

PRAIRIE PROVINCES WATER BOARD

Preliminary Studies  
for the Development of  
INTEGRATED BASIN PLANS  
FOR THE  
NELSON RIVER DRAINAGE BASIN

VOLUME III

A P P E N D I X XIII

ANNOTATED BIBLIOGRAPHY

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APPENDIX XIII

ANNOTATED BIBLIOGRAPHY

Previous studies and reports pertaining to the Saskatchewan-Nelson River Basin have been reviewed. This Appendix gives a brief summary of these reports which have been categorized into five main types: Basin, Project, Annual, Technical Data, and General. The reports have been further arranged, alphabetically in the case of Basin and Project reports, and chronologically in the other three groupings. Each report has been assigned a number in order as they appear.

Cross-referencing has been achieved in the subject which appears on the following page. The numbers listed under each subject heading refer to reports dealing therewith.

It is realized that this bibliography is not complete. However, the more important reports which will be referred to in an integrated development study are included.

BIBLIOGRAPHY SUBJECT INDEX

<u>Subject</u>	<u>Reference Numbers</u>
Agriculture	8, 9, 18, 20, 21, 29, 30, 44, 45, 48, 50, 66, 67, 72, 90, 114, 116, 118, 122, 123, 125, 126, 128, 129, 130, 131, 132, 138, 144, 145, 153.
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<u>Subject</u>	<u>Reference Numbers</u>
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Water Resources	110, 111, 113, 115, 117, 119, 124, 134, 135, 146, 157.
Water Studies	2, 3, 4, 5, 8, 9, 11, 12, 16, 18, 19, 24, 25, 46, 51, 59, 71, 127.
Urban Water Supply	8, 37, 48, 50.

BASIN REPORTS

BOW RIVER

1. Canada, Department of the Interior, Water Resources Branch, "Bow River Power and Storage Investigations" by M. C. Hendry. Published, 1914.

Abstract - This is a complete study of the Bow River and its tributaries upstream from Calgary. It contains maps, plans and detailed information on existing and possible power and storage developments.

2. Alberta, Department of Water Resources, "Study of the Available Supply of Water in the Bow River For Irrigation and Power" by F. R. Burfield. Unpublished, 1945.

Abstract - This report examines the water supply picture of the Bow River and attempts to determine the best methods of utilizing the available water for irrigation and power under existing and full development.

3. Canada, Department of Agriculture, P.F.R.A. "Water Supply and Utilization in the Bow River Watershed", by Hydrology Division. Unpublished, 1955.

Abstract - This water supply study reviews the adequacy of the Bow River to supply hydro power and irrigation developments within the basin and points out the need of improved control measures.

BRIGHTWATER CREEK

4. Canada, Department of Agriculture, P.F.R.A. "Water Supply and Utilization in the Brightwater Creek Basin", by Hydrology Division, Unpublished, 1956.

Abstract - This report evaluates the water supply in the basin with a view to present and future irrigation, and considers the problems of drainage and flood control.

CARROT RIVER

5. Canada, Department of Agriculture, P.F.R.A. "Hydrology of Carrot River Floods", by Hydrology Division. Unpublished, 1956.

Abstract - Severe flooding along the Carrot River occurred in 1955 and 1956. Subsequently, a proposal was made for diversion of flood flows. The report outlines the hydrologic studies carried out for that purpose.

6. Canada, Department of Northern Affairs and National Resources, Water Resources Branch "Report on Floods in the Carrot River Basin 1957", by R. L. Carter. Unpublished, 1958.

Abstract - An account of the magnitude, extent and courses of the flooding in the Carrot River Basin in the spring of 1957 is given in this report.

#### NORTH SASKATCHEWAN RIVER

7. Canada, Department of Public Works "Report of the Survey of the North Saskatchewan River from Edmonton to Lake Winnipeg", by L. R. Voligny. Unpublished, 1917.

Abstract - This report contains detailed information of a survey carried out during the period 1910 - 1915 to ascertain the feasibility and cost of providing a navigable waterway for light draught vessels from Edmonton to Lake Winnipeg. Some information is also given on the possibility of hydro-power development between Prince Albert and Lake Winnipeg and on the creation of headwater storage for flood control and stream regulation.

#### QU'APPELLE RIVER

8. Canada, Department of Agriculture, P.F.R.A. "Drought and Flood in the Qu'Appelle Watershed" by Hydrology Division. Unpublished, 1958.

Abstract - This report summarizes all the water supply and flood studies made by P.F.R.A. on the Qu'Appelle Basin, and discusses the feasibility of various measures for drought and flood relief.

#### ROSS CREEK

9. Canada, Department of Agriculture, P.F.R.A. "Water Supply and Irrigation in the Ross Creek Basin" by Hydrology Division. Unpublished, 1956.

Abstract - Water supply studies were carried out to determine ultimate irrigation possibilities in the Ross Creek Basin with efficient utilization of the available water resources.

#### SASKATCHEWAN RIVER

10. The Engineering Institute of Canada Journal, "The Saskatchewan River and Manitoba's Water Problem" by D. M. Stephens, Deputy Minister of Mines and Resources, Manitoba. Published, September, 1948.

Abstract - Primarily, this paper is a statement of Manitoba's claims on Saskatchewan River water. It discusses hydro production and industrial development in Manitoba as opposed to irrigation and farm production in Saskatchewan and Alberta, and emphasizes the need for a comprehensive study of the Saskatchewan Basin.

11. Prairie Provinces Water Board Report #3 "Preliminary Effects of Certain Major Projects in the Saskatchewan River Drainage Basin". Unpublished, 1951.

Abstract - This report, with its two appendices, outlines the results of studies carried out to indicate (for the period 1911 to 1952) the effect on stream flows at the Alberta-Saskatchewan Boundary, Saskatoon, The Forks and The Pas of four separate conditions of development:

- A - after Alberta's 1949 request;
- B - same as "A" plus some additional projects in Alberta;
- C - same as "A" plus full development of the South Saskatchewan River Project;
- D - same as "B" plus full development of the South Saskatchewan River Project plus other small Saskatchewan projects.

12. Prairie Provinces Water Board Report #4, "Comparison of Two Alternative Developments in the Saskatchewan River Basin". Unpublished, 1951.

Abstract - This study compares the effect of various developments in terms of acres irrigated, kilowatt hours of energy produced and costs. Two basic proposals are considered: (a) the irrigation of more than 800,000 acres in the Red Deer Project in Alberta and Saskatchewan by utilizing the waters of the Red Deer River and diversions from the Clearwater and North Saskatchewan Rivers; (b) the irrigation of 350,000 acres in Alberta from the Red Deer and Clearwater Rivers plus the South Saskatchewan River Project.

13. Prairie Provinces Water Board, "An Introductory and Preliminary Statement of Some Significant Physical Factors Relevant to Utilizing Saskatchewan River Water" by J. A. Boan and C. C. Spence. Unpublished, 1954.

Abstract - In general terms this preliminary report sets out some of the basic considerations and inadequacies of data which are relevant to an overall study of the Saskatchewan River Basin.



14. Canada, Department of Mines and Technical Surveys, "Industrial Water Resources of Canada Water Survey Report No. 7, Saskatchewan River Drainage Basin 1951 to 1952" by J. F. J. Thomas. Published, 1956.

