

Flood Control District of Maricopa County

***Five Year Capital Improvement Program***

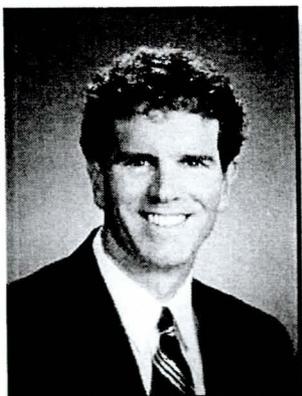
for Fiscal Years 1999 2000 to 2003/2004

Property of  
Flood Control District of MC Library  
Please Return to  
2801 W. Durango  
Phoenix, AZ 85009

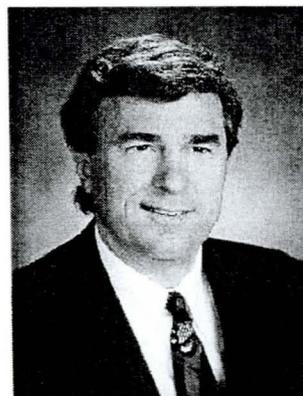
\*Southeast Valley Regional Drainage System Phase II

October 15, 1999

# Flood Control District of Maricopa County Board of Directors



Fulton Brock  
District 1



Don Stapley  
District 2



Andrew Kunasek  
District 3



Janice K. Brewer  
District 4



Mary Rose Wilcox  
District 5

Property of  
Flood Control District of MC Library  
Please Return to  
2801 W. Durango  
Phoenix, AZ 85009

## **Flood Control Advisory Board**

**Gilbert Rodgers, District 1**

**Shirley Long, District 4**

**John E. Miller, Jr., District 2**

**Hemet Patel, P.E., District 3**

**Melvin Martin, District 5**

**Paul Cherrington, P.E., Salt River Project, Ex Officio Member**

**Thomas Callow, P.E., City of Phoenix, Ex Officio Member**

### **Principal Staff**

Michael S. Ellegood, P.E., Chief Engineer and General Manager

Thomas D. Johnson, P.E., R.L.S., Deputy Chief Engineer/PPM Manager

### **Evaluation Committee**

- D.R. Johnson, Manager, Regulatory Division
- E.A. Raleigh, P.E., Manager, Engineering Division
- G.D. Lindop, Manager, Operations and Maintenance Division
- J.L. Schwartzmann, Manager, Land Management Division
- R.G. Perreault, CIP/Policy Branch Manager

# Table of Contents

Page #

<b>Alphabetical Listing of CIP Projects</b>		
<b>1.0 Introduction</b>		1
1.1	FCD Description and General Context	2
1.2	What is the Capital Improvement Program (CIP)?	2
1.3	What is the Difference between the Capital Budget and the CIP?	3
1.4	Why Undertake CIP Planning?	3
<b>2.0 Flood Control Planning and the CIP</b>		
2.1	Overview	5
2.2	The Planning Process	5
2.3	The Prioritization Process	6
2.4	Prioritization Criteria	7
2.5	Integrating Projects into the Natural and Urban Environment	9
<b>3.0 Financial Issues and the CIP</b>		
3.1	Balancing Future Revenues and Expenditures – Budgetary Challenges	11
3.2	Revenue Trends and Issues	12
3.3	Increased Cost Sharing with Municipalities	13
3.4	The CIP: Implementing District Financial Strategies and Priorities	14
<b>4.0 Using this document</b>		16
<b>5.0 CIP Project Budget</b>		
5.1	CIP Project Budget/Schedule Summary	17
5.2	CIP Project Budget/Detailed Schedule	18
<b>6.0 CIP Project Descriptions</b>		20-99

# Alphabetical Listing of CIP Projects

<i>Project Name</i>	<i>ACT#</i>	<i>Page</i>
67 <sup>th</sup> Avenue Storm Drain	C450	67
84 <sup>th</sup> Street / Cholla Basin Drain	C027	23
91 <sup>st</sup> Avenue / Union Hills Drive Drainage Improvement	C450	65
Arcadia Area Drainage Project	C103	33
Ashbrook / Balboa Wash Improvement	C670	91
Bethany Home Outfall Channel	C620	87
Bullard Wash Outfall Channel	C470	73
Camelback Ranch Levee	C400	47
Double Tree Ranch Road System	C580	83
East Maricopa Floodway Mitigation	C121	41
East PVSP Drainage Improvement	C120	39
Elliot Road Channel and Basin (Phase 1A – Elliot Basin to Ellsworth Road)	C442	53
Elliot Road Channel (Phase 1B - Ellsworth to the EMF)	C442	55
Ellsworth Channel	C442	57
Five Basins Along Central Arizona Project	C442	51
Flood Warning System	C017	21
Golden Eagle Park Dam	C670	93
Greenway Parkway Channel	C460	69
Hawes Road Channel	C442	59
Higley Outfall Channel	C491	81
Litchfield Park Drainage	C470	75
Maryvale Stadium Basin West Inlet	C620	85

<i>Project Name</i>	<i>ACT#</i>	<i>Page</i>
McCormick Ranch Flood Protection	C027	29
New River Bank Improvement (Bell Park / Paradise Shores)	C400	49
Northern / Orangewood Storm Drain	C450	63
Oak Street Storm Drain Outfall	C027	25
Osborn Road Storm Drain	C027	27
Phoenix Rio Salado	C124	43
Pima Road channel (West Pima Freeway)	C680	97
Queen Creek Channelization / Sanokai Wash Channelization	C480	77
Rawhide Wash Detention Basin	C680	99
Reata Pass Channel	C680	95
SE Phoenix Regional Drainage System	C630	89
Skunk Creek Improvements (75 <sup>th</sup> Ave. to 51 <sup>st</sup> Ave.)	C362	45
Sossaman Channel – US 60 – Baseline	C108	35
South Phoenix Drainage Improvement (Baseline Road and 43 <sup>rd</sup> Ave. Storm Drains)	C117	37
Southeast Valley Regional Drainage System Gilbert / Chandler ADMP Collector Channel	C490	79
Southern Avenue Channel	C442	61
Stormwater Monitoring System	C002	20
Town of Guadalupe	C035	31
White Tanks #3 FRS Modification	C470	71

*1.0 Introduction*

# **Flood Control District of Maricopa County**

**MISSION:** To reduce the risks of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains.

**VISION:** To be recognized throughout North America as an agency that is unsurpassed in its dedication to accomplishing its mission, and being responsive to its clients in an efficient, effective, and fiscally responsible manner. We will be known as stewards of the environment and the public trust, and for our concern about the effect of our actions for not only the current, but future generations.

**PLEDGE:** We pledge to show personal integrity and professionalism in all our actions, and to display continuous improvement, innovative thinking, and technical excellence in all our work.

## **1.0 Introduction**

### **1.1 FCD Description and General Context:**

The Flood Control District was formed on August 3, 1959, following passage of State legislation empowering counties to set up special districts to provide flood protection. Flood control districts are political subdivisions of the State and have the same powers, privileges and immunities generally given to incorporated cities and towns. The District is governed by a Board of Directors who are also the elected Board of Supervisors for Maricopa County. This Board, in turn, is advised by a seven-member Flood Control Advisory Board. The activities of the District are funded by a flood control tax levy assessed on real property within Maricopa County and a variety of cost-sharing arrangements with federal, state, county and local governments. The tax levy rate for the previous fiscal year (1998/99) was \$.3288 per \$100 of assessed value. The tax levy rate for Fiscal Year 1999/00 has been set at \$.2858 per \$100 of assessed value.

The District is organized into seven functional areas arranged in the following divisions: Administration, Operations & Maintenance, Engineering, Regulatory, Land Management, Information Technology, and Planning & Project Management. The Capital Improvement Program (CIP) serves as the cornerstone of the District's efforts to resolve flooding problems in Maricopa County. This booklet provides information on the anticipated expenditures for flood control projects and programs for the next five years, from July 1999 through June 2004.

### **1.2 What is the Capital Improvement Program (CIP)?**

The Capital Improvement Program (CIP) for the Flood Control District (District) is a Five-Year Plan that identifies spending for all anticipated capital projects. The Plan addresses both modification and replacement of existing infrastructure as well as the development of new facilities to accommodate future growth. This Plan also enables the District and its stakeholders to identify needed capital projects and co-ordinate financing and construction timing. To increase effectiveness, the CIP consists of two crucial segments; an administrative process to identify and prioritize future capital projects (the Prioritization Procedures) and the fiscal plan to provide for the funding of those projects.

The CIP links the planning and budget activities of the District. It can support past policy decisions by establishing priorities between existing and competing projects but can also measure and evaluate the merits of new proposals. Typically, a CIP describes each capital project proposed for development over the forthcoming five-year period by listing the year that it is to be started, the cost per year, and, when applicable, the proposed method of cost-sharing. Based on these details about each project, the District has developed annual cost schedules for capital expenditures. Thus, the capital improvement program presents both the cost and funding for all the project requirements for flood control purposes as tempered by current and future financial capability.

## **1.0 Introduction**

### **1.3 What is the Difference between the Capital Budget and the CIP?**

The capital budget represents the first year of the capital improvement plan. The primary difference between the capital budget and the CIP is that the capital budget gives the District staff authority to spend funds and proceed with specific projects. The CIP includes both first-year projects as well as future projects for which financing has not been secured or authorized. The "out years" of the plan are projected, but not authorized and hence are subject to change. Every item in the capital budget must be approved by the Board of Directors and is closely reviewed by the Maricopa County Office of Management and Budget to ensure that it meets with the fiscal policies of the County. As a result, the capital budget must be prepared with great care owing to the need for accuracy as well as consistency with County revenue and expenditure forecasts for the upcoming year(s). The Five-Year CIP is developed and managed by the Planning and Project Management Division for the Chief Engineer and General Manager, the Flood Control Advisory Board, and the Board of Directors. Because it is not formally tied to the County's budgeting process, it can be altered to reflect future requirements and expectations associated with capital projects more easily than the one-year capital budget.

### **1.4 Why Undertake CIP Planning?**

The CIP process is dynamic in that it helps with the planning for major expenditures in the future and adjusts project schedules as needs and circumstances change. The CIP's five-year perspective allows projects to be planned and programmed ahead of actual authorization. But the yearly repetition of the Prioritization Procedures and the CIP process ensures that each project undergoes several stages of review before it is finally approved and funded. This approach to capital planning is particularly meaningful in the

rapid growth environment of Maricopa County. It ensures that new facilities will be evaluated within the context of County and municipal land use plans and weighed against maintenance requirements for existing structures.

Among its many advantages, an effective capital improvement program:

- Focuses attention on goals, needs, and objectives. It ensures that the District's capital projects are consistent with changing community objectives, anticipated growth, and financial capabilities.
- Requires the scheduling of major investments and avoids the possibility of costly mistakes. It assists the Flood Control Advisory Board and the Board of Directors with making sound budget decisions.
- Facilitates more efficient administration and management. Coordination of necessary capital improvements can reduce scheduling problems, conflicting and overlapping projects, and overemphasis on any single function or geographic area.
- Promotes cooperation with other jurisdictions. The capital planning process gives all jurisdictions the opportunity to co-ordinate location, timing, and financing of related projects.
- Includes leveraging of FCD funds with other funding sources.
- Maintains a sound and stable financial program. Dramatic changes in the County's tax structure can be avoided when capital projects are planned and spaced over several years.

## **2.0 Flood Control Planning and the CIP**

### **2.1 Overview:**

The District maintains the Five-Year Capital Improvement Program (CIP) as called for in state statutes and directed by the District's General Policies. The Five-Year CIP includes all costs associated with the implementation of projects or elements of projects that have been proposed by federal, state, District or local programs. The selected projects are reviewed through the District's Prioritization Procedures that were approved by the Board of Directors in 1993 and put into effect for the Fiscal Year 1994/1995. These procedures were amended in 1995 and 1997, and reviewed in 1999. The prioritization process solicits project requests from the District's client communities and other agencies. The process allows comparisons between competing projects to ensure that CIP expenditures are allocated toward the greatest need.

Following the allocation of funds necessary for maintenance and other mandatory programs, the District budgets the remaining tax revenues for capital improvement projects and the related planning programs. When possible, multi-purpose uses of flood control projects and property are promoted and accommodated. This is possible provided the use does not interfere with the flood control projects' primary purposes. In addition, the project costs and the facility's maintenance requirements should not be significantly increased.

### **2.2 The Planning Process:**

The Planning Program promotes the District's mission of "...reducing flood risks for the people of Maricopa County..." by preparing comprehensive regional studies and analyses identifying locations and property at risk from potential flooding. Following an analysis of flooding problems, alternative solutions are developed to determine the most cost effective and publicly acceptable project. Recommended projects are then prioritized for inclusion in the District's CIP. The CIP allocates resources and provides a timetable for the implementation of individual projects. This process usually includes the project design, relocation of conflicting facilities, acquisition of property and construction phases.

The combined Planning Program and CIP account for approximately three-quarters of the District's annual budget. During FY 1998/99, the District, in cooperation with other agencies and municipalities, completed seven major flood control projects and started the design or construction of thirteen new projects. Ten projects currently are under construction and sixteen projects are being designed, studied or are in the land acquisition phase. Activities in the Planning Program include; Area Drainage Master Studies (ADMSs); Watercourse Master Plans; the Comprehensive Flood Control Program Report; Project Pre-design studies; and, the coordination of interagency cooperative projects and agreements. The District strives to maintain its historic close working relationship with local

## **2.0 Flood Control Planning and the CIP**

communities and other county, state and federal agencies in all of these endeavors.

Information on flooding and flood-prone areas is generated through the Area Drainage Master Study (ADMS) Program. The ADMS program was conceived in 1983 to provide the District with a proactive and leadership role in developing uniform, comprehensive inventories and models of the features influencing rainfall-runoff in selected areas. There are approximately twenty-five ADMS areas ranging from 15 to 280 square miles. Area Drainage Master Plans (ADMPs) are then undertaken for each of the ADMS areas. These plans utilize the information provided by ADMSs and recommend specific, project-oriented solutions for flooding problems. The ADMPs, along with requests from cities, towns and other agencies, are intended to be major sources of projects for the CIP.

The ADMS Program supports the planning effort by providing the physical characteristics and hydrology for a specific area. This Program utilizes a comprehensive watershed perspective, which is used to identify drainage and flooding problems reported by individual communities. Selected and approved alternatives to solve these problems are identified through the ADMPs and are implemented through the CIP. Watercourse Master Plans (WCMP) are similar to ADMPs, except that a WCMP has more of a focus on the management of a particular river, stream, creek or wash and its banks and nearby flood zones, while an ADMP focuses on flooding issues over a wider drainage area.

The proposed FY 1999/00 planning program will continue four ADMS/ADMP studies (Glendale/Peoria ADMS/ADMP Update, Metro ADMS, N. Peoria ADMS/ADMP, and the Higley ADMS/ADMP) which were initiated during FY 1998/99 and will initiate six new studies (Spook Hill ADMS/ADMP Update, White Tanks ADMS/ADMP update, Loop 303 Drainage Master Plan, Desert Hills ADMS/ADMP, Gila Bend ADMS/ADMP, and the Durango ADMS/ADMP). Additionally, three Watercourse Master Plans (WCMP) initiated during FY 1998/99 (Middle New River WCMP, Cave Creek WCMP, and the Queen Creek/Sonokai Wash Master Plan) will be continued and two new Water Course Master Plans will be initiated (Skunk Creek WCMP, and the Agua Fria WCMP). This will increase the number of active ADMS/ADMP studies from four in FY 1998/99 to ten in FY 1999/00 and will increase the number of active WCMPs from three in FY 1998/99 to five in FY 1999/00.

## **2.3 The Prioritization Process:**

The Prioritization Procedures, employed by the District, were initially implemented for the FY 1994/1995 budget cycle and have been used since that time. They serve as the mechanism for determining new CIP projects. Potential CIP projects are identified either by local cities, towns and other agencies, or through other District programs. The potential projects are evaluated on an annual basis for inclusion in the latter years of the CIP.

An important aspect of the Prioritization Procedures is the District's cooperation with its client communities in

## **2.0 Flood Control Planning and the CIP**

defining the criteria for project reviews. Tables included in Appendix 1 show the specific criteria and weights used in identifying project priorities, as determined through workshops attended by participating agencies and approved by the FCAB. The most recent workshop was held in April of 1999.

The primary benefits of the Prioritization Procedures have been their ability to:

- Reduce uncertainty by applying District-approved and community-reviewed criteria during the project review process;
- Improve fiscal efficiency by requiring concurrent review of all project proposals and timing this review with the District's budget cycle;
- Eliminate duplication and improve community commitment by focusing planning efforts on projects approved for pre-design/feasibility analysis; and,
- Provide a means for reconstructing or reprioritizing the budget and Five-Year CIP with a minimum of disruption to ongoing activities by using an objective rank ordering system.

The prioritization procedure is accomplished in two major steps. First, all newly proposed projects are evaluated according to predetermined and weighted criteria by a committee of senior District staff members. The selected projects are included in a District-funded and prioritized pre-design study program. Requesting agencies may complete prioritized pre-design studies using consultants

or in-house resources, provided the information produced meets the minimum requirements of District-sponsored studies. The purpose of the pre-design study program is to develop more detailed information on potential CIP projects. This includes design and construction costs, land acquisition requirements, required permits, mitigation and multiple-use potential.

The second step includes the evaluation and prioritization of projects for inclusion in the District's Five-year CIP. For projects requiring an Intergovernmental Agreement (IGA), the information developed in the pre-design study will serve as the basis for negotiations. When ADMPs are completed, a number of future pre-design studies and CIP project requests are identified. Input regarding the priorities for projects identified within these plans, will continue to be provided to local cities, towns and other agencies. When a CIP project has progressed to the stage where the engineering design, plans and construction specifications are being prepared, its place in the Five-Year CIP program is generally maintained. The stability and timeliness of CIP project implementation are important to the timing of interrelated projects.

### **2.4 Prioritization Criteria:**

The Project Evaluation Committee that makes recommendations to the Chief Engineer and General Manager and the FCAB Program and Budget Committee develops their recommendations using a system that allocates points to individual projects based on specific criteria. These criteria include:

## **2.0 Flood Control Planning and the CIP**

- Submitting Agency Priority
- Master Plan Element
- Hydrologic/Hydraulic Significance
- Level of Protection
- Area Protected
- Environmental Quality
- Area-Wide Benefits
- Total Project Cost
- Level of Partner(s) Participation
- Operation and Maintenance Costs
- Operation and Maintenance Responsibility

The prioritization criteria were developed with the goal of promoting a balanced approach to the evaluation of proposed projects. The District tries to identify and support flood control and regional drainage projects that not only provide long-term protection to individuals and property from flash floods and seasonal flooding, but that contribute to community development, protection of natural habitat, and maintenance of watercourse flow paths. The District also leverages its limited resources by entering into joint efforts with other agencies, municipalities or the private sector to fund flood control projects, and this is reflected in the prioritization criteria. Higher scores are given to projects that involve cost-sharing partnerships for the construction phase and/or that involve agreements by other agencies or municipalities to take responsibility for post-construction operations and maintenance.

Although the relative weighting given to each criterion (total points per category) and the points actually assigned to each criterion for a given project by an Evaluation Committee member is somewhat subjective

in nature, the evaluation procedure provides a uniform degree of objectivity to the process. The costs and benefits of the proposed projects are explicitly identified and documented. Proposed projects can be more easily compared once individual types of benefits and costs are separately quantified or otherwise evaluated. The inclusion of at least six senior staff representing different functional competencies on the Evaluation Committee further reduces the degree of subjectivity by ensuring that no one individual's personal biases excessively influence the evaluation process.

## **2.0 Flood Control Planning and the CIP**

### **2.5 Integrating Projects into the Natural and Urban Environment: A New Approach to Flood Control Projects**

The District has made an additional commitment to ensuring that new flood control projects not only protect people and property from flooding threats, but also provide additional benefits. These benefits can include increased protection for natural habitat, new recreational facilities and open space, and aesthetically pleasing designs that contribute to the revitalization of urban areas. Although Maricopa County is located in a largely desert environment, much of the County is subdivided by canals, rivers, creeks and washes, and these linear attributes are a significant feature of the physical character of the area. Dams, retention basins, channels and outfalls can also be found throughout the County, and can have a major beneficial or negative impact on adjacent neighborhoods and natural areas depending on the design and management of these facilities.

One project that is a good example of this increased commitment to compatibility with the surrounding environment is the Old Cross Cut Canal project. The project involved the construction of approximately 11,000 linear feet of covered concrete channel to convey storm flows from the Old Cross Cut Canal corridor along 48<sup>th</sup> Street and to provide an outfall for drainage from the Arcadia area north of the Arizona Canal, taking these flows to the Salt River. Although the canal was originally to be an open channel, the District and the City of Phoenix adopted proposals by local citizens and the City's Parks Department to

change the design to a covered channel (culvert) option that allows for extensive recreational opportunities.

A multi-use path has been provided along most of the right-of-way that will permit people to bicycle, walk, or rollerblade along the route. The District and the City also made a commitment to improving the aesthetics of the project. In addition to being covered with attractive turf and pathways, the inlet, spillways and retaining wall at the south end of the project were specifically designed to allow for the inclusion of public art. As is the case in many of the District's projects, the effort is a cooperative project of the District and the host municipality. The surface features south of Thomas Road were installed and funded by the District, and the multi-use path was designed and installed using District funds, while the City of Phoenix was responsible for surface features north of Thomas Road.

Another example of the District's commitment to multi-purpose facilities can be found in the Tenth Street Wash Basin #2 project. District staff planning and significant citizen involvement combined to lead to a project in which aesthetic and recreational elements played a major role in the design of the structure. Instead of a purely functional spillway facility, the project was developed in such a way that turf, irrigation, plantings, paths and design changes to the structure itself ensured that the final product was attractive and "people friendly". The design even provided space for future potential recreational facilities, such as volleyball courts, to allow for the evolution and improvement of the facility over time.

## ***2.0 Flood Control Planning and the CIP***

The District is also planning to be a partner in a number of efforts such as the Rio Salado project, where flood control facilities are included as part of major urban redevelopment, environmental restoration and/or large scale recreational facility development. If resources are available, many existing flood control systems and facilities in established urban areas could be retrofitted or altered to allow for additional benefits or activities. Many District rights-of-way or facilities offer the potential to also provide bicycle/walking paths, habitat for native species, or attractions for local businesses, without threatening the underlying flood control role of these projects.

### **3.0 Financial Issues and the CIP**

#### **3.1 Balancing Future Revenues and Expenditures - Budgetary Challenges:**

The FCD operates on a “pay-as-you-go” basis. This means that the FCD’s entire capital budget is funded from current revenues, and that no borrowing takes place to finance capital projects like dams, channels and levees. The major advantages of this are that the FCD carries no debt load, that County taxpayers do not have to pay for interest charges on FCD structures, and that there is no need to try to match future debt and interest repayments with future revenues. Since a majority of the FCD’s revenues are spent on the CIP and long-term capital expenditures on flood control protection, taxpayers are in effect investing in the future of the County and their property and safety. This policy is quite different from that utilized by most government entities, which usually spend all current revenues on current expenditures and debt repayment associated with past capital expenditures.

Most large government and private sector organizations that plan and construct very large projects over extended periods of time borrow funds to finance these large projects, and then pay for them over many years. Because these principal and interest costs can be distributed over many years, and the necessary funds are obtained from lenders at the beginning of projects, it is relatively easy for these organizations to plan their long-term capital budgets. The majority of the District’s revenue is derived from a secondary tax whose revenues can be difficult to predict because tax valuations based on property values can fluctuate significantly. The rate of growth in urban areas, and

thus total tax revenues, can also have a major impact on total District revenues obtained in any given year. A strong economy, high levels of residential, commercial and industrial development, and rising property values will all lead to higher District revenues; conversely a poor economy and falling property values would lead to reduced tax revenue for the District, for a given tax rate.

Because the District’s capital spending is affected by strong fluctuations in tax revenue, the CIP must be constantly reviewed and altered to reflect the most recent information on current revenues and expected revenues over the coming years. In the early 1990’s, a weak economy led to lower District tax revenues, and capital spending had to be reduced to reflect this reality. More recently, high levels of housing, industrial and commercial development and rising property values have led to increased needs for flood control projects and increased assessment values. This has necessitated an expansion in the capital budget to initiate required projects while funds are available. Another factor that has had a major impact on District revenues has been the need to reallocate tax revenues among various County entities. The members of the Board of Directors, who are also the members of the County Board of Supervisors, sometimes alter the secondary tax rate to meet overall County fiscal objectives, and this too can have a major impact on District revenues in any given year. For these reasons, the Five-Year CIP will continually need to be adjusted and updated to reflect changes both in the level of need for flood control capital projects and in the availability of funds to pay for these projects.

### 3.0 Financial Issues and the CIP

#### 3.2 Revenue Trends and Issues:

Funding availability for the CIP is based on estimates that combine anticipated revenues from numerous sources with the District's anticipated flood control tax revenues. The District's tax revenues are a function of the tax rate, which is set annually by the Board of Directors. The Flood Control District tax applies to the assessed real property valuations, which are also set annually by the County Board of Supervisors. The majority of the District's Operating and CIP revenues come from the flood control tax that is levied County-wide.

Additional revenue results from the sale or lease of District rights-of-way and reimbursements from project cost-share partners. Over the past ten years, the inflation-adjusted revenues provided by the Secondary Tax to the District have fallen significantly, and when the increased size of the County's population and increased flood control needs associated with this larger urban area are taken into account, it is apparent that the District is being asked to do more with less. It is anticipated that the District's tax revenues over the coming five years will be capped at a maximum of \$45 million because money is needed for other County programs.

Fiscal Year	Tax Rate	Tax Revenue
99/00	0.2858	\$44,425,000 (est.)
98/99	0.3270	\$44,995,000
97/98	0.3425	\$42,697,000
96/97	0.3413	\$38,501,000
95/96	0.3632	\$36,085,500
94/95	0.3332	\$35,300,000
93/94	0.3632	\$35,400,000
92/93	0.3901	\$39,715,000
91/92	0.4447	\$46,879,000
90/91	0.4235	\$45,797,000
89/90	0.4303	\$46,408,000
88/89	0.5000	\$51,345,000
87/88	0.5000	\$46,059,000

The CIP amounts shown in Table 2 reflect available funding for projects based on current revenue forecasts. If increased CIP spending for identified projects is to be applied to FY 01/02 through FY 03/04, additional revenue will be required.

Fiscal Year	Tax Revenue	CIP Amount
99/00	\$44,425,000	\$65,211,000
00/01	\$45,000,000	\$55,518,000
01/02	\$45,000,000	\$45,050,000
02/03	\$45,000,000	\$41,920,000
03/04	\$45,000,000	\$31,095,000

### **3.0 Financial Issues and the CIP**

#### **3.3 Increased Cost Sharing with Municipalities**

Throughout the history of the Flood Control District of Maricopa County, the District has had to adapt to the evolution of the fiscal, political and institutional environment in which it operates. For a large part of the 1970s and 1980s the District was heavily involved in cost-sharing partnerships with the Federal and State governments, initiating and participating in flood control projects that were funded in large part by higher levels of government. With the virtual end of large-scale participation in regional flood control activities by the Federal Government and the State, the District was left in the position of being the primary source of technical expertise and financial resources for flood control in Maricopa County. As a result, the District must deal with a wide range of regional flood control challenges with a limited budget provided by County taxpayers, who are also responsible for funding a wide range of other important services.

More recently, the District has adopted a number of strategies to address regional flood control problems while minimizing financial requirements. Under the direction of the Board of Directors and Flood Control Advisory Board, District staff have made a concerted effort to make maximum use of every dollar spent. A strategy used to obtain the "most bang for the buck" has been to leverage District capital program expenditures with contributions from municipalities and other agencies. One of the selection criteria for potential projects is the degree to which the projects will be paid for by other government entities; if a higher

level of cost sharing can be negotiated, the projects are given a higher priority ranking by the District. A District goal is that it should only have to pay for half to two-thirds of the design and construction costs and that a municipality or other agency will be responsible for the remainder of those costs and for future operations and maintenance

Reviewing the total dollar amount of reimbursements provided by the District's partners during the 1980s, it is clearly evident that the trend is towards rising reimbursements. While total reimbursements were only approximately \$2.4 million in FY 1992/93, they had grown to approximately \$7 million by FY 1996/97, and are projected to rise to almost \$16.8 million in FY 1999/00 (some future year projects do not have signed IGAs; projected reimbursements could still change). Similarly, an examination of reimbursements as a percentage of total capital program expenditures indicates that the long-term trend is towards higher levels of cost-sharing. While in FY 1992/93 less than 10% of the District's capital program was funded by reimbursements from municipalities and other agencies, in FY 1998/99 approximately a quarter of the capital program budget was provided by other government entities.

Expenditures made by the District to operate and maintain flood control structures and adjacent property are substantial; in FY 1998/99 these operations and maintenance (O/M) costs were approximately \$4.2 million, or about 6.9% of the total budget. One of the most important strategies of the District in recent years in terms of minimizing future expenditures and of providing the most regional flood control protection at the least cost

### **3.0 Financial Issues and the CIP**

has been to enter into partnerships on projects where the District is responsible only for capital costs and not for O/M costs. To date, the District has been very successful in negotiating cost-sharing agreements in which the District is absolved of any responsibility for future maintenance or operations. A large number of new projects involve intergovernmental agreements (IGAs) that restrict District involvement to only immediate capital costs.

A preliminary estimate of the savings resulting from municipalities and other agencies assuming responsibility for projects funded partially or entirely by the District indicates that the O&M costs that will not have to be incurred on projects completed between FY 95/96 and FY 98/99 is in excess of \$400,000 per year. The annual costs that will be saved by municipalities assuming O & M responsibilities on projects that will be completed between FY 99/00 and FY 03/04 will be an additional \$1 million. More simply put, by following a policy of not assuming O&M on most projects since the early 1990s, the District will spend \$1.4 million (\$1998) less on O&M annually by the year 2004.

#### **3.4 The CIP: Implementing Flood Control District Financial Strategies and Priorities:**

The District's capital spending utilizes the majority of the District's overall revenues, and the District's capital spending is directed by the Five Year CIP. As a result, the Five-Year CIP must incorporate the District's strategies and priorities, and facilitate the achievement of the District's mission and objectives. Among the

District strategies/priorities that are reflected in planned expenditures included in the Five Year CIP are:

- An increased emphasis on cost-sharing and partnerships so that the District is best able to leverage its limited financial resources into the most long-term flood control protection possible throughout the County.
- A preference for partnerships in which the other partners (e.g. municipalities, agencies) assume full responsibility for operations and maintenance activities once the project has been completed.
- A continuing commitment to balance expenditures between newly-developing areas on the fringe of the urban metropolis, and existing older communities where retrofitting, repairs and project improvements are still needed.
- A commitment to avoid the construction of new conventional hard structures when non-structural approaches such as flood plain delineation and management, naturalized watercourse improvements, and/or minor improvements to natural drainage patterns can be used just as effectively from an economic perspective to protect lives and property.
- A focus on minimizing project costs and streamlining the contract tendering and management processes using information systems that track project progress and analyze engineering, land, and construction costs.
- Use of District-developed hydrological and flood control planning information so that private development infrastructure is built to District standards.

## **4.0 Using this Document**

Included in this document are narrative descriptions and location maps for the four dozen projects that the Flood Control District of Maricopa County proposes to implement during the next five years (FY 99/00 through FY 03/04) and summaries of the CIP budget that show projected expenditures by "Area" (groupings of projects) and by "Project" (individual facilities and systems). Tables in Appendix 1 provide a summary of the results of the FY 99/00 Prioritization Process. Included in these tables are each of the projects recommended for CIP consideration through previous prioritization processes. Appendix 2 includes a description of the procedures and criteria used in evaluating potential CIP projects.

