

STATE WATER CONSERVATION COMMISSION  
 Minutes of Meeting  
 Held in Office of State Water Commission in  
 Bismarck, North Dakota  
 December 20, 1957.

A regular meeting of the North Dakota State Water Conservation Commission was called to order on December 20, 1957, at the State Water Conservation Commission Office in Bismarck, North Dakota, to consider routine business matters. The following were present:

MEMBERS OF THE STATE WATER CONSERVATION COMMISSION

Governor John E. Davis, Chairman  
 A. M. Christensen, Member from Minot  
 W. W. Corwin, Member from Fargo  
 Math Dahl, Member from Bismarck  
 Milo W. Hoisveen, Secretary and Chief Engineer, State Engineer

OTHERS PRESENT

Colonel Desloge Brown, Corps of Engineers, St. Paul  
 Robert Calton, Corps of Engineers, St. Paul  
 G. E. Lyon, Corps of Engineers, St. Paul  
 Fred Fredrickson, Planning Coordinator, Valley City  
 Oscar Berg, Missouri Souris Projects Ass'n., Minot  
 Ed Thomson, Cavalier  
 C. R. Howell, Walhalla  
 Grant Trenbeath, Neche  
 Frank J. Solberg, Langdon  
 J. C. Soeby, Walhalla  
 Manley Darling, Langdon  
 Howard Wenzel, Langdon  
 A. J. Christopher, Pembina  
 M. L. Huffman, Walhalla  
 William Clairmont, Walhalla  
 Hilton Johnson, Walhalla  
 Allan Ludwig, Langdon  
 O. A. Pung, Langdon  
 O. C. Platz, Langdon  
 O. S. Johnson, Langdon  
 Walter O. Burk, Williston  
 Joseph C. Paulson, Williston  
 Cloyd J. Wegley, Williston  
 Lorenz Suirtch, Williston  
 H. L. Josephson, Riverdale  
 J. L. Burgum, Riverdale  
 Richard Gallagher, Mandan  
 L. C. Hulett, Mandan  
 R. Sylvester, Mandan

The meeting was called to order at 10:00 o'clock a.m. by Governor Davis with Commissioners Christensen, Corwin, Math Dahl and Secretary Hoisveen present.

It was moved by Commissioner Dahl that the reading of the Minutes of the October meeting be dispensed with and that the same be approved, which motion was seconded

by Commissioner Christensen. All members voted aye and said motion carried.

It was moved by Commissioner Corwin and seconded by Commissioner Dahl that the Financial Statements for October and November, 1957, be approved and filed in the office of the State Water Conservation Commission. All members voted aye and said motion carried.

Secretary Hoisveen read a resolution which he had received from the City of Bowbells relative to dam participation, which dam will be used for recreational facilities and for a municipal water supply. The estimated cost of said dam is approximately \$28,000. Secretary Hoisveen stated that a survey has been made and the engineers are ready to start with the design. The dam would be a ten foot structure and would impound approximately 500 acre feet. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that the State Water Commission participate in said dam construction on a 50% basis. Upon roll call all members voted aye and said motion carried.

A letter from the City of Bottineau was read by Secretary Hoisveen in which it was stated that the City had passed a resolution requesting the State Water Commission to conduct a groundwater survey. It was moved by Commissioner Dahl and seconded by Commissioner Corwin that the Commission cooperate on a one-fourth basis with the U. S. Geological Survey and the City of Bottineau on said groundwater survey. Upon roll call all members voted aye and said motion carried.

Secretary Hoisveen stated that the U. S. Geological Survey pays for the rental of the drill rig to the State Water Commission and that at the present time there is approximately \$20,000 in said fund. The U. S. Geological Survey has presently exhausted their appropriations and little or no money is now available for them to conduct cooperative work. He stated that if weather permits, he would like permission to proceed with drilling operations in McKenzie, Williams and Divide Counties on a reconnaissance survey, which if results were found satisfactory would permit a more detailed survey in the future. Funds for the reconnaissance work would be derived from the rental money paid to the Commission by the U. S. Geological Survey. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that Secretary Hoisveen be authorized to proceed with said survey. All members voted aye and said motion carried.

At the request of Governor Davis, Colonel Desloge Brown, Mr. Robert Calton and Mr. G. E. Lyon of the St. Paul District of the Corps of Engineers appeared at the Commission meeting to make a presentation of the various projects status in the Red River Basin as they apply to North Dakota. Interested proponents of the Pembilier Dam were also present, which included Messrs. Ed Thomson, C. R. Howell, Grant Trenbeath, Frank J. Solbert, J. C. Soeby, Manley Darling, Howard Wenzel, A. J. Christopher, M. L. Huffman, William Clairmont, Hilton Johnson, Allan Ludwig, O. A. Pung, O. C. Platz and O. S. Johnson. Colonel Brown went into considerable detail in discussing the completed projects, the projects under construction, projects where construction is pending, deferred projects and examinations and surveys. Copies of his presentation were made available to all Commission members, copy of which is attached hereto as Annex #1. Colonel Brown expressed his appreciation to Mr. Fredrickson for arranging the tour which helped in familiarizing him with the projects in North Dakota. He also expressed appreciation for the additional data supplied by the State Water Commission covering additional justification of the Pembilier Dam. He stated that based on this data and further analyses by his staff it now appeared that the economic justification of the Pembilier Dam may be within reach.

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Senator Trenbeath expressed his appreciation to Colonel Brown for the report and to the Commission for being invited to attend the meeting. He stated that additional material will be forthcoming on extended damages in Neche and Pembina to agricultural land. Mr. Calton replied by saying they would like any additional information available to support the project. They have not arrived at a firm figure on estimates and any supporting data will be considered.

The State Water Conservation Commission indicated that additional information obtained through field studies will soon be made available to the Corps.

Representative Christopher stated that one of the peculiarities of the Red River is the fact that it flows northward. When the Red River channel is clear of ice at Grand Forks, ice jams exist in the vicinity of Pembina as a result of it being one of the more northerly sections of the river. The crest of the Red River generally occurs at the same time as the Pembina River crests at the confluence of the two streams. This causes a retarding effect on the Red River which, as a result, backs water on agricultural lands upstream from the Pembina. Much damage results from this condition. Mr. Christopher further stated that they are not only concerned with floods but dry cycles as well. Having an adequate amount of water available is also desirable. He stated that in the 30's, they were able to walk across the Pembina River, and he felt that if it occurred once it could happen again.

Mr. Christopher further stated that they are in the process of compiling additional figures of damage to Pembina which will be forthcoming. He stated that they have spent \$9,000 on the high school the past year as a result of the 1950 flood. It will also be necessary for the city to replace the outer walls of the filtration plant as the foundation has settled considerably. These and additional expenses are showing up from time to time. He felt that they could show an additional flood damage figure that has appeared in recent years to the extent of \$100,000.

Colonel Brown indicated that the delayed occurring damages are a definite part of the damages and should be incorporated in the report, as well as the water supply in periods of dry years.

Mr. Solberg, County Commissioner, stated that they have attempted a survey of the area involved and the paramount question in the County Commissioners' minds is the construction of bridges and how much of the cost would have to be borne by them.

Mr. Calton stated that they have contacted the U. S. Bureau of Public Roads and they have indicated that one crossing is a federal crossing. He is also awaiting further information from the U. S. Public Roads. He believed that unless there was some unusual feature, the matter of road relocations would be largely federal, except where a bridge has served its economic life and a new bridge would be a betterment. Betterments would be a cost to the county. Colonel Brown stated that it was very important they they minimize the number of crossings of the reservoir as it would be necessary to justify the costs with benefits and he felt it would certainly be to their advantage to keep the costs reduced as much as possible. Mr. Solberg suggested that a meeting be arranged with the Commissioners of Cavalier and Pembina Counties and the Highway Department and that this matter be discussed at such time.

Mr. Calton recommended that it would be well to justify the recreational improvement feature by giving assurance that local groups will manage the park areas and make use of the pool.

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Governor Davis thanked Colonel Brown and his staff for attending the meeting and giving his presentation. He stated that the presence of the residents of Pembina and Cavalier Counties was certainly an indication of their extreme interest in the project and expressed appreciation to them for making their appearance at the meeting.

