

U.S. GEOLOGICAL SURVEY: UPDATE ON CURRENT ACTIVITIES

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It is a pleasant task to recount for this gathering an overview of the water-resources activities of the U.S. Geological Survey in New Mexico. In addition, it provides a useful opportunity to interact with so many people with major water-related roles.

In such a short period of time, one can only skim the highlights of our programs. This is an attempt to portray a sense of the breadth of the program and to call especial attention to just a few activities which are relatively new, or with which others might be unfamiliar.

The Survey, as most know, is somewhat unique among federal agencies in that a large part of the work is funded on a 50/50 matching basis with state and local entities. During fiscal year 1975, about two-thirds of the Survey's water-resources program efforts in New Mexico were funded in this manner; the remaining one-third were funded by other federal agencies and Survey funds appropriated by Congress. As seen in Figure 1, the ratio of jointly-funded activities during fiscal year 1980 is now about 43 percent of program activities. This reflects a rapid increase in funding from the other areas; the jointly funded work has increased, but not as quickly.

Projects and funding emphasis within the three major categories are shown in Figure 2 for joint funding; in Figure 3 for other

*FY80
NEW MEXICO DISTRICT PROGRAM
\$4.3 MILLION*

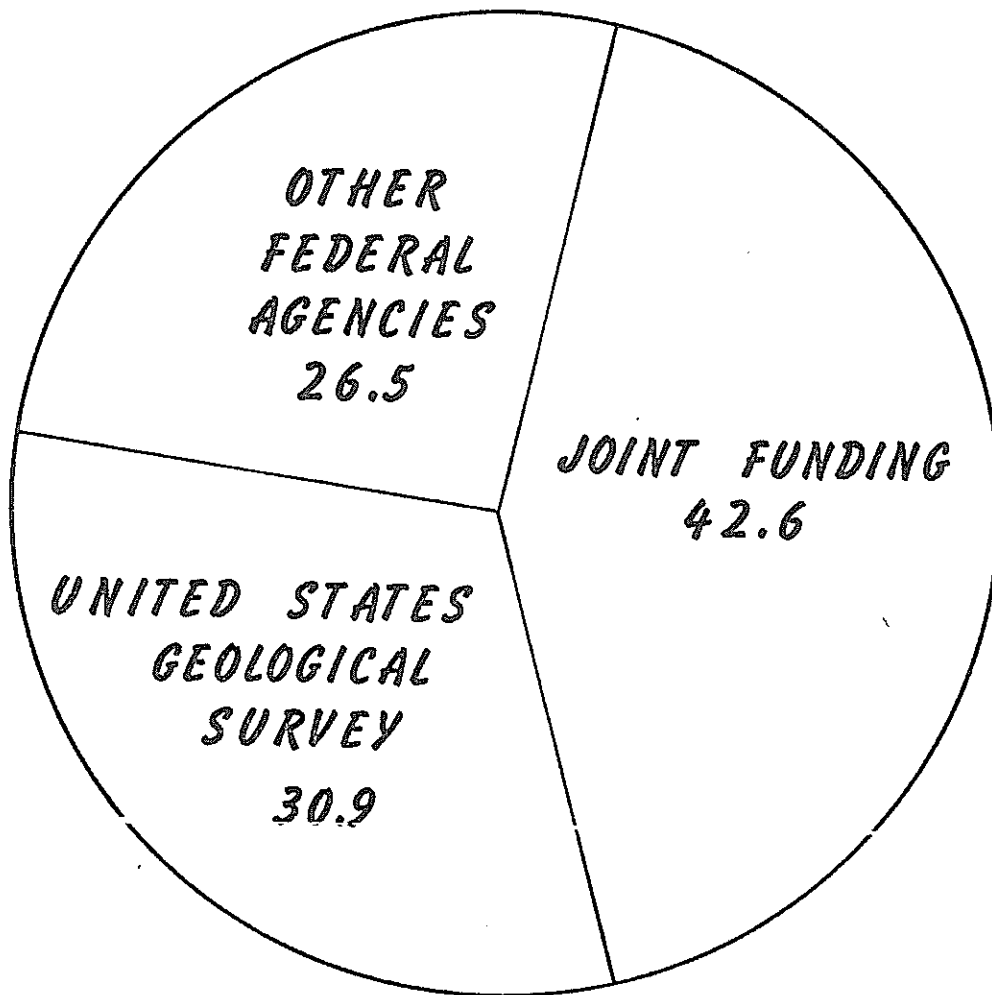
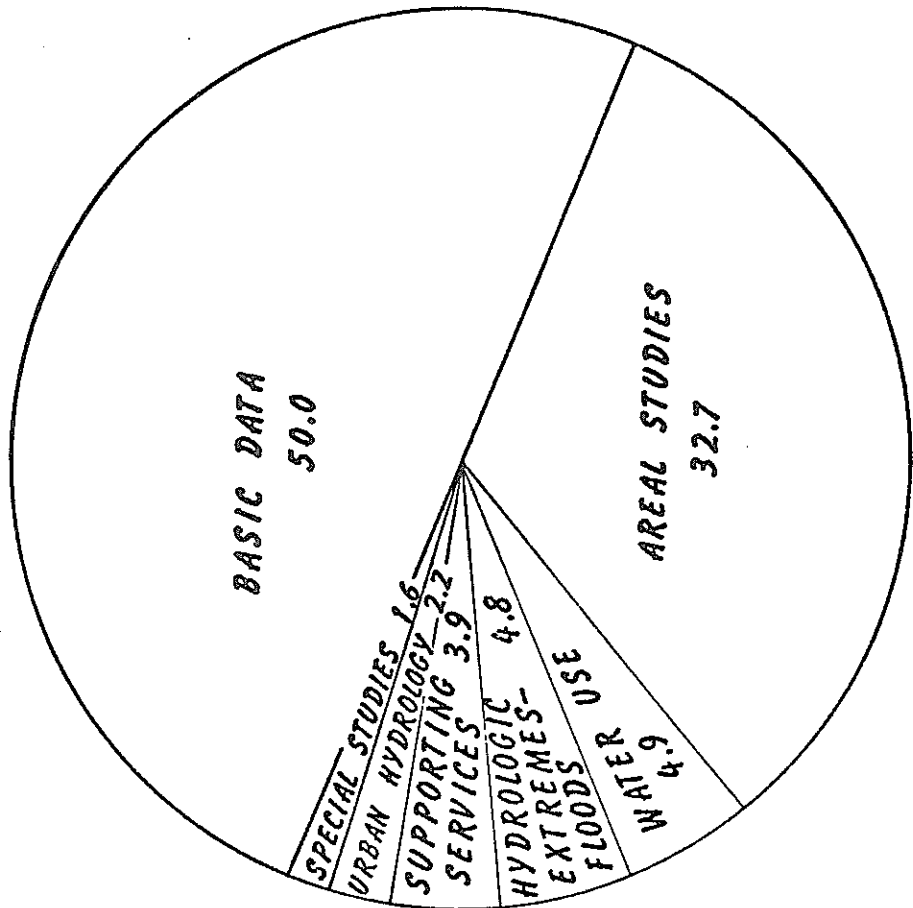


Fig. 1. Funding by source and percent.