The CIP budget in section 5.0 is provided in two different formats. Each summarizes estimated expenditures for all projects proposed for the District's Five-Year Capital Improvement Program for fiscal years 99/00 through 03/04. The first format (5.1) is a summary of all of the CIP expenditures by "Area". Every Project Control Number (PCN) is made up of a seven digit code that is used for tracking costs. The first three digits identify the "Area", or clustering or family of projects, and this is the level of detail that is used in the summary of CIP expenditures. For example, the White Tanks "Area" code includes six "Projects" that originated from the White Tanks Area Drainage Master Plan. In the summary, these individual "Projects" and their "Components" are not shown. The second format (5.2) provides a more detailed listing of expenditures by individual projects, which are shown with

both the three digit "Area Code" and the two digit "Project Code".

The figures in both tables are shown in thousands of dollars (i.e. 10 equals \$10,000), for ease of display, and are shown by fiscal year for each of the five years. A "Total" column sums all of the expenditures, by project, proposed during the five-year period. It is important to note that although most of the projects are scheduled to be completed in five years, those identified with an asterisk (\*) will be continued beyond the five-year period. Possible reasons include: availability of funding; status of design or construction plans; or incompatible schedules of other related activities. Also included in the tables are columns showing supervisor districts and the municipality where the project is located.

Details for each project included in the Five-Year CIP are provided in section 6. A description is provided for every project name and associated project control number appearing in the Five-Year CIP. Each project can thus be found in this document. Every project description includes basic information such as project name, project control number, the municipality or municipalities in which the project is located, partners involved with the design, administration, construction and/or funding of the project, anticipated beneficial results of the project, and the timing and cost of the project. The projects are listed in order of their project control numbers, or PCNs. An alphabetical list of projects is also provided at the beginning of this

## 4.0 Using this Document

document that provides the PCN and page number for each project.

In some cases, such as those in which the planning and design work is complete and construction is already underway, the scope and cost of the project are almost entirely known. In others, a project might only be in the planning and design stage, and the exact physical design, geographical location, and total cost of the project are still unknown. As a result, the further along the project is, the more likely the project description is to be a complete and dependable guide to the specifics of the project. It should be noted that projects still in the early stages of the development process will be subject to change, and that significant increases or decreases in project costs do occur well into the design stage. In some cases District projects can be combined with other projects undertaken by ADOT or MCDOT, leading to major reductions in project costs, while in others, unforeseen land acquisition or project engineering costs can greatly increase project costs.

Questions or comments concerning this document or the District's 5-year Capital Improvement Program may be sent to:

R. G. Perreault, CIP/Policy Branch Manager  
[rgp@mail.maricopa.gov](mailto:rgp@mail.maricopa.gov)

or

K. L. Presson, CIP Coordinator  
[klp@mail.maricopa.gov](mailto:klp@mail.maricopa.gov)

This information is available on the FCD web site at:  
<http://www.fcd.maricopa.gov>

### 5.0 CIP Project Budget

SUMMARY				X \$ 1,000		Five Year CIP				
CITY	DIST	ACT #	DESCRIPTION	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY 03/04	5-Yr TOTAL	
			Tax Rate:							
Multiple	All	C002	STORMWATER MONITORING SYSTEM	75	0	0	75	0	150	
Multiple	All	C017	FLOOD WARNING SYSTEM	20	20	20	20	20	100	
Scottsdale	2	C027	CITY OF SCOTTSDALE	5,621	6,600	0	0	0	12,221	
Guadalupe	5	C035	TOWN OF GUADALUPE	581	2,100	0	0	375	3,056	
Phoenix	1,2,3	C103	OLD CROSS CUT CANAL	0	0	0	0	500	500	
Mesa	1,2	C108	SOSSAMAN CHANNEL	69	0	0	0	0	69	
Multiple	1,5	C117	SOUTH PHOENIX DRAINAGE IMPROVEMENT	5,862	4,806	0	0	0	10,668	
Multiple	2	C120	PVSP	20	200	0	3,150	0	3,370	
Multiple	1	C121	EAST MARICOPA FLOODWAY	200	500	760	4,600	4,600	10,660	
Phoenix	5	C124	PHOENIX RIO SALADO	800	5,800	4,400	0	0	11,000	
Multiple	4	C362	SKUNK CREEK	2,029	0	0	0	0	2,029	
Multiple	4	C400	SKUNK CREEK/NEW RIVER	1,188	0	700	0	0	1,888	
Mesa	1,2	C442	EAST MESA ADMP	5,155	5,980	9,835	7,000	2,300	30,270	
Multiple	4	C450	GLENDALE/PEORIA ADMP	10,304	5,200	0	1,420	0	16,924	
Phoenix	3	C460	EAST FORK CAVE CREEK ADMP	1,000	1,500	0	0	0	2,500	
Multiple	4,5	C470	WHITE TANKS ADMP	7,148	1,835	5,100	5,100	0	19,183	
Multiple	1	C480	QUEEN CREEK ADMP	0	590	1,535	4,255	4,500	10,880	
Chandler	1,5	C490	GILBERT/CHANDLER ADMP	6,012	10,000	0	0	0	16,012	
Mesa/Gilbert	1	C491	HIGLEY ADMP	900	0	200	1,300	4,700	7,100	
Phoenix/PV	2	C580	ACDC ADMP	612	5,000	8,500	0	0	14,112	
Phoenix	4,5	C620	MARYVALE ADMP	1,475	2,037	6,800	4,000	2,100	16,412	
Phoenix	1	C630	FOOTHILLS ADMP	1,400	2,700	0	0	0	4,100	
Fntn. Hills	2	C670	FOUNTAIN HILLS ADMP	959	650	0	700	0	2,309	
Scottsdale	2	C680	UIBW ADMP	18	0	7,200	10,300	12,000	29,518	
<b>SUBTOTAL PROJECTS</b>				<b>51,448</b>	<b>55,518</b>	<b>45,050</b>	<b>41,920</b>	<b>31,095</b>	<b>225,031</b>	
CIP PROJECT CONTINGENCY				11,062	0	0	0	0		
INDIRECT CHARGES				556	0	0	0	0		
FORCE				2,145	0	0	0	0		
<b>PROJECTS TOTAL</b>				<b>65,211</b>	<b>55,518</b>	<b>45,050</b>	<b>41,920</b>	<b>31,095</b>	<b>236,649</b>	

## 5.0 CIP Project Budget

CIP PROJECT BUDGET/SCHEDULE									
July, 1999 (Revision)			X \$1,000		Proposed Five Year CIP				
CITY	DIST.	ACT #	DESCRIPTION	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY 03/04	5-Yr TOTAL
			Tax Rate:	0.2858					
Multiple	All	C002	STORMWATER MONITORING SYSTEM	75	0	0	75	0	150
Multiple	All		STORMWATER MONITORING SYSTEM	75	0	0	75	0	150
Multiple	All	C017	FLOOD WARNING SYSTEM	20	20	20	20	20	100
Multiple	All		FLOOD WARNING SYSTEM	20	20	20	20	20	100
Multiple	2	C027	CITY OF SCOTTSDALE	5,621	6,600	0	0	0	12,221
Scottsdale	2		84TH STREET / CHOLLA BASIN DRAIN	100	0	0	0	0	100
Multiple	1,2,5		STP OAK STREET STORM DRAIN OUTFALL	4,854	0	0	0	0	4,854
Scottsdale	2		STP OSBORN ROAD STORM DRAIN OUTFALL	667	6,400	0	0	0	7,067
Scottsdale	2		MCCORMICK RANCH FLOOD PROTECTION	0	200	0	0	0	200
Guadalupe	5	C035	TOWN OF GUADALUPE	581	2,100	0	0	375	3,056
Guadalupe	5		TOWN OF GUADALUPE	581	2,100	0	0	375	3,056
Phoenix	1,2,3	C103	OLD CROSS CUT CANAL	0	0	0	0	500	500
Phoenix	2,3		ARCADIA AREA DRAINAGE PROJECT	0	0	0	0	500	500
Mesa	1,2	C108	SOSSAMAN CHANNEL	69	0	0	0	0	69
Mesa	1,2		SOSSAMAN CHANNEL - US 60 TO BASELINE	69	0	0	0	0	69
Phoenix/UMC	1,5	C117	SOUTH PHOENIX DRAINAGE IMPROVEMENT	5,862	4,806	0	0	0	10,668
Phoenix/UMC	1,5		SOUTH PHOENIX DRAINAGE IMPROVEMENT	240	0	0	0	0	240
Phoenix/UMC	1,5		BASELINE ROAD/43RD AVENUE STORM DRAIN	5,622	4,806	0	0	0	10,428
Scottsdale	2	C120	PVSP	20	200	0	3,150	0	3,370
Scottsdale	2		CACTUS RD. NEIGHBORHOOD	20	0	0	0	0	20
Scottsdale	2		EAST PVSP DRAINAGE IMPROVEMENT	0	200	0	3,150	0	3,350
Qu Cr./Mesa	1	C121	EAST MARICOPA FLOODWAY	200	500	760	4,600	4,600	10,660
Qu Cr./Mesa	1		EMF MITIGATION	200	500	760	4,600	4,600	10,660
Phoenix	5	C124	PHOENIX RIO SALADO	800	5,800	4,400	0	0	11,000
Phoenix	5		PHOENIX RIO SALADO	800	5,800	4,400	0	0	11,000
Glendale	4	C362	SKUNK CREEK	2,029	0	0	0	0	2,029
Glendale	4		51ST AVE.-75TH AVE.	2,029	0	0	0	0	2,029
Multiple	4	C400	SKUNK CREEK/NEW RIVER	1,188	0	700	0	0	1,888
Peoria	4		NEW RIVER BANK (BELL PARK/PARADISE SHORES)	0	0	700	0	0	700
Phoenix/Glendale	4		CAMELBACK RANCH LEVEE	1,188	0	0	0	0	1,188
Multiple	1,2	C442	EAST MESA ADMP	5,155	5,980	9,835	7,000	2,300	30,270
Mesa/U.M.C.	2		FIVE BASINS ALONG CAP	2,319		1,560	0	0	3,879
Mesa/U.M.C.	2		HAWES ROAD CHANNEL	62	1,360	3,675	0	0	5,097
Mesa/U.M.C.	2		ELLIOT BASIN AND CHANNEL	668	3,820	2,500	0	0	6,988
Mesa/U.M.C.	1		ELLIOT CHANNEL (ELLSWORTH TO EMF)	0	800	2,100	5,000	1,300	9,200
Mesa/U.M.C.	1		ELLSWORTH CHANNEL	0	0	0	2,000	1,000	3,000
Mesa	2		SOUTHERN AVENUE CHANNEL	2,106	0	0	0	0	2,106

## 5.0 CIP Project Budget

Multiple	4	C450	GLENDALE/PEORIA ADMP	10,304	5,200	0	1,420	0	16,924
Multiple	4		NORTHERN / ORANGEWOOD STORM DRAIN	8,224	3,100	0	0	0	11,324
Peoria	4		91ST AVE. / UNION HILLS DR. D.I.	2,000	2,100	0	0	0	4,100
Glendale	4		67TH AVE. STORM DRAIN	80	0	0	1,420	0	1,500
Phoenix	3	C460	GREENWAY PARKWAY CHANNEL	1,000	1,500	0	0	0	2,500
Phoenix	3		GREENWAY PARKWAY CHANNEL	1,000	1,500	0	0	0	2,500
Multiple	4	C470	WHITE TANKS ADMP	7,148	1,835	5,100	5,100	0	19,183
County	4		WHITE TANKS #3 FRS MODIFICATION (NRCS)	681	1,415	5,100	5,100	0	12,296
Goodyear	4		BULLARD WASH OUTFALL CHANNEL (R10)	6,467			0	0	6,467
Litchfield Pk.	4		LITCHFIELD PARK DRAINAGE	0	420	0	0	0	420
Queen Creek	1	C480	QUEEN CREEK ADMP	0	590	1,535	4,255	4,500	10,880
Queen Creek	1		QUEEN CREEK CHANNELIZATION	0	0	715	275	4,500	5,490
Queen Creek	1		SANOKAI WASH CHANNELIZATION	0	590	820	3,980	0	5,390
Multiple	1,5	C490	GILBERT/CHANDLER ADMP	6,012	10,000	0	0	0	16,012
Chandler/GRIC	1,5		BASIN / OUTLET CONNECTOR	2,012	0	0	0	0	2,012
Chandler	1,5		COLLECTOR CHANNEL	4,000	10,000	0	0	0	14,000
Multiple	1,2	C491	HIGLEY ADMP	900	0	200	1,300	4,700	7,100
Gilbert/Chandler	1,2		HIGLEY OUTFALL CHANNEL	900	0	200	1,300	4,700	7,100
Multiple	2,3	C580	ACDC ADMP	612	5,000	8,500	0	0	14,112
P.V.	2		DOUBLE TREE RANCH ROAD SYSTEM	602	5,000	8,500	0	0	14,102
Multiple	4,5	C620	MARYVALE ADMP	1,475	2,037	6,800	4,000	2,100	16,412
Phoenix	5		STADIUM BASIN WEST INLET CHANNEL	396	250	0	0	0	646
Glendale/Phoenix	4,5		BETHANY HOME OUTFALL CHANNEL	1,079	1,787	6,800	4,000	2,100	15,766
Phoenix	1	C630	FOOTHILLS ADMP	1,400	2,700	0	0	0	4,100
Phoenix	1		SE PHOENIX REGIONAL DRAINAGE SYSTEM	1,400	2,700	0	0	0	4,100
Fountain Hills	2	C670	FOUNTAIN HILLS ADMP	959	650	0	700	0	2,309
Fountain Hills	2		GOLDEN EAGLE PARK DAM	959	650	0	0	0	1,609
Fountain Hills	2		ASHBROOK / BALBOA WASH IMPROVEMENTS	0	0	0	700	0	700
Scottsdale	2	C680	UIBW ADMP	18	0	7,200	10,300	12,000	29,518
Scottsdale	2		REATA PASS CHANNEL	0	0	7,200	8,800	0	16,000
Scottsdale	2		PIMA ROAD CHANNEL (W/ PIMA FWY./TPC)	0	0	0	1,500	12,000	13,500
Scottsdale	2		RAWHIDE WASH DETENTION BASIN	18	0	0	0	0	18
			SUBTOTAL PROJECTS	51,448	55,518	45,050	41,920	31,095	225,031
			CIP PROJECT CONTINGENCY	11,062	0	0	0	0	
			INDIRECT CHARGES	556	0	0	0	0	
			FORCE	2,145	0	0	0	0	
			PROJECTS TOTAL	65,211	55,518	45,050	41,920	31,095	238,794

## 5.0 CIP Project Budget

				FY	FY	FY	FY	FY	5-Yr
			REIMBURSEMENTS	99/00	00/01	01/02	02/03	03/04	TOTAL
Scottsdale	2	C027	CITY OF SCOTTSDALE (SCOTTSDALE/PHOENIX)	1,700	1,530	1,961	0	0	5,191
Phoenix	1,2,3	C103	OLD CROSS CUT CANAL (PHOENIX)	242	0	0	0	0	242
Phoenix	5	C117	43RD AVE STORM/BASELINE DRAIN AND BASIN (MCDOT)	2,177	0	0	0	0	2,177
Scottsdale	2	C120	PVSP	0	0	0	1,650	0	1,650
Glendale	4	C362	SKUNK CREEK (GLENDALE)	0	768	576	577		1,921
Multiple	4	C400	SKUNK CREEK /NEW RIVER (GLENDALE/PEORIA/ADOT)	3,603		0	0	0	3,603
Mesa	1	C442	EAST MESA ADMP (MESA/MCDOT)	237	3,815	3,387	2,500	650	10,589
Multiple	4	C450	GLENDALE/PEORIA ADMP (GLENDALE/PEORIA/MCDOT/ADOT)	3,500	3,500	3,500	0	0	10,500
Multiple	4	C470	WHITE TANKS ADMP (NRCS/GOODYEAR/MCDOT)	4,100	1,953	0	0	0	6,053
Queen Creek	1	C480	QUEEN CREEK (QUEEN CREEK)	0	148	385	1,065	1,125	2,723
Multiple	1	C490	GILBERT/CHANDLER ADMP (CHANDLER/ADOT/GRIC)	554	8,100	0	0	0	8,654
Multiple	1,2	C491	HIGLEY ADMP	0	0	546	154	2,350	3,050
Par. Valley	2	C580	DOUBLE TREE RANCH RD DRAIN (PARADISE VALLEY)	245	2,000	3,200	0	0	5,445
Multiple	4	C620	BETHANY HOME CHANNEL (GLENDALE/PHOENIX)	210	900	3,000	2,000	0	6,110
Phoenix	1	C630	FOOTHILLS ADMP (PHOENIX)	0	1,144	0	0	0	1,144
Ftn. Hills	2	C670	FOUNTAIN HILLS ADMP (FOUNTAIN HILLS)	273	315	0	0	0	588
Scottsdale	2	C680	UPPER INDIAN BEND WASH (PHNX/SCOTTSDALE/ASLD)	0	0	0	0	0	0
			REIMBURSEMENTS TOTAL	16,841	24,173	16,555	7,946	4,125	69,640

## 6.0 CIP Project Descriptions

# **Stormwater Quality Monitoring System**

Municipality: Multiple  
Township Range: n/a

PCN: 002-00-XX

Supervisor District: All  
PM: Todd Williams, A.I.C.P.

In 1990 the United States Environmental Protection Agency implemented the National Pollutant Discharge Elimination System (NPDES) regulations regarding municipal stormwater quality. The NPDES program is a national effort to monitor and enhance the quality of discharges to streams and rivers of the U.S. The regulations require large cities in urbanized areas to obtain a permit to discharge stormwater and to monitor the quality of the stormwater at the point it enters the effected streams or rivers. In Maricopa County, this included the Cities of Mesa, Phoenix and Tempe, and more recently, the Cities of Glendale and Scottsdale. Since the District has interconnected and shared drainage systems with the impacted cities, and stormwater discharges from nearly all District facilities could potentially reach the Salt/Gila River system, the District has been working cooperatively with these municipalities to comply with NPDES regulations.

The District has negotiated agreements to collaborate on some of the NPDES permit requirements. The cities

have agreed to locate, identify and halt illicitly polluting discharges where they can, and the District collects stormwater quality data for NPDES permit compliance and inclusion in the District's Regional Stormwater Quality database. As a result of these agreements, the District currently operates a network of 17 stormwater quality monitoring stations throughout the Phoenix metropolitan area with plans to add 5 new stations in the next fiscal year. The District has been working cooperatively with the Cities of Mesa and Phoenix since 1993, and the City of Tempe since 1994 and recently developed similar agreements with the Cities of Glendale and Scottsdale. During FY 99/00, the District anticipates spending approximately \$75,000 from the CIP budget in cost-sharing arrangements for monitoring station equipment and installation. Additionally, laboratory analyses and station operation and maintenance costs will be shared. The District's cost-share for these components will total approximately \$140,000 during the same FY and will be supported by the Operating Budget.

6.0 CIP Project Descriptions

# ***Flood Warning System***

Municipality: Multiple  
Township Range: n/a

PCN: 017-00-XX

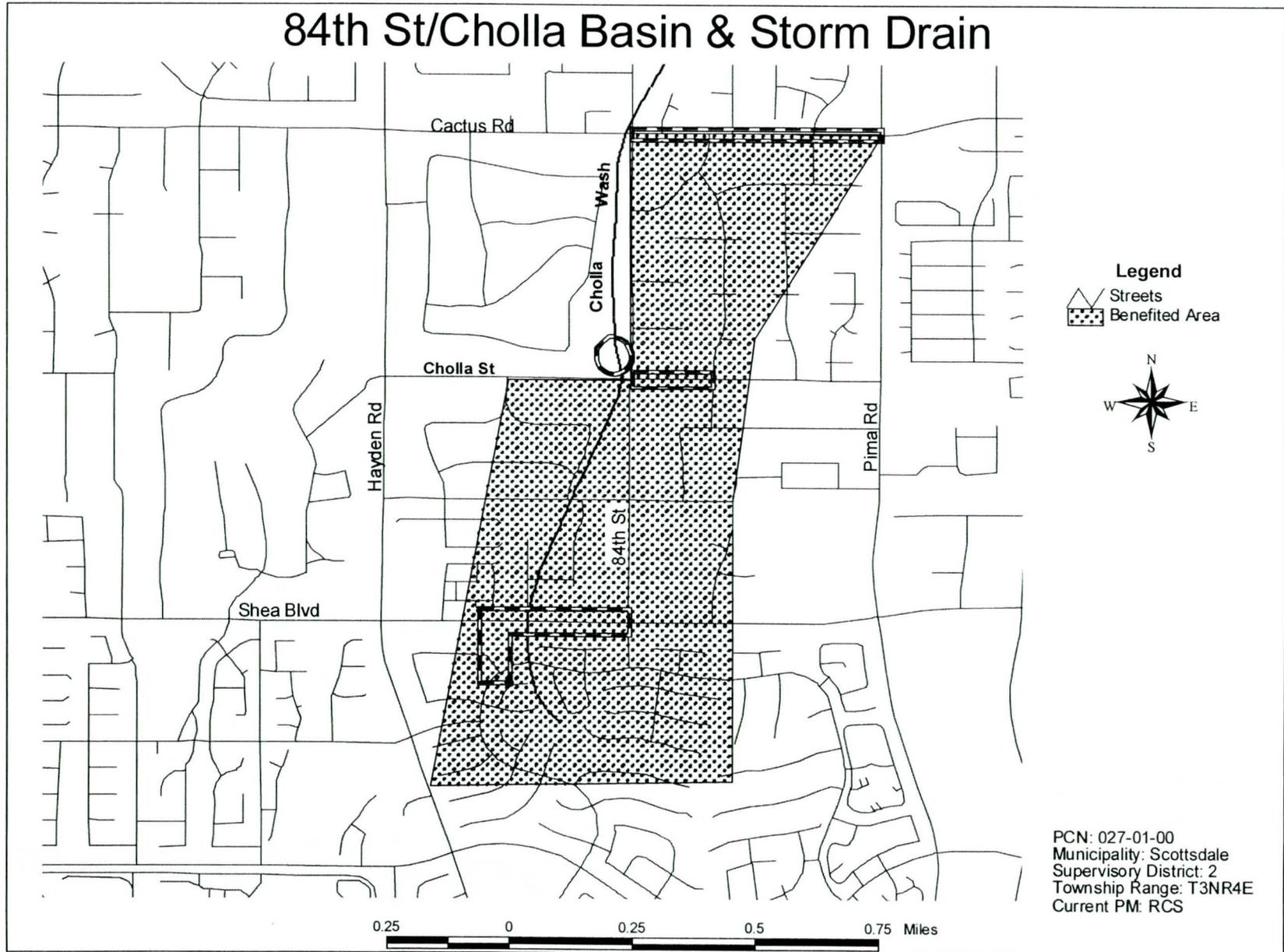
Supervisor District: All  
PM: Steve Waters

The Flood Warning System is called the Automated Local Evaluation in Real Time (ALERT) system. This system includes 238 self-contained precipitation and stream gauges that transmit information instantaneously by radio waves to base station computers at the District office and the National Weather Service. The data are used for

monitoring conditions at flood control structures and for archiving data for hydrologic studies. The CIP expenditures includes the acquisition of instrumentation for rain gauges and other monitoring equipment for the system.

11/15/00  
Steve Waters

## 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# **84th Street / Cholla Basin Drain**

Municipality: Scottsdale  
Township/Range: T3N R4E S24

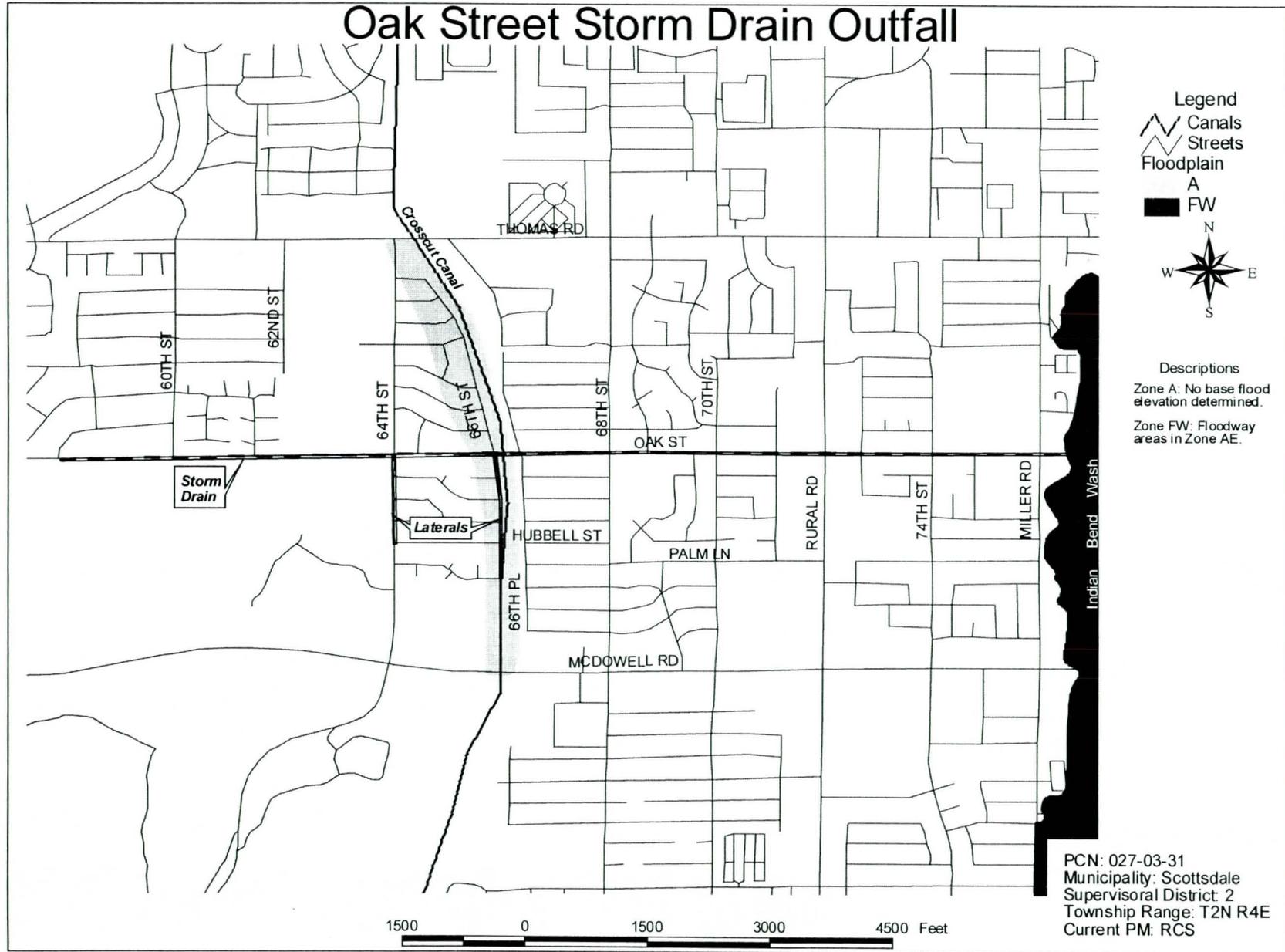
PCN: 027-01-30

Supervisor District: 2  
P.M. Raju Shah, P.E.

The 84<sup>th</sup> Street / Cholla Basin and Storm Drain Project provides 100 year protection (650 cfs.) in the Cholla Wash watershed in north Scottsdale between Cactus Road and Shea Boulevard. The project improves flood protection for approximately 200 homes and one church in a fully-developed, 250-acre area. Of this total, twenty-one homes are immediately adjacent to the Cholla Wash floodplain. The project area is part of the City of Scottsdale's Hayden/Shea Area Drainage Master Plan. The approved IGA includes a funding split of \$925,000 for Scottsdale and \$750,000 for the

District to construct a storm drain system, an open channel, and a detention basin. The final portion of the District's cost share has been budgeted in FY 99/00. The project was advertised for construction in early May 1999 and is anticipated to be completed by December, 1999. Landscaping will start after construction is complete. Landscaping is estimated to be complete by January, 2000. Scottsdale will provide future operations and maintenance of the constructed features.

## 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# **Oak Street Storm Drain Outfall**

Municipality: Scottsdale

PCN: 027-03-31  
& 027-03-32

Supervisor District: 2

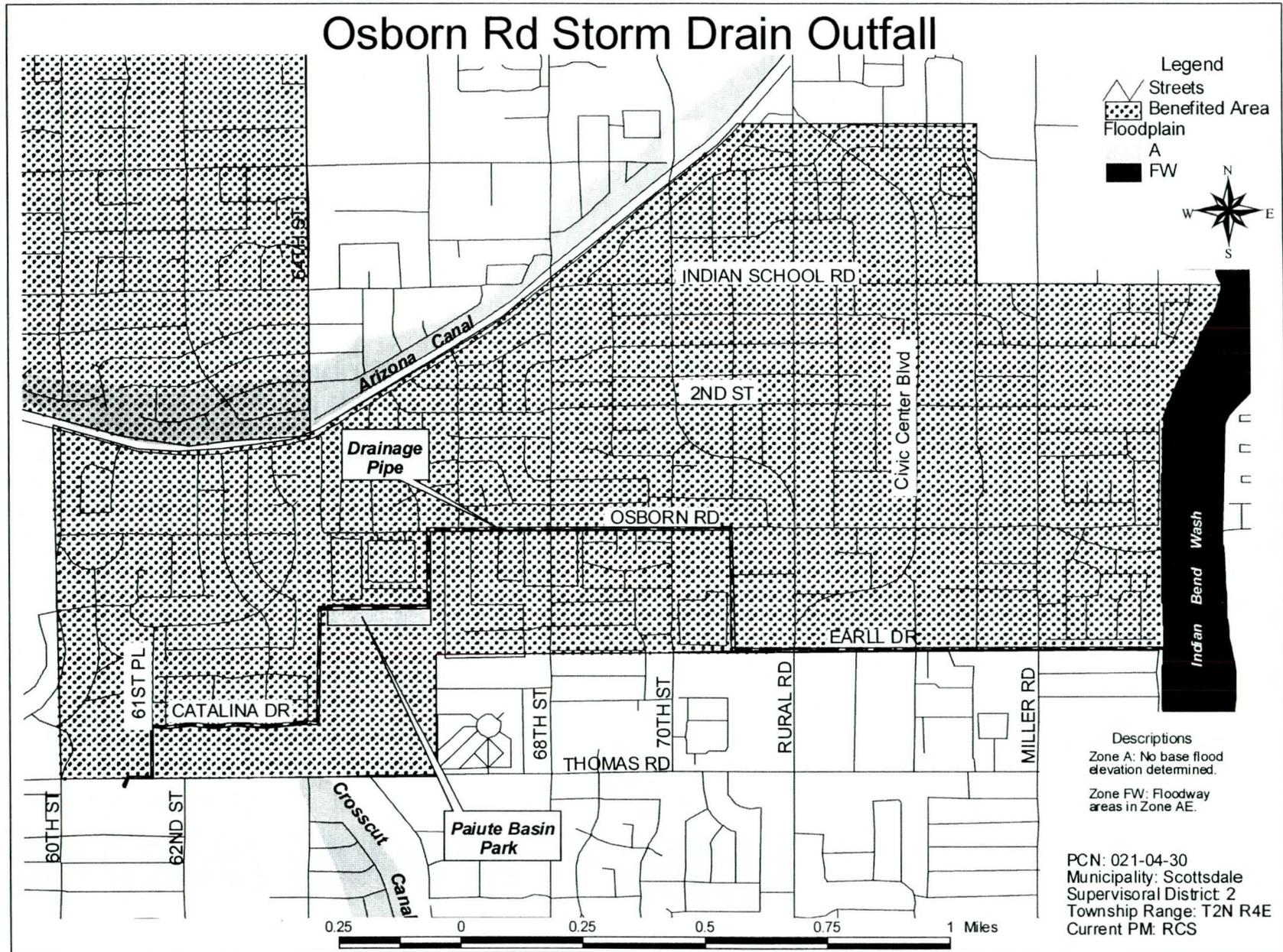
Township/Range: T2N R4E 33, 34 AND 35

PM: Raju Shah, P.E.

