# 1. INTRODUCTION

## 1.1. BACKGROUND

### 1.1.1. Clean Water Act Section 208

The Clean Water Act began as the Federal Water Pollution Control Act of 1948. Growing concern over water pollution led to major amendments in 1972. With additional amendments in 1977, the law became commonly known as the Clean Water Act. The objective of the Clean Water Act is to restore and maintain the biological, chemical and physical integrity of the nation's waters.

Section 208 of the 1972 Amendments required the governor of each state to identify areas having water quality control problems, delineate the boundaries of these areas, and designate for each area "a single representative organization, including elected officials from local governments or their designees, capable of developing effective areawide waste treatment management plans." The law required each organization designated by the governor to develop a plan for areawide waste treatment management. The "single representative organization" designated by the governor to develop a plan for its respective area is commonly referred to as the "Designated Planning Agency" or "DPA". The plan itself is known as the "Certified Areawide Water Quality Management Plan" or "208 Plan". These terms are defined in Arizona rule under R18-5-301.

In 1974, Governor Jack Williams designated the Pima Association of Governments (PAG) as the DPA for Pima County. This followed Executive Order 70-2, which divided the State of Arizona into six planning districts, with one of the six being Pima County (Figure 1-1). PAG applied for a grant to develop the 208 Plan in 1975. PAG's 208 Plan was approved in 1978. This report is the first region-wide, comprehensive update to that plan.

The Clean Water Act and 40CFR130.6(c) (see Appendix A) specify what must be included in 208 Plans. Among other requirements, the plans must identify the "management agencies necessary to carry out the plan", and they must identify the anticipated municipal and industrial waste treatment works. The "management agencies necessary to carry out the plan" are commonly referred to as "Designated Management Agencies" or "DMAs". This term is defined in Arizona rule under R18-5-301.

### 1.1.2. History of sewer service and management agency designations in Pima County

The first public sanitary sewers in Pima County were installed in Tucson in 1900, and the first wastewater treatment facility (WWTF) was constructed in 1928. Prior to construction of the treatment facility, wastewater was used directly for farm irrigation. In 1951 Phase 1 of the City of Tucson's Roger Road WWTF began operation, and in 1961 the Pima County Sanitary District #1 installed the first wastewater treatment lagoon at the Ina Road site. This sanitary district was dissolved in 1968 and replaced with the Pima County Department of Sanitation, which was later renamed the Pima County Wastewater Management Department in 1978 (Schladweiler, 2000).

In 1974 the City of Tucson and Pima County created, through an intergovernmental agreement, the Metropolitan Utilities Management Agency. The City and County created this agency to operate water and sewerage systems within the Tucson city limits and the unincorporated areas

of Pima County (PAG, 1975). However, the City of Tucson and Pima County continued to operate their respective sewerage systems. The joint agency was dissolved in 1976 (Schladweiler, 2000).

Also in 1974, Governor Jack Williams designated PAG as the DPA for Pima County. The PAG 208 Plan was completed in1978, and it identified both Pima County and the City of Tucson as Designated Management Agencies responsible for sewerage facilities. However, the EPA preferred a single management agency (Schladweiler, 2000), and the 1978 PAG 208 Plan recommended consolidation of sewage treatment programs in the metropolitan area (PAG, 1978).

In 1979, the ownership and all responsibilities for the construction, operation, and maintenance of the City of Tucson's sewerage systems were transferred to Pima County. In recognition of the pending consolidation of facilities, the PAG Regional Council passed resolution 78-12-07 in December 1978 requesting that the Governor designate Pima County as the single 208 Management Agency (DMA) for municipal wastewater treatment and sewer system operations (see Appendix B). This designation is noted in a 1980 amendment to the 1978 PAG 208 Plan.

The 1979 intergovernmental agreement transferring the sewerage system stipulated that the City would own and have unilateral control over the use and disposition of effluent discharged from metropolitan treatment facilities. The IGA stated that the County was entitled to up to ten percent of the effluent for use on County parks, golf courses and recreational facilities. A supplemental IGA was negotiated in 2000. It addressed control of effluent from non-metropolitan facilities, access by other water providers to effluent derived from their water supplies, and establishment of a conservation pool of up to 10,000 AF per year for use of effluent in habitat conservation plans or other approved projects.

