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AREAWIDE WASTE
TREATMENT MANAGEMENT
PLANNING PROGRAM

REVISED WORK PROGRAM

MARICOPA ASSOCIATION OF GOVERNMENTS
OCTOBER 1976

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PREFACE

The Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) encourages and facilitates the development and implementation of improved areawide waste treatment management programs. Section 208 of this act establishes a mechanism for water quality/waste control planning and management. Through the provisions of this act, Federal funds are available to assist local planning jurisdictions in identifying, quantifying, and addressing complex and difficult urban, industrial and nonpoint source water quality problems.

The Maricopa Association of Governments (MAG) has been designated the 208 planning agency for Maricopa County by both the Governor of Arizona and by Region IX of the U. S. Environmental Protection Agency (EPA). The Maricopa Association of Governments currently serves as the regional planning agency within the county. The membership of MAG includes all 19 incorporated cities and towns as well as the county.

MAG will incorporate the 208 water quality planning into their overall comprehensive regional planning program (see Chart 1). The four major elements of this program will then be: (1) Comprehensive Regional Development Plan; (2) Regional Transportation Plan; (3) Regional Water Resources Plan; and (4) Regional Housing Plan. Each of these elements are being developed simultaneously to fulfill specific planning needs for the region. All four elements will be developed through a unified planning process and will draw on a common data base. Because the planning for all elements is being conducted concurrently, and because the processes have been highly integrated, each element will build on the other in a truly synergetic fashion.

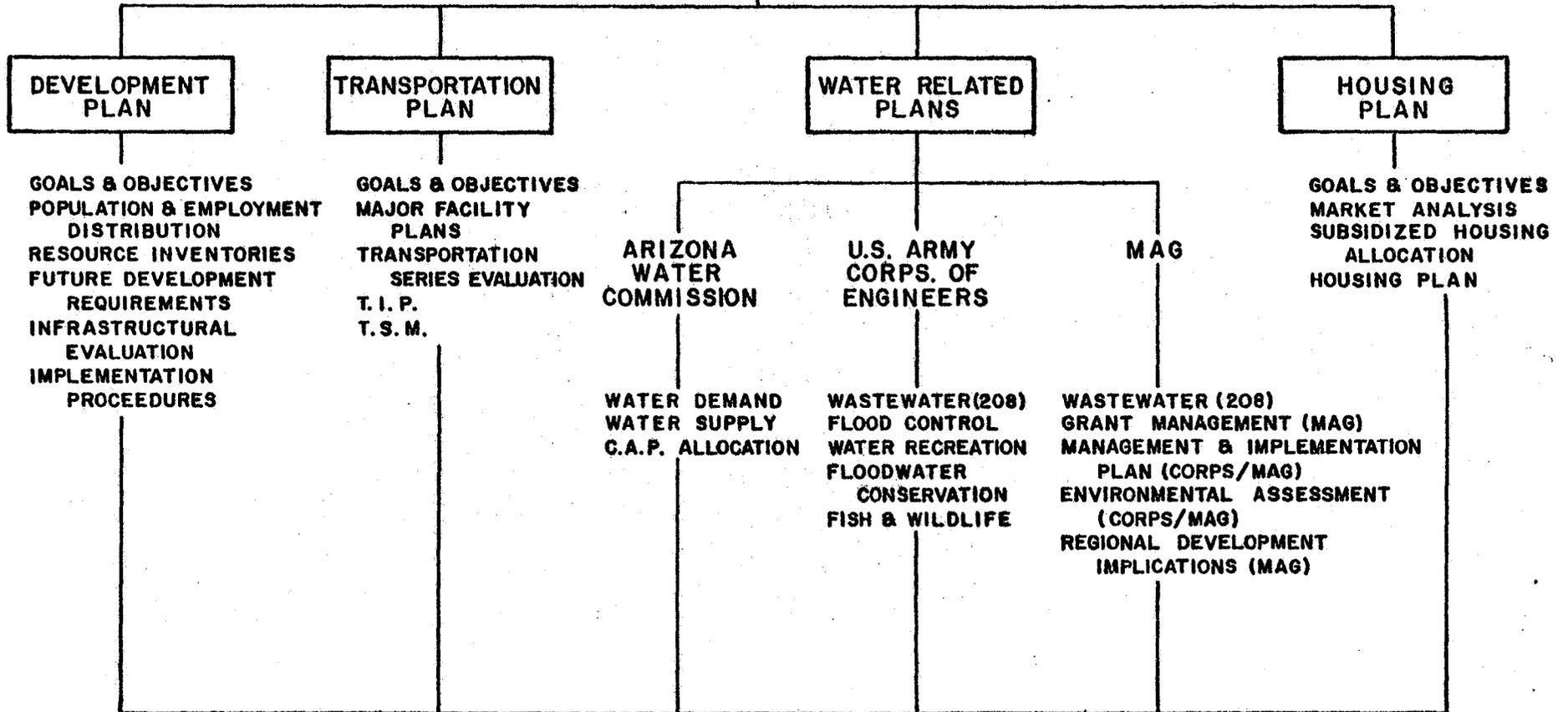
INTRODUCTION

MAG COMPREHENSIVE PLANNING PROGRAM

REGIONAL COUNCIL

MAG COMPREHENSIVE
DEVELOPMENT PLAN

REGIONAL GOALS
AND OBJECTIVES



REGIONAL DATA BASE & PLANNING PROCESSES

CHART I

INTRODUCTION

A. OVERVIEW OF THE 208 PLANNING PROCESS

In order to identify and solve the problems relative to wastewater management in Maricopa County, the Maricopa Association of Governments (MAG) has been designated the 208 planning agency for the County. MAG has accepted the 208 program as part of their overall Comprehensive Regional Planning Program. Through reevaluation of the MAG Overall Work Program (OWP), numerous work elements have been rephased and restructured in terms of the function of the Section 208 planning program. A number of work elements which are funded by agencies other than the U.S. Environmental Protection Agency (EPA) but are essential to the total Section 208 planning program have been interfaced in the MAG OWP. It is anticipated that the increased work load will be funded through Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) and the U.S. Army Corps of Engineers (Corps) Urban Study Program.

To obtain assistance in the development of the technical waste management plans for the Phoenix Metropolitan area, MAG has requested the Corps of Engineers to include wastewater management in the Corps' Phoenix Urban Study (see map for Corps' study area on Page 1-9). MAG will rely on the services of consulting engineers to provide the technical analysis for the remainder of the County. Through modifications to their overall work program MAG proposes to develop the supportive demographic, economic land use data in a standardized

format suitable for use and inclusion in the two paralleling technical programs. MAG will provide for the integration and coordination of its programs and the Phoenix Urban Study Program through an established planning structure and citizen participation processes. MAG will also provide staff assistance as well as in-kind services from its member agencies to assure the development of a reasonable, flexible and fully coordinated waste management plan.

The services provided by the Corps of Engineers will be funded through the U. S. Army Corps of Engineers Phoenix Urban Study Program. MAG's contributions (staff services, coordination and technical data generation) to the 208 Study and the non-metro portion of that study will be funded in part by a grant from the Environmental Protection Agency (EPA). In addition 8% of the EPA grant will be provided to support the State's activities in developing the areawide plan. In-kind services will be provided by MAG member agencies and the State of Arizona to support the study effort and will also provide the local match. Chart 2 shows a general breakdown of the study effort.

B. HISTORICAL PERSPECTIVE

Comprehensive physical planning on a regional basis is relatively new to the MAG region. The first professional staff was established in 1965 by the Arizona Highway Department (through the agency known as the Valley Area Traffic and Transportation Study). Since that initial beginning, considerable work has been accomplished. The current arrangement is a contract between MAG and Arizona Department of Transportation (ADOT). (Note: The MAG Transportation and Planning Office (MAGTPO) is a part of ADOT.)

CHART 2 MAG 208 WATER QUALITY PLANNING FUNDING
(Thousands of Dollars)

	LOCAL	EPA	CORPS	TOTAL
Maricopa Association of Governments	189	566		755
1. Program Management**	10	140		150
2. Coordination**	35	36		71
3. Public Participation**	40	25		65
4. Land Use*	25	50		75
5. Water Quality**	45	250		295
6. Water Supply	25	60		85
7. Plan Adoption*	9	5		14
State (OEPAD)	16	49		65
1. Program Management	7	22		29
2. Technical Assistance	4	12		16
3. Coordination	3	9		12
4. Review and Certification	2	6		8
Corps of Engineers	400		1,200	1,600
1. Program Management	0		201	201
2. Coordination	50		50	100
3. Public Participation	70		120	190
4. Land Use	10		10	20
5. Water Quality	260		809	1,069
6. Plan Adoption	10		10	20
TOTAL	605	615	1,200	2,420

OEPAD - Office of Economic Planning and Development

NOTE: Additional funds will be provided to the Arizona Department of Health Services through their 106 grant to support the State's effort

*Primary responsibility of MAG - Staff

**Primary responsibility of Maricopa County Planning Department

MAG is presently engaged in an areawide planning effort to produce a revised regional plan. MAG was originally formed in 1967 when an agreement was enacted to cooperate, coordinate, clarify, identify and comprehensively plan for the solution of regional problems. Other examples of intergovernmental cooperation are the Five-Cities Sewer System, the Pay and Classification Study, the formation of the Valley Area Traffic and Transportation Study, mutual aid agreements for police and fire protection, civil defense and a solid waste disposal study.

The specific functions of MAG were defined in the initial by-laws as (1) providing a forum for discussion and study of regional problems; (2) cooperating by pooling common resources to achieve efficiency and economy; (3) determining the nature of and planning for the solution of regional problems; (4) facilitating intergovernmental agreements; (5) adopting policy statements; (6) encouraging as much intergovernmental cooperation as possible; and (7) preparing for future growth of the metropolitan area.

C. AREA DELINEATION

The MAG area of jurisdiction encompasses 9,226 square miles and contains 19 incorporated cities and towns (Figure 1, Page 6). Figure 2 (Page 7) shows the relationship of MAG's planning area to the other five of the State's regional planning districts as designated in the Governor's Executive Order 70-2.

For functional planning purposes, subareas have been delineated within the region. MAGTPO, in cooperation with the local planning agencies, has designated the Urban Planning Area (UPA) which encompasses approximately 1,900 square miles of eastern Maricopa County (Figure 3, Page 8). This area con-

PLACE NAMES IN MARICOPA COUNTY, ARIZONA

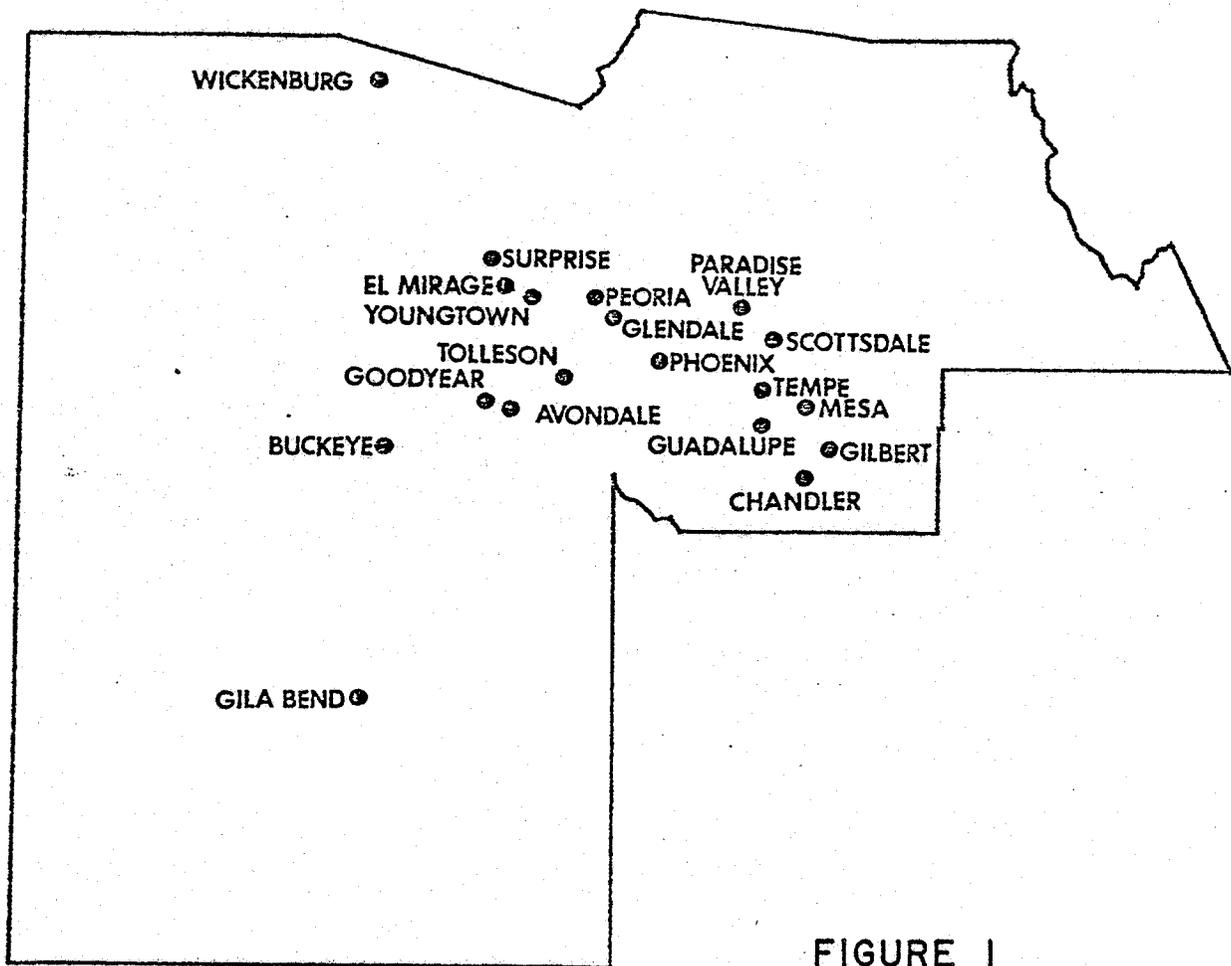


FIGURE 1

STATE PLANNING AND DEVELOPMENT DISTRICTS

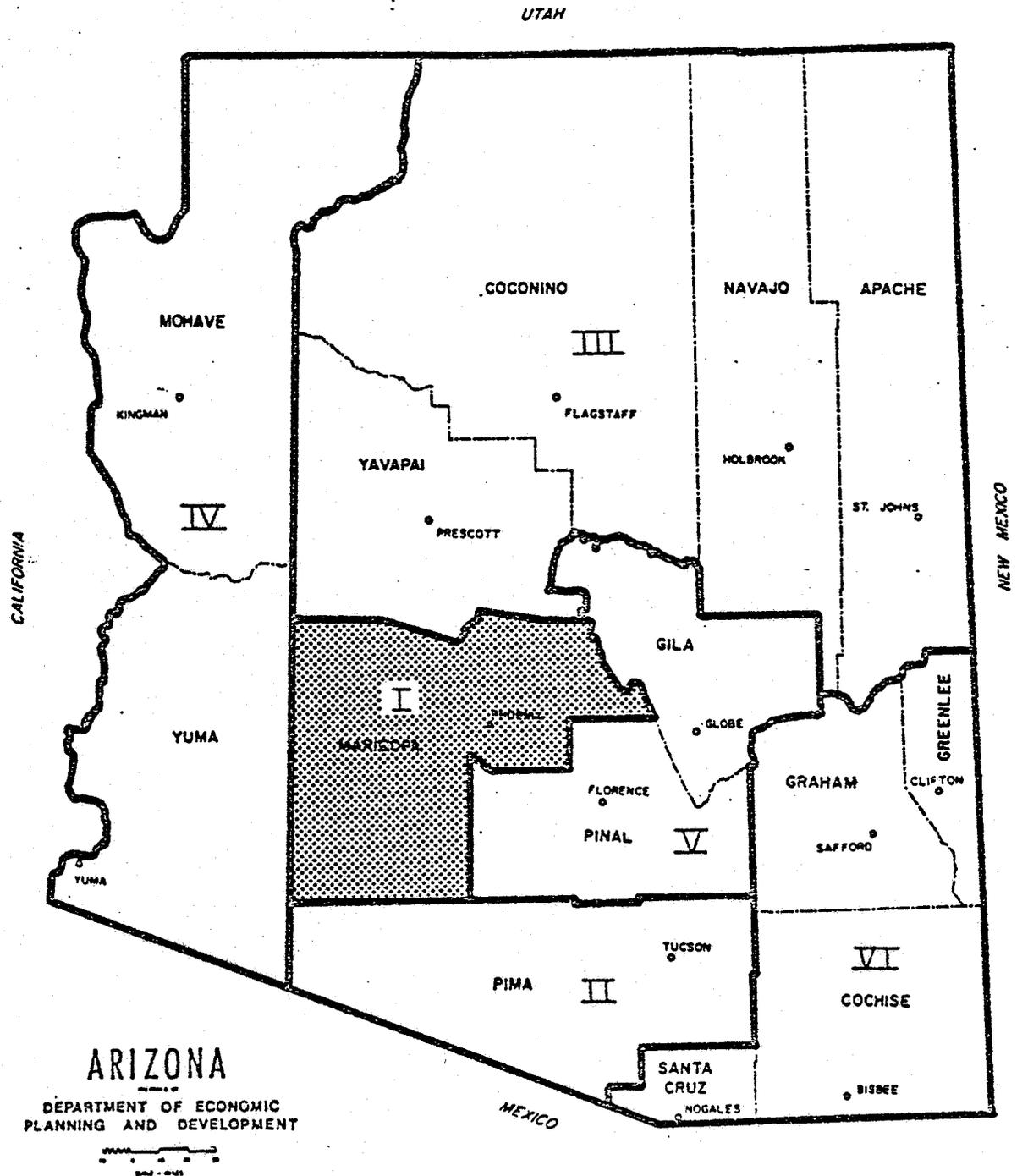
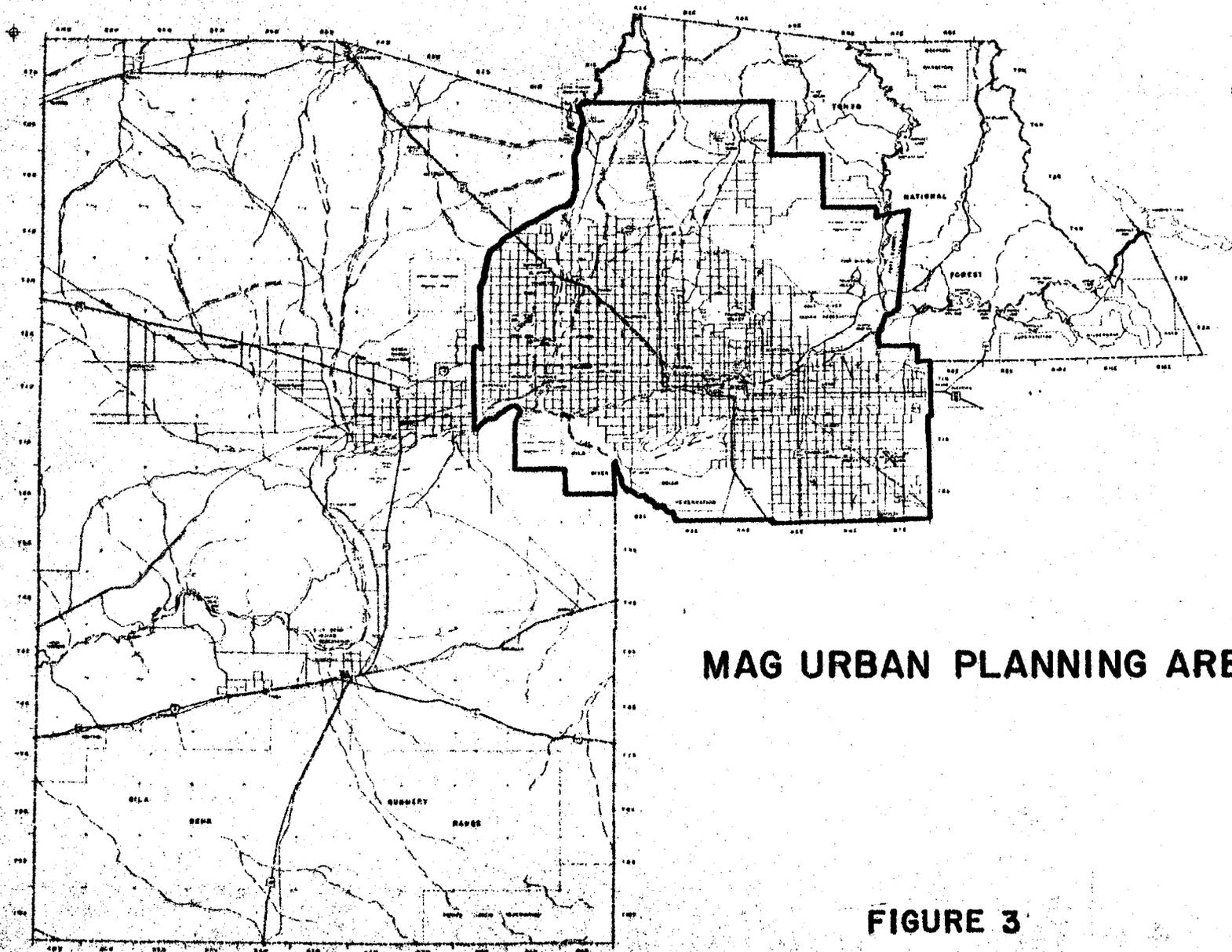
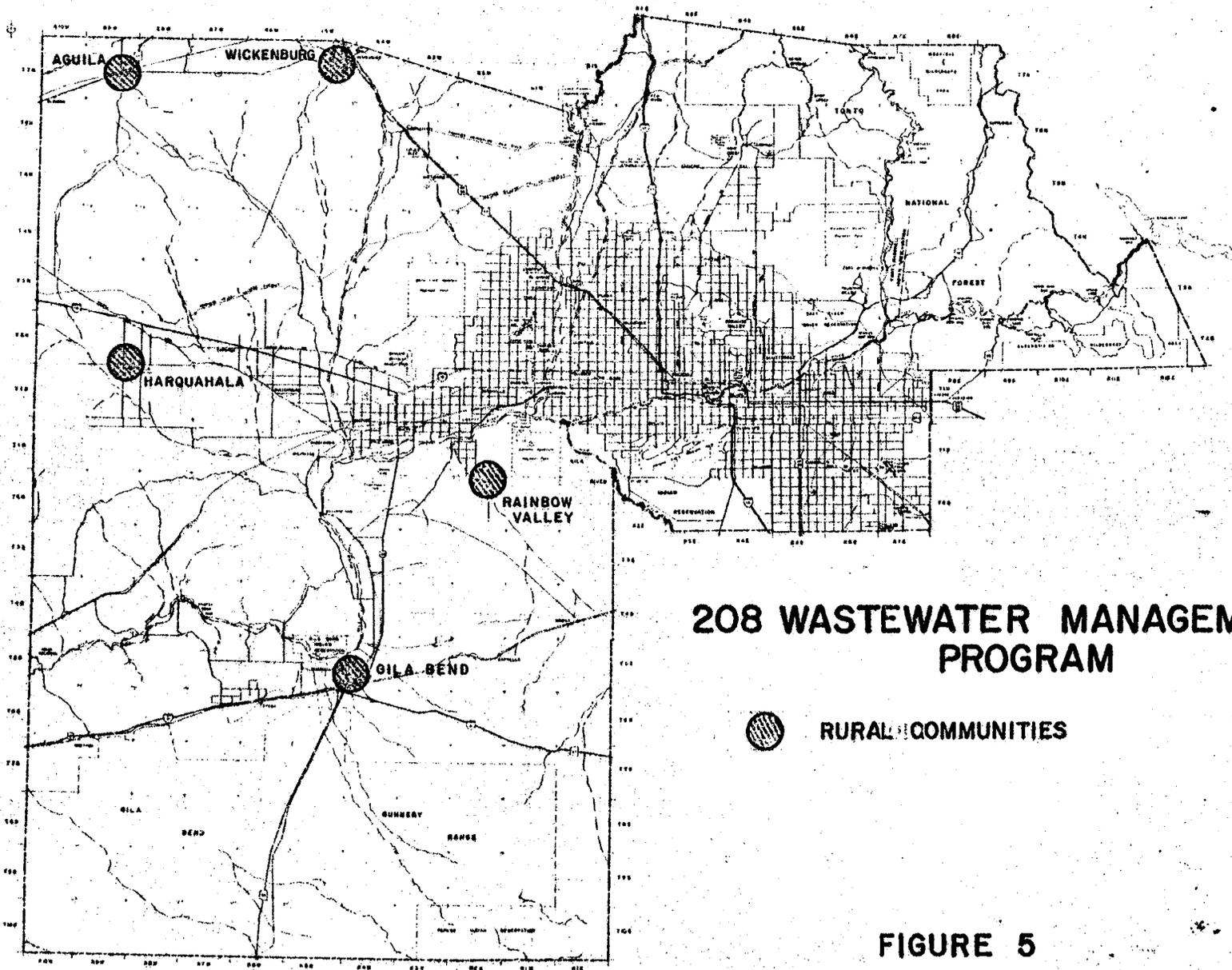


FIGURE 2



MAG URBAN PLANNING AREA

FIGURE 3



208 WASTEWATER MANAGEMENT PROGRAM

 RURAL COMMUNITIES

FIGURE 5

tains the existing contiguous urban development, plus that area projected to be urbanized by the year 2000. This area contained 98 percent of the SMSA population in 1970 and is used for most land use planning programs. This planning area has been expanded slightly to the west so as to include Buckeye in the U.S. Army Corps' urban study area boundary (Figure 4, Page 9). Figure 5 illustrates the location of the rural communities in the non-metro area of the MAG Study.