The project consists of approximately 3 miles of storm drain from 58<sup>th</sup> Street to Indian Bend Wash along Oak Street. The storm drain has two laterals: 1) 64<sup>th</sup> Street from Hubble Street to Oak Street and 2) 66<sup>th</sup> Street from Palm Lane to Oak Street. The project will provide a 10-year level of protection to the contributing watershed except for the area west of the New Cross Cut Canal that will be protected from a 100-year flood. There is an existing "Zone A" floodplain designated by the Federal Emergency Management Agency (FEMA) along the west side of the New Cross Cut Canal from McDowell Road to

Thomas Road. There are approximately 160 residential and commercial properties currently within that floodplain that will receive 100-year protection after the completion of the project. The estimated cost of the storm drain system is \$4.9 million. The District, along with the Cities of Scottsdale and Phoenix are cost-sharing on the project. The District is responsible for design, construction, and construction management. The City of Scottsdale will be responsible for project operations and maintenance after completion.

# 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# **Osborn Road Storm Drain Outfall**

Municipality: Scottsdale

PCN: 027-04-30

Supervisor District: 2

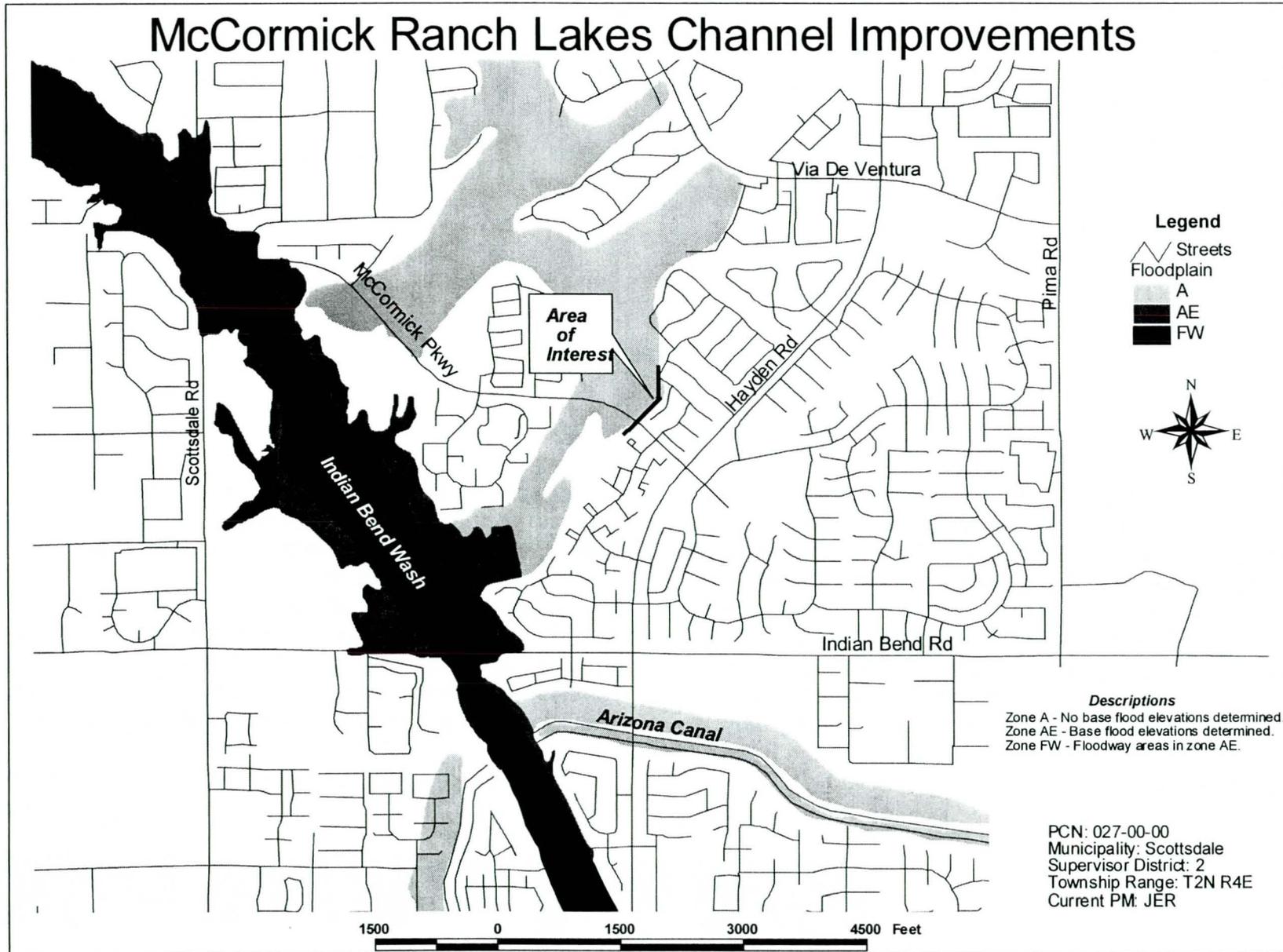
Township/Range: T2N R4E 26, 27 AND 28

PM: Raju Shah, P.E.

The project consists of approximately 2.5 miles of storm drain beginning at 60<sup>th</sup> Street and Thomas proceeding north along 61<sup>st</sup> place, east along Catalina Drive, north along 64<sup>th</sup> Street, east into Paiute Park Basin, north out of the Basin up to Osborn Road, south along 71<sup>st</sup> Street and east along Earll Drive into the Indian Bend Wash. The outfall will provide a storm drain with 10-year level of protection for contributing areas and will reduce drainage problems. Basins at Marriott's Brighton Gardens and

Paiute Park, which will reduce the required pipe sizes for the downstream storm drain, will augment the storm drain. The estimated cost of the storm drain system is \$8.2 million. The District along with the Cities of Phoenix and Scottsdale are cost-sharing the project. The District is responsible for the design, construction, and construction management of the project. The City of Scottsdale will be responsible for operation and maintenance of the project after completion.

## 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# ***McCormick Ranch Lakes Channel Improvements***

Municipality: Scottsdale  
Township/Range: T2N R4E

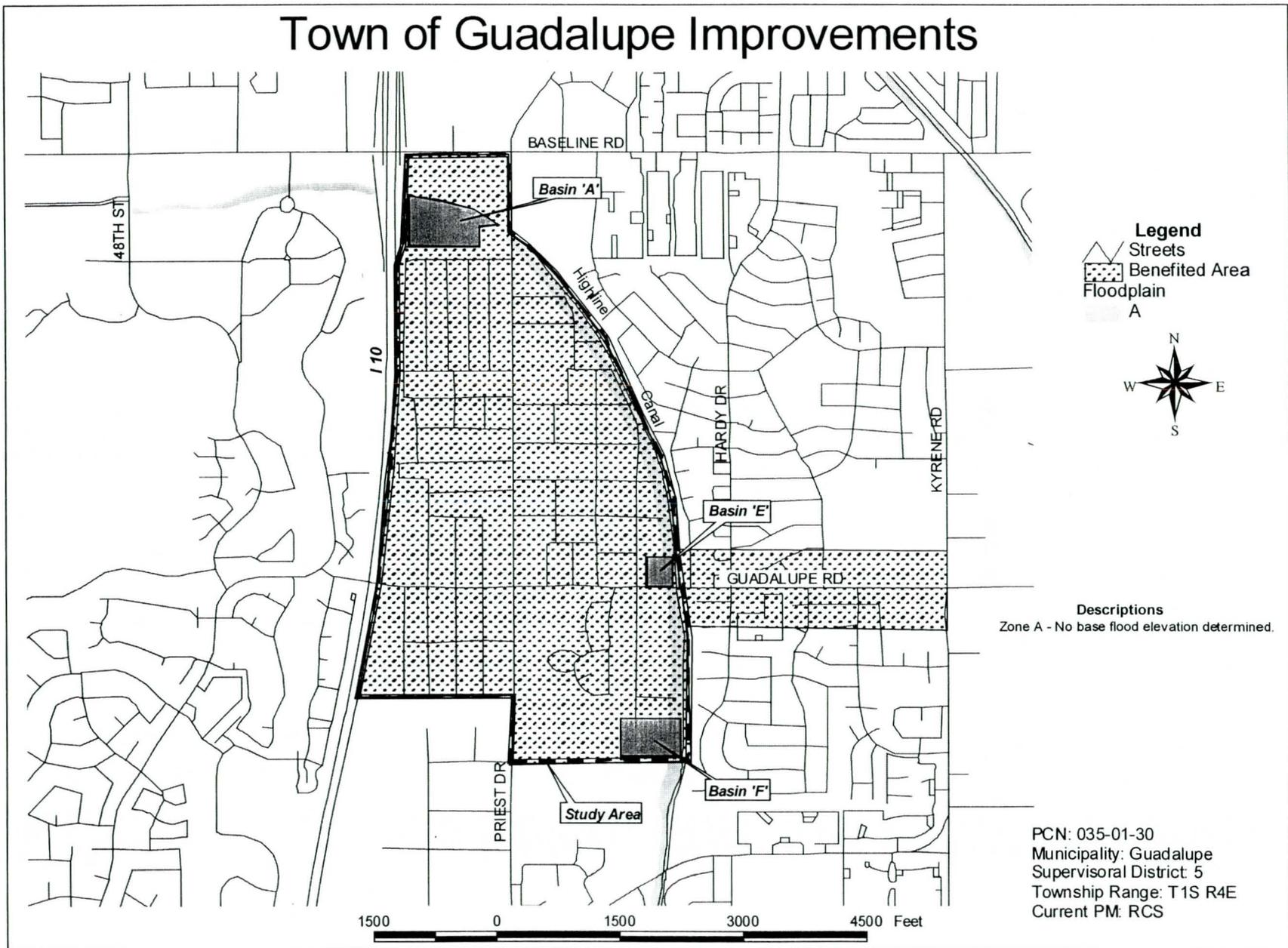
PCN: 027-XX-XX

Supervisor District: 2  
PM: John Rodriguez, P.E.

The goal of the project is to eliminate a floodplain breakout condition that was recently identified while delineating the floodplain/floodway boundaries for the McCormick Ranch Lakes, which are a major tributary to the Indian Bend Wash at Indian Bend Road. The breakout occurs along the east bank immediately upstream of the McCormick Parkway and would be contained by a floodwall, levee, or other appropriate flood control measure. At this location, the 100-year discharge of 9,280 cfs traverses an existing neighborhood prior to

inundating the intersection of McCormick Parkway and Hayden Road. Land uses in the affected area are mostly a mix of commercial and residential uses, and the area has been built out for approximately 20 years. The total estimated cost of the project is \$400,000, of which Scottsdale will contribute 50%. The City will be the lead agency responsible for design, construction, and operation and maintenance. The District will review the plans and specifications and provide technical assistance and project funding.

**6.0 CIP Project Descriptions**



6.0 CIP Project Descriptions

# ***Town of Guadalupe Improvements***

Municipality: Town of Guadalupe  
Township/Range: T1S R4E S4, SEC 9

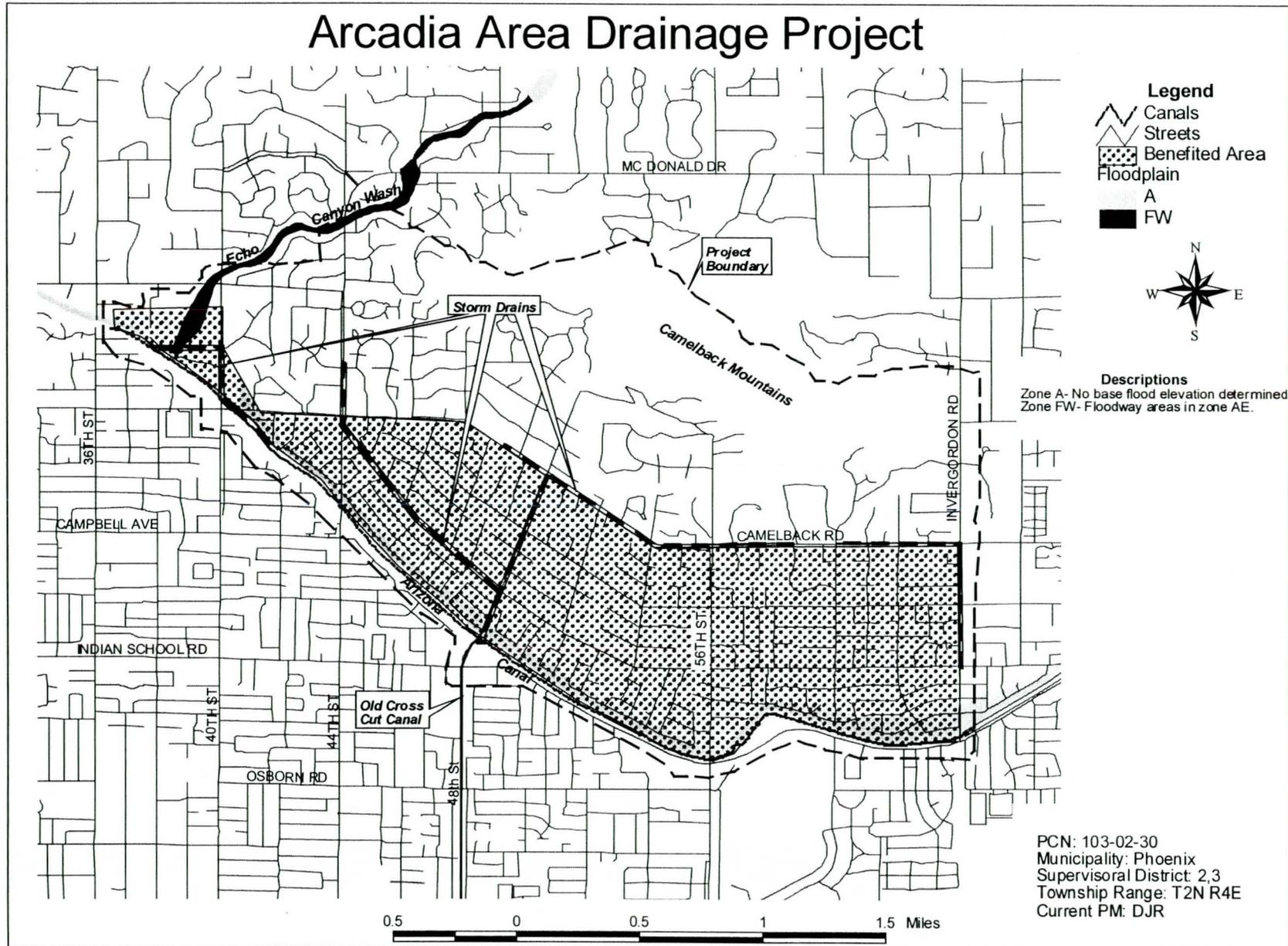
PCN: 035-01-30

Supervisor District: 5  
PM: Raju Shah, P.E.

The project will provide a storm water collection system, three retention basins located along the Highline Canal and an outfall system for runoff originating within the Town of Guadalupe. Runoff from within the Town results in flooding of low-lying houses and collects along the Highline Canal. There is an existing "Zone A" floodplain designated by the Federal Emergency Management Agency (FEMA) along the west side of the Highline Canal. There are approximately 90 properties currently within that floodplain that will receive 100-year flood protection after the completion of the project. The

ponded water results in flooding of adjacent homes and causes damage to the canal and to downstream properties within Tempe. The project costs for design and construction of the project are estimated to be \$6.2 million. Land acquisition has been completed. The Town is not able to contribute financially to the project but will assume maintenance responsibilities for the conveyance system and the basins. Additionally, the Town will seek grants and other means to participate in the construction of street drainage improvements.

## 6.0 CIP Project Descriptions



**6.0 CIP Project Descriptions**

# ***Arcadia Area Drainage Project***

Municipality: Phoenix

PCN: 103-02-30

Supervisor District: 2, 3

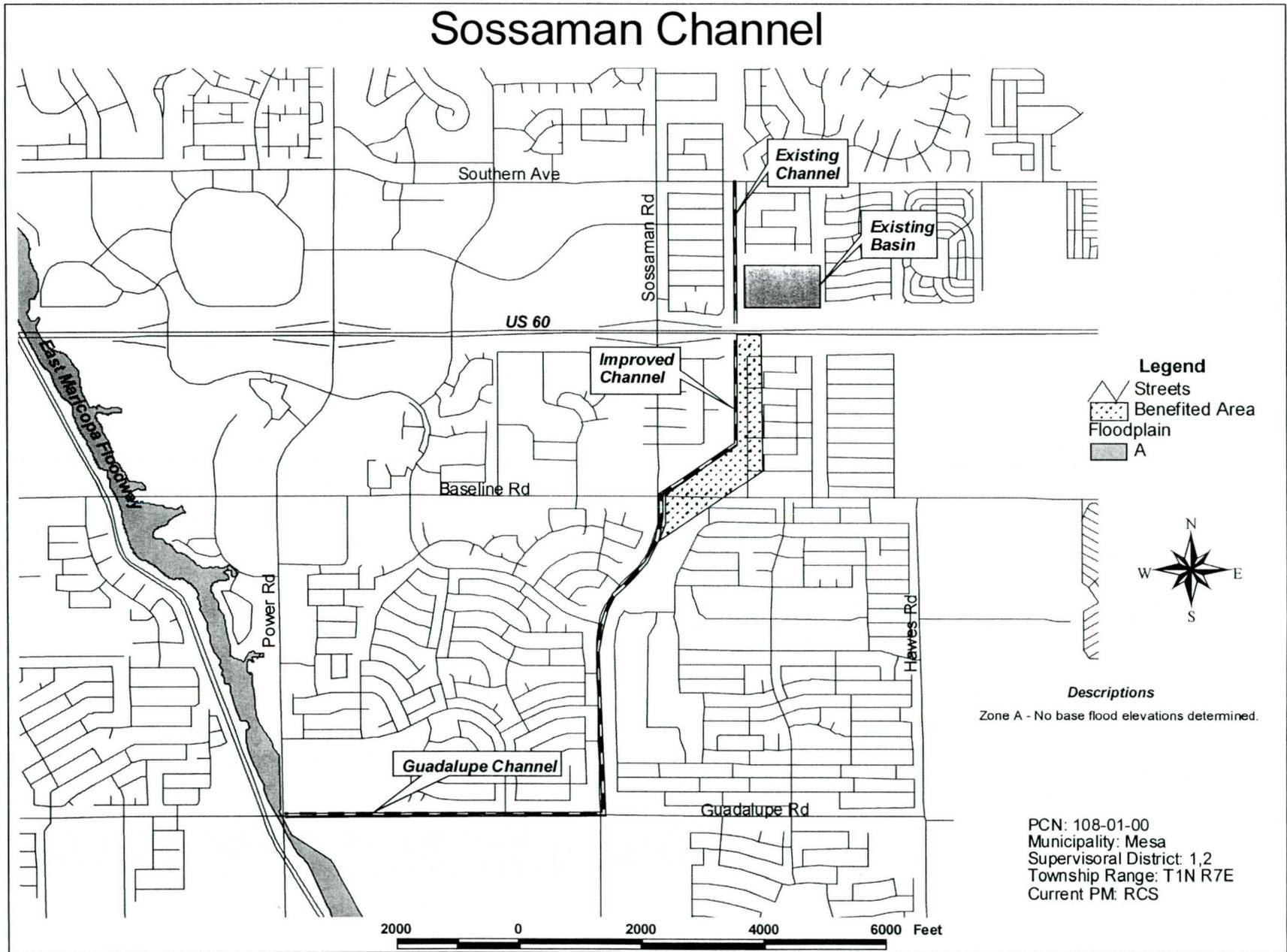
Township/Range: T2N R4E S19-21

PM: Don Rerick, P.E.

The project will include design and construction of three storm drain systems, which will intercept and convey up to 1,000 cfs through a highly developed residential area between 40th and 64th Streets, north of the Arizona Canal and provide a ten-year level of protection. The project will provide drainage outfalls for a four square mile area, utilizing the improved Old Cross Cut Canal, the ACDC and Indian Bend Wash. The project is a component of the Old Cross Cut Canal master plan. The study phase was completed in April 1997 at a cost of

\$325,000 funded by the District. The cost for construction of the recommended Alternative Number 2 is estimated at \$12 million, with the costs expected to be shared equally between the District and the City of Phoenix in accordance with an IGA to be developed in the future. The design IGA FCD-97016 for the Alternative Number 2 was approved in April 1998. The City will provide the operation and maintenance for the project. Present funding for design is in FY 2003/2004.

## 6.0 CIP Project Descriptions



**6.0 CIP Project Descriptions**

# **Sossaman Channel**

Municipality: Mesa  
Township/Range: T1N R7E S32

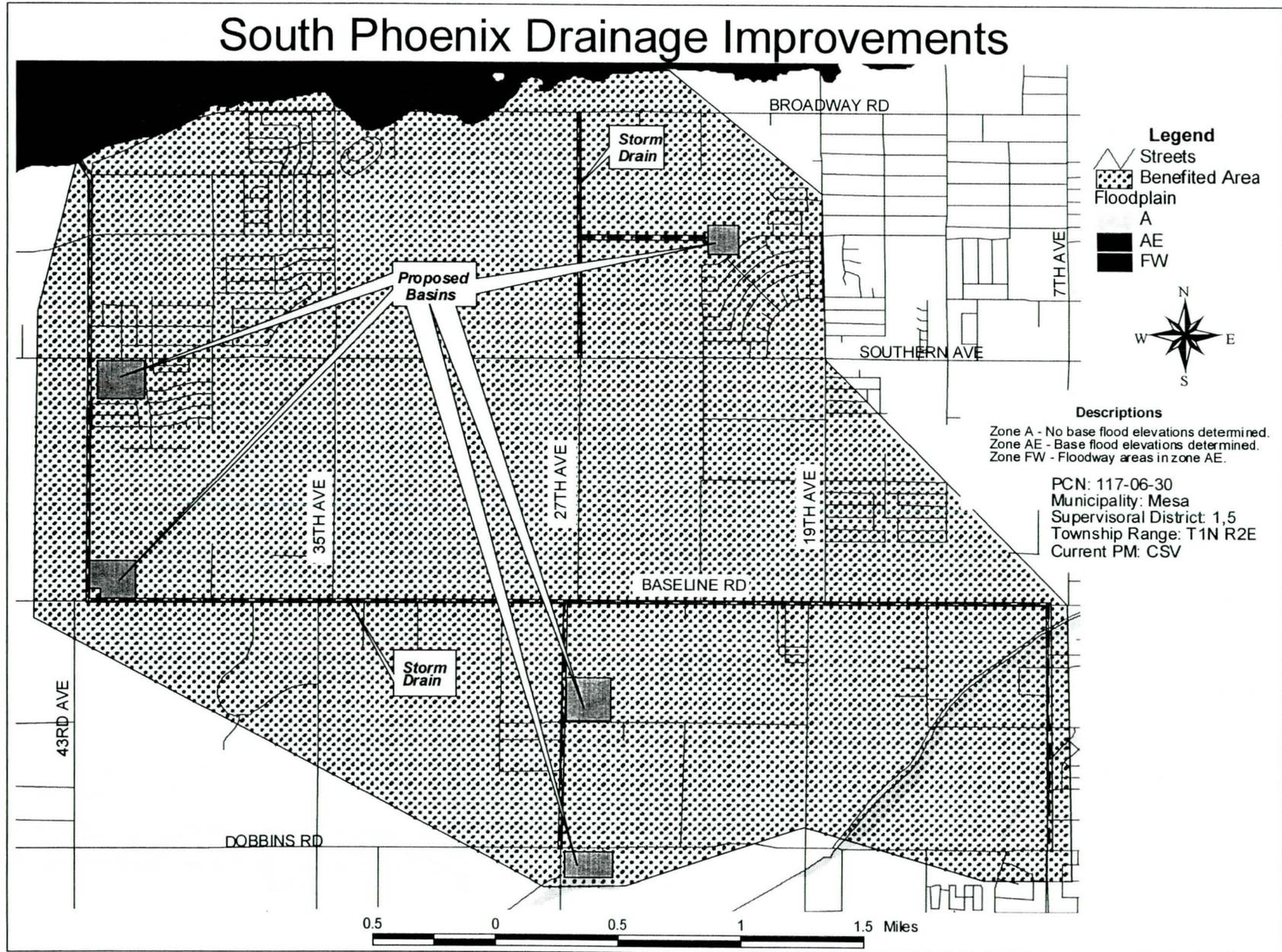
PCN: **108-01-XX**

Supervisor District: 1, 2  
PM: Raju Shah, P.E.

The channel is located in east Mesa between Sossaman Road and Hawes Road and the Superstition Freeway (U.S. 60) to Baseline Road. The channel construction was completed in January 1999. The existing channel section did not have sufficient capacity to convey the 100-year peak discharge. The project improved the channel from U.S. 60 to Baseline Road. This project

completed the Sossaman drainage system. The portions north of the Freeway and south of Baseline Road were previously constructed by the District and are being operated and maintained by the District. District staff is currently designing the landscaping element of this project and anticipates completion by December 1999.

## 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# **South Phoenix Drainage Improvements**

## Baseline Road and 43<sup>rd</sup> Avenue Storm Drains

Municipality: Phoenix

PCN: 117-06-30

Supervisor District: 1, 5

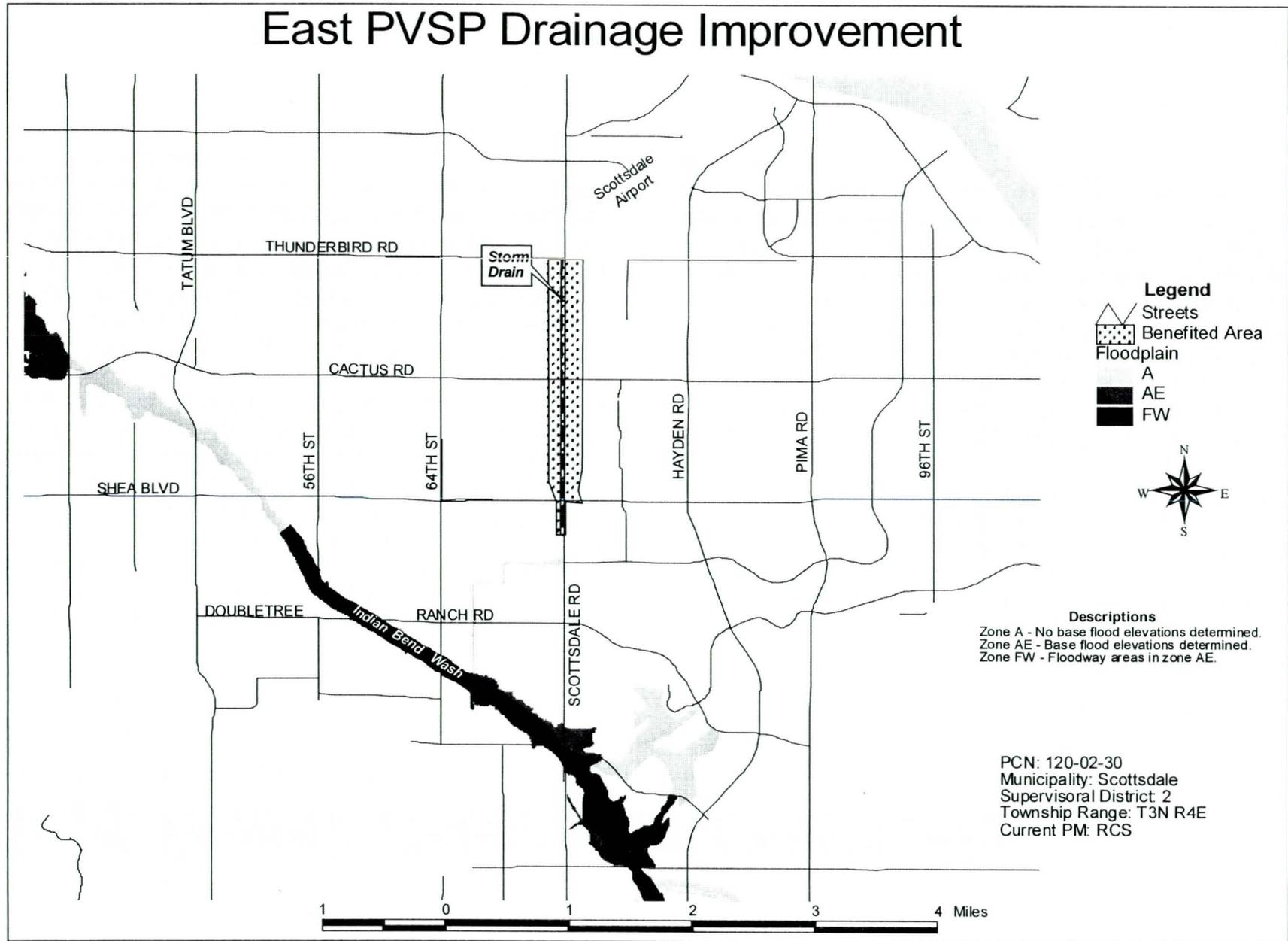
Township/Range: T1N R2E; T1N R3E

PM: Scott Vogel, P.E.

Residents in the South Phoenix area have been flooded during relatively minor events, including those considered to be less than 10-year flood storms. The residents living in a subdivision on the southeast corner of 43<sup>rd</sup> Avenue and Southern are usually the hardest hit. An interim project was constructed at this location through the joint cooperation of the District, the City of Phoenix, and the Salt River Project. The interim project does not provide 100-year flood protection, but it does help to drain the water from the area more quickly after a flood event. The South Phoenix Drainage Improvement Project will provide protection from a 100-year flood event to residences and farmland within the City of Phoenix. In addition, the project will provide flood protection to a proposed high school and an elementary school that are currently being constructed within the project area. The project will be built in phases to maximize the potential for cost sharing with other

agencies. The proposed system is composed of underground pipes, located within existing rights-of-way, and basins that will help to minimize the project's cost. It is estimated that the project will cost \$24 million to design and build. Elements of the project will be constructed in phases through a joint partnership among the District, the City of Phoenix, and the Maricopa County Department of Transportation. Design and construction management for Phase I, or the 43<sup>rd</sup> Ave Storm Drain, will be provided by District staff. Phase II, made up of the Baseline Road storm drainage improvements; will be cost-shared among the District, MCDOT, and the City of Phoenix. The goal is for the District to contribute approximately 50% of the project cost of the South Phoenix Drainage Improvements. Depending on funding participation, some project elements may be deleted, downsized or deferred, possibly resulting in a reduced level of protection.