Abstract - By means of tables and graphs this report presents the results of a chemical analysis of surface waters and municipal water supplies at various points in the Saskatchewan River Drainage Basin, during the years 1951 and 1952.

#### SASKATCHEWAN-NELSON RIVER

15. Canada, Department of Agriculture, P.F.R.A. "Full Development Possibilities in the Saskatchewan River Basin", Hydrology Division Report #1. Unpublished, 1952.

Abstract - This report reviews the more important development possibilities in the Saskatchewan-Nelson River Drainage Basin. It also reviews the status of data on meteorology, stream gauging, stream flow forecasting, quality of water, groundwater and soils, and suggests how deficiencies in this basic data could be relieved.

16. Lakes Winnipeg and Manitoba Board, "Report on Measures for the Control of the Waters of Lakes Winnipeg and Manitoba". Published, 1958.

Abstract - Detailed studies were carried out by the "Lakes Winnipeg and Manitoba Board" primarily to determine the effects of regulation of the levels of Lakes Manitoba and Winnipeg in relation of flood control and hydro power. These studies are fully reported on in 8 Appendices as follows:

#### Supplementary Volume I

- Appendix 1: Geography and History of the Area.  
Appendix 2: Hydrologic Studies.

#### Supplementary Volume II

- Appendix 3: Nelson River Power Potential.  
Appendix 4: Lake Winnipeg Regulations for Flood Control.  
Appendix 5: Lake Manitoba Regulation for Flood Control.  
Appendix 6: Lower Saskatchewan River Regulation.  
Appendix 7: Lower Assiniboine River Regulation.  
Appendix 8: Lake Regulation for Power Development.

SOUTH SASKATCHEWAN RIVER

17. Canada, Department of Northern Affairs and National Resources, Water Resources Branch, "Floods in the South Saskatchewan River Basin, 1953" by E. P. Collier. Unpublished, 1957.

Abstract - In this report a discussion is given of the causes and effects of the floods of 1953 on the South Saskatchewan River Basin. Stream flow data and hydrographs are presented for a number of hydrometric stations in the basin.

SWIFT CURRENT CREEK

18. Canada, Department of Agriculture, P.F.R.A., "Water Supply and Irrigation in the Swift Current Creek Basin", Hydrology Division, Report #7.

Abstract - To evaluate the water supply of the Swift Current Creek Basin and to determine the extent of future irrigation development there, studies were carried out for the period 1921 to 1943. The results of these studies are presented in this report.

PROJECT REPORTS

BOW RIVER IRRIGATION PROJECT

19. Canada, Department of Agriculture, P.F.R.A., "Bow River Development Studies", by W. M. Myers. Unpublished, 1951.

Abstract - This water supply study was carried out to assess existing and ultimate demands for irrigation and to estimate pumping power requirements for the Bow River Project.

20. Canada, Department of Agriculture, P.F.R.A., "Policy and Procedure, Settlement and Operation Bow River Project", published, 1953.

Abstract - This report reviews the policy of the Government of Canada for the movement of farmers from lands unsuitable for cultivation, to the Bow River Project and sets out procedures and regulations for that project.

21. Canada, Department of Agriculture, P.F.R.A., "The Bow River Irrigation Project, by D. W. Kirk. Published, 1955.

Abstract - This report summarizes the history and development of the Bow River Irrigation Project up to and including its purchase by the Government of Canada in 1950. It contains an interesting list of references.

FORT A LA CORNE POWER PROJECT

22. Saskatchewan Department of Natural Resources, "Supplement to Report of 1931 on Power Development and Transmission--Fort a la Corne" by H. G. Acres and Co. Unpublished, 1946.

Abstract - To evaluate the feasibility of hydro-electric power development at a site on the Saskatchewan River, adjacent to Fort a la Corne, a detailed study was made. Information on the study and the conclusions reached are presented in this report. More recent investigations of this and other nearby sites have been conducted for the Saskatchewan Power Corporation.

RED DEER RIVER DIVERSION PROJECT (also known as "North Saskatchewan Project" and "William Pearce Scheme")

23. Canada, Department of the Interior Reclamation Service, "Report on the Proposed North Saskatchewan Project", by D. W. Hays. Unpublished, 1922.

Abstract - This report summarizes the initial investigations which were undertaken by the Department of Irrigation to evaluate the irrigation scheme conceived by Mr. William Pearce.

24. Canada, Department of Interior, Reclamation and Irrigation Service, "Proposed North Saskatchewan Project" by B. Russell. Unpublished, 1923.

Abstract - In considerable detail this report sets out the studies and cost estimates that were prepared to evaluate various alternatives for irrigation of the proposed William Pearce Scheme.

25. Canada, Department of Agriculture, P.F.R.A., "General Report Proposed Red Deer River Diversion Project" by S. H. Hawkins. Unpublished, 1947.

Abstract - This might be described as a progress report. It reviews early proposals for development of this project and contains preliminary cost estimates of the most feasible alternatives.

26. Alberta, Department of Water Resources, "North Saskatchewan Project", by A. G. Underhill. Unpublished, 1951.

Abstract - This is a preliminary report on the comparative cost of development of the Red Deer Diversion and South Saskatchewan River Project independently and in combination with one another.

27. Alberta, Department of Resources, "A Preliminary Report on the Proposed William Pearce Project" by A. G. Underhill. Unpublished, 1953.

Abstract - This is a general report prepared to acquaint the members of the Prairie Provinces Water Board with the William Pearce Project as presently envisioned by the Province of Alberta. Two alternative schemes are outlined.

#### SASKATCHEWAN RIVER RECLAMATION PROJECT

28. Canada, Department of the Interior, Water Power Branch, "Report on the Pasquia Reclamation Project" by T. H. Dunn. Published, 1914.

Abstract - This report contains information on investigations carried out in 1913 and 1914 to determine the possibility of lowering Cedar Lake and subsequently reclaiming the low lying lands in the Saskatchewan Delta region. It also contains extracts from a report of investigations on the same project made in 1911 by William Ogilvie.

29. Canada, Department of the Interior Water Power and Reclamation Service, "Carrot River Reclamation Project", by G. F. Horsey and W. C. Warrent. Unpublished, 1924.

Abstract - Investigations were carried out during the period 1921 - 1923 with a view to reclaiming the large area of flat swamp lands lying between the Saskatchewan and Carrot Rivers and the Pasquia and Carrot Rivers, which were subject to periodic flooding by the Saskatchewan River. Various reclamation proposals and cost estimates were prepared and reported on in this report.

30. Manitoba, Department of Mines and Resources, "Preliminary Report on the Carrot River Survey", by F. W. Brodrick and S. E. Chernick. Unpublished, 1946.

Abstract - This report outlines the agricultural possibilities of the Pasquia area based on a consideration of soils, topography and the success of farmers already established in the area. Recommendations for development of the area are given.

31. Manitoba Soil Survey, "Preliminary Report on the Classification of Land in the Carrot River Area", by J. H. Ellis and J. A. Barr. Unpublished, 1950.

Abstract - By means of soil-type maps and descriptive notes this report presents a brief account of soil types in the Pasquia Area.

