

Hydrology Unit Approaching Milestone

On April 1, 2002 the Hydrology Unit will mark a major milestone in its history -- its 50th anniversary.

The Hydrology Unit evolved from a section in the Design Unit that was set up in 1948 to support the Prairie Provinces Water Board (PPWB). By 1952, this section was heavily involved in hydrology-related activities. Thus, on April 1, 1952, it was given separate and official status as the Hydrology Unit.

The newly-formed Hydrology Unit, headed by Mr. W. M. (Bill) Berry, consisted of eight permanent staff and some casual support. Over the years, the number of staff gradually increased, peaking at 25 in the 1980-81 fiscal year. Thereafter, the staff complement decreased to 19 by the early 1990s. Extensive downsizing and restructuring in the 1990s reduced the size of the Hydrology Unit to its current complement of four.

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Hydrology Unit Staff (Circa 1981)



Back row (L to R): Terry Miller, Brian Abrahamson, Fred Martin, Erwin Jones, Gord Bell, Ted O'Brien

Middle row (L to R): Ken Dowie, Jim Yarotski, Ron Woodvine, Mike Hammer, Jim Rogers, Lionel Ruhr, Wayne Gilmer, Brian Bell, Dave Schoenfeld

Front row (L to R): Rick Rickwood, Paul Meid, Dennis Lawson, Jane Rakochoy, Elwood Scott, Mike Mowchenko

The Hydrology Unit has had many notable and landmark accomplishments over the past 50 years. First and foremost, the Hydrology Unit was the first group within PFRA to extensively use computers. Specialized Fortran computer programs were developed by the Hydrology Unit to simulate project operation. These programs are still being used today, not only by the Hydrology Unit, but also by other federal and provincial agencies and consultants.

One of the most intensive long-term undertakings by the Hydrology Unit involved drainage area delineation. In 1970, the Hydrology Unit undertook the task of determining gross and effective drainage areas tributary to hydrometric gauging stations in the Prairies. Not surprisingly, many changes and adjustments have been made over the years. The most recent advancement

has been the migration of the database to a GIS environment to facilitate its timely and efficient maintenance. This product has been widely accepted by all water resource agencies in the Prairie region because it provides a consistent database.

The Hydrology Unit has also been involved in numerous data collection field studies to improve hydrologic methodology. Evaporation studies in the 1960s and 1970s provided the basis for modifying the procedure for estimating gross evaporation. Updated estimates of gross evaporation at key locations based on the revised methodology are used extensively by all water resource organizations in the Prairie region. A Runoff Monitoring Program initiated by the Hydrology Unit in the early 1970s provided information on rainfall and snowmelt runoff parameters from small watersheds. This program is still being operated today, albeit on a much smaller scale. The Hydrology Unit has also conducted and periodically updated a number of regional studies, most notably the Annual Unit Runoff Study. Such studies provide information on hydrologic patterns across the Prairies and serve as a useful reference and database for all water resource agencies in the Prairies.

Of course, drought has been and continues to be a very stubborn adversary. The Hydrology Unit was heavily involved in both the 1977 and 1981 drought assessments. In the early 1980s, the Hydrology Unit hired additional staff to conduct extensive Drought Proofing Studies. Throughout the 1980s, the Hydrology Unit provided regular reports on drought conditions across the Prairies. In 1988, the Hydrology Unit was involved in another drought assessment from which the National Tax Deferral Program emerged. Since 1988, the Hydrology Unit has continued to provide technical support for designation of areas under the Tax Deferral Program in all regions of Canada. The Hydrology Unit has also been involved in many other drought-related activities, including weather/climate monitoring and climate change assessments.

The Hydrology Unit has also been a participant in numerous major studies, namely: the Saskatchewan-Nelson Basin Board Study of the late 1960s, the Souris River Basin Study of the late 1970s, Flood Damage Reduction Studies and PPWB Natural Flow Studies of the 1970s and 1980s, SIBED Basin Studies of 1980s, and the Upper Assiniboine River Basin Study of the late 1990s. The Hydrology Unit has also been involved in many multi-agency projects such as the South Tobacco Creek Pilot Project.

Last, but not least, the Hydrology Unit has had substantial involvement in international activities. In the 1970s and 1980s, the Hydrology Unit participated in several International Joint Commission (IJC) Task Force studies in the Poplar, Red and Souris River basins. The Hydrology Unit has also supported CIDA activities in Columbia (late 1970s), Indonesia (1980s), and Ethiopia (1990s).

Over the last 50 years, the Hydrology Unit has seen many changes and made adjustments to meet ever-changing challenges. It is little wonder that both current and former members of the Hydrology Unit look back with pride on their many accomplishments. A job well done!