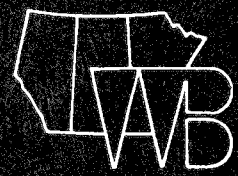


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ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1974



PRAIRIE PROVINCES WATER BOARD

CANADA ALBERTA SASKATCHEWAN MANITOBA

1973 - 74

ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1974.



PRAIRIE PROVINCES WATER BOARD

305 BRENT BUILDING 2505 11TH AVENUE REGINA, SASKATCHEWAN S4P 0K6

CANADA

ALBERTA

SASKATCHEWAN

MANITOBA

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INTRODUCTION

On October 30, 1969, Canada and the Provinces of Manitoba, Saskatchewan and Alberta entered into an agreement for the apportionment of interprovincial waters in the Prairie Provinces. Under Schedule C of the Master Agreement on Apportionment, the Prairie Provinces Water Board was reconstituted and given the responsibility for the administration of the Agreement as well as other related duties.

During this fiscal year, the Prairie Provinces Water Board held one meeting: on November 6, 1973 in Regina, Saskatchewan. This was the ninth meeting of the reconstituted Board.

This report summarizes the activities and progress of the Prairie Provinces Water Board for the period from April 1, 1973 to March 31, 1974.

RECONSTITUTION OF BOARD ADMINISTRATION

During the 22 year history of the original Prairie Provinces Water Board, the Engineering Secretary of the Board was a Federal Government PFRA employee who served in this capacity as part of his regular duties. In addition, support staff for studies and office accommodation were provided by the PFRA in Regina at no charge.

Schedule C of the Master Agreement on Apportionment reconstituted the Prairie Provinces Water Board and provides for the necessary Board staff, accommodation and supplies, to be financed by the four governments party to the Agreement. Following the reconstitution of the Board, the members agreed to the establishment of a semi-autonomous Board Secretariat.

The Secretariat is composed of Federal Public Servants that receive direction entirely from the Board and have no working connection with any part of the Federal Government. The Board has direct control over the operation of the Secretariat through approval of an Annual Budget. The Board has Federal spending authority up to an amount equal to the total Board budget with the Provincial Governments' shares recovered after the fiscal year audit is completed.

The effective change of the Board's administration came with the appointment of an Executive Director on June 1, 1972. The Board now operates through the Executive Director and his staff, supported by various committees. The organization chart is shown on page 30.

With the appointment of a permanent staff, the By-laws, and Rules and Procedures came into effect July 1, 1972. The By-laws and the Rules and Procedures are appended to this Annual Report.

ADMINISTRATIVE DECISIONS

Interim Method of Natural Flow Determination

Quarterly reports on natural flows, consumptive use, and storage changes in the South Saskatchewan River Basin in Alberta were prepared and distributed. A summary table of these quarterly report results is shown on page 18 in this report. The method used by the previous Board to determine natural flows was continued in order to administer the Apportionment Agreement, and will be used until the results of a current study of all available methods is concluded.

During 1973, the recorded flow of the South Saskatchewan and Red Deer Rivers passing the Alberta-Saskatchewan Boundary was 5,108,050 acre-feet. This volume is 80.7% of the calculated natural flow for the same period.

Orders-in-Council Resulting from Former PPWB Action

There were five recommendations put forward by the former Board that resulted in Orders-in-Council being passed by the member governments. Three of these recommendations are listed in Schedule D of the Master Agreement. Article 12 of the Master Agreement states, "Because the Orders-in-Council referred to in Schedule D hereto will become redundant upon the execution of this Master Agreement, the parties agree to take steps to have them revoked."

The two recommendations not included in Schedule D dealt with a particular project allocation of water, and dealt with amendments to hydro plant licenses subject to PPWB sponsored Orders-in-Council. Because the Apportionment Agreement stipulates allocation between Provinces, and not individual projects, and because project allocation Orders-in-Council were rescinded following the agreement, there was no need to have the two outstanding Orders-in-Council remain in force.

The Board agreed to have the members take the necessary steps to have the two Orders-in-Council rescinded by their respective governments.

Common Water Quality-Quantity Monitoring Stations

Near the end of the last fiscal year, the Board instructed both its Committee on Water Quality and its Committee on Hydrology to review and coordinate the establishment of common water quality and quantity monitoring stations for the purpose of carrying out the responsibilities of the Board. Committee meetings were held throughout the summer and fall and a list of station locations agreed to by members of both Committees was presented to the Board. The Board agreed to the proposed station locations and passed the following motion:

"The Board designates the following locations for the establishment of common water quality-quantity monitoring stations required to carry out the responsibilities of the PPWB as defined in the Master Agreement on Apportionment and that these station locations be subject to review, at least every five years.

Beaver River at Cold Lake Reserve
 North Saskatchewan River near Deer Creek
 Battle River near Unwin
 Red Deer River near Bindloss
 South Saskatchewan River at Highway 41
 Churchill River at Island Falls
 Saskatchewan River near Manitoba Boundary
 Carrot River near Turnberry
 Red Deer River near Erwood
 Assiniboine River at Kamsack
 Qu'Appelle River near St. Lazare."

Because the Master Agreement on Apportionment, Clause 7, states in part that, "...the collection, compilation, and publication of water quality and quantity data required for the implementation and maintenance of the provisions of this agreement shall be conducted by Canada...", the Board requested the Inland Waters Directorate of Environment Canada to ensure monitoring of the waters at these locations. The Board received a reply in February 1974 from Environment Canada accepting the operation of the designated stations as a Federal responsibility to commence in the spring.

PPWB Operating Manual

The Board agreed that an Operating Manual containing technical decisions of the Board which did not require ratification by Orders-in-Council should be prepared. The techniques, procedures and information compiled in the manual will govern the day-to-day operation of the Board in the performance of its duties and maintenance of its responsibilities. Distribution of the Manual is to be limited to Board members and Alternate members.

BOARD STUDIES

Natural Flow and Streamflow Forecasting Study

This study is being carried out for the Board by Water Survey of Canada, and is under the direction of the Committee on Hydrology. The study is of two parts, one is the development of procedures for the determination of natural flow for apportionment purposes, and the other is the development of procedures to meet streamflow forecasting requirements on interprovincial streams.

When the Natural Flow and Streamflow Forecasting studies are completed, reports and user manuals on natural flow computation methods and streamflow forecasting techniques will be available for five major river boundary crossings:

| | |
|--------------------------|--------------------------------|
| North Saskatchewan River | Alberta-Saskatchewan Boundary |
| South Saskatchewan River | Alberta-Saskatchewan Boundary |
| Churchill River | Saskatchewan-Manitoba Boundary |
| Saskatchewan River | Saskatchewan-Manitoba Boundary |
| Qu'Appelle River | Saskatchewan-Manitoba Boundary |

The study group started work in mid 1971. As a first step, a thorough review of existing methods of natural flow determination was undertaken and several known streamflow forecasting methods and equations were tested. All testing work was done on the South Saskatchewan River Basin in Alberta. The Natural Flow Study tested the Project Depletion Method, the Stream Depletion Method, and the Rim Flow Method of natural flow determination. The study group determined that the Project Depletion Method was the best suited of the three in the South Saskatchewan River Basin, because of the ease of application, and the resulting accuracy. It will not be necessary to repeat this detailed testing of all methods for the remaining basins under study. The Streamflow Forecasting Study component began by consulting with member agencies as to the types of forecasts being used and the types of forecasts required.

During fiscal year 1973-74, the study group completed a report on Natural Flow Determination for the South Saskatchewan River Basin in Alberta, plus the associated User Manual. They completed the natural flow study work on the North

Saskatchewan River Basin in Alberta, and the Saskatchewan Basin to the Saskatchewan-Manitoba Boundary, and prepared rough drafts of the reports. The data extraction and study was started on the determination of natural flow from the two remaining basins.

In addition, the study group completed the Streamflow Forecasting Report on the South Saskatchewan River Basin in Alberta along with two accompanying User Manuals on Water Supply, and River Flow Routing. A first draft of the third manual, Basin Simulation, was also completed. The study of streamflow forecasting for the North Saskatchewan River and the Saskatchewan River was completed and work was started on the reports and user manuals. A start was made, during the fiscal year, on streamflow forecasting for the remaining two basins, the Churchill and the Qu'Appelle Rivers.

Water Demand Study

The Board established a Task Force in 1970 to examine the need for, and the terms of reference of, a water demand (use) study for the Prairie Region. The Task Force completed its assignment and submitted a two volume report to the Board, dated January 1972. The report concluded that coordinated planning and development in the water sector requires knowledge of the entire supply and demand picture. The recently completed Saskatchewan-Nelson Basin Board investigation provides information as to the engineering feasibility and costs of providing various levels of supply at many locations throughout the region. However, data concerning demands and uses are lacking. The Task Force report states that this essential element in the planning process should be provided soon, in the form of assessments of the quantities of water, of specific qualities and price ranges, needed for all major purposes at various times in the future at a number of points in the Prairie Region.

At the December, 1972 meeting of the Saskatchewan-Nelson Basin Board Committee of Ministers in Winnipeg, a summary of the PPWB Task Force's Water Demand Study Report was presented with the comment that the SNBB Report recommended a complementary demand study. The Ministers agreed that a water demand study should be undertaken, however, the consensus was that the study should not be as extensive as outlined in the Task Force Report. They suggested that the work be done in two parts. The first part would consist of a study of water use, and the second part would consist of forecasting water demands.

Following the meeting, the Board recalled the Task Force and requested that it develop a new proposal and cost estimate of a study in accordance with the Ministers' instructions. During January 1973, the individual sector study outlines were reworked by the Task Force.

The Board reviewed the modified proposal at its March 1973 meeting and agreed that a study of past and current water uses was needed, but recognized that this would be but one part of a two-part study. The second part would consist of forecasting short and long term water demands based on alternative futures, and should be the responsibility of the Provinces, to ensure adequate consideration of Provincial policies. The Board recognized that, following the completion of the two-part demand (use) study, a reconciliation of the supply and demand studies will be necessary to support the planning of water resource developments.