32. Saskatchewan Soil Survey, "Report on the Soils of the Lower Saskatchewan Valley", by J. S. Clayton and J. G. Ellis. Unpublished, 1952.

Abstract - An account of a preliminary soil survey of the delta area bounded by the Saskatchewan and Carrot Rivers is given in this report. The soils of the area are described in terms of associations and complexes.

33. Consulting Engineers, Haarlem, Holland "Report on Drainage of Pasquia Reclamation Project" by N. Biezeveld. Unpublished, 1953.

Abstract - This report gives a detailed proposal for drainage of the Pasquia Area. The layout of drainage canals, pumping plants and other pertinent works is shown on plans; cost estimates and quantities are presented for every phase of the project.

34. Canada, Department of Agriculture, P.F.R.A., "Report Saskatchewan River Reclamation Project", by Winnipeg Regional Office. Unpublished, 1956.

Abstract - During the period 1951 to 1956, investigations and surveys were carried out by the Winnipeg Regional Office of P.F.R.A. to determine the engineering feasibility of reclaiming land in the Saskatchewan River Delta in the Province of Saskatchewan and Manitoba. This report describes these investigations, discusses the various possibilities and summarizes the findings.

In the course of these studies a number of progress and interim reports were prepared. Abstracts of these reports were not made since a fair indication is given by their titles which are listed below in chronological order.

Interim Report: "Pasquia Reclamation Project near The Pas", October 20, 1951.

Progress Report: "Saskatchewan River Reclamation Project Pasquia Area", November 1, 1951.

Interim Report: "Outline of a Study on the Saskatchewan River Reclamation Project", February, 1952.

Progress Report: "Summary Report of the Hydrometric Survey of the Saskatchewan River Reclamation Project During the Summer of 1952", September, 1952.

Interim Report No. 1: "Saskatchewan River Reclamation Project, Degree of Protection", April, 1953.

Interim Report No. 2: "Saskatchewan River Reclamation Project, Dykes--Pasquia Area", April, 1953.

Interim Report No. 3: "Saskatchewan River Reclamation Project, Hydrometric Surveys, 1953", July, 1953.

Interim Report No. 4: "Saskatchewan River Reclamation Project, History and Geology", November, 1953.

Interim Report No. 5: "Saskatchewan River Reclamation Project, Drainage--Pasquia Area", February, 1954.

- Interim Report No. 6: "Saskatchewan River Reclamation Project, Outline of Investigations", March, 1954.
- Interim Report No. 7: "Saskatchewan River Reclamation Project, Hydrologic Studies", March, 1954.
- Interim Report No. 8: "Saskatchewan River Reclamation Project, Hydrometric Surveys 1954", November, 1954.
- Interim Report No. 9: "Saskatchewan River Reclamation Project, Notes on River Morphology", May, 1955.
- Interim Report No. 10: "Saskatchewan River Reclamation Project, Regime Saskatchewan River", December, 1955.
35. Canada, Department of Agriculture, P.F.R.A., "Observations of 1956 Spring Breakup on Saskatchewan River at Sipanok Channel Station", by Winnipeg Regional Office. Unpublished, 1956.
- Abstract - A pictorial account of the 1956 flood is given accompanied by brief descriptive notes.
36. Canada, Department of Agriculture, P.F.R.A., "Saskatchewan Delta Reclamation, Moose Lake Area" by Winnipeg Regional Office. Unpublished, 1959.
- Abstract - This report contains an engineering appraisal of the potential reclamation of 350,000 acres of land situated east of The Pas and north of the Saskatchewan and Summerberry Rivers and designated as the Moose Lake area. It was assumed in this study that Cedar Lake will be used as a storage reservoir for the Grand Rapids Power Development and will have a maximum elevation of 844.

#### SOUTH SASKATCHEWAN RIVER DIVERSION PROJECT

37. Canada, Department of the Interior, Water Power Branch, "Report on South Saskatchewan Water Supply Diversion Project," by H. E. M. Kenset. Published, 1914.
- Abstract - This is a report on the costs of various sources of power for pumping water from the South Saskatchewan River for the supply of cities and towns in southern and central Saskatchewan.

SOUTH SASKATCHEWAN RIVER DEVELOPMENT PROJECT

38. Canada, Department of Agriculture, P.F.R.A., "Interim Report of South Saskatchewan River Development", by G. L. MacKenzie. Unpublished, 1947.

Abstract - This report summarizes investigations which had been carried on since 1943 to determine the feasibility of constructing a dam on the South Saskatchewan River for the purposes of irrigation, power development and general benefits. It contains a bibliography of 15 other reports on file in the P.F.R.A. Office, Regina dealing with this project; many of these reports pertain to site subsoil investigations.

39. Canada, Department of Agriculture, P.F.R.A., "Engineering Features of the South Saskatchewan Irrigation Project" by G. L. MacKenzie. Unpublished, 1949.

Abstract - Engineering features of the proposed South Saskatchewan River dam at the Coteau Creek site are given in this report. These include estimates of the costs of the dam, reservoir, power facilities, pumping plants, canals and distribution system.

40. Canada, Department of Agriculture, P.F.R.A., "The Climate of the South Saskatchewan Irrigation Project", by B. W. Currie, University of Saskatchewan. Unpublished, 1949.

Abstract - This report evaluates the climate of Central Saskatchewan with a view to determining the effect of such factors as frost-free period, precipitation and temperature on the proposed irrigation scheme. Comparisons are made to areas in Southern Alberta where irrigation is successfully practised.

41. Canada, Department of Agriculture, P.F.R.A., "Soil Survey Report of the South Saskatchewan River Irrigation Project" by H. C. Moss, W. K. Janzen, and J. E. McClelland, University of Saskatchewan. Unpublished, 1949.

Abstract - This report summarizes the results of a close reconnaissance type soil survey carried out to evaluate the suitability of the land in the South Saskatchewan Project for irrigation use.

42. Canada, Department of Agriculture, P.F.R.A., "Land and Development Policy for Newly Created Irrigation District with Special Reference to South Saskatchewan Development Area" by C. C. Spence, Dominion Economics Division, University of Alberta. Unpublished, 1949.



Abstract - Considerations and recommendations for a sound land and development policy for the proposed South Saskatchewan Project result from a review of problems and procedures on existing irrigation schemes in Alberta and the United States.

43. Canada, Department of Agriculture, P.F.R.A., "Progress Report—Concluding Section of Recreation Report", by J. A. Boan. Unpublished, 1949.

Abstract - This report attempts to appraise the recreational value of the proposed South Saskatchewan reservoir.

44. Canada, Department of Agriculture, P.F.R.A., "An Economic Appraisal of the Irrigation Phase of the Proposed South Saskatchewan River Development", by H. Van Vliet, G. Haase and R. A. Stutt, University of Saskatchewan. Unpublished, 1951.

Abstract - This study is a preliminary investigation of the irrigation area of the South Saskatchewan Project relative to the kind of development which is likely to occur and the financial returns which may be expected.

45. Canada, Department of Agriculture, P.F.R.A., "An Appraisal of Market Possibilities for Specialty Crops in the Proposed Irrigation Area of Saskatchewan" by W. Darcovich. Unpublished, 1949.

Abstract - One phase of evaluating the economic feasibility of the proposed South Saskatchewan Irrigation Project was to determine the acreage requirements for various specialty crops such as sugar beets, vegetables and seed crops. Factors investigated included population and consumption.

