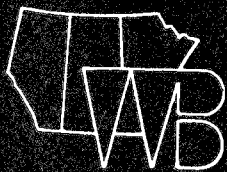


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# ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1981



PRAIRIE PROVINCES WATER BOARD

CANADA ALBERTA SASKATCHEWAN MANITOBA

# ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1981



PRAIRIE PROVINCES WATER BOARD

306 - 1901 VICTORIA AVENUE REGINA, SASKATCHEWAN S4P 3R4

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# INTRODUCTION

On October 30, 1969 Canada and the Provinces of Manitoba, Saskatchewan and Alberta entered into an agreement to share the flow and to consider the quality of eastward flowing interprovincial streams. Under Schedule C of that Master Agreement on Apportionment, the Prairie Provinces Water Board was reconstituted and was given the responsibility to administer the Agreement.

The Board met twice in the last fiscal year. The first meeting was held on May 5-6, 1980 in Edmonton. The second meeting was held on November 3-4, 1980 in Regina. Mr. J.P. Bruce, relinquished his position as Board Chairman in September, 1980 and, effective September 29, 1980, Dr. W.B. Mountain was appointed as Chairman of the Board. Dr. Mountain chaired the November meeting. The Board, at that meeting, expressed their appreciation for the contribution that Mr. Bruce, as Board Chairman, has made during the past three years and welcomed Dr. Mountain to the Board.

In the last fiscal year; the Committee on Hydrology met four times, the Committee on Water Quality three times, the Committee on Water Demand three times, the Committee on Interjurisdictional Apportionment Administration three times, and the Committee on Groundwater twice; a total of fifteen committee meetings.

This report summarizes the activities and the progress of the Prairie Provinces Water Board, its Committees, and the Secretariat for the period April 1, 1980 to March 31, 1981.



## RECONSTITUTION OF BOARD ADMINISTRATION

During the 22 year history of the original Prairie Provinces Water Board (1948 to 1969 inclusive), the Engineering Secretary to the Board was a Federal Government PFRA employee who served in this capacity as part of his regular duties. The support staff for studies and office accommodation during these 22 years 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 provided for the necessary Board staff, accommodation and supplies to be jointly financed by the four governments party to the Agreement. Following the reconstitution of the PPWB the members also agreed to the establishment of a semi-autonomous Board Secretariat.

The Board's change in administration policy was implemented when an Executive Director was appointed on July 1, 1972. The Board now operates through an Executive Director and his staff, supported by committees as shown in the organization chart on page 42. With the appointment of a permanent staff, the By-laws, Rules, and Procedures also became effective on July 1, 1972. The 1969 Master Agreement on Apportionment, the By-laws, and the Rules and Procedures are appended to this Annual Report.

The employees of the Secretariat, for administrative purposes, are classified as Federal Public Servants but receive their direction entirely from the Board and have no working connection with any part of the Federal Government. The Board directly controls the operation of the Secretariat through approval of an Annual Budget. It currently has Federal spending authority up to an annual maximum expenditure of \$625,000. The Provincial Governments' shares of current expenditures are recovered after the current financial year is completed.



## ADMINISTRATIVE DECISIONS

In keeping with previous Board decisions, and as part of the Board's mandate to monitor interprovincial streams, the following continuing action was taken:

### Natural Flow Determination

Quarterly reports on natural flows, consumptive use, and storage changes for the South Saskatchewan River basin in Alberta and the Qu'Appelle River Basin in Saskatchewan were prepared and distributed on a regular basis.

The accumulated total annual recorded flow of 6,260,000 cubic decametres ( $\text{dam}^3$ ) in the South Saskatchewan River below its junction with the Red Deer River is 78% of the total annual natural flow of 7,980,000  $\text{dam}^3$ . Recorded discharge of the South Saskatchewan River at the apportionment point did not fall below 42.5 cubic metres per second (cms) or one-half of natural flow at any time during 1980 so the minimum flow criteria were met for the complete apportionment period. A summary of monthly recorded and natural flow data for 1980 at this site is shown on page 22.

The natural flow of the Qu'Appelle River from April 1, 1980 to March 31, 1981 was 71,000  $\text{dam}^3$ . Recorded flow, aided by 90,000  $\text{dam}^3$  released from Diefenbaker Lake, was 102,000  $\text{dam}^3$ , 144% of natural flow. Apportionment conditions were also met for the Saskatchewan, Churchill and North Saskatchewan River basins at their respective boundaries. A summary of monthly recorded and natural flows for 1980 at the above four sites is shown on page 24.

### PPWB Monitoring Stations

The Board has designated eleven locations for the establishment of common water quantity and water quality monitoring stations to carry out the responsibilities of the Board. The Inland Waters Directorate of Environment Canada monitors the quantity of flow continuously and the quality of flow monthly at each of these eleven sites. The map on page 66 shows the location of each monitoring site.

### Ducks Unlimited Cumberland Marsh Project

The Board, in the interest of good interprovincial water management, has a continuing interest in the Ducks Unlimited Project recently



constructed in the Cumberland Marsh area and the effect it might have on downstream water quantity and quality. Reports on the project's operation are prepared annually by Water Survey of Canada in consultation with Ducks Unlimited, and Saskatchewan Environment. The second report, describing the operation of this project during 1979, was submitted to the Board in November, 1980 and is available on request.

Several administrative decisions were also made in the current fiscal year. They are summarized in the following section:

#### Administration of Apportionment Agreement Report

The Committee on Hydrology has submitted a report to the Board entitled "Report on the Administration of Apportionment Agreement". The report and its recommendations were accepted and the Committee on Hydrology was asked to prepare a report describing procedures that might be used to initiate and conduct negotiations leading to continuing equitable apportionment of interprovincial waters.

#### Implementation of the First Order Long Term Water Quality Network

The systematic implementation of a permanent network of water quality stations is a matter of continuing concern to the Board. The Board members have agreed to investigate alternatives within their own agencies to free resources and to establish agreements to expedite the implementation and maintenance of such a network. They have also directed the Committee on Water Quality to continue monitoring the implementation process and to report the network's current status to the Board on a regular basis.

#### Small Interprovincial Basin Natural Flow Reports

The Board agreed that a total of \$39,000 should be spent to conduct small basin natural flow studies for Big Gully Creek, Gainsborough Creek, Graham Creek, Eyehill Creek, and Battle River. They asked that Member Agencies be consulted to determine the number of additional such studies they could undertake in the next two financial years.

#### Water Quality Task Force

The Board approved the Terms of Reference for a Task Force on Water Quality Analytical Methodology to function under the direction of the Committee on Water Quality. The Task Force reported to the Board. Following this report, the Board agreed that the Task Force should continue to work towards the implementation of equivalent water quality methodologies needed to ensure that a compatible long term water quality data base is developed for streams in Western Canada.

#### Interprovincial Drainage Reference

The Saskatchewan and Manitoba members jointly submitted a reference to the Board on an interprovincial drainage problem in the vicinity

of Russell, Manitoba. The Board, in accepting that reference, directed the Executive Director, in conjunction with Saskatchewan and Manitoba provincial representatives, to define the work required to delegate tasks and to establish a schedule for preparing a report with recommendations concerning the problem.