D. REQUIREMENTS OF THE LAW, REGULATIONS, AND GUIDELINES

Public Law 92-500 (the Water Pollution Control Act Amendments of 1972), Section 208 outlines the requirements of the areawide waste treatment management planning and includes conditions for controlling point and non-point sources of pollution. With reference to the control of point source of pollution, the law, (in Section 208, A through E) specifically requires a 208 plan to provide for:

- 1) Identification of necessary treatment works.
- 2) Identification of necessary waste water collection systems.
- 3) Identification of construction priorities and time schedules for initiation and completion of such works.
- 4) Establishment of a regulatory program which will provide for areawide waste treatment management, regulating constuction resulting in runoff, and assure that industrial pretreatment requirements are met.
- 5) Identification of agencies which will construct, operate, maintain, and otherwise carry out the plan.
- 6) Establishment of methods for financing plan implementation.

Section 208 (b) (2) (F through K) requires the agency to identify and formulate methods for management and control of nonpoint sources of pollution from agriculture, silviculture, mining, construction, hydrologic modification, salt water and land or subsurface disposal of residual wastes.

USEPA Regulations are revised as published in the Federal Register under CFR 131 to further expand these content requirements to include the following statement (40CFR ss 131-10 (g) - Nov. 28, 1975)

(g) Water quality management planning elements include, but are not limited to:

- 1) Planning boundaries [ss 131.11 (a)]
- 2) Water quality assessment and segment classification [ss 131.11 (b)]
- 3) Inventories and projections [ss 131.11 (c)]
- 4) Nonpoint source assessment [ss 131.11 (d)]
- 5) Water quality standards [ss 131.11 (e)]
- 6) Total maximum daily loads [ss 131.11 (f)]
- 7) Point source load allocations [ss 131.11 (g)]
- 8) Municipal waste treatment systems needs [ss 131.11 (h)]
- 9) Industrial waste treatment systems needs [ss 131.11 (i)]
- 10) Nonpoint source control needs [ss 131.11 (j)]
- 11) Residual waste control needs; land disposal needs [ss 131.11 (k)]
- 12) Urban and industrial stormwater needs [ss 131.11 (l)]
- 13) Target abatement dates [ss 131.11 (m)]
- 14) Regulatory programs [ss 131.11 (n)]
- 15) Management agencies [ss 131.11 (o)]
- 16) Environmental, social, economic impact [ss 131.11 (p)]

Any additions to or deletions from the above program elements will be discussed in the sections of this document entitled "Water Quality Problems in the 208 Area," and "Waste Management Problems". In accordance with EPA policy, modifications will be made to the Water Quality Management Planning Process to accommodate unique problems of different geographical regions of the County.

E. WATER QUALITY PROBLEMS IN THE 208 AREA

The management of the quality of the water supply is one of the single most important problems of any community. Table 1 presents the existing water quality of the surface water as reported by the Salt River Project, and of the groundwater of five of the communities. In order to help identify problem areas, the last column presents the 1962 "Drinking Water Standards" as published by the U.S. Public Health Service.

The surface water supply passes all of the chemical water quality requirements. After removal of suspended solids and chlorination, this water meets all of the necessary health standards.

The chemical quality of the ground water supply varies throughout the area, with the specific problems identified in the following paragraphs.

One measure of the suitability of groundwater for domestic use is the dissolved-solids content. The U.S. Public Health Service in 1962 recommended that water for drinking purposes should contain no more than 500 mg/l* of dissolved solids. However, the quality of groundwater from most of the project area cannot meet this recommendation. The groundwater in the northern part of the

* mg/l - Milligrams per liter.

project area generally contains less than 500 mg/l of dissolved solids. In the southern part of Scottsdale and Paradise Valley, the northern part of Tempe, Mesa and Phoenix and the Gila River Indian Reservation, most of the wells yield water that contains from 500 to 1,000 mg/l of dissolved solids. Water in this concentration range is obtained from deposits that contain small amounts of gypsum (calcium sulfate) or other soluble salts and is used for domestic supply, especially where water of lesser concentration is not available. The main objection is bad taste due to dissolved gypsum and common table salt (sodium chloride). Much groundwater used successfully for irrigation is in this concentration range. In the southern part of Tempe, Mesa and Phoenix, as well as the Buckeye area, much of the groundwater contains from 1,000 to 3,000 mg/l of dissolved solids. Water in this concentration range is used successfully for irrigation of salt-tolerant crops grown on well-drained soil. However, it is usually demineralized or blended for municipal use. A small area along the Gila River yields water that contains more than 3,000 mg/l. Water of this concentration may be demineralized for municipal use. Use of this water for irrigation requires salt-tolerant crops, well-drained soil and addition of amendments to prevent accumulation of harmful salts in the soil.

In the general area of Buckeye, high concentrations of fluorides have been reported. Water in many of the wells contains 6 mg/l of fluorides. This is reduced to 2 or 3 mg/l by their electro dialysis plant.

CHEMICAL QUALITY COMPARISON
Values, except pH, as mg/L

No. of Wells Sampled	Scottsdale			Glendale			Sun City			Gila Bend			Wickenburg			Buckeye(A)			Surface Water (B)			USPHS Units (C)
	23			27			14			2			3			3						
Item	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	
Solids Dissolved	190	670	362	257	1177	464	223	471	333	1120	1190	1150	234	358	297	494	1466	971	181	554	335	500*
Hardness	4	246	98	50	716	225	112	286	193	220	250	233	104	238	184	62	196	141	112	212	147	***
Calcium	1	47	20	12	182	55	31	81	52	53	59	54	28	80	57	15	64	45				***
Magnesium	1	23	12	2	78	25	8	27	15	21	24	23	8	16	11	6	9	7				***
Sodium	30	225	88	9	118	66	26	43	29	325	326	326	24	36	33	160	445	291	7	160	35	***
Carbonates	0	26	2	-	-	Nil	Nil	Nil	Nil	-	-	Nil	-	-	Nil	-	-	Nil	-	-		***
Biocarbonates	88	210	162	60	228	123	114	146	137	50	50	50	146	232	193	36	82	53	80	176	107	***
Chlorides	9	330	75	27	408	128	22	124	57	540	556	549	19	28	23	212	712	456	7	152	65	250*-
Sulfates	8	90	24	14	182	56	8	46	31	115	130	117	4	48	33	54	134	83	28	58	49	250*
Nitrates	1	48	6	6	100	38	5	37	23	4	4	4	4	12	8	1	7	3	1.0	9.6	3.5	45*
Fluorides	0.4	2.8	0.8	0.27	1	0.54	0.17	0.35	0.24	5.2	6.0	5.6	0.38	1.0	0.62	1.5	4.4	3.1	0.17	0.45	0.32	1.4**
Iron	0.05	2.5	0.24	0.05	2.2	0.24	0.05	0.35	0.08	0.05	0.05	0.05	0.01	0.5	0.04	0.05	0.13	0.08	0	0	0	0.3*
Hexavalent Chromium	0.01	0.72	0.12	0.01	0.3	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.03	0.02	0.01	0.04	0.02				0.05**
pH	7.2	9.2	8.1	7.4	8.3	7.9	7.8	8.3	8.0	7.9	8.1	8.0	7.5	7.9	7.7	7.2	8.3	7.8	7.1	8.3	7.6	

A - Untreated water

B - Salt River & Verde River

C - 1962 "Drinking Water Standards" of the United State Public Health Service with criteria as:

* "... should not be present in a water supply in excess of listed concentration where ...other more suitable supplies are or can be made available."

** "The presence of the following substances in excess of the listed concentrations shall constitute grounds for rejection of the supply."

*** "no limit is set."

Based on the annual maximum daily air temperature, the optimum fluoride concentration is 0.7 mg/l. A fluoride concentration of more than 1.4 mg/l constitutes grounds for rejection of the water for public use. Other areas that are experiencing problems are: Avondale, Buckhorn (east of Mesa) along the southern foothills of Phoenix, and Gila Bend.

In the northern part of Scottsdale, near the intersection of Scottsdale Road and Shea Boulevard, a hexavalent chromium problem exists.

In the New River area, an arsenic problem has been reported. However, it is confined to several wells found within an area of approximately one square mile.

Some well samples in the Carefree area have shown radioactive readings. One well registered 16 picocuries/liter* of uranium 226 radiation. The standards set the limit at 3 picocuries/liter.

Hardness is not a known health hazard and therefore no maximum standard has been set. However, for domestic water supplies with a total hardness greater than 150 mg/l, it is often desirable to use a water softening system to reduce pipe incrustation and soap consumption. As can be seen in Table 1, most of the water in the study area, including the surface water, is considered hard.

Problems with chlorides and sulfates exist along both the Salt and the Gila Rivers.

Nitrates in drinking water can cause cyanosis in infants. The source of nitrate in water in the Phoenix area is unknown, but it may be the nitrate fertilizers applied in the agricultural areas or naturally occurring organic material in the alluvial deposits. The current drinking water standards have a recommended limit

*Picocurie - A unit quantity of any radioactive nuclide in which 2.22 disintegrations occur per minute.

of 45 mg/l of nitrate or 10 mg/l of nitrate-nitrogen. Many of the wells do not meet these standards, however, most of these can be blended to reduce the concentrations. The proposed new drinking water standards make the 10 mg/l of nitrate-nitrogen a mandatory, rather than recommended limit. Therefore, supplies which exceed this limit will be rejected for drinking purposes unless they can be blended or treated.

Water quality problems may be caused, to some extent, by agricultural activities within the study area. Dissolved solids contained in irrigation water remain in the soil after the water is lost to the atmosphere in the evapo-transpiration process. In time these solids are leached through the soil and are added to the groundwater. Similarly, fertilizers and pesticides may be introduced into the groundwater supply by the leaching action of the irrigation water. These pollutants become urban problems due to the high dependency of the urban area upon the groundwater for domestic uses. Due to the lack of standards incorporated within the U. S. "Drinking Water Standards" concerning various pollutants (e.g., insecticides, pesticides, etc.) found in agricultural areas there has been no monitoring of the presence or assessment of the effects of these pollutants.

Water quality problems may also be caused by a number of other non-point sources of pollution identified in PL 92-500. These include pollution from storm drainage systems, solid waste disposal sites, manure disposal areas, runoff from land used for crop and livestock production, sand and gravel operations, and construction related activities. While each of these represents a potential pollutant

source, none of these except feed lots has been documented as such for the MAG 208 area. (There have been a few documented reports by the Maricopa County Health Department concerning bacteriological pollution from wells beneath feed lots.) Lack of quantitative information on water quality problems from non-point sources within the MAG 208 area is itself a serious water quality management problem. Agricultural wells are not monitored by the County Health Department.

One non-point source for which there is some information are the salt seeps on the Upper Salt River. A total of ten "seeps" or springs have been identified on the Upper Salt River and Tributaries. These "seeps" are estimated to contribute from 800 to 1100 tons per day of salts to the Salt River. Despite the identification of these salt sources, no control measures have been studied for them.

Water quality problems may also be caused by the point sources within the MAG 208 area. These include a large number of treatment plants, both municipal and industrial, as well as individual household units. Significant quantities of heavy metals, nutrients, organics, and pathogenic organisms are associated with wastewaters of this nature. These may be contributing to ground water contamination as well as creating surface water problems. The effluent in the Gila River channel down stream of the 91st Avenue Treatment Plant (the largest treatment plant in the County with a current capacity of 95 MGD) contributes a great deal to the recharge of the ground water in the Buckeye area. It also supports the only free flowing stream in the study area below Granite Reef Dam. As such, it has secondary problems associated with surface waters including vector control problems.

Monitoring of water quality is performed by both the State Department of Health Service, Bureau of Water Quality Control, and the Maricopa County Health Department. The Bureau of Water Quality Control monitors chemical content of wells furnishing public water supply within the State every three years to check compliance with 1962, "Drinking Water Standards" of the U. S. Public Health Service relative to chemical content of the well water. The Maricopa County Health Department monitors water franchise districts (public water supplies) for a general inspection every two years, which focuses on construction of wells and the water distribution systems. Bacteriological samples of public water companies are evaluated every month by the County Health Department. Private wells receive bacteriological evaluation upon request. Noncompliance with U. S. Drinking Water Standards results in closing the system or a phased program of water quality improvement.

Through the use of these monitoring programs the following significant water quality problems in the non-metro area have been discovered. Flouride concentrations in many areas of the non-metro area of the County exceed recommended national standards notably in Gila Bend where the public water company has been restricted by the County Health Department from providing any additional water hookups. The City of Gila Bend is presently seeking a federal grant from the Farmer's Home Administration to provide for a new well, improved distribution system, and deflouridation unit.

A unique feature of the water quality and supply situation throughout the County is that subsurface water supplies occur at varying depths and in varying quantities (i.e. significant concentration changes in flourides, total

dissolved solids, and the other chemical substances). It is common practice to seal off wells at depths where contaminant concentrations in groundwater exceed national "Drinking Water Standards" and to drill to greater depths in search of potable water.

There is a need to compile available water quality information presently being monitored to receive a clearer picture of the County water supply and quality. It is apparent that available results from such a study would not incur future water supply or quality due to the many variables in water supply in present subsurface water deposits (i.e., size and quality of water deposits at varying depths).

In addition to the water quality problems previously mentioned there are a number of programs presently underway which impact significantly on water supply and aquifer recharge. The construction of the Central Arizona Project will add a new water supply to the region with some significant treatment needs. The proposed Orme Dam on the Fort McDowell Indian Reservation could change present aquifer recharge patterns in the Verde River. The Rio Salado Project, a redevelopment/flood control project along the Salt River where it passes through the metropolitan area, could significantly affect water supply and aquifer recharge patterns. Numerous flood control projects have been constructed and are planned for construction in the future. These projects change storm runoff flows and aquifer recharge patterns considerably. The effects of all the above water supply and quality issues will be closely monitored as a

part of the 208 program. The Corps is directly involved in the planning of many of these water related programs and will be incorporating data from these programs into the 208 planning process.

F. WASTE MANAGEMENT PROBLEMS

Nationwide, waste management problems often stem from a lack of consideration of the total effect of waste disposal on the land and water resources of the region. This lack of consideration really reflects a lack of long range planning for resources within the area. In these situations the short range goals of least cost disposal of liquid and solid wastes often result in higher long range costs from polluted resources. Part of the problem stems from a lack of understanding of the long term effects of various waste disposal practices.

In the MAG-208 area the greatest single waste management problem is the lack of a regional ground water resource management agency. Only a regional agency, with broad authority over all aspects of the resource can provide the control necessary for effective long range management of that resource. In Maricopa County ground water is one such resource. To manage the ground water quality an agency should have control over all waste disposal which affects the quality of the ground water. No such agency exists. In fact, the combined authority of all the existing waste management agencies is still not adequate.

Certain aspects of waste management within Maricopa County are well managed. There are many agencies who deal with the collection and disposal of municipal wastewater. While not all of these agencies are performing up to standards, the authorities and programs for improvement are underway. The Metropolitan area has a fine regional

collection and treatment system which includes a 40 MGD activated sludge treatment plant serving the City of Phoenix and a 95 MGD activated sludge treatment plant serving Phoenix, Mesa, Tempe, Chandler, Scottsdale, Paradise Valley, Glendale, Sun City and Youngtown. Both of these plants boast the ability to meet the Arizona Department of Health Services' and the Environmental Protection Agency's requirements for secondary treatment. Most of the area's smaller plants do not do as well.

This cooperative arrangement for wastewater collection and treatment was brought about by the recognition in the 1950s that these services could most efficiently be provided on a joint-use or regional basis, rather than an individual basis. The single most important criterion applied to wastewater treatment at the time was cost-effectiveness, and regional treatment plants met this criterion. By the end of the 1950s two joint-use wastewater treatment facilities had been constructed. One served the Cities of Avondale and Goodyear, and the other served the Cities of Glendale and Phoenix. The latter system was expanded into the 95 MGD multi-city sewerage facility mentioned above.

The need for a single agency to operate and maintain this multi-city system was met by designating Phoenix, the major user, as the managing agency. Also, the need for the planning and coordination of the future of this system was filled in 1967 within the formation of the Maricopa Association of Governments and its Public Works Committee. A 30 million gallon a day expansion has just been completed and another is planned for 1980 to provide additional capacity for those cities already serviced. This expansion could also provide new service to El Mirage, Surprise, Gilbert, Guadalupe, Luke Air Force Base.

A 1971 report entitled Maricopa County, Arizona, Comprehensive Water and Sewer Plan prepared by Ellis, Murphy and Holgate, consulting engineers, indicates that Indian residences (25) located on the Gila Bend Indian Reservation adjacent to Gila Bend are using "unsatisfactory leaching beds for sewage disposal" and recommends connecting this community to the Gila Bend sewer system. The Gila Bend sewer system does not at present meet EPA waste water discharge standards for the discharges of B.O.D.'s and suspended solids. The bacteriological health standards set by EPA are likewise not met in effluent discharges from this treatment plant and chlorination is not used in the treatment process. The effluent is presently being released into the Gila River from the existing treatment plant during the winter when seasonal resident population increases sewage loads significantly. During the summer months evaporation prevents discharge into the Gila River.

According to the Maricopa County Health Department the sewage treatment plant serving the City of Wickenburg is overloaded and not meeting EPA discharge standards for either B.O.D.'s and suspended solids nor does it meet bacteriological discharge requirements. The plant presently in operation utilizes an activated sludge (extended aeration) process and discharges effluent into the Hassayampa River. This plant does not employ chlorination in its treatment process. In the future the City of Wickenburg intends to achieve zero discharge.

There are no private wastewater treatment plants in the non-metropolitan study area. Septic tank filtration fields and individual systems are widely used in the urban fringe and rural areas of the County. The County Health Department requires percolation tests and soil boring logs for approval of septic tank use. No documentation of contamination of groundwater from septic tank use exists. Wells are usually drilled at a depth exceeding 200 feet and are therefore be-

yond leaching depths of the contamination material. It is possible that floods could cause contamination to groundwater in river bottom areas but these contaminants are indistinguishable from urban runoff. However, there is a need for a monitoring program which would serve to check the effects of septic tank filtration fields on groundwater quality.

Another aspect of waste management for which a number of agencies exist in Maricopa County is that of municipal solid waste disposal. Solid waste management agencies exist at three levels of government: local, County and State. Local agencies are generally concerned with cost effective disposal of solid wastes, while the County and State agencies are concerned with control of nuisances and health hazards. The latter agencies work through the enforcement of regulations. Recently, much evidence has been produced nationally which indicates that solid waste disposal sites frequently contribute to the pollution of surface and ground water. It is not known whether a similar problem exists in the MAG-208, however, our semi-arid climate certainly helps prevent it. Unfortunately, the practice of locating landfills in the river bottoms negates, in part, the advantages of the region's dry climate.

Not all solid waste disposal is currently well managed within Maricopa County. At present there is no class one disposal site within the County or for that matter, within the entire State. That means that there is no immediate location where an individual can legally or safely dispose of a hazardous waste. Hazardous wastes include: radioactive materials, flammable gases and liquids, extremely toxic liquids or solids, oxidizing materials, corrosive materials, irritating materials, and explosives. This creates particular difficulties for certain commercial and industrial operations and frequently results in the disposal of this material down the sewer or in unauthorized dumps. Aside from being unsafe, this practice also presents a serious pollution potential.

Another group of wastes which are not well managed are animal wastes, particularly for large concentrations of animals such as at feed lots. EPA has recently enacted regulations for management of these waste, still little is understood about their contribution, if any, to water pollution within the MAG-208 area.

Other large producers of solid wastes are the wastewater treatment plants. The two largest plants have a contract for the sale of their sludge to a company for the production of fertilizer. Aside for having limited value as a fertilizer, sludges from municipal wastewater treatment plants may result in infections or toxic contamination of food crops. Therefore, use of these sludges as a fertilizer needs to be controlled.

G. PRIOR INVESTIGATIONS AND EXISTING DATA
HISTORY AND CURRENT STATUS

MAG works closely with State and local agencies in coordinating and carrying out a comprehensive planning program in Maricopa County. The goal of this program is the betterment of the region's environmental, economic and social development.

The following is a brief description of the history and current status of comprehensive planning activities.

1. Population and Land Use

The existing MAG composite land use plan was compiled from agency plans prepared by Maricopa County, the municipalities and the Indian communities within the County. Currently the land use plan is undergoing a reevaluation in response to the need for a regional plan. The existing population projection adopted by MAG reflects an "average" of the high and low figures projected by the Arizona Department of Economic Security (DES).

2. Flood Control and Storm Drainage.

Maricopa County Flood Control District is responsible for development and implementation of a five-year capital improvements program on an annual basis. MAG (through its Public Works Committee) has assisted the flood control district in development of priorities for the five-year Capital Improvements Program. This process is undertaken in cooperation with the Corps of Engineers, the Soil Conservation Service, and the Bureau of Reclamation.

MAG annually prepares a storm drainage capital improvements program. A 1970 Storm Drainage Study by Yost and Gardner Engineers was conducted for a major portion of the metropolitan area and is used as background document for the storm drainage projections. It is worth noting that there are no combined sewers in the County.

3. Solid Waste Disposal

In 1967 and 1968, John Carollo Engineers conducted a solid waste disposal study through the Maricopa County Health Department which was monitored and evaluated through a MAG Solid Waste Disposal Committee. MAG has assisted in developing implementation procedures for solid waste disposal as it relates to regional land-fill programs. Additionally, MAG is preparing its five-year capital improvements projection for solid waste disposal needs in the County.

4. Transportation

MAG annually updates its transportation plan through a policy decision from the MAG Regional Council indicating the current status of the long range planning program. This transportation plan includes a transit element as well as the basic

street and highway network. For a number of years MAG has developed an annual Five-Year Major Street and Highway Capital Improvement Program. Beginning in Fiscal Year 1973-74, MAG developed a Five-Year Transportation Capital Improvement Program including both street and highway improvements and transit improvements. This planning effort will expand in Fiscal Year 1975-76 to include airport and low capital improvements in the Transportation Improvement Program.

Basic areawide transportation planning services are provided by MAG staff with additional expertise in transit planning provided by the City of Phoenix. MAG continues the development of a process for regional airport systems planning.

The Interstate 10 Corridor Alternative Study is soon to be completed as the first stage in a longer term program for the evaluation of areawide land use and transportation system alternatives.

5. Water and Sewer

In 1968, water and sewer studies for the metropolitan Phoenix area were developed. These were followed by a study which completed the remainder of the County area. Based on these reports, annual updates and improvements in the planning and implementation procedures for water and sewers have been developed. Annually, MAG adopts a five-year Capital Improvements Program for water works and sewerage systems. It is expected that because of new EPA regulations, a need for updating these studies exists.

6. Air Quality

The State of Arizona has developed an "Air Pollution Control Implementaion Plan" dated May, 1972. Presently, MAG is evaluating the "Comprehensive Transportation

Program and Plan" for the MAG Planning Area in terms of its consistency with the State 1972 Plan. The State of Arizona is now in the process of developing an Air Quality Maintenance Plan (AQMP). Evaluation is underway of the short (1980) and long (1995) range plan consistency, making sure this and other plans do not violate National Ambient Air Standards. Similar action and evaluation is anticipated in the consideration of the Comprehensive Land Use Plan and Waste Treatment Management Plan to be prepared under the authority of Section 208 of Public Law 92-500.

The following are some specific planning documents related to water and sewer problems for Maricopa County:

1. John Carollo Engineers, "Waterworks Report for the Valley Metropolitan Area of Phoenix, Arizona", 1968.
2. John Carollo Engineers, "Wastewater Report for the Valley Metropolitan Area of Phoenix, Arizona", 1968.
3. Ellis, Murphy & Holgate, "Maricopa County, Arizona, Comprehensive Water and Sewer Plan", 1971.
4. Yost and Gardner Engineers, "Storm Drainage Report for Maricopa Association of Governments", 1970.
5. U. S. Environmental Protection Agency, "Draft Guidelines for Areawide Waste Treatment Management", May, 1974.
6. Corps of Engineers, Department of the Army, "Proposed Policies and Procedures for Urban Studies Programs", Volume 39, No. 130, Part III, Federal Register, July 5, 1974.
7. H. S. Coblenz and Environmental Planning Consultants, "Fort McDowell Indian Community Comprehensive Planning Program, Volume IX, Public Facilities and Transportation", 1972.
8. Van Cleve and Associates, Inc., "General Community Plan-Gila River Indian Community, Arizona", 1972.
9. Simon Eisner and Associates, "Salt River General Development Plan, Pima-Maricopa Indian-Community", 1970.
10. City of Glendale 1970 Waterwork Report.