6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# ***East PVSP Drainage Improvements***

Municipality: Scottsdale

PCN: 120-02-30

Supervisor District: 2

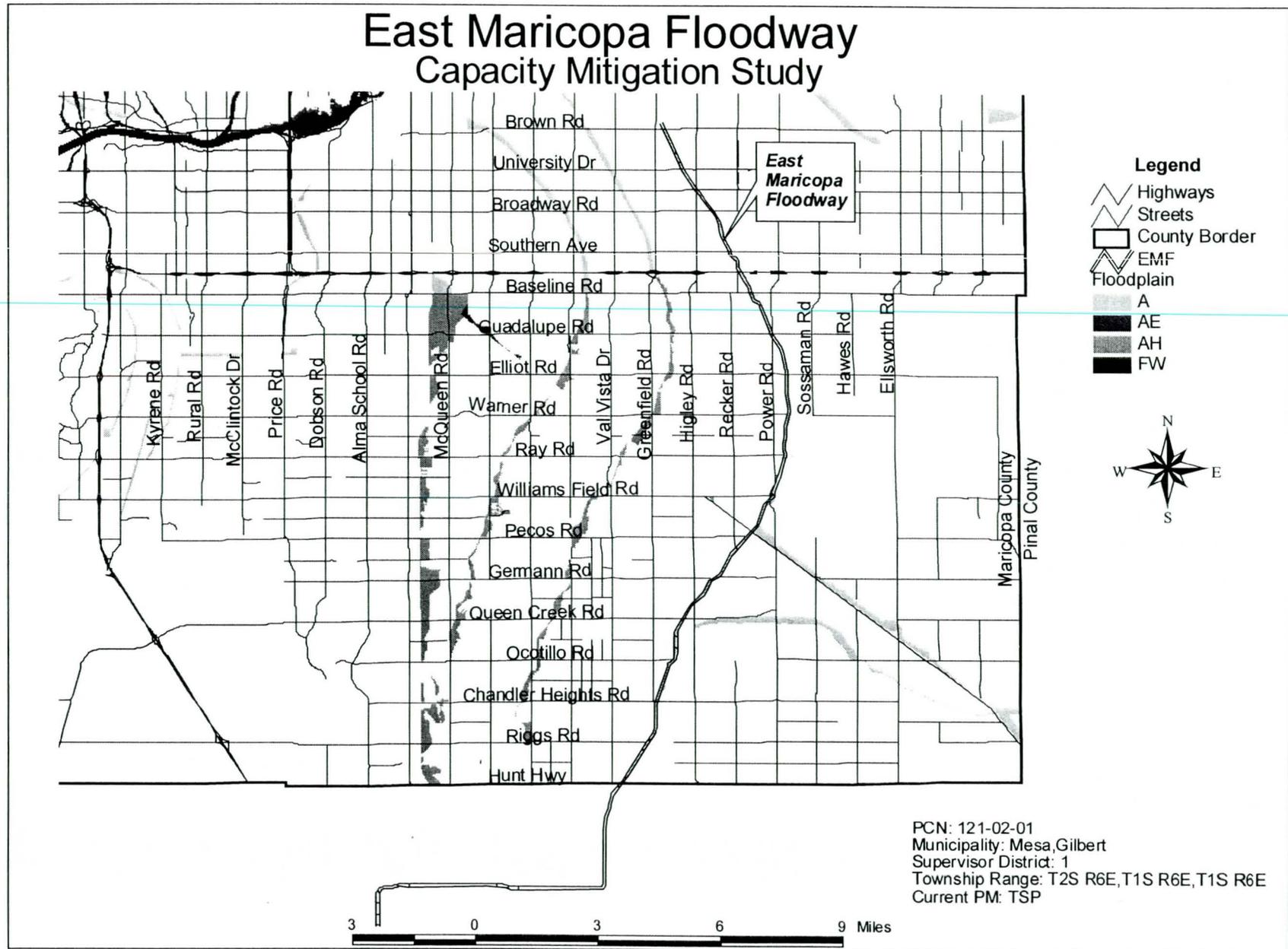
Township/Range: T3N R4E S22, 23, 27

PM: Raju Shah, P.E.

This project will construct a 100-year channel and storm drain improvements along Scottsdale Road (Thunderbird to Gary Road) and 71st Street (Sunnyside Drive to the Berneil Ditch). The first phase of this project, Cactus Road Neighborhood, was completed in FY 1997/98. Together, these two phases serve as supplements to facilities constructed through the PVSP Master Plan. This second phase of the project provides additional protection for Scottsdale Road and Shea Boulevard.

When completed, approximately 417 acres of residential and commercial development (140 acres within the City of Phoenix) will be protected. The benefited area contains approximately 330 residences and 70 commercial structures. The total project cost is estimated at \$3.3 million, with 50% funding supplied by the District. Scottsdale will be responsible for the future operation and maintenance of the facility.

## 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***East Maricopa Floodway (EMF) Capacity Mitigation Study***

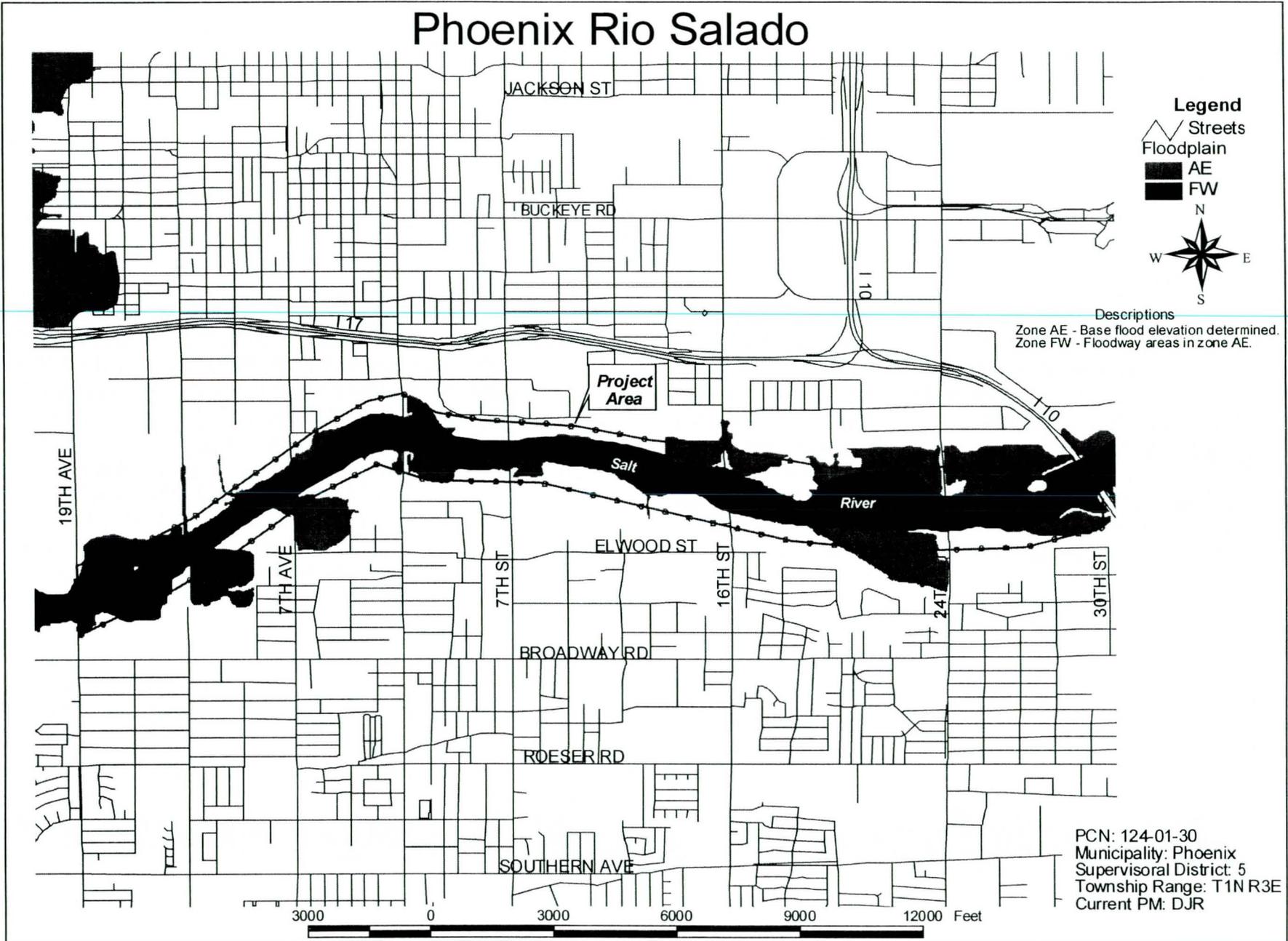
Municipality: Gilbert, Mesa and Queen Creek    PCN: 121-02-01  
Township/Range: T1N, R6E, Sections 15, 22, 23, 26, 35, 36; T1S, R6E,  
Sections 1, 2, 36; T1S, R7E, Sections 7, 18, 19, 30, 31; T2S, R6E, Sections 1, 2,  
10, 11, 15, 22, 27, 28, 33

Supervisor District: 1 and 2  
PM: Tim Phillips, P.E.

Current and projected District CIP expenditures can be divided into two parts: a conceptual development analysis that will evaluate potential capacity mitigation measures; and a design and construction phase that will provide features or structures which can contain or retain storm water runoff such that the EMF can provide 100-year protection. The conceptual development analysis consists of providing professional engineering services necessary to identify opportunities to construct in-line and/or off-line detention basins or channel improvements to increase the capability of the watercourse to convey 100-year storm flows. This analysis will evaluate the

existing channel from Brown Road to the southern county boundary at Hunt Highway. The conceptual development will be used as the basis for subsequent design and construction efforts. The EMF conceptual development effort is part of the planning effort for the Queen Creek and Sanokai Wash Hydraulic Master Plan. The combined planning effort has been contracted for approximately \$610,000. The design and construction phase will involve implementation of the solutions identified in the conceptual development phase. Total expenditures in the CIP are tentatively estimated to be \$35,000,000 implemented over the next 5 years.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# **Phoenix Rio Salado**

Municipality: Phoenix  
Township/Range: T1N R3E

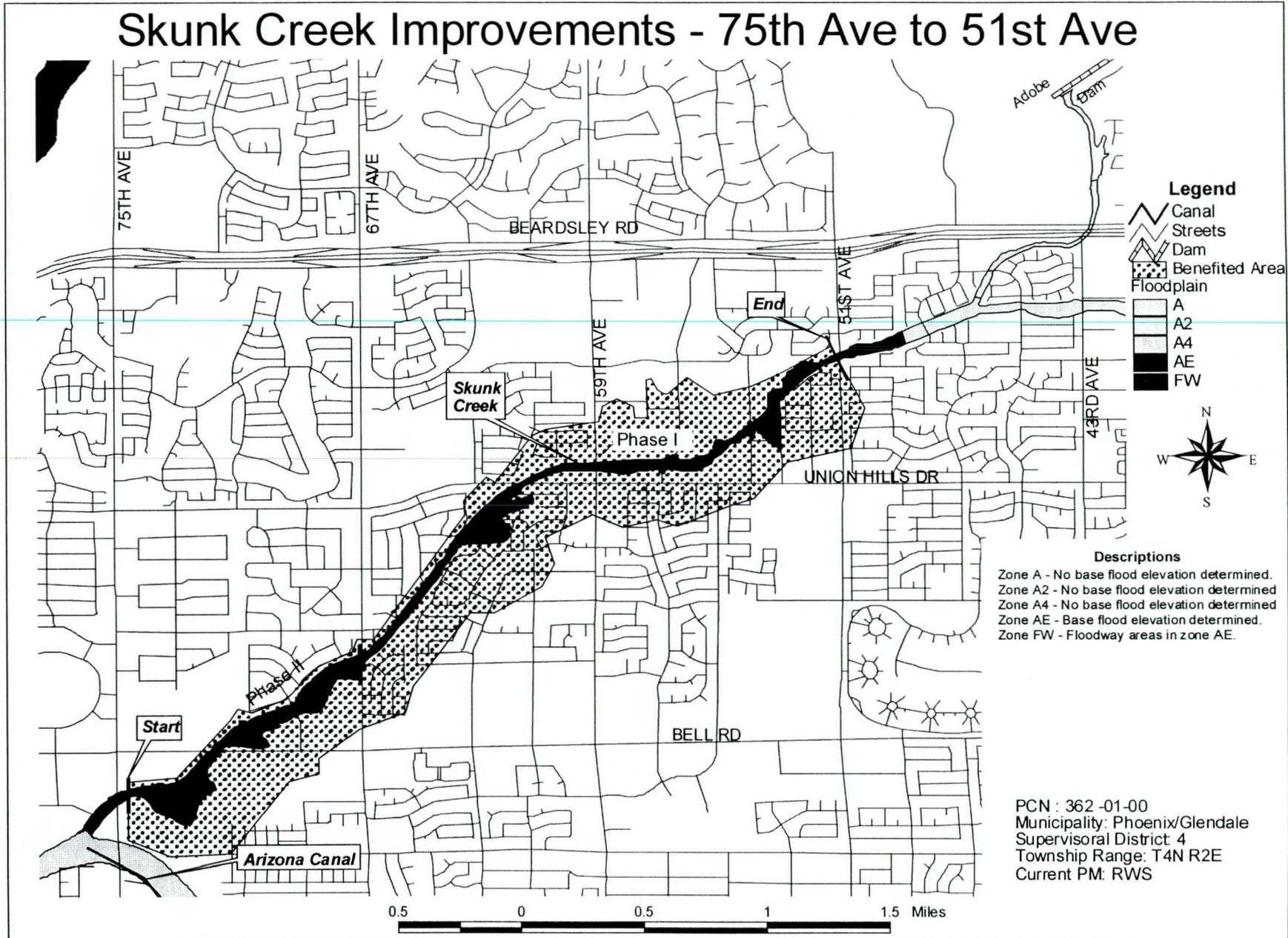
PCN: 124-01-30

Supervisor District: 5  
PM: Don Rerick, P.E.

This project involves the environmental restoration of approximately 5 miles of the Salt River within the City of Phoenix from the I-10 Bridge to 19<sup>th</sup> Avenue. The project will provide riparian habitat restoration and include channel stabilization, river bank protection, water quality improvements, aesthetic improvements and recreational opportunities. The District has recommended that it participate in the construction of the low flow channel proposed for the full length of the project. On December 16, 1998 the BOD approved project IGA FCD 98040 and Resolution FCD 98-08. The low flow channel will stabilize the river gradient, safely convey frequent flood flows and will reduce the frequency of inundation of channel vegetation from major flood events. The low

flow channel and main bank channel system will also limit scour and erosion of the channel banks and reduce the potential for disturbing landfill material that may be present adjacent to the channel. Project design requirements will insure that the current level of flood protection and river channel capacity in the 5 mile reach is not decreased by the environmental restoration features. The total project cost is estimated at \$83 million. The District's cost share for construction of the flood control features of the low flow channel is capped at \$11 million. Design is underway at this time by the United States Army Corps of Engineers. Construction of the low flow channel features will occur in two phases beginning in spring of the year 2000.

6.0 CIP Project Descriptions



**6.0 CIP Project Descriptions**

# ***Skunk Creek Improvements: 75th Ave. - 51st Ave.***

Municipality: Glendale/Peoria

PCN: 362-01-30  
& 362-02-30

Supervisor District: 4

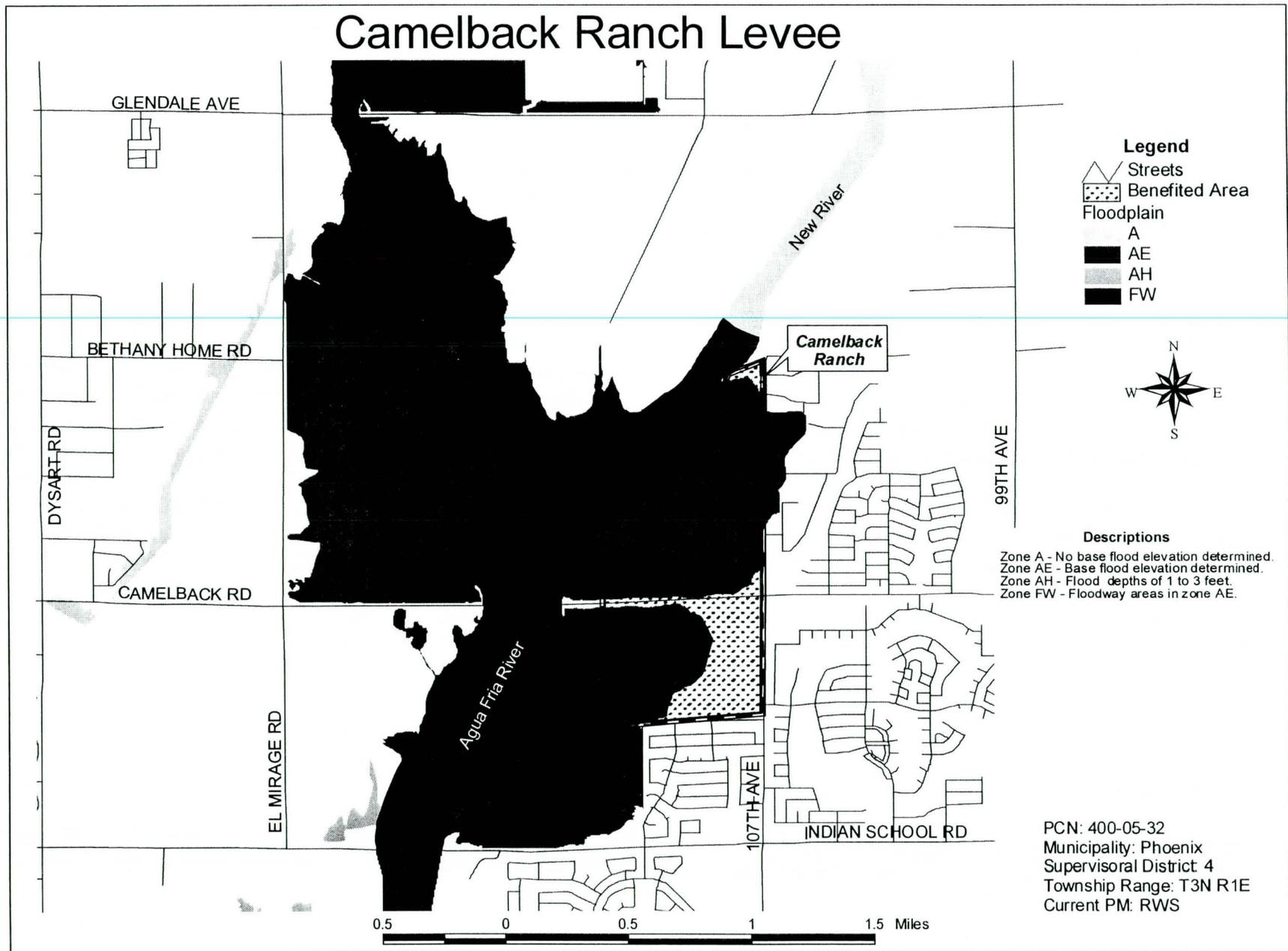
Township Range: T4N R2E S28-31; T4N R1E S36; T3N R1E S1

PM: R.W. Shobe, P.E.

Under the terms of an agreement with the U. S. Army Corps of Engineers, the District is responsible for assuring 100-year conveyance capacity in Skunk Creek from Adobe Dam to the ACDC. Recent studies indicate that portions of the channel have been restricted, and the 100-year flows break out of the existing channel. Rapid development of the bordering properties has necessitated the completion of a pre-design study to determine 100-year capacity channel designs, including the need for grade control structures and the armoring of the channel banks in the remaining unlined reaches.

Public participation has resulted in a multi-use concept designed to incorporate natural vegetation and provide access for pedestrian and equestrian uses, with bank armor buried to preserve a natural appearance. Total costs are estimated at \$10.7 million, with the District's share estimated at approximately \$5.5 million. The project should be completed in November, 1999. Glendale will assume ownership and provide operation and maintenance for the project.

## 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# Camelback Ranch Levee

Municipality: Phoenix/Glendale

PCN: 400-05-31  
& 400-05-32

Supervisor District: 4

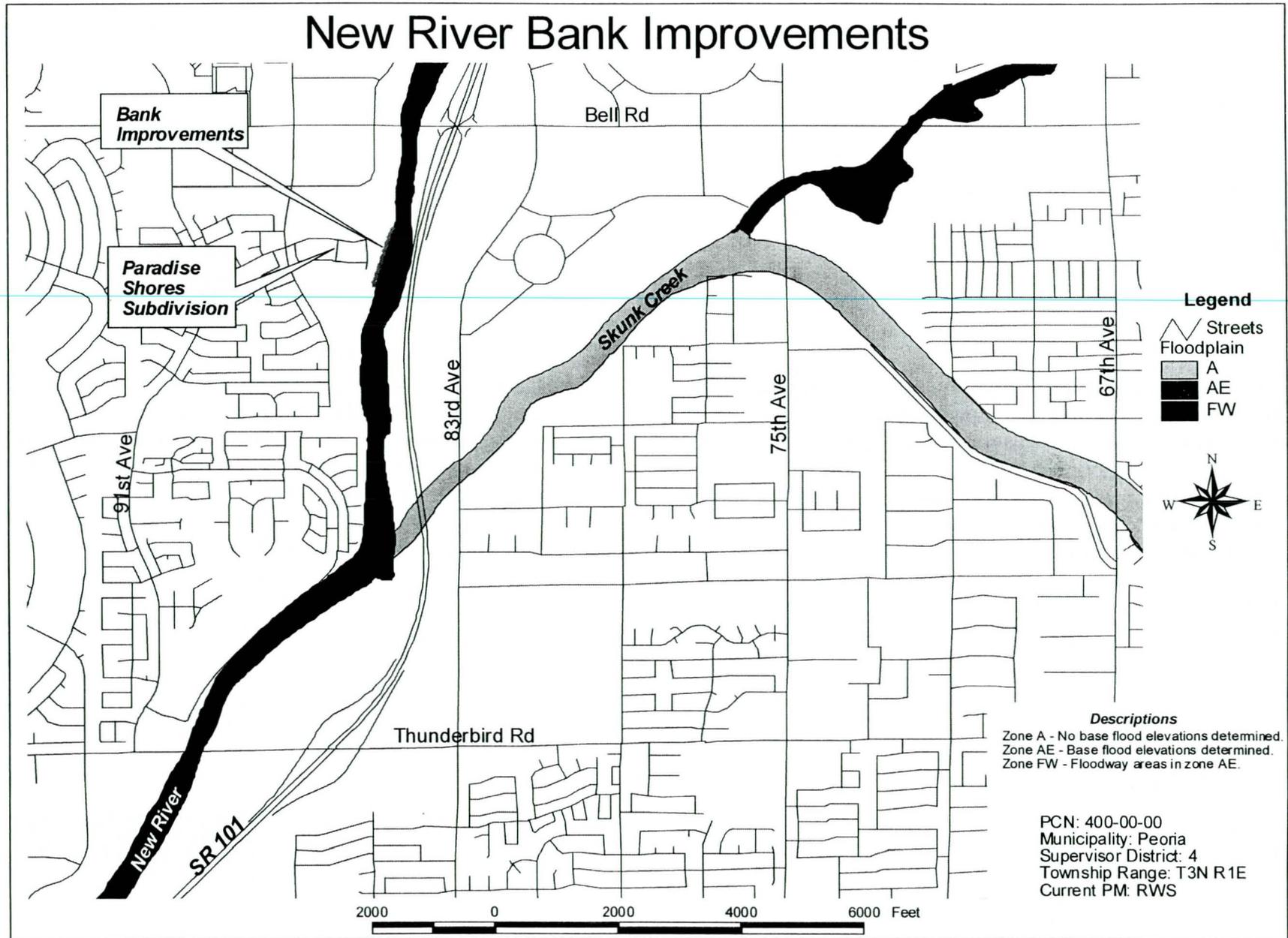
Township/Range: T2N R1E S18, 19

PM: R.W. Shobe, P.E.

The Camelback Ranch property, 489 acres, was purchased from the Resolution Trust Corporation in order to fulfill the District's obligations under its 221 Agreement with the U.S. Army Corps of Engineers for the Phoenix, Arizona and Vicinity (including New River) Flood Control Project. The District designed the levees to protect the property from New River and Agua Fria River flood flows. The levee is being constructed to meet the Corps' Standard Project Flood requirements and will be operated and maintained by the District. The estimated cost to design and build the levees and rezone the

property is \$4.4 million. Upon completion of the project, the remainder of the 489-acre property will be sold at a public auction. The District estimates the potential revenue from this sale will be \$4.6 million, thereby paying for the cost to protect the property. The portion of the project south of Camelback Road is now completed. Glendale has purchased the property north of Camelback Road for \$3 million from the District. Construction of the levee from Camelback Road to Bethany Home Road Alignment began in FY 98/99 and will be completed October, 1999.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***New River Bank Improvement (Bell Park / Paradise Shores)***

Municipality: Peoria  
Township/Range: T4N R1E

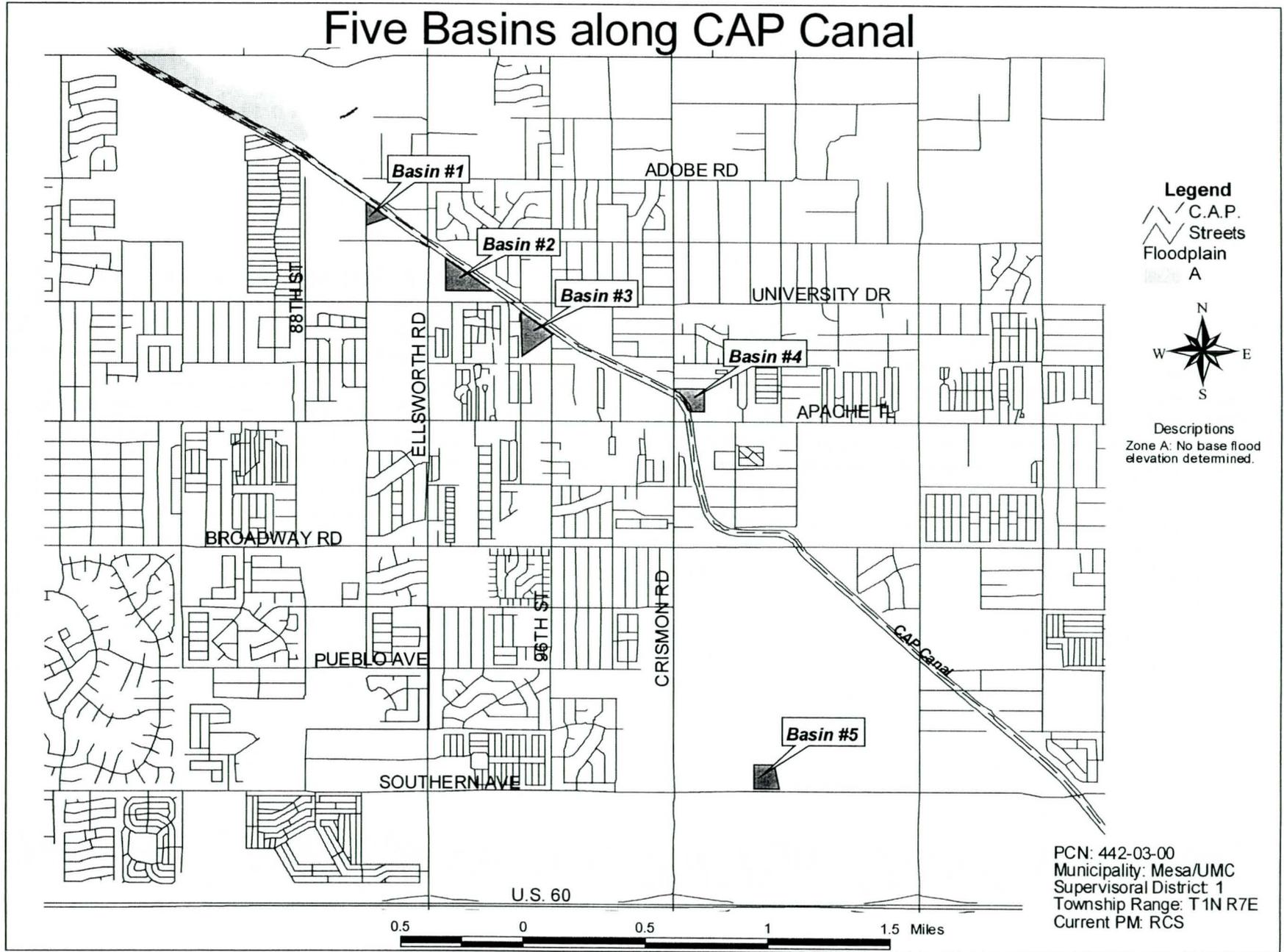
PCN: 400-XX-XX

Supervisor District: 4  
PM: Doug Williams, A.I.C.P.

A number of improvements have already been made to the bank and channel adjacent to the Bell Park subdivision, but preliminary findings of the Middle New River Watercourse Master Plan study have identified a potential break-out of a 100-year event near the drainage outlet to New River. The proposed bank and channel improvements will be designed to contain the 100-year event within New River, adjacent to the Bell Park subdivision. There will be a reduction in the bed migration, aggregation and degradation after the improvements are made. The estimated total cost of the project is \$250,000, of which the City is willing to contribute \$80,000. The New River Channel, to the extent of the City jurisdiction, is designated to be a linear City park with trail and recreational amenities. Maintenance of the park, recreational facilities, and storm drain facilities will be the responsibility of the City.

The developer of the Paradise Shores subdivision did not construct bank protection adequate to protect the subdivision because the properties necessary to undertake the improvements were not owned by the developer. The project would provide existing residential areas and public streets with 100-year flood event protection. The project is part of the Middle New River Watercourse Master Plan Project that studied the River from Thunderbird Road to the New River Dam. Individual segmented erosion protection projects have been completed in the past by private interests, but protection is not comprehensive. The river corridor is the dividing line between the cities of Glendale and Peoria. The estimated total cost is \$275,000, of which Peoria is willing to contribute \$70,000.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Five Basins along the Central Arizona Project (CAP) Canal***

Municipality: Mesa

PCN: 442-03-XX

Supervisor District: 1

Township/Range: T1N R7E 15, 16, 22, AND

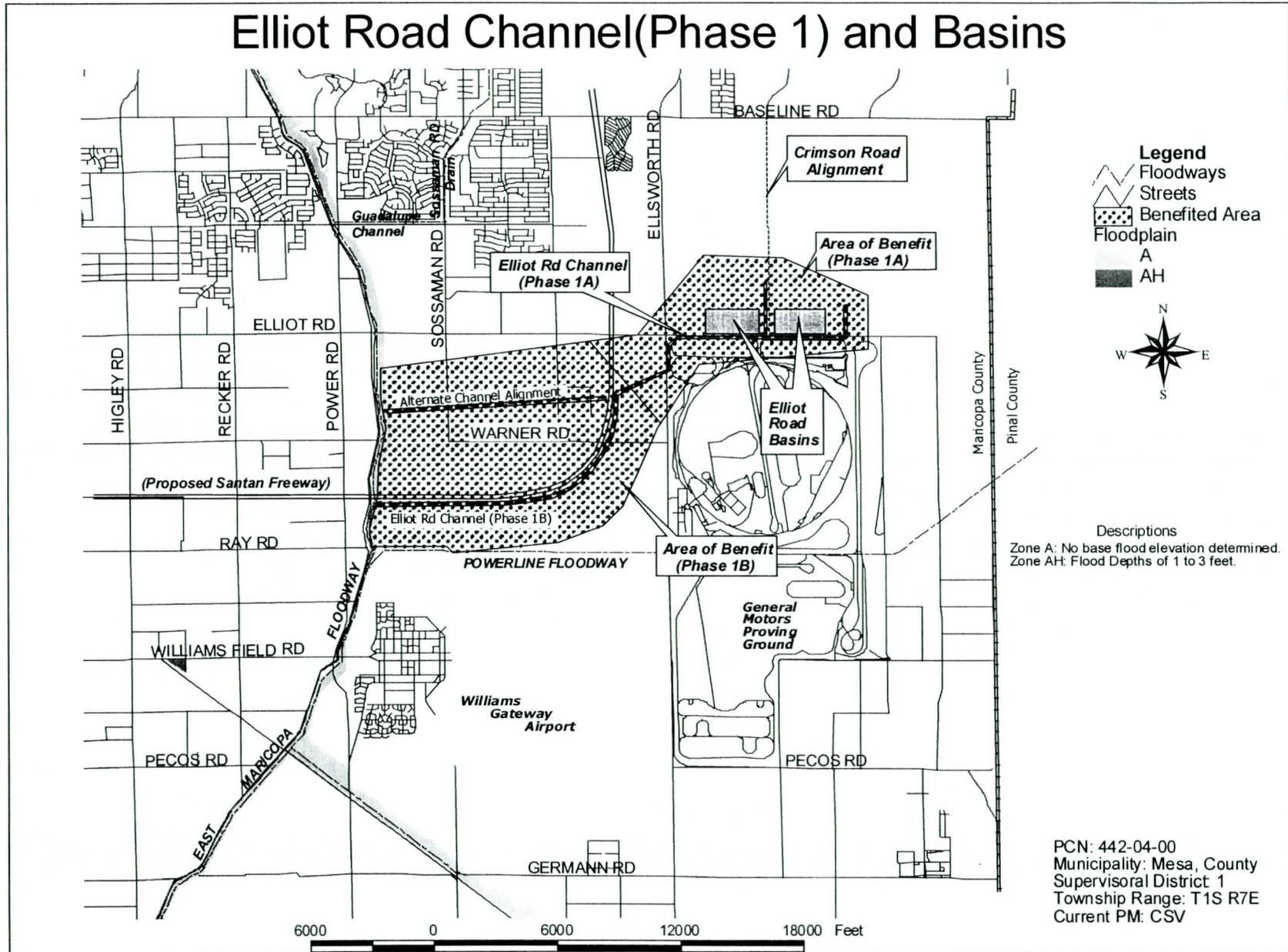
PM: Raju Shah, P.E.

