



# Five-Year Capital Improvement Program

Fiscal Years 2010 to 2014





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# 83rd Avenue and Pinnacle Peak Road Drainage Improvements (Completed 2008)



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# Durango Regional Conveyance Channel Basin

(To be Completed 2010)



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# Bethany Home Outfall Channel Reach IID

(To be Completed 2010)



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# Heramosa Vista/ Hawes Road Storm Drain and Basin (To be Completed 2009)



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# Reems Road Channel and Basin

(To be Completed 2009)



## **District Overview**

### **1.1 Establishment**

The State of Arizona formed the Flood Control District of Maricopa County (District) on August 3, 1959 in accordance with chapter 21 of title 48 of the Arizona Revised Statutes. The District is a political subdivision of the state, and has the powers, privileges and immunities generally given to incorporated cities and towns. The District is governed by a Board of Directors, and is funded primarily by a flood control tax levy assessed on real property within Maricopa County and by District cost-sharing agreements with project partners.

### **1.2 Structure**

The Maricopa County Board of Supervisors serves as the District's Board of Directors, with the advice of a Flood Control Advisory Board comprised of citizens appointed by the Board of Directors, as well as ex-officio representatives of the City of Phoenix and the Salt River Project.

The District is comprised of five divisions, operating under the oversight of its Chief Engineer and General Manager: Administration; Operations & Maintenance; Engineering; Floodplain Management and Services; and Planning & Project Management, which oversees the District's Capital Improvement Program (CIP).

### **1.3 Mission**

The District provides regional flood hazard identification, regulation, remediation and education to Maricopa County residents so they can reduce their risks of injury, death and property damage from flooding while still enjoying the natural and beneficial values served by floodplains.

# Capital Improvement Program

## 2.1 Capital Improvement Program Overview

The District primarily accomplishes structural flood hazard mitigation through its five-year CIP – the revolving five-year funding plan for accomplishing capital projects. Under this program, the District has participated in the construction of over 100 flood control structures. Guided by strategic goals and objectives, the CIP drives design and construction of new infrastructure in concert with the District's planning activities, while it simultaneously addresses modification and replacement of existing infrastructure.

The CIP accounts for approximately 65% of the total Flood Control District annual budget and includes all District costs associated with the implementation of projects or elements of projects that have been proposed by District programs or external agencies' programs.

The District maintains the five-year CIP as mandated by state statutes under the direction established by the following Board of Directors policy resolutions:

- FCD 88-08A, General Funding Policy (CIP Prioritization Procedure)
- FCD 93-03, Landscaping and Aesthetics Policy
- FCD 2006R003, Floodprone Properties Assistance Program
- FCD 2009R003, Small Project Assistance Program

Prior to their inclusion in the CIP, all capital projects are evaluated under the CIP Prioritization Procedure (regional projects), Small Project Assistance Program (local projects) or Floodprone Property Assistance Program (floodprone property buyout).

## 2.2 Prioritization Procedure

The District's Prioritization Procedure, initially implemented for the Fiscal Year 1995 budget cycle, serves as the primary annual mechanism for evaluating new proposed projects for possible inclusion in the CIP.

The Prioritization Procedure promotes a balanced approach to the evaluation of proposed projects. The District attempts 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 also promote community development, protect natural habitats and maintain watercourse flow paths. The procedure favors projects that involve cost-sharing partnerships, allowing the District to best leverage limited financial resources.

All newly proposed projects are evaluated according to predetermined and weighted criteria by a Project Evaluation Committee comprised of senior representatives of the District's Engineering, Operations & Maintenance, Planning & Project Management, Floodplain Management & Services and Real Estate divisions. The committee develops its recommendations using a system that allocates points to individual projects based on specific criteria. Project Evaluation Committee recommendations are forwarded sequentially to the Chief Engineer and General Manager, the FCAB Budget Subcommittee and the FCAB for approval.

Evaluation criteria, last updated in December 2008, include:

- Priority to Submitting Agency
- Flood Control / Drainage Master Plan Element
- Flooding Threat

- Level of Protection
- Area Protected
- Ancillary Benefits
- Total Project Cost
- Level of Partner(s) Participation
- Operations and Maintenance Costs to the District

District staff host periodic workshops to educate customer agencies on this procedure. The last such workshop was held in 2008.

In addition to its use in evaluating new proposed projects, the CIP Prioritization Procedure also governs maintenance and safety-related modifications to existing structures operated and maintained by the District. These modification projects may be recommended by the Chief Engineer and General Manager independent of the committee-based evaluation process.

The expenditure of CIP funding toward a project recommended under the CIP Prioritization Procedure will not occur until the District's Board of Directors has adopted a formal resolution authorizing the project to move forward. Following resolution adoption, for multilateral projects, District staff work with partnering municipalities to develop project IGAs that generally must be in place before project activity begins.

### **2.3 Small Project Assistance Program**

The CIP Prioritization Procedure is intended to address projects that provide regional solutions to regional flood hazards. The District has recognized that, particularly in urban areas, localized flooding hazards exist where major structural solutions would be impractical. The Small Project Assistance Program provides a mechanism for the District to commit funding, on a limited basis, to advancing localized solutions in these situations. This program, authorized in May 2009 under Resolution FCD 2009R003, will fund a first round of local drainage construction projects in Fiscal Year 2011.

The rigidly defined program terms restrict per-project District funding to \$250,000 or 75% of project construction costs, whichever is less. Submitting municipalities are solely responsible for project design, rights-of-way acquisition, utility relocations, construction management and operations and maintenance, and are responsible for construction costs in excess of the District's contribution limit.

Projects submitted under this program are evaluated each October, under an entirely objective method, based mainly on the frequency and severity of property flooding mitigated by the proposed project, and based on project implementation readiness. Individual project resolutions are not required for projects recommended under this program. IGA terms for these projects are non-negotiable, and IGAs are required to be in place in advance of expenditure of reimbursable project costs.

### **2.4 Floodprone Property Assistance Program**

Similar to the Small Project Assistance Program, the Floodprone Property Assistance Program provides a tool to mitigate flood hazards where structural solutions are impractical.

Homeowners living in residences within delineated floodplains are eligible to apply for assistance under this program – applications are due each spring. Assistance generally takes the form of voluntary buyout, with the District purchasing the property at appraised market value. The District typically demolishes structures on the purchased property.

# District Financing

## 3.1 Financial Philosophy

Most large government and private sector organizations that plan and construct large projects over extended periods of time borrow funds to finance these large projects, and then pay for them over many years. The District operates on a "pay-as-you-go" basis: the District's entire Capital Budget is funded from current revenues, and no borrowing takes place to finance capital projects. The District carries no debt load, County taxpayers do not pay for interest charges on District structures, and there is no need to try to match future debt and interest repayments with future revenues. Since a majority of the District'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, their property and their safety. This policy is quite different from that utilized by government entities that spend current revenues on operating expenses and debt repayment associated with past capital expenditures.

