PART III

REQUEST FOR ASSISTANCE UNDER TITLE III
OF THE WATER RESOURCES PLANNING ACT, P.L. 89-90
FISCAL YEAR 1980

PROGRAM NARRATIVE

A. Alaska's water and land resource problems vary widely in importance and scope. The magnitude, complexity and relative immediacy of these problems also vary greatly, reflecting the divergent nature of the problems. The Alaska Water Assessment, the Alaska portion of the Water Resources Council 1975 National Assessment completed in August, 1977, sets out the Alaska Region's views on relative importance and priorities for addressing water problems together with conclusions and recommendations for solving Alaska's water and related land resource problems. Problems identified in the course of the Assessment fall into several general categories. Some problems are related to inadequate water supplies, some to Alaska's climate and the adequacy of existing technology to deal with it. Other problems are related to Alaska's relatively undeveloped state, its rich and diverse resources, and increasing pressures for development. This document has been used extensively in developing the majority of the programs proposed.

The following are some of the general problems facing Alaska and water resources planning:

1. Population growth and development pressure. One of the most pressing problems facing Alaska for both the short and long term is increasing population and the resultant demand on Alaska resources. As further growth and development occur, increased demands will be made on Alaska's water resources. Specific examples of future development which will affect water resources are the land use decisions made regarding Native, state, and federal lands, large-scale conversion of state land to private ownership, large-scale state promotion of agricultural development, mining and energy-related projects, potential creation of bottom-fish processing industries, the outer continental shelf leasing program, and the natural gas pipeline.

2. Climatic problems. Factors controlling the quality and quantity of Alaska's water resources include extremes of precipitation and temperature found throughout the state. In normally wet Southeast Alaska, for example, a drought of short duration may dry up streams causing water shortages. Many shallow interior and Arctic lakes and streams freeze solid over the winter causing shortages of water.

A typically Alaskan water problem is permafrost. Permafrost binds much of the water supply into an unusable form, complicates the drilling and operation of wells for ground water, the placement

of sewage systems, and the engineering needed for new water supply construction.

3. Changes in land ownership patterns. Changes in land ownership and management patterns resulting from the Alaska Native Claims Settlement Act have a pronounced effect on water and related resources. As land is divided between Native, federal, state and local interests, the structure of the law itself will promote different development on the land than what existed before. Emerging land ownership patterns will accommodate a wide variety of uses to meet the future needs of Alaska and the nation. Water use patterns will be required to change in conjunction with these occurrences.

4. Instream water. Although the Constitution of the State of Alaska recognizes general water reservations for fish and wildlife, there is a need to clarify the State's abilities and procedures to administer instream reservations. This is becoming increasingly urgent in view of expanded water resources demands created by urbanization and industrial activity.

Fish, wildlife, recreation, hydroelectric power, and navigation form the nucleus of instream water demands. Competing out-of-stream demands frequently do not give adequate consideration to instream needs. Lack of a methodology to define values is largely responsible for this inequity in competitive postion. The actual allocation of instream flows represents only the first step.

Water quantity and quality considerations are also important. Excessive water withdrawals will create a water quality problem by reducing the stream's ability to handle pollution and cleanse itself. Excessive withdrawal degrades water quality by decreasing the volume of water - thereby increasing the pollutant load per unit. For example, sedimentation may degrade fish habitat, aesthetics, hydroelectric use and navigation, as well as require artificial treatment and filtration for out-of-stream uses.

5. Water availability. The waters of the state are not totally appropriated, thus, the potential of water use and development can still be planned. In the mountainous and coastal regions of Alaska, water supplies are usually abundant in the spring and summer. In the remainder of the state where semiarid conditions or extended cold periods exist, water shortages frequently occur. These large areas with low precipitation, predominantly frozen ground, extended seasonal freezing, and watersheds with relatively low water retention are characterized by drought or flood conditions with dramatic water fluctuations. In mountainous coastal regions, where precipitation may exceed 200 inches annually and water appears to be in perpetual abundance, twenty or thirty days of cold weather produce water shortages.

Water availability at specific sites depends on a broader spectrum of conditions than normally necessary for prediction of availability in temperature climates. Hydrologic basin, region,

subregion, subarea, site, climate, and geology influence availability. Natural and man-made alterations at a specific site also appear to exert intensified effects upon availability. Large rivers may flow throughout the year although low flow conditions occur in winter rather than in summer. Lesser streams, however, may flow in summer only. Myriads of lakes in the arctic and interior valleys, deltas, and plains are generally shallow and remain frozen to the bottom much of the year. Tremendous amounts of water are accumulated in snowfields, glaciers and permanently frozen ground. The cycle of availability of these sources, however, may be more closely related to hydrologic centuries rather than hydrologic years. Man-made and natural thermal influences have a great effect on the availability of these water supplies. The storage or flow of these waters is dependent upon these potential actions which determine water liberation.

Water availability is also dependent upon the quality of waters in each area. Many of the waters of the state are unavailable or unsuitable for use due to both natural and man-made pollution. Waters heavy in iron or organics are not suitable for use without treatment.

The following are some of the specific problems facing Alaska and water resources planning:

1. Due to Alaska's vast area and varying geographic, climatic, environmental and economic conditions, an overall state water plan must be built on the development of regional or subregional planning guides. The purpose of regional guides will be to summarize available data on water use and availability and project needs in the future. These area guides will be used for development of water management and allocation policies by the Department. The following areas are undergoing especially strong development pressures and resulting needs for water resources use.

a. The Tanana River Basin is under development pressures from urban growth in the Fairbanks area and a large-scale agricultural development project involving nearly 70,000 acres in the Delta area. Increasing demands on limited ground water supplies and watercourse alterations are pressing issues in need of coordination and planning. The entire Basin has been identified as a priority study area in the Alaska Water Assessment.

b. Slight but steady increases in population, transportation, reindeer ranching, commercial fishing, and tourism are anticipated in the future in the Kotzebue Sound area. Oil and gas development and increased mining are also expected. The Alaska Water Assessment states there are uncertain and inadequate water sources for many developed areas in the region, and competitive water and land use by mineral and energy developers and by subsistence and recreation users could restrict economic growth. The regional Native corpor-

ations and the Governor's Office have designated this as a high priority planning area.

c. The Bristol Bay region is the state's prime fishery resource, has important recreation values and is becoming more organized politically. Important potential water uses are outer continental shelf oil development and seafood processing. Little data is available for the region and what does exist is not well organized.

2. The Department of Natural Resources is engaged in a long-term, large-scale, state-wide land disposal program to convert state land to private ownership. There is an urgent need for internal administrative coordination and the development of planning procedures for the disposal of land and related water resources.

3. Natural water supply is abundant when considering the state as a whole, but can be quite limited locally. Much of the interior and arctic climatic zones is characterized by low precipitation and runoff. Although runoff in inches may be low, the percent of precipitation which occurs as runoff is high. Due to cold winters and permafrost, vast areas of the state have little available water during much of the year. Resource use conflicts associated with developing regions of the state are placing heavy demands on available water supplies. The practice in many areas of Alaska of running an open faucet during cold weather periods for freeze-up prevention must currently be recognized as both practical and wasteful. Such practice increases per capita use to significant and even critical volumes at times.

