

Appendix F - Selected Water Resources Division Policy Memorandums

1. Water Resources Division Memorandum No 98.21 – Priority Issues for the Federal-State Cooperative Program, Fiscal Year 1999
2. Water Resources Division Memorandum No 95.44 – Avoiding Competition with the Private Sector
3. Water Resources Division Memorandum No 92.14 – Authority for Conducting Water-Resources Investigations
4. Water Resources Division Memorandum No 84.21 – Hydrologic Activities to be excluded from the Federal-State Cooperative Program

In Reply Refer To:
Mail Stop 441

April 27, 1998

WATER RESOURCES DIVISION MEMORANDUM NO. 98.21

Subject: Priority Issues for the Federal-State Cooperative Program, Fiscal Year 1999

This memorandum describes priority water issues to be considered in planning the Water Resources Division's (WRD) fiscal year (FY) 1999 Federal-State Cooperative (Coop) Program. Four major themes that the U.S. Geological Survey should focus on to meet Federal priorities are: (1) Hazards, (2) Resources, (3) Environment, and (4) Information. The President's FY 1999 budget proposes an increase of \$5.7 million for the Coop Program which includes an adjustment for uncontrollable costs and an increase for water-quality activities. In consultation with WRD Senior Staff and District managers, the following issues have been identified, to provide a national perspective of those State and local water-related issues which are of the most concern at the Federal level.

WATER QUALITY--The need to provide the data to better define and manage the quality of the Nation's water resources remains among the highest Coop Program priorities. The proposed FY 1999 Coop Program increase for water-quality activities supports the need to improve water quality in degraded watersheds across the country and to improve the availability and dissemination of water-quality information to all potential users. Through partnerships with State and local agencies the Coop Program can assist efforts by addressing issues that include: (1) determining the linkage between agricultural practices and pesticides in ground water; (2) providing more quantitative understanding of the sources of nutrients entering streams; (3) determining the effects of land use practices; (4) understanding the relations between water quality and the health of aquatic organisms; (5) assisting States in setting Total Maximum Daily Load (TMDL) requirements of the Clean Water Act; (6) assessing the best approach to monitor water-supply wells; (7) better quantifying the effects of active and abandoned mines on streams and aquifers; (8) evaluating effectiveness of non-point source pollution management practices; (9) improving strategies to identify and protect drinking water sources; and (10) increasing the availability of water-quality information, including real-time data, for rivers and coastal waters near the Nation's largest cities.

HYDROLOGIC HAZARDS--Economic losses from hydrologic hazards can amount to several billions of dollars annually. Monitoring the occurrence and magnitude of these extreme events and studying the basic processes underlying these hazards are needed to improve the ability to forecast probability of occurrence and likely magnitudes. Also, increasing real-time access to streamflow data through telemetry at gaging stations and through improved presentation on the Internet remains important for disaster preparedness.

HYDROLOGIC DATA NETWORKS--The hydrologic-data program constitutes the foundation for watershed and aquifer management and for many other WRD programs. It continues to be a high priority item. Present and possible future WRD initiatives are expected to require access to a comprehensive, uniform, and accurate foundation of surface-water, ground-water, water-quality, and water-use data of national scope. The Coop Program increase supports additional water-quality monitoring stations, including the collection of streamflow data, to determine pollutant loads. Greater emphasis will be placed on biological monitoring to assess conditions that affect human health and aquatic health. Large amounts of data and specialized interpretation often are required for management of the resource base and for water-rights determination by State and Federal agencies. Enhancement of the hydrologic-data program, improved

accessibility to available information (such as an increase in the availability of real-time data), and coordination of program activities with those of other agencies continue to be high-priority activities.

WATER SUPPLY AND DEMAND--The future health and economic welfare of the Nation's population is dependent upon a continuing supply of uncontaminated freshwater. Many existing sources of water are being stressed by increasing withdrawals, use, diversion, and increasing demands for in-stream flow. More comprehensive water-use data and analysis of water-use information are needed to quantify the stress on existing supplies and to better model and evaluate possible demand management options to supplement the traditional supply approaches. Improved watershed characterization and flow-system definition and simulation also are needed for the management of aquifers and streams that serve as important local or regional sources of water supply and for the management and support of watershed ecosystems. Because aquifers and streams often are highly interdependent, improved tools for simulating interactions between ground and surface water that account quantitatively for effects of withdrawals and climate variations also are needed so that watersheds can be managed more readily as systems. Hydrologic systems models that are capable of showing the consequences of various decisions over a wide range of hydrologic and climatic conditions will be very helpful to local water managers.

WETLANDS, LAKES, RESERVOIRS, AND ESTUARIES--These valuable ecosystems merit special attention because of their importance as fish and wildlife habitat, recreational areas, and sources of water supply. Wetlands, in particular, are areas where important water treatment and purification processes can occur naturally. In many areas wetlands are being restored or constructed without pre- and past-scientific evaluation. Studies that integrate and contribute to a better understanding of the physical, chemical, and biological processes of these ecosystems and their watersheds are needed to evaluate development and management alternatives.