The Board forwarded the modified study proposal to the Ministers in March 1973 for their review, concurrence and approval. During fiscal 1973-74, the Ministers of the three Provincial Departments of the Environment replied that they concurred with the recommendations of the Board for a Water Demand Study. The Minister of Environment Canada agreed with the study in principle, but could not commit financial support for the study during this fiscal year.

Westward Flowing Streams

The Board recognized that there are streams which cross interprovincial boundaries in an east to west direction and are therefore not covered by the Apportionment Agreement. At the November meeting of the Board, the members observed that although no problems have arisen, the situation should be considered in view of the probable time involved to develop a satisfactory solution.

It was realized that the problem was two-fold and involved westward flowing streams which are tributary to streams covered by the Apportionment Agreement as well as westward flowing streams not tributary to eastward flowing streams.

The Board asked the Committee on Hydrology, with the aid of the Secretariat, to prepare a report on the number and size of both types of streams, to consider possible apportionment problems, and to speculate on solutions taking into account any relevant precedents.

The subject was discussed at the February 1974 meeting of the Committee on Hydrology and particular attention was given to streams which cross Provincial Boundaries several times along their course and which are tributary to eastward flowing streams.

The Secretariat has identified westward flowing streams and delineated their respective drainage areas on large scale maps. Work is continuing on the calculation of the yield from these drainage areas and consideration of the problems associated with apportionment of each stream.

BOARD COMMITTEES

Committee on Hydrology

The Data Network Planning Committee (DNPC) was established by the Board in 1966 to determine the data network requirements for future streamflow forecasting and water management on the Prairies. When the Master Agreement on Apportionment was signed in October 1969, the Committee was given a new assignment which was to develop procedures for administration of the Apportionment Agreement. The forecasting aspect was carried along as part of the original terms of reference.

The Board concluded that the work to be done by the Committee could become quite broad and cover the entire field of hydrology, and that a change in name and terms of reference would be appropriate. The DNPC was, therefore, renamed the Committee on Hydrology, and new terms of reference were developed.

The Committee on Hydrology met three times during this past fiscal year. The meetings were held on June 26, 27 in Regina, on October 9 in Regina, and on February 8 in Winnipeg.

The major task of the Committee at these meetings has been to review and to provide direction to the Natural Flow and Streamflow Forecasting Studies being done for the Board by the Calgary Office of Water Survey of Canada.

In addition, the members discussed and agreed to a list of common monitoring boundary stations. They also discussed future satellite communication for remote networks with personnel from Communications Canada. At their June meeting, the members agreed to recommend to the Board a method of low flow measurement clarification proposed by Water Survey of Canada for monitoring the Red Deer and South Saskatchewan Rivers at the Alberta-Saskatchewan boundary. At the February meeting, the Committee agreed to the recommendations of Water Survey of Canada concerning two of the eleven PPWB common monitoring stations. The method of data collection at the Churchill River at Island Falls site is to be changed from the use of turbine and spillway releases to the use of a permanent water level gauge downstream of the dam, and a new site at Welby on the Qu'Appelle River is to be monitored for a period of one year in addition to the existing St. Lazare site in order to determine which site is more suitable for Board purposes.

The matter of westward flowing streams was discussed by the members and several suggestions concerning methods of study of this apportionment problem were supplied to the Secretariat for action. Finally, the members felt there was a need for some standardization of hydrologic terms and asked the Secretariat to prepare a draft glossary for consideration.

Committee on Water Quality

At the October 1972 meeting of the PPWB, the members agreed to establish a Committee on Water Quality to act as an advisory group on water quality matters. The Committee would consist of one representative appointed by each Board Member plus the Executive Director. This Committee held its first meeting on December 19, 1972 to draft terms of reference, to address itself to the recommendations of the Water Quality Task Force Report, and to sort these recommendations into priorities for action by the Board.

The Committee on Water Quality met three times during this past fiscal year. The meetings were held on May 22, October 10, and March 19, all in Regina.

The Board accepted the Committee's recommended Water Quality Objectives that are to be applied to interprovincial streams under the jurisdiction of the PPWB. The Committee had these Objectives printed in a brochure form and distributed to the member agencies. In addition, they printed and distributed a brochure containing standard sampling procedures and handling techniques that had also been approved by the Board.

The Committee identified eleven locations for common monitoring stations on interprovincial streams. These were identified as first priority stations. The Committee spent considerable time during the year examining the PPWB Water Quality Objectives with the object of suggesting improvements. The members are concerned about the philosophy upon which the objectives are based and whether it should be changed. They are also concerned about updating the number of parameters, the values or limits to the parameters, and the frequency of sampling for each parameter. The work on this item is still proceeding.

At the March meeting of the Committee, the members provided an interim list of parameters to be measured at the eleven PPWB stations to the Water Quality Branch, Environment Canada. These parameters are to be monitored until such time as revisions to the PPWB Water Quality Objectives are made, or analysis of the data

indicates that changes to the program are warranted.

The members of the Committee agreed that the results of the water quality monitoring program would be sent to the PPWB Secretariat for distribution to the Provincial Agencies.

Committee on Interjurisdictional Agreements Administration

At the March 1973 meeting of the Board, the members agreed to establish an ad hoc committee to develop procedures for the efficient administration of interjurisdictional agreements, and to provide procedural guidelines for various management situations. This committee was instructed to proceed, with particular attention to the Battle and Lodge Creek Basins.

The Committee met in August and agreed that the intent of Article 6, Schedule A of the Apportionment Agreement was to protect any right to water granted up to the time of the signing in October 1969. Several suggested methods for the administration of the limited water resources in the basin were put forward by the members for the Secretariat to study.

The Secretariat has now completed work on natural flow at boundary crossings, uses in each Province, and identity of all pre-1969 allocations as to owner, date, size and location. Provincial streamflow shares have been calculated several different ways and comparisons have been made between supply, shares, allocations, modified allocations, and effect of new storages. The Secretariat is now completing the process of summarizing the mass of data for presentation to the members at the next meeting of the Committee.

Joint Committee

A joint meeting of the Committee on Hydrology and the Committee on Water Quality was held on October 10, 1973, in Regina. The purpose of the joint meeting was to have both Committees collaborate in the establishment of common water quantity and quality monitoring stations required to carry out the responsibilities of the Board.

Each Committee had met prior to the meeting and had prepared a list of locations of required stations. At the joint meeting, the members reviewed the proposed locations, and agreed on eleven locations for monitoring stations which would

be presented to the Board for approval. The location of these stations is shown on the map appended to this report.

SECRETARIAT

Accommodation and Staff

The PPWB Secretariat is located in the Brent Building in Regina, Saskatchewan. The office is adjacent to the Western Region Office of the Environmental Management Service of Environment Canada so that personnel and financial administrative services can be obtained from its staff at cost.

During the last fiscal year, the Board agreed that a water quality specialist was necessary for the PPWB Secretariat to carry out the functions and the responsibilities of the Board with regard to water quality as set out in the Master Agreement on Apportionment. The position of Water Quality Specialist was advertised in Prairie newspapers on March 7th. Screening and interviews will be held early in the coming fiscal year.

Hydrometric Network

The Western Regional Director, EMS, Environment Canada, requested a list of hydrometric and water quality monitoring stations required by the PPWB. The Secretariat provided two lists. One list contained the stations useful to the PPWB at the present time, and the other list contained the stations that could be useful to the PPWB in the future when all interprovincial streams would be monitored for apportionment purposes.

Field Inspection Trip

Four days were spent by staff members in mid-September inspecting irrigation districts, water conservation projects, and water quantity and quality gauging stations throughout Southwest Saskatchewan and Southern Alberta.

Financial

The Secretariat expenditures for fiscal 1972-73 were audited on August 8, 1973 by the Audit Services Bureau of the Department of Supply and Services, Canada, at a cost of \$1,150.00.

Federal and Provincial Acts and Regulations

Copies of several Federal and Provincial Acts and Regulations pertaining to water were obtained during the study of interjurisdictional water problems in Battle and Lodge Creeks. These are now in the library of the Secretariat.

Update of Data Files from Saskatchewan-Nelson Basin Board

The data files resulting from the SNBB Study were deposited with the Secretariat. These files are complete from 1912 to 1967. During the past year, the Secretariat updated the SNBB meteorologic data to 1972. This information was printed and distributed to the member agencies.

1973 FLOW DATA

NATURAL FLOWS, CONSUMPTIVE USE AND STORAGE
(ACRE-FEET)

