9

Table A-6. Responses to questions about modifying mandatory conservation practices statutes to substitute a public hearing for the referendum requirement.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes		3	6	9
No	5	11	5	21
Uncertain	1	5	5	11
b. improve legal defensibility?				
Yes	1	2	8	11
No	4	12	4	20
Uncertain	1	5	4	10
c. reduce costs of adopting?				
Yes	3	8	3	14
No	2	6	7	15
Uncertain	1	5	6	12
d. be desirable?				
Yes	1	4	7	12
No	4	9	4	17
Uncertain	1	6	5	12

Table A-7. Responses to questions about modifying mandatory conservation practices statutes to authorize a state agency to require NRDs to draft conservation practices and hold referendum.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	6	10	17
No	5	7	2	14
Uncertain		6	4	10
b. improve legal defensibility?				
Yes	2	10	7	19
No	2	4	4	10
Uncertain	2	5	5	12
c. reduce costs of adopting?				
Yes	1	2	3	6
No	4	11	6	21
Uncertain	1	6	7	14
d. be desirable?				
Yes		7	9	16
No	5	9	2	16
Uncertain	1	3	5	9

RURAL ZONING

Table A-8. Responses to questions about modifying rural zoning statutes to specify zoning can be used to regulate irrigation activities.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	10	11	23
No	3	4	3	10
Uncertain		4	2	6
b. improve legal defensibility?				
Yes	4	10	12	26
No	1	3	2	6
Uncertain		5	2	7
c. reduce costs of adopting?				
Yes		2	6	8
No	4	8	6	18
Uncertain	1	8	4	13
d. reduce costs of administering?				
Yes		2	5	7
No	4	10	5	19
Uncertain	1	6	6	13
e. be desirable?				
Yes	3	9	10	22
No	1	3	3	7
Uncertain	1	6	3	10

Table A-9. Responses to questions about modifying rural zoning statutes to specify zoning can be used to protect subirrigation.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	10	12	23
No	1	3	2	6
Uncertain	3	5	2	10
b. improve legal defensibility?				
Yes	2	9	12	23
No	3	5	2	10
Uncertain		4	2	6
c. reduce costs of adopting?				
Yes	1	2	6	9
No	3	11	4	18
Uncertain	1	5	6	12
d. reduce costs of administering?				
Yes	1	2	3	6
No	3	10	7	20
Uncertain	1	6	6	13
e. be desirable?				
Yes	1	8	9	18
No	1	5	2	8
Uncertain	3	5	5	13

Table A-10. Responses to questions about modifying rural zoning statutes to authorize zoning for only part of a county.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	2	7	8	17
No	3	6	6	15
Uncertain		5	2	7
b. improve legal defensibility?				
Yes	2	7	5	14
No	2	7	6	15
Uncertain	1	4	5	10
c. reduce costs of adopting?				
Yes	2	7	3	12
No	1	9	8	18
Uncertain	2	2	5	9
d. reduce costs of administering?				
Yes	2	6	3	11
No	1	9	7	17
Uncertain	2	3	6	11
e. be desirable?				
Yes	2	6	8	16
No	2	6	7	15
Uncertain	1	6	1	8

GROUND WATER CONTROL AREAS AND GROUND WATER MANAGEMENT AREAS

Table A-11. Responses to questions about modifying Ground Water Management and Protection Act to specify potential ground water declines as a basis for designating a control area.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	3	12	7	22
No	2	6	1	9
Uncertain	1	2	5	8
b. improve legal defensibility?				
Yes	3	12	8	23
No	3	5	1	9
Uncertain		3	4	7
c. reduce costs of designating?				
Yes		2	4	6
No	5	9	1	15
Uncertain	1	9	8	18
d. be desirable?				
Yes	6	13	6	25
No		4	1	5
Uncertain		3	5	8

Table A-12. Responses to questions about modifying Ground Water Management and Protection Act to permit some land use controls in ground water control and management areas.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	7	6	14
No	5	6	2	13
Uncertain		7	5	12
b. improve legal defensibility?				
Yes		3	4	7
No	5	13	2	20
Uncertain	1	4	7	12
c. reduce costs of administering?				
Yes		2	2	4
No	5	13	4	22
Uncertain	1	5	7	13
d. increase ef- effectiveness?				
Yes	6	11	9	26
No		4		4
Uncertain		5	4	9
e. be desirable?				
Yes	5	9	7	21
No		6		6
Uncertain	1	5	6	12

Table A-13. Responses to questions about Modifying Ground Water Management and Protection Act to authorize well-drilling moratoria in ground water management areas.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	10	8	19
No	5	5	2	12
Uncertain		5	3	8
b. reduce costs of administering?				
Yes	1	2	3	6
No	4	11	3	18
Uncertain	1	7	7	15
c. increase ef- effectiveness?				
Yes	5	12	7	24
No	1	5	1	7
Uncertain		3	5	8
d. be desirable?				
Yes	2	9	6	17
No	1	4	1	6
Uncertain	3	7	6	16

Table A-14. Responses to questions about modifying state statutes to require NRDs to establish control areas when ground water declines reach some statutorily specified level.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	3	12	10	25
No	3	6		9
Uncertain		2	3	5
b. improve legal defensibility?				
Yes	2	10	8	20
No	3	5	1	9
Uncertain	1	5	4	10
c. reduce costs of designating?				
Yes	1	1	5	7
No	4	12	3	19
Uncertain	1	7	5	13
d. be desirable?				
Yes	2	9	7	18
No	3	6		9
Uncertain	1	5	6	12

Table A-15. Responses to questions about modifying state statutes to require NRDs to establish levels of ground water quantity or quality declines at which NRD would request a hearing for a ground water control area.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	3	13	6	22
No	3	4	1	8
Uncertain		3	6	9
b. reduce costs of designating?				
Yes		2	4	6
No	5	10	2	17
Uncertain	1	8	7	16
c. reduce costs of administering?				
Yes		2	3	5
No	5	10	1	16
Uncertain	1	8	9	18
d. be desirable?				
Yes	3	9	4	16
No	1	4		5
Uncertain	2	7	9	18

Table A-16. Responses to questions about modifying state statutes to require state designation of ground water control areas whenever NRDs do not act.

Questions / Responses	Respondent Category: NRD Managers	NRD Directors	County Comm.	Totals
		Number		
In your opinion, would this change:				
a. increase political support?				
Yes	1	6	5	12
No	5	12	1	18
Uncertain		2	7	9
b. reduce costs of designating?				
Yes		4	4	8
No	5	12	3	20
Uncertain	1	4	6	11
c. reduce costs of administering?				
Yes		3	4	7
No	5	13	2	20
Uncertain	1	4	7	12
d. be desirable?				
Yes	1	5	5	11
No	4	12	1	17
Uncertain	1	3	7	11