   The determination of need for and use of water conservation policies and methods is unresearched in the State of Alaska. While water shortage problems are known to exist, exact determination of their extent and possible alternative corrective actions has not been evaluated. The unique situation in Alaska will demand adaptation of current policies and methods, and the development of appropriate technology. The Alaska Water Assessment has identified many of the problem areas and needs for planning. The Southcentral Water Resources Study, currently underway, has further delineated these problems: "No one knows how much water is being used in this region. Metering is scattered and not very comprehensive" and "the continuous use of water during freezing weather to prevent system freeze-up and pipe rupture is common practice in many communities of Alaska. No studies or analyses for communities in this area were located or undertaken to accurately estimate such use....."

4. A past project of the Title III program identified watershed boundaries for community water supplies. In many cases, the watersheds are under jurisdiction of several agencies at different levels of government. These lands are under

increasing pressure for timber, mineral, and residential development. Alternative management strategies are needed to insure their continued use as sources of community water supplies is not impaired.

5. The Alaska Water Assessment has identified a significant need for basic knowledge of the effect of out-of-stream use of water on the instream environment. Research into methodologies available to evaluate instream flow has been completed, although development of appropriate methods for the Alaskan situation remains for future determination. A comprehensive program involving planning, research, and institutional analysis to clarify and enhance the State's abilities and procedures to administer instream reservations is an immediate need before effective management can proceed.

6. The State of Alaska has more floodplain area than the other 49 states combined. Alaskan development has traditionally occurred in this floodplain area and at the present time almost every Alaskan community is flood prone. At present, only federal programs are concerned with floodplain planning and management. It is urgently important from a safety and budgeting view that action be taken now to insure that costly flood damage is minimized in the future.

7. Alaska is embarking on a bold, large-scale program promoting agricultural development. Several tracts are already leased or sold, and tens of thousands more acres are scheduled for agricultural sale. Many of these tracts are in areas with very little rainfall, and large-scale irrigation may be necessary for successful cropping. To meet the objectives of this program it will be necessary to identify sources of water, present uses and amounts by crop type, and to develop a planning system to efficiently allocate water in agricultural regions requiring water for irrigation and other uses. This may include the development of legislation to authorize irrigation or water management districts. Many unique situations must also be considered. An example is the source of water. Many streams are unusable for irrigation due to their high amount of glacial flour and minerals. Also, due to the extreme cold of both surface and ground water, only certain types of irrigation can be used because of the need of warmer water.

8. Alaska has developed a fragmented system of responsibilities in managing the state's water resources. Many different state agencies take an active part in the regulation of the state's water resources. In addition to these state agencies, a full complement of federal government agencies are involved in water-related projects and issues. Imminent changes in land ownership and increased demands for Alaska's natural resources will serve to further diversify and complicate water resource related issues. Experience has confirmed the need for frequent and active communication between all

levels of government agencies. No agency has lead responsibility for coordination of all aspects dealing with the state's water resources. Coordination between federal, state, Native and private organizations is an essential element in the effective management of Alaska's water resources. The Alaska Water Policy Work Group has discussed this matter on several occasions, and the involved state agencies are committed to its resolution. The development of an overall state water plan will require an analysis and review of many aspects involving the resource management system in Alaska.

9. With the advent of the 200-mile limit, Alaskan fishermen have an increased opportunity to diversify their industry to include bottomfish in addition to salmon. This would mean development of a year-round fishery and shore-based facilities in addition to the seasonal salmon processing. The State is engaged in active promotion of this industry, and the nation of Denmark, a recognized leader in bottomfishing technology, has established offices in Alaska for advising and promotional purposes. Processing plants will require large amounts of fresh water during the winter months. Until this development, many salmon canneries operated only in the summer. The impact of year-round water needs urgently needs assessment before potentially severe water shortages restrict growth of this new industry.

10. The growing number of placer miners has created potential water use conflicts among miners and between miners and non-miners. In the early 1970's there were about 176 working mines in the state. By 1977 the number rose to over 300 with another 1,400 sites turning in annual assessment work. By October 20, 1979, which was the closing date for filing mining claims on federal lands, the BLM received somewhere between 15,000 - 20,000 claim notices. Some of these mining areas are extensively used by sportsmen and recreationists, i.e., Forty Mile River and Birch Creek. Other rivers used primarily by recreationists in recent times were historic mining districts. Rivers like the Salcha, Chena and Chatanika have not had significant mining since the 1940's because deposits were not economical to mine at past gold prices. However, with gold at its current price (whatever it is at this reading), it is cost effective to mine deposits along these streams.

B. This section describes the twelve activities which comprise Alaska's water planning program in FY 80. Because of the substantial increase in Title III Funds in FY 80 and the limited time in which to prepare for their use, the emphasis this year will be on using the funds for special projects during the summer field season in addition to continuation of existing planning capabilities.

1. Instream Flow.

The instream flow program for FY 80 will take two approaches: continuation of the statewide joint effort of the departments of Fish and Game, Natural Resources and Environmental Conservation to develop statewide policies and guidelines and a regional analysis of surface water use from anadromous water bodies.

a. Policy Development

This program is a continuing program jointly undertaken with the departments of Natural Resources, Fish and Game, and Environmental Conservation. Specific concerns regarding instream reservations include:

Fish and wildlife - providing sufficient flows of adequate quality for spawning, incubation, rearing, migration and over-wintering. Sufficient flows and fluctuation in flows to maintain the health of the stream habitat are necessary.

Recreation - provide adequate flows of quality water for protection of the recreational, wild, scenic and aesthetic nature of streams.

Navigation - provide adequate instream flow to permit navigation.

Hydroelectric - provide adequate annual streamflow to permit hydroelectric development and operation.

Water quality - provide adequate flows to maintain water quality. Avoid over allocation which will concentrate pollutant loads to undesirable levels.

This planning program includes:

Coordination will be continued with the Western Energy and Land Use Planning Team, Instream Flow Work Group, based in Fort Collins, Colorado. The group's expertise and training programs are being used to develop an Alaskan streamflow classification and planning system.

Identification, evaluation, and implementation of

appropriate state-federal-local action to alleviate instream conflicts in existing or potential problem areas.

A coordinated statewide data gathering network will be established and operated which can provide basic hydrologic data for instream flow analysis and evaluation as well as other water resource concerns. USGS training programs will be utilized to provide technical and field training. Field equipment will be purchased to gather basic hydrologic data.

Development of administrative guidelines for instream water use under the Water Use Act, AS 46.15.

Estimated allocation of state funds: 36,000.

Estimated allocation of federal Title III funds:

Specialized Studies - 36,000

b. An Analysis of Surface Water Use from Anadromous Water Bodies in the Matanuska-Susitna Valley.