FOR THE YEAR 1973

SOUTH SASKATCHEWAN RIVER - ALBERTA-SASKATCHEWAN BOUNDARY

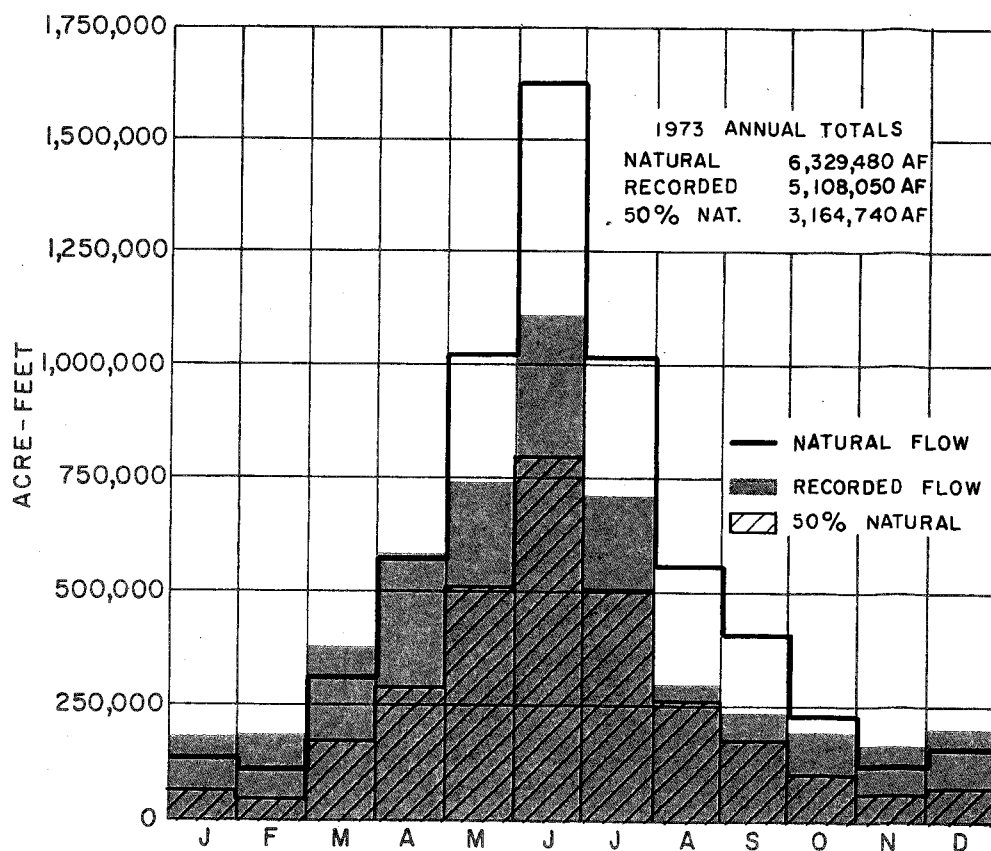
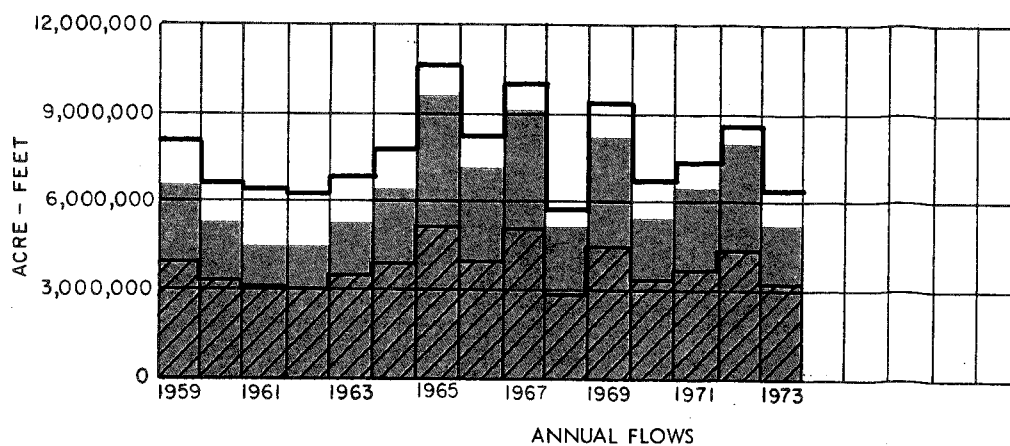
| | JAN. | FEB. | MAR. | APR. | MAY | JUN. | JUL. | AUG. | SEPT. | OCT. | NOV. | DEC. | TOTALS |
|--------------------------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|-----------|
| RECORDED DISCHARGE | 173,000 | 177,000 | 337,000 | 265,000 | 504,000 | 819,000 | 467,000 | 161,000 | 126,000 | 126,000 | 129,000 | 178,000 | 3,462,000 |
| CONSUMPTIVE USE | 0 | 0 | 0 | 23,700 | 189,100 | 243,600 | 307,700 | 267,500 | 168,100 | 55,120 | -14,970 | 0 | 1,239,850 |
| CHANGE IN RESERVOIRS | -53,300 | -73,600 | -63,600 | -26,100 | +94,200 | +215,800 | +6,800 | -15,200 | -19,900 | -29,900 | -13,500 | -40,120 | -18,420 |
| DIVERSION FROM BASIN | 0 | 0 | 0 | 0 | 11,000 | 26,200 | 23,400 | 27,200 | 19,400 | 14,520 | 5,410 | 0 | 127,130 |
| NATURAL FLOW ALTA. BDRY. | 119,700 | 103,400 | 273,400 | 262,600 | 798,300 | 1,304,600 | 804,900 | 440,500 | 293,600 | 165,740 | 105,940 | 137,880 | 4,810,560 |

RED DEER RIVER - ALBERTA-SASKATCHEWAN BOUNDARY

| | JAN. | FEB. | MAR. | APR. | MAY | JUN. | JUL. | AUG. | SEPT. | OCT. | NOV. | DEC. | TOTALS |
|--------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|--------|-----------|
| RECORDED DISCHARGE | 19,500 | 17,400 | 56,500 | 330,000 | 239,000 | 354,000 | 236,000 | 153,000 | 117,000 | 70,000 | 31,400 | 22,250 | 1,646,050 |
| CONSUMPTIVE USE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DIVERSION FROM BASIN | 0 | 0 | 0 | 0 | -11,000 | -26,200 | -23,400 | -27,200 | -19,400 | -14,520 | -5,410 | 0 | -127,130 |
| NATURAL FLOW ALTA. BDRY. | 19,500 | 17,400 | 56,500 | 330,000 | 228,000 | 327,800 | 212,600 | 125,800 | 97,600 | 55,480 | 25,990 | 22,250 | 1,518,920 |

SOUTH SASKATCHEWAN RIVER - BELOW JUNCTION WITH RED DEER

| | JAN. | FEB. | MAR. | APR. | MAY | JUN. | JUL. | AUG. | SEPT. | OCT. | NOV. | DEC. | TOTALS |
|--------------------|---------|---------|---------|---------|-----------|-----------|-----------|---------|---------|---------|---------|---------|-----------|
| RECORDED DISCHARGE | 192,500 | 194,400 | 393,500 | 595,000 | 743,000 | 1,173,000 | 703,000 | 314,000 | 243,000 | 196,000 | 160,400 | 200,250 | 5,108,050 |
| NATURAL FLOW | 139,200 | 120,800 | 329,900 | 592,600 | 1,026,300 | 1,632,400 | 1,017,500 | 566,300 | 391,200 | 221,220 | 131,930 | 160,130 | 6,329,480 |



1973 MONTHLY FLOWS

SOUTH SASKATCHEWAN RIVER NEAR ALBERTA-SASKATCHEWAN BOUNDARY
 (INCLUDES RED DEER RIVER)

RECORDED DISCHARGE - SUMMARY
SELECTED INTERPROVINCIAL STREAMS
(ACRE-FEET)

FOR THE YEAR 1973

| | JAN. | FEB. | MAR. | APR. | MAY | JUN. | JUL. | AUG. | SEPT. | OCT. | NOV. | DEC. | TOTAL |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| BEAVER RIVER - ALBERTA-SASKATCHEWAN BOUNDARY (AT COLD LAKE RESERVE) | | | | | | | | | | | | | |
| | 5,510 | 7,040 | 5,460 | 32,400 | 46,500 | 112,000 | 85,600 | 109,000 | 115,000 | 100,000 | 57,000 | 38,700 | 714,210 |
| NORTH SASKATCHEWAN RIVER - ALBERTA-SASKATCHEWAN BOUNDARY (NEAR DEER CREEK) | | | | | | | | | | | | | |
| | 164,000 | 215,000 | 244,000 | 587,000 | 791,000 | 756,000 | 638,000 | 464,000 | 356,000 | 326,000 | 241,000 | 165,000 | 4,947,000 |
| BATTLE RIVER - ALBERTA-SASKATCHEWAN BOUNDARY (NEAR UNWIN) | | | | | | | | | | | | | |
| | 1,060 | 1,020 | 3,880 | 62,200 | 38,600 | 44,600 | 44,500 | 60,600 | 28,600 | 18,200 | 8,700 | 5,030 | 316,990 |
| CHURCHILL RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (AT ISLAND FALLS) | | | | | | | | | | | | | |
| | 1,519,000 | 1,310,000 | 1,460,000 | 1,390,000 | 1,530,000 | 1,480,000 | 1,490,000 | 1,730,000 | 1,550,000 | 1,510,000 | 1,460,000 | 1,510,000 | 17,939,000 |
| SASKATCHEWAN RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (NEAR MANITOBA BOUNDARY) | | | | | | | | | | | | | |
| | 1,027,000 | 1,021,000 | 1,092,000 | 1,452,000 | 1,981,000 | 2,061,000 | 1,921,000 | 1,193,000 | 1,079,000 | 1,001,000 | 690,000 | 841,000 | 15,359,000 |
| CARROT RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (NEAR TURNBERRY) | | | | | | | | | | | | | |
| | 1,370 | 1,300 | 2,760 | 38,300 | 79,600 | 181,000 | 170,000 | 65,300 | 25,600 | 22,100 | 16,100 | 10,900 | 614,330 |
| RED DEER RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (NEAR ERWOOD) | | | | | | | | | | | | | |
| | - | - | 539 | 31,400 | 45,400 | 128,000 | 111,000 | 21,200 | 7,140 | 6,500 | 5,500 | 4,900 | 361,579 |
| ASSINIBOINE RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (AT KAMSACK) | | | | | | | | | | | | | |
| | 192 | 159 | 1,620 | 12,800 | 14,500 | 21,700 | 18,800 | 2,310 | 418 | 349 | 842 | 1,250 | 74,940 |
| QU'APPELLE RIVER - SASKATCHEWAN-MANITOBA BOUNDARY (AT TANTALLON) | | | | | | | | | | | | | |
| | 13,100 | 6,340 | 8,600 | 2,980 | 3,530 | 7,740 | 8,250 | 3,400 | 1,620 | 3,040 | 3,650 | 6,130 | 68,380 |

APPENDIX

APPENDIX INDEX

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PPWB MEMBERS

| | | |
|-----------|---|---|
| Chairman | Mr. A. T. Davidson (Feb 1973 - Nov 1973) | Assistant Deputy Minister Environmental Management Service Environment Canada |
| Chairman | Dr. J.S. Tener (appointed Nov 1973) | Assistant Deputy Minister Environmental Management Service Environment Canada |
| | Mr. W. B. Thomson | Director Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion |
| | Mr. R. E. Bailey | Assistant Deputy Minister Environmental Planning and Research Services Alberta Department of the Environment |
| | Mr. G. C. Mitchell | Deputy Minister Department of the Environment Province of Saskatchewan |
| | Mr. T. E. Weber | Director General Water Resources Branch Manitoba Department of Mines, Resources and Environmental Management |
| <hr/> | | |
| Secretary | Mr. R.J. Wettlaufer | Operations Engineer PPWB Secretariat |

ALTERNATE MEMBERS

| | |
|---------------------|---|
| Mr. E. F. Durrant | Regional Director - Western Inland Waters Directorate Environmental Management Service Environment Canada |
| Mr. W. M. Berry | Planning and Investigations Engineer Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion |
| Mr. W. Solodzuk | Assistant Deputy Minister Environmental Engineering Support Services Alberta Department of the Environment |
| Mr. S. R. Blackwell | Chief, Water Management Service Department of the Environment Province of Saskatchewan |
| Mr. N. Mudry | Director of Planning Water Resources Branch Manitoba Department of Mines, Resources and Environmental Management |

COMMITTEE ON HYDROLOGY

Terms of Reference

At the request of, and under the direction of the PPWB, the Committee on Hydrology shall investigate, oversee, review, report and recommend on matters pertaining to hydrology of interprovincial or interjurisdictional basins.