WATER RESOURCES ISSUES IN COASTAL ZONE--Effects of land use and population increases on the water resources in the coastal zone are a major national concern. Hydrologic monitoring and studies are needed to address issues of erosion, loss of wetlands, subsidence, saltwater intrusion, and problems associated with excessive nutrients, disease-causing micro-organisms, and toxic chemicals, originating upstream from industrial activities and agricultural practices. These pollutants can degrade habitat and health of fish and other wildlife and make beaches and other areas unsuitable for recreational use.

ENVIRONMENTAL EFFECTS ON HUMAN HEALTH--This priority focuses on understanding the processes and activities leading to the exposure of human disease-causing contaminants. Issues include: (1) waterborne microbiological threats to human health, including bacteria, viruses, protozoa, and potentially toxic algae; (2) bioaccumulation of trace elements in plants and fish that humans eat; (3) naturally-occurring contaminants, such as arsenic, radium, and other trace elements; and (4) occurrence and persistence of toxic organic compounds in ground waters, rivers, and reservoirs. Development of public information products jointly with State and local health or water supply agencies is strongly encouraged. These products should stress source-water conditions and health advice coupled with explanation of sources and levels of key contaminants.

In addition to the high-priority technical issues outlined above, special consideration should be given within the Coop Program to conducting hydrologic analyses and data collection that:

- (1) support the FY 1999 bureau clean water initiatives,
- (2) support WRD thrust programs,
- (3) are beneficial to the WRD commitment to other Federal

- agencies, especially DOI agencies,
- (4) result in interdivision collaboration, or
 - (5) provide data and information that could be used to develop national synthesis products.

And finally, we must always keep in mind that projects undertaken with cooperators must provide an enhancement of knowledge, methodology, or data that is likely to be useful beyond the immediate needs of the cooperator. In general, if the project is driven solely by an operational need of the cooperator to meet some information requirement for a permit or regulation, we should not undertake it. However, if this operational need can be satisfied along with one or more of the following broader USGS goals, then the work may be considered appropriate. These broader goals, as enumerated in WRD Memorandum 95-44 are:

- (1) advancing knowledge of the regional hydrologic system,
- (2) advancing field or analytical methodology,
- (3) advancing understanding of hydrologic processes,
- (4) providing data or results useful to multiple parties in potentially contentious inter-jurisdictional conflicts over water resources,
- (5) furnishing hydrologic data required for interstate and international compacts, Federal law, court decrees, and congressionally mandated studies,
- (6) providing water-resources information that will be used by multiple parties for planning and operational purposes,
- (7) furnishing hydrologic data or information that contribute to protection of life and property,
- (8) contributing data to national data bases that will be used to advance the understanding of regional and temporal variations in hydrologic conditions.

/signed/

Robert M. Hirsch
Chief Hydrologist

Distribution: A, B, S, FO, PO

This memorandum supersedes WRD Memorandum 96.21

July 7, 1995

In Reply Refer To:

Mail Stop 409

WATER RESOURCES DIVISION MEMORANDUM NO. 95.44

Subject: Avoiding Competition with the Private Sector

The purpose of this memorandum is to remind ourselves of the appropriate role of the Water Resources Division (WRD) for investigations and data collection activities within the Federal-State Cooperative (Cooperative) Program and Other Federal Agencies (OFA) Program. The need to review WRD's role is very important and most relevant today in light of the changing technical and political environment. The expertise and capabilities of the hydrologic consulting community have improved greatly in recent years. Federal, State and local agencies can and should use the private sector for many kinds of studies which, in the past, may only have been conducted by WRD. Also, our projects are subject to increasing scrutiny by public officials in light of the emphasis for privatizing Federal entities. However, we believe that there are strong justifications for our Federal role in water information. The existence of even a few projects (out of the many hundreds we undertake) for which the justification is weak can undermine our ability to continue to provide the services to the Nation that are our proper mission. Thus, for every study we undertake we must be able to demonstrate that it is an appropriate role for WRD.

One key role of WRD in hydrologic investigations under Cooperative and OFA programs is to lead the Nation in providing new understanding, approaches, technology, and research for defining water resources and solving water-resources problems. In order to fulfill this role, WRD must maintain strong partnerships with other agencies who use hydrologic data and the results of our investigations to make decisions regarding the management of water resources. The continued vitality and relevance of our programs depends on our close involvement and responsiveness to these agencies. Internally, strong competence in field techniques and assessments, familiarity with the full range of hydrologic systems, and a strong and relevant research program must be maintained. The data and hydrologic system information gathered from the Cooperative and OFA programs are used in turn by WRD to synthesize regional- and National-scale, water-resources perspectives. Thus, these programs are vital to the overall mission of the WRD.

It is no accident that WRD is the principal provider of hydrologic data, theory, research, and new technology for the United States and the world. This competence is maintained by the internal feedback loop among research, the distributed resource-assessment programs, and customer (cooperators and OFA's) input. Without the feedback loop, the WRD program would soon lose its relevance to emerging water-resource issues. Paramount, however, is the need to maintain the longstanding WRD policy not to compete with the private sector. This means that WRD must be responsive to the requests and interests of potential partners, but at the same time set limits on the type of work undertaken on their behalf.

