

and the water users. When the St. Mary-Milk Rivers Project is fully developed, Canada will be able to fully utilize the share of water allotted to it in 1921 by the International Joint Commission and, thereby, will be in a position to safeguard this right.

Surveys of a number of other large projects are in progress to determine their engineering, agronomic and economic feasibilities. These surveys include land classification to determine the acreage in each project that is suitable for irrigation as well as engineering studies. Brief descriptions of the larger proposed projects are presented below.

In this connection it is important to note that surveys and planning presently in progress on large P.F.R.A. irrigation works are not necessarily for immediate execution. The main objective of this work is to explore thoroughly, various irrigation possibilities, and to prepare construction plans in detail, so that costs and probable benefits can be determined, and construction undertaken if and when desired with a minimum of delay.

*Red Deer River Project.*—This project would involve the construction of a large dam on the Red Deer River at a point near the village of Ardley, Alta., some 25 miles east of the town of Red Deer. Water impounded by this dam would provide for hydro-electric power development, the irrigation of several hundred thousand acres of land, and the maintenance of flow in many rangeland streams which normally become dry in the summer. As this project lends itself to considerable expansion, further soil and engineering surveys are required before its ultimate possibilities can be determined.

*South Saskatchewan River Development.*—The main feature of this project would be the construction of a large dam across the South Saskatchewan River at a point near Elbow, Sask., to provide for irrigation and hydro-electric development, and possibly for the gravity diversion of water to supplement the erratic flow in the Qu'Appelle River. In this connection, the possibility of improving the water supplies for the cities of Moose Jaw and Regina is being explored. Surveys indicate that much of the irrigable land in this project, lying roughly on both sides of the South Saskatchewan in the Elbow-Saskatoon district, are at too high an elevation to be irrigated by gravity flow. For this reason the plans in hand call for the use of hydro-electric power to raise water to the necessary levels by pumping, the cost of such pumping in summer to be offset by the sale of electric power during the winter period of peak demand. Soil surveys of approximately 1,000,000 acres of land tributary to the dam site indicate that about 800,000 acres are suitable for irrigation, on a large portion of which the distribution of water is expected to be an engineering feasibility. Further surveys, both soil and engineering, are necessary to fully assess this project. The South Saskatchewan scheme is the largest so far proposed for construction under the P.F.R.A.

*Bow River Development.*—Essentially an enlargement of the existing Canada Land and Irrigation project in Southern Alberta, the Bow River Development is designed to supplement water supplies to 55,000 acres already under irrigation, and to bring water to 180,000 acres of new land extending east from Lomond to Medicine Hat. Plans for this project, which lends itself to development by stages, are advanced to a point where construction can be started when conditions warrant.

All large P.F.R.A. irrigation projects are constructed under agreement between the relevant province and the Dominion.

A score or more of community irrigation projects have been built by P.F.R.A. or expanded with P.F.R.A. assistance since 1935, varying in size from several hundred to several thousand acres each. These projects were designed to provide