## 3.2 Flood Control Tax Levy Overview

The majority of the District's revenue is derived from a flood control tax applied to assessed real property valuations. The District's Board of Directors and the County's Board of Supervisors set the flood control tax rate and assessed property valuations, respectively. The flood control secondary assessed value, and as a result the District's revenue, is subject to economic influences. Maricopa County conducts annual market studies to determine individual property assessed values, and resulting tax levies generally lag these market studies by 18 to 30 months. So the market study conducted to determine property values in December 2008 will impact the District's tax revenue in Fiscal Year 2011. This simplifies the District's financial planning process, allowing accurate revenue projections for a two fiscal year period.

To prevent large fluctuations in property owners' tax levies, the Board of Directors established a 2% levy growth limit in 2006. The overall levy generated from property taxed in a given fiscal year cannot increase by more than 2%. The flood control tax rate is set to enforce this policy and is then applied to all property - including new or previously untaxed property. Large increases in secondary assessed values result in correspondingly large decreases in the flood control tax rate. Between Fiscal Year 2007 and Fiscal Year 2008, for example, the flood control tax rate decreased from \$0.2047 to \$0.1533 per \$100 assessed value. This offset a 36% increase in the flood control secondary assessed value of property taxed in Fiscal Year 2007 and, when combined with tax revenue from newly constructed property, resulted in an overall tax levy increase of 5% when compared to the originally projected Fiscal Year 2007 tax revenue.

## 3.2 Flood Control Tax Levy History and Trends

Over the past 21 years, the flood control tax rate has experienced a steady decline, while annual revenue has slowly grown.

However, this growth trend will likely reverse in Fiscal Year 2011, consistent with the recent decline in the real estate market.

District Tax Rates by Fiscal Year

<u>Fiscal Year</u>	<u>Tax Rate</u>	<u>Tax Revenue</u>
2010	0.1367*	\$74,996,804*
2009	0.1367	\$74,844,976*

2008	0.1533	\$68,973,117
2007	0.2047	\$64,957,962
2006	0.2119	\$62,733,411
2005	0.2119	\$55,544,623
2004	0.2119	\$50,050,367
2003	0.2119	\$44,302,534
2002	0.2319	\$44,622,753
2001	0.2534	\$43,874,335
2000	0.2858	\$43,992,461
1999	0.3270	\$44,995,000
1998	0.3425	\$42,697,000
1997	0.3413	\$38,501,000
1996	0.3632	\$36,085,500
1995	0.3332	\$35,300,000
1994	0.3632	\$35,400,000
1993	0.3901	\$39,715,000
1992	0.4447	\$46,879,000
1991	0.4235	\$45,797,000
1990	0.4303	\$46,408,000
1989	0.5000	\$51,345,000
1988	0.5000	\$46,059,000

\*Values are projected and subject to change.

Over the past 10 years, the inflation-adjusted revenues provided by the secondary tax to the District have slowly increased; however, given the increased size of the County's population and increased flood control needs associated with this larger urban area, the District's mission objectives have grown at a greater rate than its revenue.

In response, the District has worked to maximize the efficiency of its operations and its project delivery. While many public works agencies have turned to alternative project delivery mechanisms that trade cost-cutting competition for shorter contract durations (e.g., Design-Build and Construction-Manager at Risk), the District has favored traditional design-bid-build competitive bid construction contracting. In the current economic environment, this has resulted in extraordinary cost savings, with District construction bids averaging 36% below engineers' estimates since December 2007. The corresponding \$21 Million savings has allowed the District to accelerate capital projects, putting flood hazard mitigation structures in place both ahead of schedule and under budget.

### 3.3 Project Cost Shares

For most 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 planned and funded in large part by higher levels of government. In the 1990s, the District replaced larger government agencies as the primary source of technical expertise and financial resources for flood control in Maricopa County. To continue to address a wealth of regional flood control problems with its limited resource pool, the District has increasingly leveraged the financing of local project partners.

The District aims to fund one-half of a project's design and construction costs and obtain the remaining funding from benefitting municipalities and other public and private agencies. Where possible, the District additionally defers maintenance responsibilities to partner agencies.

## **Use of this Document**

Project budget tables are presented for Fiscal Years 2010 through 2014. Fiscal Year 2010 figures represent the District's proposed Capital Budget and are subject to review and adoption by the District's Board of Directors. Figures for Fiscal Years 2011 through 2014 are projected and may experience significant change, particularly for projects in the early stages of development.

Tax revenue trends may have an additional, substantial impact on project sequencing. The five-year CIP is a function of District revenue projections. The five-year CIP reflected in this booklet assumes that District revenue will support an annual \$60 million Capital Budget from Fiscal Year 2010 through Fiscal Year 2014. Additional revenues generated by excess land sales, intergovernmental agreements or unforeseen property value increases may allow for additional expenditures; revenue lags tied to declines in property values or a lack of contributing project partners may lead to a corresponding decrease in the District's Capital Budget for a given fiscal year.

Listed project totals are totals for this five-year CIP; they do not represent total historical or anticipated project costs.

Included with each project description is the name and contact information for the responsible project manager. Project managers may also be contacted through the general District switchboard at 602-506-1501.

This report and project status updates are available at: <http://www.fcd.maricopa.gov>.