46. Prairie Provinces Water Board Memorandum No. 3, "Water Supply Study for South Saskatchewan River Project". Unpublished, 1951.

Abstract - Water supply studies were undertaken for the South Saskatchewan River Project based upon two different stages of irrigation development in Alberta—1,256,000 and 1,700,000 acres. The results of these studies, presented in this report, show reservoir elevations and excesses of water during the period 1912-1948.

47. Prairie Provinces Water Board, "Memorandum on the Effect of Alberta Developments on the South Saskatchewan River Project". Unpublished, 1951.

Abstract - This report discusses the effect of developments in Alberta on future irrigation and power production in the South Saskatchewan Project.

48. Royal Commission on the South Saskatchewan River Project, "Report". Published, 1951.

Abstract - This report was prepared by the Commission in compliance with their instructions "to inquire whether the economic and social benefits of the South Saskatchewan River Project would be commensurate with the cost and whether the project represents the most profitable and desirable use which can be made of the physical resources involved".

49. Canada, Department of Agriculture, P.F.R.A., "South Saskatchewan River Project, Summary Report on Power at Site 10" by C.D. Smith. Unpublished, 1951.

Abstract - All information on power from the South Saskatchewan dam, as of 1951, is briefly summarized in this report. A preliminary design for the power house is made, based on the current scheme for power production.

50. Canada, Department of Agriculture, P.F.R.A. and Economics Division, Marketing Service, "South Saskatchewan River Project Summary Report of Investigations". Unpublished, 1951.

Abstract - This report summarizes the investigations undertaken in the period 1946-50 in exploring the feasibility of this development. It contains information on the following topics: agriculture, engineering, irrigation, power, municipal water supplies, recreation, stream control and other benefits.

51. Canada, Department of Agriculture, P.F.R.A., "Water Supply Study of the South Saskatchewan River Project" by Hydrology Division. Unpublished, 1952.

Abstract - This water supply study is based primarily on the results of work carried out by the Prairie Provinces Water Board. Uses of water from the reservoir were determined on a monthly basis for the period 1912 - 1948.

52. Canada, Department of Agriculture, P.F.R.A., "South Saskatchewan River Project Report on Silt Storage for Proposed Reservoir" by J. M. Wise. Unpublished, 1952.

Abstract - Based on a silt sampling program carried out on the South Saskatchewan River at the Outlook Traffic Bridge since 1948, an attempt is made to predict how rapidly sediment will accumulate in the proposed South Saskatchewan Reservoir.

53. Canada, Department of Agriculture, P.F.R.A., "Review of Royal Commission Report on South Saskatchewan Project". Unpublished, 1953.

Abstract - Certain phases of the Royal Commission report have been disputed by P.F.R.A. Data supporting these arguments are given.

54. Saskatchewan Irrigation Committee, "Saskatchewan Replies to the Royal Commission on the South Saskatchewan River Development Project". Published, 1953.

Abstract - The Saskatchewan Government has attempted in this brief to deal with and disprove many of the considerations and findings of the Royal Commission on the South Saskatchewan River Project.

55. Prairie Provinces Water Board, "Considerations Dealing with the Proposed South Saskatchewan River Project" by P.F.R.A. Unpublished, 1953.

Abstract - This memorandum attempts to point out some of the advantages of the South Saskatchewan Project not only for irrigation and power at the site but for benefits downstream. It also shows how this project would fit in with future developments in Alberta.

56. The Engineering Institute of Canada Journal "The South Saskatchewan River Project" by G. L. MacKenzie. Published, 1959.

Abstract - This is an up-to-date summary of all engineering features of the project.

#### SQUAW RAPIDS POWER PROJECT

57. Saskatchewan Power Corporation, "The Squaw Rapids Development" by Crippen-Wright, Consulting Engineers. Published, 1959.

Abstract - This report contains a summary of design and construction features for the Squaw Rapids Power Project.

ST. MARY-MILK RIVERS PROJECT

58. The Engineering Institute of Canada Journal, "The St. Mary-Milk River Irrigation Project" by G. L. MacKenzie, P.F.R.A. Published, September, 1948.

Abstract - Quote from the Engineering Journal, "Outlining the early history of the Alberta Railway and Irrigation Company Project at Lethbridge, Alberta its subsequent extension to irrigate additional areas, and the investigations and planning which have led up to Canada's decision to make use of her full share of these boundary waters, the author describes the design of the component structures and tells how they are being built".

59. Canada, Department of Agriculture, P.F.R.A., "St. Mary-Milk Rivers Project Progress Report", by W. L. Foss.

Abstract - With information on the layout of the project, water supply, the construction program and costs this report summarizes progress with respect to development of the project.

It contains a bibliography of some of the earlier reports on this project. Many others, not listed, may be found in P.F.R.A. files.

TECHNICAL DATA REPORTS

60. Canada, Department of the Interior, Dominion Water Power Branch, "Manitoba Hydrometric Survey, Water Resources Papers 1912 - 1918". Published.

Abstract - These papers summarize gauge height and discharge data obtained at stream measurement stations in Manitoba during the period 1912 - 1918.

61. Canada, Department of the Interior, Reclamation Service "Annual Surface Water Supply Papers on Hydrometric Surveys in the Provinces of Alberta and Saskatchewan" 1909 - 1919. Published.

Abstract - These papers summarize gauge height and discharge data obtained at stream measurement stations in Alberta and Saskatchewan during the period 1909 - 1919.

62. International Joint Commission "Water Supply of St. Mary and Milk Rivers 1898 - 1917" by B. E. Jones and R. J. Burley. Published, 1920.

Abstract - Gauge height and discharge data obtained at stream measurement stations in the St. Mary & Milk Rivers in Alberta and Montana are summarized for the period 1898 - 1917.

63. Canada, Department of Natural Resources, Canadian Pacific Railway Company, "Hydrography Extracts from Annual Reports Eastern Irrigation Section, 1915 - 1934". Unpublished.

Abstract - Discharge data for canals in the Eastern Irrigation District, for the period 1915-34, are summarized in this report.

64. Manitoba Economic Survey Board, "The Climate of Manitoba", by A. J. Connor, Department of Transport, meteorological Service. Published, 1939.

Abstract - By means of maps and tables climatic data for Manitoba are presented in a summary form.

65. Canada, Department of Natural Resources, Canadian Pacific Railway Company, "Hydrography Extracts from Annual Reports Western Irrigation District, 1911-43". Unpublished.

Abstract - This report summarizes discharge data and other hydrometric information obtained in the Western Irrigation District during the period 1911 - 1943.

66. University of Saskatchewan, "Soil Survey of Southern Saskatchewan from Township 1 to 48 inclusive", by J. Mitchell, H. C. Moss and J. S. Clayton. Published, 1944.

Abstract - Detailed information on surface soils in Southern Saskatchewan by means of maps and descriptive notes in this report.

67. University of Alberta, "Soils Survey Reports" by Department of Extension. Published, 1947.

Abstract - The province of Alberta has been divided into "areas" for soil survey purposes. Detailed information on soils within each area is published in the form of reports. In the years up to and including 1947, fourteen such area reports have been prepared.