Projects undertaken for customers must meet some basic standards. They must provide an enhancement of knowledge or an enhancement of hydrologic methodology that is likely to be useful beyond the immediate needs of the customer. In general, if the project is driven solely by an operational need of the customer to meet some information requirement for a permit or regulation, we should not undertake it. However, if this operational need can be satisfied along with one or more of the following broader goals, then the work may be considered appropriate. These broader goals for WRD work are:

- 1) advancing knowledge of the regional hydrologic system
- 2) advancing field or analytical methodology
- 3) advancing understanding of hydrologic processes
- 4) providing data or results useful to multiple parties in potentially contentious interjurisdictional conflicts over water resources
- 5) furnishing hydrologic data required for interstate and international compacts, Federal law, court decrees, and congressionally mandated studies
- 6) providing water-resources information that will be used by multiple parties for planning and operational purposes
- 7) furnishing hydrologic data or information that contribute to protection of life and property
- 8) contributing data to national data bases that will be used to advance the understanding of regional and temporal variations in hydrologic conditions.

A critical aspect of each of these goals is that all WRD programs (whether funded by appropriations or by specific customers) take an active role in sharing the results of the investigation either through widely-accessible data bases or through published reports. Further guidelines on our appropriate role are given in WRD Memorandum No. 84.21; this memorandum specifically addresses criteria to be used to decide which hydrologic activities are not appropriately included in the Cooperative Program.

The fact that a cooperator or OFA approaches the WRD to undertake the particular study (rather than issuing a request for proposals) is not sufficient evidence that the project is not in competition with the private sector. It must be demonstrated that the proposed work goes significantly beyond what the private sector would do, either in terms of research or innovation, or in terms of contribution to shared hydrologic data or knowledge. There are many instances where the customer's motivations are entirely related to some regulatory requirement for information. It is appropriate for WRD to discuss the customer's needs and see if a broader effort can be undertaken involving enhancements of the data collection methods or analytical approaches or making the information collected more useful for a wide range of uses. However, if the customer's interests are limited to the routine application of standard, pre-existing protocols to satisfy a regulatory or design requirement and do not significantly fulfill any of the 8 goals listed above, then the work should be rejected. On the other hand, if the customer is interested in having the WRD participate in the development of a procedure to be used for some regulatory or design purpose, a project aimed at the development and limited application of the procedure may be appropriate.

The issue of potential competition with the private sector is a difficult one, requiring the use of considerable judgment and sensitivity. It is important that WRD stay relevant to customer needs and maintain a balance of data collection, interpretive studies, and research efforts. The WRD would lose its relevance and ability to provide innovations in data collection and interpretation if it removed itself from these routine activities. WRD must be acutely aware of the needs of a wide range of potential customers for hydrologic information. However, WRD must approach these potential customers with the viewpoint that our role is to form true partnerships with our customers. We must provide significant technical leadership and not simply respond to their needs as they perceive them.

This means that some potential projects will be rejected as inappropriate for WRD. It also means that many potential projects will be greatly strengthened, from the standpoint of benefits to the customer and to the Nation.

Robert M. Hirsch
Chief Hydrologist

DISTRIBUTION: A, B, DC

This memorandum supersedes WRD Memorandum No. 92.56.

In Reply Refer To:
Mail Stop 404

February 11, 1992

WATER RESOURCES DIVISION MEMORANDUM NO. 92.14

SUBJECT: LEGISLATION--Authority for Conducting Water Resources Investigations

This memorandum replaces Water Resources Division (WRD) Memorandum No. 90.47 (May 24, 1990) on this subject. The principal revisions are in item c.

Headquarters, Regional, and District officials of the Water Resources Division are requested from time to time to cite the legal authority for conducting water resources surveys, investigations, and research, and for publishing the results of that work. This memorandum lists the citations of the principal laws that establish such authority. The laws cited most often are the Organic Act (item a, below) and the most recent appropriations act--Public Law 102-154 described in item c. Underlining has been added as an aid to quick reference.

Abbreviations (examples):

20 Stat. 394 -- Page 394 of volume 20 of U.S. Statutes at Large. 43 U.S.C. 31 -- Section 31 of Title 43 (Public Lands) of U.S. Code. P.L. 102-154 -- Public Law 102-154 (Public Law 154 of the 102nd Congress).

Legal Authority

- a. Act of March 3, 1879 (20 Stat. 394; 43 U.S.C. 31), was the organic act that established the Geological Survey, providing for “. . . the classification of public lands, the examination of the geological structure, mineral resources, and products of the national domain,” but making no specific reference to water except as relevant to land classification. The next sentence of this same law clearly forbids the Survey from doing work for individuals and non-government organizations: "The Director and members of the Geological Survey shall have no personal and private interests in the lands or mineral wealth of the region under survey, and shall execute no surveys or examinations for private parties or corporations." (See last paragraph of item c., below, regarding authorization for carrying out work cooperatively with private agencies, financed entirely by contributions from such agencies. Special rules and procedures apply.)