The Committee may consider such things as natural flow; forecasting; network design; collection, processing and transmission of data; basin studies and other items of interprovincial interest involving hydrology.

Members

| | |
|--------------------------------------|---|
| D.J. Berry Chairman | Executive Director Prairie Provinces Water Board Secretariat |
| D.A. Davis | Water Survey of Canada Environment Canada |
| R.B. Godwin | Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion |
| G.H. MacKay | Water Resources Branch Manitoba Department of Mines, Resources and Environmental Management |
| D.L. MacLeod | Hydrology Branch Saskatchewan Department of the Environment |
| R.K. Deeprose | Technical Services Division Alberta Department of the Environment |
| S.J. Buckler (retired Dec 1973) | Atmospheric Environment Service Environment Canada |
| E. Einarsson (appointed Dec 1973) | Atmospheric Environment Service Environment Canada |
| R.J. Wettlaufer Secretary | Operations Engineer Prairie Provinces Water Board Secretariat |

COMMITTEE ON WATER QUALITY

Terms of Reference

At the request of, and under the direction of the Prairie Provinces Water Board, the Committee on Water Quality shall investigate, oversee, review, report and recommend on matters pertaining to water quality of interprovincial and interjurisdictional basins.

Carrying out the above responsibilities may include such things as natural quality assessment; quality forecasting; network design; processing and dissemination of data; determination of implications of proposed projects that may significantly alter the water quality of interprovincial streams; consideration of special problems; establishment of procedures for emergency situations; and other items of interprovincial interest involving water quality.

Members

| | |
|---------------------------------------|--|
| D. J. Berry Chairman | Executive Director Prairie Provinces Water Board Secretariat |
| S. W. Reeder (Oct 1972 - Jan 1974) | Water Quality Branch Environment Canada |
| P. Fee (appointed Jan 1974) | Water Quality Branch Environment Canada |
| R. B. Godwin | Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion |
| J. N. Warrenner | Environmental Protection Branch Manitoba Department of Mines, Resources and Environmental Management |
| R. A. McDonald | Water Pollution Control Branch Saskatchewan Department of the Environment |
| P. G. Shewchuk | Standards and Approvals Division Alberta Department of the Environment |
| R. J. Wettlaufer Secretary | Operations Engineer Prairie Provinces Water Board Secretariat |

COMMITTEE ON INTERJURISDICTIONAL AGREEMENTS ADMINISTRATION

Members

| | |
|-------------------------|--|
| D. J. Berry Chairman | Executive Director Prairie Provinces Water Board Secretariat |
| E. F. Durrant | Environmental Management Service Environment Canada |
| D. L. MacLeod | Hydrology Branch Saskatchewan Department of the Environment |
| A. L. Jones | Water Rights Branch Saskatchewan Department of the Environment |
| R. K. Deeprise | Technical Services Division Alberta Department of the Environment |
| B. Boyson | Water Resources Division Alberta Department of the Environment |

| | |
|-------------------------------|--|
| R. J. Wettlaufer Secretary | Operations Engineer Prairie Provinces Water Board Secretariat |
|-------------------------------|--|

Note

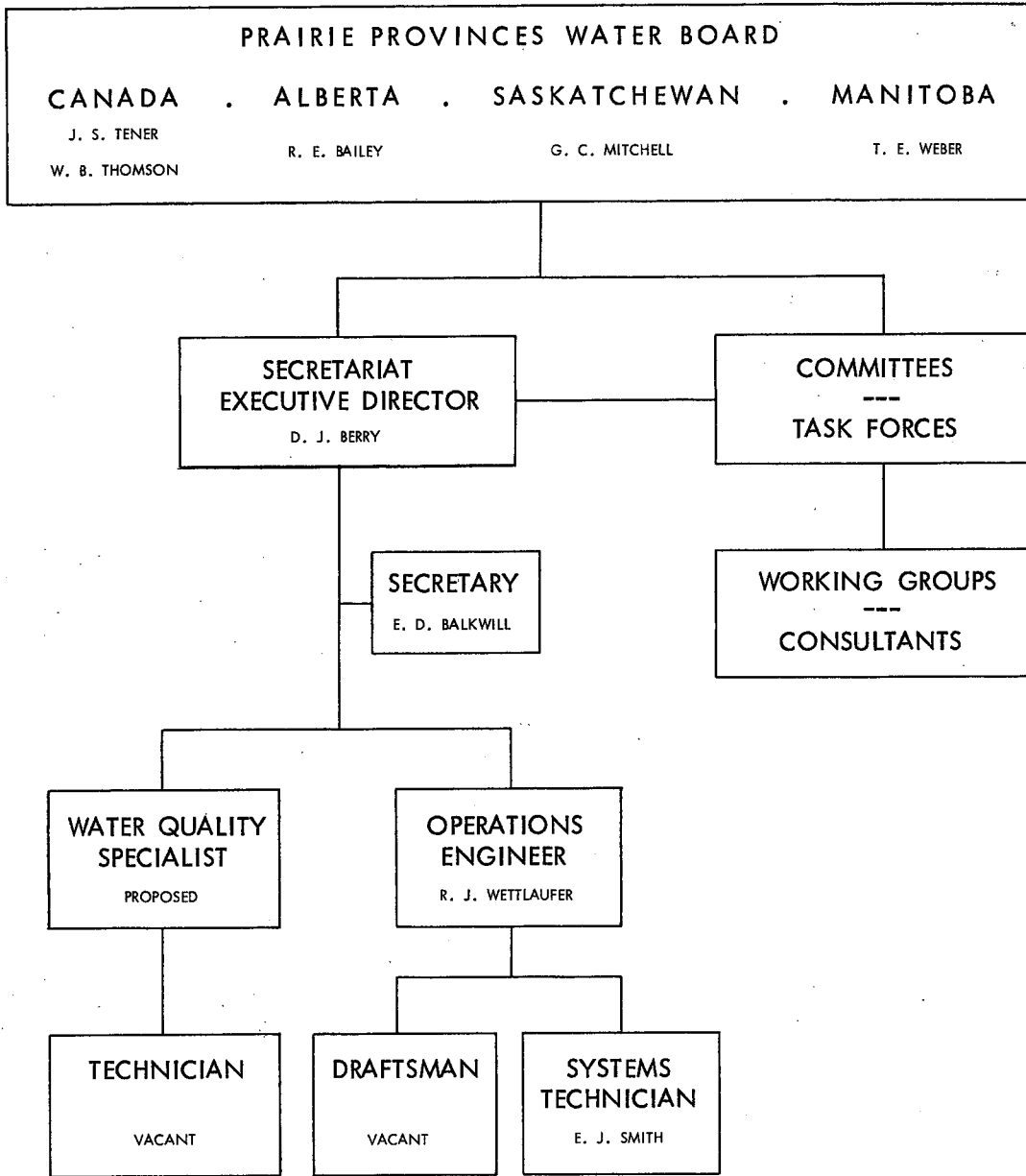
Committee established by Prairie Provinces Water Board
March 20, 1973.

STATEMENT OF EXPENDITURES

| | <u>1971-1972</u> | <u>1972-1973</u> | <u>1973-1974</u> |
|--------------------------------------|----------------------|-------------------|-------------------|
| Natural Flow and Forecasting Study | \$ 83,519.07 | 95,481.55 | 83,970.39 |
| Natural Flow Reporting | 2,900.00 | 2,900.00 | 2,900.00 |
| Water Quality Task Force | 2,571.00 | 1,592.53 | 0 |
| Irrigation Return Flow Study | 5,702.43 | 0 | 0 |
| Battle and Lodge Creek Basin Study | 9,981.98 | 0 | 0 |
| Water Demand Study Task Force | 499.64 | 0 | 0 |
| Personnel | 0 | 25,692.23 | 53,658.72 |
| Transportation and Communications | 0 | 1,379.58 | 2,624.79 |
| Information | 0 | 758.96 | 2,726.79 |
| Admin and Audit Services | 0 | 0 | 1,150.00 |
| Office Rental | 0 | 1,669.56 | 6,678.26 |
| Computer Rental | 0 | 405.46 | 3,121.26 |
| Materials and Supplies | 0 | 1,323.07 | 1,022.91 |
| Acquisition, Machinery and Equipment | 0 | 5,382.52 | 277.00 |
| Miscellaneous Expenditures | 0 | 230.99 | 143.70 |
| | <u>\$ 105,174.12</u> | <u>136,816.45</u> | <u>158,273.82</u> |
| | (audited) | (audited) | (audited) |
| <u>Shares -</u> | | | |
| Canada | 52,587.06 | 68,408.23 | 79,136.91 |
| Province of Alberta | 17,529.02 | 22,802.74 | 26,378.97 |
| Province of Saskatchewan | 17,529.02 | 22,802.74 | 26,378.97 |
| Province of Manitoba | 17,529.02 | 22,802.74 | 26,378.97 |

Note

- There were no expenditures charged to the Prairie Provinces Water Board in fiscal 1969-1970 and fiscal 1970-1971.