68. Canada, Department of Transport, Meteorological Division", Climatic Summaries for Selected Meteorological Stations in the Dominion of Canada - Volume I". Published, 1947.

Abstract - This report gives in tabular form summaries of average values of mean and extreme temperature, mean and extreme humidity, sunshine and precipitation at stations across Canada.

69. University of Saskatchewan, College of Agriculture, "Rainfall Records for Saskatchewan" by the Department of Field Husbandry. Published, 1950.

Abstract - Precipitation data for the period 1883 - 1949 has been tabulated on an annual and seasonal basis for stations in Saskatchewan. Annual precipitation for certain key stations has been shown also in bar graph form.

70. Prairie Provinces Water Board Report No. 1, "Summary Report of Recorded and Natural Monthly Flows at Certain Points on the Saskatchewan River System". Unpublished, 1950.

Abstract - By means of tables this report presents the recorded and natural monthly flows of the Saskatchewan River at the following points: Alberta-Saskatchewan Boundary, Saskatoon, The Forks and The Pas. It also contains tables of annual uses of water by irrigation schemes in Alberta.

71. Prairie Provinces Water Board Report No. 2, "Stream Flows at Three Selected Points on South and Main Saskatchewan Rivers After Alberta's 1949 Request". Unpublished, 1950.

Abstract - In March, 1949, the Province of Alberta requested the P.P.W.B. to recommend allocation of water from the South Saskatchewan drainage basin in the amount of 2,237,000 acre feet per year for use on Alberta's existing irrigation projects and proposed extensions thereto. This report outlines the results of a study carried out to indicate how this allocation would affect the flow of the Saskatchewan River at the Alberta-Saskatchewan Boundary, Saskatoon and The Pas during the dry period 1923-48.

72. University of Saskatchewan, "Soil Survey of Saskatchewan Covering the Agriculturally Settled Areas North of Township 48", by J. Mitchell, H. C. Moss and J. S. Clayton. Published, 1950.

Abstract - This report presents detailed information on surface soils in Northern Saskatchewan.

73. Prairie Provinces Water Board Report No. 5, "Evaporation from Lakes and Reservoirs on the Canadian Prairies". Published, 1952.

Abstract - Studies were carried out and data prepared for use in estimating evaporation losses from any size reservoir on The Prairies. The original study provided information for the years 1921-50. This information has been extended to include later years by Water Board staff.

74. Canada, Department of Transport, Meteorological Division and National Research Council Division of Building Research, "Climatological Atlas of Canada" by M. K. Thomas. Published, 1953.

Abstract - This "Atlas" contains many maps and charts giving a general coverage of climatic variations throughout Canada.

75. Canada, Department of Transport, Meteorological Division, "Climatic Summaries for Selected Meteorological Stations in Canada - Addendum to Volume I". Published, 1954.

Abstract - This report gives average monthly and yearly values of temperature and precipitation at selected meteorological stations across Canada.

76. Canada, Department of Mines and Technical Surveys, Geological Survey of Canada, "Water Supply Papers of Alberta, Saskatchewan and Manitoba". Published 1936 to 1954.

Abstract - A total of 306 such water supply papers have been published covering municipalities on the Prairies: 12 in Manitoba, 264 in Saskatchewan and 30 in Alberta. These papers give details of wells and water quality, and some information on geology and its general relationship to groundwater supply.

77. Canada, Department of Transport, Meteorological Branch, "Mean Annual Temperatures and Running Mean Temperatures for Selected Canadian Stations" by R. W. Longley. Published, 1954.

Abstract - The data, indicated by the title of this report, has been presented in tabular form.

78. Canada, Department of Transport, Meteorological Branch, "Degree-Day Data for Selected Canadian Stations", by C. C. Boughner. Published, 1956.

Abstract - For use in determining heat requirements the monthly, seasonal and annual degree-day totals below 65° F. have been tabulated for selected major Canadian stations for the period September 1946 to August 1956.

79. Canada, Department of Transport, Meteorological Division, "Climatic Summaries for Selected Meteorological Stations in Canada - Volume III". Published, 1956.

Abstract - This report gives in tabular form summaries of data on frost, at selected stations across Canada.

80. Prairie Provinces Water Board Report No. 6, "Precipitation and Streamflow in the Mountain and Foothill Regions of the Saskatchewan River Basin" by A. H. Laycock. Published, 1957.

Abstract - This report outlines the approximate patterns of precipitation and streamflow in the mountain and foothill regions of Alberta and suggests ways in which watershed management might affect and be affected by the patterns outlined.

81. Canada, Department of Transport, Meteorological Branch, "Winter Season Snowfall Data" by M. K. Thomas. Published, 1957.

Abstract - Extreme, average and recent snowfall depths for all current synoptic stations are listed in the tables which comprise this circular.



82. Canada, Department of Northern Affairs and National Resources, Water Resources Branch, "Memorandum on Floods on South Saskatchewan River at Medicine Hat" by E.P. Collier. Unpublished, 1957.

Abstract - This memorandum brings together available information in the files of the Water Resources Branch on flood discharges in the South Saskatchewan River at Medicine Hat. It contains information on the extreme floods which occurred in the years 1897, 1902, 1908, 1923, and 1953.

83. Canada, Department of Transport, Meteorological Branch, "A Preliminary Investigation Into Break-up and Freeze-up Conditions in Canada" by F.E. Burbridge and J.R. Lauder. Published, 1957.

Abstract - "Information on the ice conditions on rivers and lakes in Canada is tabulated. Maps are drawn showing the average dates of break-up and freeze-up. A study of the meteorological conditions prior to break-up and freeze-up is made."

84. Lakes Winnipeg and Manitoba Board, "Report of Measures for the Control of the Waters of Lakes Winnipeg and Manitoba, Province of Manitoba Supplementary Volume III, Technical Data." Unpublished, 1958.

Abstract - Technical data prepared and processed in the course of studies leading up to the main report and supplementary Volumes I and II of that report have been assembled into Volume III. Two copies of this volume were made and filed with the governments in Ottawa and Winnipeg.

85. Canada, Department of Northern Affairs and National Resources, "Index of Stream Measurement Stations in the Arctic and Western Hudson Bay Drainage and Mississippi Drainage in Canada", by the Water Resources Branch. Published, 1959.

Abstract - All stream measurement stations which have operated and are being operated in this area are indexed and the period of record at each is given.

86. -----

87. Canada Department of Transport, Meteorological Division, "Climatic Summaries for Selected Meteorological Stations in Canada - Volume II". Published, 1959.

Abstract - This report gives in tabular form summaries of data on humidity and wind, at selected stations across Canada.

88. University of Saskatchewan, Department of Physics, "Prairie Provinces and North West Territories
- (i) Wind and Storms. Published, 1953.
  - (ii) Vegetative and Frost-Free Seasons. Published, 1959.
  - (iii) Precipitation. Published, 1953.
  - (iv) Temperature. Published, 1953.
  - (v) Ice and Soil Temperatures. Published, 1953.
  - (vi) Snowfall. Published, 1953."

by B. W. Currie.

Abstract - These reports were prepared to summarize climatic data for the Prairie Provinces and North West Territories. They contain descriptions of the physical characteristics of these data, tables and diagrams.