- b. Act of October 2, 1888 (25 Stat. 526), authorized surveys to identify irrigable lands in arid regions, and "selection of sites for reservoirs and other hydraulic works necessary for the, storage and utilization of water for irrigation and the prevent of floods.
- c. Specific appropriations by Congress for gaging streams and performing other functions relating to water resources have been made annually since the act of August 18, 1894, for fiscal year 1895 (28 Stat. 398), providing for "gauging the streams and determining the water supply of the United States, including the investigation of underground currents and artesian wells in arid and semiarid sections..." These appropriations are sometimes referred to as SIR funds (an acronym for "Surveys, Investigations, and Research").

The most recent annual appropriations act is Public Law 102-154, November 13, 1991, which makes appropriations for fiscal year 1992. This act includes the words (re: USGS) “ . . . to perform surveys, investigations, and research covering topography, geology, hydrology, and the mineral and water resources of the United States, its Territories and possessions, and other areas as authorized by law (43 U.S.C. 31. 1332. and 1340).” Each annual appropriation act also authorizes the Survey to "give engineering supervision to power permittees and Federal Energy Regulatory Commission licensees..." (Re: FERC, see 16 U.S.C. 797a and 797c).

The annual appropriations act also States that the "amount appropriated for the Geological Survey shall be available for...payment of compensation and expenses of persons on the rolls of the Geological Survey appointed, as authorized by law, to represent the United States in the negotiation and administration of interstate compacts.” The public law approving each interstate compact is the authorizing legislation for the appointment, usually made by the President.

The following is provided for your information and future reference. A provision was added to the appropriations act for FY 1991 (P.L. 101-512, 104 Stat. 1924-1925) regarding, a definition of cooperative funding. It reads: "That beginning October 1, 1990, and thereafter, funds received from any State, territory, possession, country, international organization, or political subdivision thereof, for topographic, geologic, or water resources mapping or investigations involving cooperation with such an entity shall be considered as intragovernmental funds as defined in the publication titled "A Glossary of Terms Used in the Federal Budget Process.” The significance of this provision is that cooperative funds are no longer subject to sequestration under the provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177, 99 Stat. 1038).

A provision of the annual appropriations act for fiscal year 1988 (P.L. 100-202, 101 Stat. 1329-224) is applicable to volunteers who assist the Geological Survey: "...appropriations herein and hereafter...shall be available for paying costs incidental to the utilization of services

contributed by individuals who serve without compensation as volunteers in aid of work of the Geological Survey, and that within appropriations herein and hereafter provided, Geological Survey officials may authorize either direct procurement of or reimbursement for expenses incidental to the effective use of volunteers such as, but not limited to, training, transportation, lodging, subsistence, equipment, and supplies" provided that "provision for such expenses or services is in accord with volunteer or cooperative agreements made with such individuals, private organizations, educational institutions, or State or local government."

The Geological Survey part of the appropriations act for fiscal year 1987 (P.L. 99-591, 100 Stat. 3341-252) included the following provision: "That in fiscal year 1987 and thereafter the Geological Survey is authorized to accept lands, buildings, equipment, and other contributions from public and private sources and to prosecute projects in cooperation with other agencies, Federal, State, or private." This provision, excluding the words "and thereafter, n first appeared in the annual appropriations act for fiscal year 1983 (P.L. 97-394, 96 Stat, 1972). Special rules and procedures must be followed regarding the subject of this provision, as detailed in (1) WRD Memorandum No. 83-91, July 11, 1983, Subject: LEGAL--Contributions from and Collaborative Work with Private Sources; and (2) Geological Survey Manual Series/Chapter/Paragraphs 308.46.1 and 500.20.1 to 500.20.8E. (Please note that after April 1, 1992, reference to 308.46.1 will change to 308.42.2E as Chapter 308.46 will be superseded by revised chapter 308.42.)

- d. Congressional recognition and endorsement of the water-related missions of the Geological Survey are also reflected in (1) the act of June 11, 1896 (29 Stat. 453), providing that "hereafter the reports of the Geological Survey in relation to the gauging of streams and to the methods of utilizing the water resources may be printed in octavo form..." (2) the joint resolution of May 16, 1902 (32 Stat. 741; 44 U.S.C. 1318), providing that "hereafter the publications of the Geological Survey shall consist of...water-supply papers and irrigation papers... " and (3) the act of December 24, 1942 (56 Stat. 1086), as amended (43 U.S.C. 36b), authorizing the Secretary of the Interior to acquire lands (or obtain easements, etc.) "for use by the Geological Survey in gaging streams and underground water resources."
- e. Cooperative (joint) funding of Geological Survey scientific and technical investigations with State and local governmental agencies, first begun in 1884, was first referred to (re: water) in Public Law 70-100 (45 Stat. 231; 43 U.S.C. 50), March 7, 1928, for fiscal year 1929: "... such share of the Geological Survey in no case exceeding 50 per centum..." For fiscal year 1992, Public Law 102-154, the language is "... no part of this appropriation shall be used to pay more than one-half the cost of any topographic mapping or water resources investigations carried on in cooperation with any State or municipality." This has been interpreted to mean a public agency or entity having taxing authority or a public institution that is an integral part of such tax-levying entity.