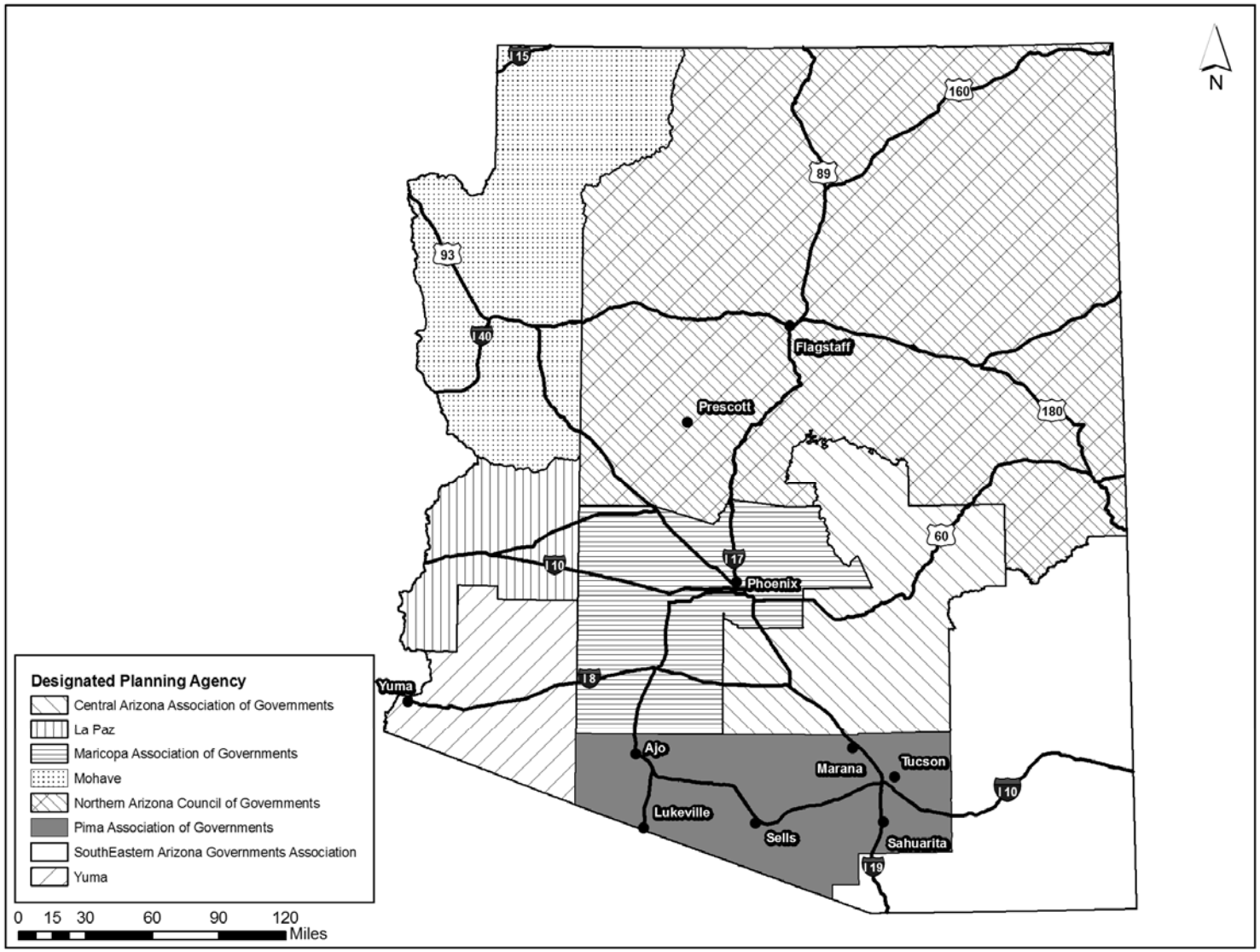
Pima County remained the sole DMA in the PAG planning area until March 1999, when the PAG Regional Council approved a 208 Plan Amendment designating the Town of Sahuarita as a management agency. The area designated for the new Sahuarita DMA encompassed the incorporated Town of Sahuarita limits excluding areas already served by Pima County. No additional DMAs have been proposed.