#### Formation of a Continuing Committee on Groundwater

The ad hoc Committee on Groundwater reported to the Board on the advisability of it becoming involved in interprovincial groundwater management. The Board accepted the recommendations of this committee, and, based on these recommendations, agreed that the Committee on Groundwater should be a continuing committee of the Board.

#### Interprovincial Implications of Proposed Projects

The Board agreed that a statement of the impact that proposed projects would have on the quantity and quality of water crossing interprovincial boundaries should be submitted through the appropriate provincial member and reviewed by the Secretariat in consultation with Board committees. The Board, in the last financial year, has been active in the evaluation of five such projects:

##### The Proposed Cold Lake Oil Sands Project

It was agreed that the Committees on Hydrology, Water Quality and Groundwater should maintain a watching brief on the development of the proposed Cold Lake Oil Sands Plant, and that they should keep the Board apprised of any plans which may affect the quantity and/or quality of water crossing the Alberta-Saskatchewan boundary.

##### The Proposed Dickson Dam

A letter was sent from the Board to the Ministers of all Member Agencies informing them that the proposed Dickson Dam will not violate the terms or conditions of the Agreement administered by the Prairie Provinces Water Board if the project is constructed and operated as planned.

##### The Proposed Nipawin Dam

A letter was sent to the Ministers of all Member Agencies informing them that the proposed Nipawin Hydroelectric project will not violate the terms or conditions of the Agreement administered by the Prairie Provinces Water Board if constructed and operated as planned.

##### The Proposed Qu'Appelle River Conveyance Project

The Saskatchewan and Manitoba members of the Board agreed to continue to exchange information on the Qu'Appelle River Conveyance Project. A final decision on the proposal has been delayed until the Committees can complete their evaluation of this project.

### The Proposed Control Structure at the Outlet of Cumberland Lake

Saskatchewan plans to construct a weir across Bigstone Cutoff and a bridge across the Tearing River. A report will be prepared by the project proponent to provide an assessment of the effects that this construction might have on the Saskatchewan River at the Manitoba-Saskatchewan boundary and on the Manitoba portion of Namew Lake.

### Observation of Phenoxy Herbicides at Water Quality Monitoring Sites

The Board members, after reviewing monitoring results indicating that 2,4-D and 2,4,5-T have been observed at selected PPWB stations, forwarded the data to the Agencies responsible for regulating the use of these herbicides in their respective jurisdictions.

### Changes to the Prairie Provinces Water Board By-laws

The Board has made two amendments to the Prairie Provinces Water Board By-laws as follows:

Board By-law 15(c) was amended to read:

"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 operation of the Board during the previous financial year. Statements of claim shall be certified by a senior official of Canada. Once every three years commencing with fiscal year 1981-82 these claims shall be audited and shall bear a Canada audit certificate."

It was also agreed to amend PPWB By-law 16 to read:

"Within six (6) months after the end of the financial year, the Chairman shall submit to the Ministers the Annual Report of the Board."

### PPWB Budget for 1981-82

The Board approved a total budget of \$474,800 for the fiscal year 1981-82 composed of \$209,800 for the Water Demand Study and \$265,000 for regular Board operations.

## BOARD STUDIES

### Water Demand Study

The Prairie Provinces Water Board, in 1970, established a task force to examine the need, and to develop terms of reference, for a Water Demand (or Water Use) Study. In January 1972 that Task Force submitted a report to the Board outlining the need for such a Study in the Prairie Region. Subsequently, at a meeting of the SNBB Committee of Ministers, it was agreed that the Study should be undertaken, but that it should be divided into two parts. The first part would document historical and current water uses; the second would forecast future water demands. An updated study plan was accepted by the Board in May 1976 but implementation for documenting historical and current water uses was postponed until May 18, 1977 when all members of the Board reaffirmed their desire to proceed with the proposed Study at a total estimated cost of \$880,000. The final report of the Water Demand Study: HISTORICAL AND CURRENT WATER USES, is scheduled for completion by March 31, 1982.

The Water Demand Study has been divided into six sectors, each managed by a Sub-committee chaired by the Study Director and under the overall direction of the Committee on Water Demand.

### Study Progress

Each Sub-committee is responsible for collecting and analyzing data pertinent to its sector, determining factors affecting historical and current water use, identifying weaknesses in the data base and preparing a report for the Committee.

The Regional Economic Base Sub-committee met twice during the past financial year. A second draft of the Regional Economic Base Report was completed, and a final draft was in preparation at the end of the financial year.

The Municipal and Industrial Sub-committee met twice last financial year. Reports from the three provincial agencies were in preparation by the March 1981. An outline for the Sub-committee's report on the whole sector was prepared.

The Agriculture Sub-committee met once during the last fiscal year. Draft reports from each of the provinces were reviewed and work was begun on revising these drafts. A first draft of the sector report was approximately half completed by the end of the fiscal year.

The Power Generation Sub-committee met twice during the 1980/81 financial year. Draft reports from the three provinces were reviewed and final drafts were in preparation by the end of March 1981. A first draft of the sector report was received and reviewed.

The Environmental Considerations Sub-committee met three times in the last financial year. Drafts of all provincial agency reports were received and reviewed. A first draft of the sector report was approximately two-thirds completed.

The Recreation Sub-committee met two times. Final drafts were approved for two of the provincial reports, and a second draft of the third provincial report was reviewed. Work on the first draft of the sector report was begun.

The Study Office reviewed reports for all sectors of the Water Demand Study. Drafts of the first four chapters of the Main Report were prepared for the Committee on Water Demand and sub-basin maps were completed. Investigations into a data storage and retrieval system continued.

Study expenditures in the fiscal year 1980/81 totaled \$236,738 making the amount spent to date \$626,888 of the total \$880,000 budgeted for the study.

#### Administration of Apportionment Study

At the November 5, 1974 meeting of the Prairie Provinces Water Board, the members discussed the type of problems that might be encountered in administering the Apportionment Agreement as water use increases to the point where apportionment becomes critical. The Committee on Hydrology, at the request of the Board, prepared Terms of Reference for a study of these problems. The Board subsequently approved these Terms and agreed that the Committee on Hydrology should be responsible for the study.

The Committee on Hydrology has prepared a report on this subject entitled "Report on Administration of the Apportionment Agreement" and it was submitted to the Board in May, 1980. The report and its recommendations were accepted by the Board at its November, 1980 meeting.

The Committee on Hydrology, at the direction of the Board, is now preparing "Guidelines For Negotiating Equitable Apportionment". This second report suggests steps that the Board and its Member Agencies may take to maintain an equitable apportionment of interprovincial waters.

#### Natural Flow Studies on Small Interprovincial Basins

At the June 10, 1975 meeting of the Board, the Members recommended that a continuing effort be made by the Secretariat to define natural flow on small interprovincial river basins. A list of streams that fell into this category was prepared and the Board agreed that the speed with which the studies might be completed would depend both on the availability of participating agencies.

Studies have been completed on Pipestone Creek and Antler River. Participating agencies are now working on studies for the Assiniboine River, Boxelder Creek, Mackay Creek, Big Gully Creek, Gainsborough Creek, Graham Creek, Battle River and Eyehill Creek.

No commitment has been made to complete further studies on small interprovincial basins in this series, but the need for such studies has been identified for the following ten streams:

Birch (Saskeram) River	Red Deer River (Saskatchewan)
Jackson Creek	Swan River
Elm Creek	Woody River
Stony Creek	Gopher Creek
Overflowing River	Bosshill River

The above studies are prepared under the direction of the Secretariat and the Committee on Hydrology.

