

File Copy #1359

Report of  
**NORTH DAKOTA STATE WATER CONSERVATION COMMISSION**  
1301 State Capitol  
**BISMARCK, NORTH DAKOTA**

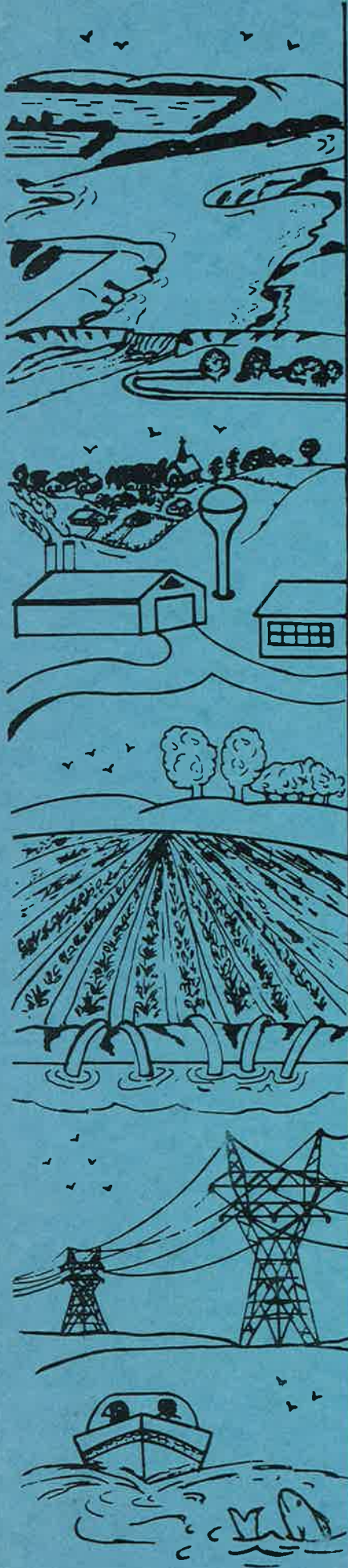
**BARNES COUNTY (LUCCA) LEGAL DRAIN #2**

SWC Project #1359

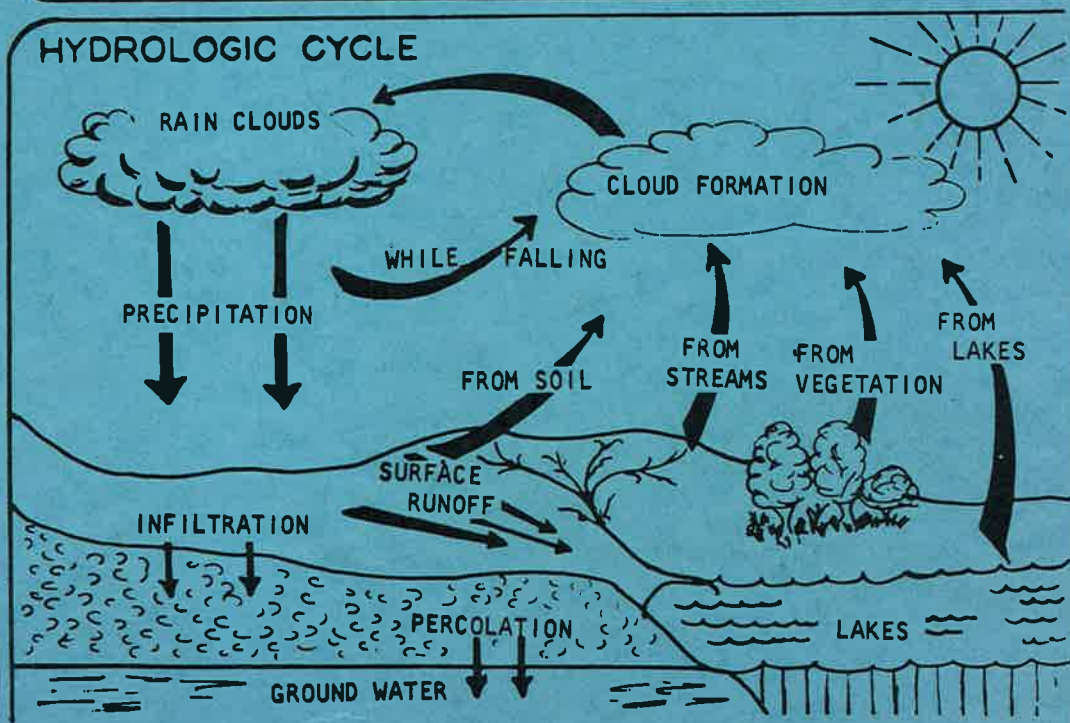
By

Fred J. Fredrickson, Planning Coordinator  
North Dakota State Water Commission

December 6, 1965



**HYDROLOGIC CYCLE**



NORTH DAKOTA STATE WATER COMMISSION

OFFICE MEMO

TO: Governor William L. Guy, Chairman, State Water Commission  
FROM: Fred J. Fredrickson, Planning Coordinator, State Water Commission  
SUBJECT: Barnes County (Lucca) Legal Drain, SWC Proj. #1359  
DATE: December 6, 1965

A. The Project

1. The proposed Barnes County (Lucca) Legal Drain (#2), also referred to as the Lucca-Nome Drain, would be located in southeastern Barnes County, extending across the Barnes-Cass county line into Cass County a distance of about one mile, and drain into Maple River in Cass County. It would affect an area in Barnes County of approximately 13 square miles, and in Cass County about a 2 square mile area.

2. It is understood that the Maple River Water Management District in Cass County would cooperate with the Barnes County Drain Board and would share in the cost of the downstream retention dam estimated to cost between \$75,000 and \$85,000. This structure would create a reservoir of 205 surface acres which would have a conservation pool of 1800 acre-feet with a depth of 31 feet, and a 1550 acre-feet flood control storage pool of a depth of 41 feet for slow release. (See Appendix A, Location Map, and Appendix 1, Area Map, prepared by C. P. Nelson, Commission Drainage Engineer, especially for this Memo report.)