Conflicts between the fisheries resource and water usage from designated fisheries habitat are a constant concern for water management. In the Matanuska and Susitna valleys, uses such as irrigation, livestock watering, mining and domestic use rely on surface water as a source to carry out these activities. Currently, little reliable information is available that can be used as a water management tool to determine at what time of year or at what quantity a particular withdrawal of water from a fish stream or lake may be detrimental to the fishery. Water management and planning is presently lacking due to unavailability of this basic data.

This program would seek to:

(1) Conduct an inventory of conflict areas by gathering streamflow data on designated anadromous fish streams and determining mean water levels on anadromous lakes within the Matanuska-Susitna Valley.

(2) Review available information such as contained in the Alaska Department of Fish and Game Fisheries Atlas and "A Catalog of Water Bodies Important to the Migration and Development of Anadromous Fishes" and correlate this with information compiled by the National Weather Service, the U.S. Geological Survey, and the Arctic Environmental Information and Data Center to develop expected natural fluctuations in water bodies within these drainages.

(3) Utilize aerial photography and information such as contained in the Southcentral Level B Planning Study to locate water users and other activities that may have an impact on designated anadromous water bodies or their drainages.

(4) Graphically delineate anadromous water bodies and their drainages and locate users of surface water within these drainages on maps of suitable scale. This would be done in such a manner as to allow for plotting of additional uses as they are developed and would result in an up-to-date management tool which would greatly enhance the ability for more comprehensive water use planning in the drainage.

(5) Correlate quantities of surface water being withdrawn from a particular water body with the volume that has been determined to be available at a specific time of the year and relate this to the fisheries need for that water body.

The product of this inventory program would be in both graphic (map) and report form. The nature of the graphic portion has already been described. The desire is to have an easily referenced management tool that can easily be kept up to date and will show the extent and location of water uses along the anadromous streams and drainage in the subject area. This type of reference is not currently available in any form.

The report portion of the program would include a compilation of the data collected in the field for stream flow and lake levels as well as climatic data and a narrative on how these relate. Conclusions could be drawn as to how much water is available for use and how much should be maintained for the fisheries resource.

The Matanuska-Susitna Valley area has the potential for very rapid development in the near future. Development of the information described above is necessary to allow for the orderly planning and management of water use in the area as well as allowing for intensive management of the valuable fisheries resource. Distribution of the final report on this program to the Alaska Department of Fish and Game and the Alaska Department of Environmental Conservation and the Matanuska-Susitna Borough should aid these agencies greatly in planning and performing their functions. It should also enhance coordination between these agencies and the Alaska Department of Natural Resources in planning the management of the water resources of this area.

Estimated allocation of state funds: 70,000

Estimated allocation of federal Title III funds:

General Studies: 10,000
Specialized Studies: 49,000

2. Placer Mining.

The placer mining component of the State's water resources planning effort will have two sections: an interagency-industry placer mining water management program and placer mining water use quantification and inventory.

a. Placer Mining Coordination

Activities towards a formation of placer mining water management program will be initiated in FY 80. This will be a cooperative program principally involving the placer mining industry and three state agencies most concerned with placer mining water use, Department of Natural Resources, Environmental Conservation and Fish and Game with the Department of Environmental Conservation as the lead agency. The elements of the new program follow:

1. Create a working group and to identify interests and concerns and develop the framework of a technical assistance program.

2. Develop streamlined permitting procedures with the aims of (1) ease and simplicity of use by miners and (2) enhanced communication and more efficient use of personnel by agencies.

Only the first element, working group creation will be initiated in FY 80. Streams with known conflicts will studied first and various conflict resolution strategies will be examined.

Work in this program started in the second quarter of FY 80. This will be an ongoing program.

Estimated allocation of state Funds $15,000

Estimated allocation of federal Title III funds

Plan Formulation - $10,000

b. Placer Mining Water Use Quantification and Inventory

This part of the placer mining program would conduct a resource inventory of water use by placer mining including quantification of water used by specific types of equipment involved in an operation, provide stream gaging information on quantities available for use and identify conflicting uses.

The following activities would be specifically conducted:

(1) Utilize available information presented in planning studies and other sources which have concerned placer mining such as the Southcentral Level B Planning Study which identified mining claims, and the Alaska Department of Environmental

Conservation study Placer Mining and Water Quality. Coordinate with agencies in management and planning roles involving placer mining and the Alaska Miners Association for identification of data needs which may be supplied in conjunction with this study and preclude duplication of effort.

(2) Conduct a resource inventory utilizing air photo interpretation in identifying the most active mining areas, the most critical conflict areas, and investigage these areas for specific water use by operation. Identify all placer mining localities within the Southcentral District by claim.

(3) A field program will be conducted to measure water quantities being used during placer operations and would quantify water use by type of equipment being utilized (hydraulic giants and monitors, suction dredges, grizzlies, trommels, dredges, sluice boxes, etc.).

(4) Prepare maps showing the watercourses, locations of placer mining activities, other water uses and withdrawals, land status, watersheds, and quantities. These will be presented on an appropriate scale for use as a management and planning tool for the water resource which could be utilized by federal, state and borough agencies as well as the general public.

(5) Conduct stream gaging at selected placer mining location to determine quantities available and compare to quantities being utilized to anlayze the relationship of water availability as a deterrent or incentive to development of the resource. This analysis will provide a planning tool to identify areas of increased development based on quantities of water available.

The product of this resource inventory and quantification program for placer mining will be a report with accompanying maps. This will show quantification of water use by equipment types, stream gaging data, watershed relationships, and locations of mining activity. The maps prepared will provide a management and planning resource presently unavailable to either the miners, general public or administrative agencies.

Estimated allocation of state funds: 136,000

Estimated allocation of federal Title III funds:

General Studies	15,000
Specialized Studies	60,000
Plan Formulation	10,000

3. Regional Studies

Several projects are proposed under the heading of regional studies. The regional water planning guide program will finish one region and start projects in two other regions. Other projects are a follow-up to the water supply report for the Southcentral Alaska Level B Study and historical use study of inland waters.

a. Regional Water Planning Guides

The purposes of regional water planning guides are to inventory the water resources and water use in a region, identify conflicts and issues and develop management guidelines for that region. Together with Level B study results, regional water planning guides will form the basis for state water planning. Regions are defined by USGS hydrological unit boundaries. The following scheduled for the regional water planning guide program for FY 80:

1. Kotzebue Sound - The Kotzebue Sound Regional Water Planning Guide started in FY 79 will be completed in FY 80. Work to be done in FY 80 includes analysis of data compiled in the previous reporting period, narrative development and agency review. Because the Kotzebue Sound report is the first regional water planning guide, agency review will be useful to in pointing out how the program can be changed to better serve state water resources needs.

2. Tanana River Basin - A Level B Study has been requested for the Tanana River Basin but funding for this has been delayed pending nationwide review of Level B studies. Because of the urgency of the information needs of the Basin the regional planning guide program will be used to inventory water resources data available for the region. If the Level B Study does proceed, work done under this planning guide will be useful and necessary background material. Expected work elements to be initiated in FY 80 include a literature search of existing information, inventory of water users from Department of Natural Resources files and hydrological reconnaissances of designated areas.