Indian tribes are considered public entities (rather than private), as substantiated by their possessing "powers of self-government" as described in Section 1301 of Title 25 of the U.S. Code. United States island possessions also are considered public entities.

- f. By the act of September 5, 1962 (P.L. 87-626; 76 Stat. 427; 43 U.S.C. 31b), the Survey's geographic jurisdiction was extended to areas outside the national domain where determined by the Secretary to be in the national interest.
- g. Authority for the Geological Survey to perform reimbursable work for other Federal agencies (OFA) program is the Economy Act of 1932, and its codification in 1982 with minimal substantive change as part of Public Law 97-258, September 13, 1982. The relevant wording of the Economy Act is, in part, as follows:

"The head of any agency or major organizational unit within an agency may place an order with a major organizational unit within the same agency or another agency for goods or services if...the head of the ordering agency or unit decides the order is in the best interest of the United States Government;...and the head of the agency decides ordered goods or services cannot be provided as conveniently or cheaply by a commercial enterprise" (31 U.S.C. 1535).

See WRD Memorandum No. 85.76, May 22, 1985, "POLICY--Relevance to the Division's Other Federal Agency Program of the Competition in Contracting Act of 1984" for a further discussion of the applicability of the Economy Act.

- h. The authorizing legislation, through fiscal year 1994, for the Federal part of the support of the State Water Resources Research Institutes and the Research and Technology Development Program is Title I of Public Law 98-242 (98 Stat. 97), May 22, 1984--the Water Resources Research Act of 1984, as amended by Public Law 101-397 (104 Stat. 852), September 28, 1990.

Office of Management and Budget (OMB) Memorandum No. M-92-01, signed by OMB Director Richard Darman on December 10, 1991, designates the Geological Survey as the lead agency to implement the Water Information Coordination Program (WICP) of the Federal Government. This new memorandum replaces OMB Circular A-67, dated August 28, 1964. The program covers information about streams, lakes, reservoirs, ground water, estuaries, and other aquatic habitats influenced primarily by fresh water. Through this memorandum, the USGS has principal responsibility for operating the national network for water-data collection and analysis and for maintaining the national historical water-information base. The WICP functions are conducted in collaboration with other Federal and non-Federal organizations.

The large appendix volume of the President's annual budget contains copy of the appropriations language and brief fiscal and descriptive data for the Geological Survey, identification code 14-0804-0-1-306, within the chapters for the Department of the Interior.

The Catalog of Federal Domestic Assistance, updated twice a year, briefly describes the objectives and eligibility requirements of the Water Resources Institute Program and Water Research Grant Program under items "15.805 Assistance to State Water Resources Research Institutes" and "15.806 National Water Resources Research Program," respectively.

The U.S. Code of Federal Regulations (CFR) contains regulations promulgated by the Geological Survey regarding water resources with respect to the Water Resources Research Institutes (WRRI) and the Research and Technology Development Programs. The regulations are in CFR Title 30, Part 401 for WRRI, and in Part 402 for the other two programs.

William B. Mann IV Assistant Chief Hydrologist for Operations

WRD Distribution: A, B, S, FO, PO

This memorandum supersedes WRD Memorandum No. 90.47 (May 24, 1990).

December 5, 1983

In Reply Refer To:
EGS-Mail Stop

WATER RESOURCES DIVISION MEMORANDUM NO. 84.21

Subject: PROGRAMS AND PLANS--Hydrologic Activities to be Excluded from the Federal-State Cooperative Program

The basic mission of the Water Resources Division (WRD) is specified by law and other mandates and, therefore, does not readily change. On the other hand, hydrologic conditions, hydrologic problems, and the public awareness of these problems do change, and as a result our activities change with time. These changes make it important that criteria used to evaluate WRD activities be reviewed and defined on a regular basis.

The current trend toward shifting responsibilities from Federal to State agencies to fund development and for managing the water resource could conceivably influence the emphasis of the Federal-State Cooperative Program. Thus, it is especially important that periodically the criteria for selecting activities for the Federal-State Cooperative Program be reviewed.

Those activities considered to be of highest priority and greatest interest are reviewed and redefined each year. Less attention has been placed on the other end of the scale; that is on those activities that should be excluded from WRD programs. At any time the Division needs to guard against expending its resources on less important activities, but especially at times when funds and manpower are under stress.

The attached staff paper reviews and discusses criteria to be used to decide which hydrologic activities are not appropriately included in the Federal-State Cooperative Program. The discussion paper provides policy guidelines, examples, and references to existing directives that should be used, along with other WRD policy Statements on high priority issues, in the formulation of new programs.