A brief report covering drilling operations by the U.S.G.S. for October was made available to the Commissioners. Mr. Brookhart stated in his report that 33 holes were drilled in the Strasburg-Linton area of Emmons County. A fairly good gravel aquifer was found north of Linton. The aquifer was pumped and a water sample taken for chemical analysis. The city wells at Bowman were checked for the possibility of running a pumping test and difficulty was encountered in measuring the water levels. Mr. Brookhart felt the wells could be opened so water levels could be measured and when this is done, the pumping test will be made. Test drilling in Ransom County showed an excellent glacial outwash aquifer. Water samples showed the chemical quality to be excellent for irrigation. A good aquifer was found in the Hillsboro area in Traill County which should be available for future municipal use by the city of Hillsboro.

Secretary Hoisveen reported that he held a hearing in Burke County on December 16, 1957, relative to the formation of a Burke County Water Conservation and Flood Control District. Two hearings were held - one at Powers Lake and the other at Bowbells. There was a fairly good attendance at both meetings and much interest was displayed. Four farmers made statements in the form of objections but Secretary Hoisveen stated that he felt their objections were more in the nature of a desire to obtain a favorable price for the lands that might be acquired for the construction of the reservoir. Commissioner Dahl presented the following Resolution and moved its adoption, which motion was seconded by Commissioner Christensen.

WHEREAS, Burke County, North Dakota, acting by and through its Board of County Commissioners, did on the 12th day of November, 1957, file with the State Water Conservation Commission its petition requesting the establishment of a water conservation and flood control district embracing the territory contained within the limits of the county; and

WHEREAS, the petition of Burke County was accompanied by a copy of a resolution adopted by its Board of County Commissioners, authorizing the filing of such petition and requesting the establishment of such water conservation and flood control district; and

WHEREAS, the report of the Chief Engineer of this Commission, and the facts adduced at public hearings held in the City of Bowbells and Powers Lake on the 16th day of December, 1957, disclose that the creation of a water conservation and flood control district is necessary through which the County may secure the assistance of state and federal agencies in constructing needed water conservation and flood control projects, in improving lakes within Burke County and also in order to furnish assurances of local cooperation in the construction of such projects requiring federal assistance;

NOW, THEREFORE, BE IT RESOLVED by the State Water Conservation Commission in meeting assembled this 20th day of December, 1957, that the chairman

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and secretary of this commission are hereby authorized and directed to execute its order establishing a water conservation and flood control district containing the territory embraced within the boundaries of Burke County, and designated as Burke County Water Conservation and Flood Control District.

Upon roll call, all members voted aye and said resolution was duly adopted.

Secretary Hoiaveen reported that Assistant State Engineer Robert Timm attended a meeting at Billings, Montana, pertaining to the Yellowstone River Compact. The Columbia Geneva Division of the United States Steel Corporation has requested the right to divert 5 c.f.s. of water into the North Platte River in conjunction with a plant which they are contemplating. The diversion of this water would have no adverse effect on North Dakota and is agreeable to the other states in the Compact. It was moved by Commissioner Dahl and seconded by Commissioner Corwin that the State of North Dakota approve the diversion of 5 c.f.s. of water into the North Platte River. All members voted aye and said motion carried.

Commissioner Dahl moved that \$1,000 be paid to the Missouri Souris Projects Association for services rendered in connection with North Dakota water projects, which motion was seconded by Commissioner Christensen. Upon roll call all members voted aye and said motion carried.

Commissioner Christensen moved that \$600 be paid to the State Reclamation Association for membership dues in the National Reclamation Association, which motion was seconded by Commissioner Corwin. Upon roll call all members voted aye and said motion carried.

Commissioner Christensen reported on the National Reclamation Association Convention held at Phoenix, Arizona, November 3rd to 8th, 1957. Also in attendance were Commissioner Tucker and Secretary Hoiaveen. Commissioner Christensen was most enthusiastic about the convention. He stated that two of the directors had taken several of the North Dakota men on a tour to view irrigation farming. He was especially impressed at the crops and cattle which are being produced and maintained through irrigation. At the convention Commissioner Christensen had occasion to speak to Congressman Aspinall and some of the other congressmen who had attended the Devils Lake hearing. They were highly complimentary as to the efficiency and organization of the hearing and claimed it as one of the best they had attended. A written report on the convention by Secretary Hoiaveen was made available to all Commissioners, copy of which is attached hereto as Annex #2.

A letter from Mr. Oscar N. Berg, Executive Secretary of the Missouri-Souris Projects Association, dated November 14th, 1957, was read to the Commissioners by Secretary Hoiaveen. Mr. Berg made the following statement in behalf of the Missouri-Souris Projects Association commending Mr. Fredrickson and the State Water Commission for arranging the Congressional hearing at Devils Lake. The letter was addressed to Secretary Hoiaveen.

"The Missouri-Souris Projects Association desires at this time to express to you and the North Dakota State Water Conservation Commission its commendation for the splendid services rendered by Fred Fredrickson in arranging and taking care of the preparations for the Congressional Hearing held in Devils Lake. No one individual

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is more responsible for its success. It is our feeling that North Dakota owes a deep debt of gratitude to the State Water Commission and to Fred Fredrickson.

"It is our thinking that when the history of the Water Development Program is finally recorded and the benefits are realized, that Fred Fredrickson and the North Dakota State Water Conservation Commission have made a contribution that will be most historic in the advance of progress in our State.

"Again thanking you in behalf of the Missouri-Souris Projects Association and with kindest personal regards, I am

Sincerely yours,

/s/ Oscar N. Berg  
Executive Secretary  
Missouri-Souris Projects Association."

The following Annual Report covering Commission activities was given by Secretary Hoisveen:

The ever increasing interest of the residents of North Dakota in their states water program is being manifested in the work load of the State Water Conservation Commission. This increase is reflected in the establishment of irrigation districts, water conservation and flood control districts, water right applications, request for water project surveys both ground and surface water, and the construction of dam and related water projects.

Four irrigation districts comprising approximately 110,000 acres were created. The newly formed districts are the Oakes Groundwater District, the James River District which comprises three divisions, the Dickey-Sargent District with five divisions, and the Warwick-McVille with five divisions. The Cartwright and Lower Yellowstone Pumping District have shown a renewed interest in constructing related irrigation projects as a result of favorable groundwater investigations made by the State Water Commission in cooperation with the State Geologist and the United States Geological Survey on those projects.

Representatives of the State Water Conservation Commission spent considerable time in the field obtaining data for the justification of the Bowman Haley and the Pembilier Projects. This material has been evaluated in the office and made available to the Corps of Engineers to incorporate in their benefit cost ratio studies for the two projects. Indications are that the materials supplied by the State Water Commission were of sufficient value to aid materially in enhancing project possibilities. The Corps of Engineers, Omaha District, reports that a 2:42 to 1:00 benefit cost ratio was attained on the Bowman Haley Project. The Corps of Engineers from the St. Paul

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District implied that favorable progress has been made on the Pembilier Dam and the project is now appearing to be a feasible one. Further studies will be made by Commission forces on both projects towards bringing about their eventual construction.

Municipalities and industries have displayed a desire to protect their water supplies through water right filings. During 1957 filings for water rights were made by twenty six municipalities. Industries made five applications. Twenty-one irrigation applications were received. Certificates of completion were issued covering thirty-five water rights.

Surveys were made by Water Commission survey parties involving fourteen projects. Project surveys receiving attention by commission survey parties were a topographical survey covering forty eight square miles in Towner County to be used as a basis of determining the economic justification for the construction of the Lower Mauvais Coulee Project which the Corps of Engineers is currently studying.

Other surveys completed are the Silver Lake Diversion in Richland County, Shmisek Lake development near Powers Lake and the proposed Bowbells municipal reservoir in Burke County, Crooked Lake Dam in McLean County, Tobacco Garden and Arnegard Dam in McKenzie County, Kilen Lake in Rolette County, Balta Dam in Pierce County, North Salt Lake in Walsh County, Boysen Lake, the Bowman-Haley dam project in Bowman County, and Scranton-Gascoyne in Bowman County. Commission crews also completed a survey in Canada which may contribute to the stabilizing of the elevation of Lake Metigoshe.

New drilling equipment was purchased by the Commission for the purpose of determining the quality of foundation material for structural purpose. Two projects were found unfeasible as a result of operations with this equipment. The feasibility of five other projects was established as a result of locating suitable structural foundation material.

Cooperative groundwater studies with the United States Geological Groundwater Branch resulted in the location of municipal water supplies for the following cities: Ellendale, Strasburg, Linton, Hillsboro and Hatton.

Adequate water supplies for irrigation purposes were located in the Lower Yellowstone Valley and the Sheyenne aquifer. An aquifer in the vicinity of Carrington which may be used in conjunction with the establishment of a new State College Irrigation Experiment Station is now being studied.