Estimated allocation of federal Title III funds.

General Studies	$15,000
Plan Formulation	5,000

b. Regional Water Management Compilation for Southcentral Alaska

The Southcentral Level B effort resulted in the gathering and collation of a large amount of water-resources related data. The published document presented only a summary report of this data. Its publication and distribution has resulted in numerous requests for detailed information.

This project will rewrite and extensively augment the original document, to produce a much more detailed report useful on a day-to-day basis by public and private concerns dealing with water management and related issues. Work is expected to be completed and the report published and distributed by the end of this fiscal year.

Estimated allocation of Title III Funds

General Studies $10,000

c. Alaskan Waterbodies Study--Bristol Bay Region

The Alaska Department of Natural Resources is currently engaged in a cooperative waterbody research effort with the Bureau of Land Management to compile and analyze facts relating to historical usage of Alaska's inland waters. The purpose of this state-wide study is to provide critical baseline information for determining the ownership and management control of Alaska's numerous lakes and rivers. Outstanding ownership and related management questions about Alaska's submerged lands continues to be a major obstacle to effective comprehensive water management and planning. In addition to helping resolve ownership disputes, the information collected as a result of this effort will be useful in regional land use planning, especially in determining traditional and potential uses of inland waters.

This year, priority will be placed on the inventory and analysis of documented historical and physical data which pertain to the Bristol Bay Region watershed-an area consisting of 25 million acres-and the collection of information to fill any data gaps. The Division of Research and Development within the Department of Natural Resources will utilize two Western Interstate Commission for High Education (WICHE) interns to conduct both literature and field investigations into the historical use patterns on waters within the Bristol Bay watershed. As shown by the results of last year's WICHE internship program with this office, the use of graduate student interns for navigability-related research is extremely valuable to the State in providing base studies describing historic use of waterbodies in various areas. In regard to the present BLM-State cooperative research effort, the reports resulting from a twelve-week WICHE interm program in the summer of 1980 will facilitate the completion of a significant portion of the research projects which have been assigned to us.

Support for the WICHE interns as well as related equipment expenditures will augment the already substantial state contribution to this project as shown below which includes two state-supported interns already. The Title III request would allow the department to double its WICHE research support and purchase much needed equipment, as well.

Estimated allocation of state funds: 79,500

Estimated allocation of federal Title III funds: 18,000

4. Surface Water Data Collection

The Division of Geological and Geophysical Surveys has responsibility for collection of surface water data. In addition to state funded projects and cooperative programs with USGS, the federal Title III funds will be used to augment the following projects.

a. Basin Analyses.

This program will focus on collecting data in targeted river basins throughout the state. Data collection efforts will be of a reconnaissance nature and used to augment existing data available on the basin. Reconnaissance techniques capable of producing reasonably accurate fundamental a stream basin have recently been developed by the Arctic Hydrology section of the USGS. These techniques will be used to make data collection more efficient and complete. This program will be coordinated with the regional planning guide program described above, district offices of the Department of Natural Resources, and with similiar U.S. Geological Survey programs.

FY 80 basins to be analyzed will include the Kobuk and Nushagak river basins; and possibly the Matanuska.

b. Preliminary surface water reconnaissance of Southeast Alaska.

Public water systems supply only a fraction of total domestic water used in Southeast Alaska. Very small surface waters sources supply a majority of the residential users. Further urban expansion and the filling in of existing areas will depend on availability of water from these small individual sources. No information is currently available on the number, flow, or general suitability of these streams in Southeast Alaska.

This project will provide a data base useful for a wide range of planning efforts. The indexing, enumeration, and evaluation of these small water sources can be accomplished rather quickly due to the linear nature of development along the coast line. The project will produce a stream catalog most useful to the Department of Natural Resources, Water Management Section, but with a general applicability to other users.

Estimated allocation of state funds: 10,000

Estimated allocation of federal Title III funds

General Studies 10,000

5. Floodplain Management

Floodplain management activities under the Title III program will be directed toward state-wide program development, development of legislative amendments to include nonstructural flood hazard mitigation and local responsibility, review of alternatives for a regional flood control project, developing techniques for floodplain delineation and training.

The floodplain management subcommittee of the Alaska Land Managers Cooperative Task Force will continue to meet to provide assistance as the Task Force considers the subcommittee report. When the Task Force's recommendations are made known, the subcommittee members will be in a position to the provide technical assistance necessary for timely implementation.

State members of the subcommittee will provide assistance in reviewing the state's role in flood control projects. The outcome of this review may include a change in state laws which will require more emphasis on nonstructural measures and increased local responsibility.

Because of the lack of adequate records on most Alaskan rivers and occurrence in Alaska of flooding that is not conventionally predictable, e.g., ice jam flooding and glacier dammed lake outbursts, techniques must be developed for alternative methods of floodplain delineation. In this fiscal year a project undertaken by the Department of Fish and Game in cooperation with NASA will examine the usefulness of remote sensing -- LANDSAT -- in the delineation of floodplains.

A training workshop on floodplain delineation will be offered in the third quarter. This will be designed primarily for land managers to acquaint them with floodplain considerations for land use decisions.

Estimated allocation of state funds: 5,000

Estimated Allocation of federal Title III funds

Specialized Studies 10,000

6. Special Districts

This program will continue the work started in the previous reporting period. Elements to be completed in the fiscal

year are the analysis of existing statutes and integration of that with the previous drafts for a final report. The report will be submitted to the Alaska Water Resources Board for their review and recommendations.

Estimated allocation of federal Title III funds

Specialized Studies	$3,000

7. Water Resources Planning Coordination

a. Alaska Water Resources Board. The Alaska Water Resources Board will continue its advisory activities in fiscal year '80 with three meetings planned. The Board will take on additional duties as the Policy Advisory Board for Alaska's 208 program. In the past the Board has had to rely solely on the staff from the Department of Natural Resources and Department of Environmental Conservation for technical assistance on matters coming before it. In some cases this has proved inadequate because of the unavailability of staff from these two departments. In fiscal year '80, $15,000 of the Title III program funds will be for contracts with non-agency consultants. This should allow timely, independent reports on matters of the Board's concern. $10,000 is for existing Title III staff funding.

Estimated allocation of state funds 25,000

Estimated allocation of federal Title III funds

General Studies	10,000
Specialized Studies	15,000

b. Water Policy Working Group

The Water Policy Working Group will be funded for three to four meetings with the purpose of coordinating the Title III program. One half of an administrative assistant position will also be funded to administer the Title III program.

Estimated allocation of state funds $15,000

Estimated allocation of federal Title III funds $20,000

8. Water Use Data System

Computer based data management systems are receiving much emphasis on the State level in FY 80. The Water Management Section of the Department of Natural Resources is involved in a cooperative program with the USGS to put its water use data into the ALARS system. The Department of Environmental Conservation will use Title III funds to join in this program.