TERM APPOINTMENT - D. V. BAUMAN - SECRETARY

(Appointed January 10, 1974)

ORGANIZATION CHART

MARCH 1974

**MASTER AGREEMENT
ON APPORTIONMENT**

MASTER AGREEMENT ON APPORTIONMENT

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Canada, represented herein by the Minister of Energy, Mines and Resources

(Hereinafter called "Canada")

- and -

HER Majesty, the Queen, in right of Alberta, represented herein by the Minister in charge of Water Resources for Alberta

(Hereinafter called "Alberta")

- and -

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

- and -

HER Majesty, the Queen, in right of Manitoba, represented herein by the Minister in charge of The Water Control and Conservation Branch Act of the said Province

(Hereinafter called "Manitoba")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Alberta would flow into the Province of Saskatchewan and under the said conditions the waters of some of the said watercourses arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the Governor-in-Council has authorized Canada to enter into this agreement by Order-in-Council P.C. 1969-8/2051 dated October 29, 1969, and the Lieutenant Governors-in-Council for Alberta, Manitoba and Saskatchewan, respectively, have authorized them to enter into this agreement by the following Orders-in-Council:

| | |
|--------------|----------------|
| Alberta | - O.C. 2053/69 |
| Manitoba | - O.C. 1359/69 |
| Saskatchewan | - O.C. 1612/69 |

AND WHEREAS the parties hereto deem it to be in their mutual interest that an agreement be reached among the four parties as to the apportionment as described in the schedules attached hereto of such interprovincial waters among the three Provinces;

AND WHEREAS Alberta and Saskatchewan have entered into an agreement, which agreement is attached to this agreement as Schedule A, that permits the Province of Alberta to make a net depletion of one-half the natural flow of water arising in or flowing through the Province of Alberta and that permits the remaining one-half of the natural flow of each such watercourse to flow into the Province of Saskatchewan, subject to certain prior rights as are set forth in the said agreement;

AND WHEREAS Saskatchewan and Manitoba have entered into an agreement, which agreement is attached to this agreement as Schedule B, that permits the Province of Saskatchewan to make a net depletion of one-half the natural flow of water arising in, and one-half of the water flowing into the Province of Saskatchewan, and that permits the remaining one-half of the flow of each such watercourse to flow into the Province of Manitoba, subject to such conditions and agreements as therein contained;

AND WHEREAS the parties are desirous that the Prairie Provinces Water Board (referred to herein as the Board), reconstituted by this agreement will be responsible for the administration of this agreement;

AND WHEREAS the parties hereto recognize the continuing need for consultation and co-operation as between themselves with respect to the matters herein referred to so that the interests of all the parties are best served;

NOW THEREFORE, THIS AGREEMENT (hereinafter known as the Master Agreement) witnesseth that each party agrees as follows:

Interprovincial Agreements

1. Alberta and Saskatchewan agree that the agreement between them (hereinafter called the First Agreement), a copy of which is set out in Schedule A to the Master Agreement, will become binding upon them upon the date that the Master Agreement is executed.
2. Saskatchewan and Manitoba agree that the agreement between them (hereinafter called the Second Agreement), a copy of which is set out in Schedule B to the Master Agreement, will become binding upon them upon the date that the Master Agreement is executed.
3. The parties agree to the apportionment of water between Alberta and Saskatchewan and Manitoba as provided in the First and Second Agreements and each party agrees to be bound by the said agreements as they relate to apportionment as if it were a party thereto.
4. The parties agree that the First or Second Agreement, or both, may be altered by an agreement in writing among the four parties to the Master Agreement, but not otherwise.
5. The parties agree that the First and Second Agreements will continue in force and effect until cancelled by an agreement in writing among the four parties to the Master Agreement.

Water Quality

6. The parties mutually agree to consider water quality problems; to refer such problems to the Board; and to consider recommendations of the Board thereon.

Monitoring

7. The parties agree that the monitoring of the quantity and quality of waters as specified in the First and Second Agreements, the collection, compilation and publication of water quantity and quality data required for the implementation and maintenance of the provisions of this agreement shall be conducted by Canada, subject to provision of funds being voted by the Parliament of Canada.

Administration

8. The parties agree, subject to Clause 9 of this agreement that if at any time, any dispute, difference or question arises between the parties with respect to this agreement or the construction, meaning and effect thereof, or anything therein, or the rights and liabilities of the parties thereunder or otherwise in respect thereto, then every such dispute, difference or question will be referred for determination to the Exchequer Court under the provisions of the Exchequer Court Act of Canada and each of the parties hereto agrees to maintain or enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference, or question in the manner provided under the Exchequer Court Act.
9. The parties also agree that the Board, with the consent of the parties in dispute, may cause to be prepared, a factual report of the dispute for consideration by the parties hereto prior to the referral of the dispute to the Exchequer Court.
10. The parties agree that the Prairie Provinces Water Board shall monitor and report on the apportionment of waters as set out in the provisions of the First and Second Agreements and ratified by this Master Agreement.
11. The parties agree to revoke the agreement dated July 28, 1948, establishing the Prairie Provinces Water Board and to reconstitute the

Prairie Provinces Water Board in the form of Schedule C hereto and the said Schedule shall form and become part of this Master Agreement.

12. Because the Orders-in-Council referred to in Schedule D hereto will become redundant upon the execution of this Master Agreement, the parties agree to take steps to have them revoked.
13. The parties agree for the future application of the provisions of the Master Agreement (and the First and Second Agreements thereunder), to work together and to cooperate to the fullest extent each with the other for the integrated development and use of water and related resources to support economic growth according to selected social goals and priorities and to participate in the formulation and implementation of comprehensive planning and development programs according to their national, regional and provincial interest and importance.
14. No Member of the Parliament of Canada or Member of the Legislative Assemblies of the Provinces party to this agreement shall hold, enjoy, or be admitted to any share or part of any contract, agreement, commission or benefit arising out of this agreement.

IN WITNESS WHEREOF Canada has caused its presents to be executed by its Minister of Energy, Mines and Resources, and Alberta has caused its presents to be executed by its Minister in charge of Water Resources, and Saskatchewan has caused its presents to be executed by its Minister in charge of The Water Resources Commission Act, and Manitoba has caused its presents to be executed by its Minister in charge of The Water Control and Conservation Branch Act on the day and year first mentioned above.

"A. Davidson"

Witness to the signature of the Minister
(Energy, Mines and Resources) for Canada

"J. J. Greene"

Minister (Energy, Mines and Resources) for
Canada

October 30, 1969

Date

"R. E. Bailey"

Witness to the signature of the Minister in
charge of Water Resources for Alberta

"Henry A. Ruste"

Minister in charge of Water Resources for
Alberta

October 30, 1969

Date

"Harold W. Pope"

Witness to the signature of the Minister in
charge of The Water Resources Commission
Act for Saskatchewan

"Allan R. Guy"

Minister in charge of The Water Resources
Commission Act for Saskatchewan

October 30, 1969

Date

"Thomas E. Weber"

Witness to the signature of the Minister in
charge of The Water Control and Conserva-
tion Branch Act for Manitoba

"Lenard S. Evans"

Minister in charge of The Water Control
and Conservation Branch Act for Manitoba

October 30, 1969

Date

SCHEDULE A

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Alberta, represented herein by the Minister in charge of Water Resources for Alberta

(Hereinafter called "Alberta")

- and -

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Alberta would flow into the Province of Saskatchewan and under the said conditions the waters of some of the said watercourses arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the parties hereto deem it to be in their mutual interest and in the interest of Manitoba that an agreement in principle be reached among the said three Provinces as to the apportionment of such interprovincial waters among them;

AND WHEREAS the parties hereto are of the opinion that an equitable apportionment of such waters as between the adjoining Provinces of Alberta and Saskatchewan would be to permit the Province of Alberta to make a net depletion of one-half the natural flow of water arising in or flowing through the Province of Alberta and to permit the remaining one-half of the natural flow of water of each such watercourse to flow into the Province of Saskatchewan, subject to certain

prior rights as are hereinafter set forth or may hereafter be mutually agreed upon in writing;

AND WHEREAS on the basis of the foregoing apportionment as between the Provinces of Alberta and Saskatchewan the parties hereto are of the opinion that in a similar manner, an equitable apportionment of the remainder of the natural flow of the said watercourses that flow into the Province of Manitoba after permitting the Province of Alberta to make its depletion of one-half thereof would be to permit the Province of Saskatchewan to make a net depletion of one-half of the said remainder and to permit the other one-half thereof to flow into the Province of Manitoba; and that the natural flow of any tributaries to the said watercourses which tributaries join the said watercourses in the Province of Saskatchewan without arising in or first flowing through the Province of Alberta could be apportioned one-half to the Province of Saskatchewan and one-half to the Province of Manitoba in a manner similar to the apportionment of waters as between the Provinces of Alberta and Saskatchewan, in all cases subject to such prior rights as may be mutually acknowledged by the said Provinces of Manitoba and Saskatchewan;

AND WHEREAS the parties hereto recognize the continuing need for consultation and cooperation as between themselves and with Manitoba with respect to the matters herein referred to so that the best and most beneficial use of the said waters may be made and the interests of all said provinces best served:

NOW THIS AGREEMENT witnesseth as follows:

1. IN THIS AGREEMENT:

- (a) "Natural flow" means the quantity of water which would naturally flow in any watercourse had the flow not been affected by human interference or human intervention, excluding any water which is part of the natural flow in Alberta but is not available for the use of Alberta because of the provisions of any international treaty which is binding on Alberta.