23

The project consists of five detention basins along the CAP Canal at the following locations: 1) Basin #1- west of 90<sup>th</sup> Street north of Decatur Street; 2) Basin #2 - northeast corner of Ellsworth Road and University Drive; 3) Basin #3 - west of 96<sup>th</sup> Street and north of Boise Street; 4) Basin #4 - north of the CAP Canal and east of Crismon Road; and 5) Basin #5 - northeast corner of Crismon Road and Southern Avenue. The purpose of these basins is to intercept flow from the CAP Canal overchutes before it discharges into natural washes and causes downstream flooding. The basins are designed so that routine overflows (5 year storm events or smaller) are allowed to pass through the basins, leaving most of

the basins dry. This allows recreational uses to continue after all but the severest storm events. However, when there is a major storm event, the basins retain water, protecting areas from flooding. The estimated cost for the five basins is \$ 5.2 million. The City of Mesa will own, operate and maintain these basins after construction. The rights-of-way for all of the basins has been acquired and final design is almost complete. The anticipated construction date is November 1999. The basin near Crimson Road and Southern Avenue is currently the subject of partnership discussions with Mesa, the local school district and a developer.

## 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Elliot Road Channel & Basin (Phase 1A - Elliot Basin to Ellsworth Road)***

Municipality: Mesa  
Township Range: T1S R7E

PCN: 442-04-30

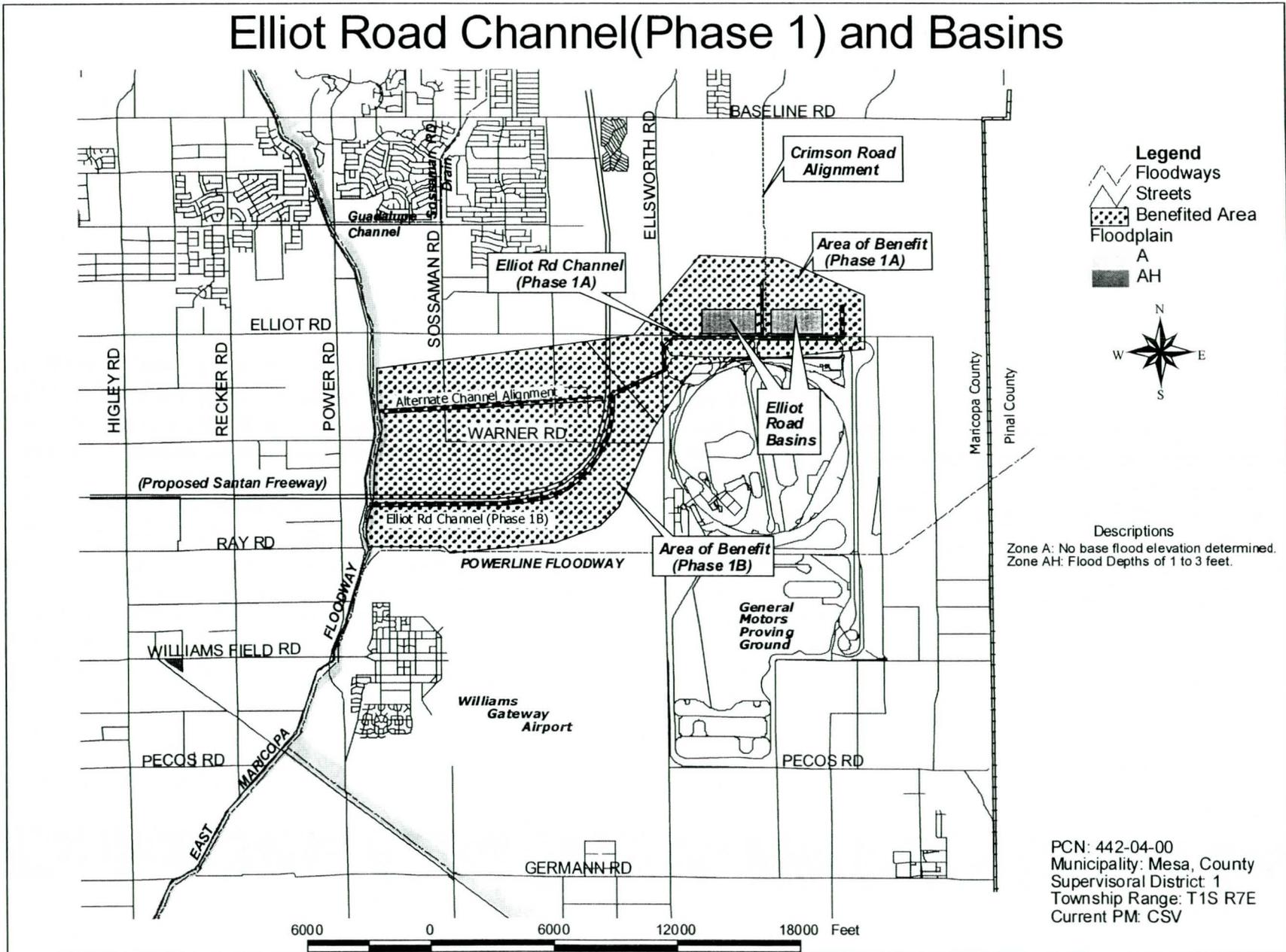
Supervisor District: 1  
PM: Scott Vogel, P.E.

The Elliot Road Channel and Basin are projects that are identified in the East Mesa Area Drainage Master Plan. The East Mesa ADMP identifies drainage problems and develops solutions for a storm water collection and basin system for eastern Maricopa County including portions of the City of Mesa, the Town of Gilbert, the Town of Queen Creek, and unincorporated Maricopa County. The Elliot Road Basin is located at the corner of Elliot Road and the Crismon Road alignment. It collects runoff from the Crismon Channel, which extends along Crismon Road north of Elliot Road and from the Elliot Road Channel extending along Elliot Road to the East. The basin attenuates peak flows to reduce the size and cost of

required downstream improvements. The basin is anticipated to become a joint use facility, being improved and maintained as a City of Mesa park. The channel conveys discharge from the Elliot Road Basin, from the Elliot Road Channel, Phase 2 (extending east along Elliot Road to a basin at Meridian Road) and from the Elliot Road Basin. The Elliot Road Channel, Phase 1A, extends west along Elliot Road, daylighting east of Ellsworth Road in natural washes. The future Phase 1B will extend from this point to the EMF. The City of Mesa may be interested in creating a joint use for the channel as a linear park.

# 6.0 CIP Project Descriptions

## Elliot Road Channel(Phase 1) and Basins



6.0 CIP Project Descriptions

# ***Elliot Road Channel (Phase 1B - Ellsworth Road to the EMF)***

Municipality: Mesa  
Township Range: T1S R7E

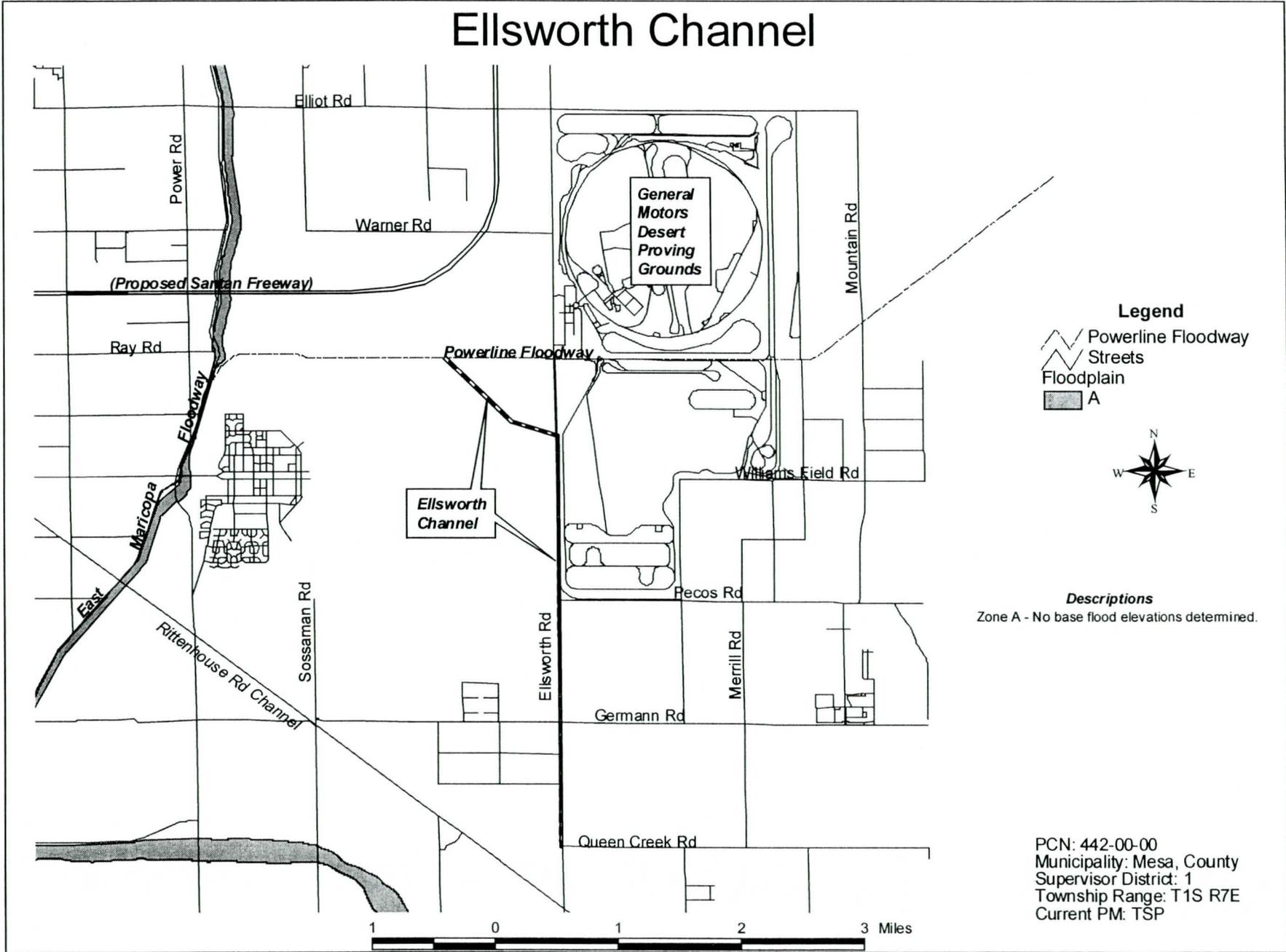
PCN: 442-04-30

Supervisor District: 1  
PM: Tim Phillips, P.E.

The Elliot Road Channel and Basin are projects that are identified in the East Mesa Area Drainage Master Plan. The East Mesa ADMP identifies drainage problems and develops solutions for a storm water collection and basin system for eastern Maricopa County including portions of the City of Mesa, the Town of Gilbert, the Town of Queen Creek, and unincorporated Maricopa County. The Elliot Road Channel, Phase 1B connects to Phase 1A,

extending from Ellsworth Road to the east, following the proposed Santan Freeway alignment to the EMF. An alternate route for the channel has been identified that extends from Elliot Road and Ellsworth Road westerly, crossing the Santan Freeway and to the EMF. The City of Mesa may be interested in creating a joint use for a channel as a linear park.

**6.0 CIP Project Descriptions**



**6.0 CIP Project Descriptions**

# ***Ellsworth Channel***

Municipality: Mesa

PCN: 442-08-01

Supervisor District: 1

Township Range: T1S R7E 27,28,33,34 and T2S R7E 3,4

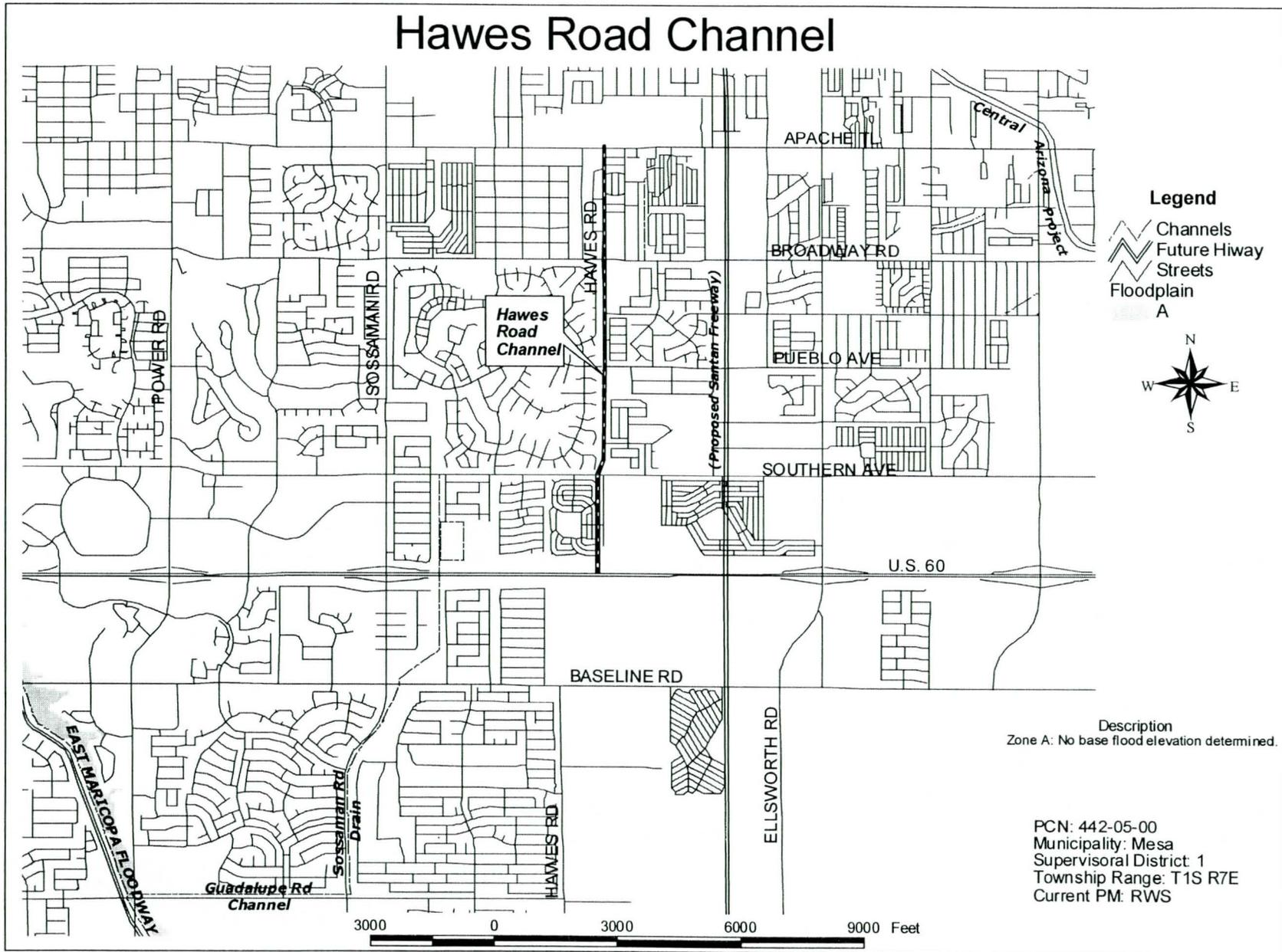
PM: Tim Phillips, P.E.

The Ellsworth Channel is one of 10 elements prioritized by the East Mesa Area Drainage Master Plan to mitigate existing and future drainage problems along Ellsworth Road particularly adjacent to the General Motors Proving Ground. The Ellsworth Channel is a channel approximately 18,600 linear feet in length paralleling Ellsworth Road from approximately ½ mile south of Pecos Road to a point approximately ¼ mile south of the

existing Powerline Floodway where the channel turns west to its connection and outfall into the Powerline Floodway.

The Ellsworth Channel is being designed and is expected to be constructed with the upcoming MCDOT Ellsworth Road improvements

# 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Hawes Road Channel***

Municipality: Mesa

PCN: 442-05-30

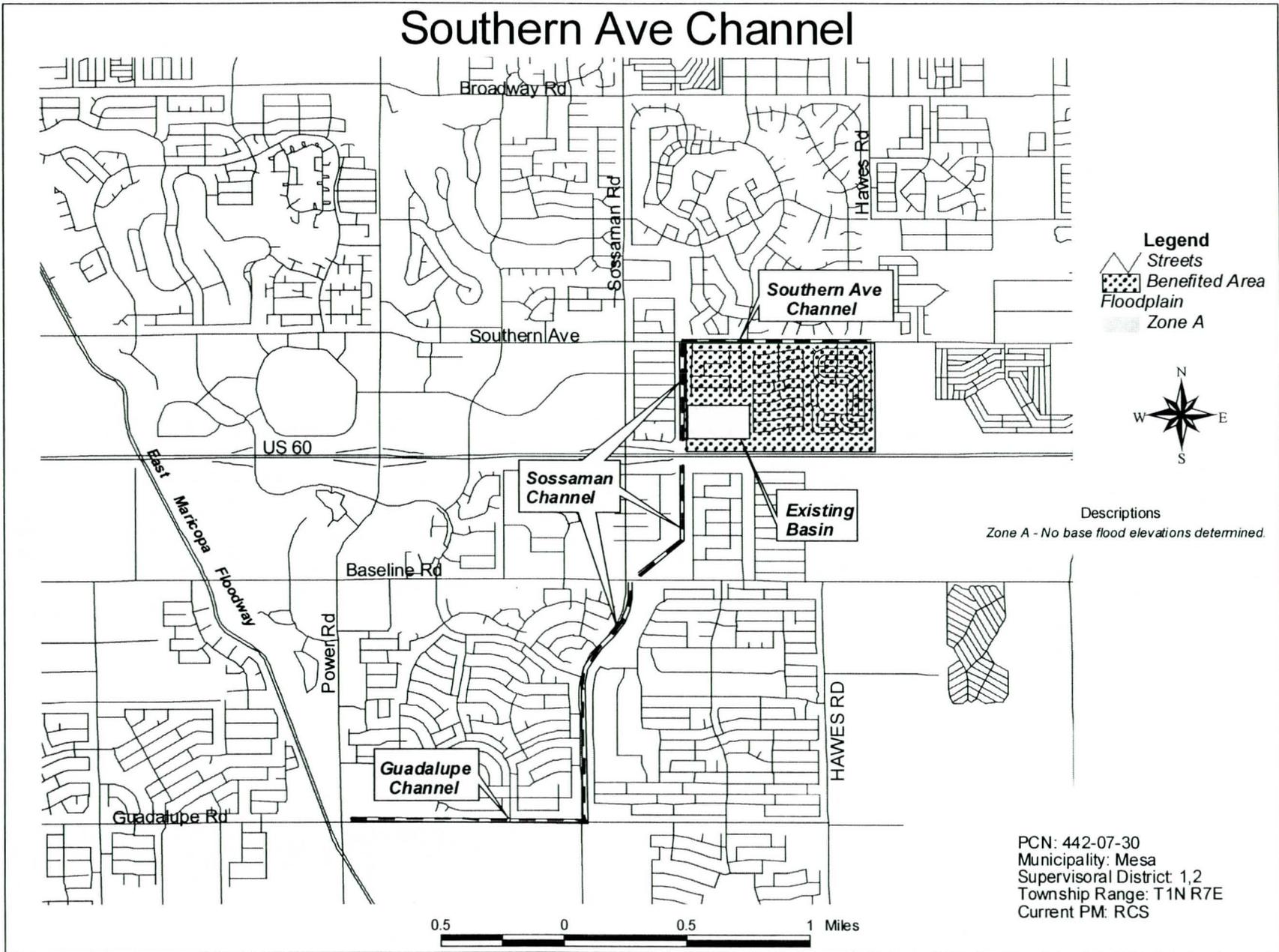
Supervisor District: 2  
PM: R.W. Shobe, P.E.

Township Range: T1S R7E S20,21,28,29,32,33

The Hawes Road Channel is a project that is identified in the East Mesa Area Drainage Master Plan (ADMP). The East Mesa ADMP identifies drainage problems and develops solutions for a storm water collection and disposal system for eastern Maricopa County including portions of the City of Mesa, the Town of Gilbert, the Town of Queen Creek, and unincorporated Maricopa County. The Hawes Road Channel extends from the Apache Trail to the Superstition Freeway along Hawes Road. The City of Mesa and/or developers are

constructing the portion of the channel from Pueblo Avenue to the Superstition. The remainder of the project (Apache Trail to Pueblo Avenue) is subject of a Candidate Assessment Report (CAR) to develop information to evaluate the benefits and costs of the project. The facility consists of a channel/box culvert within or adjacent to the Hawes Road right-of-way. The District will design the channel in-house and construct the project. Mesa will share project responsibilities that will be defined in a future IGA.

**6.0 CIP Project Descriptions**



## 6.0 CIP Project Descriptions

# ***Southern Avenue Channel***

Municipality: Mesa  
Township/Range: T1N R6E

PCN: 442-07-30

Supervisor District: 2  
PM: Raju Shah, P.E.

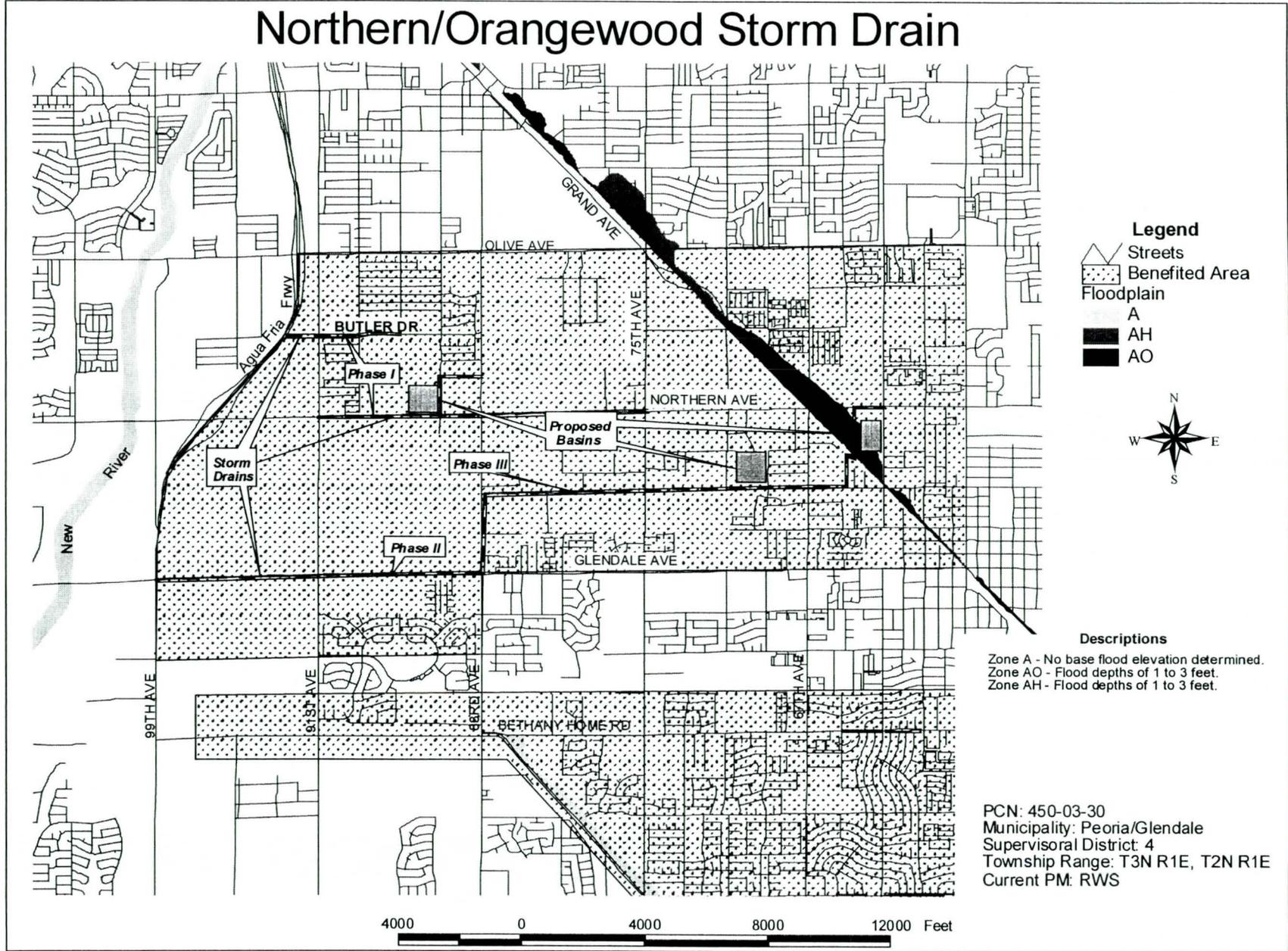
Mesa, the Maricopa County Department of Transportation (MCDOT), and the District have reported severe flooding along several major transportation corridors and near the CAP overchutes at their points of discharge. The District is currently designing detention basins downstream of the CAP overchutes to capture the flows and reduce the peak flow in the existing washes and channels. (see Five Basins on page 50)

The outfall channels and / or washes from the basins along the CAP Canal drain into a channel along Hawes Road. This channel splits into two channels: a channel along Southern Avenue from Hawes Road to 78<sup>th</sup> Street,

and a channel along Hawes Road from Southern Avenue to 750' south of Southern Avenue. The channels along Hawes Road are an integral part of the drainage system in this area. The existing channel, which is deteriorating at present, does not have adequate capacity to convey the 100-year flow. Thus, the channel must be enlarged to convey the 100-year flow.

The City of Mesa has acquired rights-of-way, completed design and relocated utilities for this project. The District will cost share 65% of the project and Mesa will own and operate the completed project.

6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# ***Northern / Orangewood Storm Drain***

Municipality: Peoria

PCN: 450-03-30  
to 450-03-33

Supervisor District: 4

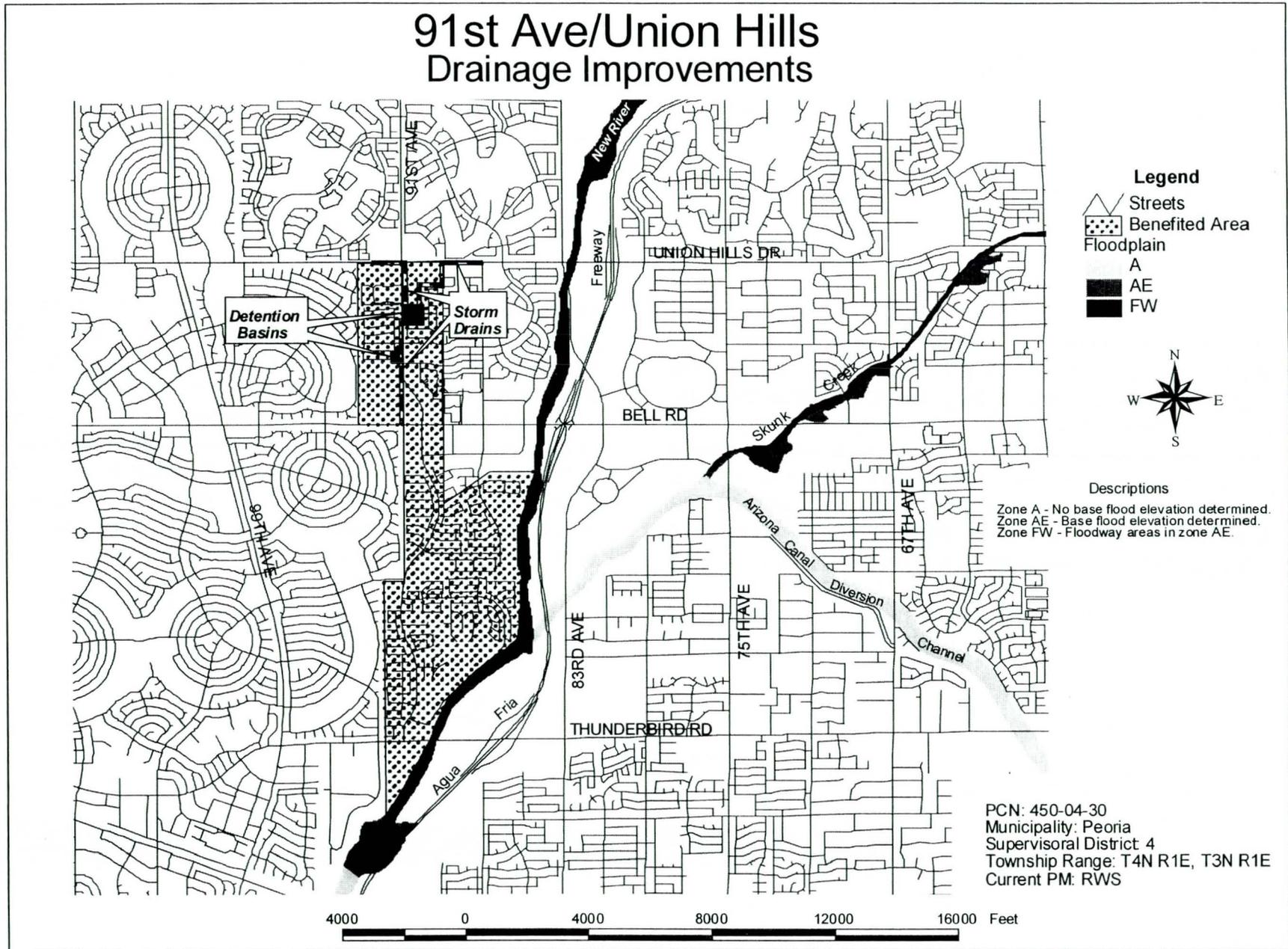
Township/Range: T2N R1E S1-5; T2N R2E S31; T3N R1E S33-35

PM: R.W. Shobe, P.E.

This project includes 10-year storm drains, running west between the Butler Drive and Glendale Drive alignments, from 63rd Avenue to Agua Fria Freeway. The project will benefit fourteen square miles of existing development in Glendale, Peoria and unincorporated County lands that have been subjected to flood events in the past several years. The drain will also provide an outlet for future municipal storm drains and MCDOT's Northern/75<sup>th</sup>/83<sup>rd</sup> Ave. Projects as well as ADOT's Grand Avenue project. The District plans to construct three detention basins (two in Glendale and one in Peoria) along the drain corridor to reduce pipe costs while increasing the future level of protection and providing water quality and recharge

benefits. By having ADOT excavate the basins, the District and ADOT will save an estimated \$2 million each. Total project costs are estimated at \$17 million (50% the District, 50% by Glendale and Peoria). Glendale will provide O&M for the portions of the project in Glendale and the unincorporated County, while Peoria will provide operations and maintenance for the portions within its city limits. An IGA with the cities was approved in April 1994. The District has acquired the basin sites. Reimbursements to the District have begun, and it is anticipated that the District will have completed construction and received all reimbursements by FY01/02.