#### Site Specific Water Quality Objectives Study

The Committee on Water Quality and the Secretariat are making a systematic review of water quality data collected at the eleven PPWB monitoring stations. They intend to update the 1973 PPWB Water Quality Objectives and to recommend PPWB Water Quality Requirements for each of the eleven PPWB stations. The Board has directed the Committee on Water Quality to prepare examples of the water quality requirements for the Beaver River at the Alberta-Saskatchewan boundary, the North Saskatchewan River at the Alberta-Saskatchewan boundary and the Assiniboine River at the Saskatchewan-Manitoba boundary.

#### Battle and Lodge Creek Basins Apportionment Study

The Secretariat, with the Committee on Interjurisdictional Agreements Administration, has prepared a report entitled "Battle and Lodge Basins Apportionment Study - PPWB Report No. 61". This report provides recommendations for the equitable apportionment of the waters of Battle and Lodge Creek Basins between Alberta and Saskatchewan. The report will be presented to the Board at their May, 1981 meeting.

#### Battle Creek Study

At the May 18, 1977 meeting, the Board agreed that a comprehensive study was needed to resolve the water supply problems in Battle Creek. They directed the Secretariat to form the Battle Creek Steering Committee. Initial meetings were held to draft Terms of Reference and to prepare cost estimates for such a study, but further action was deferred until a recommendation has been made on the interprovincial allocation of water in the Battle Creek basin.

#### Westward Flowing Streams Study

The Board recognizes that streams which cross interprovincial boundaries in an east to west direction may not be covered by the

Apportionment Agreement. At the November, 1973 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.

The Committee on Hydrology in analyzing this problem has sub-divided the study of Westward Flowing Streams into two parts; the streams that are westward flowing tributaries of eastward flowing streams and the streams that are westward flowing streams that are not subsequently tributary to eastward flowing streams.

A proposal has been made to prepare two separate reports dealing with these two separate types of streams. These reports will comment on the number and size of streams involved, will consider possible apportionment problems, and will speculate on possible solutions taking into account relevant precedents.

#### Interprovincial Drainage Task Force

The Board has accepted a reference from the provinces of Saskatchewan and Manitoba to deal with specific problems involving artificial drainage on a series of small interprovincial streams that affect the rural municipalities of Churchbridge, Langenburg, Shellmouth and Russell. A Task Force has been struck consisting of the Executive Director of the Secretariat and a member each from Saskatchewan Environment and Manitoba Department of Natural Resources.

The Task Force has made a field tour to examine the problem and has discussed the situation with counsellors from the four rural municipalities involved. A plan of action has been approved by the Board. It proposes that the Province of Saskatchewan do studies to determine the effect of drainage to date on the volume and intensity of flow at the affected boundary points, what effect further drainage might have on the volume and intensity of peak flows on these particular streams. When this study is completed, Manitoba will determine both the physical effect that the changes in flow will have on streams entering into the Assiniboine River and whether the effects will increase flooding downstream from Shellmouth reservoir. The Task Force will then recommend to the Board a solution acceptable to both provinces.

#### Updating of PPWB Monthly Natural Streamflow Estimates

The Board has agreed that the Secretariat should assume the continuing responsibility for updating the Saskatchewan-Nelson basin monthly natural streamflow estimates. They have instructed the Executive Director to bring the monthly streamflow files up to date as soon as practical and to ensure that they are updated annually.

This activity coincides with an Alberta Environment study to update monthly natural streamflow records for the South Saskatchewan River basin including the Red Deer River basin. Agency activities have been co-ordinated to ensure that the estimates produced by Alberta Environment will be usable for Board purposes as well as for planning purposes in

Alberta. It is hoped that all flow records will be updated by the completion of the current Water Demand Study of Historic and Current Water Uses.

Forest Management Study for Increased Water Yields

There has been considerable interest for several years in the Province of Alberta on the possibility of managing the eastern slopes of the Rockies to benefit water production and to control other uses of the forest area. Alberta Environment and the Alberta Forest Service, in co-operation with Federal Agencies, have the management responsibilities for this green zone. They will continue to keep the Board informed, through the Committee on Hydrology, of the conduct and results of these studies.





## BOARD COMMITTEES

### Committee on Hydrology

The Committee on Hydrology met four times in the last financial year. The meetings were held on June 25-26, 1980 in Edmonton; September 25-26, 1980 in Regina; January 20-21, 1981 in Winnipeg; and March 26, 1981 in Regina.

The proposed "Guidelines for Negotiating Equitable Apportionment" to accompany the "Administration of Apportionment Agreement" report was a major topic of discussion at all four meetings. A final draft of the guidelines was completed at the March 26, 1981 meeting.

The Committee continued to evaluate the present status of study methods used to determine the effects of artificial drainage on downstream flows in the prairie streams. They discussed a methodology used by Saskatchewan Environment and considered the possibility of using the results of the Federal Department of Environment's National Hydrology Research Institute agricultural land drainage studies to assess the need to undertake further research projects on agricultural land drainage. Further study is needed before a recommendation can be made to the Board.

A method of estimating lake evaporation, developed by F.I. Morton of Environment Canada, was discussed by the Committee to see if it might be used to replace the existing Meyer's method for calculating evaporation in the natural flow calculation procedures of the PPWB. It was felt that no decision on the acceptability of the method could be made until some field data had been collected to evaluate the relative merits of the two methods.

The Committee also completed its review of the Assiniboine River Basin natural flow study and recommended that the report be accepted for Board purposes. A draft of the Boxelder and MacKay natural flow study report was reviewed and the Overflowing River was added to the priority list of small basin studies.

The list of active PPWB hydrometric stations was reviewed and updated. The Committee also identified several special monitoring procedures for the calculation of natural flow at boundary sites and these were submitted to the Board.

### Committee on Water Quality

The Committee on Water Quality met three times in the 1980/81 financial year; in Regina on June 19-20, 1980, in Calgary on September 16-17, 1980, and in Edmonton on January 8-9, 1981.

At the June 1980 meeting the Committee prepared additional information requested by the Board on the interprovincial implications of the proposed Esso Resources Cold Lake Oil Sands Project. These included comments on changes in effluent discharge projections and tentative effluent discharge standards for this project.

The Committee on Water Quality also reported to the Board that it was not feasible to establish total loading limitations as part of the Interim Water Quality Requirements on the Beaver River, and that there should be no interbasin biota transfer if the project's water treatment processes are implemented as designed.

Recommendations were made as to how the first order long term water quality network outlined in PPWB Report #51 should be implemented and summaries of the 1979 PPWB Monitoring results were reviewed. The review, besides revealing that trace concentrations of 2,4-D and 2,4,5-T had been detected at several PPWB stations, confirmed that the 1973 PPWB Objectives should be revised on a basin specific basis.

At the September 1980 meeting, the Committee continued its review of PPWB 2,4-D and 2,4,5-T data and water use criteria. The trace concentrations detected were well below maximum allowable concentrations recommended in literature to protect water used for human consumption. It was concluded that there was no immediate cause for concern, but the Committee recommended that the Board forward the data to member agency departments concerned with herbicide licensing and use.