FY80 NEW MEXICO DISTRICT COOPERATIVE PROGRAM \$1.8 MILLION

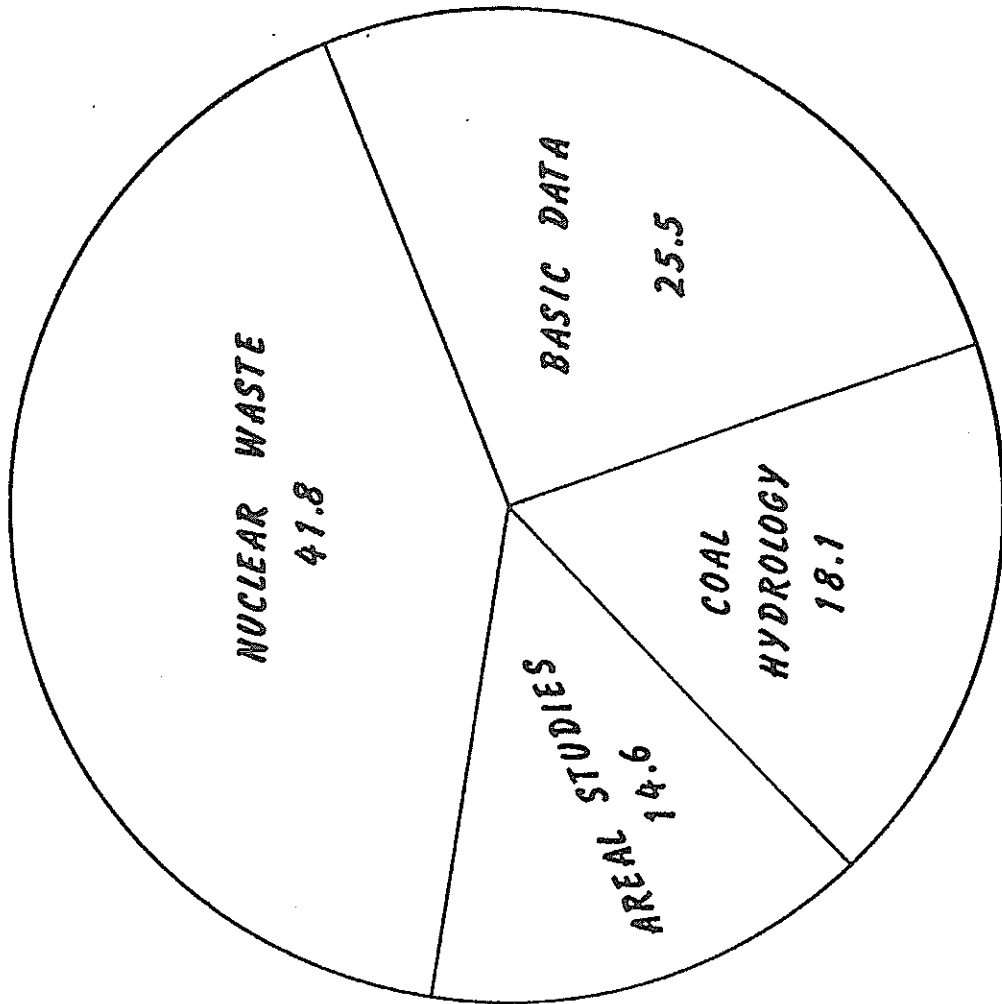


PROJECTS

- NM 00-001 SURFACE WATER STATIONS
- NM 00-002 GROUND WATER STATIONS
- NM 00-003 QUALITY OF WATER STATIONS
- NM 00-004 SEDIMENT STATIONS
- NM 78-007 WATER USE
- NM 48-100 RIO GRANDE COMMISSION
- NM 60-101 STATE ENGINEER, MISC.
- NM 63-103 ROSWELL BASIN, QUANTITATIVE
- NM 71-105 NEW MEXICO DATA BANK
- NM 70-106 MISCELLANEOUS, FECOS RIVER
- NM 67-203 FLOOD ANALYSIS
- NM 72-214 WATER RESOURCES MIMBRES BASIN
- NM 72-215 WATER RESOURCES SANTA FE
- NM 73-219 URBAN AREAS RECONNAISSANCE
- NM 75-221 EFFECTS OF DEVELOPMENT IN NW NEW MEXICO
- NM 76-224 URBAN FLOOD HYDROLOGY, ALBUQUERQUE
- NM 78-225 ZUNI WATER RESOURCES
- NM 79-226 SAN AUGUSTIN PLAINS GROUND WATER
- NM 79-227 MODEL STUDY OF ROSWELL BASIN, NM
- NM 80-228 MIMBRES BASIN MODEL
- NM 80-229 HIGH PLAINS STUDY, LEA COUNTY

Fig. 2. Expenditure of joint funds by category and percent.