## 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

## ***91st Avenue / Union Hills Drive Drainage Improvements***

Municipality: Peoria

PCN: 450-04-30

Supervisor District: 4

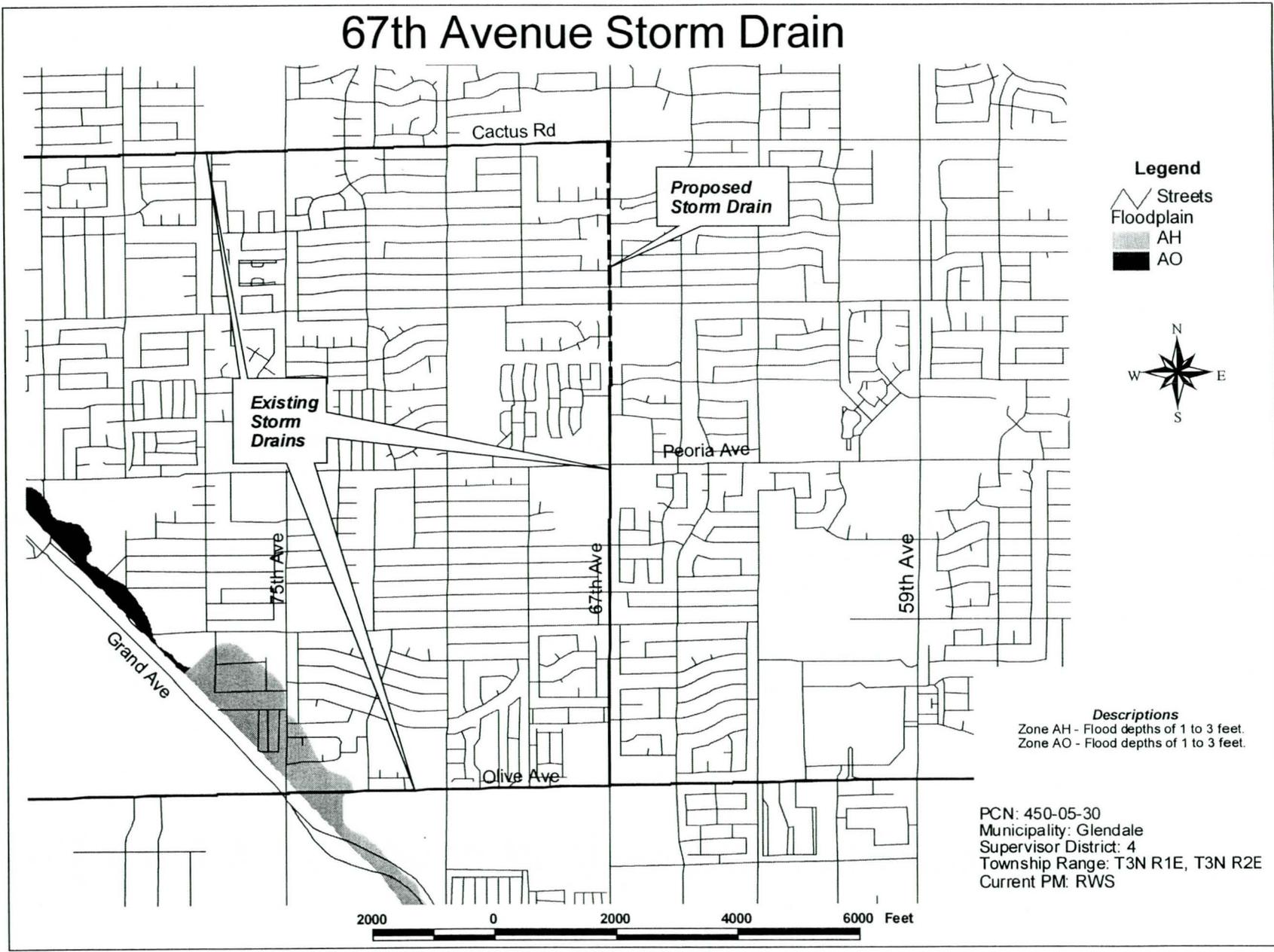
Township/Range: T4N R1E S27,28,33,34

PM: R.W. Shobe, P.E.

This project will include the construction of a regional storm drain with basins from Union Hills Drive, south of Bell Road. The project will protect seventy-five existing homes and a twenty-acre multi-family complex. An additional 600 residential lots and a forty-acre business park have been platted in the project area. The need for the project has been identified in the City of Peoria's North Area Drainage Plan, which indicated a concentration of 1750 cubic feet per second (CFS) of sheet flow from the eastern perimeter of Sun City. The

project will be cost shared with Peoria on a 50/50 basis. The estimated cost for this project is \$350,000 (Design) and \$8,300,000 (Construction). The District has budgeted \$4.15 million in FY 99/00 for construction. Peoria is providing the design, right-of-way acquisition and the operation and maintenance for this project. Project responsibilities are specified in IGAs FCD 98005 and FCD 99009.

**6.0 CIP Project Descriptions**



6.0 CIP Project Descriptions

# **67th Avenue Storm Drain Project**

Municipality: Glendale

PCN: 450-05-30

Supervisor District: 4

Township/Range: T3N R1E S12,13,24; T3N R2E 6,7,18

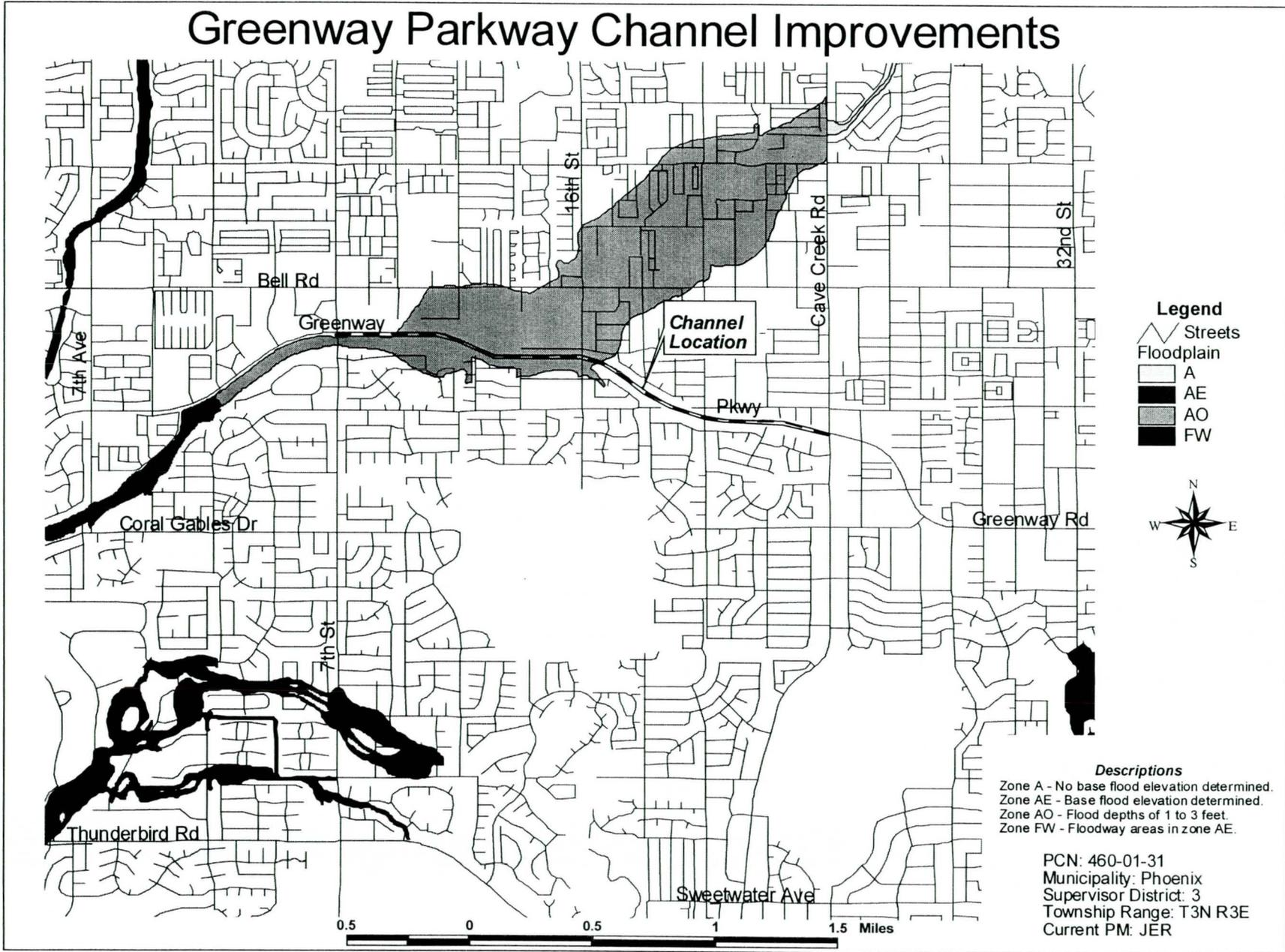
PM: R. W. Shobe, P.E.

The Project being proposed will provide 10-year storm drainage protection for a three square mile area lying within jurisdictional boundaries of both the cities of Glendale and Peoria. The project will consist of drainage pipes and catch basins and will be constructed in rights-of-way provided by Glendale. The outfalls for the project were constructed by the District and are presently owned

and operated by the City of Peoria. Glendale is proposing a 50% cost sharing with the District for the project. The estimated cost for the project is \$3 million which includes the design, land acquisition, utility relocations, construction and construction management. Glendale will provide for the operation and maintenance of the completed project.

6.0 CIP Project Descriptions

# Greenway Parkway Channel Improvements



## 6.0 CIP Project Descriptions

# ***Greenway Parkway Channel Modifications***

Municipality: Phoenix

PCN: 460-01-31

Supervisor District: 3

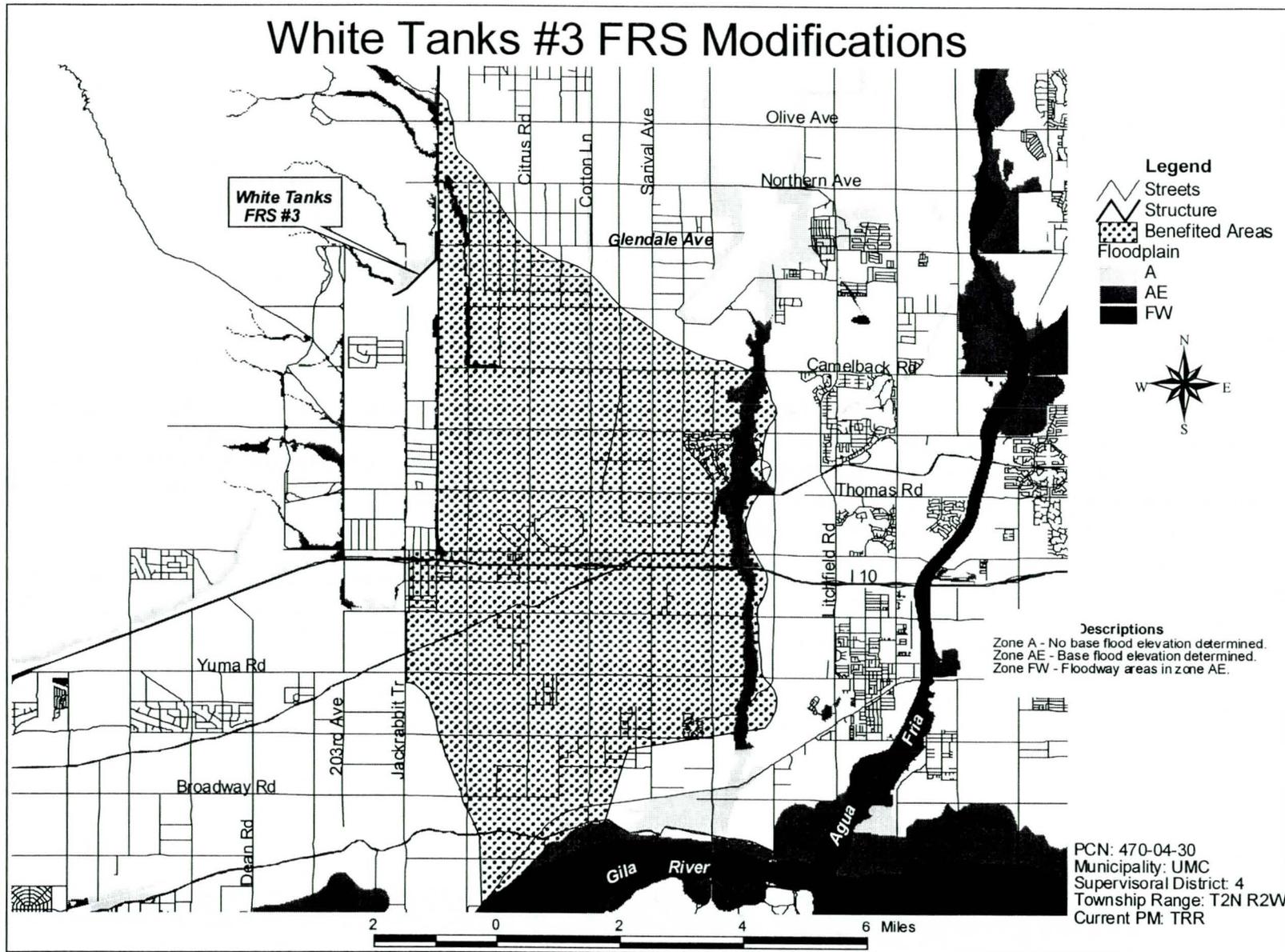
Township/Range: T3N R3E

PM: John Rodriguez, P.E.

The District and the City of Phoenix have collaborated in the design and construction of projects, consisting of basins, channels and storm drains, to collect and convey storm waters and to significantly reduce the 100-year floodplain on the Upper East Fork of Cave Creek. The City of Phoenix has also completed installation of additional basins and storm drains to convey stormwater from the basins to the Greenway Parkway Channel. Engineering studies and analysis preparatory to the City of Phoenix submitting an application to FEMA for a Conditional Letter of Map Revision (CLOMR) for the East Fork of Cave Creek, have determined that certain

modifications need to be made to the existing channel in order to meet FEMA criteria. Modifications include lowering the invert and widening the existing channel in various reaches between Cave Creek Road and Ninth Street. These modifications will allow for the removal of over 400 homes and numerous commercial establishments along Bell Road from the current FEMA delineated floodplain. The costs for this project are estimated to be \$4.5 million. The District proposes to share 50% of the costs not to exceed \$2.25 million. The City of Phoenix will own, operate and maintain the completed project.

## 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# **White Tanks #3 FRS Modifications**

Municipality: Buckeye/UMC

PCN: 470-04-30

Supervisor District: 4

Township/Range: T2N R2W S4, 8-9

PM: Tom Renckly, P.E.

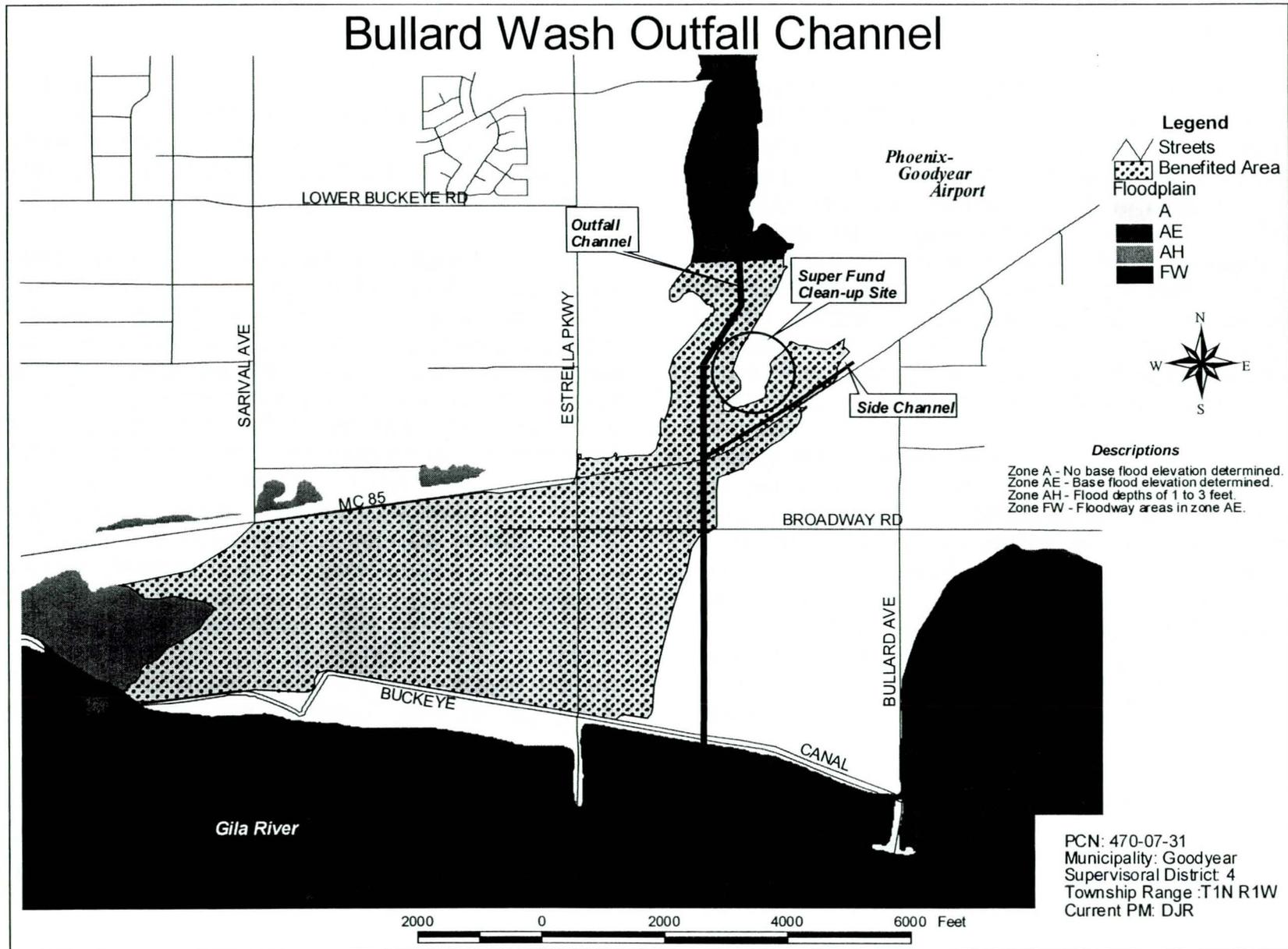
The White Tanks Flood Retarding Structure #3 (White Tanks #3), owned and operated by the District, requires corrective action to bring the structure into compliance with dam safety standards and requirements. The District awarded Contract FCD 98-11 for the modification of White Tanks FRS #3 on September 11, 1998. The Consultant has completed a detailed assessment of White Tanks FRS#3. The analysis performed by the Consultant of the design issues and associated deficiencies of the dam has resulted in a substantially higher construction cost estimate than previously estimated. The construction cost estimate for the 1996 NRCS plan to modify the dam for compliance with dam safety standards was estimated by the District in 1998 at \$1.9 million (total project cost \$2.6 million). The current construction cost estimate for required dam modifications is \$4.5 million (total project cost \$5.9 million).

Due to the significant increase in the cost estimate to repair the dam, a basin alternative was evaluated at a preliminary concept level. The construction cost estimate for the basin alternative is \$10.3 million (total project cost \$11.8 million).

Under the basin alternative, a large flood control basin would be constructed to replace the 100-year flood protection function of the dam and the dam would be removed. Removal of the dam would: eliminate the high hazard dam classification and associated risk and liabilities, significantly reduce issues related to emergency spillway discharges and eliminate required dam monitoring and maintenance activities. In addition, the basin can be designed to improve aesthetics and allow for multi-use activities.

The District is proceeding with developing plans for the basin alternative based on the significant long-term advantages the basin provides. The District will seek a project partner during this planning and conceptual design phase of the basin project. If a project partner is identified a resolution will be developed and presented to the FCAB and the BOD requesting authority to negotiate an IGA with the identified project partner. Upon completion of the above described basin studies a resolution for the basin project will be developed and presented to the FCAB and the BOD for approval of authority to proceed with final design of the basin project.

## 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Bullard Wash Outfall Channel***

Municipality: Goodyear/UMC

PCN: 470-07-31

Supervisor District: 4

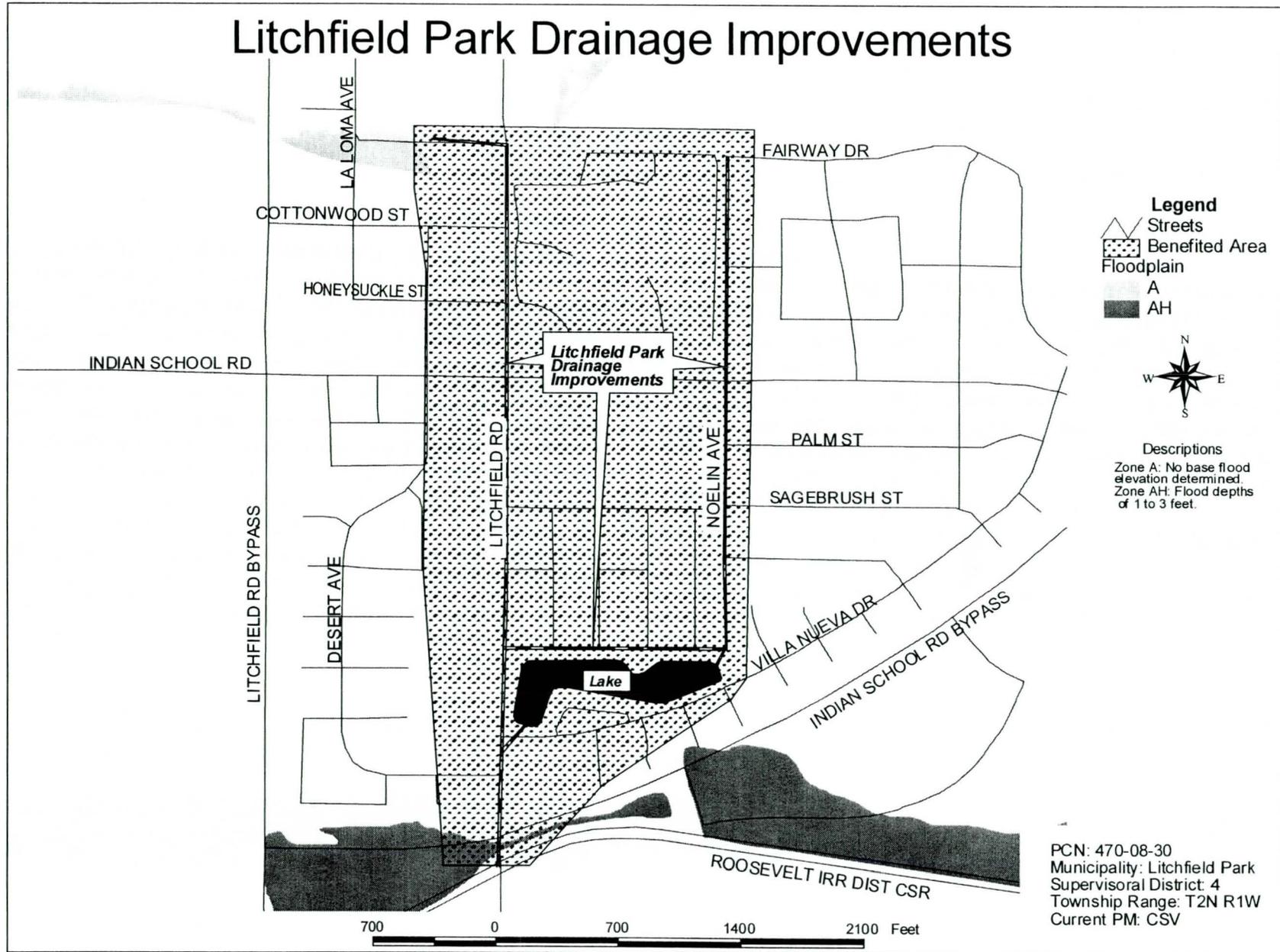
Township/Range: T1N R1W S20, 29, 17, 16

PM: Don Rerick, P.E.

The project, identified in the White Tanks/Agua Fria ADMS, includes a two-mile outfall channel from Lower Buckeye Road to the Gila River for the 100-year Bullard Wash flows (3,200 cfs). Existing structures and channels in the drainage corridor are inadequate and result in flows that overtop the Union Pacific RR, MC 85 highway, and the Buckeye Irrigation District Canal. The project will reduce flood hazards for the City of Goodyear's waste water treatment plant, the Phoenix/Goodyear Airport, several hundred acres of agricultural land, the Palo Verde Nuclear Power Plant water supply pipeline, a sanitary sewer pipeline, and three petroleum pipelines. This project includes design and construction of Estrella Parkway and MC 85 improvements in cooperation with the Maricopa County Department of Transportation

(MCDOT). The project will also provide protection to clean up facilities for a Superfund ground water contamination site. A pre-design study has been completed. The design contract has been completed and construction is underway. Construction is scheduled to be completed in January 2000. Total Channel project costs, will be shared equally with the City of Goodyear and are estimated to be \$9.5 million. Roadway costs are being shared between MCDOT and Goodyear, with MCDOT and the District also sharing certain roadway related construction costs. IGAs FCD-96001, 96002, 96023, and 96024 with the City of Goodyear and MCDOT have been approved, which identify cost sharing, design, construction and operation and maintenance responsibilities.

6.0 CIP Project Descriptions



**6.0 CIP Project Descriptions**

# ***Litchfield Park Drainage Improvements***

Municipality: Litchfield Park  
Township Range: T2N R1W

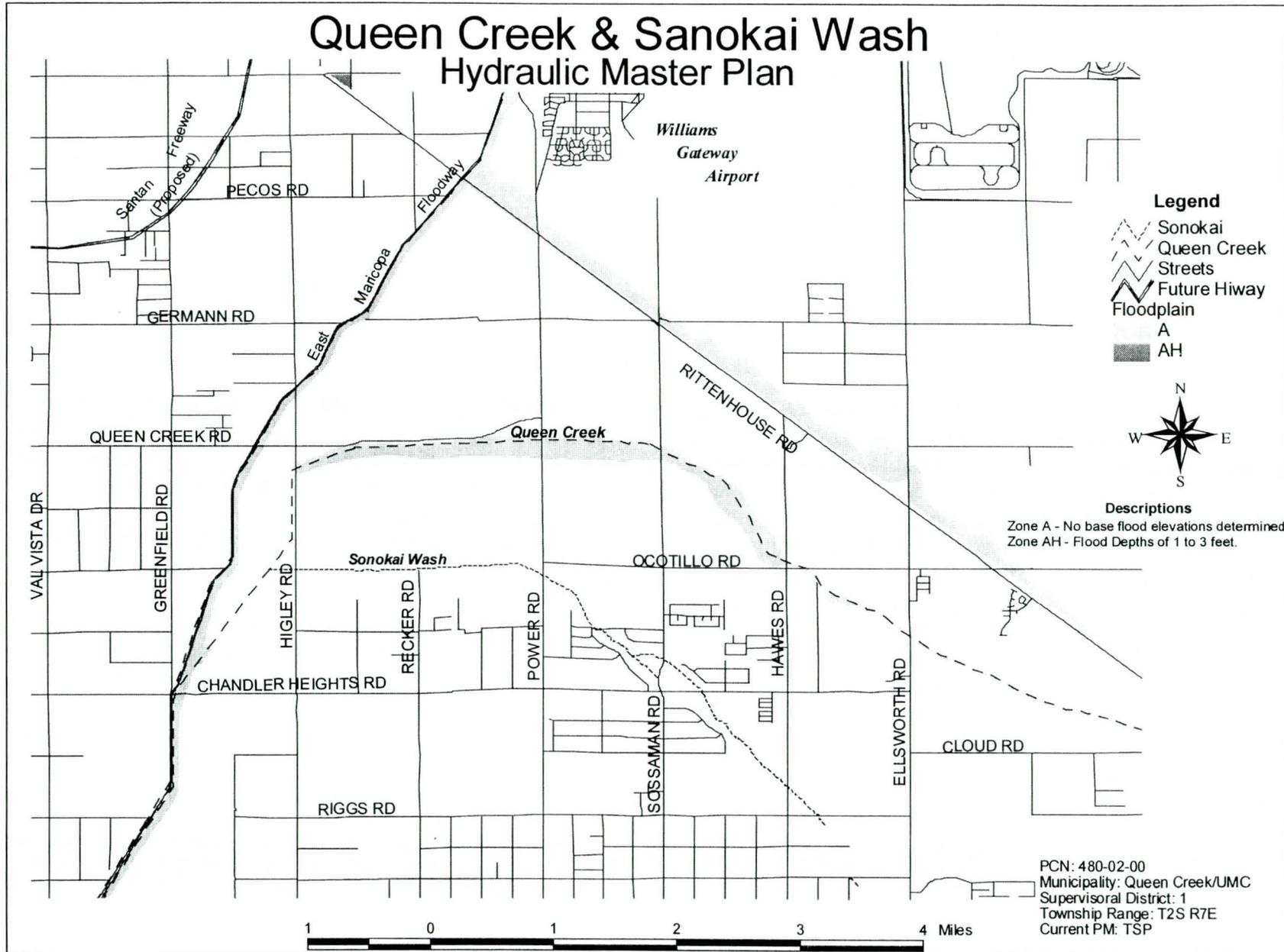
PCN: 470-08-30

Supervisor District: 4  
PM: Scott Vogel, P.E.