11. City of Glendale 1973 Sewerage Report.
12. 99th Avenue/Glendale Supplemental #1 and #2, 1973.
13. "99th Avenue Metropolitan Interceptor Sewer Project Report", City of Glendale, John Carollo Engineers, 1976.
14. Mesa/Tempe, Study of Southern Avenue Pipeline, 1974.
15. City of Mesa, Wastewater Report, John Carollo Engineers, 1969.
16. City of Mesa, Wastewater Treatment Evaluation by Carollo Engineers, 1970.
17. City of Mesa, Wastewater Treatment Evaluation by Carollo Engineers, 1973.
18. City of Mesa, Stormwater Report by Yost and Gardner Engineers, 1973.
19. City of Phoenix, Wastewater Treatment Facility Design by John Carollo Engineers, 1972.
20. City of Phoenix, Report on Transmission Mains by John Carollo Engineers, 1964.
21. City of Tempe, Storm Drainage Report, Williams and Ellis.
22. City of Tempe, Storm Drainage Report, John Carollo Engineers, 1972.
23. "Sewerage and Wastewater Treatment Report Tempe-Mesa-Gilbert Area", City of Tempe, John Carollo Engineers, 1976.
24. City of Chandler, Water and Wastewater Report, John Carollo Engineers, 1972.
25. City of Chandler, Drainage Report, John Carollo Engineers, 1974,
26. City of Buckeye, Wastewater Management Planning, John Carollo Engineers, awaiting funding.
27. Cities of Goodyear and Avondale, Design of a Collection & Treatment System, John Carollo Engineers, awaiting completion.
28. "Scope of Work for 201 Facilities Planning", for the Cities of Phoenix, Goodyear-Avondale, Buckeye, Gilbert, Glendale, and Tolleson.
29. "Landfills Within Maricopa County" Maricopa County Health Department.
30. "Article 6, Part 4 - Rules and Regulations for Reclaimed Wastes", Arizona Department Health Services.
31. "Amendments to Water Quality Control Standards for Surface Waters in Arizona", Water Quality Control Council, Dec. 1973.
32. "Maximum Allowable Limits for Discharge into the Phoenix Sanitary Sewer System, Section 28-21 and 22 of the Phoenix City Code, Dec. 1970.
33. "Principles and Standards for Water and Related Land Resources Planning", Water Resources Council, Sept. 10, 1973.

34. "Plan of Study - Phoenix Urban Study" U. S. Army Corps of Engineers, Nov. 1975.
35. "Plan of Study - Appendix C - Phoenix Urban Study" U. S. Army Corps of Engineers, Nov. 1975.
36. "Investigation of Salt Seeps On the Upper Salt River, Arizona", Edwin K. Swanson, Arizona Department of Health Services, Bureau of Water Quality Control.
37. "A Report on Infiltration/Inflow Problem Identification In Sewer Systems for the Phoenix Urban Study Program - U. S. Army Corps of Engineers", Ferguson, Morris and Simpson, June 1975.
38. "Detailed Work Plan - Point Source Wastewater Management Program - Conventional Treatment Alternatives" Prepared for the U. S. Army Corps of Engineers by Stevens, Thompson and Ranyan with Ferguson, Morris and Simpson, Sept. 1976.
39. "Detailed Work Plan - Point Source Wastewater Management Program Land Treatment Alternatives and Non-Point Source Wastewater Management Program", Prepared for the U. S. Army Corps of Engineers, by Boyle Engineers, Sept. 1976.

H. COORDINATION WITH RELATED PLANNING PROGRAMS

1. 201 Facilities Plans

In an idealized planning process the planning progresses from the large area with a "broad-brush" scope to the small area for detailed analysis. And so it is with the idealized process set up in PL 92-500. The planning was designed to progress from the basin planning (303e), through the areawide planning (208), to the facility planning (201). However, the law recognized that in most areas it would be necessary to carry on both 208 and 201 planning concurrently to prevent stopping needed construction. The key here is necessary construction. Wherever possible facility planning should be deferred until after the areawide plan is completed.

For the MAG 208 area it was determined that it would take until November of 1978 to complete the areawide plan. After that, any facility identified in the 208 plan would require about three months to complete the Step 1-201 process and 12 more months to complete the Step 2-201 process. Therefore, it would be the beginning of 1980 before construction (Step 3-201) could begin on any facility in the 208 plan. Because of this, it was agreed, that any facility which needed to begin construction prior to 1980 would have to be handled separately from the 208 plan as a 201 study.

In the development of the Plan of Study for the Phoenix Urban Study the following areas were designated as 201 study areas by virtue of their already being funded as 201 studies or their needing to begin construction before 1980: Avondale-Goodyear, Buckeye, Gilbert, Glendale (99th Avenue Interceptor Sewer), Phoenix

(91st Avenue Treatment Plant Addition), Tolleson and Wickenburg. It was agreed that these studies would be handled by the 201 program and that all other wastewater studies would be handled as part of the 208 program. It was further agreed that the 201 and 208 programs would work closely together to insure compatible plans, to share data and results, and to avoid duplication of effort.

2. Air Quality Planning

208 planning and air quality planning are interrelated, both in terms of their impact on one another and in terms of their similarities of approach. Both are concerned with maintaining environmental quality; both utilize an areawide approach in which areas of potential or existing problems are identified and a unified plan is developed for the entire area. However, when a program is designed to control pollution in just one medium, it can result in environmental deterioration in another. While the goal of both AQMP and 208 is to improve the quality of the environment, the single medium focus of separate programs may result in conflict with the attainment and maintenance of standards in the other medium. At the same time, if care is taken to coordinate their development, the plans produced through these two programs can be mutually supportive.

An obvious example of the intermedia conflict is the use of control technologies and equipment which are employed to reduce emissions to one medium while transferring the pollution problem to another medium. Lime/limestone scrubbers, one means for reducing SO₂ emissions, produce a liquid sludge which must be disposed of. Conversely, sewage treatment plants may try to dispose of sludge through incineration, thus increasing air quality problems. Such problems can also affect energy production considerations. A fossil-fueled electric generator may be undesirable because of air quality limitations, but an alternative nuclear generating plant may be unable to meet thermal pollution standards.

Potential conflicts are also apparent when examining the issue of community growth--where should it occur, how should it be distributed and how much should be allowed? The two programs will view these questions from different perspectives, which in some cases may result in different answers. For example, the location of waste treatment plants and sewer interceptors can act as an inducement to growth and guide growth toward the serviced areas. These areas planned for expanded sewerage service may have existing air quality problems which increased growth would simply exaggerate.

In addition to conflicts over the amount growth, the two programs may consciously attempt to guide growth toward different distributions. In designing an AQMP plan, for example, the planning agency may want to utilize the option of emission density zoning to establish emission limits for different areas. An industrial zone might have a limit of three zones of total suspended particulates per square mile while the limit for a commercial zone would be considerably less. However, wasteload allocations consistent with maintaining water quality may necessitate a different land use configuration which would not correspond to the air quality zones. For example, the location of additional heavy industry within a particular area may lower the quality of the receiving water below standards, due to favorable meteorological conditions, it is a desirable location in terms of air quality maintenance.

On a larger scale, the two programs may favor different general growth patterns. In one area, for example, substantial in-migration and a concomitant demand for housing may result from increasing job opportunities. New housing construction to meet the increased demand might occur primarily in the urban fringe where excess treatment capacity exists. Indirect sources, such as shopping centers, would

accompany the residential construction and, as a result, air quality standards might not be attained or maintained. In addition, adequate mass transit may not be available, and the inevitable increase of motor vehicle use could cause substantial air quality problems. Thus the development pattern best suited to meet the requirements of a water quality plan may conflict with the needs for Air Quality Maintenance Planning.

Thus far, only possible conflicts between the two programs have been mentioned. However, they should be designed to be consistent with one another so that their policies can be reinforcing, thus providing further inducement for communities to take regulatory action. Wastewater treatment and collection facilities, for example, can be designed to serve those areas lacking significant air quality attainment and maintenance problems, thus directing growth away from problem areas. In doing so, however, consideration must be given to preventing deterioration of air and water quality. If land use policies and controls are consistent, growth can be regulated so that it does not result in violations of either water or air quality standards. Therefore, it is important that agencies developing plans under the two programs coordinate closely with each other to assure that their plans will achieve national objectives for both media and that they are compatible and complementary. The plans will thus more likely reinforce each other as they are implemented.

3. Water Related Plans

The Arizona Water Commission is preparing a water plan for the entire State and an allocation plan for the Central Arizona Project. Both of these planning efforts are anticipated to have a significant influence on the rate and distri-

bution of growth in the Region. The planning activities of both MAG and AWC are being coordinated at the staff and policy levels to ensure as much as possible, that a comparable data base and policy assumptions are included in each of the planning efforts.

4. Solid Waste Management

Planning for solid waste management will have to be coordinated closely with 208 planning because the two programs are interdependent. The solids which are produced as a result of the wastewater treatment processes will need to be disposed of in some manner. One possible, and experience shows us it is a likely method, is to dispose of these solids in sanitary landfills. Conversely, the sanitary landfills themselves will have to be designed and monitored to prevent their contribution to the pollution of the area's groundwater.

5. Maricopa Association of Governments

The Maricopa Association of Governments (MAG) is responsible as the designated areawide planning agency, for a variety of planning and coordination activities in Maricopa County. (Maricopa County, the Phoenix SMSA and MAG's Region are synonymous terms for the same geographic area.) The overall planning program is designed to be responsive to the needs of the member agencies and to meet the objectives of State and Federal programs. The purpose of this paragraph is to briefly review MAG's past work in land use planning and how its present work program will integrate the elements of the comprehensive planning program to accomplish the intent of regulations and guidelines promulgated by the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA).

6. Past Land Use Planning Activities (MAG)

In 1970, the Maricopa County Planning Department assembled a composite land use plan for the metropolitan Phoenix area. This plan was accepted by the MAG Regional Council as the preliminary areawide land use element of the regional comprehensive plan. This plan was updated in 1973 by the Maricopa Association of Governments Transportation and Planning Office expanded to include the entire County.

The composite land use plans portrayed each jurisdictions' plan for their portion of the County. The composition of them on one map highlighted the inconsistencies between plans and showed the lack of regional perspective in preparing many of these local plans. The development of these composite plans was necessary to show the need to explore regional development alternatives, to identify issues which are truly regional, and to form a view of the entire Region as a whole and not just a sum of its parts.

During Fiscal Year 1974, the MAG Regional Council recognized a great opportunity to prepare a regional development plan for the Region. Several regionally significant factors were occurring at this time: i.e., the State Land Department was interested in developing a large block of its land holdings; eight of the large cities and towns were either anticipating or involved in revising their comprehensive plans; and the Federal Government (HUD, EPA, and U.S. DOT) was asking MAG to revise selected functional plans for the Region.

The Regional Council authorized a two-year study to explore regional development and transportation system alternatives and to enter into the comprehensive

planning program. (The regional development and transportation studies have proceeded through Phase I, inventory and analysis, and are in Phase II, alternative development and evaluation. These studies are being completed concomitant with the revisions of local plans and in cooperation with the State Land Department, Office of Economic Planning and Development, U.S. Corps of Engineers and other appropriate local, State and Federal agencies. This work Plan establishes the tasks and schedule for commencing the waste management planning program.

7. Current Land Use Planning Activities (MAG)

The Regional Comprehensive Plan will be a set of short and long-range policies, strategies and programs intended to guide the actions of public agencies and private individuals whose decision collectively will determine the pattern of development in the Region. The policies and strategies will deal with types of growth, where growth should or should not take place and the timing of that growth. The policies and strategies will extend beyond just growth and will encompass the supporting public facilities, housing, transportation and environmental quality.

Mapping will be used to illustrate many of the significant physical aspects of the plan. Generally, this mapping will serve to detail public facility systems, rather than to identify a specific regional character of the plan and allow the flexibility required by regional, local, State and Federal decision-makers.

The process for preparing the MAG Regional Comprehensive Plan includes four phases. They are:

1. Identification by the Regional Advisory Committee and citizens of significant physical, economic and social issues and opportunities to be addressed during the preparation of the plan, and guide the development of regional goals and objectives;
2. Definition of alternative regional development, transportation and housing policies that provide choices of ways to achieve regional goals and objectives;
3. Evaluation of the effectiveness of the alternatives in solving regional development issues and achieving regional objectives;
4. Selection of a combination of development policies which taken together comprises the Regional Comprehensive Plan.

It is very important that the process is understood by the Region's elected officials, interested citizens, media and sponsoring State and Federal agencies. Therefore, the process is described in the following section addressing specifically the content and linkage of the four phases. Special attention will also be given to the elements of the process as they deal with the requirements of the Housing and Community Development Act of 1974 and the regulations promulgated by the U.S. Department of Housing and Urban Development on August 22, 1975.

- 1) Identification of significant physical, economic and social issues and opportunities for guiding the development of regional goals and objectives and the Regional Plan

The processes whereby elected officials and citizens will be involved in the preparation of the issues and opportunities and the Regional Plan were initiated during the first phase of the program and will continue through the entire process. One of the products which first emerged from these processes was an extensive listing of regional problems and issues which will be used to define land use and functional system alternatives and regional goals and objectives. These products were incorporated into the preparation of the first set of alternative regional development scenarios and criteria for evaluating the ability of alternatives to solve regional problems.

The issues and the alternatives to be elaborated during the second step were identified using the following sources:

- A) Current planning reports prepared by the local jurisdiction and MAG during their goals work and plan development;
- B) Current and past public forum and citizen planning committee reports from the MAG member jurisdictions and regional civic organizations;
- C) Solicitation of comments and concepts from meetings with citizen organizations, sub-region planning groups and community service organization;
- D) Review comments from MAG's Regional Advisory Committee on the above documents;
- E) Review comments from MAG's technical committees.

Basic planning inventories were prepared during this phase using existing material where available and collection of primary information where significant data gaps were found. This data and the identified regional issues (problem oriented) were used to select standards and criteria on which to evaluate alternatives. The detailed process of evaluation will be agreed upon toward the end of the phase and alternative regional development policies and standards tested during the second phase.

2. Definition of alternatives regional development policies

The regional issues and problems were consolidated into subject areas that will correspond to topical areas for which goals are to be identified. Feasible alternate development policies (land use, transportation, housing and infrastructure) will address solving regional problems.

The preparation of the alternatives is to be made in such a way that decision-makers will be able to compare the effects of a potential solution to one problem on separate but related problems (e.g., the effects of the selection of one transportation mode on the regional development problem and the quality of the environment). In order to permit comparisons among alternative policies the various policy choices will be combined into topical or functional groupings.

The groupings also provide a framework for making initial comparisons of the effectiveness of the alternative choices in solving any particular development problem, which brings this discussion to the third step in the comprehensive plan preparation process.

- 3) Evaluation of several alternatives in solving regional development problems and achieving regional goals and objectives

In order to explain how it is possible to evaluate the potential effectiveness of decisions that have not yet been made, it is first necessary to describe the mechanics of the analytical procedures used in testing the consequences of the several development choices available to the region.

A wide variety of physical, environmental, economic and social and public facility information has been and is being collected and used by MAG in the study of regional goals and objectives and alternative development scenarios. The information being collected is used to elaborate the problems so that alternative solutions to them can be tested through the application of the Community Aggregate Planning Model, the Urban Systems Model and the EMPIRIC Model. These models provide mathematical simulations of the development scenarios, transportation and public facility conditions, both present and future. Their development and calibration was completed during FY 1976.

The activity allocation models provide a picture of the activity systems that make up this Region. They enable planners to project the development of these systems into the future based on the development patterns of the recent past. More importantly, however, models can simulate the possible results of future changes in public policy.

The relative effectiveness of alternative decisions about the future development of housing, employment, transportation, public facilities, and the protection of the environment is evaluated by:

- 1) Estimating each alternative's ability to achieve the regional goals as produced by the refinement of the issues and opportunities;
- 2) Estimating the quality of the performance of public facilities needed to serve a particular regional development pattern;
- 3) Estimating the financial and political costs (when quantifiable) required to implement each policy, and comparing the costs with an estimate of the benefits produced by such a policy.

Some development policies that are tested for effectiveness in solving problems and guiding development will undoubtedly reveal conflicts between at least some of the adopted regional goals and objectives. For example, a decision to intensively develop the land along a major travel corridor to achieve an objective of making future land development more compact could conflict with another possible objective of preserving the Region's Western lifestyle. The reduction in these potential conflicts will be made through a trade-off process. This process will have the decision-makers compare the costs and benefits of each goal and determine which carries a higher level of desirability in solving a problem or issue. These trade-offs will go back into the evaluation process and the results simulated. The evaluation process will be iteration and allow for this type of communication and idea exchange which will allow for a responsive planning effort and a well informed decision-making process.

4) Selection of development policies

When the Regional Council of MAG has chosen the combination of short and long-range policies and programs that it believes should comprise the Comprehensive

Regional Plan, the planning staff will be used to detail the effects of these policies on future development and to identify any remaining conflicts that might be caused by the implementation of the particular group of policies and programs. When, through policy adjustments, these conflicts have been removed or accommodated to the satisfaction of the decision-makers, the proposed Comprehensive Regional Plan will be put in a form that will permit intelligent review and adoption by the Regional Council.

It is likely that the proposed Comprehensive Plan will contain the following elements:

- A) Proposed goals and objectives for eliminating or reducing regional problems will be published as an integral part of the Comprehensive Regional Plan;
- B) Maps showing the location of proposed transportation and public facilities of regional significance, and lands that should be subject to environmental protection;
- C) Written short and long-range policies and programs to be used in guiding the development of the Region and the supporting public facilities;
- D) Proposals for changes (if required) in institutional arrangements within the Region and by Federal, State and local entities that would provide the most effective implementation of the policies and programs of the plan consistent with the needs of the residents and economic considerations;

E) Proposed policies and programs for financing and staging growth and public facilities that provides for the orderly and economically effective development of the Region;

G) Establishment of the monitoring procedure to measure the effectiveness of the plan policies and programs toward achieving the regional and program objectives;

8. Related Planning Efforts (to MAG)

This regional development plan is considered to be the lead component of the MAG Comprehensive Planning process which includes the following elements: develop plan; transportation plan; wastewater management plan; and housing plan (Figure 1). When adopted by the MAG Regional Council, these plans will supersede the present plans for these functional areas. It is MAG's intention that the Regional Comprehensive Plan will satisfy the Planning regulations and guidelines, and the legislative intents of the Federal Government.

It is important that those involved with the MAG Comprehensive Planning process be aware of the coordination and interrelationships of these functional plans.

9. Transportation

MAG annually updates its transportation plan through a policy decision from the MAG Regional Council indicating the current status of the long-range planning program. This transportation plan includes a transit element as well as the basic street and highway network.

Through the regional development planning process a range of alternative transportation system will be evaluated with each development alternative. This evaluation will include ability to support the development alternative, cost, environmental impact and levels of service. This portion of MAG's program is mainly funded through grants from the U.S. Department of Transportation and member agencies.

MAG has applied for and is anticipating funding from EPA to prepare a waste management plan for Maricopa County, and thereby completing the waste related portion of the comprehensive regional plan. MAG will have the overall responsibility of preparing a plan which meets the legal and administrative requirements of the 208 planning process as perscribed by EPA and P.L. 92-500.

The process for developing the waste management plan has been divided between the U. S. Corps of Engineers Urban Study and for the non-metro portion of the County. MAG is responsible for the development of a plan. The geographic areas of these two studies is shown on Figure 4.

The Urban Study will provide those technical elements required for the 208 plan and in addition will address flood control, water related recreation, flood water conservation and fish and wildlife enhancement. The Corps has been funded and is proceeding with its projects.

The waste management plan will incorporate both of these programs and will be adopted through MAG's comprehensive planning process as indicated above.

10. Housing

The initial housing element developed by MAG during Fiscal Year 1976 considered a housing market analysis. This was the first step in the development of an areawide housing plan and allocation plan. The MAG work program is structured to achieve HUD objectives for a Regional Housing Plan by August, 1977. This housing plan is expected to provide assistance to cities and towns in their preparation of Housing Assistant Plans under the Community Development Block Grant Program funded through HUD.

The components of each of these related planning activities are described in detail in the work program and the Overall Work Program published for the Region IX Intermodel Planning Group.

I. USE OF THE WORK PLAN

The Work Plan is a working document describing the overall work program and the methods to be used in the 208 Areawide Water Quality Management Planning process for Maricopa County. This work plan is to be reviewed and altered as necessary in response to changes in technical, financial, and institutional resources available to the program. Although no major changes in program goals are anticipated over the two year planning period, changes in methods and techniques necessary to accomplish those goals are anticipated.

In accordance with EPA Region IX policy, each of these tasks will receive further definition and refinement on a quarterly basis. These detailed descriptions will include scheduling and cost estimates for each task, as well as staff and consultant responsibilities, and provide a quarter-by-quarter basis for EPA monitoring the MAG-208 project.

OBJECTIVES OF THE PLANNING PROCESS

II. OBJECTIVES OF THE PLANNING PROCESS

A. OBJECTIVES

The major objective of the Section 208 planning process is to formulate and implement the most effective plan possible for a total Areawide Waste Treatment Management Plan. The Areawide Waste Treatment Management Plan shall integrate technical needs and recommend a management system which is capable of being implemented while providing for the needs of residents and governmental agencies within the jurisdiction of MAG.

In general, the objectives of the program are to:

Provide the most feasible and desirable plan for the collection and treatment of wastewater within the county which will be consistent with the 1977 and 1983 goals of PL 92-500 and with the guidelines and regulations.

Develop and evaluate alternative means of reuse and/or disposal of both the liquid effluents and the residual solids generated by any of the treatment processes.

Establish procedures for water conservation and wastewater flow reduction through non-structural control methods.

Investigate and identify critical non-point sources of pollution within the County and to evaluate the effectiveness and cost of controlling each critical non-point source of pollution.

Develop and evaluate alternative means of controlling the critical non-point sources of pollution considering both structural and non-structural methods.

Identify management agencies and regulatory procedures required to implement the plan.

Identify the cost priorities and time tables for the implementation of the plan together with the means of financing it.

Create a self-sustaining planning process capable of maintaining and updating the plan on continual basis.

B. ACHIEVEMENT OF THE OBJECTIVES

To achieve these objectives MAG and the Corps will:

Utilize in their planning processes, public and private inputs for the identification of problems and needs within the area.

Jointly develop a full range of alternative solutions to these problems.

Analyze and evaluate these alternatives through citizen input and local government participation and desired actions.

Foster implementation by local agencies through a program of intensive public involvement using consultation and presentation of plan alternatives throughout the study period.

It is of paramount importance in evaluating present systems and projecting future requirements of the MAG planning area to evaluate existing land use trends and influences and formulate a development scheme based upon regionally sound priorities and reasonable assumptions. The evaluation of settlement patterns and influences will be used in establishing the existing and anticipated trends together with the identified priorities of the MAG member agencies. For this reason, the Areawide Waste Treatment Management Plan scope of work is carefully integrated and interfaced with the Overall Work Program of MAG, and the Corps' Urban Studies Program. The coordination and interaction is to assure non-duplication of services and as such has the highest priority in the total program.

C. PROGRAM ELEMENTS

More specifically, MAG will address these objectives within the following program elements:

1. Water Quality Standards. MAG will consult with the State, the Salt River Project, the Irrigation Districts, the Municipalities, the Water Companies, and the public to determine the locally de-

sired uses of water. MAG will inform the above as to the types of treatment or controls required on point and non-point sources of pollution to maintain the water quality necessary to allow the continued usability of all waters for their stated desired uses. After this consultation, MAG will represent the area in the standard setting process with the State. This activity has been given high priority.

2. Municipal Facilities. MAG, in consultation with operational agencies and local governments, will determine service areas for municipal treatment priorities. Since three construction grants (75th Interim Project, 99th Ave. Interceptor and 91st Ave. Treatment Plant Addition) are needed prior to 1980, specific subpriorities have been developed for this program.
3. Waste Discharge Standards. MAG proposes to work with the State to obtain revisions of the waste discharge standards based on the water quality standards associated with the beneficial uses of each of the water supplies.
4. Pretreatment Regulations. MAG and the operating agencies will jointly develop a set of pretreatment requirements in coordination with EPA's pretreatment regulations and a program to carry out those requirements.
5. Land Use. In view of the rapid growth of the area, MAG believes that particular emphasis must be placed on (i) developing additional land development controls to guide subdivisions and to minimize

the storm drainage problem; (ii) determining preliminary routing, sizing and timing of major sewer interceptors; and (iii) updating land use plans to account sewer interceptors and treatment facility requirements for each subarea.

6. Non-Point Sources. The nature and extent of pollution from non-point sources within Maricopa County is ill defined at this time. MAG will attack this problem first by identifying the critical non-point sources of pollution and secondly by investigating means of controlling them. Those non-point sources will be identified as "critical" which have the potential of contributing either large amounts of, or particularly noxious types of pollutants to surface or subsurface water bodies, so as to interfere with the future beneficial use of that water body.