89. Canada, Department of Transport, Meteorological Branch, "Break-up and Freeze-up Dates of Rivers and Lakes in Canada." Published, 1959.

Abstract - By means of tables, this report lists all the data concerning break-up and freeze-up in Canada, which was available to the Meteorological Branch at that time.

90. Canada, Department of Transport, Meteorological Branch, "Growing Degree-Days in Canada" by C. C. Boughner and G. R. Kendall. Published, 1954.

Abstract - "Listings of accumulated degree-day totals above 42° F. are given for 1957 and 1958 for 146 Canadian stations along with charts showing the areal distribution of this parameter for Canada--Listings of calculated normal monthly and annual growing degree-day values are given for 80 stations."

91. National Research Council, Associate Committee on Geodesy and Geophysics, Subcommittee on Hydrology, "The Magnitude and Frequency of Floods on the Canadian Prairies" by E. F. Durrant and S. R. Blackwell, P.F.R.A. Hydrology Division. Unpublished, 1959.

Abstract - Annual flood peak data for 120 Prairie streams have been analysed and a regional approach indicated for determining flood probabilities.

92. Canada, Department of Transport, Meteorological Branch, "Temperature and Precipitation Normals for Canadian Weather Stations Based on the Period 1921-50" by Climatological Division. Published, 1959.

Abstract - "Monthly and annual averages of the daily mean temperature and monthly precipitation are shown in this circular for all Canadian stations which have had a record of observation long enough to make such a calculation possible on a practical basis over the period 1921 to 1950."

93. Canada, Department of Northern Affairs and National Resources, Water Resources Branch, Calgary. Snow Survey Reports as follows:

- (i) "International Snow Survey St. Mary River Drainage Basin," 1922 - 1959.
- (ii) "Cypress Hills Snow Survey," 1956 - 1959.
- (iii) "Bow River Snow Survey," 1937 - 1960.
- (iv) "Study of Glaciers in Banff and Jasper National Parks," 1945 to 1960.
- (v) "North Saskatchewan Snow Survey," 1955 - 1960. Unpublished.

Abstract - Snow surveys have been carried out in the above basins in the spring of each year. Reports have been prepared for each year shown, to summarize the results of these surveys in terms of water equivalents and snow depths.

94. U. S. Department of Agriculture, Soil Conservation Service and Montana Agricultural Experiment Station, "Snow Survey Measurements Montana and Northern Wyoming" Reports 1922 - 1960. Published.

Abstract - The results of snow surveys carried out during the period 1922 - 1960 are summarized in the form of annual reports.

95. Manitoba, Department of Mines and Natural Resources, Water Resources Branch, "Snow Surveys of Manitoba and Eastern Saskatchewan", 1952 - 1960. Unpublished.

Abstract - Snow surveys are run on courses in Manitoba and Eastern Saskatchewan on about mid-February and mid-March of each year. The water equivalent indicated for these courses is plotted on a map.

96. Canada, Department of the Interior and Department of Northern Affairs and National Resources "Annual Reports on Hydrometric Surveys in the Arctic and Western Hudson Bay Drainage in Alberta, Saskatchewan and Western Ontario". Published, 1920 - 1960.

Abstract - These reports contain a record of yearly information obtained at hydrometric stations with the area indicated.

97. U. S. Geological Survey "Surface Water Supply Papers of the United States; Hudson Bay, Upper Mississippi and Missouri Rivers". Published, 1901 - 1960.

Abstract - Streamflow data obtained at stations within this area of the United States are published for each year since 1901.

98. Canada, Department of Transport, Meteorological Division "Monthly Records of Meteorological Observation in Canada", 1895 - 1960.

Abstract - These reports contain tables of daily recorded temperature and precipitation data obtained at weather stations across Canada, in addition to monthly summaries of data on pressure, mean temperature, humidity, cloud, visibility and wind wherever it has been observed.

99. Canada, Department of Transport, Meteorological Branch, "Winter Snowfall Averages and Extremes at Synoptic Observing Stations". Published, 1960.

Abstract - For synoptic observing stations the following data has been tabulated: average snowfall, generally for the period 1921 - 1950; extremes of annual snowfall; the actual snowfall recorded during recent winters.

100. Canada, Department of Northern Affairs and National Resources, Water Resources Branch, Calgary: "Report on Return Flows from Irrigation Districts in Alberta, 1951 to 1959" by E. P. Collier. Unpublished, 1960.

Abstract - This report contains tables showing the measured and estimated data of annual diversions and return flows for the Western, Eastern and Bow River Irrigation Districts. It also contains graphs relating diversion and return flow data.

101. Prairie Provinces Water Board, "Aridity Study for the Prairies" by A. H. Laycock. Unpublished, 1960.

Abstract - Moisture deficits on The Prairies are determined by Thornthwaite's formula from a consideration of average precipitation, evapotranspiration, storage capacity of the soil and consumptive use. This data is shown by means of isolines on maps of the area.

ANNUAL REPORTS

The contents of annual reports are usually accounts of the year's activity of the department writing them and are adequately described by their titles. Therefore abstracts will not be given for this group; they will be listed chronologically, and in alphabetical order where possible.

102. Southern Alberta Land Company. Annual Reports (1909 - 1912)
103. Canada, Department of the Interior
  - (i) Annual Irrigation Reports, 1912 to 1915.
  - (ii) Irrigation Surveys and Inspections Reports, 1915-16 to 1918-19.
  - (iii) Annual Reports of the Reclamation Service, 1919-20 to 1922-23.
  - (iv) Annual Reports of the Water Power Branch, 1912-13 to 1922-23.
  - (v) Annual Reports of the Water Power and Reclamation Service, 1923-24 to 1928-29.
104. Canada, Department of Natural Resources, Canadian Pacific Railway Co. "Annual Reports of Western Section", 1911 - 1943.
105. Canada Land and Irrigation Company, Annual Reports , 1913 - 1949.
106. Alberta, Western Irrigation District, Annual Reports, 1949 - 1953.
107. Alberta, Eastern Irrigation District, Annual Reports, 1935 - 1959.
108. Alberta Power Commission, Annual Reports, 1951 - 1959.
109. Alberta Research Council, Annual Reports, 1920 - 1959.
110. Alberta, Water Resources Office, Annual Reports, 1951 - 1959.
111. Canada, Department of Northern Affairs and National Resources, "Annual Reports of the Eastern Rockies Forest Conservation Board," 1947 - 1959.

112. Manitoba Hydro-Electric Board, Annual Reports, 1952 - 1959.
113. Manitoba, Department of Mines and Natural Resources, Annual Reports, 1921 - 1959.
114. Canada, Department of Agriculture, P.F.R.A., Annual Reports, 1935 - 1959.
115. Prairie Provinces Water Board, Annual Reports, 1948 - 1959.
116. Saskatchewan, Department of Agriculture, Supervisor of Statistics, Annual Reports, 1908 - 1959.
117. Canada, Department of Northern Affairs and National Resources, Annual Reports on Water Power Resources of Canada, \_\_\_\_ to 1959.
118. Saskatchewan, Department of Agriculture, Annual Reports of the Director of Conservation and Development, 1950 - 1959.
119. Saskatchewan, Department of Natural Resources, Annual Reports \_\_\_\_ to 1959.