Construction on two projects were completed in which the Game and Fish Department and the Federal Wildlife Service cooperated with the State Water Commission. The projects were the Golden Lake Restoration Project in Steele County and the restoration of the Hyatt Slough wildlife propagation and shooting area. A satisfactory run-off occurred during the past fall enabling a partial fill of Golden Lake and a complete fill of Rush Lake which is a companion lake.

Commission maintenance crews completed repairs on fifteen dams. The work consisted of increasing the spillway elevations on five dams and refacing and interior repairs on ten other spillways. The affected dams are: the Braddock Dam, Jamestown Ice House Dam, Alexander Dam, Hansen Dam, Schramm Dam, Burlington Irrigation Dams one and two, Lake Metigoshe, Bucephalia, Long Creek, Noonan, Kathryn, and the Minot Park Dam. Work on the Riverside Dam in Grand Forks and the Pembina Dam has been delayed as a result of water conditions in the north-eastern part of the state.

A battery of five gates has been installed in Mauvais Coulee to aid in controlling the water level in Lake Irvine near Church's Ferry. Two large control gates were installed between ponds four, five and six in conjunction with the Eaton Irrigation Project. The Eaton Project is located near Towner, in McHenry County.

Cooperative surveys with the U. S. Geological Topography Branch have progressed according to schedule. Topography covering approximately 320 square miles in the Lake Irvine and Lake Alice areas in Ramsey and Towner Counties will be completed in 1958. Preliminary work has been initiated on two surveys in the Dickinson and Williston areas. Each survey will constitute three topographic maps approximating fifty four square miles. The resulting topographic maps will be available for use in studying water facility projects, designing road systems, attracting industries to those municipalities and general community use.

The backlog of projects now accumulating in the office of the Water Commission indicates that 1958 activities will equal or exceed those of 1957. The three Commission functions which will require the greatest amount of attention are project investigation, the creation of irrigation projects, and construction activities.

Secretary Hoisveen read a resolution which he had received from Mayor Everson requesting the State Water Commission to confer with federal agencies relative to establishing pools in project structures in the watershed program of the Walsh County Water Conservation and Flood Control District. Secretary Hoisveen was directed to forward the resolution to the proper agencies with comments favoring the conservation pool suggestion.

Secretary Hoisveen reported that three irrigation districts have been formed. They are the Warwick-McVile Irrigation District, the James River Irrigation District and the Dickey-Sargent Irrigation District. In forming these districts some expense has been incurred and will be incurred, and the districts have no revenue with which to take care of expenses. The Garrison Diversion Conservancy District has agreed to participate and each of the districts have written to Secretary Hoisveen requesting the Commission to contribute. It was moved by Commissioner Christensen and seconded by Commissioner Dahl that a total amount of \$500.00 be given to said irrigation districts to assist them in paying their respective election costs and financial obligations as they accrue, and are legally justifiable. As of July 1st these districts will be in a position to spread a levy and will be in a position to maintain themselves. Upon roll all members voted aye and said motion carried.



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Correspondence pertaining to the Fort Lincoln sewage problem was read to the Commissioners, which included a letter from Lt. Col. Leonard J. Goodsell dated October 22, 1957, stating that the matter would be handled by Headquarters, Fifth Army, and a telegram from Senator Langer received on December 5th. Senator Langer stated that the Army Engineers announced the acquisition of ten acres more or less for sewage facilities near Fort Lincoln.

Assistant Secretary Vernon S. Cooper stated that the State Water Conservation Commission Series J bond issue in the amount of \$63,000 matured on December 10, 1957, and was paid off with funds from the sinking fund. He also stated that there are certain securities in cash remaining in the sinking fund, the disposition of which the Commission would have to determine. It was the opinion of the Commission that they obtain the advice of the Attorney General as to the disposition of these surplus monies and action be deferred until a later meeting.

Secretary Hoisveen stated that a hearing on the application of the City of Crosby for a permit to divert and appropriate 1,085 acre feet of water from groundwater sources was held in the office of the State Water Conservation Commission on December 9th and that the Volkman family was present to object to the same. The Volkmans were represented at said hearing by Attorney Higgins of Bismarck and Attorney Points of Crosby. The water supply of the Volkmans is a deep artesian well and the City of Crosby's third well is in the same aquifer and when in use, it greatly reduces the pressure to the Volkman well. Secretary Hoisveen stated that he has viewed the pumping operations and discussed this matter with the proper city officials and they have indicated that they would supply the Volkmans with a pressure system adequate to meet the Volkman requirements. The Volkmans have indicated that they desire a monetary remuneration for loss of pressure. The members of the Commission indicated that this does not concern the Commission and the differences between the City and the Volkmans should be resolved between these parties. It was moved by Commissioner Dahl and seconded by Commissioner Christensen that inasmuch as the City of Crosby's water right is the prior water right and more people are benefited thereby, that their request for 1,085 acre feet of water from groundwater sources be granted. All members voted aye and said motion carried.

At 2:00 o'clock PM., Messrs. Walter Burk, Joseph C. Paulson, Cloyd J. Wegley and Lorenz Suirtch of Williston, and Messrs. H. L. Josephson and J. L. Burgum of Riverdale entered the meeting relative to the Lewis and Clark District. These gentlemen have all appeared previously and satisfactory arrangements have been facilitated in all respects, except that the Lewis and Clark District is still in need of \$17,000 to maintain the laterals and they are unable to raise the same. It had originally been suggested that the District use the \$18,000 which the government paid them for their property for this purpose but Mr. Burk stated that this was impossible as owners who had moved away were insisting for their proportionate share and the same would have to be disbursed. The Federal Government has agreed to furnish one-half of this amount, or \$8500, and the district requests the Commission to loan a like amount. It was moved by Commissioner Dahl and seconded by Commissioner Christensen that the following resolution be adopted:

#### R E S O L U T I O N

WHEREAS, Public Law 85-167, 85th Congress (H.R. 8090) provides "That the Secretary of the Army shall advance to the North Dakota State Water Con-

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ervation Commission out of funds herein or hereinafter appropriated for the Garrison Project, North Dakota, 50 per centum of the cost, but not to exceed \$40,000.00, for construction of works to improve the productivity and fertility of government owned lands within the Garrison Reservoir, North Dakota, formerly part of the Lewis and Clark Irrigation District, subject, however, to a mutual agreement being reached by the Chief of Engineers, the North Dakota State Water Commission, and the lessees using the land for the full repayment of the funds advanced by the Federal government within a period of ten years;" and

WHEREAS, the Lewis and Clark Mutual Aid Corporation, a non-profit mutual aid corporation, organized under the laws of the State of North Dakota, has applied to the State Water Conservation Commission for a loan in the sum of \$8500.00 in order to make the improvements contemplated by Public Law 85-167, 85th Congress; and

WHEREAS, the members of the Lewis and Clark Mutual Aid Corporation are for the most part former owners of lands in the Lewis and Clark Irrigation District, acquired by the United States for the Garrison Dam Reservoir, who desire to lease said lands from their mutual aid corporation as lessee from the U. S. Government, as long as the lands can be utilized for irrigated farming; but in order to produce crops on a large part of the Lewis and Clark Project, it is necessary to widen and improve siphons through U. S. Highway #85 running through the project at a cost of \$17,000.00, 50 per cent of which will be advanced by the U. S. Government; and

WHEREAS, it is the desire of the State Water Conservation Commission that the fertile lands comprising the Lewis and Clark Irrigation District be farmed as long as such lands are not inundated and can be profitably farmed,

NOW, THEREFORE, BE IT RESOLVED by the State Water Conservation Commission in meeting assembled this 20th day of December, 1957, that the application of the Lewis and Clark Mutual Aid Corporation for a loan in the sum of \$8500.00 be approved; that such loan be evidenced by a promissory note in the sum of \$8500.00, payable in installments of \$1700.00, the first installment to be payable on January 1, 1958, or as soon thereafter, but no later than February 1, 1958, and the sum of \$1700.00 on January 1st each year thereafter until the principal sum has been fully paid; all unpaid installments to bear interest at the rate of 4% per annum; and

BE IT FURTHER RESOLVED that the Chairman and Secretary of this Commission are hereby authorized and directed to execute such loan agreement as shall be found necessary to make or consummate a loan of \$8500.00 to the Lewis and Clark Mutual Aid Corporation.

Upon roll call, all members voted aye and said resolution was adopted.