The work of the PPWB Task Force on Water Quality on the compatibility of water quality methods being used by PPWB member agencies was reviewed. The findings confirmed that many of the analytical methods currently used would not generate data that was comparable between user agencies. A report on the Task Force's findings was forwarded to the Board.

A report entitled "PPWB Water Quality Activities 1969 to 1981" was reviewed and forwarded to the Board with a statement of the Committee's current priorities, and a first draft of PPWB Beaver River Water Quality Requirements was reviewed by the Committee.

Much of the January 1981 meeting was devoted to a review of the second draft of the PPWB Beaver River Water Quality Requirements Report. At this meeting the members also exchanged information on the Tobin Lake Study being conducted by the Environmental Protection Service of Environment Canada, effluent discharge procedures used at herbicide manufacturing/formulating plants, and surveys being conducted on interprovincial rivers for dioxins, nutrients and other organochlorine compounds.

### Committee on Water Demand

The Committee on Water Demand met three times during the 1980/81 financial year: in Regina on October 1-2, 1980; in Edmonton on December 15-16, 1980; and, in Regina on March 18, 1981. Technical guidance for the Water Demand Study was provided, including financial management, advice on matters pertaining to the conduct of the study sectors, and a review of the draft Regional Economic Base Report. The Committee, during the last fiscal year, also reviewed four draft chapters of the Main Report and advised on how future drafts should be prepared.

The Committee agreed to recommend to the Prairie Provinces Water Board that the Water Demand Study be granted a six month extension and that \$90,000 be made available in 1982/83 to complete the study.

A total of \$236,738 was spent during the 1980/81 fiscal year. Anticipated expenditures in 1981/82 are \$228,000 with the remainder of the study funds to be spent in 1982/83.

### Committee on Interjurisdictional Agreements Administration

The Committee on Interjurisdictional Agreements Administration met three times during the 1980-81 financial year: in Regina on June 11-12, 1980; in Edmonton on August 19-20, 1980; and in Regina on February 18-19, 1981.

The Committee reached agreement that the flow of the Battle and Lodge Creeks should be apportioned so that Alberta and Saskatchewan share the available flow equally on a 50-50 basis. This means that Alberta, in each calendar year, will be required to release 75 percent of the natural volume of flow originating in Alberta. Two-thirds of that water (50% of natural flow) will be passed to the United States via Saskatchewan, and one-third (25% of natural flow) may be used by Saskatchewan. Thus Saskatchewan and Alberta will share equally in Canada's 50% of the natural flow rising in Alberta. The Committee also established apportionment, balance and audit periods for the Battle and Lodge Creek Basins.

A final draft of the "Battle and Lodge Basins Apportionment Study" report describing the results of the Committee work in the Study was completed at the February 1981 meeting for the consideration of the Board at its spring 1981 meeting.

### Committee on Groundwater

The Committee on Groundwater met twice in the 1980/81 financial year. The first meeting of the Committee was held in Regina on May 21, 1980 and the second meeting was held in Regina on February 11-12, 1981.

The members prior to the May 21, 1980 meeting, provided a list of known interprovincial groundwater concerns that might have interprovincial implications and were asked to comment on the adequacy of the existing groundwater data base in the prairie provinces. The members' written comments were the major topics of discussion at the first Committee meeting.

The Committee, based on these discussions, presented, to the November 1980 Board meeting, a report answering the Board's questions on; existing and potential interprovincial groundwater problems, the adequacy of existing groundwater data, future data collection, future studies, and Board involvement in interprovincial groundwater monitoring and management considerations. The Committee's report also recommended that a Committee on Groundwater (COG) be retained on a continuing basis to answer future questions concerning the interprovincial aspects of groundwater management.

A proposal to create a cross-section or profile of groundwater aquifers at interprovincial boundaries was discussed at the February, 1981 meeting. The Committee suggested that a consultant might be retained to: identify the existing data base at Alberta-Saskatchewan and Saskatchewan-Manitoba boundary areas, prepare cost estimates for mapping the interprovincial aquifers, and make recommendations on how the cross sections and hydrogeological mapping of interprovincial aquifers might be handled.

#### Battle Creek Steering Committee

The Battle Creek Steering Committee did not meet in the financial year 1980/81. It is not proposed to reactivate this committee until the Board has agreed on a method of apportioning the flow of water in the Battle Creek basin between Alberta and Saskatchewan.

# SECRETARIAT

## Accommodation and Staff

The PPWB Secretariat is located in Room 306, of the Motherwell Building in Regina, Saskatchewan. This office is in the same building as the Western Regional office of the Inland Waters Directorate of the Environmental Conservation Service of Environment Canada. Personnel and financial administrative services are provided through the staff of that office.

There were two staff changes in the past year. The position of Secretary to the Executive Director was filled in April 1980 by Ms. G. Brown. Her resignation on January 23, 1981 left that position again vacant. The competition to replace her was held on March 12th with Mrs. Glenda Mason being the successful candidate. She will report for duty on April 6, 1981. D.A. Schoenfeld, the Computations Technician resigned that position on August 29, 1980 and Mr. Barry Cox was hired to replace him effective September 15, 1980. When Mrs. Mason reports for duty in April, 1981, the Board's Secretariat will be at full strength.

## Reports

The Secretariat published and distributed to Member Agencies, the Fifth Annual Report containing water data collected at eleven Prairie Provinces Water Board monitoring stations. Because of the large size of this report, distribution was limited to people directly connected with the Board's quality of water activities. Six Board reports were published in the past financial year. They are listed below:

- PPWB Report No. 57 - Assiniboine River at Saskatchewan-Manitoba Boundary - Natural Flow - November 1980 (prepared for the PPWB by PFRA).
- PPWB Report No. 58 - The Administration of Apportionment Agreement (April 1980).
- PPWB Report No. 60 - A Summary of Prairie Provinces Water Board Water Quality Activities 1969-1980 (October 1980).
- PPWB Report No. 61 - The Battle and Lodge Basin Apportionment Study (March 1981).

- Interprovincial River Water Quality Data at PPWB Monitoring Stations - April 1974 to December 31, 1979 (May 1980).
- Water Quantity/Quality Monitoring Program - Cumberland Marshes Project - 1979 Annual Report - October 1980 (prepared for the PPWB by WSC).

### Information

The work of the Secretariat in the past financial year has been primarily connected with Committees and Board Studies, and these activities have been reported under the sections entitled "Board Studies and Board Committees".

The IBM keypunch machine used by the Secretariat since 1972 has been replaced by a Vucom 4 terminal allowing the staff to communicate directly to the Sask-Comp computer. This improved linkage was particularly useful in processing the computerized data needed for the Quality of Water Annual Report, and in documenting alternatives for the Battle-Lodge Reference.

### Financial

Secretariat expenditures for the financial year 1980-81 as checked by a Senior Official of Canada are shown on page 43. They indicate a total expenditure of \$468,234.95 composed of \$231,496.71 directly spent on Board activities and \$236,738.24 on Water Demand Study expenditures.

### Natural Flow Reports

Water Survey of Canada, Inland Waters Directorate, provided the Board with quarterly reports on the natural flow of the South Saskatchewan River below its junction with the Red Deer River and the Qu'Appelle River at the Saskatchewan-Manitoba boundary at a cost of \$4,000 and \$2,000 respectively.