B. Wetlands

1. The Bureau of Sport Fisheries and Wildlife estimates that there are 1800 acres of wetlands, containing about 1200 wetland units, averaging 1.5 acres each, within the affected area.

C. Soil Conservation Service Engineering Service

1. When the project was first proposed, the Maple River Water Management District deposited with the Commission \$200 for study of the Lucca Dam as required by the Commission for such projects, and the Commission thereupon made preliminary studies thereof. At that time the Soil Conservation Service was authorized to provide engineering and other technical services for developing final plans for drains, and it did perform a considerable amount of work thereon. Shortly thereafter, however, the SCS regulations were changed to prohibit the use of Federal funds for such services unless the proposed drain was approved by the State Game and Fish Department. Because of anticipated adverse effects upon wildlife habitat and propagation, the State Game and Fish Department has so far withheld approval of the project as currently proposed. With the loss of further Federal funds, the SCS engineering and planning work came to an abrupt stop. It is estimated that from \$15,000 to \$20,000 would be required for private engineers to complete the planning of the drain and dam together.

D. Considered by Commission

1. Project proponents have twice appeared before the Commission in behalf of the proposal: July 21 and August 27, 1965, and the matter was again on the agenda and considered at its September 30, 1965 meeting.

2. At his appearance before the Commission on August 27, Mr. M. I. Skramstad, Chairman of the Barnes County Drain Board, speaking for the project proponents, requested Commission participation of 40% of the project cost, exclusive of engineering, in order that the affected landowners might determine if they wish to construct the drain even if the cost of the remaining engineering must be assessed against benefited property. (See Appendixes B, C and D, Minutes of Commission Meetings.)

E. Conferences

1. Pursuant to the minutes of Commission meetings mentioned, conferences among representatives of the agencies concerned, namely: State Water Commission, State Game and Fish Department, Bureau of Sport Fisheries and Wildlife, U. S. Soil Conservation Service, Barnes County Drain Board, and Barnes County Board of County Commissioners have been held in attempts to reconcile the differences and wildlife problems involved. At a meeting in Valley City on November 3, 4 and 5, 1965, the representatives not only discussed and analyzed the problems but spent half a day on a field trip to the proposed legal drain area.

2. Reports of that conference from Dale H. Glover, Commission Hydrologist, and a joint report thereon by Erling Podoll and Robert Morgan, representing the U. S. Soil Conservation Service and State Game and Fish Department, respectively, describe the various project phases and problems as they would affect the waterfowl, pheasant, partridge and deer production values, and hunting. (These reports are attached as Appendixes E and F.)

F. The Problem

1. Leaving out the 71.1 acres of wetlands on the west branch of the drain for which a solution to the problems has since been agreed upon, the joint report of Podoll and Morgan states:

- (a) "There are 221 type 3, 4, and 5 wetlands in the 16.5 square mile legal drain area totaling 705 acres. This includes the wetlands delineated in the proposed channels. In other words, 174 out of 221 or 79% of the total number, and 75% of the total acreage of type 3, 4, and 5 wetlands would be outside the channel area.

- (b) "It was generally agreed that the four large wetlands in the west branch (71.1 acres) could be preserved by setting the desired elevations on road and railroad culverts or building water control structures. An agreement has been reached on this item. 7. In addition the 31.5 acre wetland in Cass County and an 8.5 acre wetland in Section 11 may be preserved in the same way.
- (c) "There was discussion on what land is cropland. There was some local thought that land Classes Vw and 1115w are cropland. This was not checked in the field with the farmers themselves. It may still have to be done at some later date. Regardless of tax procedures or farming attempts, the above land classes are poor farming risks. The Conservation Needs Inventory found the above could be used for cultivated crops about 10% of the years without drainage. There are large wetland areas in the Lucca drain area in land Class 1114w. These are most generally type 1 wetlands and can be farmed over one-half of the years with drainage."

G. Alternatives, Preservation or Mitigation

1. The joint report insists that alternatives should be carried out, singly or in any combination, by the Drain Board in order to preserve wetlands or mitigate direct wetland loss by channel work:

- (a) "Preserve as much wetland as feasible that was originally proposed for drainage.\* \* \*
- (b) "Insure existing wetlands against drainage as partial compensation for wetland lost through channel construction. Wetlands preserved by easements or purchase should be at a rate of 3.5 acres wetlands maintained for every acre lost by channel work.
- (c) "Work with the Bureau of Sport Fisheries and Wildlife under their easement and acquisition program to insure against drainage.
- (d) "It is recommended by the joint report that at least 25% (135 acres) of the wetlands outside the channel area be preserved by the above methods."

2. Mr. Glover in his report says -

- (a) "Various means of mitigation were discussed. On the west branch, it is thought to be possible to avoid the loss of the 71.1 acres by establishing control structures at the outlets. The purpose would be to maintain the

existing marsh levels, that nothing would be lost and no mitigation would be required. This would leave 102.5 acres on the east branch to be mitigated. Several means of accomplishing this were discussed, such as:

- Control structures
- Level ditching
- Broad areas and satellite ponds
- Easement on side areas
- Purchase by Fish and Wildlife."

#### H. Position of Drain Board

1. At a meeting with Chairman Skramstad of the Barnes County Drain Board, William Baribeau of the SCS, Commissioner Gordon K. Gray and this writer in Valley City, last Saturday, December 4, 1965, it was restated by Mr. Skramstad that the only pressing question at this time is whether the Commission will agree to participate in the cost of the project at the usual 40% cost-sharing in legal drain projects.

2. It was further indicated by the drain board chairman that neither he, the affected land owners nor the Board of Barnes County Commissioners agree with the statements of the joint report in F 1(c) regarding the 'poor farming risks' in that "The Conservation Needs Inventory found the above could be used for cultivated crops about 10% of the years without drainage." These, Mr. Skramstad points to as terminological inaccuracies.

3. As indicated by a statement of Chairman Skramstad, attached as Appendix G, the 24 farmers directly affected in the area of the proposed drain, when polled, estimated each had lost \$2,500 for each of the six wet years between 1952 and 1963, both inclusive, for a total annual loss of \$15,000, which over a 15-year period (the approximate time for paying for the drain) would amount to \$360,000.

