

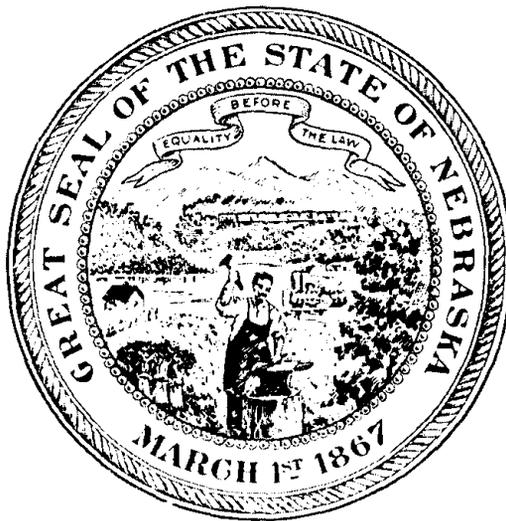
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STATE SOIL AND WATER
CONSERVATION COMMISSION
64728, State House
Lincoln, Nebraska 68509

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ANNUAL WATERSHED PLANNING REPORT

January 1, 1970 – December 31, 1970

OFFICIAL FILE COPY

Prepared by: David B. Burris, Head
Watershed Planning Section

NEBRASKA SOIL AND WATER CONSERVATION COMMISSION

Watershed Planning Section

ANNUAL REPORT

January 1, 1970 - December 31, 1970

Submitted by: David B. Burris, Head
Watershed Planning Section
Soil and Water Conservation
Commission

PROGRAMS:

SOIL & WATER CONSERVATION
WATERSHED PROTECTION
FLOOD CONTROL
RIVER BASIN INVESTIGATIONS
FLOOD PLAIN STUDIES
STATE WATER PLAN

State of Nebraska
Soil and Water Conservation Commission

P. O. BOX 94725
STATE CAPITOL
LINCOLN, NEBRASKA 68509

January 22, 1971

TO: Dayle Williamson
Executive Secretary
Nebraska Soil and Water Conservation Commission

FROM: David B. Burris
Head, Watershed Planning Section
Nebraska Soil and Water Conservation Commission

This report summarizes the activities of the Watershed Planning Section during the past year. The data contained herein shows that significant progress has been made on many projects, both P.L. 566 and otherwise. This report also shows that a large percentage of our efforts were for direct support of Soil Conservation projects.

I hope you will find this report a suitable document for evaluating the Watershed Planning Program.


David B. Burris, Head
Watershed Planning Section

DBB:rse

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ANNUAL WATERSHED PLANNING REPORT

INTRODUCTION

The Watershed Planning Section of the State Soil and Water Conservation Commission has three major programs. The oldest provides aid to the Soil Conservation Service through surveying, Kelsh plotting, and the services of a full time technician. This service started in 1959 with two survey crews and has grown to the size indicated in this report.

The second major program of the State Watershed Planning Section is the development of small watershed projects under Public Law 566, the Small Watershed Act. Under this program, considerable progress has been made on ten of the twelve P.L. 566 projects assigned to the party.

The third program consists of providing technical planning assistance to Soil and Water Conservation Districts and other units of State Government. Projects such as Brown's Canyon, Lost-Dry, the Peterson Feedlot, Scotts Bluff County, and R.C.& D. projects are current examples.

SURVEYING

The Commission's Watershed Planning Staff provides 100 percent of all P.L. 566 planning surveys needed by both the Soil Conservation Service and the Commission. In addition, surveys were completed for use in the Flood Plain Zoning Program, the R.C.& D. program, and Soil and Water Conservation Districts' projects.

The Survey Crew activities are shown in detail in the following tables, 1a and 1b.