Messrs. Richard Gallagher, L. C. Hulett and R. Sylvester entered the meeting at 2:30 P.M. on behalf of the Lower Heart Water Conservation and Flood Control

District. In order to protect the funds which have been allocated by the Federal government, it is imperative that some definite action be taken on their project. A petition requesting financial assistance from the "Multiple Purpose Cooperative Fund" of the State Water Commission was filed with the Commission, copy of which is attached hereto as Annex #3. The flood protection will be for the City of Mandan and surrounding area, which includes the State Training School which has suffered considerably. The estimated cost is \$2,300,000. The Corps of Engineers has agreed to pay approximately \$1,900,000. The City of Mandan has to raise \$302,000, plus interest, in addition to \$10,000 to \$15,000 in tax money to keep and maintain the same. This money is to be raised through special assessments. Governor Davis recommended that Secretary Hoisveen hold conferences with the Board of Administration and the State Highway Department to ascertain any participation which may be possible from them. Said conferences are to be arranged by Secretary Hoisveen.

Mr. Fred Fredrickson, Project Coordinator, presented a written report to all of the Commissioners on the Congressional Hearing on H. R. 7068, copy of which is attached hereto as Annex #4. He especially emphasized the need for organizing another Coordinating Committee to continue with preparation for the hearings to be held in Washington, D. C., the first part of the year. The following Committee was appointed:

1. Governor John E. Davis, Chairman
2. Norman Brunsdale, Vice Chairman
3. Milo W. Hoisveen, Executive Vice Chairman
4. Roy A. Holand, LaMoure
5. Henry J. Steinberger, Donnybrook
6. Leo E. Gardner, New England
7. S. W. Thompson, Warwick
8. R. L. Dushinske, Devils Lake
9. Oscar N. Berg, Minot
10. Oscar Lunseth, Grand Forks
11. Harry E. Polk, Williston
12. Daphna Nygaard, Jamestown
13. Walter Essig, Lincoln Valley
14. Harold Sauer, Washburn
15. Bert Hill, Esmond

Secretary Hoisveen stated that he had received letters from Congressmen Metcalf, Berry and Miller relative to the Devils Lake hearing on October 30th. They all indicated interest in the project and considered the hearing most successful. Copies of letters were also made available to the Commission members from the State of Kansas, dated November 29th, and the State of Iowa, dated December 3rd. Both letters pertained to the approval of these States of the Garrison Diversion Project.

It was moved by Commissioner Corwin and seconded by Commissioner Christensen that Secretary Hoisveen be authorized to hold the City of Rugby's water right hearing at said city, in view of the large number of citizens who signed the petition protesting to said application. All members voted aye and said motion carried.

Secretary Hoisveen made copies of a report on the Bowman-Haley Dam conference which was held at the Omaha District Office of the Corps of Engineers on November 19th available to all Commissioners. He stated that the possibility of constructing this project appear good and the meeting was most successful.

The following water rights were considered:

#721. Northern States Power - Minot Steam Plant - requests the right to divert 30 acre feet of water from the Souris River for industrial use. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that said request be approved. Motion carried.

#722. Northern States Power - Fargo Steam Plant - requests the right to divert 75 acre feet of water from the Red River of the North for industrial use. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that said request be approved. Motion carried.

#723. Northern States Power - Grand Forks Steam Plant - requests the right to divert 85 acre feet of water from the Red River of the North for industrial use. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that said request be approved. Motion carried.

#724. Northern States Power - Bison Steam Plant - requests the right to divert 7.5 acre feet of water from the Souris River for industrial use. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that said request be approved. Motion carried.

#745. Roy Smith of Wild Rice requests the right to divert 280 acre feet of water from the Red River of the North to irrigate 139.8 acres of land. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that Mr. Smith be granted the right to divert 139.8 acre feet of water to irrigate 139.8 acres of land. Motion carried.

#746. The City of New England requests the right to divert 1630 acre feet of water from the Cannonball River for municipal and industrial use. Moved by Commissioner Corwin and seconded by Commissioner Christensen that said request be granted. Motion carried.

#747. Irvin Ring of Corinth requests the right to divert 25 acre feet of water from the Little Muddy Creek to irrigate 12.5 acres of land. It was moved by Commissioner Corwin that upon the recommendation of the State Engineer, this amount be reduced to 19 acre feet of water to irrigate 12.5 acres of land, which motion was seconded by Commissioner Christensen. Motion carried.

#748. The City of Fargo requests the right to divert 54,000 acre feet of water from the Sheyenne River for municipal and industrial use. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that upon the recommendation of the State Engineer, this amount be reduced to 38,847 acre feet or 56.04% of the available water in the Baldhill reservoir. Motion carried.

#749. The City of Fargo requests the right to divert 109,500 acre feet of water from the Red River of the North for municipal and industrial use. It was moved

by Commissioner Corwin and seconded by Commissioner Christensen that said request be granted. Motion carried.

#750. James Paulsrud of Halstad, Minnesota, requests the right to divert 336 acre feet of water from the Red River of the North to irrigate 168.7 acres of land. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that he be granted the right to divert 168.7 acre feet of water to irrigate 168.7 acres of land. Motion carried.

#751. The City of Ellendale requests the right to divert 557 acre feet of water from groundwater sources for municipal and industrial use. Moved by Commissioner Corwin and seconded by Commissioner Christensen that said request be granted. Motion carried.

Secretary Hoisveen stated that he felt it necessary to strengthen specifications for drains within the State and suggested that specifications and application blanks for use in petitioning the Water Commission be prepared. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that specifications and application blanks be prepared to be used as the State Engineer may direct. Motion carried.

Secretary Hoisveen stated that he has received a request from Cass County to participate in the earth work and drop structure of Drain #39. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that the Commission pay 40% of the estimated cost, or approximately \$7600., the total cost of which is approximately \$19,000. Upon roll call all members voted aye and said motion carried.

A request has also been received from Grand Forks County for participation in Drain #9. Secretary Hoisveen stated that the drain has already been inspected and the anticipated cost for the Commission would be approximately \$8,000., the total cost of which is approximately \$20,000. It was moved by Commissioner Corwin and seconded by Commissioner Christensen that the Commission participate in this drain. Upon roll call all members voted aye. Motion carried.


Secretary Hoisveen stated that a request has also been received from Pembina County for participation in Drains #13 and #10. The estimated cost of Drain #13 is \$17,700 and of Drain #10 - \$22,570. It was moved by Commissioner Christensen and seconded by Commissioner Corwin that the Commission pay 40% of the cost of said drain work. Upon roll call all members voted aye and said motion carried.

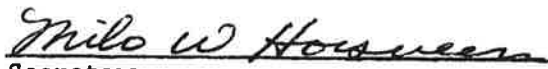
Adjournment.

Respectfully submitted,

Attest:

Governor

  
Governor

  
Secretary

Report to the North Dakota Water Conservation Commission  
Corps of Engineers, U. S. Army Engineer District, St. Paul  
Activities in North Dakota  
20 December 1957

COMPLETED PROJECTS

1. Lake Traverse-Bois de Sioux project. - Although the Lake Traverse Reservoir is located on the boundary between South Dakota and Minnesota, a part of the 24-mile channel improvement on the Bois de Sioux lies on the boundary between North Dakota and Minnesota. Insofar as is known the project has been operated satisfactorily since being placed in operation in 1941 and no significant problems arising from the project have been noted in North Dakota.

2. Baldhill Dam and Lake Ashtabula. - On the 2d of October this year I and members of our engineering staff in company with Mr. Fred Fredrickson and Mr. Milo Hoisveen made an inspection of Lake Ashtabula and met Mr. Corwin of the commission at Baldhill Dam where we inspected the structure. Later that day I had the opportunity to meet with a group of civic interests at Valley City and to discuss with them various problems relating to the operation of the dam and management of the reservoir lands. In connection with the construction of the project the Corps of Engineers acquired title to 2,450 acres of land above normal-pool elevation 1266, about 85 percent of which has been set aside for management as follows:

Wildlife management by North Dakota Game and Fish Department	1,260 acres
Public parks and access by Barnes County Park Board	160 acres
Youth camp sites (reserved)	385 acres
Semipublic use (church camps and others)	300 acres

3. Improvements completed by the Corps include a 3,300-foot access road, drinking water supplies, toilet facilities, guard rails, gravel boat-launching ramps, initial tree plantings in an area of about 150 acres, and construction of about 16 miles of stock-proof fencing. State improvements include the addition of fencing and care and replacement of tree plantings. The Barnes County Park Board has improved picnic areas through the provision of picnic tables, fireplaces, toilets, landscaping and cleanup. The park board has expressed a desire for additional sanitary and drinking water facilities and roads in the Federal land areas. Such additional improvements will be undertaken where they fall within the limits of our available authorities and the need can be clearly demonstrated subject, of course, to the availability of funds for such work.