The project is located within the City of Litchfield Park and will tie into the RID Overchute that was completed by the District in 1997. Since the completion of the City of Litchfield Park Master Drainage Study in 1989, and as a result of the District's White Tanks-Agua Fria River Area Drainage Master Study, the City and the District have undertaken several projects to reduce flooding within the City. They include the Colter Channel, the RID Overchute Phase I, the Ancora Storm Drain, and the Indian School Road Bypass Storm Drain. The drainage improvements will reduce flooding on the surface of

Litchfield Road, Indian School Road Bypass, Neolin Avenue, and Wigwam Boulevard. The drainage improvements consist of storm drains within Litchfield Road, and Neolin Avenue, and flood control improvements to "The Lake," located at the intersection of Litchfield Road and Villa Nueva Drive. The City of Litchfield Park will be responsible for the design, construction and operation and maintenance of the drainage improvements. IGA FCD 98010 defines the project responsibilities and the District's remaining cost share is estimated to be \$420,000.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

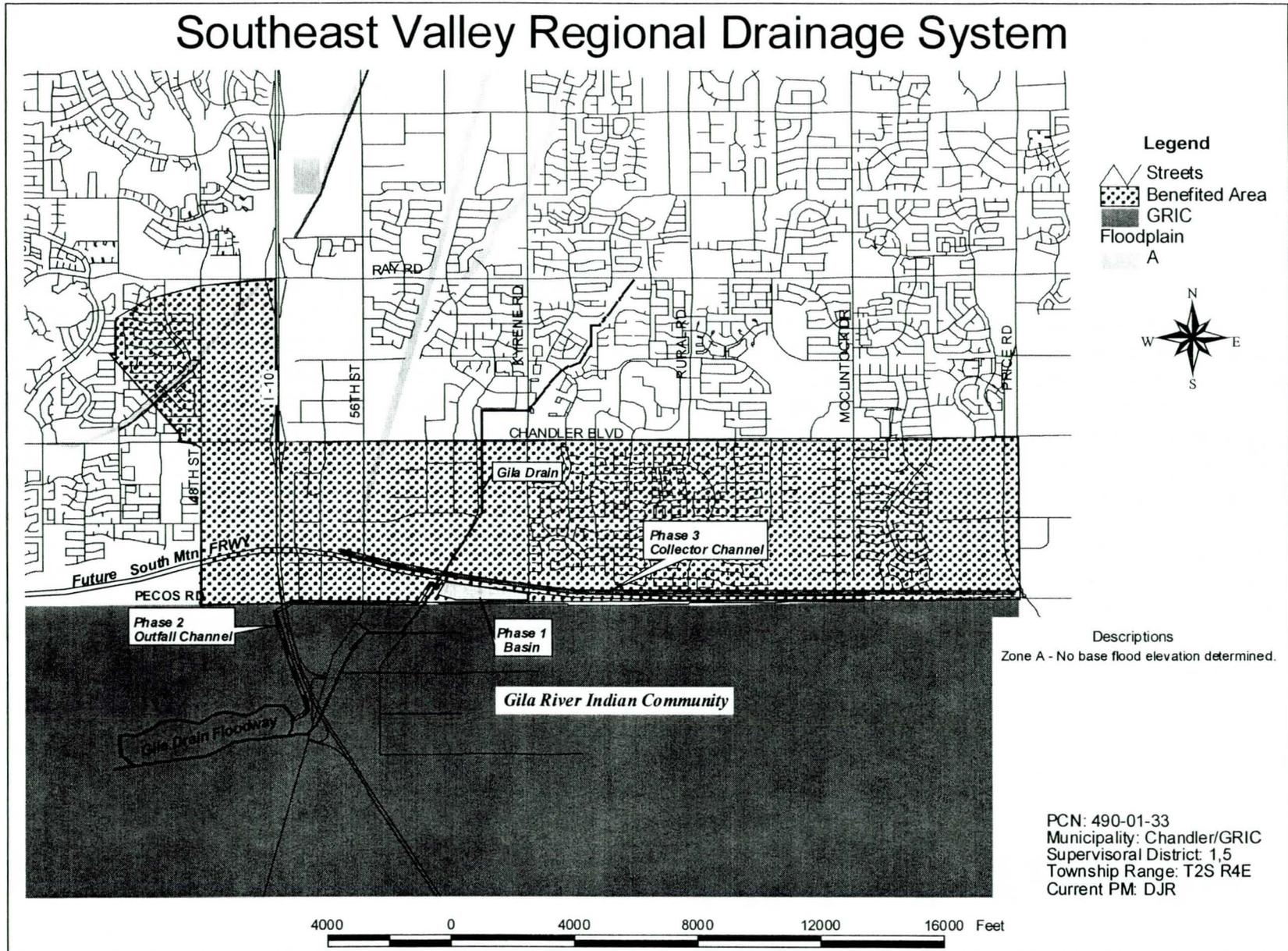
# ***Queen Creek and Sanokai Wash Hydraulic Master Plan***

Municipality: Town of Gilbert/Town of Queen Creek    PCN: **480-02-XX**    Supervisor District: 1  
Township/Range: T2S, R6E, Sections 11, 12, 13, 14,15, 22, 23, 24; T2S, R7E, Sections 7, 8, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 33, 34; T2S, R8E, Sections 20, 21, 22, 23, 25, 26, 27, 28, 29, 30    PM: Tim Phillips, P.E.

Current and projected District CIP expenditures can be divided into two parts: a planning study that will lay the groundwork for further flood control activities; and a design and construction phase that will address flooding issues in the Queen Creek and Sanokai Wash floodplains. The planning study consists of providing professional engineering services necessary for developing a hydraulic master plan to maintain the 100-year hydraulic conveyance capacity of both Queen Creek and Sanokai Wash. The study will include analysis of 17 miles of waterways associated with Queen Creek from the Central Arizona Project Canal to the East Maricopa Floodway, and Sanokai Wash from its general origin at Ellsworth Road and Riggs Road to its outfall into Queen

Creek. The study will be utilized as a tool to monitor and control development along the respective waterways by the Town of Queen Creek and to maintain the 100-year conveyance capacity. The planning study is budgeted at \$300,000 and is included in the Planning Program Budget. The design and construction phase, which is not scheduled to begin until FY 00/01, will involve the implementation of solutions to flooding along Queen Creek and Sanokai Wash that are identified once the planning and conceptual design phases have been completed, and remedial actions have been specified. Total expenditures in the CIP are now tentatively estimated at \$7 million.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Southeast Valley Regional Drainage System***

Municipality: Chandler/Gila River Indian Community  
Township/Range: T1S R4E S32-36; T2N R4E S4-5

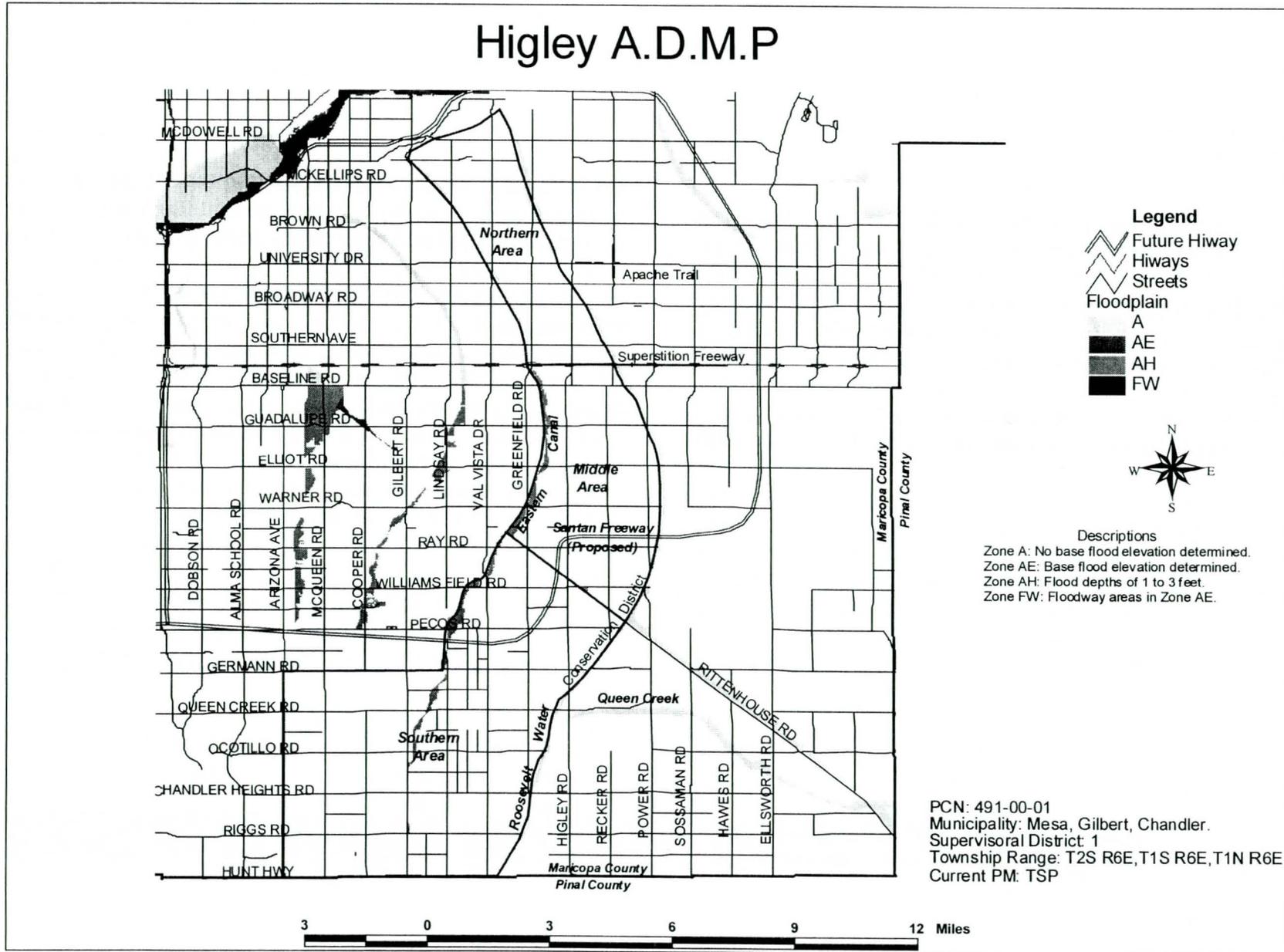
PCN: 490-01-33

Supervisor District: 1, 5  
PM: Don Rerick, P.E.

An IGA between the City of Chandler, ADOT, and FCD is in place for this project. The Southeast Valley Regional Drainage System (SEVRDS) includes a 100-year drainage system to be built within the Santan Freeway corridor between Price Road, on the east, and 56th Street, on the west. A connecting channel will extend from the basin and wetlands complex near Kyrene Road and the Pecos Road alignment to the Gila Drain Floodway west of Interstate-10. When combined with contributing flows from the Price Freeway drainage system (south of Ray Road), the SEVRDS will intercept and convey municipal and freeway drainage from 58 square miles in Chandler, Tempe, Gilbert and Maricopa County. The project will also protect areas of the Gila River Indian Community (GRIC) located south of Pecos Road and west of Price Road from flows originating from outside the Community. The SEVRDS is addressed in the Gilbert/Chandler ADMS and is an integral component

of Chandler's storm water master plan. The design concept was developed in cooperation with Chandler, ADOT, SRP and the GRIC. The total cost of the project is estimated at more than \$30 million, of which the District will pay \$12 million and Chandler will pay \$955,000. The Project is being designed and constructed in three phases. ADOT has acquired necessary rights-of-way and is responsible for the design. They will also own, operate and maintain the completed project. The District will provide construction management services for the three phases of the project. ADOT will fund all associated costs in excess of Chandler and FCD funding. Phase 1, the basin complex, has been constructed, Phase 2, consisting of the basin outfall channel system is under construction and will be completed in February 2000, and Phase 3, the collector channel system is scheduled for construction starting in the fall of 1999.

# 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Higley Area Drainage Master Plan***

Municipality: Town of Gilbert/City of Mesa/City of Chandler/ PCN: **491-00-01**  
Township/Range: T1N, R6E, Sections 4-10,15,16,17,21-23,26,27,28,34-36; T1S,  
R6E, Sections 1,2,3,10,11-15,21-29,32,33-36;T1S, R7E, Sections 7,18,19,30,31;  
T2S, R6E, Sections 1-11,15,16,17-22,27-33; T2S, R5E, Sections 24,25,34,35,36

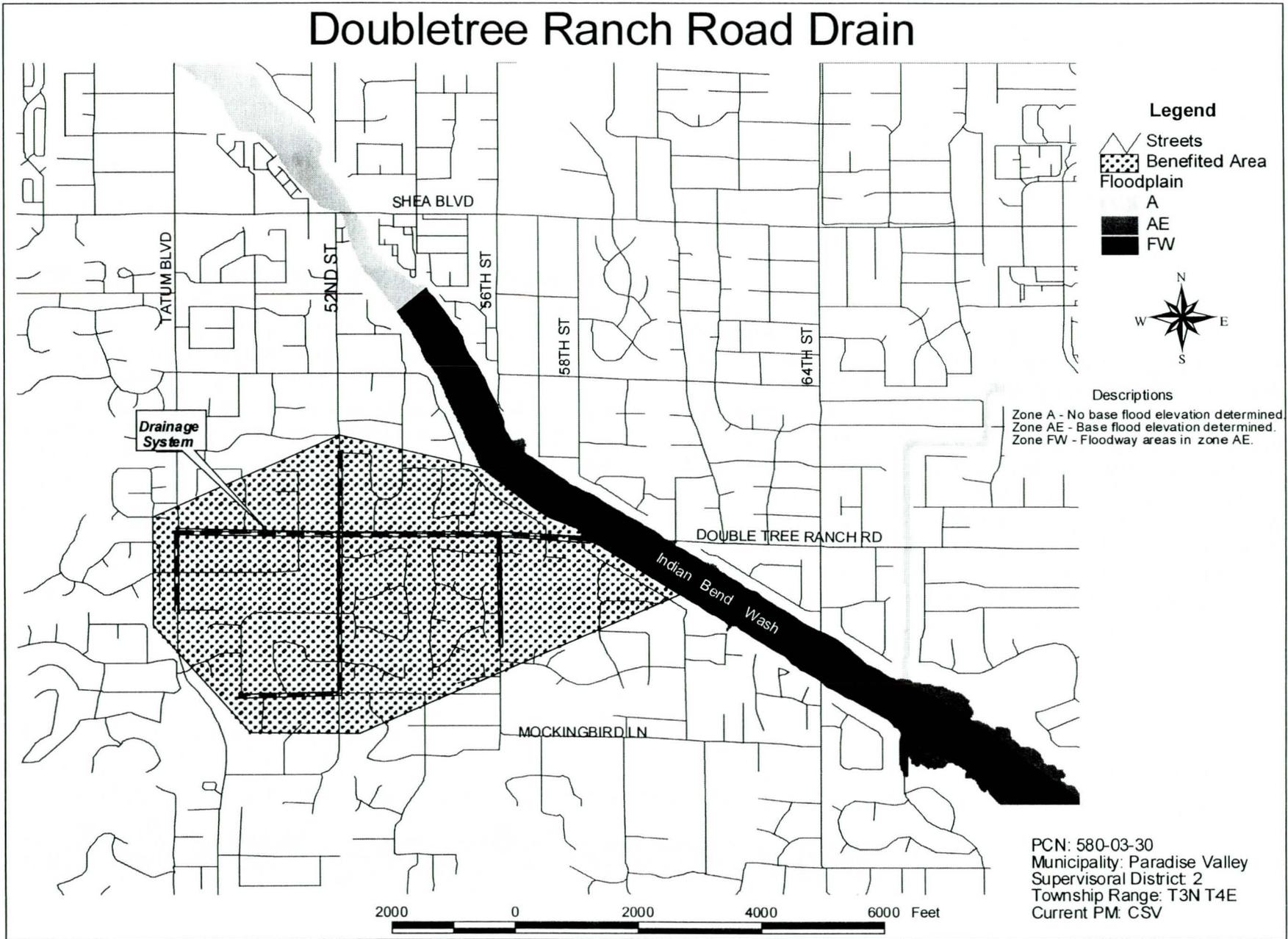
Supervisor District: 1  
PM: Tim Phillips, P.E.

Current and projected District CIP expenditures can be divided into two parts: a planning study that will lay the groundwork for further flood control activities; and a design and construction phase that will address flooding issues along the Salt River Project Eastern Canal. The planning study consists of providing professional engineering services necessary for developing an area drainage master plan to determine guidelines for stormwater management and mitigate flooding for the Higley Area. The study will include analysis of approximately 75 square miles of watershed from the Salt River Project South Canal south to Hunt Highway and from the Salt River Project Eastern Canal to the Roosevelt Water Conservation District Main Canal. The

study will identify drainage problems, and develop cost effective solutions for a storm water collection and disposal system and will further identify potential outfall alternatives. The planning study is budgeted at \$400,000 and is included in the Planning Program Budget. The design and construction phase, which is not scheduled to begin until FY 00/01, may involve the implementation of solutions to flooding along Eastern Canal that are identified once the planning and conceptual design phases have been completed, and remedial actions have been specified. Total expenditures in the CIP are now tentatively estimated at \$13 million.

6.0 CIP Project Descriptions

# Doubletree Ranch Road Drain



6.0 CIP Project Descriptions

# ***Doubletree Ranch Road Drain***

Municipality: Paradise Valley  
Township/Range: T3N R4E S28-29, 32-33

PCN: 580-03-30

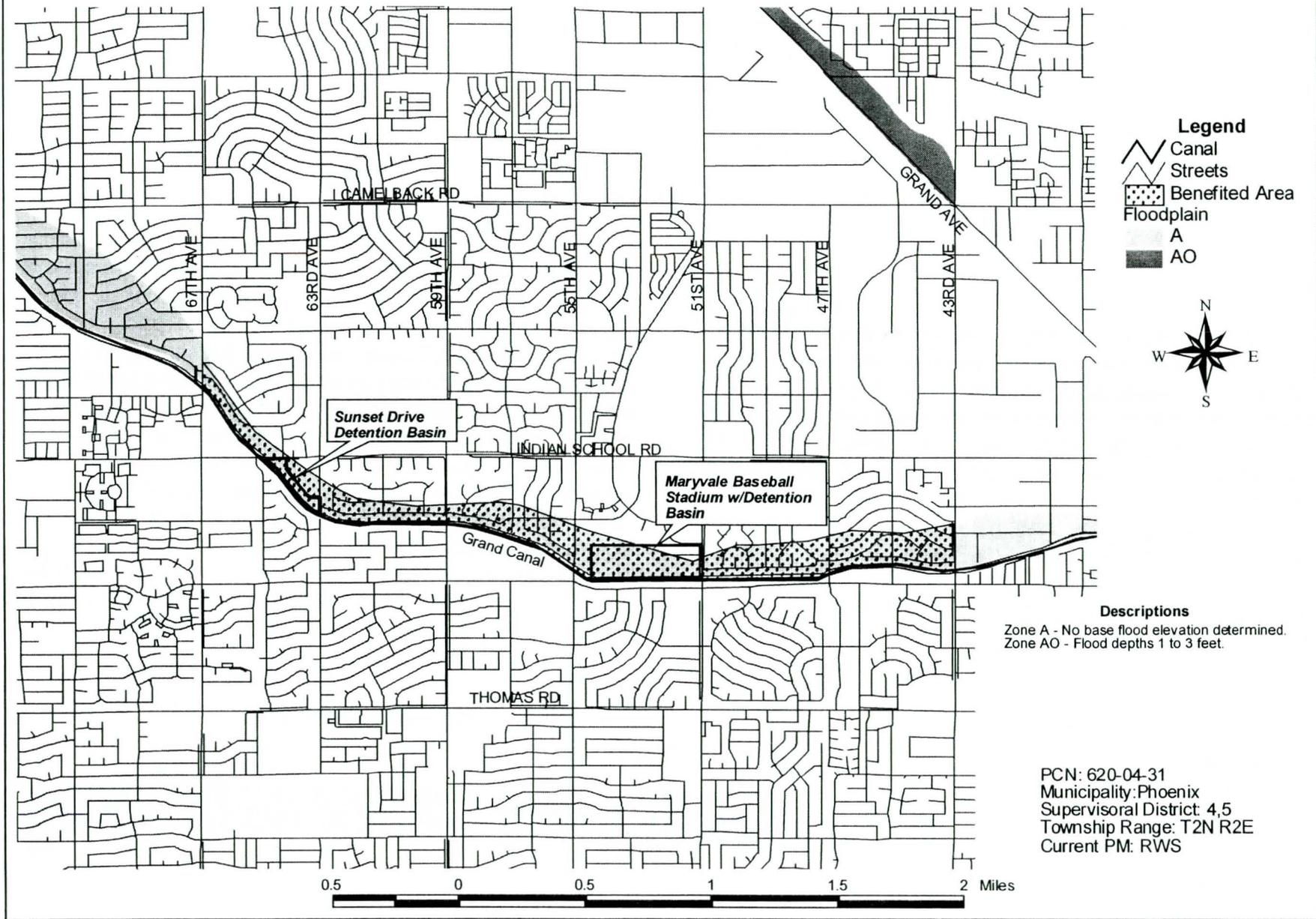
Supervisor District: 2  
PM: Scott Vogel, P.E.

This project will provide solutions for the flooding problems that exist within a mostly built out residential area of the Town of Paradise Valley. Several homes along Doubletree Ranch Road have experienced flooding during recent storms, and children have been stranded at a local grade school, whose access becomes inaccessible during heavy rains. Two major watersheds, Doubletree Ranch Road and Cherokee Wash, exist within the project area. The Doubletree Ranch Road watershed begins in the Phoenix Mountain Preserve west of Tatum Boulevard and flows eastward along Doubletree Ranch Road to Indian Bend Wash. Cherokee Wash, which is located south of the Doubletree Ranch Road watershed, also begins in the Phoenix Mountain Preserve west of Tatum Boulevard, but then flows

northeast to Indian Bend Wash. A pre-design study indicated a cost in excess of \$25 million for construction of a 100-year facility, which was beyond the funding capacity of the Town. A revised pre-design study estimates the cost of a 10-year storm drain under the road with design alterations to the road allowing 100-year flows to be transported away on the surface of Double Tree Ranch Road. The \$14 million cost is acceptable to the District and the Town of Paradise Valley. An IGA is being prepared to identify cost-sharing for design, construction, and operation and maintenance. The Town of Paradise Valley will be responsible for operations and maintenance.

6.0 CIP Project Descriptions

# Maryvale Stadium Basin West Inlet



**Descriptions**  
 Zone A - No base flood elevation determined.  
 Zone AO - Flood depths 1 to 3 feet.

PCN: 620-04-31  
 Municipality: Phoenix  
 Supervisorial District: 4,5  
 Township Range: T2N R2E  
 Current PM: RWS

## 6.0 CIP Project Descriptions

# **Maryvale Stadium Basin West Inlet**

Municipality: Phoenix

PCN: 620-04-31

Supervisor District: 5

Township/Range: T2N R2E S29

PM: R. W. Shobe, P.E.

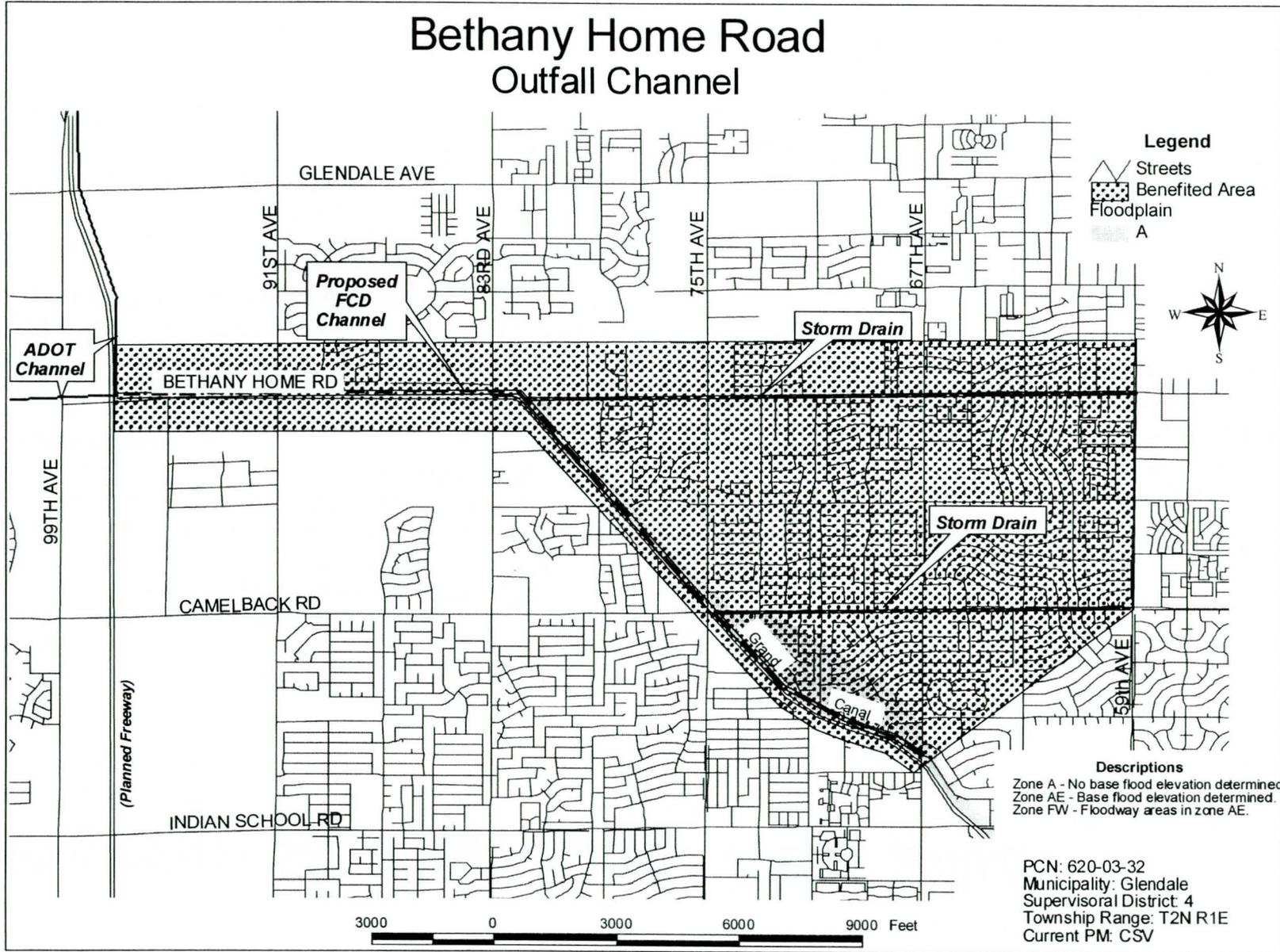
On August 21, 1996, the Board of Directors adopted Resolution FCD 96-04 to authorize the District to negotiate intergovernmental agreements, and for the negotiation of an engineering services contract for study and design of the Maryvale Flood Mitigation Project. The Maryvale Flood Mitigation Project Study recommended the construction of two detention basins located at 51<sup>st</sup> Avenue and the Grand Canal and related collection and discharge facilities.

On November 20, 1996, the Board of Directors approved IGA FCD 94014 between the District and the City of Phoenix for the incorporation of the two basins recommended by the Study, into the Stadium facilities

planned by the City of Phoenix. The City of Phoenix has proceeded with and completed the construction of the Stadium and has included the District's basins as part of their project.

The Maryvale Stadium Basin West Inlet Channel Project is one of the related collection and discharge facilities recommended in the Maryvale Flood Mitigation Project Study. The project extends from 57<sup>th</sup> Ave. to the west side of the Maryvale Stadium along the north side of the grand canal. The District will provide for the design and construction and Phoenix will provide for the operation and maintenance.

# 6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Bethany Home Road Outfall Channel***

Municipality: Glendale, Phoenix, unincorporated County  
Township Range: T2N R1E

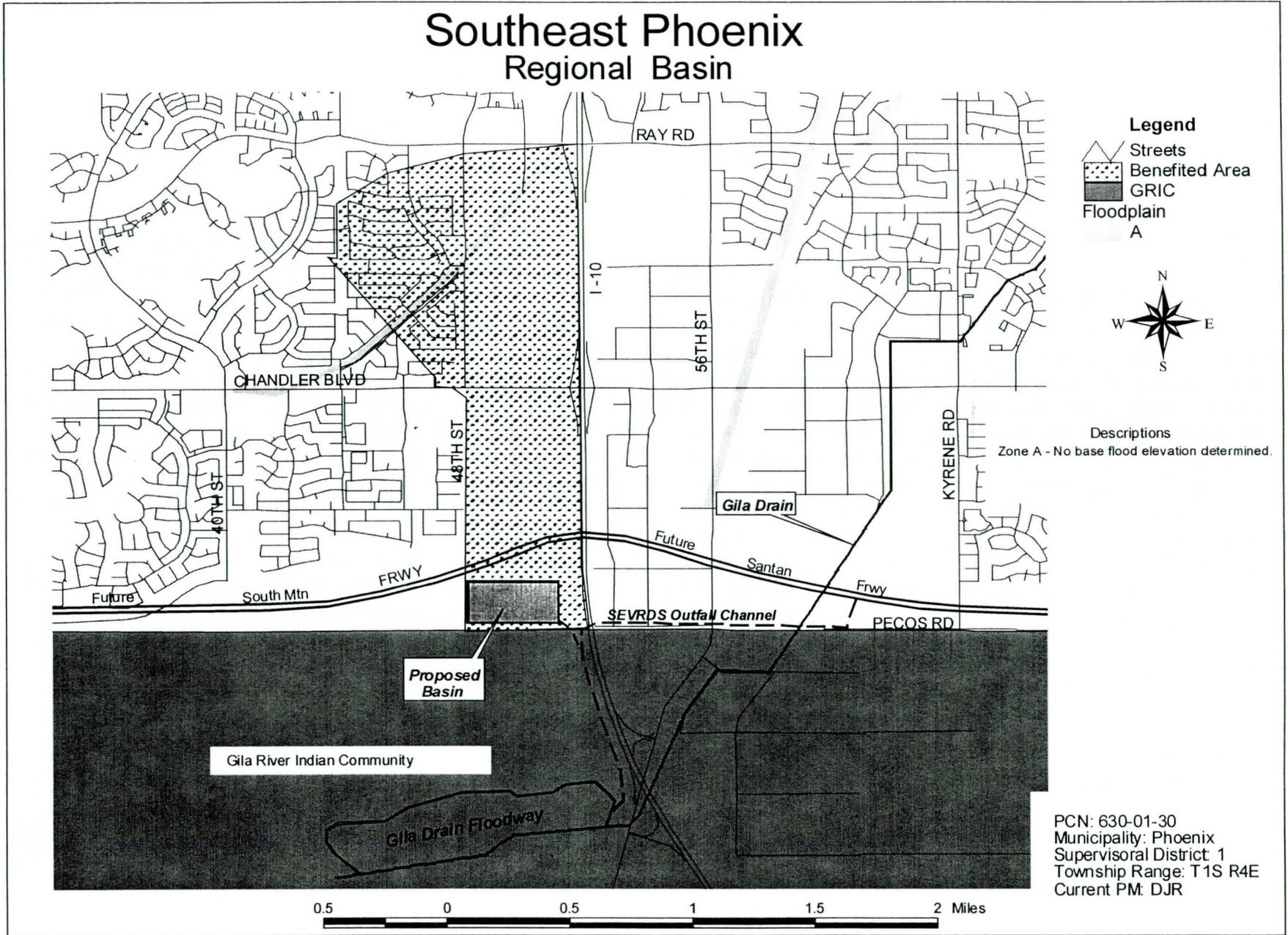
PCN: 620-03-32

Supervisor District: 4  
PM: Scott Vogel, P.E.

The Bethany Home Road Outfall Channel was identified in the Maryvale Area Drainage Master Plan (ADMP). The project includes a linear basin and channel along the north side of the Grand Canal extending westerly from 64<sup>th</sup> Avenue to the New River. The project would have a 100-year capacity removing approximately 598 houses from the floodplain. The channel will receive storm water from portions of Peoria, Glendale, Phoenix, and unincorporated Maricopa County. The channel alignment (Phase I and II) is in Phoenix, Glendale, and unincorporated Maricopa County. Phase I of the project is being completed by ADOT, with District participation. This reach extends west from the proposed Agua Fria Freeway to the New River following the Bethany Home Road Alignment. ADOT has increased the size of their channel and freeway bridges to accommodate additional flows from the Maryvale area. Phase II of the project will

extend along Bethany Home Road easterly from the Agua Fria Freeway and along the northern side of the Grand Canal to 64<sup>th</sup> Avenue. This phase of the project will include a channel from the Agua Fria Freeway alignment to 73<sup>rd</sup> Avenue and an earthen, linear, on-line detention basin from 67<sup>th</sup> Avenue to 73<sup>rd</sup> Avenue. The ADMP also recommends ten year capacity storm drains, located within Bethany Home Road and Camelback Road, extending from 59<sup>th</sup> Avenue to the Outfall Channel. Preliminary estimates indicate that the cost to construct this 100-year channel is approximately \$25 million. Additional storm drains along Bethany Home and Camelback Road are estimated to cost approximately \$8 million. The Cities of Glendale and Phoenix will be required to cost share the project and sign IGAs with the District.