- (b) "Watercourse" means any river, stream, creek, or other natural channel which from time to time carries a flowing body of water from the Province of Alberta to the Province of Saskatchewan and includes all tributaries of each such river, stream, creek or natural channel which do not themselves cross the common boundary between the Provinces of Alberta and Saskatchewan. Such tributaries as do themselves cross the said common boundary between the Provinces of Alberta and Saskatchewan shall be deemed to be "watercourses" for the purpose of this agreement.
2. (a) The parties hereto shall mutually establish a method by which to determine the natural flow of each watercourse flowing across their said common boundary.
- (b) For the purpose of this agreement, the said natural flow shall be determined at a point as near as reasonably may be to their said common boundary.
- (c) Notwithstanding sub-paragraph (b) the point at which the natural flow of the watercourses known as the South Saskatchewan and Red Deer Rivers is to be determined may be, at the option of Alberta, a point at or as near as reasonably may be below the confluence of the said two rivers.
3. Alberta shall permit a quantity of water equal to one-half the natural flow of each watercourse to flow into the Province of Saskatchewan, and the actual flow shall be adjusted from time to time on an equitable basis during each calendar year, but this shall not restrict or prohibit Alberta from diverting or consuming any quantity of water from any watercourse provided that Alberta diverts water to which it is entitled of comparable quality from other streams or rivers into such watercourse to meet its commitments to Saskatchewan with respect to each watercourse.
4. Notwithstanding paragraph 3 hereof, the following special provisions shall apply as between the parties hereto with respect to the watercourse known as the South Saskatchewan River.
- (a) Alberta shall be entitled in each year to consume, or to divert or store for its consumptive use a minimum of 2,100,000 acre-feet net depletion out of the flow of the watercourse known as the South Saskatchewan River even though its share for the said year, as calculated under paragraph 3 hereof, would be less than 2,100,000 acre-feet net depletion, provided however Alberta shall not be entitled to so consume or divert, or store for its consumptive use, more than one-half the natural flow of the said South Saskatchewan watercourse if the effect thereof at any time would be to reduce the actual flow of the said watercourse at the common boundary of the said Provinces of Saskatchewan and Alberta to less than 1,500 cubic feet per second.
- (b) The consumption or diversion by Alberta provided for under the preceding subparagraph shall be made equitably during each year, depending on the actual flow of water in the said watercourse and the requirements of each Province, from time to time.
5. The parties hereto shall work together and co-operate to the fullest extent, each with the other, for the most effective, economical and beneficial use of waters flowing from the Province of Alberta into the Province of Saskatchewan, including the construction and operation of approved projects of mutual advantage to our Provinces on a cost-share basis proportionate to the benefits derived therefrom by each Province, (the approval of which projects shall not be unreasonably withheld by either of the parties hereto) and shall enter into such other arrangements, agreements or accords with each other, and with the Governments of Canada and other Provinces to best achieve the principles herein agreed upon.

6. This agreement shall not adversely affect any right to water in Battle or Lodge Creeks which has been given by the Government of Canada prior to the transfer of the natural resources to the Provinces and is still subsisting, or any right to such water given by either Province heretofore which has been recognized and approved by both Provinces.
7. If at any time any dispute, difference or question shall arise between the parties or their representatives touching this agreement or the construction, meaning and effect thereof, or anything therein, or the rights or liabilities, of the parties or their representatives thereunder or otherwise in respect thereto then every such dispute, difference or question shall be referred for determination to the Exchequer Court under the provisions of The Exchequer Court Act of Canada, and each of the parties hereto agrees to enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference or question in the manner provided under Section 30 of The Exchequer Court Act.
8. This agreement shall become effective upon the execution of an agreement by Canada, Alberta, Manitoba and Saskatchewan relative to the apportionment of waters referred to in this agreement.

IN WITNESS WHEREOF Alberta has caused these presents to be executed on its behalf by its Minister in charge of Water Resources, and Saskatchewan has caused these presents to be executed by its Minister in charge of The Water Resources Commission Act, both on the day and year first above mentioned.

"R. E. Bailey"

Witness to the signature of the Minister
in charge of Water Resources for Alberta

"Henry A. Ruste"

Minister in charge of Water Resources
for Alberta

"Harold W. Pope"

Witness to the signature of the Minister
in charge of The Water Resources Com-
mission Act

"Allan R. Guy"

Minister in charge of The Water Re-
sources Commission Act

SCHEDULE B

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

- and -

HER Majesty, the Queen, in right of Manitoba, represented herein by the Minister in charge of The Water Control and Conservation Branch Act of the said Province

(Hereinafter called "Manitoba")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the parties hereto deem it to be in their mutual interest and in the interest of Alberta that an agreement in principle be reached among the said three Provinces as to the apportionment of interprovincial waters among them;

AND WHEREAS the parties hereto are of the opinion that an equitable apportionment of such waters as between the adjoining Provinces of Saskatchewan and Manitoba would be to permit the Province of Saskatchewan to make a net depletion of one-half the natural flow of water arising in, and one-half the flow of water flowing into, the Province of Saskatchewan, and to permit the remaining one-half of the flow of water of each such watercourse to flow into the Province of Manitoba, subject to certain rights as may hereafter be mutually agreed upon in writing;

AND WHEREAS on the basis of the foregoing apportionment as between the Provinces of Saskatchewan and Manitoba, the parties hereto are of the opinion that in a similar manner, an equitable apportionment of the natural flow of the said watercourses arising in or flowing through the Province of Alberta would be to permit the Province of Alberta to make a net depletion of one-half thereof, subject to such prior rights as may be mutually acknowledged by the said Provinces of Alberta, Saskatchewan and Manitoba;

AND WHEREAS the parties hereto recognize the continuing need for consultation and co-operation as between themselves and with Alberta with respect to the matters herein referred to so that the interests of all said Provinces are best served;

NOW THIS AGREEMENT witnesseth as follows:

1. IN THIS AGREEMENT:

- (a) "Natural flow" means the quantity of water which would naturally flow in any watercourse had the flow not been affected by human interference or human intervention.
- (b) "Watercourse" means any river, stream, creek, or other natural channel which from time to time carries a flowing body of water from the Province of Saskatchewan to the Province of Manitoba and includes all tributaries of each such river, stream, creek or natural channel which do not themselves cross the common boundary between the Provinces of Saskatchewan and Manitoba. Such tributaries as do themselves cross the said common boundary between the Provinces of Saskatchewan and Manitoba shall be deemed to be "watercourses" for the purpose of this agreement.

2. (a) The parties hereto shall mutually establish a method by which to determine the natural flow of each watercourse flowing across their said common boundary.
- (b) For the purpose of this agreement, the said natural flow shall be determined at a point as near as reasonably may be to their said common boundary.
3. Saskatchewan shall permit in each watercourse the following quantity of water to flow into Manitoba during the period from April 1 of each year to March 31 of the year following: A quantity of water equal to the natural flow for that period determined at the point referred to in paragraph 2(b) hereof, less
 - (a) one-half the water flowing into Saskatchewan in that watercourse from Alberta, and
 - (b) any water which would form part of the natural flow in that watercourse but does not flow into Saskatchewan because of the implementation of any provision of any subsisting water apportionment agreement made between Alberta and Saskatchewan and approved by Manitoba, and
 - (c) one-half the natural flow arising in Saskatchewan.

The actual flow shall be adjusted from time to time by mutual agreement on an equitable basis during such period but this shall not restrict or prohibit Saskatchewan from diverting, storing or consuming any quantity of water from any watercourse provided that Saskatchewan diverts water to which it is entitled of comparable quality from other streams or rivers into such watercourse to meet its commitments to Manitoba with respect to each watercourse.
4. Saskatchewan shall be entitled during such period to consume or to divert or store for its consumptive use the water it is not required to permit to flow into Manitoba in each watercourse under paragraph 3 hereof, but such consumption or diversion shall be made equitably depending on the actual flow of water in each watercourse and the requirements of each Province from time to time, but Saskatchewan shall permit sufficient water to flow into Manitoba to meet its commitments during such period under paragraph 3 hereof.
5. The parties hereto shall work together and co-operate to the fullest extent, each with the other, for the use of waters flowing from the Province of Saskatchewan into the Province of Manitoba, including the construction and operation of approved projects of mutual advantage to the said Provinces on a cost-share basis proportionate to the benefits derived therefrom by each Province (the approval of which projects shall not be unreasonably withheld by either of the parties hereto) and shall enter into such other arrangements, agreements or accords with each other, and with the Governments of Canada and other Provinces to best achieve the principles herein agreed upon.
6. If at any time any dispute, difference or question shall arise between the parties or their representatives touching this agreement or the construction, meaning and effect thereof, or anything therein, or the rights or liabilities of the parties or their representatives thereunder or otherwise in respect thereto then every such dispute, difference or question shall be referred for determination to the Exchequer Court under the provisions of The Exchequer Court Act of Canada, and each of the parties hereto agrees to maintain or enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference or question in the manner provided under The Exchequer Court Act.

7. This agreement shall become effective upon the execution of an agreement by Canada, Alberta, Manitoba and Saskatchewan relative to the apportionment of waters referred to in this agreement.

IN WITNESS WHEREOF Saskatchewan has caused these presents to be executed by its Minister in charge of The Water Resources Commission Act, and Manitoba has caused these presents to be executed by its Minister in charge of The Water Control and Conservation Branch Act on the day and year first above mentioned.

"Harold W. Pope"

Witness to the signature of the Minister in charge of The Water Resources Commission Act

"Allan R. Guy"

Minister in charge of The Water Resources Commission Act

"Thomas E. Weber"

Witness to the signature of the Minister in charge of The Water Control and Conservation Branch Act

"Leonard S. Evans"

Minister in charge of The Water Control and Conservation Branch Act.

SCHEDULE C

PRAIRIE PROVINCES WATER BOARD AGREEMENT

THIS AGREEMENT made this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

THE GOVERNMENT OF CANADA,
hereinafter called "Canada"

- and -

THE GOVERNMENT OF MANITOBA,
hereinafter called "Manitoba"

- and -

THE GOVERNMENT OF SASKATCHEWAN,
hereinafter called "Saskatchewan"

- and -

THE GOVERNMENT OF ALBERTA,
hereinafter called "Alberta"

1. Manitoba, Saskatchewan, Alberta and Canada agree to establish and there is hereby established a Board to be known as the Prairie Provinces Water Board to consist of five members to be appointed as follows:

- (a) two members to be appointed by the Governor General in Council, one of whom shall be Chairman of the Board, on the recommendation of the Minister of Energy, Mines and Resources,
- (b) one member to be appointed by the Lieutenant Governor in Council of each of the Provinces of Manitoba, Saskatchewan and Alberta.

2. Functions

The Board shall oversee and report on the Master Agreement (including the First and

Second Agreements thereunder) executed by Canada, Alberta, Manitoba and Saskatchewan for the apportionment of waters flowing from one Province into another Province; shall take under consideration, comprehensive planning, water quality management and other questions pertaining to water resource management referred to it by the parties hereto; shall recommend appropriate action to investigate such matters and shall submit recommendations for their resolution to the parties hereto.