# **Capital Improvement Program**

**FY 2010 – FY 2014**

# Flood Control District Capital Improvement Program (Proposed for Adoption)

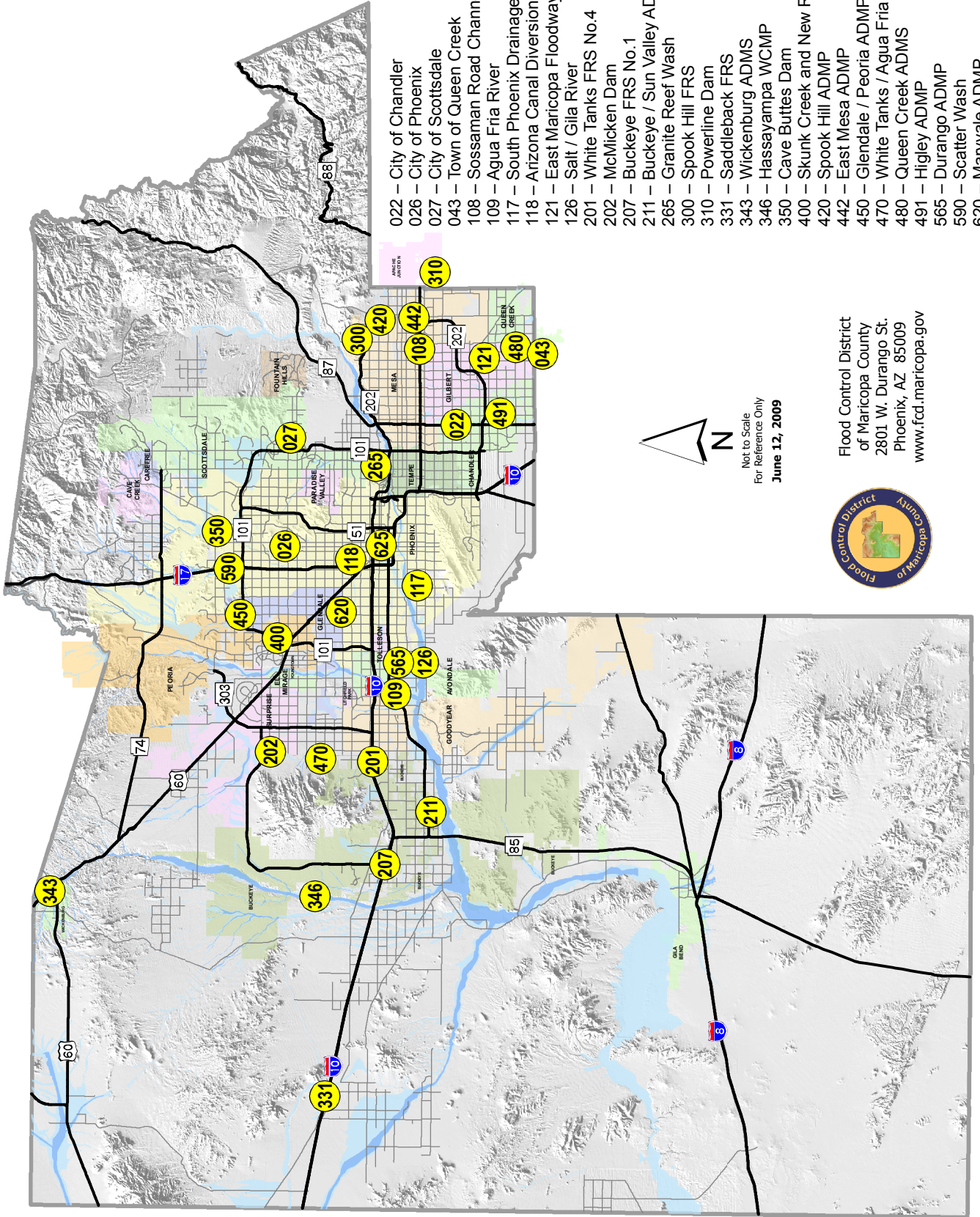
Fiscal Year 2010 - Fiscal Year 2014

Values are in Thousands of Dollars

Page	Project	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	5-Year	
10	022.01.32	Central Chandler Storm Drain Improvements	105,000	110,000	10,000	2,020,000	10,000	2,255,000
12	026.01.30	City of Phoenix Dam No. 7 Rehabilitation	5,000	0	0	0	0	5,000
14	027.10.32	Upper Camelback Wash Improvements	315,000	7,020,000	10,000	10,000	10,000	7,365,000
16	043.01.30	Cloud Rd. and Sossaman Rd. Basin and Outlet	40,000	10,000	10,000	2,020,000	10,000	2,090,000
18	108.01.31	Sossaman Channel Improvements	30,000	610,000	0	0	0	640,000
20	109.02.30	Agua Fria River Levee Safety Improvements	10,000	10,000	10,000	10,000	450,000	490,000
22	117.08.31	Laveen Area Conveyance Channel	0	0	0	0	0	0
24	117.09.31	23rd Ave. / Roeser Rd. Storm Drain & Detention Basin	635,000	10,000	0	0	0	645,000
26	118.01.30	Arizona Canal Diversion Channel Improvements	560,000	560,000	10,000	0	0	1,130,000
28	121.03.32	Rittenhouse Basin	5,585,000	10,000	5,000	5,000	1,995,000	7,600,000
30	121.03.33	Chandler Heights Basin	5,000	10,000	10,000	40,000	9,180,000	9,245,000
32	121.XX.X1	East Maricopa Floodway Low Flow Channel	50,000	1,100,000	50,000	1,100,000	1,100,000	3,400,000
34	126.01.31	Tres Rios	25,000	15,000	15,000	15,000	15,000	85,000
36	126.02.30	Gila River Bank Stabilization	30,000	330,000	840,000	3,670,000	3,670,000	8,540,000
38	201.01.31	White Tanks FRS No. 4 Outlet Channel	10,000	10,000	10,000	20,000	6,100,000	6,150,000
40	201.02.31	White Tanks FRS No. 4 Rehabilitation	1,078,000	10,680,000	60,000	0	0	11,818,000
42	202.02.31	McMicken Dam	10,000	480,000	1,200,000	80,000	8,180,000	9,950,000
44	207.01.31	Buckeye FRS No. 1 Rehabilitation	1,480,000	5,780,000	9,880,000	80,000	0	17,220,000
46	211.03.31	Downtown Buckeye Regional Basin & Storm Drain	162,000	1,010,000	10,000	5,020,000	10,000	6,212,000
48	265.XX.X1	Granite Reef Wash Drainage Improvements	0	0	10,000	1,020,000	10,000	1,040,000
50	300.01.31	Spook Hill FRS / Red Mountain Freeway (SR-202L) Modification	100,000	0	0	0	0	100,000
52	310.01.30	PVR Rehabilitation / Replacement	950,000	950,000	50,000	50,000	50,000	2,050,000
54	310.01.31	Powerline FRS Fissure Risk Zone Mitigation	390,000	5,150,000	40,000	0	0	5,580,000
56	331.01.30	Saddleback FRS Modifications	0	0	0	0	0	0
58	343.01.31	Wickenburg Downtown Flooding Hazard Mitigation	10,000	0	0	0	0	10,000
60	350.XX.X1	Cave Buttes Dam Remediation	345,000	1,585,000	60,000	20,000	0	2,010,000
62	350.XX.X2	Cave Buttes Dam Access Rights Acquisition	0	0	0	0	0	0
64	400.06.31	New River (Grand Ave. to Skunk Creek, Including Paradise Shores)	560,000	0	0	0	0	560,000
66	420.02.31	Hermosa Vista / Hawes Rd. Storm Drain and Basin	10,000	0	0	0	0	10,000
68	420.03.31	McDowell Rd. Basin & Storm Drain	2,063,000	0	0	0	0	2,063,000
70	420.04.31	Oak St. Detention Basin and Storm Drain	540,000	380,000	40,000	40,000	2,150,000	3,150,000
72	420.05.31	Ellsworth Rd. and McKellips Rd. Drainage System	80,000	10,000	10,000	10,000	10,000	120,000
74	442.11.31	Siphon Draw Drainage Improvements	4,660,000	20,000	0	0	0	4,680,000
76	442.12.31	East Mesa Drains Reaches 4 & 7 Channel Improvements	1,165,000	0	0	0	0	1,165,000
78	450.02.32	Rose Garden Lane Channel	1,228,000	1,300,000	10,000	0	0	2,538,000
80	450.03.34	Northern Ave. Storm Drain (47th Ave. to 63rd Ave.)	10,000	10,000	0	0	0	20,000
82	450.05.30	67th Ave. Storm Drain	10,000	0	0	0	0	10,000
84	450.06.31	Pinnacle Peak Rd. Channel (89th Ave. to Agua Fria River)	4,077,000	390,000	5,430,000	5,400,000	20,000	15,317,000
86	450.08.31	Pinnacle Peak Rd. / 67th Ave. Drainage Improvements	0	510,000	1,010,000	6,020,000	10,000	7,550,000
88	470.04.30	White Tanks FRS No. 3 Modifications	9,625,000	655,000	0	0	0	10,280,000
90	470.04.32	White Tanks FRS No. 3 Outlet Channel	6,795,000	510,000	5,180,000	5,180,000	20,000	17,685,000
92	470.12.31	Reems Road Channel and Basin	20,000	0	0	0	0	20,000
94	470.13.31	Bullard Wash (Phase II)	10,000	3,120,000	5,150,000	60,000	3,180,000	11,520,000
96	470.14.31	Loop 303 Drainage Improvements	40,000	3,032,000	10,992,000	8,892,000	6,380,000	29,336,000
98	470.15.31	Northern Parkway Drainage and AT&SF Outfall	15,000	10,000	1,520,000	20,000	20,000	1,585,000
100	470.16.31	Elm Lane (Avondale) Drainage Mitigation	1,035,000	10,000	0	0	0	1,045,000
102	470.XX.X1	Waddell Rd. Drainage Improvements	0	10,000	50,000	480,000	2,080,000	2,620,000
104	480.04.32	Sonoqui Wash Channelization (Chandler Heights to Crismon)	3,863,000	20,000	80,000	4,180,000	60,000	8,203,000
106	480.04.34	Sonoqui Wash Channelization (Main Branch)	460,000	25,000	80,000	4,180,000	4,180,000	8,925,000
108	491.04.31	Queen Creek Road Basin	10,000	0	0	0	0	10,000
110	565.04.31	75th Ave. Storm Drain and DRCC	1,864,000	0	0	0	0	1,864,000
112	565.04.32	DRCC (107th Ave. to Agua Fria)	40,000	2,390,000	390,000	80,000	4,180,000	7,080,000
114	565.04.33	DRCC (75th Ave. to 107th Ave.)	620,000	440,000	90,000	3,180,000	1,680,000	6,010,000
116	590.03.31	Scatter Wash Channel and Basin	5,000	0	0	0	0	5,000
118	620.03.32	Bethany Home Outfall Channel	1,714,000	0	0	0	0	1,714,000
120	620.03.33	Camelback Rd. Storm Drain (59th to 75th Ave.)	644,000	170,000	7,230,000	60,000	0	8,104,000
122	620.03.34	Bethany Home Rd. Storm Drain (79th Ave. to 59th Ave.)	160,000	1,710,000	3,770,000	20,000	0	5,660,000
124	625.01.30	Downtown Phoenix Drainage System (Phase I)	2,297,000	2,780,000	780,000	20,000	10,000	5,887,000
126	Various	Floodprone Properties Assistance Program	1,590,000	1,560,000	1,560,000	1,560,000	1,560,000	7,830,000
128	Various	Small Projects Assistance Program	0	2,000,000	2,000,000	2,000,000	2,000,000	8,000,000
NA	FCPR	Flood Control Project Reserve	2,860,000	3,498,000	2,338,000	3,438,000	1,670,000	13,804,000
Capital Improvement Program Total		60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	300,000,000	