I. Conference of Agency Representatives

1. Last Friday afternoon, December 3, 1965, the following representatives of the concerned agencies name met in the Commission office for the purpose of attempting to reach agreement on items in controversy and recommending solutions thereof:

Milo W. Hoisveen, State Engineer-Chief Engineer,  
State Water Commission

C. P. Nelson, Drainage Engineer, State Water Commission

Dale H. Glover, Hydrologist, State Water Commission


Lyness G. Lloyd, State Conservationist, U. S. Soil  
Conservation Service

Charles Evans, Assistant State Conservationist, U. S.  
Soil Conservation Service

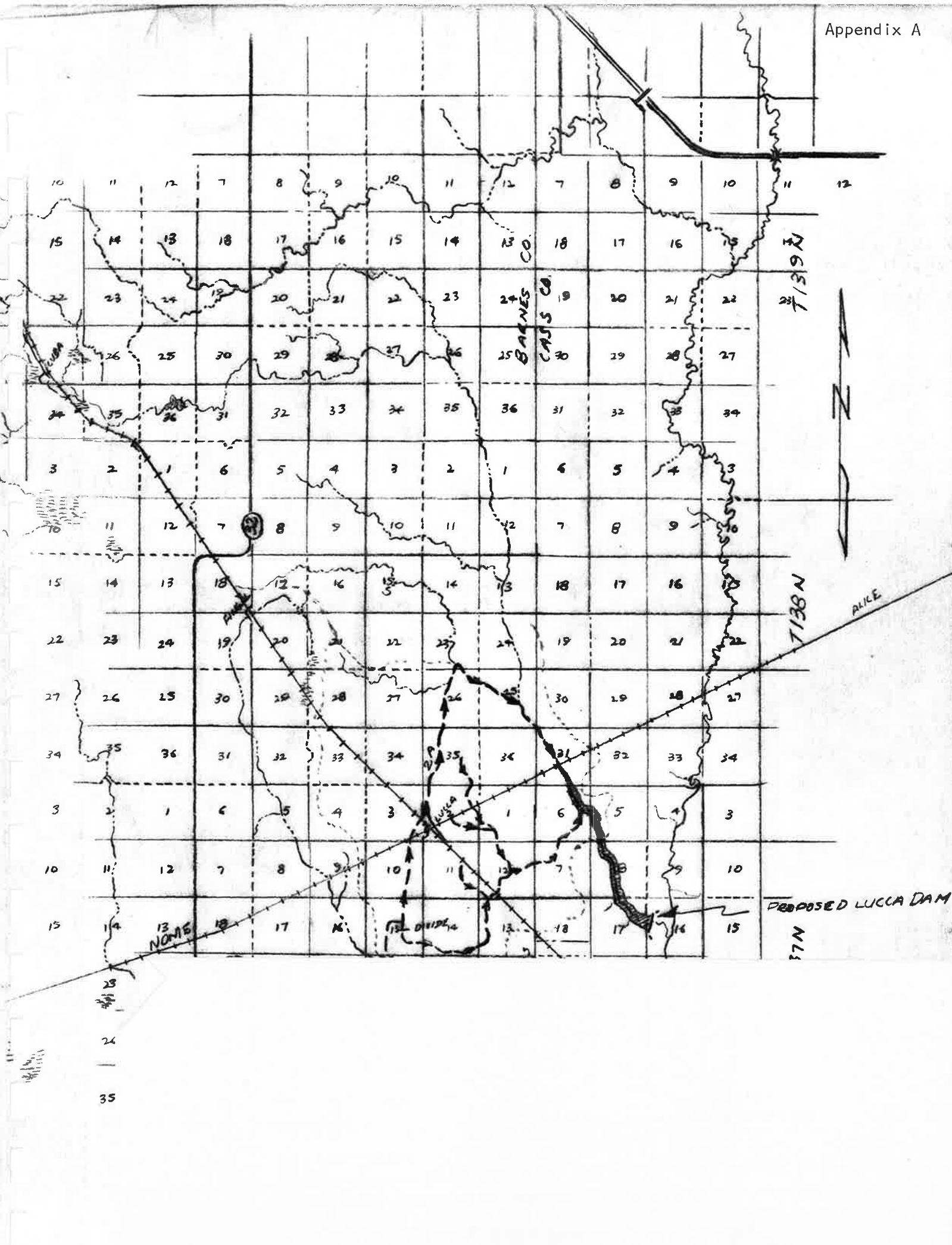
Russell Stuart, Commissioner, State Game and Fish Department.

2. At that conference Mr. Hoisveen pointed out that the activities of both the Commission and SCS result in statewide increase in reservoirs and recharge basins which in effect provide a 'Water Bank' which in the aggregate enhance wildlife and to which credit should be given for such benefits. No change in the approach given to the analysis of mitigation measures in the case of the Lucca drain arose from this approach, however. Messrs. Stuart and Lloyd expressed themselves as accepting the Joint Biological Report of Messrs. Podoll and Morgan. (See Appendix H, Minutes of the December 3, 1966, meeting.)

Respectfully submitted,

  
Fred J. Fredrickson  
Planning Coordinator  
State Water Commission







NORTH DAKOTA STATE WATER COMMISSION

OFFICE MEMO

TO: Milo W. Hoisveen, Chief Engineer  
 FROM: C. P. Nelson, Drainage Engineer  
 SUBJECT: Wells County Drain #1 - SWC Project #1483  
 DATE: February 20, 1968

*Biological Report  
 Does meet their  
 not to original spec*

This office has been requested by letter dated February 13, 1968, from the Wells County Water Management District to participate in the improvement of Wells County Drain #1. This is an old drain, extending from a large slough area west of Fessenden north to a well-defined coulee with outfall into the James River.

The slough area is included in the mitigation measures planned as part of the present Garrison Diversion project. The planned drain improvement is not designed to drain the slough, but to reduce overflow and adjacent flooding experienced as a result of uncoordinated and unplanned field drainage into it during the past several years. The designed ditch line appears to me to be definitely a partial restoration only, of the original drain.