4. Homme Reservoir. - Since operation began in 1951 we have attempted to interest a local governmental agency in assuming management responsibilities for the recreation areas. The American Legion and the Agassiz Garden

9-11-1

Club are agencies interested in recreational development but are not in a position to accept management responsibility. The Walsh County Board of Commissioners has been continuously approached by these agencies and the Corps to establish a county park board for management of the area, similar to the arrangement at Lake Ashtabula. However, a basis for management of the area by the county commission has not yet been established. This matter was discussed briefly with a small group of local interests during my inspection of the area in October in company with Mr. Lundseth, Mr. Hoisveen and Mr. Fredrickson.

5. Facilities at Homme Reservoir have been provided entirely by the Corps and include beach improvement, drinking water supply, toilets, parking areas, and access roads including a portion of bituminous surfacing on a hillside trail subject to erosion. The latter item proved to be unsatisfactory and will be replaced next summer.

6. Visitor use at the reservoir is low, about 800 visitor days annually. In view of the lack of local interest shown further improvements by this office are not believed justified.

7. The chief recreational problem at Homme Reservoir is maintenance and cleanup of recreational facilities constructed at the request of local interests since the Corps of Engineers has no resident dam tender.

8. Rush River channel improvement. - The Rush River project includes about 13.2 miles of channel excavation and 13.7 miles of clearing and snagging. As the construction work neared completion a number of problems developed involving the quality of spoil-bank leveling, condition of the improved channel, effects of spraying operations on stock and adjacent trees, and sliding banks. All of these problems have been resolved and the project has been accepted by the Rush River Conservation and Flood Control District. However, as a result of the heavy runoff last June we have agreed to rebuild two side-ditch drop structures. This work will be undertaken following the spring runoff period next year.

9. Miscellaneous clearing and snagging projects. - A total of about \$290,000 has been expended for this type of work in North Dakota, including operations on the Park River in 1950, 1952 and 1956; on the Tongue River in 1951; on the Sheyenne River in 1951 and 1952; on the Forest River in 1952; and on the Maple River in 1956. The removal of snags and debris at these locations has permitted the passage of flood flows at lower stages and reduced flood damages in adjacent areas.

#### PROJECTS UNDER CONSTRUCTION

10. Grand Forks local protection works. - The levee and related flood control improvements at Grand Forks are now approximately 99 percent complete.

Work remaining which will be completed following the spring high-water period includes:

- a. Gravel surfacing of the ramp leading to the top of the dike.
- b. Seeding levee side slopes and some miscellaneous shaping along the levee toe.
- c. Completion of a drainage ditch to manhole No. 1.
- d. Miscellaneous cleanup of the entire area.

#### PROJECTS - CONSTRUCTION PENDING

11. Fargo local protection works. - Detailed planning for the flood control improvement at Fargo is well-advanced and present plans provide for initiation of project construction in the spring of 1958. The city of Fargo is in the process of obtaining necessary rights-of-way.

12. Clearing and snagging work. - Funds are currently available to permit clearing and snagging of approximately 9 miles on the upper reaches of the North Branch of the Park River in Pembina County and similar work on the Pembina River in a 9-mile reach extending downstream from the junction with the Tongue River. It is anticipated that contracts will be let for these improvements ~~during 1958 so that the work may be advertised~~ prior to the end of the fiscal year.

#### DEFERRED PROJECTS

13. Wahpeton-Breckenridge. - Work on the authorized channel improvement project on the Bois de Sioux River and Red River of the North in the vicinity of these two communities has been indefinitely deferred because of the apparent lack of economic justification for the project. A review of the flood damages and benefits originally credited to the project has shown that much of the benefits anticipated in Breckenridge were the result of backup in existing sewer lines and that these damages could be effectively eliminated by installation of appropriate gates and related works at local expense. Also, since the original study, construction of a levee riverward of the Wahpeton park has provided a substantial measure of flood protection in that area, further reducing benefits which had been credited to channel improvement work.

14. Maple and Sheyenne Rivers. - Authorized channel improvements on these streams have been deferred because of lack of local interest in the work as planned and, in the case of Maple River, the possibility that a satisfactory betterment may be obtained through upstream works being planned by the Soil Conservation Service under Public Law 566.



## EXAMINATIONS AND SURVEYS

15. Pembina River. - During the past year the North Dakota State Water Conservation Commission has furnished a report dated April 1957 covering certain information in justification of the proposed Pembilier Dam and a supplemental report dated 1 October 1957 summarizing the municipal and industrial water requirements within the Pembina River Basin. Based upon these data and further analyses by the District office staff, it now appears that economic justification for the Pembina Dam may be within reach. However, there are a number of areas which have not been fully explored including the matter of water quality and costs of necessary treatment, the actual irrigation demand and costs involved assuming that Federal assistance through the Bureau of Reclamation will not be forthcoming, and the necessary road relocations and their costs. There is still a lot to be done on the report but every effort will be made to complete the report this fiscal year.

16. Devils Lake. - Necessary field surveys, supplementing those obtained by the Water Conservation Commission and the Soil Conservation Service, have been completed and foundation data have been obtained in the areas of proposed excavation. However, hydraulic designs and quantity estimates have been deferred pending receipt of data on possible upstream drainage and related improvements affecting the runoff contribution. In this connection the Soil Conservation Service was requested to furnish a report on the costs and benefits of such upstream work but declined to participate because of its heavy schedule on the small watershed work. Subsequently, a tentative plan was worked out with the engineering staff of the Water Conservation Commission whereby drainage plans, costs and benefits would be worked out for sample areas with the view that the results could be expanded and considered applicable to the entire upstream tributary area. At this time there appear to be a number of local problems which will have to be resolved before the desired improvement can be recommended. These include objections by downstream interests along Mauvais Coulee to a channel enlargement program and an apparent unwillingness of certain upstream interests to recognize a responsibility in the downstream outlet problem. In view of the number of unresolved problems in the Devils Lake area and the need for additional funds to complete the Pembina study, part of the funds originally allocated to the Devils Lake study this fiscal year has been transferred to the Pembina study.

17. Red River of the North review survey. - A review survey of a number of unresolved flood problems in the basin was authorized by the Chief of Engineers as the result of a preliminary examination completed by the District in December 1956. Under this authority further survey-scope consideration would be given to flood problems brought to light by floods since the 1947 Red River report. The study would include consideration of the feasibility of local protection works at Pembina on the main stem, at Minto on the Forest River, and at Grafton on the Park River; consideration of the advisability of increasing the flood protection afforded by

Baldhill Dam on Sheyenne River by raising the structure; and consideration of the need for an outlet from McHugh Lake near Lakota as well as consideration of similar problems in a number of areas in the Minnesota portion of the basin. There are no funds available for the review survey this fiscal year. However, it might be appropriate for the Water Conservation Commission to review the survey program with a view toward establishing a priority for consideration of these problems. Such priorities could be coordinated with similar priorities for study of the problems in Minnesota and an equitable basis established for undertaking the most critical studies as soon as funds become available.

18. Souris River survey. - Based upon a recommendation contained in a preliminary examination completed by the District in July 1956, the Chief of Engineers authorized a survey to determine the most feasible plans and the economic justification for providing additional flood protection in the Souris River Valley at and in the vicinity of Minot, N. Dak., and relief from flood and drainage problems in an upland area in Ward and Renville Counties. No funds have been made available for this survey to date.

**MEMO TO:** Governor John E. Davis  
**FROM:** Milo W. Hoisveen  
**SUBJECT:** National Reclamation Association Convention  
Phoenix, Arizona. November 3-8, 1957.

Upon arrival in Phoenix on November 3rd, I attended the Board of Directors meeting of the National Reclamation Association. The most important item on the agenda for the afternoon session was the discussion of derogatory reclamation articles appearing in national magazines. The articles in the Nation's Business and the Wall Street Journal fostered considerable discussion. The directors decided to take immediate steps to refute this publicity.

A later meeting with Congressman Aspinall resulted in his committee sending a letter to the director of the Congressional Library requesting him to prepare an article entitled "The Case for Reclamation." The letter was a strong one and should have the desired effect in obtaining a favorable article. The Nation's Business magazine has been approached and will give the Association or the Congressman sufficient space in their magazine to permit the printing of this article.