Natural flows on the South Saskatchewan River Basin were calculated using the project depletion method and natural flows of the Qu'Appelle River Basin were calculated using the Streamflow Synthesis and Reservoir Regulation (SSARR) Model. Both procedures have been approved by the Board to calculate natural flow on these two specific basins. The SSARR model is currently being reviewed by a sub-committee of the Committee on Hydrology and, following this review, the model will be modified and recalibrated to function in metric units.

**1980 FLOW DATA**



RECORDED AND NATURAL FLOWS,  
CONSUMPTIVE USE, DIVERSION, AND STORAGE  
(CUBIC DECAMETRES ROUNDED TO THREE SIGNIFICANT FIGURES)

FOR THE YEAR 1980

SOUTH SASKATCHEWAN RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED DISCHARGES	114 000	147 000	206 000	442 000	804 000	1 440 000	282 000	201 000	151 000	304 000	307 000	211 000	4 610 000
CONSUMPTIVE USE	-604	-826	2 210	30 200	303 000	276 000	376 000	271 000	216 000	62 000	-13 200	370	1 520 000
CHANGE IN RESERVOIRS	-59 100	-48 600	-52 800	39 500	315 000	113 000	24 700	-19 900	19 500	-23 500	-61 400	-59 400	193 000
DIVERSION FROM BASIN	0	0	0	0	22 400	35 900	42 700	34 700	21 900	16 100	3 840	0	178 000
NATURAL FLOW ALTA. BDY.	73 100	94 900	161 000	438 000	1 460 000	1 870 000	695 000	515 000	411 000	411 000	243 000	150 000	6 520 000

RED DEER RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED DISCHARGE	9 760	9 100	22 700	272 000	140 000	445 000	260 000	167 000	133 000	104 000	59 700	23 100	1 650 000
CONSUMPTIVE USE	0	0	0	0	0	0	0	0	0	0	0	0	0
DIVERSION FROM BASIN	0	0	0	0	-22 400	-35 900	-42 700	-34 700	-21 900	-16 100	-3 840	0	-178 000
NATURAL FLOW ALTA. BDY.	9 760	9 100	22 700	272 000	120 000	409 000	218 000	131 000	110 000	86 100	55 700	23 100	1 470 000

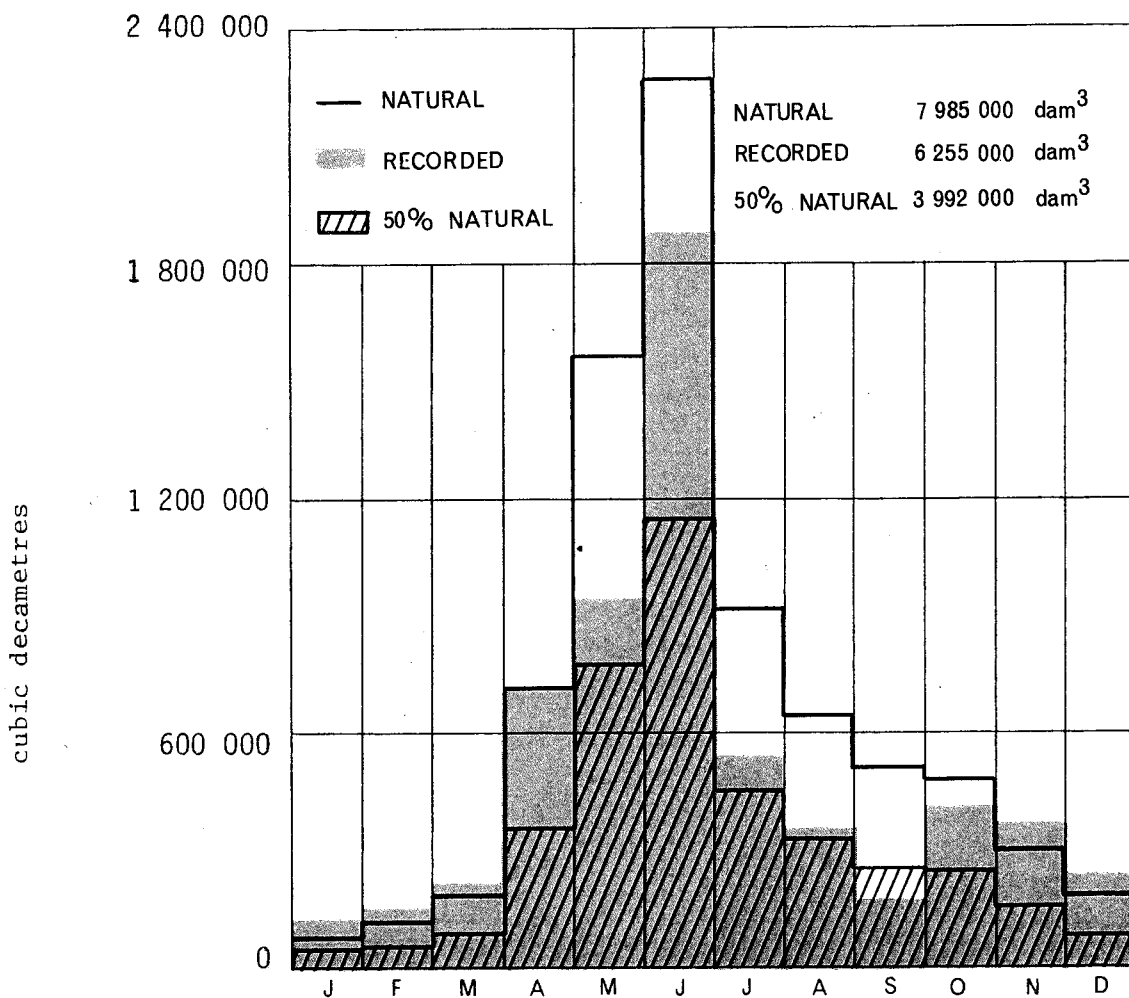
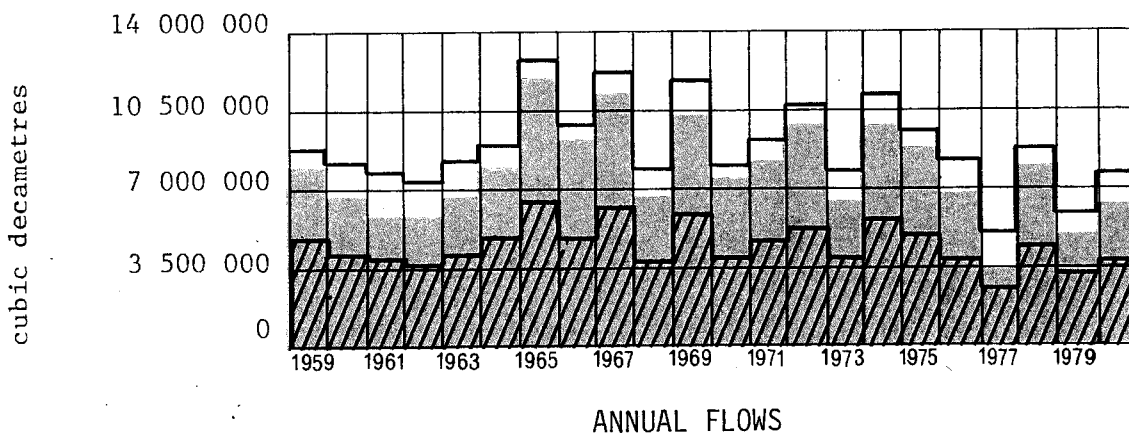
SOUTH SASKATCHEWAN RIVER --- BELOW JUNCTION WITH RED DEER RIVER

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED DISCHARGES	124 000	156 000	229 000	714 000	944 000	1 880 000	542 000	368 000	284 000	408 000	367 000	234 000	6 260 000
NATURAL FLOW	82 900	104 000	184 000	710 000	1 580 000	2 280 000	913 000	646 000	521 000	497 000	299 000	173 000	7 980 000

Recorded flows for the years 1970 to 1978 inclusive are based on WSC's preliminary data.