Attached is a copy of the joint biological report on this drain. It is apparent that the plans of the Soil Conservation Service, which have been accepted by the Water Management Board, are aimed at meeting item 2 of the recommendations in the biological report. The ditch bottom grade line intersects the existing 36" CMP above its center. At low or no flow, the upstream slough would drain to approximately 1597, which is 2' below the top of the section line road crossing the north extremities of the slough area. This is minimum freeboard for road protection, and therefore can be considered as meeting the requirements of the biological report.

The cost of the drain improvement as designed is shown as \$8,461.40 by the Soil Conservation Service technical advisors to the board. The State share of this cost, which is qualified for State participation is \$3,384.40.

In view of the probability that 6 to 8 years will elapse before this land becomes a wildlife-managed area, and the present project calls for controlling slough level rather than draining it, I recommend that State participation be granted.

Respectfully submitted,



C. P. Nelson  
Drainage Engineer

CPN:ka

Dist.  
MWH  
Al G  
DDS

NORTH DAKOTA STATE WATER COMMISSION

OFFICE MEMO

MEMO TO: Milo W. Hoisveen, Chief Engineer  
FROM: C. P. Nelson, Drainage Engineer  
SUBJECT: Lucca Drain, SWC Project #1359  
DATE: March 18, 1968

Summary of Mitigation Measures

Acreage of wetlands (III or IV) committed to easement: = 10 acres - 37.7 a.

71.1

Level ditching - to G2 standards, estimated total length: 16,000' ÷ 3 = 5,333 yards, or 53.3 units equivalent to 1 acre each of wetlands

115.

Wildlife waterholes = 12 at an estimated equivalent of 2a, under specifications as equivalent of broadpond = 24.0 acres, equivalent

In addition, permanent grass areas are to be provided in three locations, fenced in. Existing tree area will be fenced, in at least one area, and ten new tree planting areas are planned.

The wetlands to be preserved or provided by mitigation by the above figures total 115 acres, without any credit being applied to the tree plantings, one food patch volunteered, and the fenced grass and tree areas.

71.1  
15.0  
7.0  
93.1

Original requirements were to preserve the 71.1 acres of wetlands on the west branch, or reach #2A of the drain. Fifteen acres of this area will be preserved under the counter proposal, and approximately 7 acres more, equivalent in level ditching, making 22 acres equivalent. This is without a possible addition, due to the indeterminate large slough area in Section 10, Township 137, Range 56.

The balance of the area shows 22.7 acres preservation, 24 acres waterhole equivalent, and 46.3 acres level ditching equivalent, making a total of 93 acres. The original recommendation was for 25%, or 135 acres be preserved outside the channel area.

135  
93  
42

*206 Invision by Biolog Report*  
*- 115*  
*91 Deficient*

Neither figure is up to the acreage required by the original biological report.

The total cost of the Lucca Drain project, estimated in 1964, was \$71,082.50. Costs have gone up since, and I believe a 20% increase in that estimate would be

realistic for a current cost figure,. This would place the present estimated cost at approximately \$85,000. The proportion of qualified construction items was 32 $\frac{1}{2}$ % on the first estimate, and should remain substantially the same on this one. The state share figures to \$27,600, on this basis.

In view of the near total loss of control by all departments involved, and the voluntary nature of the counter proposal presented to this office by the Barnes County Drain Board, it is my recommendation that participation in this drain in the amount of 40% of qualified construction items, amounting to an estimated \$27,600, be given favorable consideration. It is further recommended that the Barnes County Drain Board be urged to continue in obtaining further commitments to place wetlands under easement, or obtain similar commitments to provide "G2" mitigation measures within the area of influence of this drain.

It might be worthy of consideration that the orderly approach to drainage which is a part of such a planned community effort, as opposed to "going on their own" would be considerably strengthened by further incentive in signing up for the mitigation practices or easements. If there were some means whereby this department could underwrite the landowner's 20% of cost in each of the G-2 practices volunteered and shown on the attached map, I believe it would save or mitigate more wetlands, and reduce the local resistance to the "total water management" approach.

Respectfully submitted,



C. P. Nelson  
Drainage Engineer

CPN:jd

Dist.  
MWH ✓  
AI G  
DDS

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JOINT BIOLOGICAL REPORT ON PROPOSED CLEAN-OUT OF MANFRED LEGAL DRAIN (WELLS #1)

A joint inspection was made of the above area on August 9, 1967. The actual drain is located in Section 35, T 149N, R 71W and Section 3, T 148N, R 71W, Wells County. It is intended to drain an old slough of approximately 1300 acres. Signs of attempts to cultivate the slough again this year were evident. Recent land ownership changes have been consummated with the specific intent of obtaining complete drainage of the slough.

It was reported previously that this area is one of the recommended development sites for wildlife habitat mitigation under the Garrison Diversaion Project.

At a meeting with farmers on this drain, they reported that a landowner above them lowered the water level of a lake which added to their problem. This point should be checked out by an appropriate agency to determine whether illegal water management activity has occurred.

It is recommended that either:

1. No assistance be provided for clean-out of the drain; or
2. Provide technical assistance only if the grade of the ditch is set no lower than that needed to safeguard roads. Generally, this can be attained by setting the ditch bottom elevation slightly below the top of the gravel road near the ditch's beginning. The State Water Commission could not locate any survey or field notes on this drain, so determining the original elevation would be difficult.

Generally, it is deemed inappropriate to assist with drainage of this area for many reasons, particularly from the reclamation standpoint and not being consistent with wildlife plans for the area.

Erling B. Pedoll, Biologist  
Soil Conservation Service

Robert L. Morgan, Biologist  
North Dakota Game & Fish Dept.

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discharge measurements in connection with dams. A gaging station is to be installed on Sweetbriar Lake as a result of this program. During the winter months an employee of the State Water Commission is placed with the Geological Survey and the Commission pays the salary of this employee in the amount of \$2,000. The contract is for \$48,000. The U. S. Geological Survey matches the Commission's share of the program costs.

It was moved by Commissioner Hanson, seconded by Commissioner Dushinske and carried that the Commission approves the hydrographic program for fiscal year 1966 in the amount of \$43,000 with the Commission's share being \$22,000 repay and \$2,000 direct on an annual basis.