The Board also agreed to pay \$375 as an equal share to the State of Utah in the preparation of an article for Governor George Clyde to appear as author. Following this meeting I had a conversation with Governor Clyde in which he stated that he planned to give this article at the annual meeting of the Association of Agricultural Engineers in Chicago in December. The article should be a good one.

At subsequent meetings the Board of Directors approved 22 resolutions favoring the development of the 17 western states. The resolutions dealt with such matters as the State's rights to its waters, opposition to wilderness bills, the recommendation of a national water policy and the increasing appropriations for use on reclamation projects.

The Board also met with high level staff members of the Department of Interior relative to the formation of an advisory group for that department. This suggestion met with the apparent approval of the Department of Interior representatives. Former Governor Aandahl was present at this meeting.

Representatives of the North Dakota caucus, for which I served as chairman, met with Department of Interior staff representatives which included Solicitor Elmer Bennett, Governor Aandahl, Commissioner Daxheimer, Assistant Commissioners Nielson and Dominy, with the Chief Planning Engineer N. B. Bennett. This group seemed very favorably impressed with the information they had witnessed and heard about in conjunction with the Devils Lake hearing. As you recall in the Devils Lake hearing, Chairman Aspinall repeatedly stated that he would be unable to act on the reauthorization of the Garrison Diversion Unit until Congress had received the Bureau of the Budget report on the project. This matter came up for consideration at the Department of Interior meeting.

The Bureau of Reclamation officials were of the opinion that they would be in a position to have the report reviewed and out of their office in early December. Solicitor Elmer Bennett inferred that the Department of Interior would make the report available to the Bureau of the Budget on or about January 1st. The report

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will consist of a review of the comments made by the various Missouri Basin States and interested federal agencies. Governor Aandahl stated that all reports were in with the exception of one and this was believed to be the State of Iowa. The reporting date has now expired.

It was the opinion of these federal representatives that the Bureau of the Budget could complete the economic analysis of the Garrison Diversion Unit report within a thirty day period. Our Congressional representatives could then request the report to be made available to Congress. This would permit it to be reviewed by the Congressional committees on Interior and Insular Affairs in early February. Governor Aandahl was of the opinion that 6 to 8 state witnesses might be required at that time. He was of the opinion that your appearance at this hearing would be highly desirable. He also thought it highly significant that Solicitor Bennett committed the Department of Interior to make the report available by January 1st.

A conference was also held with Mr. E. D. Eaton, Advisor to the Senate Committee on Interior and Insular Affairs. Mr. Eaton was of the opinion that it would be possible to schedule the Senate hearings immediately following the House hearing on the Garrison Diversion Unit. This would afford us the opportunity of appearing before both committees with little additional expense. Mr. Eaton inquired as to what progress we had made with the Mississippi Valley Association. We informed him of the fact that Jim Smith, Vice President of the Association, made a statement favoring the project at the Devils Lake hearing. He appeared well satisfied over this matter and inferred that we would be unable to get the bill out of committee if we did not have the support of the Mississippi Valley Association. Apparently we will be required to work closely with this group if we expect approval of our project.

Several personal meetings were held with Congressman Aspinall and several members of his committee. Congressman Aspinall was very favorably impressed over the fact that you were able to take time from your busy schedule to spend two days with the committee. He mentioned this on more than one occasion.

The program of speakers at the convention was a good one. It included Congressman Miller, Senators Goldwater and Anderson and several other prominent reclamation enthusiasts.

This convention was the best that I have been privileged to attend and was well organized. The officers of the Association were re-elected. Houston, Texas, was named as the convention city for 1958.

The State Water Conservation Commission was also represented by Vice Chairman Tucker, A. M. Christensen and Fred Fredrickson.

PETITION

TO: THE HONORABLE JOHN E. DAVIS, GOVERNOR OF THE STATE OF NORTH DAKOTA;  
AND THE NORTH DAKOTA STATE WATER CONSERVATION COMMISSION.

Gentlemen:

Under and by virtue of Chapter 43 of the North Dakota Session Laws of 1957, there was created a special fund designated, "Multiple-Purpose Cooperative Fund," which fund is administered by your Honorable Commission, and which fund was created in order that your commission can lend financial assistance as well as to actively participate in the construction and maintenance, among other things, of flood control projects.

In support of this petition, your petitioner respectfully represents and shows your commission as follows:

1. The Lower Heart River Water Conservation and Flood Control District of Morton County, North Dakota, was duly established by order of your Honorable Commission dated December 4th, 1953, pursuant to petitions received from the City of Mandan and the County of Morton, requesting the creation of such district under the provisions of Chapter 61-16 of the North Dakota Revised Code of 1943 and acts amendatory thereof and supplemental thereto.

2. Subsequent thereto, the Board of County Commissioners of Morton County, North Dakota, duly appointed a board of water conservation and flood control commissioners for said district.

3. Thereafter, the Board of Commissioners of the Lower Heart River Water Conservation and Flood Control District of Morton County, duly organized, and commenced negotiation with the Corps of Army Engineers for the construction of flood protective works within said district. Thereafter, the said Corps of Engineers duly submitted plans and specifications for the construction of a flood control project within said district, the cost of said project to be borne in part by the district and in part by funds appropriated for such purpose by the Congress of the United States. These plans and specifications, after public hearing thereon, were duly approved by the Board of Commissioners of said District and the Congress of the United States subsequent thereto duly appropriated money for the planning of said project and thereafter the sum of \$200,000.00 was duly appropriated by the Congress of the United States in order to commence construction of the project within said district.

4. The Heart River Basin, located in southwestern North Dakota, is approximately 120 miles long and has a maximum width of about 40 miles. Heart Butte Reservoir, which was constructed by the Bureau of Reclamation, about 60 miles above mouth of the Heart River, controls approximately one-half of the 3,400 square mile drainage area of the stream.

*Approved Feb 3*

5. There have been at least 26 occasions since 1881 when overbank flooding has occurred on the Heart River in the vicinity of Mandan. Only five of these floods are known to have been caused entirely by excessive run-off from rainfall. The remaining 21 floods were caused by rapid run-off from snowmelt in combination with ice-jam conditions. The Heart Butte Reservoir has relieved flood conditions along the river in the immediate regions below the dam; however, a major flood problem has been found to still exist along the lower regions of the river including the area in which this district is situated. Upstream from Sunny, the flood plain is restricted, and flood-flows inundate only small acreages. In the reach from Sunny to the mouth of the Heart River, approximately 4,400 acres of land are subject to flooding. Of this acreage, about 2300 acres are utilized as crop land. The Bureau of Reclamation has indicated that there are approximately 2,480 acres of irrigable land situated between Sunny and the mouth, but that they could not develop this acreage under present conditions due to the extensive flood hazard. The proposed plan of the Corps of Engineers would afford flood protection for about 1700 acres of these lands.

6. The City of Mandan and its environs have always been cognizant of flood threat and the necessity of adequate protective works. The earliest works were started at the turn of the century by the Northern Pacific Railroad Company and consisted chiefly of channel changing of the Heart River west of Mandan, and constructing levees around the roundhouse and shops. The Russell-Miller Milling Company built protective works around its installations at the edge of the river. The City of Mandan was instrumental in and contributing toward channel changing and re-routing of the river at the south edge of the city, in addition to providing a levee along the left bank of the Heart River between the Mott line bridge and the west bluffs in the city limits. The State Training School also constructed a levee on the right bank of the river extending from its buildings to a junction with the Northern Pacific Railway's right-of-way at the west edge of the city of Mandan.

7. Below the city of Mandan, efforts to control the Heart River floods were instituted by the State Highway Department in conjunction with cooperation of property owners along U. S. Highway No. 10. A levee on the left bank was constructed in the late thirties to provide the highway and the landowners with some protection. The Northern Pacific Railroad Company provided a channel straightening and channel shortening change. The city of Mandan and Morton County removed trees and brush in the channel area below the city to alleviate ice jamming and stoppage.

8. All of these efforts were made over a period of 40 years in an attempt to stem the flood waters and resultant damage from the Heart River. In addition to these measures, the city of Mandan, in the 1890s, established a levee at the then eastern limits of the city to keep out the flood waters of the Missouri River.