GENERAL REPORTS

120. Canada, Department of Interior, Water Power Branch, "Report on Manitoba Water Powers", by D. L. McLean, S. S. Scovil, and J. F. Johnston. Published, 1914.

Abstract - This is a general report on the water power situation in Manitoba containing all available information on rivers in that province.

121. Canada, Commission of Conservation, "Water Powers of Manitoba, Saskatchewan and Alberta", by L. G. Denis and J. B. Challies. Published, 1916.

Abstract - This volume contains the findings of reconnaissance surveys of all major streams in Manitoba and Saskatchewan, together with portions of the Yukon and Northwest Territories, for the purpose of evaluating the water power potential.

122. Canada, Dominion Bureau of Statistics, Canada Year Book 1933, "Droughts in Western Canada" by A. J. Connor. Published.

Abstract - Temperature, precipitation and other meteorological data have been studied in an effort to evaluate the relationship of this data to droughts in Western Canada during the years 1884 to 1932.

123. Saskatchewan Agricultural Society Review, "Weather and Crop History in Western Canada" by E. C. Hope, University of Saskatchewan. Published, 1938.

Abstract - Historical documents have been reviewed to provide weather and crop information for the period 1733 to 1937. Available data is summarized by years for the period 1813 to 1937 in terms of drought, flood and crop failures.

124. Manitoba Economic Survey Board, "The Water Resources of Manitoba", by C. H. Attwood. Published, 1938.

Abstract - This is a general appraisal of the water resources of Manitoba with a view to determining how those resources may best be utilized for domestic, municipal, industrial recreational and water power purposes.

125. Canada, Department of Agriculture, "Report on Rural Relief Due to Drought Conditions and Crop Failures in Western Canada, 1930 - 1937", by E. W. Stapleford. Published, 1939.

Abstract - This report attempts to tell the story of the crop failures from which the West suffered during the period 1930 - 1937. The major portion of the report is devoted to the province of Saskatchewan.

126. Canada, Department of Agriculture, "Land Use Classification in the Special Areas of Alberta" by A. Stewart and W. D. Porter, Marketing Service and Economics Division.

Abstract - The territory with which this report deals include the Special Municipal Areas of Neutral Hills, Sullivan Lake, Sounding Creek, Berry Creek, Tilley East and Bow West; the municipality of Acada Valley and six townships in the municipality of Rosenheim. Based on field surveys and analysis this report attempts to determine the long-run use capabilities of this land for agricultural purposes.

127. Canada, St. Mary and Milk Rivers Water Development Committee, "Report on Further Storage and Irrigation Works Required to Utilize Fully Canada's Share of International Streams in Southern Alberta" by V. Meek, G. Spence and W. E. Hunter. Published, 1952.

Abstract - This is a report of a study carried out to determine how irrigation and power projects in southern Alberta may best use Canada's share of the waters in the St. Mary and Milk river's basins.

128. Canada, Department of Agriculture, "An Ecological and Grazing Capacity Study of the Native Grass Pastures in Southern Alberta, Saskatchewan and Manitoba," by S. E. Clarke, J. A. Campbell and J. B. Campbell, Division of Forage Crops, Dominion xperimental Station, Swift Current. Published, 1942.

Abstract - This bulletin presents information relative to the types of grasslands found in southern Alberta, Saskatchewan and Manitoba, an estimate of their carrying capacity, and indications of how they can be used to the greatest advantage.

129. Canada, Department of Agriculture, Marketing Service Economics Division, "An Economic Study of Land Settlement in Representative Pioneer Areas of Northern Saskatchewan," by R. A. Stutt and H. Van Vliet. Published, 1945.



Abstract - This report presents a picture of the problems of land settlement in the pioneer areas of northern Saskatchewan and attempts to show the economic factors associated with agricultural development there.

130. Canada, Department of Agriculture, "Cattle Ranching in Western Canada", by C. W. Vrooman, G. D. Chattaway and Andrew Stewart, Marketing Service Economics Division. Published, 1946.

Abstract - A study of the problems of ranch management and organization was made during the period 1939 to 1941. Factors such as type of livestock, size of ranch, degree of specialization, etc., were related to net income and ways and means of increasing this income were indicated.

131. Canadian Geographical Journal, "Prairie Irrigation" by H. G. Lang. Published, 1946.

Abstract - This is a general account of irrigation activity, and the benefits therefrom, on the Prairies.

132. Canada, Department of Agriculture, Marketing Service, Economics Division, "Farming in the Irrigation Districts of Alberta," by C. G. Spence, B. H. Kristjanson and J. L. Anderson. Published, 1947.

Abstract - This study analyses the factors in farm management influencing irrigation farming in Alberta, and determines the net revenue that can be expected from irrigated land. An evaluation is also made of the difference in income of irrigated compared with dry land areas.

133. The Engineering Institute of Canada Journal, September, 1948, "Irrigation in Western Canada, Its Possible Effect on Industry and Population" by A. E. Palmer, Experimental Station, Lethbridge. Published.

Abstract - The potential development of food processing industries arising from further irrigation development on The Prairies is discussed. Existing plants are described briefly. Possible growth in rural and urban population resulting from irrigation is assessed.

134. Alberta, Department of Water Resources, "Report on Surface Water Supplies and Water Power of Alberta, Their Present and Ultimate Use", by B. Russell. Unpublished, 1948.

Abstract - This report briefly outlines some of the provisions of the Acts pertaining to the administration of the water resources of Alberta; enumerates these water resources, reviews the surveys and investigations which have been made and discusses some of the problems incidental to future developments.

135. The Engineering Institute of Canada Journal, September, 1948, "Hydro Power Development on the Eastern Slopes of the Canadian Rockies" by T. D. Stanley, Calgary Power Ltd. Published.

Abstract - Developments of hydro power in Alberta are reviewed. The importance of storage on the headwater streams is shown as well as how Alberta rivers are naturally divided between storage and production sections. Problems in design and operation are discussed. Alberta's hydro resources are described and suggestions given as to their best utilization.

136. Manitoba, Water Power Commission, "Report of Manitoba Water Power Commission" by T. H. Hogg. Published, 1948.

Abstract - This report contains the results of an inquiry into all matters pertaining to the supply of electrical energy in Manitoba. It investigates the likely demands of the various regions of Manitoba for hydro power up to the year 1953 and considers the adequacy of existing and under-construction developments to meet these demands. Recommendations are made as to the best means of utilizing the water powers of Manitoba.

137. Prairie Provinces Water Board "Memorandum on the Problems Facing the Prairie Provinces Water Board", by W. M. Berry, Acting Secretary. Unpublished, 1949.

Abstract - Prepared for the use of Board members this memorandum outlines some of the problems associated with development, particularly of irrigation and power, on inter-provincial streams.

138. Canada, Department of Agriculture, P.F.R.A., "The Development of Irrigation in Alberta An Historical Survey" by C. S. Burchill, Dom. Economics Division, University of Alberta. Unpublished, 1949.

Abstract - This is an historical account of irrigation development in Alberta and the problems it has encountered. Indications are given of the ways in which the experiences gained on these early irrigation schemes may be profitably applied to ensure the success of future developments.

139. Saskatchewan Power Corporation, "Power Report Central Saskatchewan Development" by D. Cass-Beggs. Unpublished, 1950.