# Flood Control District of Maricopa County CAPITAL IMPROVEMENT PROGRAM

Fiscal Years 2010 - 2014



Not to Scale  
For Reference Only  
June 12, 2009



Flood Control District  
of Maricopa County  
2801 W. Durango St.  
Phoenix, AZ 85009  
[www.fcd.maricopa.gov](http://www.fcd.maricopa.gov)

- 022 – City of Chandler
- 026 – City of Phoenix
- 027 – City of Scottsdale
- 043 – Town of Queen Creek
- 108 – Sossaman Road Channel
- 109 – Agua Fria River
- 117 – South Phoenix Drainage Improvements
- 118 – Arizona Canal Diversion Channel
- 121 – East Maricopa Floodway
- 126 – Salt / Gila River
- 201 – White Tanks FRS No.4
- 202 – McMicken Dam
- 207 – Buckeye FRS No.1
- 211 – Buckeye / Sun Valley ADMS
- 265 – Granite Reef Wash
- 300 – Spook Hill FRS
- 310 – Powerline Dam
- 331 – Saddleback FRS
- 343 – Wickenburg ADMS
- 346 – Hassayampa WCMP
- 350 – Cave Buttes Dam
- 400 – Skunk Creek and New River
- 420 – Spook Hill ADMP
- 442 – East Mesa ADMP
- 450 – Glendale / Peoria ADMP
- 470 – White Tanks / Agua Fria ADMP
- 480 – Queen Creek ADMS
- 491 – Higley ADMP
- 565 – Durango ADMP
- 590 – Scatter Wash
- 620 – Maryvale ADMP
- 625 – Metro ADMP

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# Central Chandler Storm Drain Improvements

PCN: 022.01.32

## Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Chandler

Origination: FY 2009 Prioritization Procedure

Resolution(s): FCD 2008R004

IGA(s): Pending

Recommended by the City of Chandler's March 2006 Storm Water Master Plan Update, this project removes all local drainage connections to an existing Salt River Project "Chandler Drain" irrigation tailwater system and establishes a distinct City storm drain system. Improvements are contained within a two-square-mile area of downtown Chandler subject to historic flooding problems.

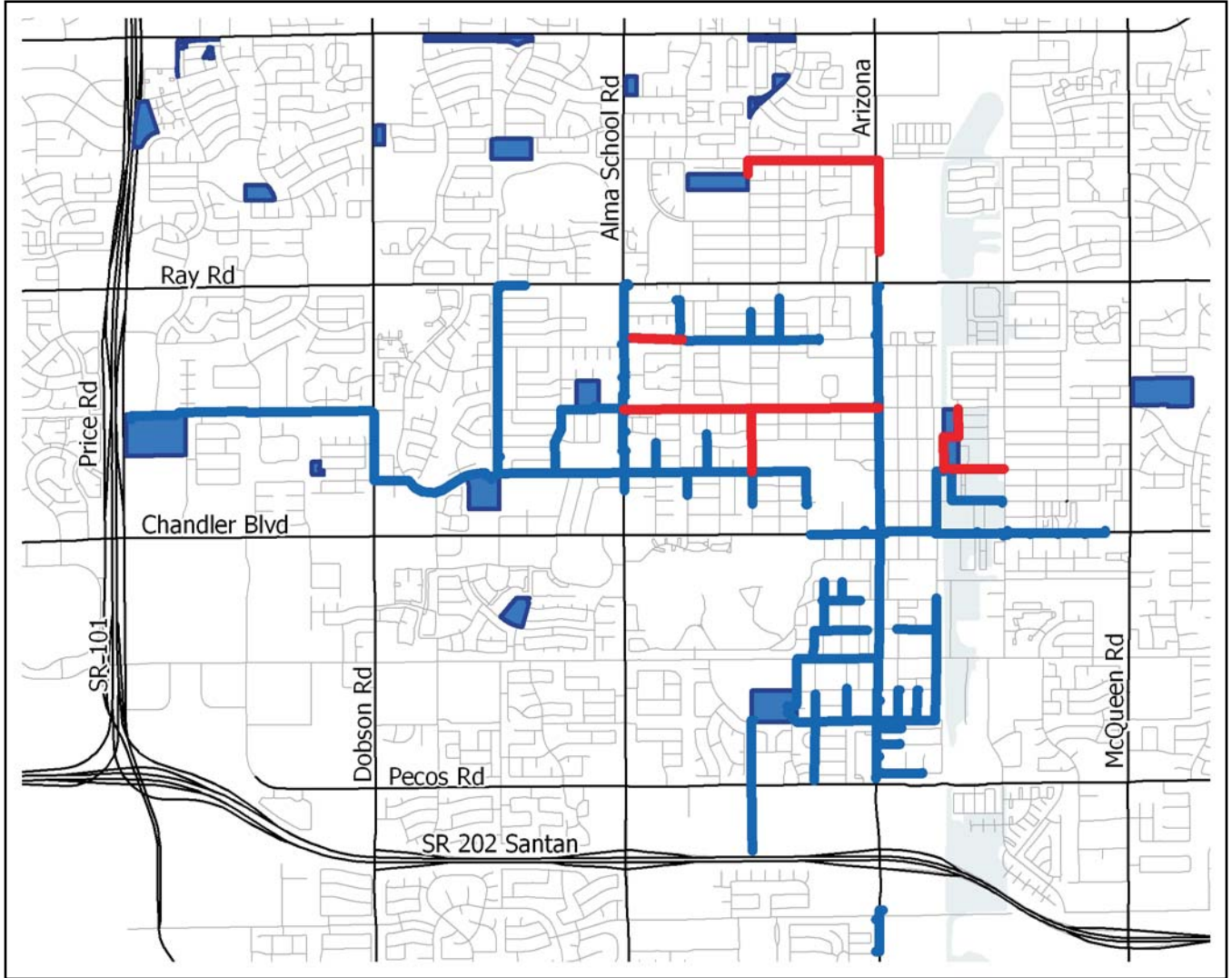
The City of Chandler has contracted additional work to refine the master plan's recommended solution and verify a 10-year level of protection for the affected area. Pending the outcome of that work, the District anticipates entering a cost-share agreement for design and construction of the project.