9. The severity and intensity of Heart River floods increased from 1938 onward, as is revealed by the study made by the Corps of Army Engineers. One of the chief contributing causes for the apparent increase in flood intensity is the denuding of the upstream flood plains of the river of natural growths, either by man or as a result of the droughts in the early thirties. This factor, coupled with a record-breaking run-off, has resulted in nullifying the efforts to control the river at Mandan prior to 1949. After the construction of the present levee system was completed in 1950 as authorized by Congress and under the Corps of Engineers' supervision, the City Proper has had no flooding of its areas. The present levee system was overtopped once, in 1952, but action by the city in blowing out the right-of-way of the south branch of the Northern Pacific quickly relieved the flood situation. The areas above and below Mandan, however, did have the greatest difficulty yet experienced with flood waters.

10. In addition to the protective works which were constructed, the City of Mandan, since 1946, has maintained an elaborate flood fighting organization. Prior to 1946, this organization existed as a skeleton force, but since that time it has been completely re-organized and coordinated with the efforts of the Corps of Engineers, Garrison District.

11. After the disastrous flood of 1943, in which lives and a great deal of property were lost, a protective levee was placed on the left bank of the Heart River to protect the city of Mandan. This levee was overtopped and breached in the flood in 1948, the year in which the present U. S. Highway No. 10 bridge to the west of Mandan was being constructed.

12. After the 1948 flood and as a result of Congressional authorization and expenditure of federal funds, the Corps of Engineers planned, contracted for and supervised the present protective works around the city of Mandan. This work was started and substantially completed in 1949, giving the city its first protection behind the new works during the spring of 1950. These works were designed upon the experience of prior floods in the area, reinforced by the knowledge of flood control works by the Corps of Engineers. Subsequent observations of the 1950 and 1952 floods indicated that the present protective works would be ineffective under conditions which might normally occur in the lower reaches of the Heart River.

13. Discharges in 1950 and 1952 indicated the type of discharge that might be expected in the future. These discharges of 30,500 cubic feet per second in 1950 and 30,000 cubic feet per second in 1952 at Mandan exceeded the design flow of the present system.

14. The 1952 discharge overtopped, for a short time, the present levee for approximately 1000 feet in the lower reaches of the levee. This overtopping was caused by an icejam in the Heart River below the lower end of the levee. Timely breaching of the railroad grade saved the levee system from being topped over a prolonged period.

15. The present low point of the existing levee is at elevation 1651.0 feet mean sea level located at the junction of the levee and the Northern Pacific South Branch bridge. The low point in the 1943 protective works was also located in this immediate vicinity with an elevation of 1644.8 feet mean sea level. The resultant crest level of the 1943 flood in the city of Mandan was elevation 1647.3 feet.

16. Under present conditions and with the present protective works, the waters of a standard project flood of the proportions indicated by the Corps study would produce a crest elevation flood of at least 1651.0 feet within the city of Mandan should the project flood waters overtop the present protective works. That this is possible can be recognized by the fact that the discharge of the 1952 flood did top the levees and this discharge is only 60% of the designed capacity of 50,000 cubic feet per second proposed under the present plans for modification of the levee works. Further, the effects of ice jamming are the unknown factors and experience indicates that ice jamming of the nature encountered in the 1952 flood is not unreasonable to expect anywhere along the lower reaches of the Heart River.

17. The elevation of 1651.0 feet is reasonable to assume since it represents the lowest point on the levee system and the point at which any outflow of overtopping water would be expected. How much higher than elevation 1651.0 the crest would be is entirely dependent upon the elevation of the crest waters. These crest waters would have to be higher than elevation 1651.0 in order to overtop the levee. With proper ice and water discharge combination, the possibility of overtopping can become a reality. Again it is pointed out that this did occur in the 1952 runoff under conditions that can duplicate themselves.

18. When this does occur, there will be a period ranging from 8 hours to 10 days in which the incoming waters will be at an elevation greater than the low point of the present levee system, indicating that cresting and leveling off of the flood waters will be over a period sufficient in length to inundate all of Mandan



to the extent of the 1943 flood plus an additional 62 blocks. In addition to the business district flooded in 1943, those areas in the business district which escaped that flood would be inundated.

19. A junior high school and two public grade schools, eight of the nine churches, and approximately 150 homes would be involved which escaped the damage of the 1943 flood. Three trunk line sanitary sewer lift sub-stations would be rendered inoperative because of submergence. These lift stations serve an estimated population of 2,000, of which over one-half would be outside of the inundated area. In addition, submerging of manholes serving the main collector sewer would render the main lift station inoperative because of insufficient capacity to pump additional flood waters finding their way into the city through the manholes. This main lift is used during period of high water in the Heart River to discharge sewage against the head of the flood waters. With the failure of this station, the entire sewer system flow of the city would be stopped.

20. Experience of the 1948 and 1949 floods indicate that if ice also rides in on the flood crest, shearing of hydrants would result. Attempts to shut off hydrants under water are futile, as past experience has proven. Shearing off of more than two hydrants would tax the water treatment facilities to a point where the domestic supply would be jeopardized because of the inability to produce safe drinking water at the rate of demand created.

21. Because of the season of the year when most floods occur, the freezing temperatures that prevail could raise havoc with inundated structures by the effect of resultant ice pressures. This was experienced in the 1943 flood. Not only were structures affected, but service lines and interior piping froze with residual damage.

22. Damage which would result to the community of Mandan should the anticipated flood take place could not be measured in dollars at this time, but not only property values would be at stake, but also the lives and health standards of this community.

23. A flood of the magnitude anticipated to overtop the Mandan protective works would also top the State Training School levee as well as the Northern Pacific main line track to the north, inundating all of the dormitories, power house, administrative building, workshops and a part of the food storage facilities.

24. Experience in cause and effect studies show that the basic problem confronting the area is one of providing uninterrupted flow of ice and flood waters through a constricted channel and water course area in the vicinity of Mandan.

Constrictions exist at the U. S. Highway 10 bridge west of the city, at the Northern Pacific Mott Line bridge southeast of the city and at a number of points lying east of the Northern Pacific South Branch right-of-way and south of U. S. Highway 10.

25. The constriction at the U. S. Highway No. 10 bridge west of the community of Mandan causes the water to back up and overtops U. S. Highway 10 and the main line of the Northern Pacific Company. Both the highway and the main line of the Northern Pacific have been made inoperative because of the floods in the past. In addition, it has been necessary for the State Training School to block off the Northern Pacific main line track to prevent waters which flow south of the track from a point near the Sunny bridge from flooding the school. In the past, waters from this latter source have flooded the State Training School farm approximately three miles west of Mandan.

26. The effects of the U. S. Highway No. 10 bridge west of Mandan were first observed during the 1948 flood when that bridge was under construction. At that time, the high water and ice, striking the low steel of the bridge formed an ice barrier backing the water west and across U. S. Highway 10 and up to and across the Northern Pacific main line tracks, west of the community. At that time, it was necessary for the State Training School personnel to construct a dike of such a height as to block the transcontinental operations of the railroad company.

27. The plan proposed by the Corps of Engineers and adopted by the Lower Heart River District to alleviate problems in the lower reaches of the Heart River is sub-divided into three units.

28. The northern unit, referred to as the Sunny unit, provides for a closure levee between the main line of the Northern Pacific track and the hills to the south in the vicinity of the Sunny bridge. This closure would prevent water from flowing eastward along the south side of the Northern Pacific's right-of-way to a point where it has flooded the State Training School farm and has required the State Training School to erect a levee between the Northern Pacific track and the hills to the south at a point just to the west of the school proper. In addition, this unit of the plan provides for raising U. S. Highway 10 immediately north of the State Training School property so as to form a levee at that point preventing water backing up from the constricted area near the U. S. Highway 10 bridge into the State Training School property. The cost of raising the highway at this point for a distance of approximately three-quarters of a mile is estimated at approximately \$100,000.00.

29. The second unit of the plan, referred to as the Mandan unit, provides for raising the U. S. Highway 10 bridge west of Mandan so as to alleviate the flooding

to the west thereof and also raising the Northern Pacific Company bridge a like amount to effect the same purpose. In addition, this phase of the plan calls for strengthening and raising the levee on the west bank protecting the State Training School property and raising and strengthening the levee on the left bank protecting the city of Mandan. As a part of this unit, the Corps proposes the construction of a trestle opening under the south branch of the Northern Pacific Company's Mott line at a point approximately 1000 feet south of their present south branch bridge. This opening would provide additional discharge into the plains to the east of Mandan.

30. The third phase of the plan called the Unit Below Mandan would shorten and straighten the channel from the eastern limits of Mandan to the Missouri River, and would provide for a 2000 foot wide floodway with a levee on the left bank of the floodway. It would also provide for channel clearance downstream to increase the passage of ice and to eliminate any of the points where jamming has occurred in the lower reaches of the Heart River in the past. This jamming has, in the past, caused the flooding of U. S. Highway No. 10 east of the city of Mandan.