7. Preservation and Protection. MAG is mindfull of the importance of preserving and protecting all water resources within this semi-arid region. The entire 208 planning effort is directed at achieving these goals.

OUTPUTS OF THE AREAWIDE PLAN

III. OUTPUTS OF THE AREAWIDE PLAN

A. GENERAL OUTPUTS OF THE AREAWIDE PLAN

The general outputs of the Section 208 program will be embodied in a series of technical memoranda, graphics, interim reports, final reports, and regional priorities. More specific material outputs will include documents, suggested rules and regulations, and policies based upon the identification of problems. All work will be projected to include both short range (1980-2000) and long range (2000-2020) planning time frames. Periodic status reports will be made available to all interested parties in a phasing system as reflected in the work scheduling bar charts.

Final outputs will include but will not be limited to:

Anticipated industrial, municipal, and special wastes sources will be identified and alternatives developed to reflect a phased construction program over five, ten, fifteen, and twenty year time frames.

Alternatives required for the control of non-point sources will be recommended.

Alternatives will be suggested for disposal of sludges and other special waste products. Land spreading for disposal or reuse of sludges will be investigated.

Management strategies will be developed by subareas with primary emphasis given to point source effluent and sludge discharge controls, non-point pollution source controls, water quality related land use controls, and means for the protection of surface waters and groundwater recharge areas. Alternative strategies will be developed into subplans for evaluation. Emphasis will be placed on strategies utilizing wastewater recycling/reuse.

Institutional requirements (including management planning, program or facility implementation, operation and maintenance, regulation, and financing) necessary for each technical plan and subplan option developed will be identified. Institutional modifications of responsibilities and operational programs will be developed. Recommendations for modifying institutions to more effectively meet essential responsibilities will be prepared.

Projections of financial arrangements to provide the facilities and management programs necessary, within institutional capabilities, will be developed. Financial arrangement programs developed will include management planning, capital investment, operations, and overhead cost estimates for alternative plans and subplans.

B. SPECIFIC SECTION 208 PLANNING OUTPUTS

1. Point Source

- a. A profile of existing facilities and those which will begin construction before 1980 will be provided, This will include: location, capacity, type of treatment, age, expected remaining life, and area served.
- b. Alternative plans for municipal wastewater systems including system configurations, locations, capacities, treatment levels and types of construction for the planning period.
- c. Establishment of construction priorities for municipal treatment works and the time schedule for their initiation and completion.
- d. Identification of industrial construction and schedule of discharges from such to municipal treatment works.
- e. Industrial pretreatment requirements and ordinances will be investigated.
- f. Alternatives for controls of residual waste and land disposal of pollutants.

2. Non-point Source

- a. Identification of major non-point sources and their impact on water quality.
- b. Identification of those non-point source problems which can be most easily and immediately solved.
- c. Specification of non-point source control mechanisms.

For example:

- 1) Temporary storage areas in new development areas
- 2) Street sweeping program
- 3) Non-point source regulatory controls

3. Land Use and Economics

- a. Tables showing population projections for the fifth, tenth, fifteenth, twentieth, and twenty-fifth year of the planning period disaggregated to the TAZ level.
- b. Working maps based on zoning and other applicable ordinances showing residential, commercial, industrial and other land uses. These maps should also include major transportation arteries and major public facilities.
- c. Working maps showing critical water quality/environmental areas including steep slopes, poorly drained soils, and floodplains.

- d. Working maps depicting the type, pattern, amount, and location of growth disaggregated by subareas and extent of development for the fifth, tenth, fifteenth, twentieth, and twenty-fifth year of the planning period.
- e. Quantitative information on residential generation characteristics of different land uses, areas and activities.

4. Regulatory-Institutional Process

- a. Identification of management agency(s) to carry out the plan.
- b. Description of management agency(s) authorities needed to carry out the plan.
- c. Certification that the management agency(s) has the authority to carry out the plan or establishment of a program to acquire the necessary authority.
- d. Specification of land use controls to carry out the plan.
For example:
 - 1) Zoning
 - 2) Conservation easements
 - 3) Development permits
 - 4) Flood plain regulation

- e. Specification of point and non-point source controls to carry out the plan.

For example:

- 1) Pretreatment Requirements
- 2) Sanitary landfill regulations
- 3) Anti-littering ordinances
- 4) Construction permits
- 5) Mining area operation and reclamation regulations

- f. Specification of the institutional arrangements to carry out the plan.

For example:

- 1) Description of the relationship between the management agency(s) and other agencies whose actions will significantly affect plan implementation.
- 2) Identification of the agencies responsible for:
 - a) facilities construction
 - b) regulatory control
 - c) wastewater treatment
 - d) fiscal program
 - e) planning
- 3) Interagency mechanisms such as:
 - a) contracts
 - b) memoranda of agreement and understanding

5. Financial Program

- a. Legal opinion from agency(s) counsel that the designated management agency(s) have the legal authority to undertake the financing necessary for plan implementation.
- b. An official statement describing the financial capacity of the designated management agency(s) to implement the plan.
- c. User charges provisions by subarea basis.
- d. Projection of financial means to provide wastewater treatment works over 20-year period with detailed projection for first five years.
- e. Provisions for funding the continuing planning process.
- f. Description of the relationship between the regulatory and financial process.

6. Other Outputs

- a. Environmental assessment.
- b. Provisions for performance assessment, plan revision and updating.
- c. Schedule of implementation.

- d. Cost of implementation.
- e. Required certification relating to consistency with other plans and public participation.
- f. Recommended revisions to State Water Quality Standards which are consistent with beneficial water uses.
- g. Recommendations of appropriate local governing bodies.
- h. Technical reports and summaries for public distribution.

WORK PLAN CONTENTS: SCOPE OF THE PLAN

V. WORK PLAN CONTENTS

A. SCOPE OF THE PLAN

The proposed scope of work for the Section 208 program and the revised MAG Overall Work Program has been structured in light of the problems identified in Section IV of the "Application for Area and Agency Designation for Area-wide Waste Treatment Management Planning" (Section 208, PL 92-500).

The following list of issues, problems and opportunities was utilized in defining the scope of work:

- o No stream reach or surface water body in Maricopa County has been classified as a water quality segment as defined in 40 CFR, Part 130, June 3, 1974, "Policies and Procedures for State Continuing Planning Process" (Section 303, "Basin Planning"). Surface water are relatively pure and provide a substantial portion of the municipal and agricultural water for only the eastern third of the County's land area. In addition, surface water is augmented by groundwater in this eastern area. For the remaining two-thirds of the County, groundwater is the primary source of water.
- o Due to the nature of the water basin system, recharge to the aquifer has been of questionable quality relative to total dissolved solids. Man's alteration of the natural stream system by imposing artificial water storage and irrigation systems on the area is one of the major causes for the concentration of these solids in the groundwater. The other major factor is the natural occurrence of salts in the two of the three major substreams feeding the aquifer: the Salt River and the Verde River. These substreams also account for the largest volume of water flowing into the basin.

- o The aquifer is a major source of the non-renewable natural resource-- water (Figures 6 and 7). Its continued existence is critical to the survival of the urban-industrial base and agricultural activity in the MAG planning area. The availability of potable water in appropriate quantities is unquestionably the single most important element in the continuance and expansion of this economic center.
- o The existing waste treatment facilities generally meet the standards placed upon them; however, their long-term effect on the groundwater is unknown.
- o The waste treatment facilities within Maricopa County have had a problem with industrial waste processing. As a result, pretreatment is now required of many industries. Trace elements, although greatly reduced, may still be a problem. For this reason, a plan to properly treat these industrial wastes is mandated if Maricopa County is to preserve and improve its water quality.
- o The population for the Phoenix SMSA is projected to increase at an annual rate of 3.94 percent between 1970 and 2000 using MAG's projections. The number of square miles with resident population of 1,000 or more persons increases from 226 in 1970 to 604 in the year 2000. The Urban Planning Area in 1970 had 98 percent of the total SMSA population with this proportion staying constant in the year 2000.
- o Maricopa County received 122 of the 182 net increase in industrial firms in the State of Arizona between 1972 and 1973. This was 67 percent of Arizona's net increase from 1972. The number of firms

in Maricopa County increased 10.4 percent from 1972, approximately equal to the total percentage growth for the State.

- o Urban storm runoff and similar non-point pollution sources are suspected to be a problem, although their impact upon surface and subsurface water quantity and quality is unknown. Urban storm collection systems are severely limited within Maricopa County at the present time. Those systems which do exist discharge directly into canals and stream channels without pre-treatment.
- o In the Urban Planning Area, non-point pollution sources vary in nature from petro-chemicals on the streets to gravel mining operations to agricultural irrigation runoff. It is believed that non-point pollution sources may be a significant element in the total degradation of surface and subsurface waters. The cumulative effect of the great number of non-point pollutants makes the problem extremely complex in nature but not necessarily insurmountable.
- o Groundwater is a major source of the municipal, agricultural and industrial water supply. It is known that certain wells, particularly near Buckeye and Gila Bend, are badly polluted by fluorides. No new service from these wells have been ordered for public health reasons. This has created serious problems of water supply and will require the implementation of costly treatment practices or the cessation of growth in these areas.

- o To assure the non-degradation and preservation of water resources in Maricopa County is extremely complex due to the multiplicity of municipal governments affected (also agricultural irrigation districts). The geological and hydrological complexities further compound the problem. It would appear logical to address the situation from a multi-municipal standpoint or regional perspective. MAG has the infrastructure and mechanisms to undertake such a charge.

- o The implications of growth on water quality and groundwater reserves is profound and necessitates a more comprehensive approach to wastewater planning than has been traditionally taken. Even with the use of advanced treatment technologies, it is likely that the projected growth may create the potential for water quality violations if a comprehensive study of water and waste treatment factors for this area is not undertaken and appropriate actions taken.

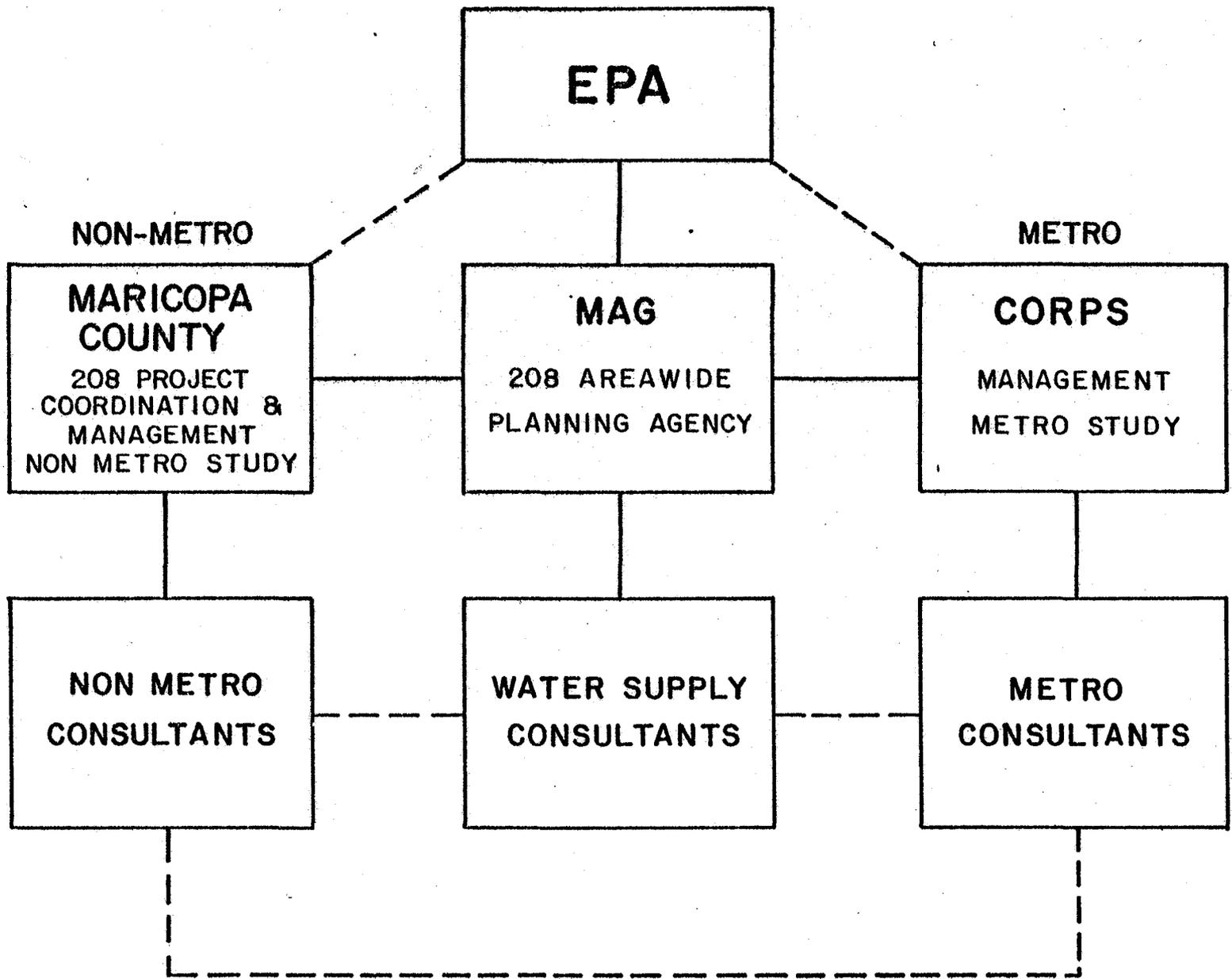
2.0 PROGRAM MANAGEMENT

2.0 PROGRAM MANAGEMENT

2.1 Scope and Contents:

Provide for the administration and management of the MAG 208 program utilizing the existing Corps Urban Study effort and MAG's Non-metro program under the administration of the Maricopa County Planning Department through a contractual agreement with MAG. The administration and coordination of the MAG 208 program will consist of: designing and implementing administrative control, design and implementing technical management controls, defining job descriptions and responsibilities, preparing operating procedures for the 208 advisory committees, design consultant selection procedures, and design and implementation of a data management system. These efforts will involve coordination of the Corps Metro Study and the Maricopa County/MAG Non-metro Study by the MAG 208 Coordinator and staff.

2.2 MAG 208 PROGRAM MANAGEMENT
DIAGRAM



2.3 PROGRAM MANAGEMENT TASK IDENTIFICATION AND DESCRIPTION

- 2310: Design and Implement Administrative Control for the MAG 208 Program
- 2320: Design and Implement Technical Management Controls for the MAG 208 Program
- 2330: Incorporate Operating Procedures for 208 Advisory Committee, Technical Advisory Group, Agricultural Advisory Group, and Citizens Advisory Group into Existing MAG Regional Government Program
- 2340: Design and Implement Consultant Selection Procedures and Contract Formats for Non-Metro 208 Program and Coordinate them with the Corps 208 Urban Program
- 2350: Design and Implement Data Management System

Task 2310: Design and Implement Administrative Control for the MAG 208 Program

Purpose: To schedule and control administrative activities associated with the 208 program throughout the duration of the program period.

- Subtasks:
- 1) Compiling quarterly progress reports and the project completion reports.
 - 2) Requisition of funds and disbursements to contracted consultants.
 - 3) Scheduling of periodic contracts between consultants and administrative agencies (Maricopa County Planning [MAG] and the Corps).
 - 4) Maintenance of a continuous and efficient office operation.
 - 5) Identification of related activities as necessary to insure proper administration of the 208 program.

Relationship with Other Program Activities:

Administrative controls will be used throughout the 208 planning period summarizing the progress of the planning efforts on a quarterly basis.

Products: Administrative activities paper

Completion Date: Continuous

Manpower:

EPA Funds	\$12,000
Corps Funds	<u>27,000</u>
Total	\$39,000

Task 2320: Design and Implement Technical Management Controls For The
MAG 208 Program

Purpose: To schedule and control the technical quality of activities
associated with formulation of the 208 plan.

- Subtasks:
- 1) Management and supervision of technical staff.
 - 2) Preparation, review, and approval of technical outputs, e.g.,
progress reports, position papers, policy proposals, etc.
 - 3) Technical review of contracted consultant's work through
technical contract monitoring.
 - 4) Periodic review of technical content of all 208 program
work by the CAG, TAG and AAG committees.
 - 5) Identification of related activities necessary to insure
proper technical management of the 208 program.

Relationship with Other Program Activities:

Outputs of this task will govern 208 staff activity and division
of responsibility.

Products: Job descriptions for all staff positions

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$83,000
	Corps Funds	<u>97,000</u>
	Total	\$180,000

Task 2330: Incorporate Operating Procedures for 208 Advisory Committee
Technical Advisory Group, Agricultural Advisory Group, and
Citizens Advisory Group into Existing MAG Regional Government
Program

Purpose: To formalize operating procedures for the 208 Advisory Committees
which will allow for an expedient accomplishment of the 208
project. These procedures will be designed to satisfy responsi-
bilities directed to the committees by the MAG Regional Council
and promote community involvement in the planning process.

- Subtasks:
- 1) Identify 208 Advisory Committee responsibilities delegated
by the Regional Council.
 - 2) Identify additional responsibilities as appropriate.
 - 3) Identify committee procedures necessary for committee
functioning.
 - 4) Present procedures for committee review and adoption.

Relationship with Other Program Activities:

Advisory Committee Operating Procedures will govern the develop-
ment of all interim products and the final 208 plan.

Completion Date: 15 January, 1977

<u>Manpower:</u>	EPA Funds	\$10,000
	Corps Funds	15,000
	MAG Services	<u>10,000</u>
	Total	\$35,000

Task 2340: Design Consultant Selection Procedures and Contract
Formats for Non-Metro 208 Program

Purpose: To provide guidance during the consultant selection process;
to insure that consultants are selected in the best interest
of the 208 program.

- Subtasks:
- 1) Determine procedures for drawing up technical specifications for all consultant contracts.
 - 2) Identify Maricopa County, MAG, and EPA requirements for all consultants contracts.
 - 3) Designate R.F.P. Formats and response time.
 - 4) Identify criteria governing consultant contracts.
 - 5) Identify those responsible for negotiating consultant contracts. (MAG, County, Corps)
 - 6) Select consultants and negotiate contracts.

Relationship with Other Program Activities:

Procedures will govern the selection of all 208 consultant contractors.

Products: 208 consultant procurement paper

Completion Date: 15 February 1977

<u>Manpower:</u>	EPA Funds	\$25,000
	Corps Funds	<u>47,000</u>
	Total	\$72,000

Task 2350: Design and Implement Data Management System

Purpose: To provide a comprehensive approach to graphic and verbal (written) information management that will encompass all 208 administrative, technical and policy planning responsibilities by facilitating storage, rapid manual retrieval and duplication of information gathered for or produced during the program period.

- Subtasks:
- 1) Characterize 208 information needs both as to subject matter and possible format.
 - 2) Design overall data and information cataloguing system.
 - 3) Design formats for all 208 published documents (written and graphic portions).
 - 4) Design storage, retrieval and duplication systems for graphic materials.
 - 5) Prepare and maintain a library of current planning and guidance documents.

Relationship with Other Program Activities

Outputs from 2340 will be used in all 208 activities. Design criteria for the data system should be taken from Tasks 2310, 2320, and 2340.

Products: 208 data and information control handbook.

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$10,000
	Corps Funds	<u>15,000</u>
	Total	\$25,000

3.0 COORDINATION WITH OTHER WATER QUALITY
MANAGEMENT AND RESOURCE PLANNING PROGRAMS

3.0 COORDINATION WITH OTHER WATER QUALITY
MANAGEMENT AND RESOURCE PLANNING PROGRAMS

3.1 SCOPE AND CONTENTS

There are presently several ongoing water quality, wastewater management, and resource management programs operating within the MAG 208 planning area. These projects range from those at the federal level (e.g., Bureau of Land Management, Tonto National Forest, Bureau of Reclamation, etc.) to the local governmental level (e.g., 201 facilities planning, etc.). Some of these programs (such as the State Air Quality Maintenance Planning and 201 wastewater facilities planning) will directly impact the MAG 208 planning activities. Other resource planning activities will have a less direct impact on 208 planning but nevertheless must be recognized and coordinated as appropriate. Some of the coordination mechanisms which will be used are the inclusion of key program members on 208 advisory committees, review of resource and wastewater facility plans, dissemination of 208 progress reports and A-95 notifications, sharing of data base material, and additional coordination measures as applicable to each respective program.

Those water quality and resource management programs with the greatest impact upon the MAG 208 program will receive the greatest attention.

There have been no basin plans prepared previously for the MAG 208 area, therefore, planning pursuant to Sections 209 and 303e is nonexistent to date. Consequently, there is no mention of coordination with 209 or 303 basin planning in this task series.

3.2 COORDINATION WITH OTHER WATER QUALITY MANAGEMENT
AND RESOURCE PLANNING PROGRAMS TASK IDENTIFICATION

- 3210: Design and Implement Coordinative Procedures for 201 and Other
Wastewater Facilities Planning
- 3220: Design and Implement Coordinative Procedures for Air Quality
Maintenance Planning
- 3230: Design and Implement Coordinative Procedures for HUD 701 Land
Use Planning
- 3240: Design and Implement Coordinative Procedures for Other Federal,
State, and Local Water Quality Management and Resource Planning
Programs

Task 3210:

Design and Implement Coordinative Procedures for 201 and
Other Wastewater Facilities Planning

Purpose:

To provide for the MAG 208 program compliance with EPA's Water Planning Division Program Guidance Memorandum SAM-1, "Relationship Between 201 Facility Planning and (208) Water Quality Management". To minimize duplication and conflict, share data and results, and to insure compatible plans between the 201 and 208 studies.

Subtasks:

- 1) Review all ongoing 201 facility plans to establish: when they started, when they will be completed, what facilities they are studying, what alternatives they will investigate, what data they have acquired, how extensive their environmental analysis has been or will be, and whether their alternatives are compatible with the overall 208 alternatives.
- 2) Make provisions for regular attendance at the 201 technical advisory meetings.
- 3) Make provisions for regular attendance of a representative from each of the 201 studies at the 208 technical advisory meetings.
- 4) Develop mechanisms for continual coordination and sharing of data.

- 5) Provide clear statements of planning responsibilities for each of the studies to avoid duplication of effort. The EPA should assist in accomplishing this task.
- 6) The 208 and 201 study managers should blend their individual studies together into a unified water quality management program. The EPA should also assist in this task.
- 7) Identify wastewater management programs exclusive of the 201 program and incorporate representatives from those programs into subtasks 1-6 above.

Relationship with Other Program Activities:

This task is a prerequisite to Tasks 6340 and 6440. This task will impact on the 208 planning process at various points in time through the duration of the 208 project including TAG meetings, 201 plan adoption, and other key occurrences of interaction.

Products: "Coordinative Procedures for 208, 201, and Other Wastewater Facilities Planning"

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$ 5,000
	Corps Funds	20,000
	MAG Services	<u>15,000</u>
	Total	\$30,000

Task 3220:

Design and Implement Coordinative Procedures for Air
Quality Maintenance Planning

Purpose:

To provide for MAG 208 program compliance with EPA Water Planning Division Program Guidance Memorandum AM-14, "Coordinating 208 Planning and Air Quality Maintenance Area Planning." To integrate work plans and data inventory and to avoid conflicts between the 208 program and Air Quality Maintenance Planning program. To provide for written agreement(s) which will ensure the completion of the following subtasks.

Subtasks:

- 1) Ensure that the designated air quality maintenance planning agency(s) has reviewed and commented on the 208 work plan prior to its submittal to EPA.
- 2) Provide for periodic reporting and output review procedures for both the AQMP and 208 programs to be established between the designated air quality maintenance planning agency(s) and the areawide waste treatment management planning agency.
- 3) Provide for the designated air quality maintenance planning agency to participate as a member of the Technical Advisory Group established pursuant to 40 CFR 35.1054-2(d).
- 4) Request to the State Department of Health Services that an equivalent degree of participation (as B. above) by the areawide waste treatment management planning agency (grantee) in the air quality maintenance planning activities for the area.

- 5) Provide for coordinated search (involving the responsible air quality planning agencies) of the existing economic, demographic, land use, and other baseline data and insure the data format is developed prior to the development of the data base for the 208 and AQMP programs.
- 6) Develop new economic, demographic, land use and other baseline data with respect to content, format, and timing of both the AWWTMP and AQMP programs.
- 7) Ensure that consistent economic, demographic, and land use projections are utilized in both the AWWTMP and AQMP programs.
- 8) Ensure that development of the air quality portions of the environmental assessment required by 40 CFR 6.512(a) and the air quality analysis in response to requirements of Section 208(b) (2) (E) of the Federal Water Pollution Control Act are compatible.
- 9) Where possible, coordinate scheduling of intermediate 208 program outputs and information requirements with the outputs and information requirements of the AQMP program.

Relationship with Other Program Activities:

The interrelation process between the MAG 208 project and the State Health Department's AQMP project will be continuous up to the adoption of the preferred 208 plan. Tasks 9220 and 9230 will act as tools to achieve this coordination process.