Design funding is tentatively scheduled for Fiscal Year 2010.

### **Fiscal Year**

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FY 2010	\$105,000
FY 2011	\$110,000
FY 2012	\$10,000
FY 2013	\$2,020,000
FY 2014	\$10,000
5-Year Program	<hr/> \$2,255,000



**Legend**

- Proposed Storm Drain
- Existing Storm Pipes
- Existing Basins
- Floodplain
- Floodway

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# City of Phoenix Dam No. 7 Rehabilitation PCN: 026.01.30

## Michael Greenslade, P.E., Project Manager

602-506-5426  
mdg@mail.maricopa.gov

Supervisory District: 3

Jurisdiction: Phoenix

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2007R007

IGA(s): FCD 2007A012

The City of Phoenix owns and operates four flood control dams that are of sufficient height and storage capacity to be classified as jurisdictional by the Arizona Department of Water Resources: Phoenix Detention Basin No. 7, East Park Dam, West Park Dam and North Mountain Flood Detention Dam No. 3.

Safety assessments of these dams performed by the City under IGA FCD 2004A018 recommended rehabilitation of Phoenix Detention Basin No. 7 and implementation of minor dam safety improvements of the remaining jurisdictional dams.

Phoenix Detention Basin No. 7, located in the North Mountain Preserve, provides flood protection to downstream areas for up to the 100-year flood event. This earth embankment

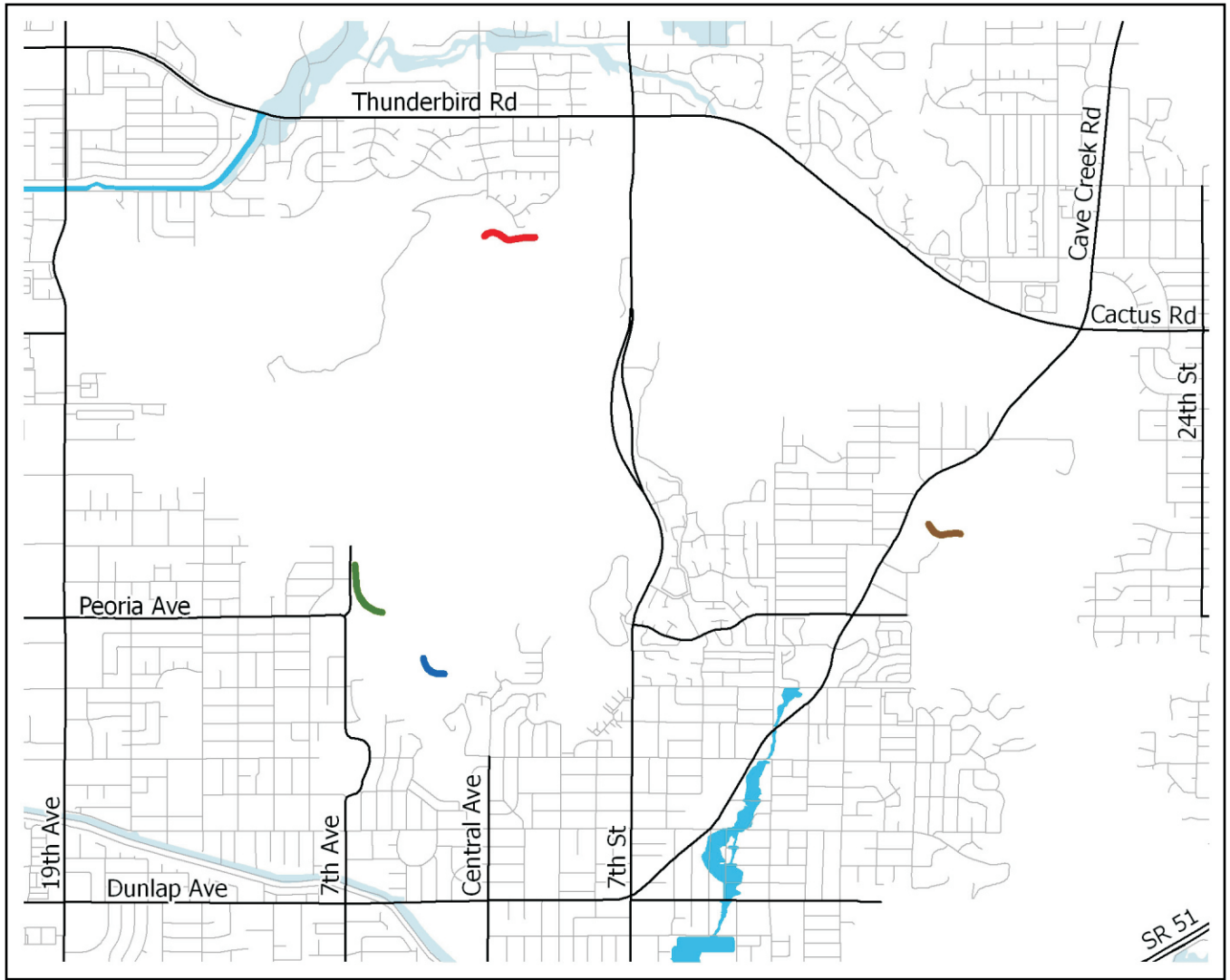
dam is about 1,000 feet in length with a maximum height of 31 feet and a storage capacity of 120 acre-feet. An un-gated low level drain pipe (primary outlet) through the dam releases floodwaters captured in the impoundment at a rate of about 50 cubic feet per second (cfs) to a downstream natural channel.

Dam rehabilitation includes adding a central filter into the existing earth dam, repair work of the dam embankment, removal of existing trees and large tree roots in accordance with current dam safety practices, and installation of new trash racks on the primary outlet of each of the four City jurisdictional dams.

Construction is substantially complete.