3. Composition of Board

The members of the Board shall be chosen from those engaged in the administration of water resources or related duties for Manitoba, Saskatchewan, Alberta or Canada, as the case may be, and shall serve as members of the Board in addition to their other duties.

4. Duties of the Board

In accordance with its functions, the duties of the Board shall be as follows:

- (a) to review, collate, and analyze stream-flow data and prepare reports and recommendations on the apportionment of water,
- (b) to review water quality problems, particularly such problems located at the interprovincial boundaries, and to recommend to the parties hereto, appropriate management approaches for their resolution including the establishment of new institutional arrangements,
- (c) to develop recommendations on other water matters, in addition to problems on water quality, referred to the Board by any party hereto including the review and analysis of existing information and the requesting of additional studies and assistance by appropriate governmental agencies to provide information for formulating its recommendations,

- (d) to promote through consultation and the exchange of information the integrated development of water resources of inter-provincial streams,
- (e) to cause to be prepared with the consent of the parties involved factual reports on disputes arising out of the water apportionment for consideration by the parties hereto,
- (f) to ensure the co-ordination of such technical programs as water quantity and quality monitoring and streamflow forecasting required for the effective apportionment of water.

5. Confirmation of the Board's Recommendations

A recommendation of the Board with respect to any matters referred to it under Section 2 shall, subject to the Master Agreement for the apportionment of water, become effective when adopted by Orders-in-Council passed by Canada and each of the Provinces.

6. Authority of Board

The Board shall have authority to correspond with all Governmental organizations and other sources of information in Canada or abroad concerned with the administration of water resources, and such other authority as may be conferred on the Board from time to time by agreement between the parties hereto; all agencies of the four governments having to do with the water and associated resources in the area covered by the Agreement shall be required to supply the Board with all data in their possession requested by the Board.

7. Records

The records relating to the water resources of the three provinces collected and compiled by the P.F.R.A. organization at Regina shall be made available to the Board.

8. Meetings of the Board

The Board shall meet at the call of the Chairman and meetings shall be called at least twice annually; the expenses of the members shall be borne by their respective governments.

9. Reports

The Board shall submit an annual progress report outlining work done and work contemplated in the agreed program to each of the responsible Ministers of the parties hereto and such other reports as may be requested by any one of such Ministers.

10. Operation of the Board

The Secretary for the Board and such other technical and clerical staff as may be required, with a headquarters at Regina, shall be Federal or Provincial public servants. The cost of administration, excluding the cost of monitoring as described in Section 7 of the Master Agreement, but including staff, accommodation, supplies and incidental expenses of the Board, shall be borne by the parties hereto on the basis of one-half by Canada and one-sixth by each of the Provinces. The Board shall prepare for approval of the parties hereto, work program, staff requirements, annual budgets and five-year forecasts and such other reports as may be required in the operation of the Board.

11. Any water development project already constructed or to be constructed by any one of the parties shall be so operated as to maintain the apportionment of water as set out in the Master Agreement (and the First and Second Agreements thereunder) for the apportionment of waters of interprovincial streams.

SCHEDULE D

PREVIOUS ALLOCATIONS OF INTERPROVINCIAL WATERS
 APPROVED BY ORDERS-IN-COUNCIL BY THE GOVERNMENTS OF
 CANADA, ALBERTA, MANITOBA, AND SASKATCHEWAN

| <u>Item</u> | <u>Order-in-Council</u> | | | |
|---|-------------------------|----------------|---------------------|-----------------|
| | <u>Canada</u> | <u>Alberta</u> | <u>Saskatchewan</u> | <u>Manitoba</u> |
| Allocation of water for specific projects in Alberta | 4030/49 | 857/49 | 1307/51 | 1121/49 |
| Allocation of water for specific projects in Saskatchewan | 1874/51 | 1091/51 | 1310/51 | 1264/51 |
| Allocation of water for South Saskatchewan River Project in Sask- atchewan | 973/53 | 991/53 | 1271/53 | 924/53 |

BY-LAWS

PART I

1. In these By-Laws:

- (a) "Agreement" means the Prairie Provinces Water Board Master Agreement (including the First and Second Agreements thereunder) executed the Thirtieth day of October, 1969, A. D. by Canada, Alberta, Saskatchewan and Manitoba.
- (b) "Alternate" means Alternate Member of the Prairie Provinces Water Board.
- (c) "Board" means the Prairie Provinces Water Board.
- (d) "By-Laws" means the ordinances adopted by the Board for the regulation of the Board's internal affairs.
- (e) "Chairman" means Chairman of the Prairie Provinces Water Board.
- (f) "Executive Director" means the senior officer of the Secretariat.
- (g) "Member" means Member of the Prairie Provinces Water Board.
- (h) "Ministers" means the responsible ministers of the governments which are party to the Agreement.
- (i) "Secretariat" means the operational unit established by the Board to carry out the day-to-day affairs of the Board.
- (j) "Schedule C" means the Prairie Provinces Water Board Agreement under the Master Agreement (1969) executed by Canada, Alberta, Saskatchewan and Manitoba establishing the Prairie Provinces Water Board.

PART II

The following shall be the By-Laws of the Prairie Provinces Water Board.

1. Objectives

The objectives of the Board shall be to promote the integrated development and use of water and related resources to support economic growth according to selected social goals and priorities, and to participate in the formulation and implementation of comprehensive planning and development programs according to their national, regional and provincial interest and importance.

In general, the Board will provide coordination and liaison between water resource agencies and will advise governments on the planning, development and management of interprovincial waters.

In particular, the Board will ensure the equitable apportionment of water flowing from one province into another province in accordance with the Agreement and will promote effective water quality management of interprovincial streams relative to standards and procedures adopted by the Board from time to time.

2. Membership

In accordance with Section 1 of Schedule "C", the Prairie Provinces Water Board shall consist of five Members to be appointed as follows:

- (a) two Members to be appointed by the Governor General in Council, one of whom shall be Chairman of the Board;
- (b) one Member to be appointed by the Lieutenant Governor in Council of each of the Provinces of Manitoba, Saskatchewan and Alberta.

3. Alternate Members

Each Member, including the Chairman, shall arrange for the appointment of an Alternate Member to act on his behalf during his absence, in which case the Alternate shall enjoy all the rights and privileges conferred on the Member.

4. Meetings and Notice

The Board shall meet at least twice a year by the call of the Chairman. Any Member may request a meeting of the Board at any time, in which case the Chairman must call the meeting within one month (30 days).

Meetings of the Board shall be called with at least 14 days notice unless every Member agrees otherwise.

5. Quorum

Meetings of the Board shall be official when all Members or their appointed Alternates are present.

6. Voting

All recommendations to government, all By-Laws and budgets-in-total shall require unanimous approval. The majority of votes determines a question on any other matter. In the event of a tie, the Chairman shall cast the deciding vote.

7. Powers

In accordance with the duties, functions and operations of the Board, as contained in Schedule "C", the Board shall have the power to authorize expenditures within the limits of approved budgets for the operations of the Secretariat, for the employment of staff, or for any other purposes necessary for administering the Agreement and furthering the objectives of the Board.

8. Authority

Within the general responsibilities given to it, the Board shall determine its technical and administrative functions from time to time and

shall decide all matters regarding the authority of the Board and the delegation thereof.

9. Financial Year

The financial year shall end on the 31st day of March in each year.

10. Budgets

The Chairman shall submit fiscal year program and budget estimates to the Board and to the parties to the Agreement for their approval. Such estimates shall be submitted not later than the first day of August preceding the financial year to which they pertain.

11. Secretariat

- (a) There shall be a permanent Secretariat with offices at Regina, Saskatchewan.
- (b) The Secretariat shall be the "operational arm" of the Board, charged with the responsibility of conducting programs approved by the Board for collating and analyzing data and reporting the apportionment and water quality of interprovincial streams; for conducting approved studies, and for furthering the policies and objectives of the Board.
- (c) Except as otherwise provided for under subsection (f) herein, employees of the Secretariat shall be federal civil servants, subject to federal public service regulations and classification and collective agreements.
- (d) The chief officer of the Secretariat shall be the Executive Director whose actions shall at all times be subject to the approval of the Board.
- (e) The Board shall approve the establishment of salaried positions within the Secretariat and shall approve job descriptions prior to submission to the appropriate federal authority. The Board shall be consulted on the appointment of employees to the Secretariat which role may be delegated to the Executive Director.

- (f) The Board may arrange by agreement for secondment to the Secretariat, the employees of the agencies of those party to the Agreement, at cost, whenever in the opinion of the party concerned the services of such employees are available. Such employees shall remain under the administrative control and public service regulations of the appropriate party.

12. Assignments to Associated Agencies and Consultants

- (a) The Board shall have the authority to engage agencies of those party to the Agreement, at cost, to undertake assignments from the Board, whenever in the opinion of the party concerned, the services of such agencies are available.
- (b) Agencies may enter into sub-contracts with consultants for purposes of professional interpretation subject to the approval of the Executive Director. Sub-contracts for the collection of basic data shall not require the approval of the Executive Director.
- (c) The Board may engage consultants to undertake assignments from the Board where such services are deemed necessary.
- (d) The services of consultants and of agencies of those party to the Agreement shall be engaged under a contractual arrangement. Contracts shall be entered into by the Chairman and/or the Executive Director subject to delegated authorities under the federal government contract regulations. Contracts for services shall also be subject to budgetary appropriations and any other controls imposed by the Board for the conduct of the work.

13. Terms of Payment for Services Provided by Associated Agencies

- (a) Canada, through the Board, shall reimburse the Provinces of Alberta, Saskatchewan and Manitoba on a monthly basis, for expenditures made pursuant to the Agreement and approved by the Board. Payment for such expenditures will be made by Canada upon the submission of a claim in a mutually agreed manner and form.

- (b) Canada, and the Provinces of Alberta, Saskatchewan and Manitoba shall keep complete records of all expenditures made severally pursuant to the Agreement and shall support such expenditures with proper documentation. Canada and the Provinces of Alberta, Saskatchewan and Manitoba shall make these records and documents available to auditors appointed by the other.