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$15,000
	Corps Funds	20,000
	MAG Services	<u>30,000</u>
	Total	\$65,000

Task 3230:

Design and Implement Coordinative Procedures for HUD 701

Land Use Planning

Purpose:

To maintain the coordination and integration of the HUD 701 comprehensive planning program and the EPA 208 waste management planning program and provide for the development of a common data base. The activities and products of this task are in conformance with the interagency agreement between the Department of Housing and Urban Development and the Environmental Protection Agency, dated 24 March, 1975.

Subtasks:

- 1) Identify common informational needs between the 701 and 208 programs.
- 2) Identify relevant and common data, maps, inventories and reports, which have or are being prepared under either the 701 or 208 programs and establish a process for duplication and exchange between the two programs.
- 3) Maintain staff liaison through joint staff meetings and briefing sessions.
- 4) Provide for a process of exchange and review of relevant reports, directives, regulations, work programs and quarterly reports.
- 5) Provide input and comment to the MAG Overall Work Program for topical areas relating to the 208 program.

Relationship with Other Program Activities:

Task 5370: This task is a prerequisite to Evaluation of Alternative Land Use Policies; Task 5310: Series Land Use Data (existing and projected); and Task 5340: Series Economic Data (existing and projected).

Products: Data exchange process, meeting documentation or quartely basis; and input to MAG's Overall Work Program.

Completion Date: Continuous

<u>Manpower:</u>	MAG Services	<u>\$10,000</u>
	Total	\$10,000

Task 3240:

Design and Implement Coordinative Procedures With Other
Federal, State, and Local Water Quality Management and
Resource Planning Programs

Purpose:

To enable consistency and avoid conflict between the MAG 208 adopted plan and other planning programs currently underway or planned for the future.

Subtasks:

- 1) Utilize Task 9230 for identification of all Federal and State Water Quality Management and Resource Planning programs either in existence or planned during the 208 project period.
- 2) Include key members from the Arizona Department of Health Safety, Tonto National Forest, Bureau of Land Management, Arizona State Land Department, Maricopa County Flood Control, and any other significant public agencies dealing with Water Quality and Resource Management on the Technical Advisory Group.
- 3) Utilize Tasks 4320, 4330, and 4340 to achieve adequate information dissemination concerning the MAG 208 program to necessary public agencies responsible for Water Quality and Resource Management.
- 4) Assign 208 staff to attend significant meetings (technical workshops, public hearings, plan adoptions) concerning Water Quality Management and Resource Planning impacting the 208 study area.

- 5) Maintain continuous liaison with State Office of Department of Economic Development and Planning 208 Coordinator.
- 6) Interrelate Maricopa County Health Department's solid waste planning program with 208 planning.

Relationship with Other Program Activities:

Interrelates water quality management and resource planning between the MAG 208 program and other Federal, State, and local programs.

Products: Coordination

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$16,000
	Corps Funds	10,000
	MAG Services	<u>20,000</u>
	Total	\$46,000

4.0 PUBLIC INVOLVEMENT

4.0 PUBLIC INVOLVEMENT

4.1 SCOPE AND CONTENT

The MAG 208 planning program will include a comprehensive public involvement effort fully integrated with the planning process. As this public involvement program is developed and implemented, several philosophical considerations will be recognized.

The fundamental purpose of the program is to benefit the general public. The solutions to water resource problems which result from this study must conform to the desires and best interests of the general public. The purpose of the public involvement program will not be to "sell" the public on programs that are contrary to their desires, but rather to determine what these desires are and to develop solutions accordingly.

The effectiveness of the public involvement program will largely determine whether or not the solutions are supported strongly enough to be implemented. The importance of public involvement cannot be overemphasized.

The objective of the public involvement program is to provide a continuous, two-way communication process which will:

Promote full understanding of the manner and means by which waste management problems and needs are investigated and solutions are proposed.

Keep the public fully informed regarding the status and progress of studies and the results and implications of planning activities.

Actively solicit from the public their opinions and perceptions of problems, issues, concerns, and needs, and their preferences regarding resource use and alternative development or managerial strategies, and any other information and assistance relevant to the planning process.

Using the public involvement program as a vehicle for discussion of community desires and purposes will allow the opportunity to obtain information concerning the acceptability of alternative plans. Thus the possibilities and difficulties of implementing alternative plans can be effectively explored by utilizing the involved public as a sounding board for the alternatives which are generated.

To meet the objectives of the public involvement program various activities will be conducted involving various decision making bodies. Rather than being a fixed program, the public involvement scheme outlined below is flexible, and will be monitored for effectiveness as the 208 planning process progresses. The following public participation mechanisms will be utilized as indicated (for more specificity see the 4000 and 6000 task series):

Public Meetings - Three are planned during the 208 program. One was held in July, 1975, under the Corps Urban Study; one will be held March, 1977; and another in June, 1978, near the final 208 plan adoption.

Public Workshops (see task 4340)

208 Advisory Committee - A policy advisory body with direct access to the MAG Regional Advisory Committee and MAG Regional Council, the regional

government decision making body. The 208 Advisory Group will entertain membership from the Technical Advisory Group, the Agricultural Advisory Group, and the Citizen Advisory Group. The 208 Advisory Group will pass on key policy decisions from the citizen groups to the MAG Regional Advisory Committee which then passes the policy recommendations to the MAG Regional Council for final adoption.

Technical Advisory Group (TAG) - This is a technical evaluation body comprised of public works officials and other officials of governmental agencies chosen by MAG and Corps staff to provide adequate technical expertise in the areas of concern. The TAG passes technical policy recommendations on to the MAG Management Committee (see chart 4.2).

Specific duties of the TAG are as follows:

1. Provide technical review
2. Provide insight into past, present, and future facility planning
3. Provide basic background information
4. Assist in the development of reuse options
5. Assist in the development of the point source alternative
6. Assist in the development of the non-point sources alternative
7. Assist in the development of the implementation plans
8. Make recommendations to the MAG Regional Council

Agricultural Advisory Group - This advisory body will evaluate policy and technical issues related to the agricultural community; serve as a liaison between the 208 planning program and the farming community; pass technical recommendations on to the MAG Management Committee; and pass policy recom-

mendations on to the 208 Advisory Committee (see chart 4.2) Specifically the AAG will:

1. Provide Technical Review
2. Provide insight in the agricultural communities' goals
3. Provide basic background information
4. Assist in the development of reuse options for municipal wastewater
5. Assist in the non-point source analysis
6. Assist in the development of implementation plans
7. Make recommendations to the MAG Regional Council via the MAG Management Committee and the 208 Advisory Committee

Citizen Advisory Group (CAG) - This body will be formed to provide a forum for individuals interested in the subjects addressed by the 208 program. The policy evaluations of this body will be passed on to the 208 Advisory Committee (see chart 4.2). Membership for the CAG will be drawn from representatives of the following groups and general public:

American Institute of Architects
American Society of Civil Engineers - Phoenix Branch
Arizona Conservation Council
Arizona Outdoor Writers Association
Arizona Public Health Association
Arizona Wildlife Federation
Audubon Society
Friends of the Earth
League of Women Voters
Phoenix Chamber of Commerce
Sierra Club - Grand Canyon Chapter
Valley Forward Association

Specific duties of the CAG are as follows:

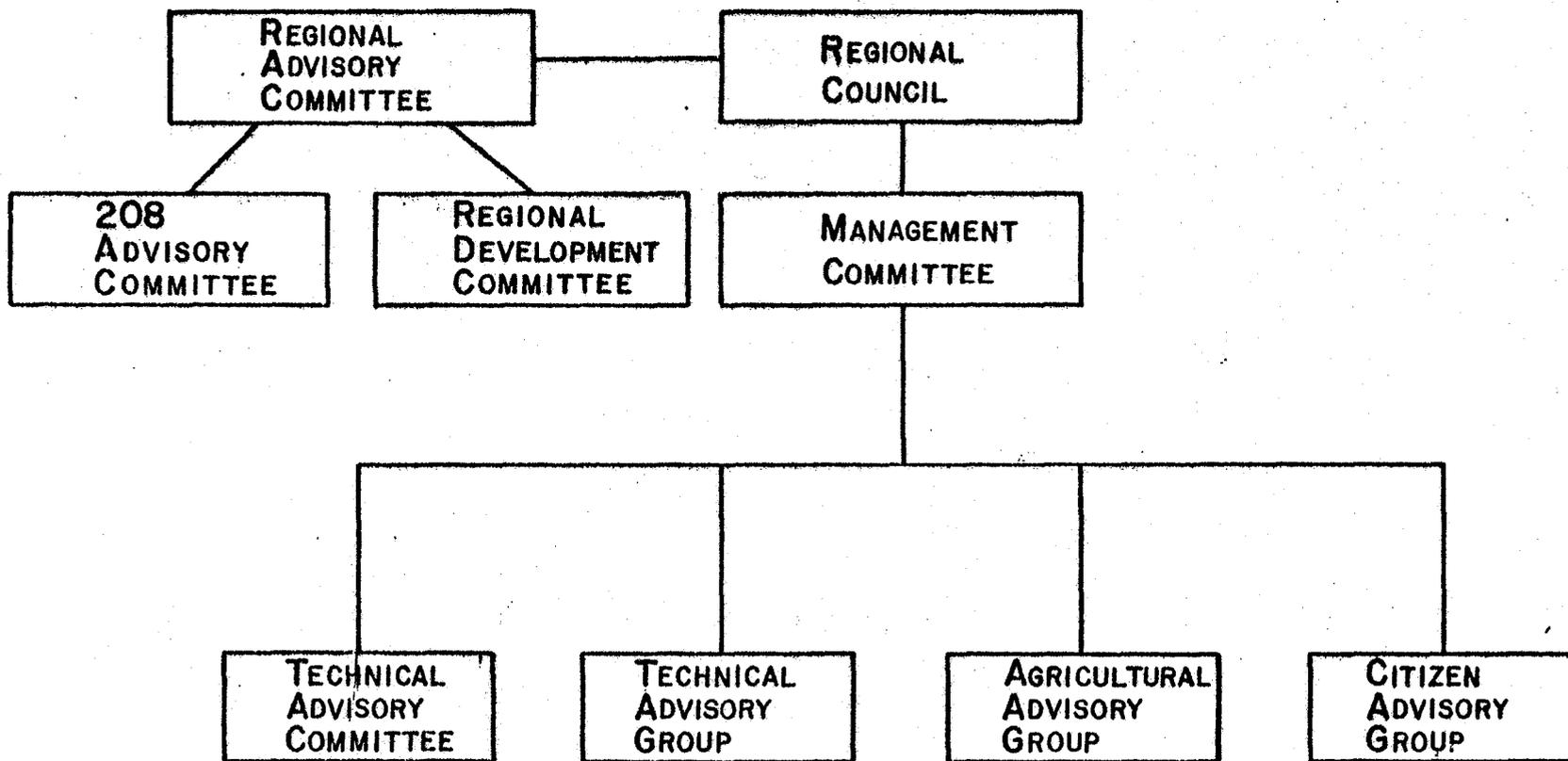
1. Reviewing all aspects of the 208 program on a periodic basis and advising the MAG Management Committee or the 208 Advisory Committee as appropriate.
2. Presenting to the Executive Committee and the Study Manager information concerning their own perceptions of problems and solutions.
3. Advising on best methods of establishing a two-way information exchange with the general public.
4. Taking an active role in assessment of alternative solutions to the water resource problems as these solutions are developed in the course of the study.

Brochures, newsletters, speakers, media (representatives on CAG, television specials, and news releases), papers (technical, working, and "white"), and reports (technical support documents), will augment other citizen involvement activities.

Funding for the Metro and Non-Metro Public Involvement program is being provided by EPA, MAG and the Corps, the greater portion of expenditure coming from the Corps.

Specific uses of the above citizen involvement devices are mentioned throughout the 4000 series and in greater detail throughout the 6000 series in the Water Quality Planning Program.

4.2 MAG 208 CITIZEN COMMITTEE
ORGANIZATIONAL CHART



4.3 PUBLIC INVOLVEMENT TASK IDENTIFICATION

- 4310: Develop Public Involvement Program
- 4320: Develop Information Services
- 4330: Institute Public Involvement Campaign
- 4340: Design and Implement Public Workshop Programs
- 4350: Design and Carry Out Public Hearings

Task 4310: Develop Public Involvement Program

Purpose: To organize and begin implementation of the MAG 208 Public Involvement program which will successfully determine what the desires of the public are in the areas of water resources and wastewater management. To refine schedules for this work element to coordinate with other elements in the program.

- Subtasks:
- 1) Identify and define committee and subcommittee support functions.
 - 2) Identify technical milestones to be considered in the public involvement process.
 - 3) Identify major segments of the public and develop mechanisms to insure broad based representation (Review Technical Advisory Group, Agricultural Advisory Group, Citizen Advisory Group, and 208 Advisory Group membership).
Incorporate Non-Metro 208 representation into existing TAG, AAG, CAG, and 208 Advisory Group.
 - 4) Establish media contacts.
 - 5) Establish coordinative mechanisms with other public participation efforts (i.e., 201 studies, city and county planning, etc.)

Relationship with Other Program Activities:

Task 4310 is a prerequisite to all other tasks in the Citizen Involvement work element.

Products: 208 Public Participation Operating Procedures

Completion Date: 15 January 1977

<u>Manpower:</u>	EPA Funds	\$ 8,500
	Corps Funds	21,000
	MAG Service	<u>20,000</u>
	Total	\$49,500

Task 4320: Develop Information Services.

Purpose: To design and implement an information dissemination system which will: 1) allow easy access to information concerning the MAG 208 Project to all segments of the community; and, 2) schedule 208 project staff for information presentations whenever requested.

Subtasks: 1) Assemble project information and establish depositories.
 2) Develop project mailing list.
 3) Develop and maintain presentation schedules.

Relationship with Other Program Activities:

Successful completion of Task 4320 will serve to provide the public with easy access to all 208 project information.

Products: 208 Information Dissemination System

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$ 4,000
	Corps Funds	<u>10,000</u>
	Total	\$14,000

Task 4330: Institute Public Involvement Campaign

Purpose: To provide a flexible public involvement scheme which will guarantee optimum citizen involvement and public awareness concerning the 208 project. To introduce the 208 project to the general public.

- Subtasks:
- 1) Identifying the devices for communicating with the citizens, i.e., brochures, newsletters, speakers, media, special issue papers, and reports.
 - 2) Formating and scheduling of the different devices of communication.
 - 3) Interrelating these devices with other citizen participation activities.
 - 4) Determine contents and level of detail for campaign.

Relationship with Other Program Activities:

The public involvement campaign will serve to aid all program elements which involve policy decision making. The 6000 task series cites specific activities of the Public Involvement Campaign.

- Products:
- 1) Integration of communication devices into the daily procedures of the 208 program.
 - 2) A report on the format and tentative schedule for use of the selected communication devices.

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds	\$12,500
	Corps Funds	65,000
	MAG Funds	<u>75,000</u>
	Total	\$152,500

Task 4340: Design and Implement Public Workshop Programs

Purpose: To enable the community to interact constructively and creatively with persons responsible for 208 wastewater planning and management activities. To provide a mechanism for bringing major policy issues and ultimately the alternative plans before the public.

- Subtasks:
- 1) Design schedule and format for workshops, each workshop being built around either the Technical Advisory Group, Agricultural Advisory Group, or Citizens Advisory Group.
 - 2) Determine a means of making citizens aware of and interested in the workshops.
 - 3) Interrelate this program with the other citizen participation programs.
 - 4) Carry out public workshops.

Relationship with Other Program Activities:

Public workshops are scheduled at key points throughout the 208 planning process. This task will be exercised repeatedly in the 6000 task series. (i.e., 6310, 6320, 6330, 6340, 6360, 6370, 6410-6440, 6460, 6470, and 6510)

Products: Format and tentative schedule for public workshops.
Public input from workshops
Workshop evaluations

Completion Date: To be determined

<u>Manpower:</u>	Corps Funds	\$15,000
	MAG Services	<u>10,000</u>
	Total	\$25,000

Task 4350: Design and Carry Out Public Hearings

Purpose: To provide a well publicized opportunity for citizens to react to the alternate proposals, plans, and policies made concerning water quality problems and waste water planning and management at various points during the planning program and just prior to submission of the final 208 plan.

- Subtasks:
- 1) Schedule and format the public hearings.
 - 2) Insure that adequate advertisement is widespread concerning the location, time, and content of the hearing.
 - 3) Coordinate the public hearing process with other citizen involvement activities.
 - 4) Carry out public hearings.

Relationship with Other Program Activities:

Once preliminary policy decisions have been reached and formal adoption is necessary, a public hearing will be scheduled. The choice of a small array of alternatives from the large array of land treatment alternatives, and the choice of a final 208 plan from the small array of land treatment alternatives are two key public hearing dates. Therefore, public hearings will take place at any key policy decision making points.

Products: Report explaining public hearing scheduling, issues, and publicity for public hearings.
Public Hearing Testimony.

Completion Date: July 1975, March 1977, June 1978

<u>Manpower:</u>	Corps Funds	\$ 9,000
	MAG Services	<u>5,000</u>
	Total	14,000

5.0 LAND USE SOCIO-ECONOMIC AND ENVIRONMENTAL PLANNING

5.0 LAND USE, SOCIO-ECONOMIC AND ENVIRONMENTAL PLANNING

5.1 SCOPE AND CONTENTS:

It is recognized that regional comprehensive and functional planning is primarily concerned with the activity/spatial relationships which occur within the region. These relationships are usually manifested in the land use/activity pattern; the impact of that pattern on the social and natural environment and the changes in these relationships over time. The following tasks provide for the collection, interpretation, and analysis of those relationships as they affect regional development and waste management. This portion of the work plan will ensure provision of the data, on a current and continuing basis, which is essential for the development, evaluation and implementation of a waste management capable of supporting a regional development plan and the quality of the environment.

5.3 LAND USE, SOCIO-ECONOMIC, AND ENVIRONMENTAL

PLANNING TASK IDENTIFICATION

- 5310: Inventory Land Use Data
- 5320: Inventory Natural Resources
- 5330: Inventory Economic Data
- 5340: Identify Infrastructure and Fiscal Impact
- 5350: Evaluate Land Use and Environmental Suitability
- 5360: Identify Implementation Alternatives Available Through
the Private Economy

Task 5310: Inventory Land Use Data

Purpose: To refine the current land use data base to meet the specific requirements of the waste management planning program.

- Subtasks:
- 1) Identify specific data requirements of the waste management planning program.

 - 2) Using the existing data base from the comprehensive and transportation planning programs update, modify, and supplement the land use data to meet the needs of subtask 1.

Relationship with Other Program Activities:

Task 3330: Coordination with HUD 701 program, funding and results will be shared between 208 and 701 Land Use Inventories. This task is a prerequisite to Tasks 5350, 5370 and 5380.

Product: Land use data in map, statistical and written form appropriate for the special requirements of the waste management program.

Completion Date: 1 July 1977

<u>Manpower:</u>	EPA Funds	\$3,000
	Corps Funds	2,000
	MAG Services	<u>2,000</u>
	Total	\$7,000

Task 5320:

Inventory Natural Resources

Purpose:

To identify the natural resources base of Maricopa County; classify the resources according to their vulnerability to man's activity; and evaluate alternative regional plans in relationship to the impacts placed on the natural resource base.

Subtasks:

- 1) Define data requirements for evaluating regional development and waste management plans and review these with the existing data base.
- 2) Develop additional resource base information for the identified data gaps.
- 3) Define a framework for determining the suitability of the resource base to support the regional development and waste management plans.
- 4) Coordinate information development and evaluation procedures with U.S. Corps of Engineers, 201 projects and 701 programs.
- 5) Prepare evaluation documentation which meets the guidelines for the 208 program.

Relationship with Other Program Activities:

This task is a prerequisite to Tasks 5350, 5370 and 5380

Products:

Interim and final working papers, reports and maps

Completion Date: 1 May 1977

<u>Manpower:</u>	EPA Funds	\$ 9,600
	MAG Services	<u>5,000</u>
	Total	\$14,000

Task 5330:

Inventory Economic Data

Purpose:

Provide the basic economic information required to develop and evaluate alternative regional development and waste management plans and policies.

Subtasks:

- 1) Acquire and develop economic data necessary to develop alternative waste management plans and provide input to the activity allocation modeling process.
- 2) Prepare special sub-regional and economic sector analysis necessary to identify critical sectors of the regional economy, identify selected sources of waste, and determine the economic implications of alternative regional development and waste management strategies.
- 3) Prepare projections of social and economic factors necessary to supplement those prepared by the Urban Study and 701 programs.

Relationship with Other Program Activities:

Provides background economic data

Products: Interim and final reports, memoranda, statistics and evaluations of alternatives.

Completion Date: August 1976

<u>Manpower:</u>	EPA Funds	\$ 7,900
	Corps Funds	2,000
	MAG Services	<u>7,000</u>
	Total	\$16,000

Task 5340: Identify Infrastructure and Fiscal Impact

Purpose: To identify the systems and their associated costs of the existing regional development pattern and provide a means of projecting the costs of the selected regional development plan, with emphasis on the waste management systems.

- Subtasks:
- 1) Using the inventory of present systems, Federal, State, and local service requirements and environmental sensitivity data, prepare criteria for evaluating alternative regional development and waste management plans.
 - 2) Develop relative cost and revenue projections for infrastructural systems needed to support selected alternative regional development and waste management plans.
 - 3) Evaluate the cost and revenue differentials for selected alternative regional development and waste management plans.

Relationship with Other Program Activities:

This task will be supported by information generated from Tasks 6360 and 6370.

Products: Interim and final reports and maps for alternative evaluated.

Completion Date: 1 May 1977

<u>Manpower:</u>	EPA Funds	\$ 6,000
	Corps Funds	6,000
	MAG Services	<u>8,000</u>
	Total	\$20,000

Task 5350: Evaluate Land Use and Environmental Suitability

Purpose: To evaluate and provide input into the alternative regional development policies in terms of the potential effects on environmental and waste management issues.

- Subtasks:
- 1) Utilizing the data from task 5320 identify constraints to development within the study area.
 - 2) Through a system of overlaps or the use of a geographical matrix define and map those areas which are most suitable for different types of development.
 - 3) Evaluate each of the alternative development patterns to insure consistency with the land use constraints.
 - 4) Examine mitigation procedures for selected alternatives including the multiple use and protection of areas for open space and recreation.

Relationship with Other Program Activities:

Provides necessary data on the suitability of land for different uses.

Products: Documented evaluation of alternative regional development policies to be included in the overall evaluation report.

Completion Date: 1 May 1977

<u>Manpower:</u>	EPA Funds	\$ 8,500
	MAG Services	<u>5,000</u>
	Total	\$13,500

Task 5360:

Identify Implementation Alternatives Available Through the
Private Economy

Purpose:

Implementation strategies are included as a major element of the regional planning process - part of this evaluation is an analysis of the mechanisms necessary for implementing the alternatives. These evaluations usually consider the primary public costs and benefits, to determine the acceptability of that alternative in addressing the issues.

The actual implementation process often falls far short of expectations. This may in part be due to the lack of understanding of the private market, where most public development policies are ultimately implemented. The functioning of the private market processes is not well documented in most regional planning efforts. Seldom is much consideration given to working through these processes (as a method of implementation and public acceptance of the plan) These factors as well as the impacts on this sector by regional policies will be included as part of the plan documentation.

Subtasks:

- 1) Identify mechanisms, economics and institutions which guide the direction and rate of expansion of the private investment and development sector.
- 2) Identify and analyze interrelationship between the public sector and the private economic and development processes.

Evaluate their responsiveness to public policies. The most effective relationships will be described as to their applicability for effective regional goals and policies.

- 3) Examine regional development and waste management alternatives to determine the effects their implementation mechanisms will have on the private sector. The more effective mechanisms will be reflected as public goals institutional changes needed, and anticipated effects on the private development processes.
- 4) Test alternative implementation strategies to determine the combination which will reflect public values and are acceptable to the private investment and development sector.
- 5) Identify and describe the appropriate administrative, legislative and public investment strategies necessary to affect desired changes in the private sector and implement public policies.

Relationship with Other Program Activities:

Incorporation of private market forces into waste Management/land use decision making.

Products: "Regional Land Use and the Private Economy" report.

Completion Date: May 1977

<u>Manpower:</u>	EPA Funds	\$15,000
	MAG Services	<u>8,000</u>
	Total	\$23,000

6.0 WATER QUALITY PLANNING

6.0 WATER QUALITY PLANNING

6.1 SCOPE AND CONTENTS

This portion of the work program includes those tasks and activities which relate to the development of more traditional water quality components of the 208 planning program. This portion of the Maricopa Association of Governments work program has resulted from a consideration of what is required of the 208 program by law and regulation, and existing water quality conditions within the designated 208 planning area.

This element is designed to produce two separate subplans or elements of the final 208 plan. These include:

- *A point source element dealing with both continuous and intermittent point sources.

- *A non-point source element dealing with what might be considered diffuse and small point sources as well as pollution introduced directly into overland flow.