### 1.1.3. The need to update the PAG 208 Plan

According to federal regulations (40CFR130.6e), 208 Plans must be updated "as needed" (see Appendix A). The PAG 208 Plan has not had a comprehensive, region-wide update since it was first adopted in 1978. Although PAG has amended the 208 Plan at various times to address unforeseen changes at the sub-regional scale, enough changes have occurred at the local, state and national level to warrant an update to the plan as a whole.

At the local level, the population and the geographic extent of the metropolitan area have changed dramatically. At the time PAG submitted the grant application for developing the original 208 Plan, Pima County's population was estimated at 435,000, and PAG's membership included only Tucson, Pima County and South Tucson (PAG, 1975). Today, PAG's membership includes Tucson, Pima County, South Tucson, Oro Valley, Marana, Sahuarita, the Tohono O'odham Nation, and the Pascua Yaqui Tribe. The 2000 Census showed a Pima County population of more than 840,000. Recent growth rates in suburban communities, as percent change in population between 1990 and 2000, are particularly noteworthy: 519.8% for Marana; 345.3% for Oro Valley; and 99.0% for Sahuarita, which incorporated in 1994. Pima County as a whole grew at a rate of 26.5% between 1990 and 2000 (PAG, 2003).

Figure 1-1. Designated Planning Agencies in Arizona



Pima County is not the only part of Arizona experiencing rapid growth. In fact, the growth rate statewide between 1990 and 2000 was 39.9% (PAG, 2003). In order to better manage the state's growth, "Growing Smarter" legislation was passed by the state legislature and signed by the governor in 1998 and 2000. The Growing Smarter legislation required several new general plan and comprehensive plan elements for cities, towns and counties. This prompted the local governments in Pima County to update their land use plans in the early 2000's. PAG staff helped Pima County develop the water quality element of its new Comprehensive Plan prepared under Growing Smarter. At that time, PAG staff recommended that the 208 Plan be updated as well, in order to ensure consistency between the two plans.

In Pima County, rapid urbanization has prompted the formulation of the Sonoran Desert Conservation Plan (SDCP). The listing of the cactus ferruginous pygmy-owl as an endangered species initially triggered the SDCP proposal, but a key part of the SDCP will be a multi-species habitat conservation plan addressing habitat protection for a number of species of concern. The SDCP is also intended to preserve archaeological and historical sites, as well as local ranching and recreation. The City of Tucson and the Town of Marana are also developing multi-species habitat conservation plans.

Additional changes at the local level include the designation of the Town of Sahuarita as a DMA in 1999, negotiation of a supplemental IGA between the City of Tucson and Pima County in 2000 regarding treated wastewater effluent, additional IGAs between the City of Tucson, Metro Water District and Oro Valley, and passage of the Southern Arizona Water Rights Settlement Act. Also, several wastewater treatment facilities have been constructed since the original 208 Plan was adopted, a number of existing facilities have expanded, and some facilities have closed.

A number of key changes have occurred in state government since the original 208 Plan was adopted. Foremost among these was the creation of the Arizona Department of Environmental Quality (ADEQ) by passage of the Environmental Quality Act in 1986 (ARS §49-102). Whereas the original 1978 PAG 208 Plan identified the Arizona Department of Health Services – Bureau of Water Quality Control as the state water pollution control agency, the Environmental Quality Act established ADEQ as the agency responsible for all the major federal water quality legislation. The Act also established the Aquifer Protection Permit (APP) program to protect the quality of the state's aquifers. All discharging facilities (including wastewater treatment facilities) must now obtain APPs. Arizona obtained primacy for the National Pollution Discharge Elimination System (NPDES) in 2002. With state primacy, ADEQ now issues "AzPDES" permits as well as APPs. ADEQ also regulates the reuse of treated effluent and enforces reclaimed water standards.

Another change at the state level was passage of the Arizona Groundwater Management Act (GMA) in 1980. The purpose of the GMA is to address the issue of groundwater overdrafting in several critical areas of the state. The GMA requires the Arizona Department of Water Resources (ADWR) to administer safe-yield and 100-year assured water supply requirements in Arizona. The GMA also established the active management areas (AMA), one of which is Tucson. The AMAs are areas in the State that have severe groundwater overdraft problems. The safe-yield goal and assured water supply requirements have led to increased emphasis on the efficient reuse of wastewater. The GMA is incorporated in Arizona Revised Statute Title 45.