/signed/

Philip Cohen

Attachment

Distribution: All Professional Personnel

HYDROLOGIC ACTIVITIES TO BE EXCLUDED FROM THE FEDERAL-STATE COOPERATIVE PROGRAM

Introduction

The task of defining guidelines for rejection of hydrologic studies and data collection proposed by Water Resources Division (WRD) Districts for inclusion in the Federal-State Cooperative Program might be viewed as the negative counterpart of identifying those activities to be accorded the highest priority in the program. In other words, rejection criteria would have to be based on some definition of the lowest priority. One criterion might entail a definition of hydrologic activities that are devoid of merit in the sense that the data or information derived from them would be worthless or nearly so. However, the selection and ranking of hydrologic studies and hydrologic data collection that are of lowest priority is even more subjective than the selection of highest-priority activities. High-priority program issues are so defined in part because of their relation to water problems that are wide-spread geographically. As applied to areal descriptions or interpretive studies, geographically limited occurrence of the water problem to which they were addressed would be a necessary criterion for rejection, but any one of many factors might make a given project of limited geographic extent and occurrence a very desirable addition to the Federal-State Cooperative Program. Considerations of geographic distribution, however, are not applicable to the acceptance or rejection of a given data station.

The list of high-priority activities is rooted in the Division's perception of national and regional water problems, which are the aggregate of local problems, but rejection criteria cannot be based solely on a limitation in the utility of the resultant data or information in space or time, because of the possibility that information of limited areal extent, or data at some point, might be critical to the understanding and eventual solution of a particular hydrologic problem.

In the past it was fashionable to judge the worth of proposed activities in terms of Federal interest--a concept that commonly had been equated with "National" or "interstate." The Federal-interest notion has, however, become less useful with time, as Federal funds are no longer reserved for very large, or "National" projects, Federal dollars have pervasively entered all levels of government and all aspects of life. Thus, it has become increasingly difficult to define an absence of, or some minimal degree of Federal interest. The spectrum of enterprises and activities supported by Federal dollars is so broad, and so many of them take on national significance only by aggregation of a myriad of site-specific and local concerns, that by analogy practically any and all local and site-specific hydrologic data can be said to have "Federal value" and, therefore, to fall within the Federal interest. Is there less Federal interest in water-supply wells for small rural communities than there is for wheelchair ramps on city sidewalks?

In contrast, there are: (1) Legal and administrative constraints deriving from the Organic Act, the appropriation language, and "the intent of Congress," plus the amplifying rules and procedures promulgated by the Department and the Survey (manuals, and so forth) that contain explicit rejection criteria or provide the framework for them; (2) Statements of objective and mission that allow the exclusion of activities not included by such Statements; (3) judgmental determinations that a given proposal would be technically in-feasible; and (4) management considerations.

The criteria and guidelines that follow, as well as the discussion intended to illustrate and amplify them, should be applied to program proposals for work under the Federal-State Cooperative Program regardless of the funding mechanism. They should be applied whatever

the funding situation, 50-50 matched funds, Federal funds against direct services credit, or 100-percent repay.

Relation to High Priority Program Issues

High-priority program issues, as listed and defined in WRD Memorandum 83.52 for example, describe the kinds of interpretive studies that will be given preference for funding in the Federal-State Cooperative Program. Data collection activities generally are not uniquely related to such a priority list. By implication, however, kinds of data that would contribute to, or provide the foundation for, high-priority program issues take on higher priority than data collection devoid of such a relationship. If a proposal for new work does not fall within the realm of any of the high-priority categories, it should be examined critically and tested against the criteria for exclusion.

A long list can be compiled of activities that are generally considered to be of low priority. In some situations good reasons exist for excluding them from the Federal-State program; in others, they might serve to complement other program elements, or to fill a critical gap in the spectrum of hydrologic information. The list includes, but is not confined to: compilation of drainage areas, preparation of bridge site reports, and sampling and analysis of waste treatment plant outfalls. None of these topics can be categorically rejected. In some hydrologic situations, or if the understanding of the hydrology is minimal, each could be relevant, and in some cases, provide essential hydrologic data or information.

Legal and Administrative Constraints

1. The Organic Act prohibits the undertaking of work for private parties or corporations. By extension, this restriction can be applied to joint-funding agreements with private parties or corporations. Although language in the Appropriations Act for FY 1983 allows for funding of Survey work from private sources, the line items for Federal-State water-resources investigations are presumed not to be affected.
2. Appropriation language in recent years has referred to "...water-resources investigations carried on in cooperation with any State or municipality." This has been interpreted to mean an agency or entity having taxing authority or a public institution that is an integral part of such tax-levying entity. An entity that did not meet such a definition would not be eligible to enter into a joint-funding agreement. For example, the University of California operates the Los Alamos Scientific Laboratory in New Mexico under contract for the U.S. Department of Energy. While the University would be an appropriate cooperating agency for work in California, in New Mexico it is a contractor to a Federal agency and not an extension of that State's government.
3. Cooperative (joint) funding cannot be used for hydrologic activities outside the United States and its associated commonwealths and trust territories.
4. Hydrologic investigations, the conduct of which would violate existing laws or statutes, are to be rejected. (See WRD Memorandum 81.53.) For example, investigations that might have significant adverse effects on public health and safety, such as the introduction of toxic or hazardous materials as hydrologic tracers, or adversely affect endangered or threatened species, should be rejected. Investigations that would adversely affect national landmarks, antiquities, or archeological sites should be rejected.