Natural flow for the South Saskatchewan and Red Deer Rivers have been calculated using WSC's preliminary data and using the methodology described in "Natural Flow Report, South Saskatchewan River Below Red Deer River" March 1974 (PPWB Report No. 45).

Quantities shown in table have been routed to Alberta boundary.



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

1980 MONTHLY DATA

RECORDED AND NATURAL FLOWS - SUMMARY  
 SELECTED INTERPROVINCIAL STREAMS  
 (CUBIC DECAMETRES ROUNDED TO THREE SIGNIFICANT FIGURES)

SUMMARY FOR THE YEAR 1980

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. TOTALS

NORTH SASKATCHEWAN -- ALBERTA-SASKATCHEWAN BOUNDARY (NEAR DEER CREEK)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED FLOW	263 000	309 000	402 000	913 000	572 000	2 150 000	1 270 000	681 000	615 000	482 000	412 000	272 000	8 340 000
NATURAL FLOW	27 100	45 400	88 600	773 000	802 000	2 490 000	1 570 000	914 000	713 000	452 000	261 000	94 600	8 230 000

CHURCHILL RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (AT SANDY BAY)

RECORDED FLOW	2 320 000	2 220 000	2 290 000	2 190 000	1 800 000	1 790 000	1 840 000	1 960 000	1 860 000	1 990 000	1 970 000	2 210 000	24 400 000
NATURAL FLOW	2 160 000	1 830 000	1 810 000	1 860 000	1 710 000	1 470 000	1 610 000	1 750 000	1 660 000	1 670 000	1 700 000	1 850 000	21 100 000

SASKATCHEWAN RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY

RECORDED FLOW	753 000	1 230 000	1 320 000	1 810 000	1 500 000	1 870 000	2 070 000	1 170 000	1 020 000	1 350 000	1 040 000	627 000	15 800 000
APPORTIONMENT FLOW	244 000	484 000	750 000	2 400 000	2 120 000	2 910 000	2 830 000	1 410 000	1 160 000	1 240 000	897 000	151 000	16 600 000

QU'APPELLE RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR WELBY)

RECORDED FLOW	14 700	9 270	7 400	30 700	11 000	2 280	1 340	859	522	9 500	17 800	8 420	114 000
NATURAL FLOW	0	0	5 240	32 300	21 300	3 450	448	196	24	0	0	0	63 000

RECORDED DISCHARGE - SUMMARY  
 SELECTED INTERPROVINCIAL STREAMS  
 (CUBIC DECAMETRES ROUNDED TO THREE SIGNIFICANT FIGURES)  
 FOR THE YEAR 1980

JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
<u>BEAVER RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY (AT COLD LAKE)</u>												
10 200	7 600	8 160	84 400	33 600	19 200	12 400	78 700	82 400	74 100	30 400	16 100	457 000
<u>BATTLE RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY (NEAR UNWIN)</u>												
1 520	957	1 460	61 300	31 900	15 100	25 200	17 900	22 100	29 200	17 900	8 040	233 000
<u>CARROT RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR TURNBERRY)</u>												
3 000	2 520	4 480	87 800	105 000	14 200	24 600	11 800	22 800	33 000	8 700	4 160	322 000
<u>RED DEER RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR ERWOOD)</u>												
1 900	2 170	2 410	58 700	17 300	3 410	12 300	16 600	17 500	24 100	5 100	2 230	164 000
<u>ASSINIBOINE RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (AT KAMSACK)</u>												
1210	936	959	74 700	13 700	1 630	1 160	307	201	707	1 290	853	97 700

Recorded flows for the years 1970 to 1978 inclusive are based on WSC's preliminary data.



**WATER QUALITY MONITORING**

### PPWB Water Quality Monitoring Program

At the request of the Prairie Provinces Water Board, the Water Quality Branch of Environment Canada continued reporting monthly or quarterly data collected at the 11 PPWB monitoring stations for the 90 water quality parameters listed on page 29.

This data has been collected to establish the range of existing parameter concentrations and estimate compliance with the 1973 PPWB Water Quality Objectives for the parameters marked with an asterisk. (\*)

This program started in April 1974 and has been carried out continuously since that time. All data obtained at these 11 stations from April 1, 1974 to December 31, 1980 have been validated, published in the PPWB Annual Water Quality Reports, and distributed to member agencies.

\*Aldrin  
 Alkalinity, phenol.  
 Alkalinity, total  
 N-Alkanes  
 Aromatic Hydrocarbons  
 \*Arsenic, diss.  
 \*Barium, total  
 BHC-alpha  
 BHC-gamma(Lindane)  
 \*Boron  
 \*Cadmium, total  
 Calcium, diss.  
 Carbon, diss., inorganic  
 Carbon, diss., organic  
 Carbon, organic, particulate  
 Carbon, total, organic  
 Chlordane-alpha  
 Chlordane-gamma  
 Chloride, diss.  
 Chlorophyll A  
 Cobalt, Total  
 Coliforms, fecal  
 Coliforms, total  
 \*Color, apparent  
 \*Copper, Total  
 \*Cyanide, total  
 \*P,P-DDD  
 \*P,P-DDE  
 \*O,P-DDT  
 \*P,P-DDT  
 \*Dieldrin  
 Endosulfan-alpha  
 Endosulfan-beta  
 \*Endrin  
 \*Fluoride, diss.  
 Hardness, total, CaCO<sub>3</sub>  
 \*Heptachlor  
 \*Heptachlor, epoxide  
 Hexachloro-benzene  
 \*Iron, diss.