### Fiscal Year

FY 2010	\$5,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$5,000



**Legend**

- Phoenix Detention Basin No. 7
- East Park Dam
- North Mountain Flood Detention Basin No. 3
- West Park Dam
- Floodplain
- Floodway

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# Upper Camelback Wash Drainage Improvements

PCN: 027.10.32

## Afshin Houraiyan, P.E., Project Manager

602-506-4519

afa@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Scottsdale

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2009R001

IGA(s): FCD 2009A006

The City of Scottsdale's Storm Water Master Plan recommended improvements to mitigate flooding hazards in the Upper Camelback Wash watershed. Conveyance capacity of the existing system of open channels and street conveyance is limited to a 2-year event level in some areas, creating a flood hazard for an estimated 750 structures. The proposed project will improve system capacity to convey the 100-year storm event.

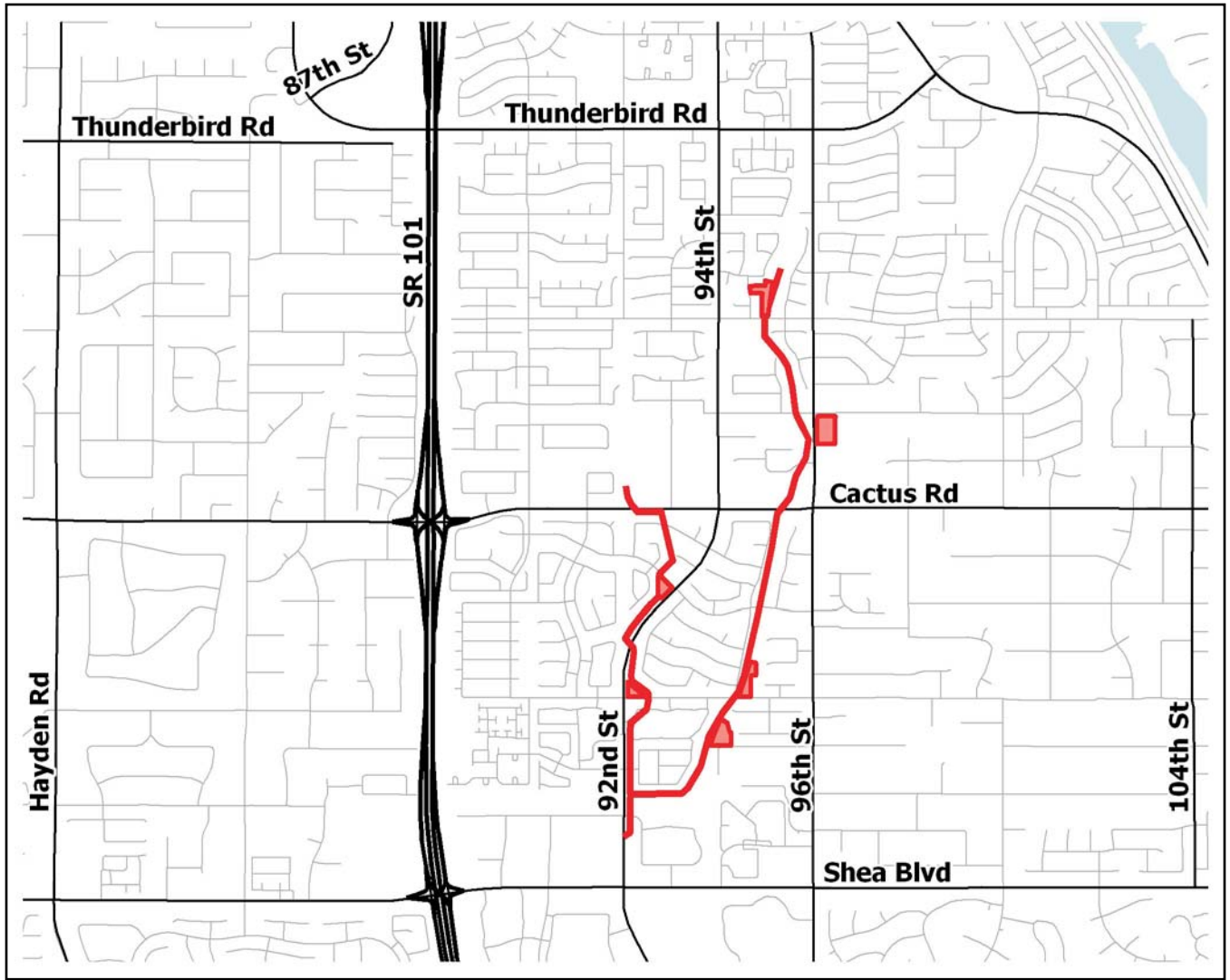
In advance of District participation, the City initiated design of the project, acquired rights-of-way and, during the widening of Cactus Road, constructed box culverts to accommodate the project.

The District and the City have entered an IGA to complete the final design for the project. The District anticipates entering an additional IGA for Construction, forecast to begin in Fiscal Year 2011.

Construction may be phased due to City budget limitations.

### Fiscal Year

FY 2010	\$315,000
FY 2011	\$7,020,000
FY 2012	\$10,000
FY 2013	\$10,000
FY 2014	\$10,000
5-Year Program	<u>\$7,365,000</u>



**Legend**

- Proposed Drainage Basins
- Proposed Channelization
- Floodplain
- Floodway

---

# Cloud Road and Sossaman Road Basin and Outlet

PCN: 043.01.30

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Queen Creek

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2009R004

IGA(s): FCD 2009A003

The Town of Queen Creek completed the Cloud Road Channel capacity study in March 2003. The study recommended construction of a new basin and outlet in the area of Cloud Road and Sossaman Road to mitigate historical flooding to nearby homes along Cloud Road to the west.

The project consists of a basin located at approximately the southeast corner of Cloud Road and Sossaman Road and an outlet along Sossaman Road from the basin site north to Sonoqui Wash. The project would provide 100-year flood protection for over 120 homes in the area as well as protect public infrastructure including roads and utilities.

The Town has purchased rights-of-way for the basin, which it intends to locate adjacent to a planned municipal park and fire station.