COMMISSION DISTRICT  
DESIGNATION-File C1-6

Secretary Hoisveen presented two plans for approval for Commission district designation. The Commission approved Plan Two with the

recommendation that Foster County be a part of Mr. Dushinske's District. The County designations are as follows:

<u>Steinberger</u>	<u>Dushinske</u>	<u>Hanson</u>	<u>Gallagher</u>	<u>Gray</u>
Divide	Rolette	McKenzie	Mercer	Griggs
Williams	Towner	Dunn	Oliver	Steele
Burke	Cavalier	Golden Valley	Morton	Traill
Mountrail	Pembina	Billings	Burleigh	Stutsman
Renville	Pierce	Stark	Kidder	Barnes
Ward	Benson	Slope	Emmons	Cass
McLean	Ramsey	Nettinger	Logan	Lafour
Bottineau	Walsh	Bowman	McIntosh	Ransom
McHenry	Nelson	Adams	Sheridan	Dickey
	Grand Forks	Grant	Wells	Sargent
	Eddy	Sioux		Richland
	Foster			

It was moved by Commissioner Gray, seconded by Commissioner Dushinske that Plan 2 be approved as designating the districts of the Commission members. Motion carried.

Governor Guy returns to the meeting.

HOME-LUCCA DRAIN  
Project #1377

Messrs. Skramstad, Heimes, Anderson and Hanson of Barnes County appear before the Commission concerning the Home-Lucca Drain.

Secretary Hoisveen stated that the Maple River Water Management District in Cass County is interested in the Nome-Lucca project. That district paid \$200 towards the survey which the Commission conducted relative to the Lucca dam survey which was made last winter. They have a great deal of flooding in the Maple River area resulting from the flood waters originating in the so-called Fingal-Lucca drainage basin and will share in the cost of the project at the local level, as well as Barnes County. This dam as proposed would cover 205 surface acres at a depth of 31 feet and have a conservation pool of 1800 acre-feet. The flood control pool at maximum depth would be 41 feet which would impound 1550 acre-feet of storage for slow release into

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the Maple River. The estimated cost of the structure would be between \$75,000 and \$85,000.

Mr. Skramstad stated that the activities on the drain were started in 1962 after flooding in the area. The farmer couldn't get his crops harvested. In 1963 they couldn't get their crops seeded. They started work to obtain the legal drain between Casselton and Maple River area at that time. They are still working on the drain at Lucca, Home and Fingal. In 1962 when the project was started it was under P.L. 8732. The law has now been changed so that no federal funds can be expended without approval of the Game and Fish Department. Up to this time they had been using Soil Conservation Service engineers for the survey work. The remaining survey work cannot be completed without approval of the Game and Fish Department. If they have to hire a private engineer this will increase the cost of the Lucca Drain. They would like assistance from the State Water Commission. Mr. Skramstad stated that at least one-third of the land has not been farmed in the last three years.

Governor Guy asked if they were asking the State Water Commission for help with the engineering study, the construction of the drain and the construction of the dam.

Commissioner Gray stated that the Lucca survey was completed and 90% of the survey on the Home and Fingal drains was completed. They are not able to get approval from the State Game and Fish Department to permit construction of the project with Soil Conservation Service assistance as they have the veto power.

Secretary Hoisveen stated that the Water Commission has an agreement with the Soil Conservation Service whereby they will supply the engineering surveys for legal drains provided the State Water Commission will pass on the plans and the drains meet with Commission approval. This agreement has been in effect for approximately 17 years. There was discussion on this area being a watershed project.

Governor Guy suggested that the Barnes County group meet with Mr. William Sebens, Executive Secretary of the North Dakota State Soil Conservation Committee and ask him if he thinks there is a possibility of approaching the Fingal and Home drains on the basis of a soil program. Governor Guy stated that the Game and Fish Department would be contacted to ascertain the reason for not approving the project and that this matter would again be placed on the Agenda for the next meeting, to which this group was invited. It was felt that the Commission needed more information before they could say what they would do regarding this project.

Commissioner Gallagher stated that the State Water Commission does not participate in engineering of drains but does participate in construction of dams and approval of plans.

The meeting reconvened at 1:30 p.m. Governor Guy was not present.

MISSOURI RIVER EROSION BETWEEN  
I-94 BRIDGE AND NORTHERN PACIFIC  
BRIDGE - Project #576

Secretary Hoisveen read a letter from the City of Bismarck in which they requested the State Water Commission to investigate the need for stabilizing the Missouri River bank between the new I-94 bridge and the Northern Pacific Bridge. Hoisveen indicated that

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LUCCA-NOME DRAIN  
Project #1377

Secretary Hoisveen reviewed the Lucca-Nome Drain, which had been discussed at the July 21, 1965, meeting. The Maple River Water Management District in Cass County and the Barnes County Water Management District are both much interested in this project because they are being flooded both above and below the dam site at the present time. He indicated that there would have to be as much water in storage as drained off the land in order to adequately provide protection against flooding in the lower reach of the Maple River. Mr. Skramstad indicated that the present problem is lack of approval from the State Game and Fish Department.

Mr. Russell Stuart, Commissioner, State Game and Fish Department, stated that he was made aware of the project in early December of 1964. Mr. Stuart stated that a meeting was held in January at which Messrs. Skramstad, Barbeau and others were present. It was his impression that this project had something to do with the U. S. Fish and Wildlife. The Fish and Wildlife stated they could do nothing about this as it was a drain. Never, to Mr. Stuart's knowledge, had the Game and Fish Department been consulted about legal drains. Mr. Stuart read several letters received from various departments concerning this project. Stuart stated that his department had no authority over drains. However, he was of the opinion that a drain in this area would be detrimental to wildlife.

Mr. Skramstad stated that this area is land that has been cropped. The County Commissioners of Barnes County set up a drain board. This project was started in 1962. At that time the Soil Conservation Service furnished technical assistance. After the preliminary survey they received a memorandum from Mr. Williams, Soil Conservation Service, Washington that the State Game and Fish Commissioner has to approve the project if they are to receive assistance from the Soil Conservation Service. Secretary Hoisveen stated that the Lucca drain was an intermittent stream fed by snow melt and rain.