\*Lead, Total  
 Magnesium, diss.  
 \*Manganese, diss.  
 MCPA  
 \*Mercury, total  
 P,P-methoxychlor  
 Mirex  
 Nickel, Total  
 Nitrogen, diss., NO<sub>3</sub>+NO<sub>2</sub>  
 Nitrogen, particulate  
 \*Nitrogen, total, calc.  
 Nitrogen, total, diss.  
 \*Oil and Grease  
 \*Oxygen, diss., DO  
 PCB, Arochlor 1248  
 PCB, Arochlor 1254  
 PCB, Arochlor 1260  
 \*pH  
 \*Phenolics  
 \*Phosphorous, total, diss.  
 \*Phosphorous, total, phosphate  
 Picloram (Tordon)  
 Potassium, diss.  
 Residue, fixed, nonfilterable  
 \*Residue, nonfilterable  
 \*Selenium, diss.  
 Silica, reactive  
 Silvex  
 \*Sodium, diss.  
 Specific Conductance  
 Sulphate, diss.  
 Surfactants (MBAS)  
 \*Temperature  
 \*Turbidity  
 Vanadium, Total  
 \*Zinc, Total  
 2,4-D  
 2,4-DB  
 2,4-DP  
 2,4,5-T

\* Objectives exist





**APPENDIX**





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## PPWB MEMBERS

Chairman

J.P. Bruce  
(August 1977 - September 1980)

Assistant Deputy Minister  
Environmental Conservation Service  
Environment Canada

Chairman

Dr. W.B. Mountain  
(Appointed September 29, 1980)

Assistant Deputy Minister  
Environmental Conservation Service  
Environment Canada

Dr. H.M. Hill

Director General  
Prairie Farm Rehabilitation Administration  
Department of Regional Economic Expansion

Mr. R.E. Bailey

Special Projects Director  
Alberta Environment

Mr. S.R. Blackwell

Executive Director  
Water Management Service  
Saskatchewan Environment

Mr. T.E. Weber

Director  
Water Resources Branch  
Manitoba Department of Natural Resources

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Secretary

Mr. E.W. Allison

Water Quality Analyst  
PPWB Secretariat

## ALTERNATE MEMBERS

Mr. D.A. Davis	Regional Director Western and Northern Region Inland Waters Directorate Environmental Management Service Environment Canada
Mr. G.S. Brown	Director Soil and Water Conservation Branch Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
Mr. P.G. Melnychuk	Assistant Deputy Minister Environmental Engineering Support Services Alberta Environment
Mr. D.L. MacLeod	Director Hydrology Branch Water Management Service Saskatchewan Environment
Mr. N. Mudry	Chief Water Management Water Resources Branch Manitoba Department of Natural Resources

# 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.

## Current Members

R.B. Godwin <small>Chairman</small>	Executive Director Prairie Provinces Water Board
G.H. Morton	Water Resources Branch Environment Canada
D.W. Lawson	Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
R.K. Deeprose	Environmental Engineering Support Services Alberta Environment
V.M. Austford	Water Resources Branch Manitoba Department of Natural Resources
D.L. MacLeod	Hydrology Branch Saskatchewan Environment
R.F. Hopkinson	Atmospheric Environment Service Environment Canada
<hr/>	
A.J. Chen <small>Secretary</small>	Operations Engineer PPWB 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

R.B. Godwin <small>Chairman</small>	Executive Director Prairie Provinces Water Board
K.W. Reid	Water Quality Branch Environment Canada
D.W. Lawson	Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
J.N. Warrener	Environmental Management Division Manitoba Department of Consumer and Corporate Affairs and the Environment
R.A. McDonald	Water Pollution Control Branch Saskatchewan Environment
P.G. Shewchuk	Standards and Approvals Division Alberta Environment
<hr/>	
E.W. Allison <small>Secretary</small>	Water Quality Analyst PPWB Secretariat



# COMMITTEE ON INTERJURISDICTIONAL AGREEMENTS ADMINISTRATION

It was agreed that a committee consisting of the Executive Director, one member from Saskatchewan, one member from Alberta, and Mr. E.F. Durant be struck to handle the problem of developing a methodology for the efficient administration of interjurisdictional agreements, particularly as regards Battle and Lodge Creek Basins.

(8:35: March 20, 1973)

## Members

R.B. Godwin <small>Chairman</small>	Executive Director Prairie Provinces Water Board
B.N. Johnson	Inland Waters Directorate Environment Canada
A.L. Jones	Water Rights Branch Saskatchewan Environment
B.W. Boyson	Water Resources Management Division Alberta Environment

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A.J. Chen <small>Secretary</small>	Operations Engineer PPWB Secretariat
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# COMMITTEE ON WATER DEMAND

## Terms of Reference

The Committee on Water Demand shall be composed of one member representing each of the Provinces of Alberta, Saskatchewan and Manitoba, two members representing Canada, and the Executive Director of the Prairie Provinces Water Board who shall be Chairman. The Committee shall function during the life of the Water Demand Study in the Saskatchewan-Nelson Basin and shall have the responsibility of providing technical guidance and financial management for the Water Demand Study on behalf of the Board.

The Water Demand Study shall be divided into two parts. Part One shall be done under the auspices of the Prairie Provinces Water Board and consist of a study of water demand based on current needs and historical uses in accordance with the Terms of Reference for Part One. Part Two may be done at a later date and would provide estimates for future water demands. Throughout Part One of the study the Committee shall: monitor and oversee the technical and financial aspects of the study as directed by the Board; ensure that there is no duplication of studies; report regularly to the Board on the progress of the study.

Members

R.B. Godwin Chairman	Executive Director Prairie Provinces Water Board
H. Foerstel	Planning Division Water Planning and Management Branch Environment Canada
V.M. Austford	Water Resources Branch Manitoba Department of Natural Resources
R.L. Kellow (November 1975 - February 1981)	Policy, Planning & Research Branch Saskatchewan Environment
J.E. Foraie (Appointed - February 20, 1981)	Environmental Assessment Secretariat Saskatchewan Environment
C. Primus	Planning Division Alberta Environment
G.T. Forsyth (November 1975 - September 1980)	Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
B.T. Abrahamson (Appointed - October 6, 1980)	Hydrology Division Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
<hr/>	
E.W. Allison Secretary	Water Quality Analyst PPWB Secretariat