A strong emphasis on data gathering appears most useful for the coming year, with data base design occurring mainly towards the end of FY 80. Along these lines four areas of emphasis have been identified, phasing has been estimated, and following is an outline of the new program proposal:

a. Data Gathering:

- Identify capturable data elements. Prioritize based on mandatory list, availability, perceived usefulness
- Develop data collection forms - integrate these with coding forms
- Coordinate data collection with other agencies - USGS, DEC to start, expansion as able and necessary
- Formulate a data collection program
  - methods
  - schedule
  - prioritization by use type/and or geographic area
- Implement data collection program

b. Continuing Efforts:

- Continue water use information coding and entry to EASYTRIEVE files from state water rights case files.

c. Data Base Design and Implementation:

- Obtain training in the use of ADABAS
- Install preliminary state-level data base definition on state computer.
- Input sample data set for manipulation and retrieval
- Begin preliminary adaptation to Alaska needs and ALARS system
- Obtain a computer terminal for use of ADABAS water use system at central ADNR office
- Upon receipt of final version of state-level data base definition, install on Anchorage computer. Contract for adaptation to Alaska needs and ALARS system
- Begin transfer of computerized EASYTRIEVE data to ADABAS files

d. Integrate DEC Water Quality System with Department of Natural Resources ALARS

Estimated allocation of state funds available for match $96,000

Estimated allocation of federal Title III funds

Specialized Studies	35,000
Plan Formulation	15,000

9. Urban-Suburban Studies

a. Fairbanks Area Ridge Water Resources Study

The ridge areas surrounding Fairbanks are coming under development pressures and water supply problems exist. This program will determine how local land use planning and zoning may minimize these problems. A study will be contracted out to:

1. Review existing information sources including published and unpublished U.S.G.S. reports, Division of Forest, Land and Water Management, and Fairbanks North Star Borough case files, and University of Alaska, Institute of Water Resources Studies.

2. Identify data gaps and develop work plan to fill in these gaps.

3. Map developed and existing information.

4. Prepare development guidelines for ridge top areas.

This study will be contracted out and done in close coordination with the Northcentral District office of the Division of Forest, Land and Water Management and the Fairbanks North Star Borough.

Estimated allocation of state funds 30,000

Estimated allocation of federal Title III funds

General Studies	10,000
Specialized Studies	15,000
Plan Formulation	5,000

b. Community Water Use Studies

The State of Alaska is currently engaged in a cooperative program with the U.S. Geological Survey to gather water use data from many sources, state-wide. Community water use is one of four areas which will be studied in this fiscal year. This project will provide funding for the specific purpose

of determining water use by various types of users through selective, representative metering and associated methods. The information developed will be used to aid in conservation rate structuring, determining the feasibility and desirability of user metering, and estimations of water use for supply planning. It may also prove useful in assessing the need for maintenance and upgrading (elimination of system leakage and thus reducing gross demand) of water supply facilities.

Estimated allocation of federal Title III funds

Specialized Studies	70,000
Plan Formulation	10,000

It is anticipated that this project will continue in the next fiscal year's program. An associated study of unique conditions which affect water usage in Alaska, and evaluation of appropriate technology to meet the demands of the Alaska environment, is also expected in the next fiscal year.

c. Followup assessment of water supplies in the Mendenhall Peninsula-Auke Bay area near Juneau.

In the spring of 1979, a preliminary investigation of the water supplies in the Mendenhall Peninsula-Auke Bay area was performed for the Department of Natural Resources by Gary Balding, a hydrologist on loan from the U.S. Geological Survey. His findings indicate that water availability and quality problems definitely do exist and that further investigation is needed. The work elements of the followup to the earlier work by Balding are as follows:

(1) Collection of information from the property owners that did not respond to the earlier study. This information will be integrated into the work done by Balding.

(2) Determination of salt water intrusion, seasonal variation, and the effect of additional ground-water withdrawals. This can be accomplished by setting up monitoring network of wells showing the higher specific conductivities. Water from test wells will be tested monthly.

(3) Determination of the depth of salt water intrusion. This will require the radiometric well logging and will be necessary to complete the data needed to assess the water situation in this area.

Estimated allocation of state funds	$7,500
Estimated allocation of federal Title III funds	$7,500

d. Assessment of water supplies from Auke Bay to Eagle River near Juneau.

Little if any data exists on water availability and quality in the residential strip along Glacier Highway beyond Auke Bay. Future residential development is likely to occur without community water systems. As in other Juneau areas, underlying bedrock in proximity to salt water makes ground-water sources questionable for quantity and quality. It is also unknown to what extent surface waters (mainly small streams) are being used or are available for use. Before further development occurs, perhaps causing crucial water shortages, questions of availability and quality must be answered.

Each residential unit in the study area will be surveyed, either by a mailed questionnaire or in person. Well water will be tested for specific conductance and chemically analyzed if conductance is high. Wells with water exceeding 1,000 micromhos will be monitored monthly for specific conductance and chemically analyzed if conductance increases. This will show seasonal variations and possible cause/effect relationships (i.e., increase in ground-water withdrawal may increase salinity).

Surface water use will be assessed, taking into account low flow periods, number of users on the stream, and possible streams to be tapped.

The result will be an overall picture of current and future water uses, needs, and problems. A table and map, similiar to the format used Gary Balding "An Assessment of Water Supplies in the Mendenhall Peninsula/Auke Bay Area" (1979), will be produced.

Estimated allocation of state funds	10,000
Estimated allocation of federal Title III funds	
Specialized Studies	7,500
Plan Formulation	2,500

10. Surface Water User Manual.

The typical small surface water appropriator lacks an adequate knowledge of the types of systems available to divert, transport, and store water. The majority of these users are unfamiliar with the special conditions that the Alaskan climate presents.

A public information booklet will be produced and made available. This booklet will show in an easy to comprehend format the different systems that are available and where each can be best used to provide a clean and dependable source of water. The booklet will gather information from existing sources and make an evaluation of their applicability to Alaska. New and innovative systems will be sought out for inclusion and valuation. This project will supply a

needed tool for the person who wishes to construct or upgrade an existing system but lacks the basic knowledge to proceed or evaluate proposals.

Estimated allocation of federal Title III funds

Specialized Studies	10,000

11. Watershed Planning

Many communities in Alaska are dependent for their water supply upon watersheds that are small and vulnerable to contamination from land use activities. Several communities have requested assistance to develop land management plans for their watersheds. In this interdepartmental program management guidelines will be developed to fit a wide range of situations. An assessment will be made of the most effective measurements for protection and utilization of these small watersheds.

The State Departments of Environmental Conservation and Community and Regional Affair will use primarily 208 water quality funds for this program. Title III funds will be used to augment this and to allow the Department of Natural Resources to participate.