6.0 CIP Project Descriptions



## 6.0 CIP Project Descriptions

# ***Southeast Phoenix Regional Basin***

Municipality: Phoenix

PCN: 630-01-30

Supervisor District: 1

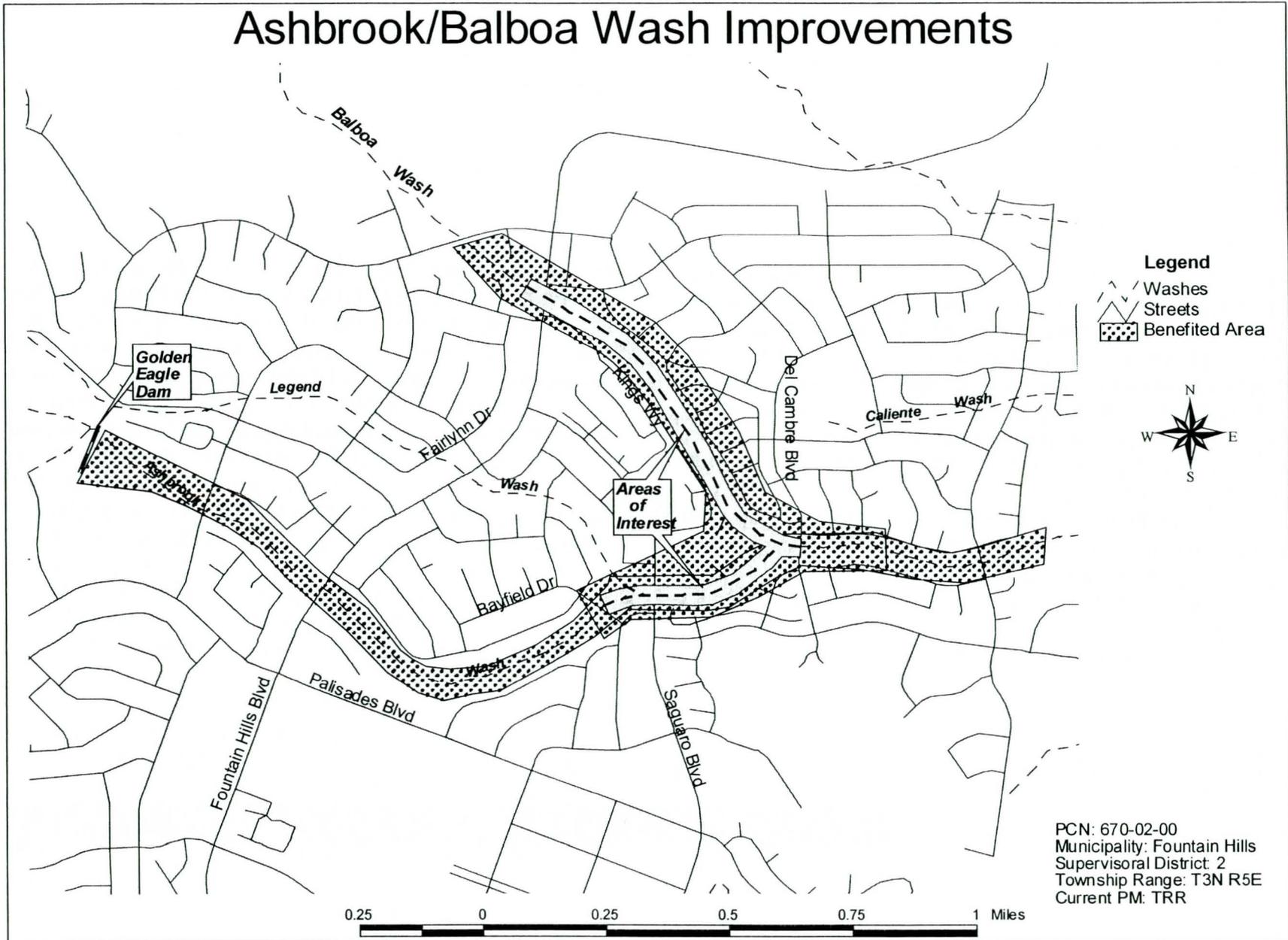
Township/Range: T1S R4E S32

PM: Don Rerick, P.E.

The project was developed within the Foothills ADMP area and will create a 100-year outfall system for a 4.5 square mile watershed. The area impacted by the project is bounded by Interstate-10 (E), Pecos Road (S), 40th Street (W) and Knox Road (N). Improvements will be located within a corridor located between 48th Street and Interstate-10. Flows will be discharged to the Southeast Valley Regional Drainage System (SEVRDS) outfall channel prior to its final discharge into the Gila Drain Floodway on the Gila River Indian Community. The watershed is rapidly developing, with the remainder primarily in agricultural production. Currently, there are many manmade channels in the upper watershed, but these waterways terminate at development boundaries, and stormwater is typically dispersed back to

pre-development flow patterns. Opportunities for water quality and groundwater enhancement are being given full consideration in the detention basin. The City also intends to use the basin as a park site. Additional inflows to the Gila Drain Floodway may complement the GRIC's plan for wetlands and a natural open-space corridor. Costs are estimated by Phoenix staff to be \$8 million, and will be shared 50/50 between Phoenix and the District with District costs capped at \$3.5 million. The City is acquiring the basin site and design is underway by the City. IGA FCD 98035 identifies the District's role in the project as responsible for construction and construction management. Future operation and maintenance of this facility will be the responsibility of the City of Phoenix.

6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# **Ashbrook / Balboa Wash Improvements**

Municipality: Fountain Hills  
Township/Range: T3N R6E S10-11

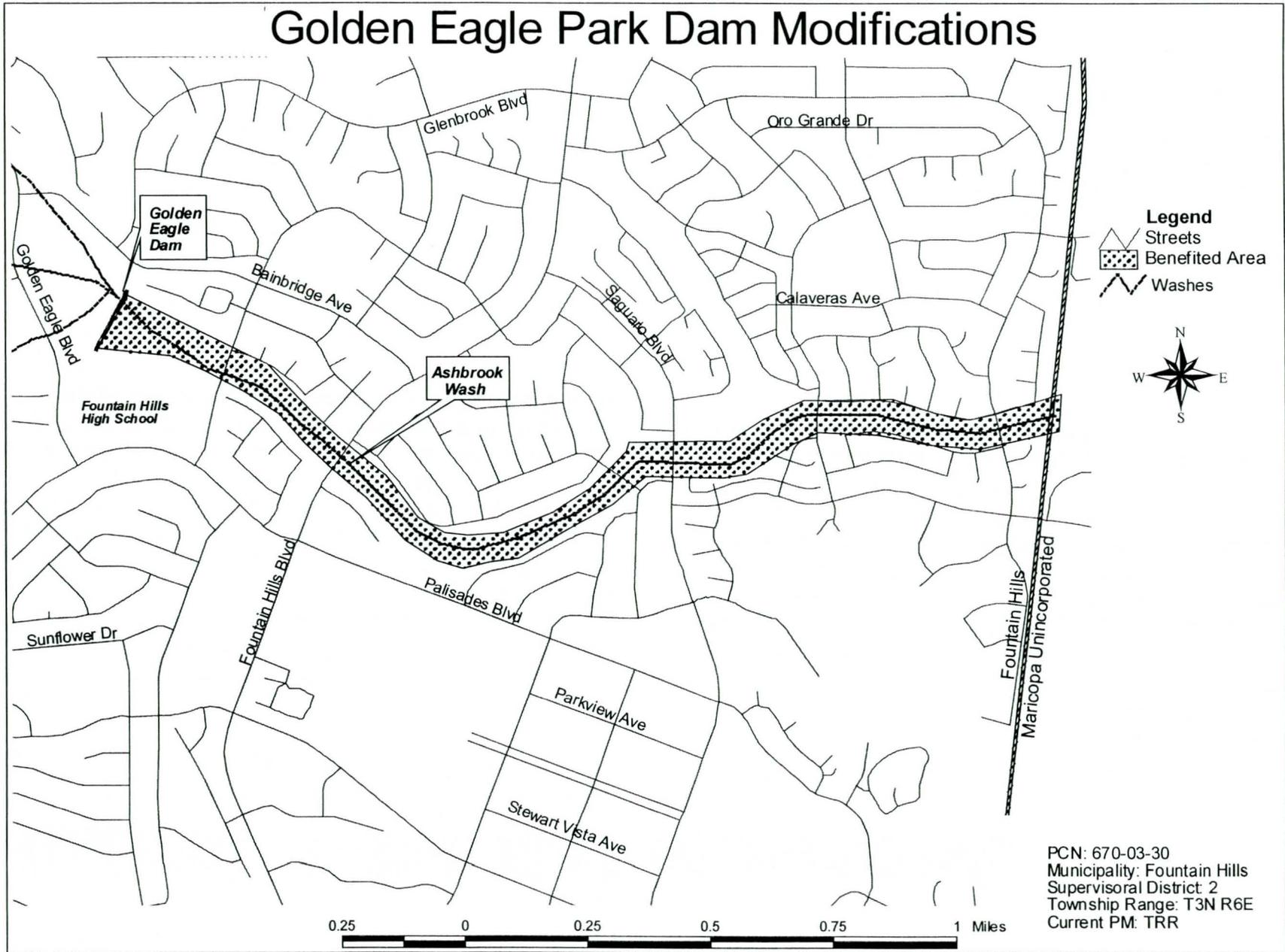
PCN: 670-02-XX

Supervisor District: 2  
PM: Tom Renckly, P.E.

Ashbrook Wash and its tributaries (including Balboa Wash) are the largest wash system in Fountain Hills. Downstream of an existing series of dams, 100-year flows of 3,190 cfs affect three major problem areas (Ashbrook Wash, Del Cambre west for 900 feet; Ashbrook Wash, Saguaro Boulevard to Bayfield Dr.; Balboa Wash, and Kings Way to west of Fairlynn Drive). These areas contain sixteen single-family and twenty-three multi-family residences. The 100-year flows may also threaten the Fountain Hills Sewage Treatment Plant. The project is proposed to provide 100-year protection for

the thirty-nine residences and the treatment plant. It will also improve conditions for nine roadway segments and enhance implementation of the Town's recreational Trails Plan. The project area is within the Fountain Hills ADMS (completed in FY 96-97). Cost for design and construction have been estimated by Town staff at \$1.3 million (60% by FCD, 40% by Fountain Hills). Rights-of-way are to be donated to the Town by development interests. The Town of Fountain Hills will provide future operation and maintenance.

6.0 CIP Project Descriptions



**6.0 CIP Project Descriptions**

# ***Golden Eagle Park Dam Modifications***

Municipality: Fountain Hills  
Township/Range: T3N R6E S9, 10

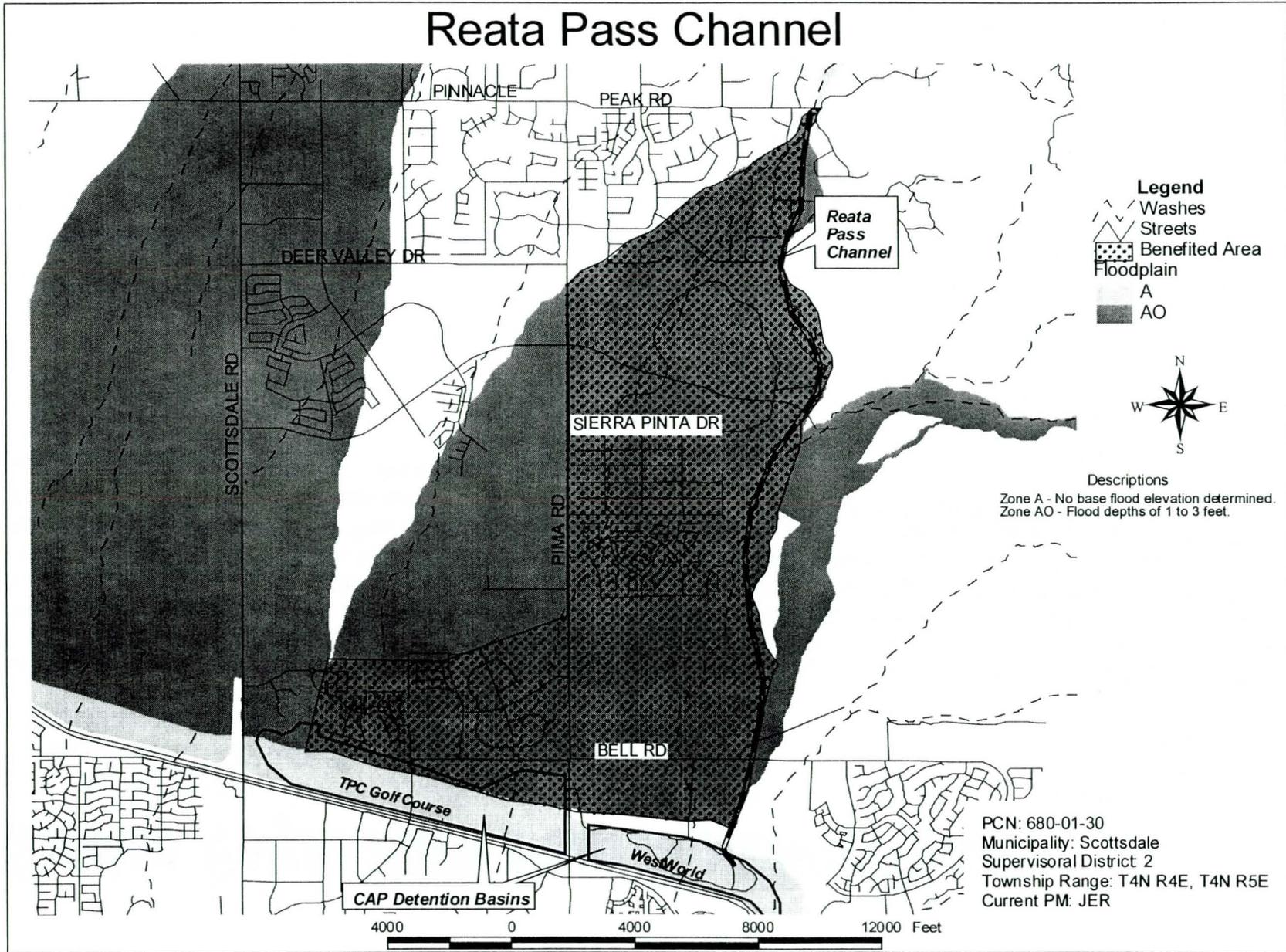
PCN: 670-03-30

Supervisor District: 2  
PM: Tom Renckly, P.E.

Golden Eagle Park Dam is a 28-foot high zoned earth-fill embankment dam. The Dam functions as a flood control structure and is classified as a high hazard/small dam under the jurisdiction of the Arizona Department of Water Resources (ADWR). The Dam is unable to safely pass the Inflow Design Flood (IDF). The safety of the Dam is of major concern since it is upstream of Fountain Hills High School and a highly developed residential

community. Modifications will bring the Dam into compliance with current ADWR dam safety requirements and significantly reduce the potential for flooding at the Fountain Hills High School facilities. The Town of Fountain Hills will be a project participant. The total project cost is estimated at \$1.8 million, of which the Town will fund 35% (\$620,000).

# 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# ***Reata Pass Channel***

Municipality: Scottsdale

PCN: 680-01-30

Supervisor District: 2

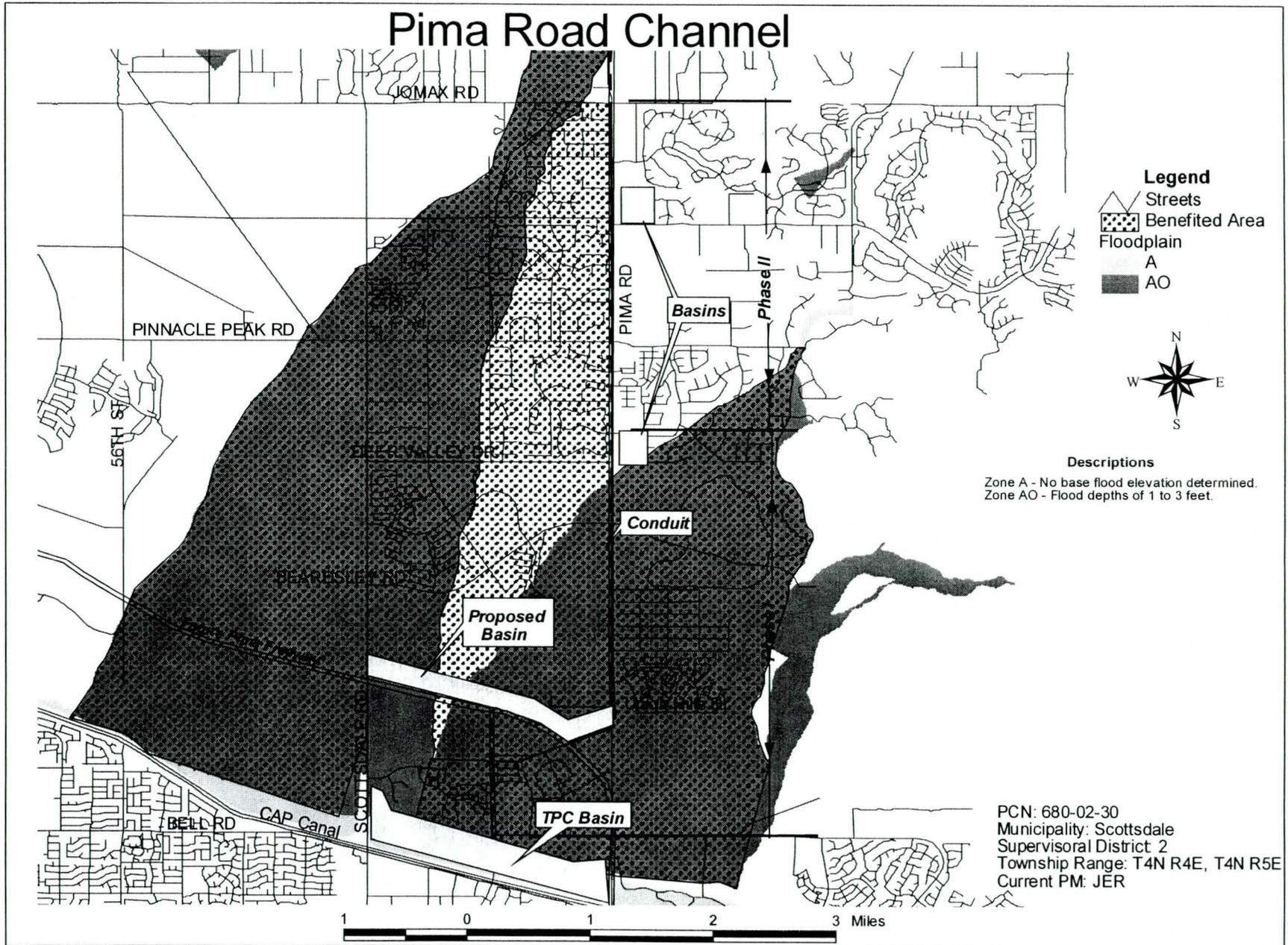
Township/Range: T4N R5E S8, 17, 20, 29, 32

PM: John Rodriguez, P.E.

The Reata Pass Channel is a cost shared project with the City of Scottsdale to construct a 5-mile long channel between Pinnacle Peak Road and the Central Arizona Project (CAP) Retention Basin to collect and convey the 100-year runoff flows from the McDowell Mountains. The channel consists of reaches with entrenched cross sections, levees, grade control, and drop structures through the full length of the channel. Approximately

500,000 cubic yards of soil cement will be utilized to line the channel banks, levees, toe downs, grade control and drop structures, and the invert of the upper 1.5 miles of the channel. The completed project is to be owned and maintained by the City of Scottsdale. The District, by an IGA, will provide \$15.8 million toward construction costs and will also perform the construction management services.

# 6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# ***Pima Road Channel***

Municipality: Scottsdale

PCN: 680-02-30

Supervisor District: 2

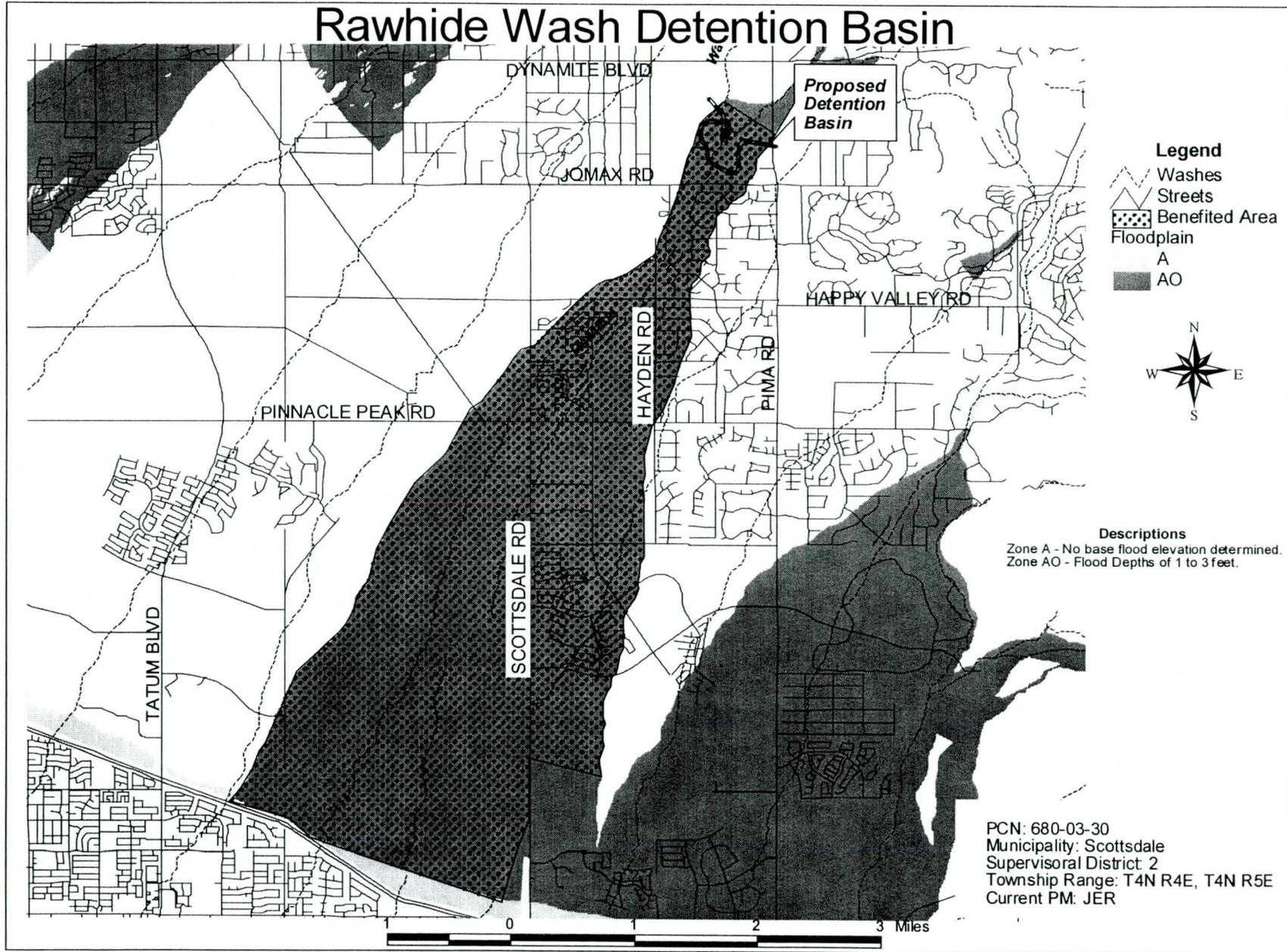
Township/Range: T4N R4E S24; T4N R5E S6-7, 18-19

PM: John Rodriguez, P.E.

A joint project with the City of Scottsdale to provide for a 100-year system of basins, collector channels and outlet conduits from ¼ mile north of Jomax Road on Pima Road south to the Outer Loop Freeway, thence along Hayden Road south to the CAP Retention Basin. Phase 1 construction of a basin at Deer Valley Road, and a large diameter outlet conduit with additional inlets that outfall into a narrow basin along the northerly right-of-way of the

Outer Loop Freeway and extends to Hayden Road, is delayed until a Section 404 Permit is received from the U. S. Army Corps of Engineers. A second basin extends to Scottsdale Road along the northerly side of the freeway. The outlet conduit for these basins is along Hayden Road to the CAP Retention Basin. Project responsibilities need to be defined in a future IGA.

6.0 CIP Project Descriptions



6.0 CIP Project Descriptions

# **Rawhide Wash Detention Basin**

Municipality: Scottsdale  
Township/Range: T4N R4E S1-2, 11, 14

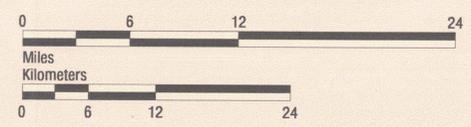
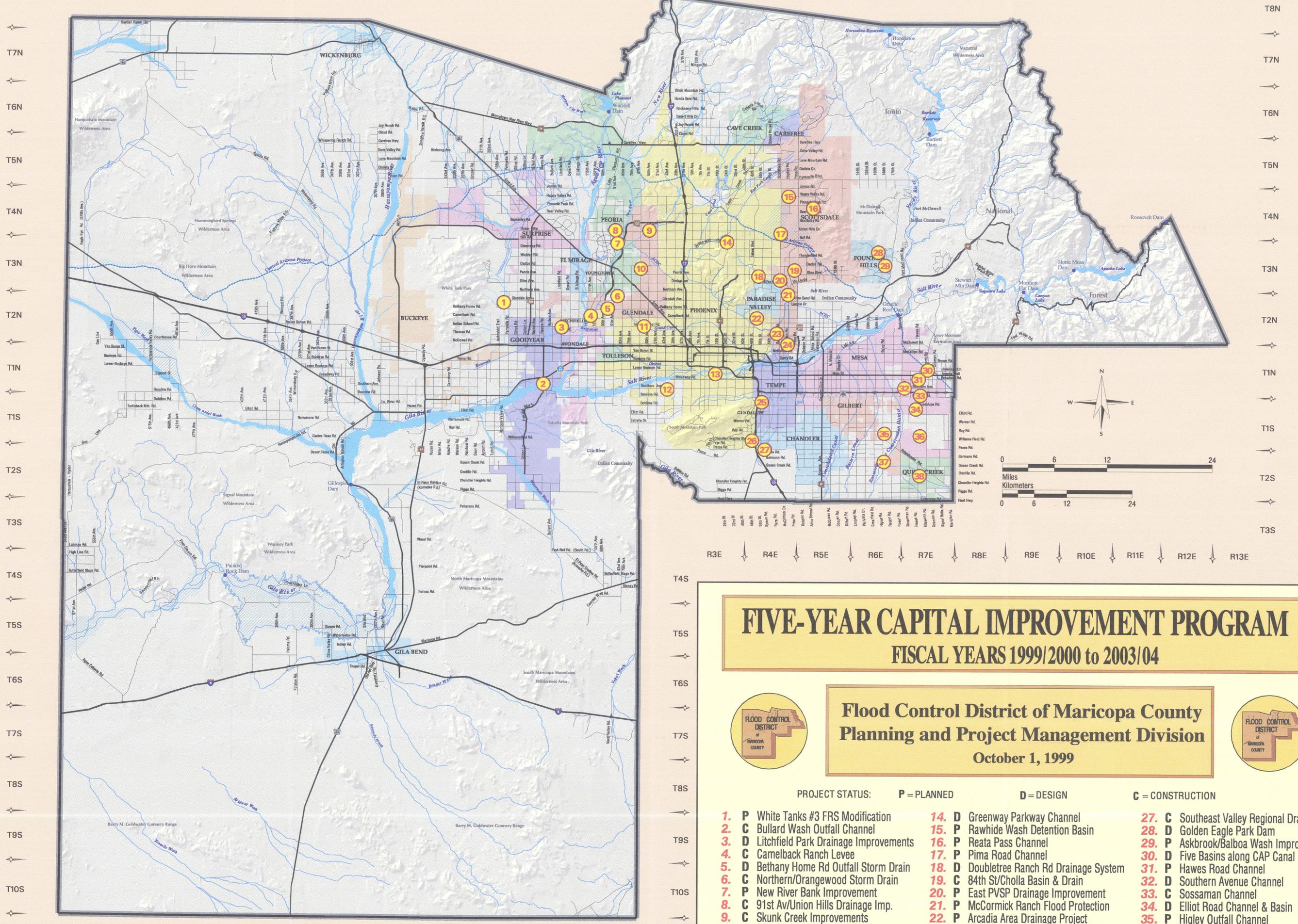
PCN: 680-03-30

Supervisor District: 2  
PM: John Rodriguez, P.E.

The Rawhide Wash Detention Basin is a joint project among the Arizona State Land Department, the cities of Phoenix and Scottsdale, and the District to design and construct a basin that will intercept and attenuate the 100-year, 6-hour storm from the Rawhide Wash

Watershed. The proposed basin is to be located on approximately 90 acres east of Hayden and north of Jomax Roads. The estimated cost of \$22 – 25 million is to be cost shared, 50% by the District and 50% by our partners. A future IGA will define partner responsibilities.

R10W R9W R8W R7W R6W R5W R4W R3W R2W R1W R1E R2E R3E R4E R5E R6E R7E R8E R9E R10E R11E R12E R13E



R3E R4E R5E R6E R7E R8E R9E R10E R11E R12E R13E

# FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM

## FISCAL YEARS 1999/2000 to 2003/04

**Flood Control District of Maricopa County**  
**Planning and Project Management Division**  
 October 1, 1999

PROJECT STATUS: <b>P</b> = PLANNED <b>D</b> = DESIGN <b>C</b> = CONSTRUCTION		
<p><b>1. P</b> White Tanks #3 FRS Modification</p> <p><b>2. C</b> Bullard Wash Outfall Channel</p> <p><b>3. D</b> Litchfield Park Drainage Improvements</p> <p><b>4. C</b> Camelback Ranch Levee</p> <p><b>5. D</b> Bethany Home Rd Outfall Storm Drain</p> <p><b>6. C</b> Northern/Orangewood Storm Drain</p> <p><b>7. P</b> New River Bank Improvement</p> <p><b>8. C</b> 91st Av/Union Hills Drainage Imp.</p> <p><b>9. C</b> Skunk Creek Improvements</p> <p><b>10. D</b> 67th Avenue Storm Drain</p> <p><b>11. D</b> Maryvale Stadium Basin Inlet</p> <p><b>12. C</b> South Phoenix Drainage Improvements</p> <p><b>13. D</b> Phoenix Rio Salado</p>	<p><b>14. D</b> Greenway Parkway Channel</p> <p><b>15. P</b> Rawhide Wash Detention Basin</p> <p><b>16. P</b> Reata Pass Channel</p> <p><b>17. P</b> Pima Road Channel</p> <p><b>18. D</b> Doubletree Ranch Rd Drainage System</p> <p><b>19. C</b> 84th St/Cholla Basin &amp; Drain</p> <p><b>20. P</b> East PVSP Drainage Improvement</p> <p><b>21. P</b> McCormick Ranch Flood Protection</p> <p><b>22. P</b> Arcadia Area Drainage Project</p> <p><b>23. D</b> Osborn Rd Storm Drain Outfall</p> <p><b>24. C</b> Oak Street Storm Drain</p> <p><b>25. D</b> Town of Guadalupe</p> <p><b>26. D</b> Southeast Phoenix Drainage Imp.</p>	<p><b>27. C</b> Southeast Valley Regional Drainage</p> <p><b>28. D</b> Golden Eagle Park Dam</p> <p><b>29. P</b> Askbrook/Balboa Wash Improvements</p> <p><b>30. D</b> Five Basins along CAP Canal</p> <p><b>31. P</b> Hawes Road Channel</p> <p><b>32. D</b> Southern Avenue Channel</p> <p><b>33. C</b> Sossaman Channel</p> <p><b>34. D</b> Elliot Road Channel &amp; Basin</p> <p><b>35. P</b> Higley Outfall Channel</p> <p><b>36. P</b> Ellsworth Road Channel</p> <p><b>37. P</b> East Maricopa Floodway Mitigation</p> <p><b>38. P</b> Queen Creek &amp; Sanokai Wash</p>