At the federal level, changes related to the Clean Water Act have also occurred since 1978. One change is the level of funding available for 208 Planning and 208 Plan implementation. In the 1970s and early 1980s, funding authorized by Section 208 of the Act for developing and

operating the 208 Plans was approximately $100,000,000 per year. Today, federal funding for 208 Planning in Arizona is primarily through section 604(b) grants, which in Arizona are limited to a total of $100,000 for the entire state (EPA, 2003). By comparison, the amount of the grant requested by PAG to develop the 208 Plan in 1975 was $1,260,403 (PAG, 1975). Other changes include replacement of the construction grants program with the Clean Water State Revolving Fund, a shift in focus to watershed-based strategies, increased emphasis on Total Maximum Daily Loads (TMDLs), and increased focus on non-point sources of pollution such as municipal stormwater runoff.

### 1.1.4. Use of the 208 Plan

208 Plans are used to direct implementation. The plans identify priority point and nonpoint water quality problems, consider alternative solutions, and recommend control measures. Control measures can include financial and institutional measures necessary for implementing recommended solutions. State annual work programs are based on the priority issues identified in the State Water Quality Management Plan (40CFR 130.6b – see Appendix A).

208 Plans identify anticipated municipal and industrial wastewater treatment facilities. Federal regulations preclude the issuance of NPDES permits to facilities that are not consistent with the applicable 208 Plan (§208{e}; 40CFR130.6{f} – see Appendix A). State regulations preclude construction of sewage treatment facilities that are not consistent with the applicable 208 Plan (R18-5-303), or issuance of an APP to sewage treatment facilities that are not consistent with the 208 Plan (R18-9-A201B). An up-to-date 208 Plan is necessary to ensure efficient permitting decisions with regard to determining 208 consistency.

A key benefit of 208 Planning is that waste treatment occurs in an efficient manner and is planned on a regional basis. Lack of regional planning (or lack of implementation of an approved regional plan) could lead to a proliferation of small, privately operated sewage treatment facilities that are built for individual subdivisions and other residential, commercial and industrial developments. Such an approach would result in water quality management being the responsibility of numerous entities with varying levels of experience with local conditions. A proliferation of unplanned sewage treatment plants could lead to difficulties in sewering adjacent privately-owned properties, particularly if adjacent, upgradient areas become land-locked. Concerns about potential impacts to water quality, long-term reliability of small plants, additional strain on resources available for inspection and enforcement, and competition for federal funds, all lend support to proper planning for wastewater treatment. In addition, should a waterbody be identified as impaired, a proliferation of discharges by numerous entities to that waterbody would likely complicate efforts to improve the water quality and prepare a TMDL. 208 Planning helps to avoid these situations, promotes benefits from economies of scale, provides a means for the general public to be involved in regional environmental decision-making, and helps avoid conflicts among neighboring jurisdictions.

## 1.2. Required Elements in an Areawide Water Quality Management Plan

### 1.2.1. Federal requirements (40 CFR 130.6 – see Appendix A)

Federal regulations state that the following elements must be included in the 208 Plan or referenced as part of the Plan if they are contained in separate documents:

- Total maximum daily loads
- Effluent limitations
- Identification of anticipated municipal and industrial waste treatment works

- Nonpoint source management and control
- Identification of agencies necessary to carry out the plan
- Identification of implementation measures necessary to carry out the plan
- Identification and development of programs for the control of dredge or fill material
- Identification of any relationship to applicable basin plans developed under section 209 of the Act.
- Identification and development of programs for control of ground-water pollution including the provisions of section 208(b)(2)(K) of the Act.

The complete text of the relevant regulations is included in Appendix A.

### 1.2.2. State requirements (Arizona Continuing Planning Process, April 1993)

The most recent document describing Arizona's Continuing Planning Process (ADEQ, 1993) includes a checklist for 208 Plan Amendment content requirements. The state requirements generally mirror the federal requirements. A copy of the ADEQ checklist is included as Appendix C.