Estimated allocation of state funds 20,000

Estimated allocation of federal Title III funds

General Studies	10,000
Specialized Studies	5,000
Plan Formulation	5,000

C. Progress toward the accomplishments scheduled for each program will be monitored by the Alaska Water Resources Board. This is a seven-member board whose duty it is to inform and advise the Governor on all matters relating to the use and appropriation of water in the state, including, but not limited to: the effect and adequacy of all state laws and regulations governing the establishment of water rights, the multi-purpose use of water, the prevention of pollution and the protection of fish and game, studies of the state's water supplies and plans for future requirements, development of water resources, participation of local governmental units in the management of water resources, lands which are or may be needed for dams, reservoirs, flood dams, floodways, canals or ditches for the impoundment, storage, flow and control of waters.

The State's overall comprehensive planning program is described in the following summaries and outlines adapted from the Land Use Element of the Alaska State Comprehensive Planning Process, dated April 21, 1978. In general, state agencies are assigned the tasks of coordinating those activities within their relevant statutory mandates and specialty areas. Overall coordination is achieved through the budgeting review process and A-95 reviews as well as formal and informal review committees or work groups. Their particular interests in water will provide an overview of state responsibilities in water resources planning.

Department of Commerce and Economic Development. Departmental responsibilities include the general functions of economic planning for the State, power development, conducting studies and surveys relating to economic development and the dissemination of resultant findings, the establishment and activation of programs to achieve balanced economic growth, and advising the Governor on economic development policy matters.

Outline of Water Resources Activities

A. Development of hydroelectric power facilities
B. Water resources revolving loan fund (AS 45.86)

    1. Hydroelectric generation
    2. Water supply

C. Alaska Power Authority

Department of Community and Regional Affairs. The primary function of this department is local assistance. The community planning program is the primary land-use related program and aids communities develop comprehensive plans, floodplain management regulations in order to be eligible for flood insurance under the National Flood Insurance Program, district coastal management plans under the Alaska Coastal Management Program, and zoning and subdivision ordinances. The Division of Community Planning has developed a model subdivision ordinance, a model floodplain zoning ordinance

and is working on a model shoreline zoning ordinance. The Department also helps communities deal with the impacts of major developments such as OCS oil and gas development. Other responsibilities include the classification of municipalities, incorporation of municipalities, the administration of funds in the unorganized borough, and assisting in the development of new cities.

Outline of Water Resources Activities

A. Technical planning and management assistance to small communities in regard to sewers and water systems

B. Coastal zone management

C. Administration of the national flood insurance program

D. Develop state policies for OCS related onshore development

Department of Environmental Conservation. The Department is charged with developing, implementing, and enforcing programs for the protection of environmental quality. This includes air and water quality standards, a state implementation program pursuant to the Clean Air Act, 208 and 303 water programs, and programs dealing with solid waste management, oil and hazardous substances, toxic wasters, and the use and control of pesticides. In addition to their regulatory responsibilities, the Department is responsible for the coordination and development of environmental policies, plans, and programs, and for permit issuance, and may review and appraise agency programss and activities to determine the extent to which to which they are contributing to the achievement of environmental policies, and make recommendations to agencies including but not limited to environmental guidelines.

Outline of Water Resources Activities

A. Water resources responsibilities

1. Conservation and enhancement of the state's marine and fresh water environment
2. Control of liquid waste discharge
3. Surveillance of water quality
4. Management of state/federal public water supply and sewage treatment facility construction program
5. Provision of safe water facilities and supplies

B. Programs

1. River basin water management planning (Sec. 303(e), PL 92-500)
2. Water treatment managment planning (Sec. 208, PL 92-500)

a. Statewide (non-point source emphasis)
b. Areawide (Anchorage, Juneau, and Bethel area water quality planning)

3. Alaska Environmental Plan
4. Village safe water programs
5. Emergency water supply plan
6. Co-chairman of Alaska Water Study Committee
7. Quartz Hill water resource study with USGS

Department of Fish and Game. The Department is responsible for the management of fish and wildlife resources. This entails the enforcement of rules and regulations for hunting, fishing, and trapping; the development of fishing rehabilitation and enhancement programs; the identification and establishment of management plans for critical habitat areas; specification of lakes, rivers and streams important to anadromous fish, and the determination of endangered species and development of management strategies for them.

Outline of Water Resources Activities

A. Water Resources responsibilities

1. Operation of fish hatcheries which require high quality water
2. Coordination of reviews of land and water activities which impact on fish and wildlife habitats and recreational resources (Habitat Section)
3. Regulation of modifications within anadromous streams

B. Programs

1. Title III funded contract to develop methodology for determing instream flow requirements (completed)
2. Participation in the Susitna River Basin Study
3. Participation in Southcentral Level B Study

Department of Natural Resources. The Department has the overall responsibility of planning for and managing state lands and waters, tidelands and submerged lands. Under these broad functions are numerous programs including land use planning for state lands; classification and disposal and leasing of state lands; resource development on state lands, tidelands, and submerged lands; permitting; state land selection; water appropriation and adjudication; recreation and scenic resource planning and development; conservation of historic, prehistoric and archaeological resources, and zoning in the unorganized borough. These responsibilities carry broad opportunities for effective water use planning and land management, since the State, acting through the Department, can implement the land and water use policies on state lands, and can provide for their implementation on all lands disposed of or leased by the State, and can further implement the statewide water policies through permit issuance.

Pursuant to a Governor's Directive of July 1, 1968 the Department is the designated state agency to administer and coordinate state water and related land resources programs and to act as liaison with the U.S. Water Resources Council (WRC).

Outline of Water Resources Activities

A. Provide staff support for Alaska Water Resources Board

B. Hydrologic studies and water resources data (Division of Geological and Geophysical Surveys).

1. Statewide long-range water resource inventory plan
2. Data analysis and site specific research and publication

C. Water rights determinations (Division of Forest, Land and Water Management). Applications are taken in three district offices.

a. Backlog of pending applications
b. Coordination with DEC and ADF&G on water quality and fishery values
c. Revision of ADL regulations for administration of the Water Use Act
d. Involvement in Native water rights cases

D. Water resources management (Division of Forest, Land and Water Management)

1. State water planning

a. Regional guides
b. Statewide issue papers
c. Computerization of water information
d. Revision of procedures for water rights determinations
e. Follow-up of Trelease report on Alaska Water Administration
f. Instream flows
g. Susitna River Basin Study
h. Involvement in Alaska Water Study Committee activities
i. Water resources analysis for state land selection
j. Review of other reports for water resources concerns
k. Floodplain management
l. Dam inventory and safety

Department of Transportation and Public Facilities. The Department is charged with planning, constructing and maintaining highways, bridges, ports, and other transportation facilities, and all public facilities. The former departments of Highways and Public

Works were consolidated in order to faciliate the efficient and coordinated planning and development of such facilities. The Department also has authority to promulgate airport zoning and to maintain the scenic beauty along the state's highways. In the near future the Department will have the responsibility of planning and designing all capital improvements. The integration of the land use policies into Department planning and design functions will be significant since it will be in effect bring the state's major construction activities into conformity with its own stated goals, objectives and policies.