Commissioner Gray stated that this would be reclamation of land that has been farmed prior to 1962. Stuart stated that approximately 160 acres of wetlands would be destroyed by this ditch and an additional 500 acres would be destroyed if this project is continued.

Governor Guy asked what per cent of the total acres available for wildlife habitat would be destroyed. Stuart replied that wildlife habitat on the upper land is zero because of cultivation. This is the only part that has wildlife value in the Lucca-Nome area. He thought that was the reason the National Wildlife Service changed its policy on drains. He felt that if the drains were going to be built with public money they should mitigate wildlife losses.

Commissioner Gray asked Mr. Stuart if he objected to farmland that has been farmed being farmed again and he said he did not.

It was moved by Commissioner Dushinske, seconded by Commissioner Hanson and carried that the Commission take the initiative to work with the Game and Fish Department, the Soil Conservation Service and the county entities relative to the Nome-Lucca drainage project to see if a development plan acceptable to all interested parties can be initiated.

August 27, 1965

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Mr. Stuart stated that he has not said that he approved or disapproved the project. He did say that the drain would have an adverse affect on wildlife habitat.

Mr. Skramstad stated that they would have to get professional engineering assistance and had contacted an engineer in Fargo but they would like assistance from the State Water Commission.

Commissioner Gallagher stated that the Commission had not vetoed the drain, and if it had no adverse affect on the downstream lands he would recommend that it be authorized for 40 per cent participation.

TRANSFER OF FUNDS FROM CONTRACT  
FUND TO GENERAL OPERATIONS  
APPROPRIATION File C5-1.3

Secretary Hoisveen stated that when the Commission appeared before the Budget Board a year ago the State Water Commission staff, at the recommendation of the Commission, requested an appropriation of \$617,500 for salaries, wages, expenses. The Budget Board did not approve the increase requested. It is now apparent that with the added work, the Commission will exceed the amount set up for salaries under the present budget system. It will be necessary to appear before the Emergency Commission and request a transfer of funds from the Contract Fund to the General Operations Appropriation or curb some of the Water Commission's services. Additional work will be required with regard to the Garrison Diversion Project, the Anti-Poverty Program, the Sheyenne project, Bureau of Outdoor Recreation Program and a curtailed participation by the Highway Department on drainage activities. The situation has been explained to Mr. Dewing and he was of the opinion that such a transfer of funds would be agreeable. Hoisveen averred that he thought it advisable to have the transfer now and not wait until the emergency arises. He indicated that Jim Schulz, Assistant Secretary, had made an extended study of the problem and would explain his report.

Mr. Schulz outlined the reason for a review of the present salary budget. The 1965-1967 appropriation includes all salaries and Commissioners' per diem, social security matching, OASIS, Workmen's Compensation and medical insurance. The Commission requested a biennial appropriation of \$617,500 and was allowed \$431,000. He further stated that a letter had been received from the Highway Department cancelling the agreement whereby they paid half the salary and expenses of the services of a drainage engineer. Schulz recommended that a transfer of \$98,000 be made before an emergency exists. A geologist and an engineer have resigned and in order to replace them it is necessary to increase the salary base. Construction costs will be increased because of the outdoor recreation program, which will require another engineer. Governor Guy stated that the number of dollars needed should be left open as the requirements may be different after added study.

It was moved by Commissioner Gallagher, seconded by Commissioner Hanson and carried that the Secretary be directed to request the Emergency Commission for authority to transfer monies as required from the Contract Fund to the General Operations Appropriation because of the excessive requirements brought on by the Garrison Diversion Unit and the program to be developed under the outdoor recreation program.

August 27, 1965

Secretary Hoisveen stated that if it was the wish of the Commission these rules could be added to the Water Commission rules and regulations and then the Commission could support Dr. Laird in some of his efforts.



It was moved by Commissioner Steinberger, seconded by Commissioner Hanson and carried that the Commission make these rules and regulations a part of the Commission's rules and regulations.

LUCCA-NOME DRAIN AND WAHPETON FLOOD PROTECTIVE WORKS

Secretary Hoisveen reviewed the Lucca-Nome Drain problem and stated that Commissioner Gray had been working on this problem. Commissioner Gray stated

that he had been contacted each week concerning this project but could give them no information.

Secretary Hoisveen stated that there should be a meeting of all interested entities to see how this could be resolved. He was of the opinion that a meeting should be scheduled for sometime in October but that he would not be able to attend an October meeting. He suggested that Commissioner Gray, Mr. Fredrickson and one of the engineers attend such a meeting.

It was recommended that Secretary Hoisveen set up a meeting with the Soil Conservation Service and the State Game and Fish Department which would be attended by Commissioner Gray and Mr. Fredrickson.

WATER RESOURCES PLANNING ACT - Public Law 89-80

The Secretary passed out to the Commissioners copies of the Water Resources Planning Act and Report. Mr. Fredrickson read a part

of the Act pertaining to allotments, and stated that beginning next year the Commission could decide whether they wanted to set up more planning. Hoisveen averred that with this added project there will be a lot more planning with the Bureau of Outdoor Recreation and other agencies which will result in the need for more employees for design and investigation of these projects as well as increased planning activities with other states and federal agencies. The Commissioners discussed the enlarged program of the State Water Commission. Commissioner Steinberger suggested that Bruce Johnson be invited to appear before the Commission meeting to explain some of the details. Mr. Hoisveen stated that possibly at the Grand Forks meeting he could appear. Mr. Hoisveen explained North Dakota's participation in the work groups for various task forces. Commissioner Gallagher felt that Messrs. Hoisveen and Fredrickson should be prepared to go ahead on Title 3.

It was moved by Commissioner Gray, seconded by Commissioner Dushinske and carried that the Commission staff investigate the possibility of applying for a basin planning commission covering the Minnesota and North Dakota portions of Red River basin and that this be further examined to determine the attitude of South Dakota in regard to the basin commission.