## 1.3. PURPOSE AND SCOPE OF THIS UPDATE

The purpose of this update to the PAG 208 Areawide Water Quality Management Plan is to provide a comprehensive guide to the PAG planning area and provide a format for implementing waste management responsibilities in the PAG portion of the Santa Cruz River and San Pedro River watersheds. This update addresses issues that have emerged since approval of the original PAG 208 Plan in 1978, and it incorporates the individual plan amendments approved since 1978. The goal of this updated document is to provide the foundation for a common, consistent basis for rational decision making and to provide consistency for water and sewer planning activities

The primary scope of this update is the required 208 Plan elements identified in 40CFR §130.6(c)(3) and 40CFR §130.6(c)(5) (see Appendix A), which address municipal and industrial waste treatment and management agency designations. This report thus focuses on existing and planned point source discharges from waste treatment facilities, the projected discharge volumes, the discharge locations, and the management agencies responsible for these facilities and their service areas. Also addressed are any significant changes in anticipated future needs for new facilities or for expansions of existing facilities. The projections for future facilities and expansions of existing facilities are based on a parallel 201 Facilities Planning effort undertaken by Pima County Wastewater Management Department (WWM).

In addition, a key use of this report is to consolidate the various individual amendments and updates that have been made to the original 1978 208 Plan into one readily accessible document. Clarification of policies and updated information on environmental regulations and regulatory agencies are also included. Of particular importance is clarification of policies regarding issuance of discharge permits pursuant to state (R18-9-B201H) and federal (40CFR 130.6f – see Appendix A) regulations requiring permitting decisions to be made in accordance with 208 Plans. AzPDES permits and APPs cannot be issued to facilities that are not consistent with the applicable 208 Plan.

An important goal of this report is to make determination of 208 consistency easier. It is currently a challenge to determine 208 consistency for a particular proposed permit or facility in the PAG region, because the PAG 208 Plan consists of numerous documents, including the

original 1978 Plan, various amendments and minor updates, and incorporation by reference of several 201 Facility Plan updates and other documents. Many of these documents are very old, with limited copies available for public review and use by PAG and ADEQ staff. Very few are available electronically. The intent is for future 208 consistency determinations to be made using this document alone.

Additional goals are to integrate the 208 Plan with other water quality planning programs, and to integrate water quality and resource planning with land use and infrastructure planning. This update to the 208 Plan also explores ways to encourage regional wastewater treatment and conveyance as a preferred alternative to on-site systems, and establishes regionally agreed upon policies for protecting high priority surface waters in Pima County.

In addition, although this update to the 208 Plan focuses on point source discharges, it also addresses urban stormwater runoff and establishes appropriate regional policies for managing stormwater and issuing municipal stormwater NPDES permits. This update also addresses disposal of residual waste (i.e., landfills, sludge disposal, and recycling). Beyond these, however, nonpoint source management and control is generally outside the scope of this update. The other elements of nonpoint source management and control are currently addressed by the existing PAG 208 Plan and the State of Arizona's nonpoint source program, and they could be the focus of a future update to the PAG 208 Plan should the need arise.

Finally, development of new Total Maximum Daily Loads (40CFR 130.6{c}{1} – see Appendix A), effluent limitations (40CFR 130.6{c}{2} – see Appendix A), and dredge and fill programs (40CFR 130.6{c}{7} – see Appendix A), beyond any that have already been approved by the State of Arizona and/or U.S. EPA, are specifically outside the scope of this update. These elements could be the focus of future updates to the PAG 208 Plan if necessary.

In summary, the specific objectives of this update to the PAG 208 Plan are:

1) to consolidate the original 1978 208 Plan, and the various individual amendments and updates to the original 208 Plan, into one readily accessible document, particularly with regard to identification of point sources and policies regarding municipal and industrial waste treatment facilities;
2) to provide an updated description of the PAG planning area, particularly the quality of all major water sources, the regulatory agencies and programs that protect water quality, and areas with water quality problems;
3) to clearly identify existing and planned point source discharges from waste treatment facilities, the projected discharge volumes, and the discharge locations;
4) to clearly identify the Designated Management Agencies for waste treatment facilities and their service areas;
5) to describe plans for disposal of residual waste; and
6) to clearly and concisely describe regional policies regarding:
    - issuance of permits and determination of 208 consistency;
    - integration of 208 planning with other water quality planning, land use planning, and infrastructure planning programs;
    - use of regional wastewater treatment infrastructure vs. on-site treatment and disposal systems;
    - stormwater runoff management; and
    - protection of the highest priority surface waters in Pima County.