TABLE 1a
(Crew Weeks)
SURVEY ASSISTANCE - COMMISSION PROJECTS

Project	County	Area	Vertical Control	Valley Cross Sections	Bridge Cross Sections	Kelsh Control	Topography	G and Drill Hole Locations	Total Crew Weeks	Remarks
Southern Sarpy	Sarpy	76,000	4.0						4.0	P.L. 566
SUBTOTAL			4.0						4.0	
West-Dry	Phelps-Kearney	183,040				7.0			7.0	Special
Brown's Canyon	Scotts Bluff		2.0			3.0			5.0	Special
SUBTOTAL			2.0			10.0			12.0	
Grand Island	Hall			0.4					0.4	Flood-Plain
SUBTOTAL				0.4					0.4	
TOTAL			6.0	0.4		10.0			16.4	

TABLE 1b
(Crew Weeks)
SURVEY ASSISTANCE - SOIL CONSERVATION PROJECTS

Project	County	Area	Vertical Control	Valley Cross Sections	Bridge Cross Sections	Kelsh Control	Topography	G and Drill Hole Locations	Total Crew Weeks	Remarks
Middle Big Nemaha	Pawnee - Gage - Johnson	136,415				10.0	21.0		31.0	P.L. 566
Spring Creek	Dawson	175,000				0.4			0.4	P.L. 566
Blackwood	Hays - Hitchcock	151,000					13.6	3.0	16.6	P.L. 566
South Fork	Pawnee - Richardson	30,400						2.0	2.0	P.L. 566
Winnebago-Bean	Richardson	12,100						1.0	1.0	P.L. 566
32-Mile	Adams	60,000		0.4			2.4		2.8	P.L. 566
South Branch Little Nemaha	Johnson - Otoe - Lancaster	126,220					16.6		16.6	P.L. 566
Upper Medicine	Lincoln - Hays - Frontier	235,000						0.8	0.8	P.L. 566
Maple Creek	Stanton - Colfax - Dodge	253,000	6.0						6.0	P.L. 566
SUBTOTAL			6.0	0.4		10.4	53.6	6.8	77.2	

TABLE 1b - Cont'd
(Crew Weeks)
SURVEY ASSISTANCE - SOIL CONSERVATION PROJECTS

Project	County	Area	Vertical Control	Valley Cross Sections	Bridge Cross Sections	Kelsh Control	Topography	G and Drill Hole Locations	Total Crew Weeks	Remarks
Lewellen	Garden		2.0						2.0	R.C.& D.
Dshkosh	Garden		2.0						2.0	R.C.& D.
Lisco	Garden		2.0						2.0	R.C.& D.
SUBTOTAL			6.0						6.0	
Peterson Feedlot	Holt					0.4			0.4	Special
SUBTOTAL						0.4			0.4	
TOTAL			12.0	0.4		10.8	53.6	6.8	83.6	

KELSH PLOTTING

The Kelsh Plotting Section furnishes all the mapping requirements of the Soil Conservation Service in the State of Nebraska in addition to the needs of the Soil and Water Conservation Commission. In addition to the mapping listed in Tables 2a and 2b, they also compiled four drainage maps and provided extensive drafting services for miscellaneous reports completed by the Planning Party.

In April, 1970, the Commission moved to new office space in the Capitol Building. One of the Kelsh operators spent two months remodeling the new office area. This time was the equivalent of mapping two floodwater retarding structures.

TABLE 2a
KELSH PLOTTING - COMMISSION PROJECTS

Project	County	Work Completed	Remarks
Lost-Dry	Phelps-Kearney	14 Sq. Mi. of 2 ft. Contours	Special
Brown's Canyon	Scotts Bluff	3 Sq. Mi. of 2 ft. Contours	Special

TABLE 2b
KELSH PLOTTING - SOIL CONSERVATION PROJECTS

Project	County	Work Completed	Remarks
South Branch Little Nemaha	Johnson - Otoe - Lancaster	14 Floodwater Retarding Structures	P.L. 566
Spring Creek	Dawson	1 Floodwater Retarding Structure	P.L. 566
Middle Big Nemaha	Pawnee - Gage - Johnson	2 Floodwater Retarding Structures	P.L. 566
Blackwood	Hays-Hitchcock	1 Floodwater Retarding Structure	P.L. 566
Peterson Feedlot	Holt	2 Sq. Mi. of 2 ft. Contours	Special