## NORTH DAKOTA STATE WATER COMMISSION

## OFFICE MEMO

TO: Milo W. Hoisveen, Chief Engineer  
FROM: Dale H. Glover, Hydrologist  
SUBJECT: Meeting on Nome-Lucca Drain, SWC Proj. #1377  
DATE: November 10, 1965

On November 3, 4 and 5 I met with a group at Valley City to consider problems concerning the Nome-Lucca Drain. Commissioner Gordon Gray was present at the meeting also.

On the morning of November 3 the general problem was discussed and maps were used to illustrate. Construction of drains as proposed by the S.C.S. would involve the destruction of natural wildlife habitat. Work on the drains can not proceed under S.C.S. supervision unless the plans are approved by U. S. Fish and Wildlife and State Game and Fish Department. With such approval, it is my understanding that up to 80% of the cost of construction could be obtained through the ACP.

It seems that the residents are very desirous of having these drains constructed. This was brought out by statements made by a Mr. Skramstad, Chairman of the Barnes County Drain Board, and by Mr. Baribeau, of the S.C.S. at Valley City.

During the afternoon of November 3 we made a field inspection of the entire east and west branches of the proposed Lucca drain.

The entire day of November 4 was spent in the S.C.S. office discussing the Lucca drain and trying to arrive at some compromise satisfactory to all interests. A great deal hinges on the objectives of the drainage plan. If the objective is to drain, and reclaim for farming, most of the low-lying areas there will result a much greater loss of wildlife habitat than if the drains remove only the flood waters above certain levels, sufficient to enable the farmers to crop approximately the same areas as they now crop, or have been in the habit of cropping over the past decade or so.

The drain locations were laid out on aerial photographs. Since the drain necessarily goes through low areas it was unavoidable that certain wildlife areas would be lost. These areas were marked out on the photos and measured, giving the result that 72.1 acres would be lost on the west branch of the drain and 102.5 acres on the east branch.

It was the view of the wildlife representatives (Morgan for State and Murrell for Federal) that these areas should be replaced, or mitigated, acre for acre. It was their view that they were being very liberal in this matter because in making the inventory of lands lost, they had omitted temporary-class wetlands.

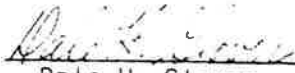
Various means of mitigation were discussed. On the west branch, it is thought to be possible to avoid the loss of the 72.1 acres by establishing control structures at the outlets. The purpose would be to maintain the existing marsh levels, that nothing would be lost and no mitigation would be required. This would leave 102.5 acres on the east branch to be mitigated. Several means of accomplishing this were discussed, such as:

- Control structures
- Level ditching
- Broad areas and satellite ponds
- Easements on side areas
- Purchase by Fish and Wildlife

These are practically self-explanatory except the "Easements on side areas". This refers to a proposition by Fish and Wildlife as a substitute for mitigation. Instead of replacing acre for acre in kind, the landowner would give easements whereby he promises not to drain 5 acres of other wetlands on his property, for each acre for which mitigation would otherwise be required. These lands would still be farmed the same as they now are, whenever conditions permit, the only condition being that the landowner promises not to drain.

On the morning of November 5 we inspected the Nome drain. S.C.S. had not done any field work on this, and the group finally concluded that it would be best to get the Lucca drain problems resolved before getting involved with the Nome problem.

Meetings were continued in the afternoon at the S.C.S. office, but no definite agreements evolved. Mr. Ludall and Mr. Murrell will prepare a report and furnish copies to all in attendance at the meeting as well as to heads of the separate agencies. Heads of agencies (Hoisveen, Stuart, Lloyd, ?) are then to confer and agree on essentials of a plan. Mr. Skramstad, assisted by personnel from Fish and Wildlife and State Game and Fish, and S.C.S. will then arrange hearings to present plans to residents and landowners of the areas. No doubt Mr. Gordon Gray can give you further information regarding these arrangements. Also, a memo with list of personnel present at these meetings will be forthcoming from the S.C.S.

  
\_\_\_\_\_  
Dale H. Glover  
Hydrologist

DHG:kl

Dist.  
MWH (SWC #1377)  
HAS  
VEZ

## JOINT BIOLOGICAL REPORT ON PROPOSED LUCCA LEGAL DRAIN

This is a report with recommendations, resulting from a meeting on November 3-5, 1965, at Valley City on the above proposed legal drain. The following groups were represented:

State Water Commission - Gordon Gray and Dale Glover  
 State Game and Fish Department - Robert Morgan  
 Bureau of Sport Fisheries and Wildlife - Stuart Murrell  
 U. S. Soil Conservation Service - William Baribeau, Robert Boone, Erling Podoll  
 Barnes County Drain Board - M. Skramstad and E. Monson  
 Barnes County Commissioners - M. A. Monson, G. Schroeder, and J. Heimes

Bill Baribeau was designated to keep minutes. This and the attendance list will be sent to you by the Drain Board.

Wednesday forenoon was spent indoors developing purpose and procedure for work during remainder of week. Facts brought out, and decisions were as follows:

1. State Water Commission wants permanent guidelines for handling legal drains. Use Lucca and Nome for developing these guidelines. Expect group to set past land use priority and/or history.
2. The Drain Board says Cass County will allow additional water to be drained into the Maple River if a detention dam is built on the lower end of the drain. This will be done if the legal drain is built.
3. The Drain Board said landowners will be assessed about \$10-15 per acre for legal drain costs.
4. County Commissioners and the Drain Board would be called for a joint meeting again on Friday.

Wednesday afternoon was spent in the field inspecting the Lucca Drain area.

Thursday was spent indoors delineating wetlands and discussing wetland preservation and mitigation.

Friday forenoon was spent on a field trip to the proposed Nome legal drain area.

Friday afternoon a joint meeting was held to discuss methods and alternatives for preserving or developing wetlands. Agreed that joint biology report would be submitted to the Game and Fish Department and Soil Conservation Service by November 19.



Page 2 -- Joint Biological Report on Proposed Lucca Legal Drain

### Lucca Legal Drain (//2)

This drain would affect an area of about 15 square miles. Of interest and concern in this area is the natural wetlands and their value for waterfowl, pheasant, partridge, and deer production, and hunting.