**FY80 NEW MEXICO DISTRICT OTHER FEDERAL AGENCIES
PROGRAM \$1.2 MILLION**



PROJECTS

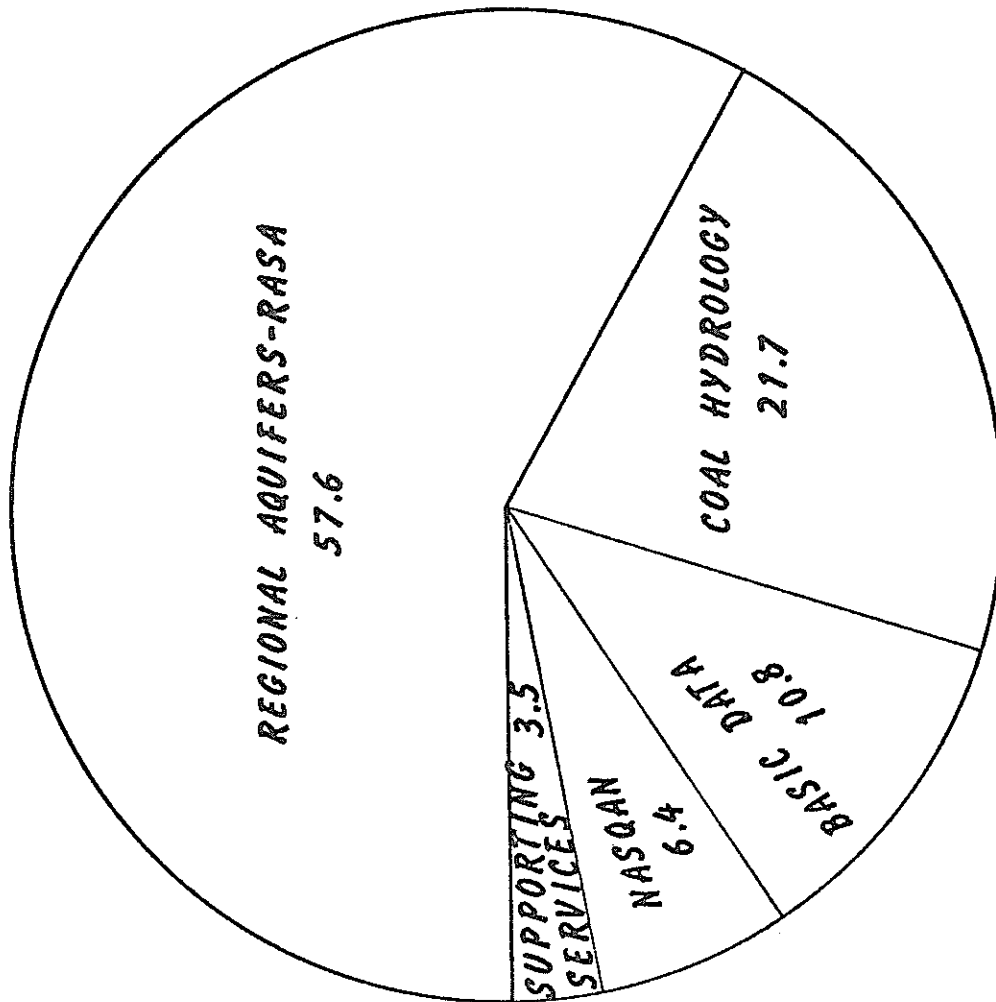
- NM 00-001 SURFACE WATER STATIONS
- NM 00-002 GROUND WATER STATIONS
- NM 00-003 QUALITY OF WATER STATIONS
- NM 00-004 SEDIMENT STATIONS
- NM 61-109 WSMR WATER LEVELS
- NM 75-321 COAL LEASE AREAS, NW NEW MEXICO
- NM 75-324 RADIOACTIVE BY-PRODUCTS IN SALT
- NM 76-325 QW MONITORING IN CHACO RIVER BASIN
- NM 78-329 WATER RESOURCES, LAGUNA PUEBLO
- NM 78-330 WATER RESOURCES, ACOMA PUEBLO
- NM 79-333 RF/RO MODELING IN COAL-LEASE AREAS