OTHER ASSISTANCE TO THE SOIL CONSERVATION SERVICE

The Watershed Planning Section furnishes one engineering technician to the Soil Conservation Service. This technician is permanently assigned to the SCS planning party and works full time in their office. The administration and supervision of this employee have been delegated to the Soil Conservation Service. His duties include planimetering areas, performing routine calculations, preparing land rights maps, and other semi-technical assignments. The salary and field expenses are furnished by the Commission Watershed Planning Party.

WORK PLAN DEVELOPMENT

The following table indicates the status of each P.L. 566 project the Commission is working on as of December 31, 1970.

In addition to the work shown on Table 3, the Commission is engaged in developing a surface water drainage scheme for an area in Scotts Bluff County known as Brown's Canyon. This project will be sponsored by the County and the SWCD.

The staff geologist has, in addition to his regular duties, provided technical information on a groundwater withdrawal problem in Banner County and a detailed report on a road stabilization problem in Scotts Bluff County.

TABLE 3 ^{1/}
 WORK PLAN PROGRESS - COMMISSION PROJECTS

	Basic Data	Basic Surveys	Preliminary Hydrology	Preliminary Engineering	Preliminary Economics	Preliminary Geology	Costs	Benefits	Compare Alternatives	Present to Sponsors	P. I. Report	Authorization	Site Surveys	Detailed Hydrology	Detailed Engineering	Detailed Economics	Detailed Geology	Costs	Benefits	Comparison of Alternates	Present to Sponsors	Select Plan	Review by Agencies	Acceptance by Sponsors	Authorized	% Complete
Balls Branch												X	X	X	X	X	X	X	X	X	X					80
Wahoo							X	X	X	X																35
Bone			X	X	X	X	X	X	X																	30
Humbug					X	X	X	X	X	X	X															100
Winters Creek																								X		95
Creighton Valley												X	X	X												50
Twin				X																						20
Southern Sarpy	X																									5
Stevens-Callahan	X																									5
Weeping Water	X																									5
N. E. Cass	X																									5

^{1/} Lost-Dry and Brown's Canyon not shown because they are not P.L. 566 projects. A description of the progress is shown in the next section - Summary of Planning Status.

^{2/} Exeter-Dogtown not listed - See Summary of Planning Status.

SUMMARY OF PLANNING STATUS

EXETER-DOGTOWN

Planning has been suspended pending an evaluation of the present limits of the problems and the most feasible method of financing.

BALLS BRANCH

A work plan has been completed and presented to the sponsors. The required reviews will be initiated as soon as the sponsors indicate their acceptance.

WAHOO

The sponsors have recommended several alternatives to the structural systems presented for their consideration. The Planning Party is in the process of evaluating these recommendations.

BONE

The Planning Party is comparing the feasibility of structural schemes recommended by the sponsors.

HUMBUG

A preliminary investigation was completed and presented to the sponsors. The project was not found to be economically justified.

LOST-DRY

After consulting with the sponsors and the Soil Conservation Service, it was decided that this area and its problems were not applicable to the P.L. 566 program. We therefore determined that the Commission Planning Party would devise a surface drainage scheme that the sponsors would

incorporate with their program of ground water control. It was also agreed that the sponsors would seek other means of financing the construction of the drainage system - possibly by a "Small Project Loan" from the Bureau of Reclamation.

TWIN

The Planning Party is in the process of trying to formulate a feasible surface drainage scheme.

WINTERS CREEK

The Work Plan has been accepted and signed by the sponsors. It is presently in Washington undergoing the formal review and authorization process.

CREIGHTON VALLEY

Planning Authorization has been received from Washington. An unusual seepage problem was discovered and detailed geologic studies were initiated to determine the extent and magnitude of the problem. It was concluded that the problem could be solved by storing the floodwaters farther up the groundwater gradient, i.e. farther upstream.