Tasks and subtasks in the initial phases are designed to serve multiple purposes and are to be accomplished in parallel time frames. Early scheduling of consultant or third party contracts is seen as critical. However, the actual content of the contracts from the standpoint of technical accomplishments can be designed on a modular basis depending upon contingencies such as contractor capability,

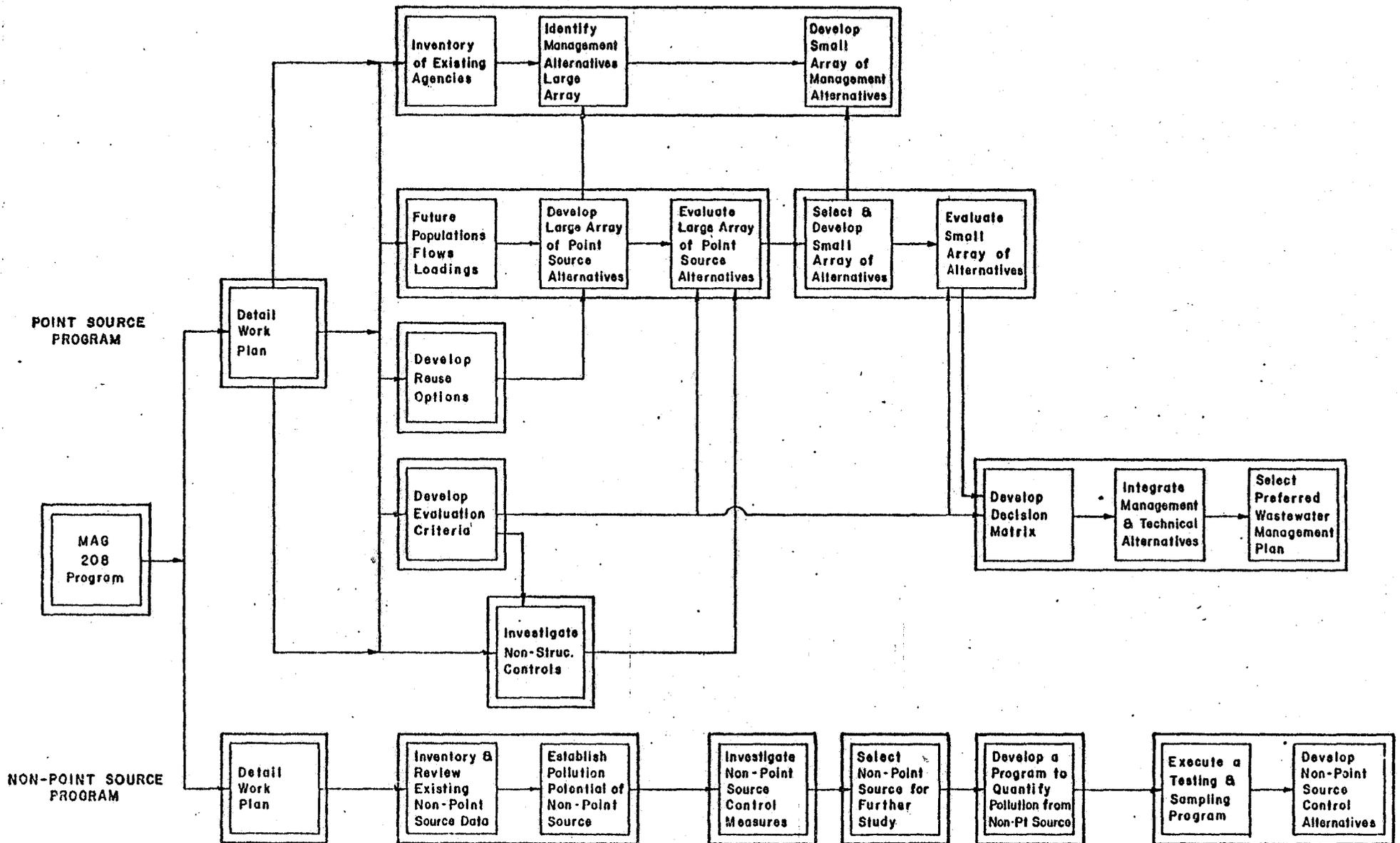
costs, and proximity. In short, individual tasks can be combined in a variety of logical ways, with compatible scheduling being the single most critical consideration.

The tasks have been grouped into four major categories. The first deals with point sources of pollution in the Metro Area and the second with point sources of pollution in the Non-Metro Area. The third deals with non-point sources of pollution in the Metro Area and the fourth deals with non-point sources of pollution in the Non-Metro Area. While the work is similar in both the Metro and Non-Metro Areas it was necessary to separate the tasks this way because the work for the Metro area is proceeding under contracts executed and managed by the U. S. Army Corps of Engineers and the work for the Non-Metro Area will be handled by contracts executed and managed by MAG. The actual tasks will be similar and information and results will be shared. In this respect, the Non-Metro Area study will benefit by advance work being done in the Metro Area under existing Corps contracts as can be seen by a comparison of the tasks listed in sections 6.3 and 6.4 and sections 6.5 and 6.6.

The manpower requirements and completion dates for tasks 6390, 6550, 6560, 6570, and 6580 as well as for task series 6410 and 6610 are estimates and are subject to change upon negotiation of the contracts to accomplish the work. This is particularly true of tasks 6550, 6560, and 6570 and of tasks 6640, 6650, and 6660 which are also dependent upon the findings of the previous tasks in each of their respective series.

6.2 WATER QUALITY PLANNING FLOW CHART

-6.20-



6.3 TASK IDENTIFICATION AND DESCRIPTION

TASK SERIES 6310 POINT SOURCE WASTE WATER MANAGEMENT PROGRAM METRO AREA

- 6310: Develop a Detailed Work Plan
- 6320: Develop Evaluation Criteria
- 6330: Prepare an overview of reuse options for the Phoenix Metropolitan area.
- 6340: Inventory and Assess Existing Management Agencies and Develop Alternative Management Strategies
- 6350: Investigate Non-structural Controls for Point Source of Pollution
- 6360: Develop a Large Array of Point Source Control Alternatives
- 6370: Select and Refine a Small Group of Regional and Subregional Plans
- 6380: Select and Present the Final Areawide Point Source Waste Management Plan
- 6390: Environmental Assessment of the Point Source Alternatives

Task 6310: Develop A Detailed Work Plan

Purpose: To define in detail the work to be done and the schedule for completion of each of the tasks.

- Subtasks:
- 1) Project initiation meeting
 - 2) Meet with the local agency personnel to discuss the project, local problems and programs and information requirements and procedures.
 - 3) Prepare an overview of existing community and agency programs and goals.
 - 4) Prepare a draft work plan.
 - 5) Review the draft work plan by the Technical Advisory Group (TAG) and the Agricultural Advisory Group (AAG).
 - 6) Prepare the final work plan.

Relationship with Other Program Activities:

This task will provide for future coordination and communication throughout the program. It provides input for the development of the evaluation criteria. It services as a management tool for remainder of the point source wastewater management program.

Products: Memo on Agency Meetings Report on Community Programs and Goals.
Draft Work Plans (100 copies)
Final Work Plans (20 copies)

Completion Date: Draft Work Plan - 25 July 1976
Final Work Plan - 24 September 1976

<u>Manpower:</u>	Corps	\$25,000
	MAG Services	<u>8,000</u>
	Total	\$33,000

Task 6320: Develop Evaluation Criteria

Purpose: To define the criteria to be used in evaluating and selecting the alternatives as the project proceeds.

- Subtasks:
- 1) Prepare a report on the relationship of community goals and water resource development.
 - 2) Prepare a draft set of evaluation criteria.
 - 3) Review the draft evaluation criteria by the Technical Advisory Group (TAG) and the Agricultural Advisory Group (AAG).
 - 4) Refine the evaluation criteria to reflect TAG and AAG comments.

Relationship with Other Program Activities:

The revised evaluation criteria developed in this task will be used to select and refine regional and subregional wastewater management plans and to select the final area-wide wastewater management plan..

Products: Draft Report (100 copies)
Final Report (20 copies)

Completion Date: Draft Report 24 January 1977
Final Report 11 February 1977

Manpower:

Corps Funds	\$12,000
MAG Services	<u>6,000</u>
Total	\$18,000

Task 6330:

Prepare an Overview of Reuse Options for the Phoenix Metropolitan Area.

Purpose:

Provide information on reuse options in the Phoenix Metropolitan area for both wastewater treatment plant effluents and residual solids. This information will be used to plan for optimum use of wastewater resources.

Subtasks:

- 1) Inventory and review existing and planned reuse agreements.
- 2) Conduct a literature survey and prepare a compendium of potential reuse options.
- 3) Determine reuse options which are feasible for the study area.
- 4) Prepare a report, graphics, and brochure on potential reuse options.
- 5) Present the graphics and brochure to the TAG and AAG for their review and comment.
- 6) Revise the reuse option report.
- 7) Prepare new graphics and a new brochure.

Relationship with Other Program Activities:

This is a critical information interface since subsequent tasks will use this information to develop the reuse alternatives associated with each of the point source control alternatives. This task also provides some information on existing institutions and future implementation.

Products:

Compendium of Reuse Option (2 copies)
Draft Report on Reuse Option (2 copies)
Draft Brochure on Reuse Options (100 copies)
Overheads and Slides (1 copy)
Revised Report on Reuse Options
Final Report on Reuse Options (2 copies)
Final Brochure (300 copies)
Final Graphics (1 copy)

Completion Date:

Compendium 29 July 76
Draft Report 6 Aug. 76
Draft Brochure 20 Aug. 76
Graphics 30 Aug. 76
Revised Report 12 Oct 76
Final Report 27 Dec. 76
Final Brochure 27 Dec. 76
Final Graphics 27 Dec. 76

Manpower:

Corps Funds	\$12,000
MAG Services	<u>5,000</u>
Total	\$17,000

Task 6340:

Inventory and Assess Existing Management Agencies and Develop
Alternative Management Strategies.

Purpose:

To describe the existing wastewater agencies with respect to their legal authorities and financial capabilities. Using this information as a base, alternative management strategies will be developed and evaluated for the large and small array of alternative technical wastewater plans developed in tasks 5316 and 5317.

Subtasks:

- 1) Review existing information on the local institutional and management aspects of wastewater planning.
- 2) Complete an assessment of the existing agencies to manage and finance an area-wide waste management plan.
- 3) Document agency assessment and present at an open workshop.
- 4) Develop an array of management strategies applicable to the "large array" of point source control alternatives.
- 5) Document the identification, selection and development of the alternative management strategies.
- 6) Present alternative management strategies at an open workshop to solicit review and comment.
- 7) Identify, select and develop detailed management strategies suitable to the refined regional control alternatives.
- 8) Prepare final documentation of the alternative management strategies.

Relationship with Other Program Activities:

Provides input for development of the final plan for the management and financing of the areawide waste management plan.

Products:

Working paper summarizing work to date.

Brief description of each of the relevant agencies in the study area.

Report on the status and capability of the existing agencies.

Description of alternative management strategies.

Interim report on management strategies for "large array".

Final report on management strategies for "large array" (20 copies)

Interim report on management strategies for "small array"

(20 copies)

Final report management strategies for "small array" (20 copies)

Completion Date:

Working Paper

Agency Description

Status of Existing Agencies

Alternative Management Strategies

Interim Report "large array"

Final Report "large array"

Interim Report "small array"

Final Report "small array"

Manpower:

Corps Funds	\$35,000
MAG Services	<u>13,000</u>
Total	48,000

Task 6350: Investigate Nonstructural Controls for Point Sources of
Pollution

Purpose: To identify the various methods of reducing the wastewater flows
and loadings into the collection system.

- Subtasks:
- 1) Prepare a compendium of nonstructural flow and waste load reduction measures.
 - 2) Identify which of the nonstructural control measures are usable in the area.
 - 3) Prepare a general information brochure on nonstructural controls for point sources of pollution within the Phoenix Metropolitan area.

Relationship with Other Program Activities:

This task will provide a brochure which will be used to present nonstructural control measures to the advisory groups and the public. The information generated by the task and the inputs from the advisory groups and the public will be used to help develop the final point source control plans.

Products:

Compendium of Nonstructural Control Measures

Technical Memo Presenting Control Measures Which Can Be Used In the Phoenix Area

Brochure presenting Nonstructural Control Alternatives

Completion Date: Compendium 12 January 1977
Draft Technical Memo 30 January 1977
Technical Memo 14 February 1977
Draft Brochure 22 February 1977
Final Brochure 30 February 1977

<u>Manpower:</u>	Corps Funds	\$10,000
	MAG Services	<u>8,000</u>
	Total	\$18,000

Task 6360:

Develop A Large Array of Point Source Control Alternatives

Purpose:

Develop and evaluate alternative methods for collecting, treating, and disposing of future wastewater flows including reuse options for both the effluents and residual solids. The methods evaluated will include biological, physical-chemical, and land treatment systems.

Subtasks:

- 1) Review existing information and data.
- 2) Develop an overlay of the existing wastewater service areas.
- 3) Develop an overlay showing drainage basins and subbasins.
- 4) Determine for each subbasin the existing and future population by five year increments.
- 5) Establish the waste flows and waste loads for each of the subbasins.
- 6) Calculate the capacity of the existing treatment and collection system.
- 7) Prepare a report on flow, loading and capacity.
- 8) Develop preliminary point source control alternatives.
- 9) Prepare graphics and a brochure necessary for public and advisory group presentation of the preliminary alternatives.
- 10) Present the alternatives and receive the comments.
- 11) Prepare and present the alternatives and comments at a Checkpoint I Conference at the Corps of Engineers Division Office in San Francisco.
- 12) Base on comments from the public meetings, advisory groups, and Checkpoint I Conference revise the alternatives.

- 13) Document the revised alternatives and prepare new graphics and a brochure.

Relationship with Other Program Activities:

This element is central to the entire point source program. All previous tasks focus on it and each provides input to it.

Products:

Catalogue data system with the important elements identified and marked.

Overlay existing service and treatment plant boundaries.

Overlay existing city boundaries.

Overlay of drainage basins and subbasins

Tabular and graphical display of existing and future population.

Working paper on flows and loadings.

Tabulation of existing system capacities.

Flow, loading, and system capacity report.

Working paper describing the alternatives.

Graphics and brochure on preliminary alternatives

Working paper on revised alternatives.

Interim report on revised alternatives

Revised graphics and brochure

Completion Date:

Catalogue data system 12 July 76

Draft Overlay service areas and treatment plant 10 Aug. 76

Final Overlay service areas and treatment plant 27 Aug. 76

Draft Overlay Subbasins 10 Aug. 76
 Final Overlay Subbasins 27 Aug. 76
 Draft Tabular & graphical population displays 25 Aug. 76
 Final Tabular & graphical population displays 5 Sept. 76
 Draft Working Paper 5 Sept. 76
 Final Draft Working Paper 24 Sept. 76
 Tabulation of Existing System Capacities 29 Oct. 76
 Draft flow, loading & system capacity report 11 Oct. 76
 Final Flow, loading & system capacity report 10 Nov. 76
 Working paper on alternative 3 Dec. 76
 Preliminary Draft Brochure 19 Nov. 76
 Final Draft Brochure 6 Dec. 76
 Final Brochure 20 Dec. 76
 Checkpoint I Conference 14 Jan. 77
 Working paper on revised alternatives 18 Feb. 77
 Preliminary Draft Brochure 21 Feb. 77
 Final Draft Brochure 4 Mar. 77
 Final Brochure 11 Mar. 77

Manpower:

Corps Funds	\$174,000
MAG Services	<u>48,000</u>
Total	\$222,000

Task 6370:

Select and Refine a Small Array of Point Source Control

Alternatives

Purpose:

To select and refine a small group of regional and sub-regional plans for control of point sources of pollution.

Subtasks:

- 1) Development of a decision matrix which presents the information necessary for selection on the large array of alternatives.
- 2) Presentation of the revised plans to the Regional Council of MAG for the selection of a "small array" of plans for further study.
- 3) Revise and refine the "small array" of selected plans.
- 4) Review of the report on the "small array" of alternatives.
- 5) Preparation of graphics and a brochure to present the small array.
- 6) Preparation of a detailed design and cost appendix for the regional and subregional plans.
- 7) Presentation of the "small array" to public workshops, the advisory groups, and at the Corps Checkpoint II Conference in San Francisco.

Relationship with Other Program Activities:

This task is a logical continuation of the previous task and results in the further refinement of the point source control alternatives.

Products:

Completed decision matrix and graphics.
Description of the "small array" and methods used in selection.
Report describing and evaluating the "small array".
Revised Report on the "small array".
Graphics and a brochure on the "small array".
Design and Cost appendix.
Comments on the small array.

Completion Date:

Draft Decision Matrix 22 Apr. 77
Final Decision Matrix 10 May 77
Description of "small array" 25 May 77
Report on refined alternatives 22 July 77
Draft Working Paper 9 Sept. 77
Draft Revised Report 23 Sept. 77
Final Revised Report 24 Oct. 77
Preliminary Draft Graphic & Brochure 11 Nov. 77
Final Draft Graphic & Brochure 24 Nov. 77
Final Graphics & Brochure 2 Dec. 77
Draft Design & Cost Appendix 28 Oct. 77
Final Design & Cost Appendix 9 Dec. 77
Comments 15 Jan. 78

Manpower:

Corps Funds	\$121,000
MAG Services	<u>28,000</u>
Total	\$149,000

Task 6380:

Select and Present the Final Areawide Point Source Waste Management Plan

Purpose:

To select and present the final areawide wastewater management plan. In this task the Corps of Engineers will coordinate the integration of the various technical and management plans into areawide wastewater management alternatives for the Metro Area. These alternatives will be combined with similar alternatives for the Non-Metro area and the final 208 areawide waste management plan selected. An implementation plan and an annual updating procedure will also be developed in this task.

Subtasks:

- 1) Integration of alternative areawide waste management plans for the Metro Area.
- 2) Development of a decision matrix.
- 3) Documentation and presentation of the areawide plans at a public meeting and to the MAG Regional Council for selection and adoption.
- 4) Development of an implementation plan and program for revision.
- 5) Presentation of the implementation and revision programs.

Relationship with Other Program Activities:

This task ties all of the previous work together for both the Metro and the Non-Metro areas and produces the final adopted areawide waste management plan.

Products:

Alternative areawide waste management plans for the Metro area.
Complete Decision Matrix showing the pros and cons of the areawide plans.
Graphical displays and written comments on the final plans.
Draft reports on implementation and revision.
Final implementation plan and revision program.

Completion Date:

Alternative areawide plans 10 Mar. 78
Draft Decision Matrix 12 Mar. 78
Final Decision Matrix 10 Apr. 78
Preliminary Report 6 June 78
Final Report 2 July 78
Draft Implementation & Revision Plan 15 July 78
Final Implementation & Revision Plan 5 Aug. 78
Complete Final Plan 25 Aug. 78

Manpower:

Corps Funds	\$53,000
MAG Services	<u>27,000</u>
Total	\$80,000

Task 6390:

Environmental Assessment of the Point Source Alternatives

Purpose:

This task will provide the necessary assessment of the environmental impacts of the point sources control alternatives including both primary and secondary impacts. The work will produce an environmental assessment not an environmental impact statement and is programed to rely on the State AQMP process to provide all of the needed air quality assessment.

Subtasks:

- 1) Develop the environmental setting.
- 2) Assess the general impacts of the reuse options.
- 3) Assess the general impacts of the nonstructural control measures.
- 4) General assessment of the impacts of the large array of alternatives including comments on air quality issues.
- 5) Detailed assessment of the primary and secondary impacts of the small array of point source control alternatives including the effluent and residual solid reuse and disposal options.
- 6) Detailed assessment of the final areawide plan including primary and secondary impacts for both the facilities and the effluent and residual solids reuse and disposal options.

Relationship with Other Program Activities:

This task provides key information on the effectiveness of the control options in the protection of water quality as well as

information on the effects of these options on the remainder of the environment.

Products:

Environmental Setting
Assessment of the Reuse Options
Assessment of the Nonstructural Controls
Assessment of the large array
Assessment of the small array
Assessment of the final plan

Completion Date:

Environmental Setting 30 Oct. 76
Assessment of the Reuse Option 15 Nov. 76
Assessment of the Nonstructural Controls 7 Dec. 76
Assessment of the large array 15 Dec. 76
Assessment of the small array 25 June 77
Assessment of the final plan 15 June 78

Manpower:

Corps Funds	\$120,000
MAG Services	<u>27,000</u>
Total	\$147,000

6.4 TASK IDENTIFICATION AND DESCRIPTION

TASK SERIES 6410 POINT SOURCE WASTEWATER MANAGEMENT PROGRAM NON-METRO AREA

- 6410: Develop a Detailed Work Plan
- 6420: Develop a Large Array of Point Source Control Alternatives
- 6430: Select and Refine a Small Array of Alternatives
- 6440: Select and Present the Final Areawide Point Source Waste Management Plan
- 6450: Environmental Assessment of the Point Source Alternatives

Tasks 6410, 6420, 6430, 6440, and 6450

To avoid redundancy of presentation with the same tasks in the 6310 series only the titles, manpower, and completion dates will be presented here. The purpose, subtasks, relationships with other program activities, and products are the same as for similar tasks in the 6310 series.

Task 6410: Develop a Detailed Work Plan

Completion Date: 1 Mar. 77

<u>Manpower:</u>	EPA Funds	\$10,000
	MAG Services	<u>4,000</u>
	Total	\$14,000

Task 6420: Develop a Large Array of Point Source Control Alternatives

Completion Date: 1 Aug. 77

<u>Manpower:</u>	EPA Funds	\$30,000
	MAG Services	<u>5,000</u>
	Total	\$35,000

Task 6430: Select and Refine a Small Array of Alternatives

Completion Date: 1 Jan. 78

Manpower:

EPA Funds	\$35,000
MAG Services	<u>3,000</u>
Total	38,000

Task 6440: Select and Present the Final Areawide Point Source Waste
Management Plan

Completion Date: 1 Aug. 78

<u>Manpower:</u>	EPA Funds	\$25,000
	MAG Services	<u>5,000</u>
	Total	\$30,000

Task 6450: Environmental Assessment of the Point Source Alternatives

Completion Date: 1 June 78

<u>Manpower:</u>	EPA Funds	\$30,000
	MAG Services	<u>3,000</u>
	Total	\$33,000

6.5 TASK IDENTIFICATION AND DESCRIPTION

TASK SERIES 6510 NON-POINT SOURCE WASTEWATER MANAGEMENT PROGRAM METRO AREA

- 6510: Develop a Detailed Work Plan
- 6520: Inventory and Review Existing Non-point Source Data and Establish the Pollution Potential of the Non-point Sources
- 6530: Investigate Non-point Source Control Measures
- 6540: Select Non-point Sources for Future Study
- 6550: Develop a Program to Quantify the Pollution from the Selected Non-point sources.
- 6560: Execute a Testing and Sampling Program
- 6570: Develop and Adopt Non-point Source Control Alternatives
- 6580: Environmental Assessment of the Non-point Source Alternatives

Task 6510: Develop A Detailed Work Plan

Purpose: To define in detail the work to be done and the schedule for completion of each of the tasks.

Subtasks:

- 1) Project initiation meeting
- 2) Meet with the local agency personnel to discuss the project, local problems and programs and information requirements and procedures.
- 3) Prepare an overview of existing community and agency programs and goals.
- 4) Prepare a draft work plan.
- 5) Review the draft work plan by the Technical Advisory Group (TAG) and the Agricultural Advisory Group (AAG).
- 6) Prepare the final work plan.

Relationship with Other Program Activities:

This task will provide for future coordination and communication throughout the program. It provides input for the development of the evaluation criteria. It services as a management tool for remainder of the point source wastewater management program.

Products:

Memo on Agency Meetings Report on Community Programs and Goals.
Draft Work Plans (100 copies)
Final Work Plans (20 copies)

Manpower:

Corps Funds	\$12,000
MAG Services	<u>8,000</u>
Total	\$20,000

Task 6520: Inventory and Review Existing Non-Point Source Data and
Establish the Pollution Potential of the Non-Point Sources

Purpose: To investigate and identify critical non-point sources within
the Metro Area.

- Subtasks:
- 1) Review existing information on the non-point sources.
 - 2) Obtain, review and report on various regulations which affect non-point sources of pollution in the study area.
 - 3) Review current agricultural practices to evaluate the magnitude of the non-point source of pollution from agricultural return flows.
 - 4) Review salt seeps information to determine their extent as non-point sources.
 - 5) Prepare descriptive text and overlays for various non-point sources.
 - 6) Review related information and prepare a summary report which defines the pollution potential from each of the non-point sources.

Relationship with Other Program Activities:

This task provides a preliminary screening of the non-point sources of pollution in the study area and allows the selection of certain of these for further study in the program. This screening is based on existing data and state-of-the-art information in non-point source pollution problems.

Products:

Summarized report on existing regulations.
Report on current agricultural practices.
Overlay of irrigation supply and return flow systems.
Overlay of existing drainage system.
Overlay of existing cropping pattern.
Report on various non-point sources.
Overlay on existing storm drains over 18" diameter.
Overlay of solid waste disposal sites.
Overlay of feed lot locations.
Overlay of dairy locations.
Overlay of sand and gravel operations.
Report on pollution potential.

