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Standard Guide for Planning and Implementing a Water Monitoring Program[1]

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INTRODUCTION

Water resource monitoring has taken place in many forms for scores of years. This monitoring has been sponsored and performed by a variety of federal, state, and local public agencies; and perhaps by an even wider variety of private, quasi-public and industrial entities. Historically, much of the early data dealt with quantities of flow, and drinking water quality was judged by the standards of the period.

During the past several years the problems related to point and nonpoint sources of pollution of water resources have become increasingly apparent. Technology has improved dramatically, as the need for monitoring data has improved. There is a necessity for information on marine beaches and estuarine areas, fresh water swamps, ground water, wetlands, streams, and sediment deposits, and to better understand the entire hydrologic cycle.

The need for more and varied water quality information has expanded as rapidly as our technological ability to generate the information. Further, it has become increasingly difficult and sometimes impossible to understand and resolve conflicts among the different data sets available. Much of the data have been collected at different times, in different geographic areas, and for different purposes. The data have been collected by persons with varied training, using different methods, and with vastly different analytical capabilities. As a consequence, we presently are at the stage where we may know more about a given situation than we understand and workers in the field who receive the data are unable to integrate the data available into a useful solution. The need for standardization of monitoring programs is evident. Standardization does not herein mean everyone doing everything exactly the same way. It does mean the use of methods and procedures, where applicable, that follow recognized and documented protocols as well as the accurate recording and storage of the data in accessible formats.

Realizing the difficulties in water monitoring, the Office of Management and Budget (OMB) of the federal government charged the Water Information Program (WICP), a program of the U.S. Geological Survey's Office of Water Data Coordination, with studying water quality monitoring in the United States and recommending improvements. The Intergovernmental Task Force on Monitoring Water Quality (ITFM), a federal, state, and tribal partnership, was established under the WICP's Interagency Advisory Committee on Water Data to carry out this study. The results of three years of work by about 200 contributors have been captured in a series of three annual reports (**1-3**).[2]

The following summarizes the conclusions from those reports:

(*1*) Monitoring programs shall keep pace with changing water-management programs.

(*2*) A collaborative strategy is needed to link the many separate monitoring programs.

(*3*) A genuine appreciation of the need for cooperation currently exists among monitoring agencies.

(*4*) Recent advances in technology provide opportunities for interaction and cooperation that previously were impossible.

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