31. Originally, when this district was created, the people of Mandan and the area to the east thereof proposed that the program for flood control be commenced at U. S. Highway 10 west of Mandan, and that all improvements be made from that point south along the river so as to remove constrictions and straighten the channel from that point onward as well as to raise the dikes on the left and right banks of the river. These people were not interested in raising U. S. Highway 10 bridge or in raising the railroad bridge west of the city because these two bridges act as a constriction and prevent too much water and ice from flowing through the channel adjacent to Mandan.

32. The Corps, however, proposed to alleviate the flooding in the entire area and thus it came in with a plan to raise both of the bridges as well as to raise U. S. Highway No. 10 west of the city and to close off the area south of the Sunny Bridge. By its nature, any channel straightening or improving in the lower reaches will benefit those residing in the upper reaches by permitting the water to move downstream more quickly, as well as the prevention of ice jams causing the water to back up. Conversely, any improvement upstream has little or no benefit to those people living downstream because the removal of the present constrictions in the upper reaches would tend to cause water and ice to move into the lower reaches in a greater volume and mass.

33. The Corps' plan goes farther than that requested by the local citizens of Mandan and those people lying east thereof in the improvements made by raising the two bridges west of the community as well as raising U. S. Highway No. 10 west of the

city. The sole reason for raising these bridges and the improvements west of Mandan was to protect the State Training School property. However, the raising of the bridge alone threw an additional \$175,000.00 in cost into the project which must be paid by the local taxpayers. These people, who must bear the burden of constructing the project, had no voice whatsoever in the construction of the bridge at the present elevation or its present location, nor will they share in any of the benefits to be derived from raising of that bridge or the raising of the highway or the construction of the levee near Sully. The benefits from that portion of the project will accrue almost entirely to the State Training School, and not to the people in the lower reaches. Thus, the people in Mandan and east thereof are called upon to bear the burden of supporting an installation which does not necessarily benefit them.

34. The benefited property consisting mostly of the State Training School would escape the assessments which the district could levy, and in addition, the state being exempt from the three mill levy which this district is permitted by law to make for the maintenance of the project, would not be contributing anything in that respect.

35. The people in the city of Mandan and in the area to the east have paid dearly for its flood protection in the past. In addition to direct costs which they have assumed, they have been required to pay all losses which have occurred to their properties as well as to installations owned by the municipality.

36. Under the agreement to be entered into with the United States Government before the project is started, the district is committed to maintain the flood protective works. Experience in the past has shown this to be an extremely expensive undertaking.

37. Since its inception, this district has been levying the maximum amount permitted by law (three mills) on all the taxable property within the district. The total 100% assessed valuation of all property in the Lower Heart River Water Conservation and Flood Control District for the year of 1956 amounted to \$9,949,972.00, of which amount slightly over \$9,000,000 is situated within the city of Mandan. This levy has been bringing into the treasury of the district approximately from \$12,000.00 to \$13,000.00 per annum.

38. While the figures of maintaining the present dike system in the City of Mandan are rather incomplete, because it was impossible to budget for such expenditures, the city did spend a known \$45,611.97 for dike maintenance during the years 1957 through

1957. These figures do not include capital expenditures, nor do these figures well and truly show the true expense that has been experienced by the city of Mandan in keeping up a dike much smaller than the proposed one. It is unfortunate that there was no proper accounting methods that could be used in this respect as all funds of the city were necessarily tapped and all employees of the city, regardless of what department they were employed in, were used in flood protection work during times of high water and during the off-season.

39. The inadequacy of the figures for maintenance can be shown by the fact that in 1952 alone over 642 persons were directly involved in the flood fight with an additional 400 on call. At that time it represented well over 1% of the population of the city and it is estimated that the direct cost to the city during that year for maintenance and flood protective work exceeded \$18,000.00, even though much of the help was volunteer help.

40. The maintenance of the dike from experience shows that it must be kept constantly in repair. Ice, rain, water, current wash tend to carve the banks and these must be repaired. In addition, rodents bore into and damage the dike area and livestock, likewise, cause damage to the dike. Seepage develops in saturation areas and sand boils appear which must be corrected. Ripraping becomes dislodged when exposed to high water and ice, and the crown and the roadway of the levee tend to become weakened from the necessity of driving worktrucks over the top of the levee. Sapling growth and willows spring up on the levee as well as in the channel itself and these must be cleared away. All the mechanical structures must be kept in good shape, free from rust and corrosion and must at all times be in operating condition. These are but a few of the items of maintenance which must be borne by the taxpayers in this district. In addition, during time of high flood water, it is necessary to have standby crews and trucks ready to repair any damage which might occur to the dike during high water. Men must patrol the entire length of the dike area at all times during the flood to see that no weak or soft points occur. And if a weak spot does occur, it is necessary to bring in sand bags and large crews of men to immediately get to work to prevent water from overtopping the dike. The number of men needed in 1952 is but a fraction of the amount which would be needed on the enlarged levee system.

41. The proposed levee will be three times as long as the present levee system and it is anticipated that the cost of maintenance would be approximately three times the present amount. If the cost were to increase in relation to the increased

distance of the levee, the amount which the district is permitted to levy by law would be insufficient to take care of the normal maintenance experienced on a dike of this nature. Yet the local taxpayer is required to maintain and keep up this levee system, while the State Training School under our law is exempt from paying taxes toward the cost of maintaining this levee.

WHEREFORE, Your Petitioners pray that inasmuch as the greatest item of cost is to be expended for the benefit of the State Training School property, solely, and inasmuch as the State Training School will ensage any cost of maintaining the dike, your Honorable Body assist this district in raising funds necessary to meet the financial commitment to raise U. S. Highway No. 10 bridge west of the city of Mandan and generally for use on the proposed flood control project in the Lower Heart River Water Conservation and Flood Control District.

Respectfully submitted,

LOWER HEART RIVER WATER CONSERVATION  
AND FLOOD CONTROL DISTRICT

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
Member

\_\_\_\_\_  
Member

Dated: December, 1957.

REPORT ON CONGRESSIONAL HEARING ON H. R. 7068

Held

October 30, 1957, Devils Lake, North Dakota

DEC 20 1957

To: The Honorable John E. Davis, Governor, and Member of  
North Dakota State Water Conservation Commission.

From: Fred J. Fredrickson, former chairman of Governor's Coordinating committee for the Devils Lake hearing on H. R. 7068.

Gentlemen:

As the chairman of the dissolved coordinating committee appointed by Governor Davis in connection with the Congressional hearing at Devils Lake, North Dakota, held October 30, 1957, I submit the following report:

The coordinating committee was composed of -

R. L. Dushinske and Oscar N. Berg, representing Missouri-Souris Projects Association.

Robert F. Masee and S. W. Thompson, representing North Dakota Reclamation Association.

Roy A. Holand and Vernon S. Cooper, representing Garrison Diversion Conservancy District.

Milo W. Hoisveen, State Engineer and Chief Engineer of the State Water Conservation Commission.

Fred J. Fredrickson, Planning Coordinator of State Water Conservation Commission and Washington Representative of Greater North Dakota Association.

Three meetings of the full committee and a number of conferences of a lesser number were held.

Witnesses were selected in cooperation with a number of organizations and groups, and assistance given in the preparation of their formal statements. All statements, about one hundred of each, were mimeographed by the staff in the Water Commission office.

Informal prehearing activities consisted of receptions and dinners for the Congressional Delegation at Bismarck, Harvey and Devils Lake with coffee and doughnuts at Riverdale, and an inspection tour through part of the proposed unit.

The names of the members of the Congressional subcommittee hearing the presentations and of the staff appear in the attached booklet, and also the names of all witnesses who appeared or filed statements.

*Fredrickson*

The intense interest of North Dakotans in the Garrison Diversion Unit and the hearing was amply demonstrated by an attendance of approximately 2500 people. Actually there were 2285 who registered.

Although this unexpected large attendance and the 50 witnesses who appeared and testified, as well as those who filed statements, greatly impressed the subcommittee, there remains much more work to be done. I have reference to the additional House hearing which will be held in Washington and the hearing in the Senate.

It is my suggestion that another coordinating committee for these additional hearings be created. The number might be slightly increased over the previous committee to say a committee of 15.

I would like to see such new coordinating committee named at an early date so that it may organize and assess the task to be accomplished soon after the first of next year.

Respectfully submitted,

  
Fred J. Fredrickson