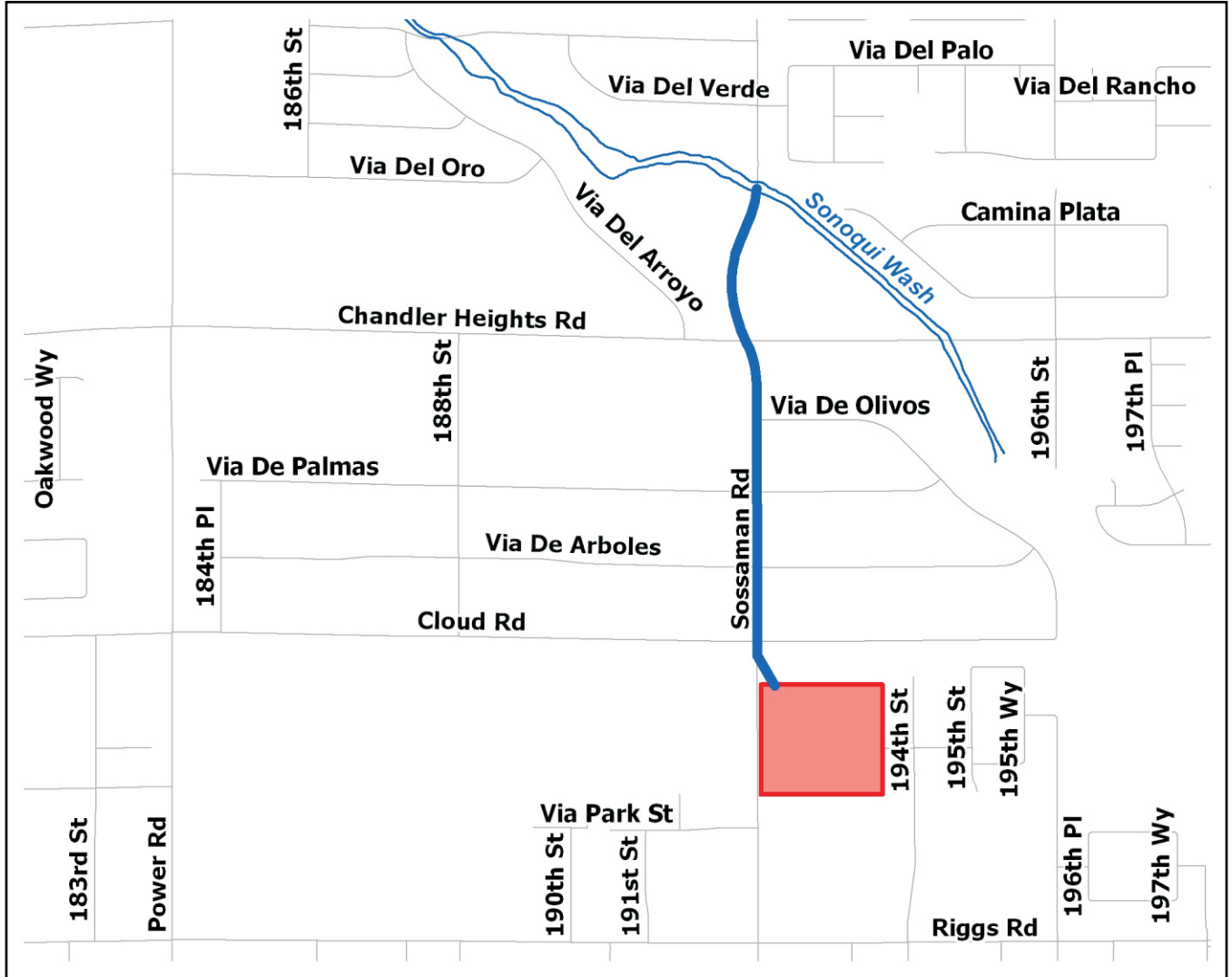
The District has entered a design IGA with the Town, and design is scheduled to be completed in Fiscal Year 2010.

A follow-on IGA for construction is anticipated, and the project's construction schedule will be contingent upon the availability of Town funding.

### **Fiscal Year**

---

FY 2010	\$40,000
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$2,020,000
FY 2014	\$10,000
5-Year Program	<hr/> \$2,090,000



**Legend**

- Sonoqui Wash
- Proposed Outlet
- Proposed Basin

---

# Sossaman Channel Improvements Baseline Road to Guadalupe Road

PCN: 108.01.31

**Mike Duncan, P.E., CFM, Project Manager**

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa

Origination: FY 2011 Prioritization Procedure

Resolution(s): FCD 2009R005

IGA(s): None

The segment of the existing Sossaman Channel between Baseline Road and Guadalupe Road is earthen with concrete grade-control structures. It was designed and built as part of a Maricopa County Highway Department project for Sossaman Road in 1981, to convey regional storm water flows. It is located in the mid-length portion of the three-mile-long Sossaman/Guadalupe channel and basin system, which the District owns, operates and maintains.

District staff have identified cracking, undermining and buckling of some of the concrete structures, erosion of channel bottom and banks, nuisance water ponding areas and other evidence of channel functional distresses. During a storm event, the structural failure of a channel feature could compromise the

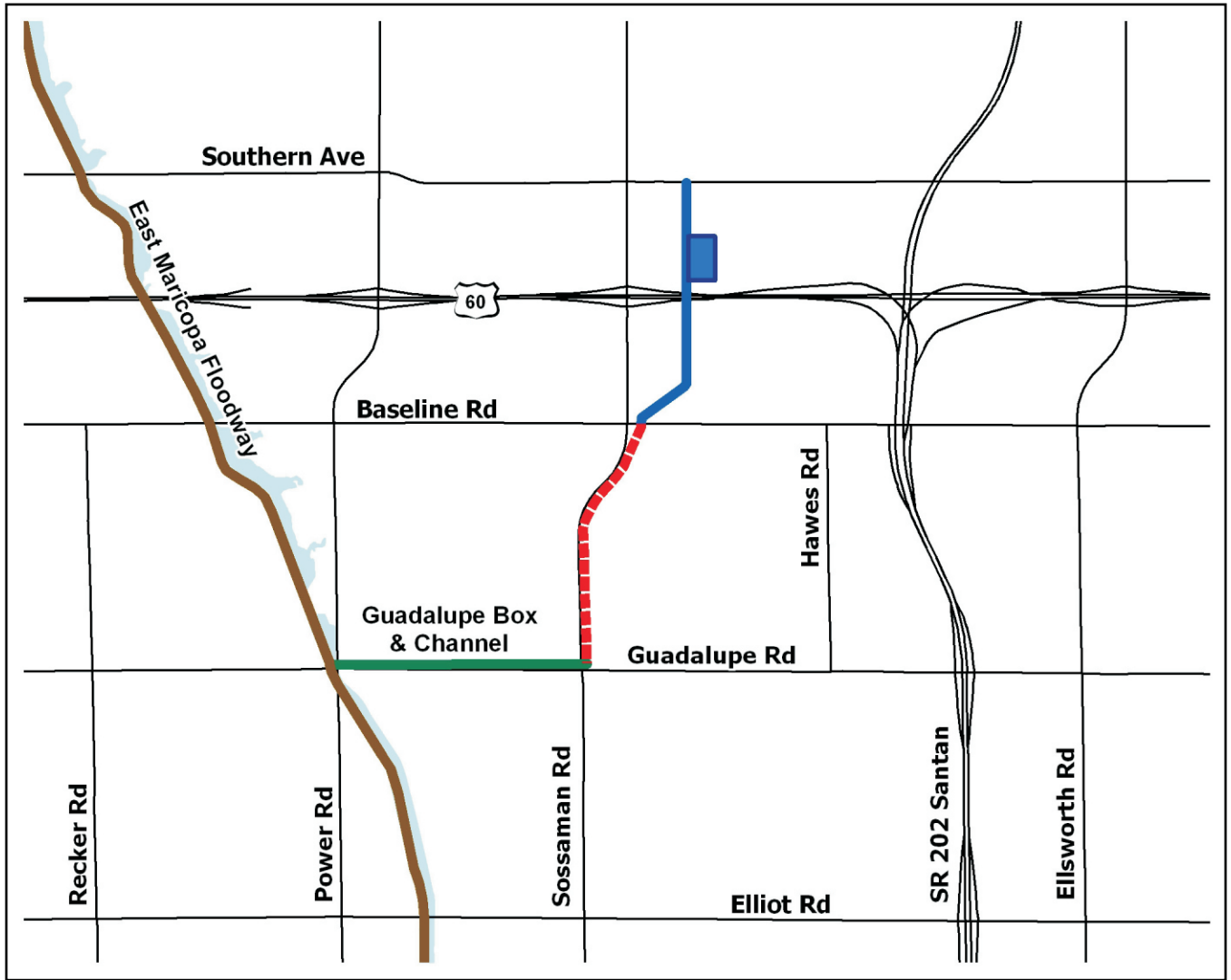
channel's structural integrity and the level of flood safety provided by the Sossaman/Guadalupe system. The District initiated a study to identify repair and improvement alternatives to increase the structure's life span.