BROWN'S CANYON

Detailed topographic maps of the area are nearly complete. Project formulation will begin when these maps are completed.

STEVENS-CALLAHAN

Basic information such as 3.2 inch to the mile aerial photographs and drainage maps have been obtained. As soon as scheduling permits, survey crews will initiate preliminary surveys.

NORTHEAST CASS

See Stevens-Callahan.

WEeping WATER

See Stevens-Callahan.

SOUTHERN SARPY

Basic information such as 3.2 inch to the mile aerial photographs and drainage maps have been obtained. Survey crews have started preliminary surveys.

FUNDS EXPENDED:

WATERSHED PLANNING

January 1, 1970 to December 31, 1970

	Survey	Kelsh	SCS	Planning	Total
Salaries	\$56,102.02	\$28,761.17	\$4,382.37	\$76,368.53	\$165,619.09
Travel	13,618.82	124.02	----	4,644.29	18,387.13
Contracts		(9,328.80) ^{1/}	5,184.00 ^{2/}		5,184.00
Capital	5,951.25	1,418.26	----	2,756.91	10,126.42
Supplies and Operating Cost	3,500.00	2,569.76	2,238.85	2,476.93	10,785.54
	<u>\$79,177.09</u>	<u>\$32,873.21</u>	<u>\$11,805.22</u>	<u>\$86,246.66</u>	<u>\$210,102.18</u>

^{1/} Reimbursed by local sponsors.

^{2/} Not reimbursed by sponsors.

The total surveying expenditure is composed of the following:

Commission Projects

P.L. 566	4.0%	=	\$3,167.08
Special	12.0%	=	9,501.25
Flood Plain Zoning	0.4%	=	<u>316.71</u>
Subtotal	16.4%	=	\$12,985.04

Soil Conservation Projects

P.L. 566	77.2%	=	\$61,124.71
R.C. & D.	6.0%	=	4,750.63
Special	0.4%	=	<u>316.71</u>
Subtotal	83.6%	=	<u>\$66,192.05</u>

Total Surveying Expenditure = \$79,177.09

The total Kelsh Mapping expenditure is composed of the following:

Commission Projects

P.L. 566	0.0%	=	\$ 0.00
Special	47.6%	=	<u>15,647.65</u>
Subtotal	47.6%	=	\$15,647.65

Soil Conservation Projects

P.L. 566	49.0%	=	\$16,111.56
Special	3.4%	=	<u>1,114.00</u>
Subtotal	52.4%	=	<u>\$17,225.56</u>

Total Kelsh Expenditure = \$32,873.21

The Watershed Planning Party's net operating expense for calendar year 1970 is shown below.

Total expenditures	\$210,102.18
Less Survey Value for SCS	66,192.05
Less Survey Value for Flood Plain Zoning	316.71
Less Kelsh Value for SCS	17,225.56
Less Salaries and Contracts for SCS	<u>9,566.37</u>
Net Operating Cost	\$116,801.49

SUMMARY

An analysis of the preceding data will show that approximately 44.3 percent or \$92,983.98 of the Watershed Planning Party's budget was expended for direct support of the Soil Conservation Service. To adequately evaluate the Planning Party's progress during the past calendar year, the progress indicated under the section entitled Work Plan Development must be compared to a net expenditure of \$116,801.49.

The Soil Conservation Service has estimated an expenditure of \$139,500 during the last calendar year. If the value of assistance from the Soil and Water Conservation Commission is added to this figure, the total equivalent cost is approximately \$232,500.

Total planning expenditures, therefore, amount to \$349,300 of which the net operating expenses of the Commission's Watershed Planning Party comprise \$116,800 or 33.4 percent.

A comparison of the net operating costs for calendar year 1969 and 1970 indicates a 6 percent increase in 1970. In view of the salary increases, inflation, and purchase of new equipment, this figure seems quite reasonable.