Bureau of Sport Fisheries and Wildlife informed us there are about 1200 wetlands that average about 1.5 acres each, totaling 1800 acres of wetlands.

The size of the type 3, 4, and 5 wetlands that occupy the proposed channel area or are to be crossed by the channel were measured.

The west branch by Lucca would directly affect 71.1 acres (four wetlands) of type 4, and 1.0 acre (one wetland) of type 3 wetlands. The east branch and its laterals would affect about 45 potholes of types 3 and 4 that total 102.5 acres. One of these is a 31.5-acre type 3 wetland in Cass County. This was the only wetland delineated in Cass County.

There are 221 type 3, 4, and 5 wetlands in the 16.5 square mile legal drain area totaling 705 acres. This includes the wetlands delineated in the proposed channels. In other words, 174 out of 221 or 79% of the total number, and 75% of total acreage of type 3, 4, and 5 wetlands would be outside the channel areas.

It was generally agreed that the four large wetlands in the west branch (71.1 acres) could be preserved by setting the desired elevations on road and railroad culverts or building water control structures. In addition the 31.5 acre wetland in Cass County and an 8.6 acre wetland in Section 11 may be preserved in the same way.

There was discussion on what land is cropland. There was some local thought that land Classes Vw and III5w are cropland. This was not checked in the field with the farmers themselves. It may still have to be done at some later date. Regardless of tax procedures or farming attempts, the above land classes are poor farming risks. The Conservation Needs Inventory found the above could be used for cultivated crops about 10% of the years without drainage. These are the type 3 and 4 wetlands of such high value to wildlife. There are large wetland areas in the Lucca drain area in land Class III4w. These are most generally type 1 wetlands and can be farmed over one-half of the years without drainage."

Following are items or alternatives that should be carried out singly or in any combination by the Drain Board in order to preserve wetlands or mitigate direct wetland loss by channel work:

1. Preserve as much wetland as feasible that was originally proposed for drainage. At least 71.1 acres can be saved in the west branch. If this cannot be done the channel from the north should not extend beyond the road north of Lucca near the center of the west side of Section 2. A control structure should be placed at a desirable level at this point to retain the Lucca Slough.

## NORTH DAKOTA STATE WATER COMMISSION

## OFFICE MEMO

MEMO TO: Milo W. Hoisveen, Chief Engineer  
FROM: C. P. Nelson, Drainage Engineer  
SUBJECT: Barnes County Drain #2 - (Lucca) SWC #1359  
DATE: December 6, 1965

On Friday afternoon, December 3, 1965, a meeting was held in the Water Commission office for the purpose of reviewing the Joint Biological report on the Lucca drain, resolving policy differences, and establishing common aims in water management.

## Attending were:

Milo W. Hoisveen, State Engineer, State Water Commission

C. P. Nelson, Drainage Engineer, State Water Commission

Dale Glover, Hydrologist, State Water Commission

Lyness G. Lloyd, State Conservationist, Soil Conservation Service

Charles Evans, Assistant State Conservationist, Soil Conservation Service

Russell Stuart, Commissioner, North Dakota Game & Fish Department

Mr. Hoisveen reviewed the history of the proposed Lucca drainage improvement. Discussion of the west branch (2A) followed. It was the consensus of those present that control structures consisting of properly placed culverts at strategic locations would be sufficient mitigation measures to retain four wetlands, totalling 71.1 acres, through which the proposed channel is routed. Mitigation measures as outlined in the Joint Biological report were summarized by Nelson (See Appendix "A").

It was pointed out by Mr. Lloyd that the Barnes County chairman of the Drain Board, Mr. M. I. Skramstad, has asked for a clarification of the mitigation measures proposed in the Joint Biological report.

Mr. Nelson reviewed the potential of the proposed Lucca Dam. This could not be credited as mitigation, according to Mr. Stuart, since its value would not compensate for the type of wildlife habitat lost in the

drainage project.

Mr. Hoisveen pointed out that the activities of both the State Water Commission and the Soil Conservation Service result in a continuing state-wide increase in flood-retention reservoirs, city water reservoirs, recharge basins, and multi-purpose reservoirs which in effect provide a "Water Bank" and which in the aggregate enhance wildlife. Mr. Hoisveen stated these should be given credit for doing this. No change in the approach given to the analysis of mitigation measures in the case of the Lucca drain arose from this approach, however.

Mr. Lloyd and Mr. Stuart expressed themselves as accepting the Joint Biological report. Mr. Evans stated that he believed the simplest and most economical approach to compliance with the mitigation measures outlined in the report would be to provide the required wetlands easements, or land purchases along the east branch (2B) and laterals of the Lucca drain, rather than construct waterfowl complexes or provide "Level Ditching."

Mr. Hoisveen asked Mr. Stuart for a copy of the standard wetlands easement which would be used in the Lucca drain area.

It was concurred that a meeting with the Barnes County Drain Board was needed to explain the mitigation measures, as related to the Lucca drain.

Respectfully submitted,



C. P. Nelson  
Drainage Engineer

CPN:jd

Dist.  
MWH  
VEZ  
HAS  
FJF

## Report on Lucca Drain Meeting - APPENDIX "A"

## Recommendations of Joint Biological Report Summarized:

Preserve all (low) wetlands, totalling 71.1 acres in East Branch (2B)

Preserve against drainage 3.5 acres to replace each acre drained by channel work, by means of Barnes County Drain Board getting a 35-year easement in the counties name on the acreage to be preserved, or having such an easement agreed to directly with Bureau of Sports Fisheries & Wildlife, or selling the acreage to Sports Fisheries & Wildlife under their land aquisition program.

In general, 25% of existing wetlands outside the channel should be preserved. - By the above means, or by the following measures, in event direct easement or purchase cannot be accomplished:

1. Develop a waterfowl complex, consistive of a 1-acre brood pond, and 2-1/20 acres ponds nearby, within the drainage area. - Drain local runoff through these ponds.
2. Increase natural retention in existing wetlands by dikes and control structures. This acreage increase will count as mitigation.
3. "Level ditching" - meaning overdigging and setting control sills so that a stretch of ditch will hold water permanently, 5' below flow depth.