# COMMITTEE ON GROUNDWATER

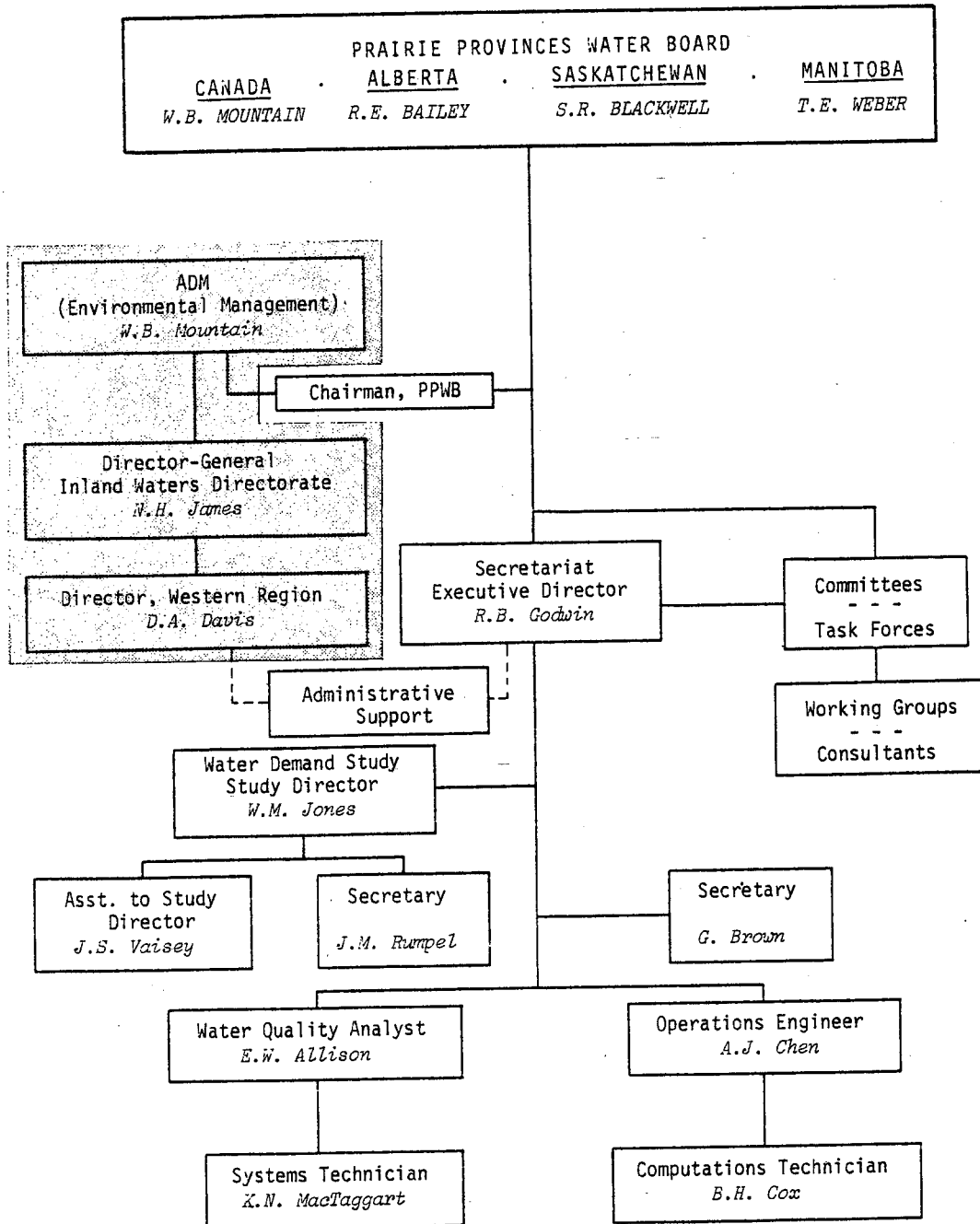
It was agreed that the Committee on Groundwater should be a continuing committee of the Board, and that it should prepare and present, at the May 1981 Board meeting, draft terms of reference defining its responsibilities.

(PPWB Board Minute #24-64)

## Members

R.B. Godwin <small>Chairman</small>	Executive Director Prairie Provinces Water Board
D.H. Lennox <small>(May 1980 - November 1980)</small>	National Hydrology Research Institute Environment Canada
J.A. Gilliland <small>(Appointed December 1981)</small>	National Hydrology Research Institute Environment Canada
D.H. Pollock	Geology and Air Surveys Division Prairie Farm Rehabilitation Administration Department of Regional Economic Expansion
H.A. Kerr	Earth Sciences Division Alberta Environment
T.W. Rey <small>(May 1980 - January 1981)</small>	Groundwater Division Saskatchewan Environment
R.J. Stewart <small>(Appointed February 1981)</small>	Groundwater Division Saskatchewan Environment
L. Gray	Water Resources Branch Manitoba Department of Natural Resources
<hr/>	
A.J. Chen <small>Secretary</small>	Operations Engineer PPWB Secretariat

# ORGANIZATION CHART



# STATEMENT OF EXPENDITURES

	<u>Final Claim</u>		
	<u>1978-79</u>	<u>1979-80</u>	<u>1980-81</u>
Salaries	99,307	185,691	222,961
Travel and Transportation	20,344	24,421	21,011
Postage, Freight and Express	195	361	475
Telephone and Telegraph	3,733	5,084	6,275
Professional and Special Studies	59,656	246,348	157,062
Computing Services	7,744	6,153	13,673
Stenographic and Typing Services	6,818	6,444	5,223
Miscellaneous Special Services	712	4,361	----
Accommodation Rental	11,867	12,000	12,000
Computer Equipment Rentals	1,282	1,332	742
Photocopying and Office Equipment Rentals	2,141	2,451	24,508
Furniture and Fixtures	3,837	1,132	123
Stationery, Printed Matter & Office Supplies	6,472	4,509	3,463
Miscellaneous	369	100	719
	<u>\$224,477</u>	<u>\$500,387</u>	<u>\$468,235</u>

Final Claim includes Water Demand Study expenditures.

<u>Shares:</u>	<u>1978-79</u>	<u>1979-80</u>	<u>1980-81</u>
Canada : one half	112,238	250,194	234,118
Alberta : one sixth	37,413	83,398	78,039
Manitoba : one sixth	37,413	83,398	78,039
Saskatchewan : one sixth	37,413	83,398	78,039

## Previous Board Expenditures

Fiscal 1970-71	0
Fiscal 1971-72	105,174
Fiscal 1972-73	136,816
Fiscal 1973-74	158,274
Fiscal 1974-75	109,547
Fiscal 1975-76	143,805
Fiscal 1976-77	139,381
Fiscal 1977-78	163,008

FINAL CLAIM

For expenditures in accordance with the Prairie Provinces Water Board Agreement dated October 30, 1969. (See Section 10, Schedule C and Section 15 of the By-laws).

FINANCIAL YEAR 1980-81

	<u>SECRETARIAT</u>	<u>WATER DEMAND STUDY</u>	<u>TOTALS</u>
1. Salaries	\$152,031.53	\$ 70,929.79	\$222,961.32
2. Travel and Transportation	9,128.10	11,882.93	21,011.03
3. Postage, Freight and Express	347.73	127.00	474.73
4. Telephone and Telegraph	4,200.39	2,074.70	6,275.09
5. Professional and Special Services	19,323.18	137,738.51	157,061.69
6. Computing Services	13,673.60	---	13,673.60
7. Stenographic Services	4,827.05	396.00	5,223.05
8. Miscellaneous Special Services	---	---	---
9. Accommodation Rental	12,000.00	---	12,000.00
10. Computer Equipment Rentals	741.69	---	741.69
11. Photocopying and Other Equipment Rentals	13,805.71	10,702.23	24,507.94
12. Furniture and Fixtures	22.00	100.60	122.60
13. Stationery, Printed Matter and Supplies	1,005.96	2,456.86	3,462.82
14. Miscellaneous	389.77	329.62	719.39
TOTAL	<u>\$231,496.71</u>	<u>\$236,738.24</u>	<u>\$468,234.95</u>

Each Province's Share of Expenditures (one-sixth) = \$78,039

I hereby certify that to the best of my knowledge and belief, the works in respect of which this claim is made have been satisfactorily performed and that the amount claimed is properly chargeable under the terms of the Prairie Provinces Water Board Agreement dated October 30, 1969.

Original signed by R.B. Godwin  
Executive Director  
Prairie Provinces Water Board

I hereby certify the amounts shown are appropriately documented by the Federal Department of Environment and represent expenditures for PPWB purposes.

Original signed by D.A. Davis  
D.A. Davis  
Regional Director  
EMS - Environment Canada

**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 HEREOF 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.
- (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.

"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

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.

"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. Once every three years, commencing with fiscal 1981-82, these claims shall be audited and shall bear a Canada audit certificate. (Amended 1980)*



- (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 six (6) months after the end of the financial year, the Chairman shall submit to the Ministers the Annual Report of the Board. (Amended 1980)*

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

*Section 15(c) amended at  
PPWB Meeting No. 23 - May 5, 1980.*

*Section 16 amended at  
PPWB Meeting No. 24 - Nov. 3, 1980.*

# 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