Completion Date:

Report on regulations (5 copies) 24 Nov. 76
Report on agricultural practices (5 copies) 21 Dec. 76
Overlays of irrigation system, drainage systems, and
cropping pattern 21 Dec. 76
Report on various non-point sources (10 copies) 10 Jan. 77
Overlays of various non-point sources 10 Jan. 77
Report on pollution potential (2 copies) 9 Feb. 77

Manpower:

Corps Funds	\$24,000
MAG Services	<u>13,000</u>
Total	\$37,000

Task 6530:

Investigate Non-Point Source Control Measures

Purpose:

To determine what measures have been used in other areas to control non-point sources of pollution. To evaluate these measures and determine which can be used in the MAG-208 study area.

Subtasks:

- 1) Conduct a literature survey and prepare a compendium on both structural and nonstructural methods which have been successfully employed to control non-point sources of pollution.
- 2) Prepare a list of non-point source control measures feasible for use in the MAG 208 area.
- 3) Prepare a final report consisting of the compendium, the revised list, and the reductions in wastewater flow and waste load expected from each control measure.

Relationship with Other Program Activities:

This information, together with the information from the previous task will be used in the following task to screen the potential non-point sources and select those sources which will be studied further.

Products:

Compendium of control measures.

Report on those control measures which are feasible in the study area.

Final Report on Control Measures.

Completion Date: Compendium (2 copies) 14 Jan. 77
Report feasible measures (2 copies) 24 Jan. 77
Final Report Control Measures 9 Feb. 77

<u>Manpower:</u>	Corps Funds	\$12,000
	MAG Services	<u>4,000</u>
	Total	\$16,000

Task 6540:

Select Non-Point Sources For Further Study

Purpose:

To select for further study only those non-point sources which are potentially contributing to the pollution of the ground water and for which viable control measures exist. This will serve to maximize the subsequent study effort in non-point source control.

Subtasks:

- 1) Propose a testing and sampling program necessary to quantify the extent of the pollution from the selected non-point sources.
- 2) Estimate the cost and effectiveness of controlling each of the selected non-point sources.
- 3) Summarize all information developed in tasks 6520, 6530, and 6540 and prepare a report.
- 4) Present this information to the advisory groups and to public workshops for comments.
- 5) Present the information and the comments to the MAG Regional Council for selection of those non-point sources for further study.

Relationship with Other Program Activities:

The non-point sources selected in this task will be studied in the following tasks.

Products:

Preliminary Report On Non-Point Source Control Costs
Final Report On Non-Point Source Control Costs

Preliminary Selection Report

Final Selection Report

Completion Date: Preliminary Cost Report (2 copies) 24 Feb. 77
Final Cost Report (2 copies) 9 Mar. 77
Preliminary Selection Report (2 copies) 21 Mar. 77
Final Selection Report (15 copies) 29 Mar. 77
Selection By MAG Regional Council 25 Apr. 77

Manpower:

Corps Funds	\$ 7,000
MAG Services	<u>10,000</u>
Total	17,000

Task 6550: Develop A Program To Quantify The Pollution From The Selected Non-Point Sources

Purpose: This task has not yet been negotiated. The information necessary to prepare the scope of work will be developed in tasks 6520, 6530, and 6540. The task will develop and adopt a detailed testing and sampling program designed to quantify the pollution from the non-point sources.

- Subtasks:
- 1) Review the work completed in subtasks 1, 2, and 3 of task 6540.
 - 2) For each of the selected non-point sources propose and evaluate alternative testing and sampling programs.
 - 3) Present the information on the alternative testing and sampling programs to the advisory groups for their review and comment.
 - 4) Present the information and the comments to the MAG Regional Council for their selection and adoption.
 - 5) Refine the selected testing and sampling programs and provide detailed operating procedures.

Relationship with Other Program Activities:

This task selects, adopts, and prepares a detailed testing and sampling program to be carried out in the next task.

Products: Report on Alternative Testing and Sampling Programs.
Comment on the Alternative Testing and Sampling Programs.

Refined Testing and Sampling Program

Completion Date: Draft Report Testing and Sampling Alternative Programs 24 May 77
Final Report Testing and Sampling Alternative Programs 15 June 77
Comments on Testing and Sampling Alternatives 15 July 77
Refine Testing and Sampling Program 31 Aug. 77

<u>Manpower:</u>	Corps Funds	\$11,000
	MAG Services	<u>13,000</u>
	Total	\$24,000

Task 6560: Execute A Testing and Sampling Program

Purpose: This task has not yet been negotiated. To conduct the actual testing and sampling necessary to quantify the pollution from the selected non-point sources.

- Subtasks:
- 1) Select the sampling sites.
 - 2) Acquire and calibrate the equipment.
 - 3) Install the equipment.
 - 4) Test the equipment.
 - 5) Conduct the testing and sampling program.
 - 6) Compile and analyze the results.
 - 7) Prepare a report and draw conclusions.
 - 8) Present the report and conclusions to the public and the advisory group for review and comment.

Relationship with Other Program Activities:

This task is essential to provide the data necessary to make the final decisions on the control measures.

Products:

- Selection of Sampling Sites
- Acquisition of Equipment
- Calibration, installation, and testing of equipment
- Data from tests
- Report on tests and conclusions
- Comments on Report

Completion Date: Select Sites 30 Sept. 77
 Acquire Equipment 31 Oct. 77
 Calibrate, install & test equipment 15 Dec. 77
 Run tests 15 Dec. 78
 Report on Tests 30 Jan. 79
 Comments on Report 30 Feb. 79

<u>Manpower:</u>	Corps Funds	\$100,000
	MAG Services	<u>10,000</u>
	Total	\$110,000

Task 6570:

Develop and Adopt Non-Point Source Control Alternatives

Purpose:

This task has not yet been negotiated. To develop and evaluate alternative methods for controlling the selected non-point sources of pollution which have been studied in the previous tasks.

Subtasks:

- 1) Review previous work from tasks 6520, 6530, 6540, 6550, and 6560.
- 2) Using this information, prepare and evaluate alternative methods for controlling non-point sources of pollution.
- 3) Prepare graphic and a brochure for presentation of the alternative non-point source controls.
- 4) Present the alternatives at public workshops and to the advisory groups for review and comment.
- 5) Revise the alternatives and prepare new graphics and a new brochure.
- 6) Present the revised alternatives to the public and the advisory groups.
- 7) Prepare a decision matrix presenting the alternatives, the pros and cons, and the comments.
- 8) Present the decision matrix and the recommendations of the advisory groups to the Regional Council of MAG for their decision.
- 9) Prepare a final report outlining adopted measures and implementation procedures.

Relationship with Other Program Activities:

This task results in the adoption by the MAG Regional Council of the control measures to be implemented for the control of non-point sources of pollution.

Products:

Draft report on alternative control measures
Draft graphics and brochure
Revised report
Revised graphics and brochure
Comments and Recommendations
Decision Matrix
Final Report Including Implementation

Completion Date:

Draft Alternative Report 15 Apr. 79
Draft graphics and brochure 15 May 79
Revised report 30 June 79
Revised graphics and brochure 30 July 79
Comments and recommendations 30 Aug. 79
Decision Matrix 15 Sept. 79
Final Report plus Implementation 30 Oct. 79

Manpower:

Corps Funds	\$12,000
MAG Services	<u>13,000</u>
Total	\$25,000

Task 6580:

Environmental Assessment of the Non-Point Source Alternatives

Purpose:

This task will provide the necessary assessment of the environmental impacts of the non-point source control alternatives including both primary and secondary impacts. The work will produce an environmental assessment not an environmental impact statement and is programed to rely on the State AQMP process to provide all of the needed air quality assessment.

Subtasks:

- 1) Develop the environmental setting.
- 2) Assess the general impacts of the non-point source control measures.
- 3) Assess the general impacts of the non-point sources on areas other than water quality.
- 4) Provide a detailed assessment of the primary and secondary impacts of the alternative control measures for the selected non-point sources.

Relationship with Other Program Activities:

This task provides key information on the effectiveness of the control options in the protection of the water quality as well as information on the effects of these options on the remainder of the environment.

Products:

Environmental Setting
Assessment of the control measures
General assessment of the non-point sources
Detailed assessment of the alternatives

Completion Date: Environmental Setting 30 Oct. 76
Assessment of the control measures 20 Jan. 77
General assessment of the non-point sources 20 Jan. 77
Detailed assessment of the alternatives 30 May 79

<u>Manpower:</u>	Corps Funds	\$69,000
	MAG Services	<u>19,000</u>
	Total	\$88,000

6.6 TASK IDENTIFICATION AND DESCRIPTION

TASK SERIES 6610 NON-POINT SOURCE WASTEWATER MANAGEMENT PROGRAM NON-METRO AREA

- 6610 Develop A Detailed Work Plan
- 6620 Inventory and Review Existing Non-Point Source Data and Establish
 the Pollution Potential of the Non-Point Sources
- 6630 Select Non-Point Sources For Future Study
- 6640 Develop a Program to Quantify the Pollution From the Selected Non-
 Point Sources
- 6650 Execute a Testing and Sampling Program
- 6660 Develop and Adopt Non-Point Source Control Alternatives
- 6670 Environmental Assessment of the Non-Point Source Alternatives

Tasks 6610, 6620, 6630, 6640, 6650, 6660, and 6670:

To avoid redundancy of presentation with the same tasks in the 6510 series only the titles, manpower, and completion dates will be presented here. The purpose, subtasks, relationship with other program activities, and products are the same as for similar tasks in the 6510 series.

Task 6610: Develop a Detailed Work Plan

Completion Date: 1 Mar. 77

<u>Manpower:</u>	EPA Funds	\$10,000
	MAG Services	<u>2,000</u>
	Total	\$12,000

Task 6620: Inventory and Review Existing Non-Point Source Data and
Establish the Pollution Potential of the Non-Point Sources

Completion Date: 15 June 77

<u>Manpower:</u>	EPA Funds	\$10,000
	MAG Services	<u>3,000</u>
	Total	\$13,000

Task 6630: Select Non-Point Sources For Future Study

Completion Date: 30 July 77

Manpower:

EPA Funds	\$ 5,000
MAG Services	<u>5,000</u>
Total	\$10,000

Task 6640: Develop a Program to Quantify the Pollution From the Selected
Non-Point Sources

Completion Date: 30 Sept. 77

<u>Manpower:</u>	EPA Funds	\$15,000
	MAG Services	<u>3,000</u>
	Total	\$18,000

Task 6650: Execute a Testing and Sampling Program

Completion Date: 30 Feb. 79

<u>Manpower:</u>	EPA Funds	\$45,000
	MAG Services	<u>6,000</u>
	Total	\$51,000

Task 6660: Develop and Adopt Non-Point Source Control Alternatives

Completion Date: 30 Oct. 79

<u>Manpower:</u>	EPA Funds	\$15,000
	MAG Services	<u>5,000</u>
	Total	\$20,000

Task 6670: Environmental Assessment of the Non-Point Source Alternatives

Completion Date: 30 May 79

<u>Manpower:</u>	EPA Funds	\$20,000
	MAG Services	<u>1,000</u>
	Total	\$21,000

7.0 WATER SUPPLY

7.0 WATER SUPPLY

7.1 Scope and Content:

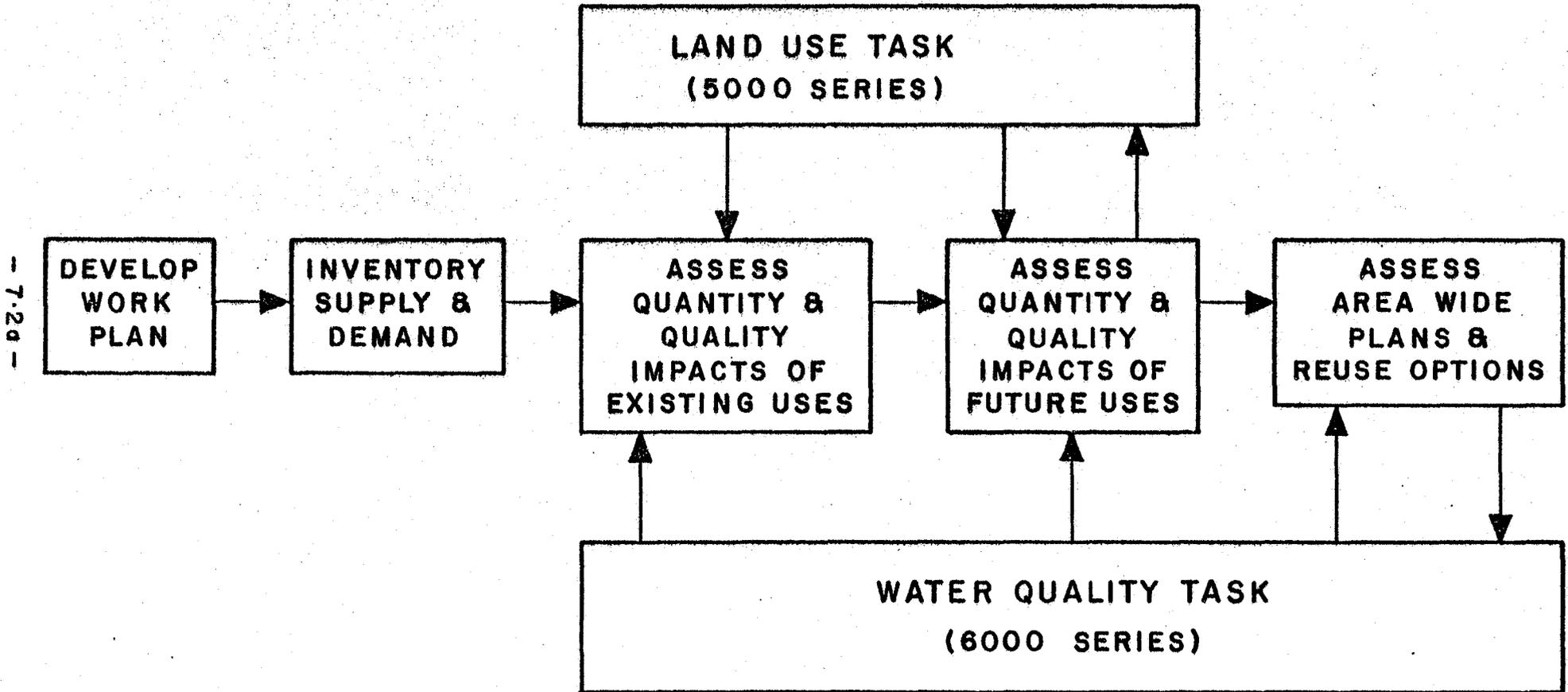
There are a number of agencies who deal with the issues of water supply within Maricopa County. Notable among these are the cities and private water companies who provide for the needs of the urbanized areas, the irrigation districts who provide for the agricultural needs and the Salt River Project who provides water to those entities within its boundaries who have rights to the surface waters which the Salt River Project controls. At the State level there are two primary planning agencies. The first is the State Land Department who oversees the ground water resources of the State and the second is the Arizona Water Commission who oversees the State's surface waters. The latter is currently developing a "State Water Plan" which will take a long range look at the water resources of the entire State, both surface and subsurface. At the Federal level there is the USGS who gathers and maintains a great deal of data concerning both surface and ground water and the Bureau of Reclamation who is developing the Central Arizona Project.

Despite this multiplicity of agencies, or perhaps because of it, there is a lack of a unified source of basic planning information on water supply and demand within Maricopa County. To complete the 208 study it will be necessary to develop this data. Because of funding limitations this water supply study will have to rely on existing information concerning the availability of water within the County. The data concerning present demands can also be provided from existing information. The future demands and their affect on the future supply will be calculated as

part of the study. Additionally, the effects on the quality of the surface and ground water from both the existing and the future use will be studied. This latter part of the study will require technical information from the water quality task (6000 series) and information about the future development from the land use task (5000 series).

The water supply study will be handled in two parts. The first part will collect existing information on present supply and demand and prepare a water balance for each of the urban areas in the County (Phoenix Metro Area, Gila Bend and Wickenburg). Then, using information from the water quality task (6000 series), the effects of the existing uses on the quality of the surface and ground water will be studied. The second part of the study will assess the long term effects of the proposed future development plans including the alternative waste management plans and their various reuse options. The study will then make recommendations on modifications to the areawide waste management plans and reuse options.

7.2 - WATER SUPPLY FLOW CHART



7.3 TASK IDENTIFICATION

- 7310: Prepare a Detailed Work Plan
- 7320: Inventory Existing Water Supply and Demand
- 7330: Assess the Quantity and Quality Impacts of the Present Uses on existing and future water supplies.
- 7340: Assess the Quantity and Quality Impact of the Proposed future uses on future water supplies.
- 7350: Assess the effects of the proposed areawide waste management and reuse plans on the quality and quantity of future water supplies.

Task 7310: Prepare a Detailed Work Plan

Purpose: To define in detail the work to be done and the schedule for each of the tasks.

Subtasks: 1) Prepare a draft work plan
 2) Review the draft plan with the Technical Advisory Group and the 208 Policy Advisory Group.
 3) Prepare the final work plan.

Relationship with Other Program Activities:

This task will provide for future coordination throughout the program. It will serve as a management tool for the remainder of the water supply study.

Products: Draft Work Plans
 Final Work Plans

Completion: Draft work plans - 15 December 1976
 Final work plans - 1 January 1977

<u>Manpower:</u>	EPA Funds	\$ 5,000
	MAG Services	<u>3,000</u>
	Total	\$ 8,000

Task 7320: Inventory Existing Supply and Demand of Water

Purpose: To identify, describe and present in a straight forward format an overview of existing water supply and demand in the MAG 208 planning area.

- Subtasks:
- 1) Identify and analyze past reports and information dealing with the total water budget in Maricopa County.
 - 2) Identify from a historical and technical perspective the different estimates of water availability and use within Maricopa County and discuss reasons for differences and similarities.
 - 3) Survey knowledgeable professionals as to the most reasonable estimates.
 - 4) Prepare a report on the existing water budget in Maricopa County.

Relationship with Other Program Activities:

Task 7320 is a prerequisite to all 7300 series tasks.

Product: Existing Water Supply and Demand Overview.

Completion: 1 February 1977

<u>Manpower:</u>	EPA Funds	\$12,000
	MAG Services	<u>12,000</u>
	Total	\$24,000

Task 7330: Assess the Quantity and Quality Impacts of the Present Uses on Existing and Future Water Supplies.

Purpose: To estimate the quantity and quality effects on the present and future water supply of each of the major present uses of water within Maricopa County.

- Subtasks:
- 1) Using the information generated in task 7320 calculate and tabulate (by five year increments to the year 2000 and for year 2020) the quantity effects on water supply for each of the major users within Maricopa County.
 - 2) Using the quantitative information in the previous subtasks calculate and tabulate (by five year increments to the year 2000 and for the year 2020) the quality effects on water supply for each of the major users within Maricopa County. This subtask will draw on information concerning pollutant transport in soils from the 6000 series tasks.

Relationship with Other Program Activities:

This task provides information necessary to assess the water supply implication of the existing land development plan.

Product: Report on the quantity and quality impacts of current land uses.

Completion: 1 March 1977

<u>Manpower:</u>	EPA Funds	\$18,000
	MAG Services	<u>5,000</u>
	Total	\$23,000

Task 7340: Assess the Quantity and Quality Impacts of the Proposed Future Uses on Future Water Supply

Purpose: To estimate the quantity and quality effects on the future water supply of each of the development plans being studied by the MAG land use reevaluation study.

- Subtasks:
- 1) Using the information generated in tasks 7320 and 7330 calculate and tabulate (by five year increments to the year 2000 and for the year 2020) the quantity effects on the water supply for each of the major uses proposed by the development plans being studied by the MAG land use reevaluation study.
 - 2) Using the quantitative information in the previous subtask and information from task 7330 calculate and tabulate (by five year increments to the year 2000 and for the year 2020) the quality effects on future water supply for each of the major users for each of the proposed future development plans being studied by the MAG land use reevaluation study. This subtask will draw on information concerning pollutant transport from the 6000 series tasks.

Relationship with Other Program Activities:

This task provides information necessary to assess the water supply implications of the alternative land development plans being studied by the MAG land use reevaluation study.

Product: 1 May 1977

Manpower:

EPA Funds	\$15,000
MAG Services	<u>5,000</u>
Total	\$20,000

Task 7350:

Assess the Effects of the Proposed Areawide Water Management and Reuse Plans on the Quality and Quantity of Future Water Supplies

Purpose:

To estimate the quantity and quality effects on the future water supply of each of the proposed waste management plans and reuse options and to provide recommendations for modifications to those plans and options.

Subtasks:

- 1) Using the information generated in task 7340 calculate and tabulate (by five year increments to the year 2000 and for the year 2020) the quantity effects on the future water supply for each of the proposed areawide waste management plans including each of the reuse options. This subtask draws heavily on the 6000 series.
- 2) Using the information generated in the previous subtask calculate and tabulate (by five year increments to the year 2000 and for the year 2020) the quality effects on future water supply of each of the proposed waste management plans and reuse options. This subtask draws heavily on the 6000 series.
- 3) Provide recommendations for modifications to the areawide waste management plans and the reuse options.

Relationship with Other Program Activities:

This task interacts with the 6000 series in determining the quantity and quality impacts of the areawide waste manage-

ment plans and reuse options on the water supply in Maricopa County.

Product:

Report on the quantity and quality impacts of the areawide waste management plans and reuse options.

Recommendation for modification of areawide waste management plans and reuse options.

Completion:

Report - 1 July 1977

Recommendations - 1 July 1977

Manpower:

EPA Funds

\$10,000

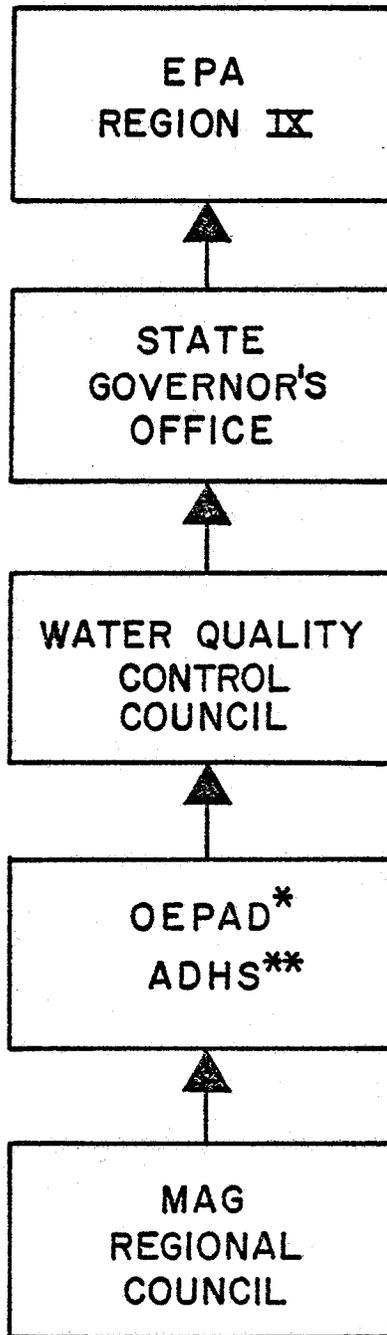
8.0 PLAN ADOPTION

8.0 PLAN ADOPTION

8.1 Scope and Content.

This element of the work plan has been designed to meet the requirements for plan submittal, review, and certification. Local endorsement of the MAG 208 plan is represented by MAG Regional Council's certification. Compliance with State technical regulations and standards will be reviewed by the Arizona Department of Health Services (ADHS). Compliance with the State Water Quality Plan will be evaluated by the State Office of Economic Planning and Development and ADHS. The final State approval will be given by the Governor's Office. EPA approval will finalize MAG 208 plan certification.

8.2 208 PLAN ADOPTION



*OFFICE OF ECONOMIC PLANNING AND DEVELOPMENT

**ARIZONA DEPARTMENT OF HEALTH SAFETY

8.3 PLAN ADOPTION TASK IDENTIFICATION

- 8310: Submit Final 208 Plan to MAG Regional Council
- 8320: Submit Final 208 Plan to State Offices (OEPAD, ADHS, and Governor's Office) for Adoption.
- 8330: Submit Final 208 Plan to EPA Region IX for Adoption.

Task 8310: Submit Final 208 Plan to MAG Regional Council.

Purpose: To receive local support and adoption of the MAG 208 plan.

Subtasks: 1) Prepare and present the MAG 208 plan to Regional Council with endorsements from participants for adoption.

Relationship with Other Program Activities:

Adoption of the MAG 208 plan by the Regional Council is a prerequisite to 208 plan implementation.

Products: Statement of adoption of the MAG 208 plan by the MAG Regional Council.

Completion Date: 25 August 1978

<u>Manpower:</u>	EPA Funds	\$ 2,000
	Corps Funds	5,000
	MAG Services	<u>14,000</u>
	Total	21,000

Task 8320: Submit Final 208 Plan to State Office (OEPAD, ADHS, and Governor's Office) for Adoption.

Purpose: To receive State support and adoption of the final MAG 208 plan.