14. Cost of Administration of the Board

- (a) In accordance with Section 10 of Schedule "C", all budgeted expenditures, which shall not include the cost of monitoring, as described in Section 7 of the Master Agreement, but including staff, accommodation, supplies and incidental expenses of the Board, shall be borne by the parties to the Agreement on the basis of one-half by Canada and one-sixth by each of the Provinces.

15. Financing the Operations of the Board

- (a) Canada shall assume responsibility for financing the operations of the Board.
- (b) Subject to the cost sharing provisions of the Agreement, the Provinces of Alberta, Saskatchewan and Manitoba shall pay to Canada their shares of approved expenditures made by Canada for the operations of the Board.
- (c) On or before July 1st of each year, Canada shall prepare and submit to each of the provinces party to the Agreement, statements of claim respecting provincial shares of monies due Canada for financing the operations of the Board during the previous financial year. Statements of claim shall be certified by a senior official of Canada and bear a Canada audit certificate.
- (d) Within sixty (60) days after receipt of a claim by Canada, submitted as prescribed in Article 15(c), the Provinces of Alberta,

Saskatchewan and Manitoba shall reimburse Canada for their shares of expenditures incurred during the previous financial year for the operations of the Board.

16. Annual Report

Within three (3) months after the end of the financial year, the Chairman shall submit to the Ministers the Annual Report of the Board.

17. Amendment of By-Laws

By-Laws may be enacted, amended or repealed by unanimous approval of the Board. "Notice of Motion" to enact, amend or repeal By-Laws must be served on Members at least sixty (60) days prior to a vote on such issue.

18. Rules and Procedures

The Board shall formulate and adopt "Rules and Procedures" governing the day-to-day affairs of the Board and the operations of the Secretariat. These "Rules and Procedures" may be amended, adopted or repealed in accordance with Article 6 of these By-Laws.

PART III

EXECUTIVE DIRECTOR

1. Functions

- (a) The Executive Director shall be the senior employee of the Secretariat; subject to the Board's direction, he shall be responsible for the technical and administrative activities of the Secretariat and the day-to-day management of the Board.
- (b) He shall record or cause to be recorded all votes and minutes of all proceedings in books to be kept for that purpose.
- (c) He shall give or cause to be given notice of all meetings of the Board.
- (d) He shall keep the Board informed at all times of matters pertinent or relevant to the programs and operations of the Board.
- (e) He shall have charge of all records of the Board, together with copies of all reports made by the Board and such other books or papers as the Board may direct.
- (f) He shall implement all orders and resolutions of the Board and perform any other duties that the Board may prescribe.

Approved at PPWB Meeting No. 5
- November 2nd, 1971

RULES AND PROCEDURES

SECRETARIAT

The Prairie Provinces Water Board hereby adopts the following Rules and Procedures governing the operations of the Prairie Provinces Water Board Secretariat.

Financial Administration

1. The Executive Director is authorized to make disbursements of funds in conformity with the main items of expenditure allotted in the budget estimates approved by the Board, subject to those restrictions specified elsewhere in these Rules and Procedures.
2. The Executive Director shall prepare the annual program and budget estimates for the operations of the Prairie Provinces Water Board. Such estimates shall be submitted to the Chairman not later than the first day of July preceding the financial year to which they pertain.
3. Contracts with private consultant firms and individuals shall conform to accepted practices and procedures of the Federal Treasury Board.
4. A contract for services with a person or persons may be undertaken by the Executive Director providing that no such contract is made with a single person, a single firm of persons, or government agency exceeding \$5,000 without the approval of the Board.
5. Contracts not exceeding \$5,000 shall be executed on behalf of the Board under the signature of the Executive Director. Contracts exceeding \$5,000 shall be executed under the signature of the Chairman of the Board.
6. Payment of accounts will be made only after they have been approved by the Executive Director.

Establishment of Salaried Positions, Appointments and Administration of Salaries

7. The establishment of salaried positions in the Secretariat shall be approved by the Board.
8. The Board shall approve the duties of all positions in the Secretariat including those of Executor Director.
9. The classification and remuneration of salaried positions within the Secretariat shall be governed by the appropriate federal authority.
10. The financial and personnel administration of the Secretariat shall be carried out in accordance with federal government practices.
11. To facilitate the operations of the Secretariat, personnel and financial administrative support services shall be provided, at cost, by the Federal Department of the Environment.

Board Offices

12. The Executive Director is authorized to lease and maintain property within which to conduct Board affairs providing that terms of such leasing shall be sanctioned by the Board.
13. Costs for the operation of the Board offices shall include, but shall not necessarily be limited to, expenditures for the following items:
 - (a) Salaries and wages and related benefits of Board employees or personnel seconded to the Board offices, including removal expenses, both at the commencement and termination of the appointment, where applicable, and living expenses for seconded personnel where approved by the Board.

- (b) Field surveys and investigations including travel and living expenses when applicable, by personnel engaged in conducting studies or field investigations.
- (c) Rentals for office space and equipment and charges for utilities and related services for the operation of Board offices.
- (d) Purchases of furniture, and equipment not available on a rental basis.
- (e) Operating, maintenance and transportation expenses for equipment.
- (f) Contracts awarded by the Board including, where applicable, arbitration, settlements, legal fees and other matters, made in accordance with the provisions of the contract.
- (g) Settlement and legal fees arising out of property damaged or public liability made or incurred by an employee of the Secretariat or a party to the Agreement working for the Secretariat and engaged in the activities of the Board offices.
- (h) Other items required for conducting the work and for operations of the Board offices which have been approved by the Board.
- (c) Normal operating maintenance and transportation expenses for equipment where such expenses are not included in the rental rate.
- (d) All contracts as provided under the provisions of Article 12(b) of the By-Laws.
- (e) Other items required for conducting the work of the Board and approved by the Executive Director.

Board Members, Alternates and Advisory Committees

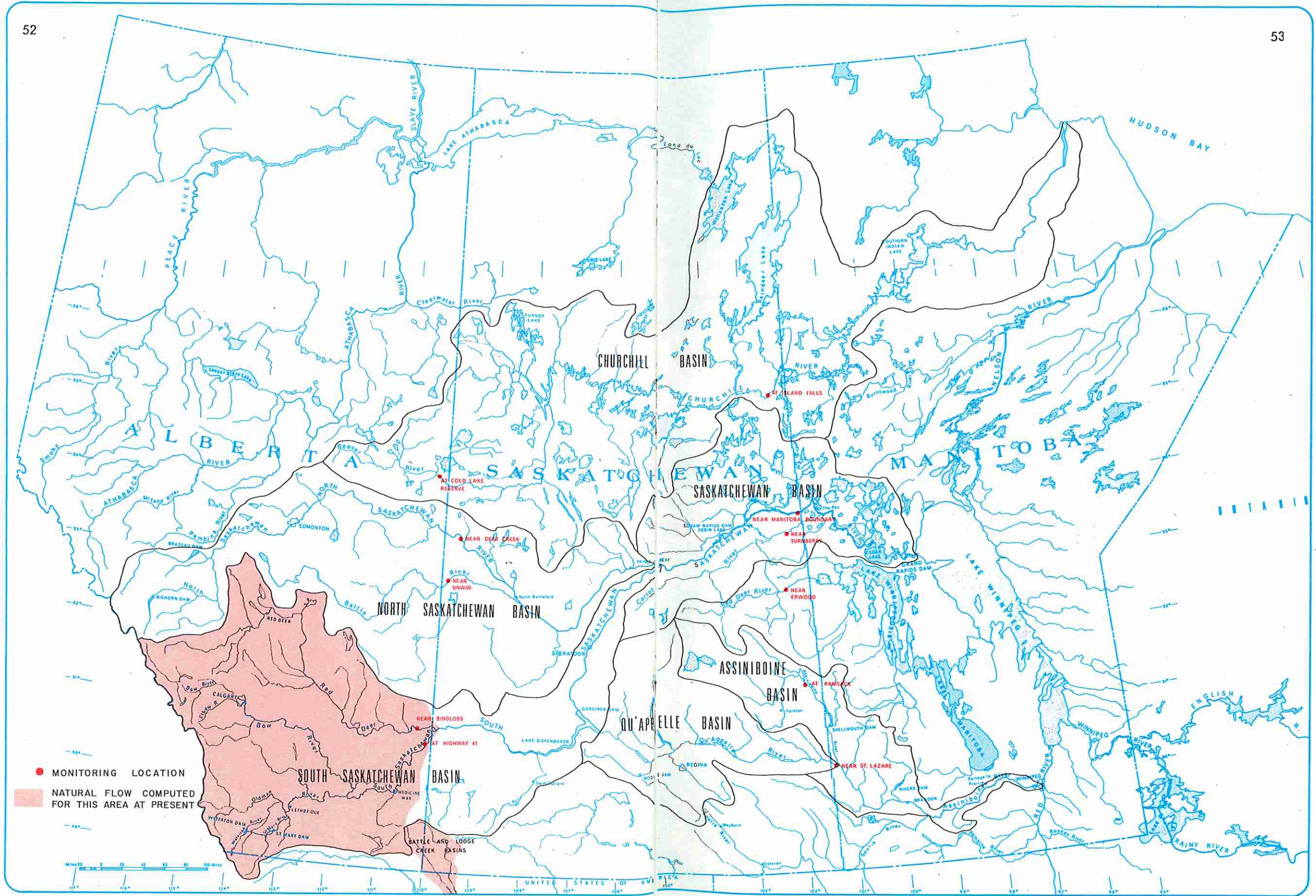
15. The costs incurred by Board Members and their Alternates in representing their respective governments at Board functions shall be paid for by the appropriate government. The salaries and travelling expenses of government officials appointed to represent those party to the Agreement on Committees established to advise the Board and/or the Executive Director shall be paid by the appropriate party.

Approved at PPWB Meeting No. 5
- November 2nd, 1971

Payment for Services Provided by Participating Government Agencies

14. Costs of participating government agencies for services, field investigations, planning studies, etc., specifically requested by the Board shall include the following items:
- (a) Salaries, wages, travel and living expenses for employees engaged in providing the service.
 - (b) Rental charges for equipment and operators.

MAP



● MONITORING LOCATION

■ NATURAL FLOW COMPUTED FOR THIS AREA AT PRESENT