Policy and Mission Constraints

1. The long-standing and firm Division policy not to compete with private industry (See WRD Memorandum 79.42 and memorandum from Chief Hydrologist, with enclosures, to Regional Hydrologists and others dated April 5, 1976, on "Programs and Plans--Competition with private industry.") precludes consideration of any work devised for or submitted competitively with private industry.
2. Work will not be undertaken (except perhaps under certain court-ordered situations or under special situations negotiated with and specifically approved by the Chief Hydrologist and the cooperator) in which the data and reports therefrom cannot be made public.
3. Given that in broad terms the mission of the Water Resources Division, as conveyed or implied in various laws and other Statements, is to appraise the Nation's water resources, any work proposed for joint funding that is not within that mission would not be acceptable. For example, a State Highway Department might propose joint funding of engineering geology necessary for highway design, but without hydrologic implications. Such work should be rejected.
4. Work that is more appropriately done by private industry or another governmental agency. The scope of proposed work, and its relation to the mission of the Geological Survey to "appraise the Nation's water resources," must contribute to the determination of appropriateness. If it is clearly in the public interest that hydrologic data be collected or hydrologic information be generated in an unbiased, objective manner and that there is a clear public need for the data/information, then it is appropriate for the Geological Survey to consider the work. The need for continuity in time-series data is especially important in such a determination ; continuity can best be assured if the data are collected, disseminated, and archived by an organization with a recognized expertise and the stability necessary to provide a long-term standardized data operation. If these tests are not met, or if the work cannot reasonably be judged a part of appraising the Nation's water resources, than it may be more appropriately within the purview of the private sector or other governmental agencies.

Even though a cooperating agency might prefer that a given piece of work be done by the Water Resources Division--whether it be flow conditions at a bridge site or a waste outfall, or the location of a supply well for a new subdivision--the worth of the resultant hydrologic data, and especially further interpretations thereof, must be critically evaluated before deciding to accept or reject such work. However, if the purpose of the hydrologic work is dominated by design and engineering considerations of a facility or structure, or if under these conditions and constraints the worth of the data or information does not meet Division standards, then the hydrologic work should not be undertaken as part of the cooperative program. For example, consider the opportunity to collect ground-water data in connection with dewatering necessary to excavate for the foundation and substructure of a large building, perhaps one being built by a cooperating State or local agency. Observation wells might be available, along with other appurtenances and sources of related data. However, if the dewatering had to be done in such a manner that would preclude the estimation of aquifer parameters--perhaps variable discharge rate, or multiple discharge points--rejection of th
Indeed, if the dewatering cannot be regulated in such a way as to make it a useful aquifer test, the work should be rejected.

If a major part or primary thrust of the work consists of engineering, economic, or other determination s, judgments, or opinions, it is more properly done by the private sector and should be rejected by the Division. This is not to say that economic or engineering aspects of resource appraisal or development are to be excluded from the cooperative program, or that

economic or engineering ramifications per se can or should be the basis for exclusion; rather that engineering or economics must be subsidiary to hydrologic or water-resources considerations.

This guideline is especially difficult to express. A definition written from the government point of view is likely to be considered self-serving by industry and vice versa. The key judgment involves the anticipated worth of the resultant data, and the need for those data in ongoing programs or as part of a network. This guideline must be applied flexibly, and implemented gradually, because the availability of private-industry capability varies a great deal from one State to another, and because of historical factors in the development of the cooperative program.

5. Information Value

Activities that will produce little hydrologic information, or information of low value, should be rejected. Activities that would duplicate known facts or information are to be rejected. This obviously requires a distinction between refinement and duplication of information, and would not apply to conditions known or thought to vary with time.

Consider the case of a well field to be developed in an area where the subsurface geology is well known, but where head distribution and hydraulic properties of the aquifers and confining beds are poorly defined. Initial drilling and testing of the first few wells are likely to have a high information content, and depending on the general understanding of the flow system, information of high value. Thus, it would be appropriate to monitor the initial drilling and testing carefully to insure that head distribution is well documented and that properly designed and conducted aquifer tests produce good information. However, at some stage in well field development and expansion, data on individual drill holes takes on as a primary objective the design of casing and screening so that yields can be maximized and drawdowns can be minimized. The generation of continuing data on drawdown, pumpage, etc., provides justification for continuing Division involvement, but unless such opportunity exists, at this point the collection of drill-hole data is no longer an appropriate cooperative-program activity, including recognition of direct services credit.

The key point in this guideline relates to the duplication of known facts or information. While it may be well within the cooperator's mission and objective, and may indeed be essential to that mission, to duplicate the hydrologically significant information for other reasons (for example, engineering requirements), when the generation of new hydrologically significant data or information decreases appreciably or vanishes, the activity is no longer appropriate for Division involvement.