Abstract - The feasibility of construction of a power site at the South Saskatchewan dam is compared with other sources of energy. Power requirements in Central Saskatchewan, the effect of irrigation and upstream diversions are all considered.

140. Saskatchewan Economic Advisory and Planning Board "Excerpts from Report to the Government Finance Office Committee on Power Development" by D. Cass-Beggs. Published, 1950.

Abstract - Based on studies of probable rate of load growth and existing power developments in Saskatchewan recommendations are made as to the best way of meeting future requirements for energy in this province.

141. Prairie Provinces Water Board, "History of Decision to Fully Investigate the Separate Projects (Red Deer and South Saskatchewan River Projects)" by P.F.R.A. Unpublished, 1951.

Abstract - This memorandum, prepared for the Prairie Provinces Water Board, outlines briefly the history of these projects and explain how P.F.R.A. became involved in investigations dealing therewith.

142. Alberta, Department of Water Resources, "Study of Merits of Alternative Plans for the use of the Waters of the Saskatchewan River Drainage Basin in Alberta and Saskatchewan with Approximate Cost Estimates of Alternative Plans of Development" by B. Russell. Unpublished, 1951.

Abstract - A synopsis of this memorandum is adequately given by its lengthy title. Its purpose was to bring to the attention of the Prairie Provinces Water Board the need for a review of the possible combination of the South Saskatchewan and Red Deer Diversion Projects before making any allocations.

143. Alberta, Department of Water Resources, "Possible Diversion from the Arctic Watershed to the Saskatchewan (Hudson's Bay) Drainage Basin", by B. Russell. Unpublished, 1951.

Abstract - This report briefly outlines a reconnaissance survey carried out to determine the possibility of diverting water from the McLeod and Pembina rivers (tributaries of the Athabasca River) into the North Saskatchewan River.

144. Saskatchewan, Department of Agriculture, "Farm Practices in Central Saskatchewan" by J. W. Clarke, Dom. Economics Division. Published, 1951.

Abstract - This study deals with moisture conservation, soil management, crop varieties timeliness of work, implement use, and other factors of crop production in Central Saskatchewan. Its purpose is to indicate how good farming procedures tend to minimize the effect of adverse weather conditions.

145. Canada, Department of Agriculture, "Irrigation Farming in Southern Alberta", by K. W. Hill and A. E. Palmer, Experimental Station, Lethbridge. Published, 1953.

Abstract - Irrigation farming practices in Southern Alberta are discussed with special considerations for methods, crops grown, crop rotation, the place of livestock on the irrigated farm, commercial fertilizers, soil drifting and weed control.

146. Canada, Department of Agriculture P.F.R.A., "Appendix 3 to Brief to Royal Commission on Canada's Economic Prospects -- Water Development in Alberta, Saskatchewan and Manitoba", by Hydrology Division. Unpublished, 1955.

Abstract - This report contains a brief outline of the water resources of the Prairie Provinces and a discussion of existing projects and full development possibilities.

147. Alberta, Department of Public Health, "Report on Pollution Survey of the Oldman E. Drainage Basin and South Saskatchewan River", by the Division of Sanitary Engineering. Published, 1955.

Abstract - Tests were conducted on water supplies and sewage at some of the largest centres in the South Saskatchewan River Basin in Alberta, during the period 1953 to 1955. The results of these tests are tabulated in this report.

148. Alberta Research Council, "Round Table Conference on Groundwater in Alberta". Published, 1955.

Abstract - On September 27, 1955, the Research Council of Alberta sponsored a round-table conference on groundwater resources and development in Alberta, attended by 27 professional and technical men. The remarks made by these various participants are contained in this report.

149. Canada, Department of Transport Meteorological Division, "The Climate of Central Canada" by W. G. Kendrew and B. H. Currie. Published, 1955.

Abstract - This report discusses the climate of Central Canada according to six regions: the Mackenzie basin; the Barren grounds; the forest and parkland areas of Alberta and Saskatchewan; the Prairie grasslands; and Manitoba: Maps and tables are given on such factors as vapor pressure, temperature, snowfall and total precipitation.

150. Canada, Department of Transport, Meteorological Division, "Some Characteristics of Precipitation in the Canadian Prairies", by R. G. Kendall and M. K. Thomas. Published, 1956.

Abstract - Statistical analysis is applied to annual precipitation data on the Prairies in an attempt to explain regional trends and yearly variations.

151. Canada, Department of Mines and Technical Surveys, Mines Branch, "Interim Report on Hardness of Major Canadian Water Supplies", by J. F. J. Thomas, Industrial Minerals Division. Published, 1956.

Abstract - This report presents general information on water quality, particularly hardness, of water supplies used by a number of municipalities in Canada.

152. Canada, Department of Northern Affairs and National Resources, Water Resources Branch, "Glacier Variation and Trends in Run-off in the Canadian Cordillera" by E. P. Collier. Published, 1957.

Abstract - "In this paper, attention is given to the relation between the quality of water produced by snow and ice melt and the total flow, and to the effect of the glaciers on the regime of the main streams. The paper also presents the results of a preliminary study on trends in run-off in the Canadian Cordillera."

153. Alberta, "Report of the Irrigation Study Committee on Problems of Irrigation Farming and Administration". Published, 1958.

Abstract - To assemble those things which have an application in the raising of the status of irrigation farming and the administration of irrigation development, this committee held public hearings and interviews, studied reports and made field tours. Their findings have been summarized in this report and recommendations are made to improve irrigation developments in the future.

154. Manitoba, Department of Industry and Commerce "Economic Survey of Northern Manitoba," by A. D. Little, Inc. Published, 1958.

Abstract - This report presents recommendations designed to assist the Government to formulate a long-term program for the economic development of Northern Manitoba. An appraisal of the resources and associated industries in this region is given in detail.

155. Alberta Research Council, "A General Outline of Groundwater Conditions in the Alberta Plains Region" by J. W. Foster and R. N. Farvolden. Published, 1958.

Abstract - "This paper has been prepared to outline the present status of knowledge on groundwater occurrence in the plains region of Alberta. Discussions are given on the geology of the area, the quality of groundwater and current problems and anticipated future problems in groundwater supply.

156. Canada, Department of Mines and Technical Surveys, Mines Branch Industrial Minerals Division, "Water Quality at Some Canadian Military Establishments, 1956-57" by J. F. J. Thomas. Published, 1959.

Abstract - By means of tables this report presents the results of a chemical analysis of the water supply of some Canadian military establishments during the years 1956 - 1958. A number of the establishments referred to in this report are located in the Saskatchewan River Basin.

157. Canada, Department of Agriculture, P.F.R.A. and Economics Division, "A Survey of the Land of Water in Alberta, Saskatchewan and Manitoba" per Gisvold. Published, 1959.

Abstract - This is a comprehensive and up-to-date account of the legal and constitutional aspects of water use in Alberta, Saskatchewan and Manitoba.

158. Canada, Department of Transport Meteorological Branch, "Snowfall and Snow Cover Measurements in Canada" by J. G. Potter. Published, 1959.

Abstract - This report summarizes snow measurements in Canada. The agencies which make these measurements, the type-climatological or snow survey, the location and the purpose for such measurements, are cited.