COMMITTEE ON HYDROLOGY

"GUIDELINES FOR NEGOTIATING EQUITABLE APPORTIONMENT"

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PRAIRIE PROVINCES WATER BOARD

CANADA ALBERTA SASKATCHEWAN MANITOBA

"GUIDELINES FOR NEGOTIATING EQUITABLE APPORTIONMENT"

The 1969 Prairie Provinces Water Board Master Agreement on Apportionment provides the ground rules for apportioning natural flow on an equitable basis between the three prairie provinces.

Natural flow is defined as the quantity of water which would naturally flow in any watercourse had the flow not been affected by human intervention, excluding any water which is not available for use because of the provisions of any international treaty [see Section 1(a) of Schedule A and B]. Note that this definition of natural flow refers to a quantity of water but not to a time period.

Methods of determining natural flow [see Sections 2(a) of Schedules A and B] are described in PPWB Report No. 48, "Natural Flow for Apportionment Purposes," and these methods have been approved by the Board. These methods may change as more information becomes available and as water use patterns change.

The preambles to Schedules A and B state that "...equitable apportionment...would be to permit...a net depletion of one-half the natural flow...". Sections 3 of Schedules A and B define the periods in which the net depletion of one-half the natural flow may be made. Under Schedule A "...the actual flow shall be adjusted from time to time on an equitable basis during each calendar year..."Under Schedule B"...Saskatchewan will permit...during the period from April 1 of each year to March 31 of the year following... The actual flow shall be adjusted from time to time by mutual agreement on an equitable basis during such period..."

It is not clear why "mutual agreement" appears in Schedule B but not in Schedule A. Mutual agreement is as necessary between Alberta and Saskatchewan as it is between Saskatchewan and Manitoba if equitable apportionment is to be achieved. The intent of the Master Agreement is to provide for maintaining the most equitable apportionment which is currently practicable and mutually advantageous throughout the 12-month apportionment

period, and to prevent any final deficit at the end of the apportionment period.

Achieving Equitable Apportionment

The method of reaching mutual agreement is referred to briefly on page 3 of the report "Administration of the Apportionment Agreement," as follows:

> "Practically, if both the timing and volume of flow are to be equitable, a downstream province should first determine both its minimum allowable discharge and volumetric water use requirements. The upstream province should then determine if these requirements can be met. Differences between the requirements of the upstream and downstream provinces could then be settled by negotiation. The results obtained by this process, while not binding for all time, would be suitable until requirements in one or both provinces change, necessitating a new round of negotiations. Thus, both the division of flow volumes and the timing of discharges could be kept equitable based on current needs."

Up to now it has not been necessary for the Board to reach formal agreement as to how the actual flow should be adjusted from time to time during the apportionment year. The state of development in the basins, the present methods of operation of the projects, and the minimum flow requirement on the South Saskatchewan River fulfill all the present requirements of downstream provinces.

If, in the future, there is a need for more frequent balancing of flow, one means of achieving equitable apportionment would be to mutually agree upon (negotiate) sharing of water for balance periods of less than the apportionment period. Special measures might have to be brought into effect for the final balance period in an apportionment period to ensure that a deficit does not occur. Given, however, that a final deficit could occur, provision would have to be made for an analysis of the cause of any such deficit and the implementation of measures to prevent its recurrence. Any

recurring deficit, both within or at the end of the apportionment period, would be just cause to bring the matter before the Board for further consideration.

Balance periods would be selected to provide the practical opportunity to make up any volumetric shortages which might arise. The intent is to provide for equitable apportionment based on balance periods which could be shortened to the minimum practicable duration, yet would, in practice, be negotiated close to the maximum tolerable duration.

The Master Agreement recognizes a continuing need for consultation and co-operation with respect to the most beneficial use of interprovincial water. Future concerns may involve water quality and ecological issues which necessitate the negotiation of some form of maintaining the natural seasonal sequence of flows in interprovinicial streams. For instance, by themselves, minimum flow requirements may not be sufficient for environmental protection and this could lead to negotiating minimum spring discharges, minimum summer discharges, and maximum winter discharges. Furthermore, the Agreement lends itself to such negotiations since the volume of flow over any time period less than a year is subject to mutual agreement on an equitable basis.

Procedures

If it becomes necessary to negotiate mutual agreements to achieve "equity" in the future, the following general procedures illustrate the type of methodological approach which may provide a basis for such negotiated agreements.

1. The following principles would be affirmed:

   a) the provinces are the principals in any negotiations of mutual agreements to achieve equitable apportionment;
   b) the role of the Board is to facilitate reaching agreements;
   c) the role of the Secretariat is to co-ordinate input to the negotiations and to assist in the preparation of background material;

d) the role of Board committees is to undertake background work and to develop recommendations to the Board.

2. In a typical situation a member agency or party might request that a review be made involving the Saskatchewan River system. The Board would ask the Secretariat, under the direction of the Committee on Hydrology (COH), to prepare representative natural flow hydrographs at the apportionment points under review representing (a) low, medium and high flow years and (b) a succession of such years.

3. Each province would determine its own water use requirements. These would include such requirements as the volume and timing of consumptive withdrawals, the volume and timing of storage and release from reservoirs, and the magnitude and timing of essential discharge constraints.

4. Alberta would superimpose its water use requirements on the representative natural flow hydrographs of the North Saskatchewan and South Saskatchewan Rivers to estimate the actual hydrographs at Alberta-Saskatchewan apportionment points. Alberta would then send these hydrographs with a statement of Alberta's water use requirements to the Secretariat for distribution to COH members.

5. Saskatchewan would determine if the actual hydrographs of the North and South Saskatchewan River flows as prepared by Alberta would satisfy Saskatchewan's water use requirements.

6. If Saskatchewan's requirements were satisfied it would superimpose its water use requirements on the estimated actual hydrographs of the North and South Saskatchewan Rivers to provide an estimated actual hydrograph of the Saskatchewan River at the Saskatchewan-Manitoba apportionment point. Saskatchewan would then send the hydrographs, along with a statement of Saskatchewan's water use requirements, to the Secretariat for distribution to COH members.

7. Manitoba would determine if the actual hydrographs of the Saskatchewan River flows prepared by Saskatchewan would satisfy Manitoba's water use

requirements. If Manitoba's requirements were satisfied the Secretariat would be so informed. The COH would then prepare a report to the Board indicating how agreement had been achieved.

8. If Saskatchewan's requirements were not satisfied, Saskatchewan would prepare a statement explaining why and would forward this statement to the Secretariat. The Secretariat would then arrange a meeting of the Alberta and Saskatchewan representatives to try to resolve the problem. If these discussions were successful, the Secretariat would prepare a report indicating how agreement had been achieved, and further action would be based on steps 6 and 7.

9. If Manitoba's requirements were not satisfied further action would be similar to that described in step 8 with discussions being broadened as required to include Alberta.

10. If, following the discussions described in steps 6 of 7, the requirements of Saskatchewan and/or Manitoba still were not satisfied, the Secretariat would document all relevant details and alternate solutions under the direction of the COH and would forward a report to the Board with a recommendation for further action by Board.

The procedures described relate to equitable apportionment on the Saskatchewan River system. The same general procedures would be followed for any component of the Saskatchewan River system, for the Churchill and Qu'Appelle Rivers, or for any other apportioned stream.

The procedures described relate to negotiation of flows or to water quantity. If water quality is at issue, or is primarily responsible for setting discharge constraints, the Committee on Water Quality should also be involved.