Technical Feasibility

Rejection criteria related to technical feasibility of proposed work (a) must be considered in a very flexible manner, (b) must rely on and presume that those persons responsible for acceptance or rejection of proposals have access to the technical expertise and judgment consistent with high scientific standards of the Geological Survey, (c) must be made in light of the capabilities of the Division as a whole to advance the State-of-the-art, and (d) must consider the ability and willingness of the organization to assign the requisite scientific talent to the proposed work.

In some cases it is necessary to reject proposals for cooperatively funded work because there is inadequate scientific understanding of the phenomena of interest to meet the Stated objectives. In some cases the research necessary to gain an appropriate degree of understanding is either outside the purview of the Water Resources Division, or chemically and physically so complex

that a major research effort, and consequent program redirection, would be required to achieve the necessary degree of understanding. This situation is illustrated by a recent proposal to model the transport of nitrates in ground water beneath an area where extensive applications of nitrogen fertilizers take place. The proposal had to be rejected because of chemical changes (including changes in the mass balance) in the unsaturated zone and consequent uncertainties about the magnitude and chemical nature of the very diffuse input to the ground-water system. The project would not have been rejected if it had been proposed as a research project with provision for adequate funding, time, and talent.

The conduct of basic research in the Federal-State program is to be encouraged, provided both parties fully understand and appreciate the risks and uncertainties of the research and are fully prepared to dedicate the financial and human resources to the quest for knowledge.

Questions of technical feasibility are most commonly raised by inconsistencies between Statements of objectives and descriptions of approach in areal, topical, or applied-research investigations. Rejection may not be necessary if a flexible position is taken by both proposers and reviewers for acceptability. It may be possible to adjust and modify the objectives, or to amplify and strengthen the approach (in some cases with appropriate adjustments in effort and funding) and arrive at an acceptable match between objectives and approach.

Technical feasibility frequently involves the time necessary, given a reasonable level of effort and funding, in which to generate and verify the data necessary for a given investigation, and fit those data within an appropriate conceptual, analytical, and/or numerical simulation. In many cases the cooperating agency lacks sufficient understanding of the investigational process to appreciate the time and effort necessary to achieve a given objective. In such situations, either the direction of study and level of funding must be extended, or the work should be rejected.

Management Considerations

Although management considerations may be considered somewhat subjective, they are related to the general plans and concepts of the Division in terms of program effectiveness and organizational effectiveness.

National program balance

Inasmuch as the only vehicle whereby the Division can provide reasonably comprehensive and complete coverage of the hydrology and water-resource conditions of the entire Nation is the cooperative program, it follows that the Division has an obligation to strive for a reasonable geographic balance in that program. In other words, if a wealthy State such as California, Florida, or some other State wished to participate in the program with a very large sum of money, and the necessary increase in Federal matching funds could not be obtained, at some point the acceptance of such work would operate to the detriment of the overall program, because other needs for information could not be met within the limits of the appropriation. Objective criteria at which distortions of program balance would be detrimental are elusive at best. There seems to be no practical way of combining the myriad of factors that enter into such judgment. Nevertheless, if proposals for work would require a level of funding that necessitates "robbing" programs in other States, the proposals should be rejected or scaled down. Similarly, if the direct credit contribution from the State and local agencies approaches a level in which technical competence and operational efficiency within the offices of the Division would be appreciably weakened, such proposals should be rejected.

Shifts in geographic balance can very well result from program emphasis on high-priority national concerns that are not evenly distributed geographically; for example, water for energy

self-sufficiency, or water for increased food production, and the hydrologic impacts thereof. Such issues can and should be identified in advance and should be specified as line items in the budget, rather than allowing the program in some parts of the country to deteriorate in order to expand a few priority issues having limited geographic scope. This, however, becomes a problem in the definition of National-program goals rather than defining rejection criteria.

Maintenance of program balance should be a goal of Division management; the process of acceptance or rejection of a particular project or data station is but a minute step toward the larger goal.

Direct services credit

Criteria for rejection of proposals for cooperatively funded work by the Water Resources Division apply also to work by a cooperating agency for which direct-services credit might be offered. In addition, direct-services credit should not be granted for major capital expenditures by the cooperating agency, and proposals predicated on such expenditures should be rejected. (See WRD Memorandum 71.17.) This applies especially to major capital expenditures such as the purchase of well-drilling equipment. For example, the one-time cost would be inappropriate; however, the fair market value of a use rate or a fee for services is appropriate.

Employee safety

Proposals for work, whether in the Federal-State program or other program elements, that would place employees in an unsafe environment should be rejected. Although a number of Division activities involve some measure of personal risk, and greater risk at some times than at others, work that would incur an unacceptable level of risk should be rejected, whether it might involve streamflow measurements from structurally unsound bridges, or excessive exposure to toxic chemicals.

8/1/99

The following memos referenced are obsolete or superseded:

71.017 Obsolete

79.042 Superseded by 84.036

81-053 Obsolete

83.052 Obsolete