Outline of Water Resources Activities

A. Marine transportation
B. Planning and construction of shallow draft boat harbors and related facilities
C. Financial support for flood control projects

Division of Policy Development and Planning - Office of the Governor. This division is mandated to prepare and maintain a statewide comprehensive development plan; identify long-range goals and objectives; advise the Governor on statewide planning matters; assist the Governor and Department of Community and Regional Affairs in coordinating agency activities which impact solutions to local and regional development problems; assist local governments, government conferences and councils in planning and coordinating their activities; review and recommend final development city plans and zoning; provide information and assistance to agencies to aid in government coordination and unity in the preparation of agency plans and programs; act as a clearinghouse, and review and make recommendations on all state agency proposals for the location of capital improvements. Under proposed new legislation the Division would specifically be responsible for evaluating capital improvement proposals as to their consistency with state policies. In addition, the Director of the Division sits on the budget review committee which evaluates all budget proposals as to consistency with state policies.

Outline of Water Resources Activities

A. Coordination of policy and program development
B. Relationship of water activities to other state activities
C. State clearinghouse
D. Coastal zone management

C-1a) The Department of Natural Resources is responsible for the state water resource planning in Alaska using Title III funds. The Title III program will be administered through the Water Management Section in the Division of Land and Water Management. The Water Management Section will serve as the focal point for coordination within the DNR (Divisions of Forest, Land and Water Management, Minerals

and Energy Management, Parks, Oil and Gas, Agriculture, and Geological and Geophysical Surveys) and with other agencies. State water planning will concentrate on water management decisions which are the responsibility of DNR, but interactions with other agencies will be an important facet in developing balanced resource plans which incorporate a variety of interests and considerations.

The Division of Policy Development and Planning of the Governor's Office has been designated as the State A-95 Clearinghouse. Coordination of grant proposals is achieved by submitting the proposal to the State Clearinghouse for review, in accordance with established procedure. In turn, the State Clearinghouse passes the proposal to other state agencies for comments and review to insure an effective interchange of information.

C-1b) RELALTIONSHIP TO OTHER STATE AGENCIES

The state water resources planning program will be closely coordinated with other state agencies. Greater efforts will be made to made to integrate water resources planning of the DNR with the water quality planning of the Department of Environmental Conservation (DEC). As an example, the water and land management responsibilities of the DNR have a significant bearing on the implementation of non-point source pollution controls developed through the DEC's 208 water quality management planning.

Management of the state's waters is a responsibility shared with other agencies, most notably DEC and the Department of Fish and Game (ADF&G). The role of ADF&G is particularly significant with respect to maintaining adequate stream flows, lake levels, and habitat for fish and wildlife and other purposes. Initial work has been done to develop a methodology for determing instream flows which is suited to Alaskan climatic and hydrologic conditions.

A liaison with the Department of Community and Regional Affairs is maintained because of that agency's assistance programs to communities, coastal management projects, and administration of the national flood insurance program. The Governor's Division of Policy Development and Planning is responsible is responsible for the coastal management program and provides a forum for coordination with other state programs.

C-1c) RELATIONSHIP TO FEDERAL AND FEDERAL-STATE PLANNING PROGRAMS

There are several federal and federal-state water and land programs which will be utilized during the state water planning effort. Because the State has limited resources with which to undertake such a planning program, it is imperative that close cooperation with other studies take place. Such cooperation is to the benefit of all parties involved because of the resultant exchange of information and cross-fertilization of ideas.

The Alaska Water Assessment has identified the major water and land problems and has recommended various studies, projects, and research.

As a part of its revitalized water program, the DNR has become very active in the Alaska Water Study Committee's activities, including staff assistance in preparing the Assessment's summary report. The state water planning program will be addressing several of the issue identified in the Alaska Water Assessment.

The Southcentral Level B Study covers two of the priority planning areas of the state water planning program, the Kenai Peninsula and Matanuska-Susitna Valleys. This is advantageous in that the studies can be conducted in a complementary manner. Literature searches, projections, alternative management strategies, and public participation are just some of the work items that can be done in conjunction with the Level B Study. The DNR is engaged in land management planning for state lands on the Kenai Peninsula. These land management decisions will have a substantial bearing on future demands for water and subsequent impacts on water quality and quantity.

The USDA-State cooperative study of the Susitna River Basin will provide much needed data for planning and management decisions in that area. The DNR has been coordinating state, local and citizen input to the Susitna Study to insure compatibility with other programs and objectives.

C-2) COORDINATION WITH OTHER PROGRAMS

The State has established a Water Policy Working Group to provide an overall direction and coordinative mechanism for the many state programs related to water resources. With the increase in funding of the Title III program the working group will be funded to organize greater coordination in the development of the annual program. Several members of the working group have been involved in the review of this application and will make other contributions during the course of the state water planning program.

Communication with other state agencies is helping to achieve a coordinated state program which is responsive to Alaska's needs. The State has participated in other WRC funded activities, including the Water Assessment and Appraisal Program, and an ongoing Level B Study.

Title III Planning will be coordinated with:

a. The Southcentral Alaska Level B Study being conducted by the Alaska Water Study Committee made up of participating federal and state agencies. DNR is lead agency for the water supply work element.

b. The Susitna River Basin Type 4 Study, part of a U.S. Department of Agricultural cooperative program with the Alaska Department of Natural Resources, Environmental Conservation, and Fish and Game.

c. Land and water management planning conducted by the DNR's Division of Land Water Management.

d. Coastal zone management and facility siting investigations being conducted by governmental and private entities. DNR is a participating agency in this program and is representated on the State's Coastal Policy Council.

e. Resource inventory and analysis projects in conjunction with state land selection program.

f. Outdoor recreation planning under the Land and Water Conservation Fund Act of 1965.

g. Urban planning under Section 701 of the Housing Act of 1954.

h. Water quality control plans formulated pursuant to the Water Pollution Control Act Amendments of 1972, including 208 area-wide waste management planning and contributions to a CCJP for Alaska.

i. Wildlife protection planning under the Federal Aid for Fish and Wildlife Restoration.

j. Ongoing water resources investigation programs of the U.S. Geological Survey, Water Resources Division. DNR and other state agencies actively participate in this program through staff support and cash outlays.

k. Planning related to floodplain studies conducted by the Department of Army, Alaska District Corps of Engineers. The DNR is the designated state agency to work with the Corps on these projects.

l. Water supply and water quality (208) planning and investigations of the Municipality of Anchorage and Department of Environmental Conservation. The Department is actively participating with DEC in the development of best management practices.

m. The University of Alaska Institute of Water Resources, the Federal-State Land Use Planning Commission, the State Clearinghouse and the Metropolitan Clearinghouse.

n. Project planning for water resources development such as the upper Susitna River hydroelectric power project and Fairbanks Flood Control project. The Department reviews and comments on such projects as well as exercises relevant approval authority.