- Subtasks:
- 1) Submit the final MAG 208 plan to OEPAD and ADHS for review and adoption.
 - 2) Submit the final MAG 208 plan to the Water Quality Control Council for their review and formal adoption.
 - 3) The WQCC endorses the approved plan to the Governor for his certification.

Relationship with Other Program Activities:

Adoption of the final MAG 208 plan by the State Governor's Office is a prerequisite to 208 plan implementation.

Products: Statement of adoption of the final MAG 208 plan from the Governor's Office.

Completion Date: 1 November 1978

<u>Manpower:</u>	EPA Funds	\$ 3,000
	Corps Funds	5,000
	MAG Services	<u>5,000</u>
	Total	\$13,000

Task 8330: Submit Final 208 Plan to EPA Region IX for Adoption.

Purpose: To receive EPA support and adoption for the final MAG 208 plan.

Subtask: 1) The Governor endorses the final State 208 plan to EPA Region IX office along with letters of adoption from the Regional Councils for EPA's approval.

Relationship With Other Program Activities:

Adoption of the final MAG 208 plan by the Environmental Protection Agency is a prerequisite to 208 plan implementation.

Products: Statement of certification of the MAG 208 plan from the Environmental Protection Agency.

Completion Date: 1 December 1978

Manpower: N/A

9.0 STATE RESPONSIBILITIES

9.0 STATE RESPONSIBILITIES

9.1 Scope and Content

The State's role in the 208 planning process falls into four areas: 1) management responsibilities, 2) technical assistance, 3) coordination, and 4) review and certification. In order to satisfy the requirements of 40CFR, Parts 130 and 131 and following EPA Guidelines as set forth in the EPA Program Guidance Memo SAM-10, the following scope of work is proposed with the objective of fostering State and local coordination in the 208 planning process.

The State responsibilities will fall primarily to the following two agencies: OEPAD (Office of Economic Planning and Development) and ADHS (Arizona Department of Health Services). OEPAD's efforts will be funded in part through MAG using EPA 208 funds with the required 25% State match through provision of State in-kind services. ADHS's efforts will be funded entirely using EPA 106 grant funds. The following task descriptions include subtasks and products. The State agency (either OEPAD or ADHS) with the primary responsibility for completing the subtask or preparing the product is shown. In some cases both agencies have major responsibilities and therefore both are shown.

Additionally, many of the tasks required of the State by MAG are also needed by the other five 208 studies within Arizona. Therefore, information generated by the State can be shared by all studies and resources needed by the State can be provided from all studies. The following manpower figures show only MAG's contribution to that effort.

9.2 State Responsibilities Task Identification

- 9210: Identify and Implement the State Program Management Responsibilities Associated With the MAG 208 Program.
- 9220: Identify and Implement the State Technical Assistance Responsibilities Associated with the MAG 208 Program.
- 9230: Identify and Implement the State Coordinative Responsibilities Associated with the MAG 208 Program.
- 9240: Identify and Implement the State Review and Certification Responsibilities Associated with the MAG 208 Program.

Task 9210:

Identify and Implement the State Program Management Responsibilities Associated with the MAG 208 Program.

Purpose:

To ensure that the alternative water quality management strategies developed for the MAG 208 area are compatible to the more comprehensive State Water Quality Management Plan.

Subtasks:

- 1) Establish State water quality goals and objectives (OEPAD & ADHS). (106 should fund)
- 2) Inventory and summarize existing water quality management programs at all levels of government. (OEPAD)
- 3) Analyze water quality management programs at all levels of government (i.e., Federal, State, and local) (OEPAD)
- 4) Provide water quality program policy guidance (OEPAD)
- 5) Provide uniform guidelines and regulations to areawide and State water quality planning programs concerning project management, technical assistance, coordination procedures. (OEPAD)
- 6) Develop strategies for implementation as a part of the planning process. (OEPAD)
- 7) Keep the governor and legislature informed of overall water quality program needs. (OEPAD) (OEPAD FUNDS)

Relationship with Other Program Activities:

Other MAG 208 program outputs will be prerequisites to suggested State implementation through State management and legislative efforts. Clear program guidance at the State level will facilitate all 208 program elements.

Products:

- 1) "State Water Quality Goals and Objectives" report. (OEPAD)
- 2) "Existing State and Federal Water Quality Management Programs" report. (OEPAD)
- 3) "Analysis of Existing Water Quality Management Programs" report (OEPAD)
- 4) "Uniform Guidelines and Regulations for Areawide and State Water Quality Planning" report. (OEPAD)
- 5) "208 State Implementation Strategies" report. (OEPAD)
- 6) Lobbying for legislative needs of 208 planning and implementation. (OEPAD)

Completion Date:

Water Quality Goals and Objectives - 1 December 1976
Existing Water Quality Management Programs - 1 January 1977
Analysis of Existing Programs - 1 February 1977
Uniform Guidelines - 1 March 1977
208 Implementation Strategies - 1 April 1977
Lobbying for 208 Legislation - Continuous

Manpower: EPA Funds (OEPAD) \$22,000
State Services (OEPAD) 7,000
Total (OEPAD) \$29,000

EPA Funds 106 Grant (ADHS)

Task 9220:

Identify and Implement the State Technical Assistance Responsibilities Associated with the MAG 208 Program.

Purpose:

To identify the Technical review and assistance necessary to the MAG 208 program from the State level.

Subtasks:

- 1) Establish and revise water quality standards (ADHS) (106)
- 2) Serve as a clearinghouse for information and specialized technical assistance to the MAG 208 agency and other MAG area delegated water quality planning agencies. (OEPAD) (A-95)
- 3) Provide review to areawide water quality planning agencies for terms and conditions of NPDES permits (ADHS) (106)
- 4) Provide assistance to present areawide water quality management agencies in the areas of facilities planning, and development of construction priorities, needs, assessments, etc. (ADHS) (106)
- 5) Provide leadership role in non-point source water quality planning, specifically with extractive industries and agriculture. (OEPAD)
- 6) Provide a background analysis of State legislation and institutions relevant to the 208 program. (OEPAD)
- 7) Provide leadership with the revision of State and local statutes to allow water quality management. (OEPAD)

(Can add \$ here)

Relationship with Other Program Activities:

Provides necessary background information on State statutes and standards, State agency review, and

Products:

- 1) Revised Water Quality Standards. (ADHS)
- 2) State A-95 review. (OEPAD)
- 3) NPDES Permit Review. (ADHS)
- 4) 201 Program Management. (ADHS)
- 5) Background Analysis of State Legislation. (OEPAD)
- 6) Revise State and local Statutes. (OEPAD and ADHS)

Completion Date:

- 1) Revise Standards - continuous
- 2) State A-95 review - continuous
- 3) NPDES Permit Review - continuous
- 4) 201 Program Management - continuous
- 5) Legislative Background Analysis - 1 May 1977
- 6) Revised State and Local Statutes - continuous

Manpower:

EPA Funds (OEPAD)	\$12,000
State Services (OEPAD)	<u>4,000</u>
Total (OEPAD)	\$16,000

EPA 106 Grant Funds (ADHS)

Task 9230:

Identify and Implement the State Coordinative Responsibilities Associated with the MAG 208 Program.

Purpose:

To clearly define and ensure implementation of State participation in coordinating water quality management programs at the Federal, State and multi-regional level with the MAG 208 program.

Subtasks:

- 1) Provide for the coordination of water quality and related programs (air quality, solid waste, economic planning and development) (OEPAD and ADHS)
- 2) Provide coordination with key Federal and State agencies, especially Federal and State Land Managers such as water resources, mining, land use, transportation, and State planning. (OEPAD).
- 3) Maintain liaison with designated areawide planning agencies. (OEPAD)
- 4) Provide opportunities for quarterly meetings of designated areawide planning agencies to facilitate coordination. (OEPAD)
- 5) Interrelate the MAG 208 program recommendations and outputs with other adopted State environmental laws including air, solid waste, water supply, and groundwater. (OEPAD and ADHS)

Relationship With Other Program Activities:

The State's coordinative function will impact on all work plan elements to ensure consistency with all Federal, State and local water quality management plans, and to specifically ensure a close interrelationship between the MAG 208 planning process and contiguous areawide 208 agencies, State Air Quality Maintenance Planning, and 201 Facilities Planning. This task will be closely integrated with Tasks 3210, 3220, 3230, and 3240.

Products: Recommendations to the Arizona State Legislature concerning water quality planning and present environmental law. (OEPAD)

Completion Date: Continuous

<u>Manpower:</u>	EPA Funds (OEPAD)	\$ 9,000
	State Services (OEPAD)	<u>3,000</u>
	Total (OEPAD)	\$12,000

EPA 106 Grant Funds (ADHS)

Task 9240: Identify and Implement State Review and Certification Responsibilities Associated with the MAG 208 Program.

Purpose: To achieve review certification of the MAG 208 plan by OEPAD (Office of Economic Planning and Development), ADHS (Arizona Department of Health Services), and the Governor's Office.

Subtasks:

- 1) Review and evaluate interim outputs and progress reports of all water quality planning activities (OEPAD and ADHS)
- 2) Periodically report to the Governor and Legislature on progress of Water Quality Planning (OEPAD)
- 3) Certify final plan. (OEPAD and ADHS)

Relationship with Other Program Activities:

Task 9240 is a prerequisite to MAG 208 plan implementation.

Products:

Review and comments on Interim Products (ADHS and OEPAD)

Reports to Governor and Legislature (OEPAD)

Final Plan Certification (ADHS and OEPAD)

Completion Dates:

Interim Product Review - continuous

Reports to Governor and Legislature - continuous

Final Plan Certification - 1 October 1978

Manpower:

EPA Funds (OEPAD)	\$ 6,000
State Services (OEPAD)	<u>2,000</u>
Total (OEPAD)	\$ 8,000

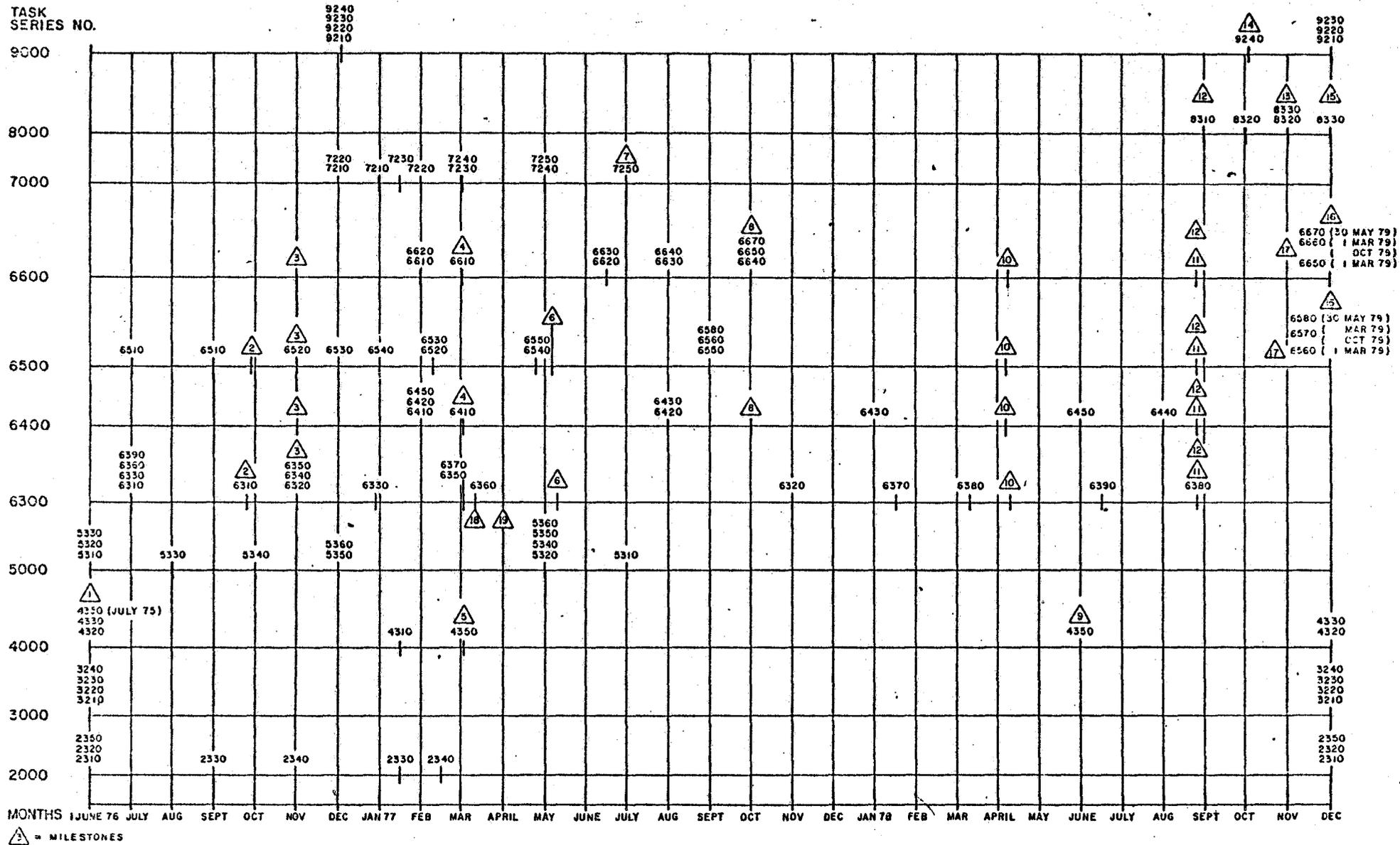
EPA 106 Grant Funds (ADHS)

10.0 MILESTONES

10.0 MILESTONES

1. 1st Public Meeting (July, 1975)
2. Approval of Point and Non-point Source Work Plan-Metro Area (25 September 1976)
3. Approval of 208 Work Plan (1 November 1976)
4. Approval of Point and Non-point Source Work Plan - Non-metro Area (1 March 1977)
5. 2nd Public Meeting (March 1977)
6. Selection of Small Array - Metro Area (10 March 1977)
7. Complete Water Supply and Demand Study (1 July 1977)
8. Selection of Small Array - Non-metro Area (1 October 1977)
9. Final Public Meeting (June 1978)
10. Selection of Final Plan by MAG Regional Council (10 April 1978)
11. Complete Final Plan (25 April 1978)
12. Adoption of Final Plan by MAG Regional Council (25 August 1978)
13. Adoption of Final Plan by State (25 September 1978)
14. Submit Final Plan to EPA (1 November 1978)
15. Adoption of Final Plan by EPA (1 December 1978)
16. Complete Non-point Source Testing and Sampling Program (1 March 1979)
17. Propose Non-point Source Control Measures (1 October 1979)
18. Final brochure on Large Array of Point Source Control Alternatives Metro Study.
19. Final brochure on Small Array of Point Source Control Alternatives Metro Study.

10.2 MAG 208 TASK SERIES TIME LINE



APPENDIX

MAG AND CORPS CITIZEN COMMITTEES
ASSOCIATED WITH MAG 208 PROGRAM



75-10-0181

MARICOPA ASSOCIATION OF GOVERNMENTS

1820 WEST WASHINGTON PHOENIX, ARIZONA 85007 (602) 254-6308

September 15, 1976

TO: Interested Government Agencies, Public Groups and Concerned Parties

In accordance with the Maricopa Association of Governments (MAG) and the Environmental Protection Agency's procedures and in compliance with A-95 Clearinghouse regulations, this is a statement of notice that MAG is amending its application and work plan for its Areawide Waste Treatment Management Plan. This plan is to be prepared according to the regulations and grant requirements of Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500).

Project Summary

MAG submitted a grant request and proposed work plan to EPA in April, 1975, for a 100 percent grant of \$500,000. EPA has requested MAG to amend this plan to request funding of \$614,982 and to provide for 25 percent local match.

MAG is requesting a grant from EPA to encourage and facilitate the development and implementation of improved areawide waste treatment management programs for Maricopa County. MAG has requested the U.S. Army Corps of Engineers to provide a broad range of water resource-related technical assistance services for the Phoenix Urban Study Area (Plate 1). These services include engineering and management studies for flood control, wastewater, flood water conservation, water-related recreation and fish and wildlife.

MAG will provide the overall program management, the technical studies for the remainder of the County, and alternative development. The decision to adopt or implement specific alternatives or proposals generated by this planning process is the responsibility of the MAG Regional Council and those local general purpose governments with waste treatment management program implementation responsibilities.

Action

The preparation of an areawide waste treatment management plan for Maricopa County, as part of MAG's ongoing regional planning process.

Interested Government Agencies, Public Groups and Concerned Parties
September 15, 1976

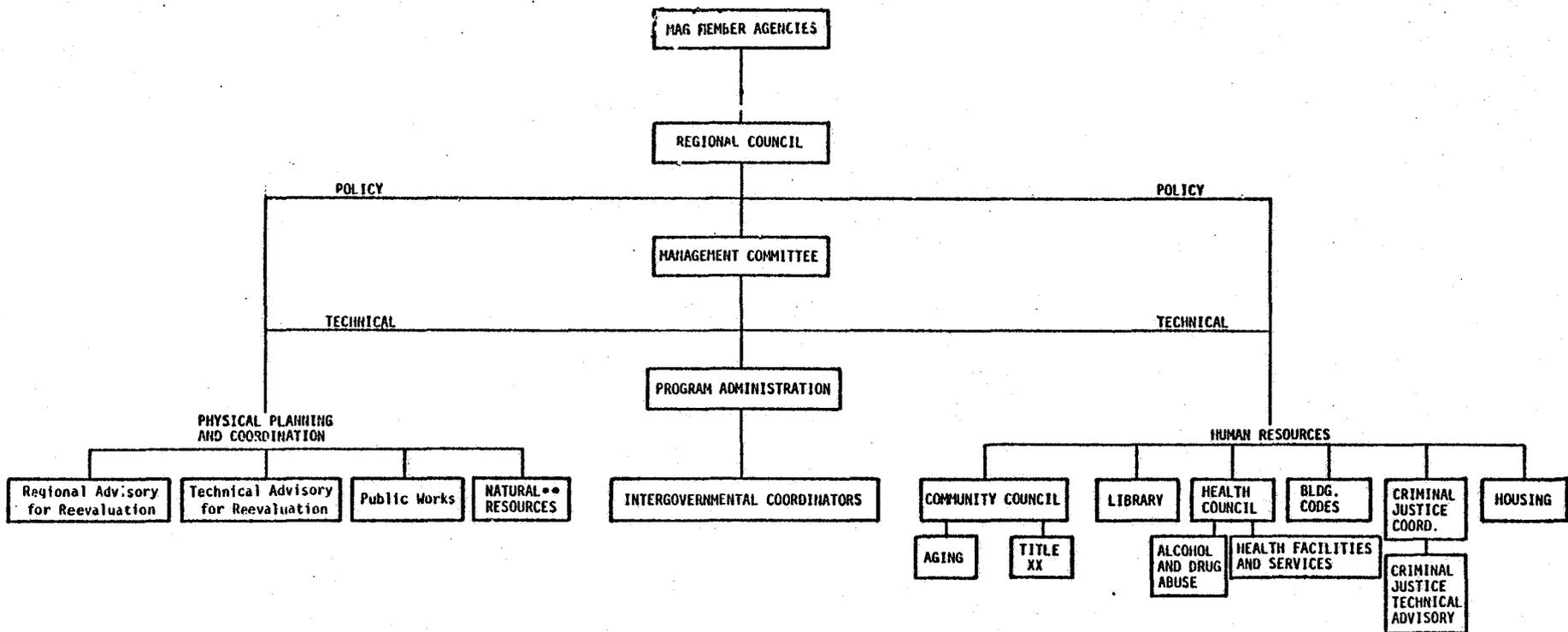
Funding

MAG originally submitted a grant request and work plan to EPA in April, 1975. This grant request was for \$500,000, to be funded under Section 208 of the Federal Water Pollution Control Act Amendments of 1972, at 100 percent Federal funds. EPA has requested MAG to amend their work plan and increase the grant request to a total of \$819,976. The Federal share would be \$614,982 or 75 percent of program costs. The MAG costs will be split between member agencies and the State of Arizona.

Additional Information

If you desire additional information concerning the amendments to MAG's program, please contact either Mr. David Miller at 262-3403 or Mr. G. Kenneth Driggs at 254-6308.

FIGURE 1
 MARICOPA ASSOCIATION OF GOVERNMENTS
 COMMITTEE STRUCTURE
 July 1, 1976



•• Serviced by the Hohokam Resource and Conservation Development Project

PUBLIC WORKS COMMITTEE

2/6/76

Mr. W. G. Hamner
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Mr. Bruce Knutson
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Federal Aid Coordinator
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Mr. Dean Sloan
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Mr. Charles Atkinson
Public Works Director
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Paradise Valley, Arizona 85253

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TRANSPORTATION AND LAND USE TECHNICAL ADVISORY COMMITTEE

2/6/76

<p>City Manager P.O. Box 38 Peoria, Arizona 85345</p>	<p>Mr. Robert Strander Assistant Town Manager Box 157 Buckeye, Arizona 85326</p>	<p>Mr. Ed Gussio City Planner 200 East Commonwealth Chandler, Arizona 85224</p>
<p>Mr. Brandt Daley Planning Director Box 837 Gilbert, Arizona 85234</p>	<p>Mr. Paul Walker Planning Director Box 1556 Glendale, Arizona 85311</p>	<p>Mr. Howard Godfrey Planning Director Box 1466 Mesa, Arizona 85201</p>
<p>Mr. Arnold Herring Public Works Department Box 1466 Mesa, Arizona 85201</p>	<p>Mr. Charles Atkinson City Engineer Lincoln at Invergordon Paradise Valley, Arizona 85253</p>	<p>Mr. Jim Attebery City Engineer 251 West Washington, Room 700 Phoenix, Arizona 85003</p>
<p>Mr. John Beatty Planning Director 251 West Washington, Room 601 Phoenix, Arizona 85003</p>	<p>Mr. Ed Hall Community Development and Transportation 251 West Washington, Room 901 Phoenix, Arizona 85003</p>	<p>Mr. Tim Bray Community Development 3939 Civic Center Plaza Scottsdale, Arizona 85251</p>
<p>Mr. Ross Smith Community Development 3939 Civic Center Plaza Scottsdale, Arizona 85251</p>	<p>Mr. Dan Raby City Engineer 3939 Civic Center Plaza Scottsdale, Arizona 85251</p>	<p>Mr. Don Hull Planning Director Box 5002 Tempe, Arizona 85281</p>
<p>Mr. Grover Serenbetz Public Works Director Box 5002 Tempe, Arizona 85281</p>	<p>Mr. Robert Esterbrooks County Engineer 3325 West Durango Phoenix, Arizona 85009</p>	<p>Mr. Don Hutton Planning Director 111 South 3rd Avenue, Rm. 300 Phoenix, Arizona 85003</p>
<p>Mr. Joseph Weinstein Health Services 1825 East Roosevelt Phoenix, Arizona 85006</p>	<p>Mr. John Bivens Department of Transportation 206 South 17th Avenue Phoenix, Arizona 85007</p>	<p>Mr. Sam Morse State Land Department State Capitol Building Phoenix, Arizona 85007</p>
<p>Mr. Harry Higgins OEPAD 1645 West Jefferson Phoenix, Arizona 85007</p>	<p>Mr. Norm Arthur Federal Highway Administration 3500 North Central Phoenix, Arizona 85012</p>	<p>Mr. Will Worthington Corps of Engineers 2721 North Central Avenue Phoenix, Arizona 85012</p>
<p>Mr. Harold Goodman Director of Eng. & Development Box 1556 Glendale, Arizona 85311</p>	<p>Mr. Ed Colby Transit Administrator 251 West Washington Phoenix, Arizona 85003</p>	<p>Mr. Charles Haley Traffic Engineer 251 West Washington, Room 800 Phoenix, Arizona 85003</p>
<p>Mr. William Ralston Airport Director 3500 Sky Harbor Boulevard Phoenix, Arizona</p>	<p>Mr. Ken Fooks HoHoKam RC & D 596 West Dublin Chandler, Arizona 85224</p>	<p>Mr. Peter Starrett Special Assistant to Manager 251 West Washington Phoenix, Arizona 85003</p>

REGIONAL COUNCIL

2/6/76

The Honorable Dessie Lorenz
Mayor of Avondale
749 South 4th Street
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The Honorable Everette Vanskike
Mayor of Buckeye
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The Honorable Kenneth Thomas
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The Honorable Margarita Reese
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The Honorable Will Williams
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The Honorable Dale Hallock
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The Honorable Sterling Ridge
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The Honorable Charles Salem
Mayor of Goodyear
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The Honorable Frank Valencia
Mayor of Guadalupe
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Guadalupe, Arizona 85283

The Honorable Wayne C. Pomeroy
Mayor of Mesa
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The Honorable J. Duncan Brock
Vice-Mayor
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Paradise Valley, Arizona 85253

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Vice-Mayor
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Tolleson, Arizona 85353

The Honorable Curt Arnett
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Arizona Republic
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The Honorable Henry H. Haws
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MAG MANAGEMENT COMMITTEE

2/5/76

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