federal agencies; and in Figure 4 for the Survey's appropriated federal program. Of the projects listed in Figure 2, the largest number are joint undertakings with the New Mexico State Engineer's Office. For example, others are financed in cooperation with the New Mexico Bureau of Mines and Mineral Resources, New Mexico State Highway Department, City of Albuquerque, and Albuquerque Metropolitan Arroyo and Flood Control Authority (AMAFCA), and Zuni Pueblo. Many other agencies participate from time-to-time, so that the list changes periodically. Apologies are extended if omissions have been made. Elephant Butte Irrigation District and the City of Las Cruces are two entities with whom financial cooperation has taken place previously and for whom some results are presently being finalized.

Approximately one-half of this joint effort is directed toward acquiring hydrologic data for current management or future needs. Of the remainder, areal studies are primarily groundwater oriented and would include Roswell Basin, Mimbres Basin, and Lea County; supporting services include the data bank and State Engineer miscellaneous projects. There is an approximately equal amount of interpretive studies and data collection.

Other federal agency programs are summarized in Figure 3. Again, there is a mixture of interpretive studies and data collection. One item of note in this category is the magnitude of energy-related studies. That emphasis did not exist in 1975. Now, however, almost two-thirds of the other federal agency program is

FY 80 NEW MEXICO DISTRICT FEDERAL PROGRAM \$1.3 MILLION



PROJECTS

- NM 00-001 SURFACE WATER STATIONS
- NM 00-002 GROUND WATER STATIONS
- NM 00-003 QUALITY OF WATER STATIONS
- NM 00-004 SEDIMENT STATIONS
- NM 75-321 COAL LEASE AREAS, NW NEW MEXICO
- NM 77-406 EXPANDED MONITORING IN COAL-LEASE AREAS
- NM 78-407 HIGH PLAINS AQUIFER STUDY
- NM 79-408 SOUTHWEST ALLUVIAL VALLE" -EAST
- NM 79-409 LIAISON USGS-BLM
- NM 79-410 MINICOMPUTER EVALUATION
- NM 80-411 INDIVIDUAL COAL MINE EFFECTS

Fig. 4. Expenditure of U.S. Geological Survey appropriated funds by category and percent.

energy related -- when appropriate data collection is considered -- either in assessing or predicting impacts of energy development or energy waste disposal. Agencies supporting these projects include the U.S. Army (Corps of Engineers, White Sands Missile Range), U.S. Water and Power Resources Service, U.S. Department of Energy, U.S. Environmental Protection Agency, and the U.S. Bureau of Land Management, among others.

The Survey's appropriated federal program is summarized in Figure 4. Today this aspect of the total program accounts for about one-third, while in 1975 it was only about one-tenth. Again, energy-related coal efforts are significant, but the Regional Aquifer System Analyses also are significant. New Mexico has two on-going Regional Aquifer System Analyses that account for 58 percent of the funding. One is a part of the High Plains analysis; the other is the Southwest Alluvial Basins analysis that includes a large part of New Mexico, plus smaller parts of Colorado and Texas.

When all studies are considered, one reaches the conclusion that the Survey's program is very much dependent upon joint funding of projects and other agency needs. Because of this, we feel the program stays responsive to local needs and problems. If it were not responsive, those sources of funding would undoubtedly dry up.

It seems fitting that energy-related projects are so prominent in the program. The national interests are reflected in both other federal agency and survey funding. However, New Mexico is an energy resource-rich state and many of the jointly funded efforts are

designed to obtain hydrologic information to assess development effects on water resources. With this information, state and local officials can better manage and allocate the water resources of the area.

By way of summary, the program deals with a broad range of water-information needs with a mixture of data collection and interpretive projects. That breadth is reinforced by the myriad of agencies -- federal, state, and local -- with whom we cooperate and collaborate. We're proud of our program, but we recognize there are many problems unsolved and unaddressed. It will take all the hydrologic talent available (not just that in the Survey) to stay abreast of today's and tomorrow's needs.