C-3) PARTICIPATION IN AND CONTRIBUTION TO STATE WATER MANAGEMENT PROGRAMS

The State of Alaska is currently involved in a number of Federal-State planning efforts which will serve to strengthen state planning capabilities. Through the 1975 National Water Assessment, the Water Assessment and Appraisal Program, the comprehensive, coordinated, joint plan, and the priorities reports, the state and federal governments are undertaking a statewide analysis of critical problem areas and an implementation. The Alaska Department of Natural Resources is working closely with other state and federal agencies on these programs.

The Southcentral Alaska Level B Study and the Susitna River Basin Cooperative (Type 4) Study are joint federal-state studies which were initiated during FY 1977 and FY 1978. Strong state involvement is viewed as a necessary ingredient to insure the success of these undertakings. The Alaska Department of Natural Resources is contributing staff time and other resources to each study.

Participation, contribution and coordination activities should improve the State's ability to anticipate, coordinate, and manage activities affecting its water resources. The Title III program enables the State to tie water programs together through improved communication and coordination and provides for development of in-house experienced staff to deal with water planning and management.

Assumptions and projections of economic, social, energy production, demographic, environmental and other relevant aspects which are utilized are shared with other agencies through published reports, memoranda and formal and ad hoc committees.

D. Working knowledge of public concerns will be achieved through several efforts. At the advisory level, the Alaska Water Resources Board, composed of seven citizen members, provides advice to the governor and the administrative agencies on a broad spectrum of water issues. The board may hold and conduct public meetings at any time or in any place in the state in order to obtain public opinion on a water use problem or proposal and it may, by majority vote of all members, formally or informally delivered, authorize one or more of its members to hold and conduct a public meeting.

The Alaska Public Forum, a statewide program to involve citizens in the decision-making process on the most pressing state issues, has opened communication links between the public and government officials, most recently in the area of capital improvement projects. The state water planning program also benefits from the public input on other studies. The Southcentral Alaska Level B Study and the USDA Susitna River Basin Study have had active public involvement programs which have supplied valuable information for some of the planning areas. In addition, hearings concerning public contacts in conjunction with the DNR water permitting and management activities are valuable interchanges with people who are experiencing water problems.

Public involvement in the specific programs proposed in this grant application varies greatly. Workshops and hearings will be held at several key points on programs such as the regional planning guides, floodplain management, and water use data studies. Other programs are largely research oriented or deal with technological standards, such as dam safety, instream flow, and water resources planning coordinations and may involve only limited public involvement.

A special problem must also be addressed in Alaksa. The Alaska Native Claims Settlement Act and vastly increased efforts to bring health, safety, and technological improvements to the whole of Alaska in a very short time period has induced a "future shock" situation in many areas. A great deal of public involvement has been solicited to alleviate this condition, sometimes successfully and sometimes not. Acquiring active and meaningful input will necessitate new and innovative approaches to public participation.

E. In FY 80 there will be a substantial increase in training activities with an emphasis on technical courses taught by the USGS and USFWS. In addition, a workshop on floodplain delineation will be offered and correspondence courses from Linn-Benton Community College will be available to interested Department of Natural Resources staff.

a. Technical courses. 11 staff will be sent to USGS and USFWS basic hydrology and hydraulics courses in Colorado and Wisconsin. The cost, at $900 per person trip, will be $9,900.

b. A floodplain delineation workshop will be developed by the Floodplain Management Subcommittee of the Alaska Land Managers' Task Force. It will be designed primarily for staff faced with making decisions affecting floodplain lands. The workshop contents will be development from responses from potential participants. Organization and technical expertise will be primarily provided by the Corps of Engineers. Title III funds will be used to help cover travel and per diem costs of participants. Estimated allocations of Title III funds is $6,000.

c. Correspondence courses for Linn-Benton Community College will be made available to interested water management officers. The courses included in the Linn-Benton program include: Introduction to Surface Water Sources, Introduction to Ground Water Sources and Introduction to Distribution Systems. The estimated cost is $200.

F. The following is a list of equipment with a unit cost greater than $1,000 which will be purchased with FY 80 Title III funds. This equipment is necessary to develop basic data for such projects as the regional water guides, instream flow, community water use data, and Bristol Bay waterbodies study.

1.	3 Levels, Leitz B-2(32x) @ $1600	$ 4,800
2.	1 Vehicle (4x4 enclosed)	10,000
3.	2 Marsh-McBirney flow meters @$1,600	3,200
4.	4 Water level and flow recorders, Manning "Dipper" @ 3,500	14,000
5.	2 water level recorders, Stevens 835 @4,000	8,000
6.	1 Avon inflatable raft with kicker	$ 2,500
		$ 42,500

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PART IV

ASSURANCES

The Applicant hereby assures and certifies that he will comply with the regulations, policies, guidelines and requirements, including OMB Circulars No. A-95, A-102 and FMC 74-4, as they relate to the application, acceptance and use of Federal funds for this federally-assisted project. Also the Applicant assures and certifies to the grant that:

1. It possesses legal authority to apply for the grant; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body, authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.
2. It will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and in accordance with Title VI of that Act, no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the applicant receives Federal financial assistance and will immediately take any measures necessary to effectuate this agreement.
3. It will comply with Title VI of the Civil Rights Act of 1964 (42 USC 2000d) prohibiting employment discrimination where (1) the primary purpose of a grant is to provide employment or (2) discriminatory employment practices will result in unequal treatment of persons who are or should be benefiting from the grant-aided activity.
4. It will comply with requirements of the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (P.L. 91-646) which provides for fair and equitable treatment of persons displaced as a result of Federal and federally assisted programs.
5. It will comply with the provisions of the Hatch Act which limit the political activity of employees.
6. It will comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act, as they apply to hospital and educational institution employees of State and local governments.
7. It will establish safeguards to prohibit employees from using their positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have family, business, or other ties.
8. It will give the sponsoring agency or the Comptroller General through any authorized representative the access to and the right to examine all records, books, papers, or documents related to the grant.
9. It will comply with all requirements imposed by the Federal sponsoring agency concerning special requirements of law, program requirements, and other administrative requirements.
10. It will insure that the facilities under its ownership, lease or supervision which shall be utilized in the accomplishment of the project are not listed on the Environmental Protection Agency's (EPA) list of Violating Facilities and that it will notify the Federal grantor agency of the receipt of any communication from the Director of the EPA Office of Federal Activities indicating that a facility to be used in the project is under consideration for listing by the EPA.
11. It will comply with the flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973, Public Law 93-234, 87 Stat. 975, approved December 31, 1976. Section 102(a) requires, on and after March 2, 1975, the purchase of flood insurance in communities where such insurance is available as a condition for the receipt of any Federal financial assistance for construction or acquisition purposes for use in any area that has been identified by the Secretary of the Department of Housing and Urban Development as an area having special flood hazards.

    The phrase "Federal financial assistance" includes any form of loan, grant, guaranty, insurance payment, rebate, subsidy, disaster assistance loan or grant, or any other form of direct or indirect Federal assistance.