Design is in progress, and construction is expected to begin by Fiscal Year 2011.

## **Fiscal Year**

---

FY 2010	\$30,000
FY 2011	\$610,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$640,000



**Legend**

-  Sossaman Channel - Area to be Improved
-  Sossaman Channel
-  Sossaman Basin
-  East Maricopa Floodway
-  Guadalupe Box & Channel
-  Floodplain
-  Floodway

---

# Agua Fria River Levee Safety Improvements

PCN: 109.02.30

## Greg Jones, P.E., Project Manager

602-506-5537

glj@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Avondale

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2008R009

IGA(s): FCD 2008A010

Channelization of the Agua Fria River, completed by the District and the U.S. Army Corps of Engineers in the 1980s, included construction of soil cement levees. The District entered IGA 2001A009 with the City of Avondale, granting the City a non-exclusive easement over certain District fee-held land, including channelized portions of the Agua Fria River, to facilitate construction of a City trail system.

Maintenance of the Agua Fria River levees poses a hazard to District personnel, as the levees were originally constructed without pipe rail fall protection, and a trail atop the levees would pose a similar hazard to the public.

IGA FCD 2008A009 establishes a cost share between the City and the District for installation of pipe rail along levees between Buckeye Road and McDowell Road. The District's cost share is capped at \$440,000, including a per-foot ceiling.

The City, under the IGA, will act as lead agency for installation of the pipe rail, and will assume operation and maintenance responsibility over the installed railing.

### Fiscal Year

---

FY 2010	\$10,000
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$10,000
FY 2014	\$450,000
5-Year Program	<hr/> \$490,000



**Legend**

- Piperail Additions
- FEMA Floodplain
- FEMA Floodway

---

# Laveen Area Conveyance Channel

PCN: 117.08.31

## **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix

Origination: FY 2002 Prioritization Procedure

Resolution(s): FCD 2000R011

IGA(s): FCD 2000A021, 2000A021A, 2000A021B

The Laveen Area Conveyance Channel is a public and private partnership that improved the Maricopa Drain into a regional flood control facility to reduce flooding in the Laveen area. The project consisted of 5.8 miles of conveyance channel and a detention basin at 43rd Avenue and Southern Avenue.

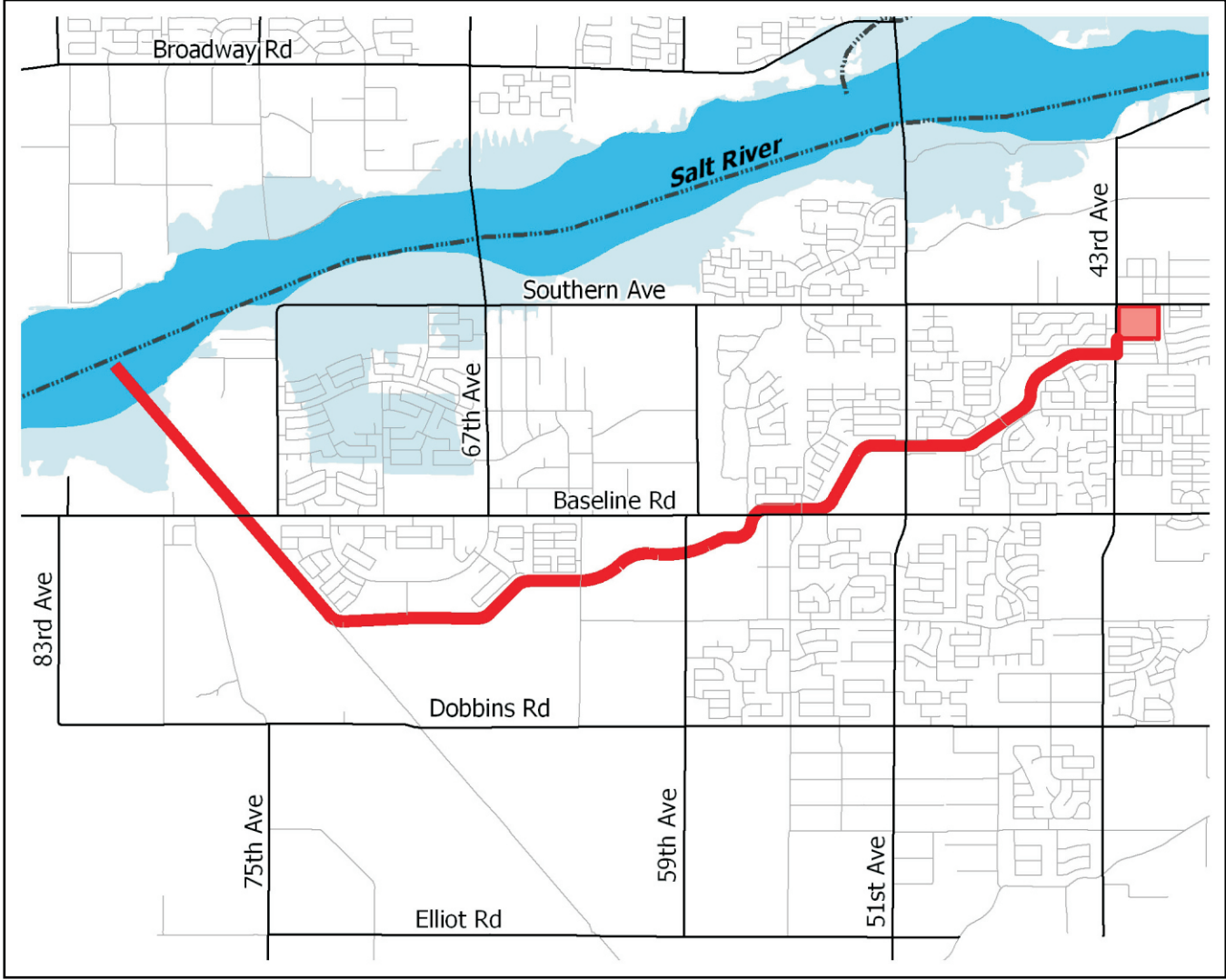
The District's project involvement is complete with the exception of litigation related to project rights-of-way condemnations.

Landscaping by the City of Phoenix is ongoing to allow the channel and basin to function as City park facilities. The District will continue to maintain the project outfall.

### **Fiscal Year**

---

FY 2010	\$0
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$0



**Legend**

- Laveen Area Conveyance Channel
- Basin Site
- Floodplain
- Floodway

---

# 23rd Avenue and Roeser Road Basin and Storm Drain

PCN: 117.09.31

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2003R008

IGA(s): FCD 2003A004, 2003A004A

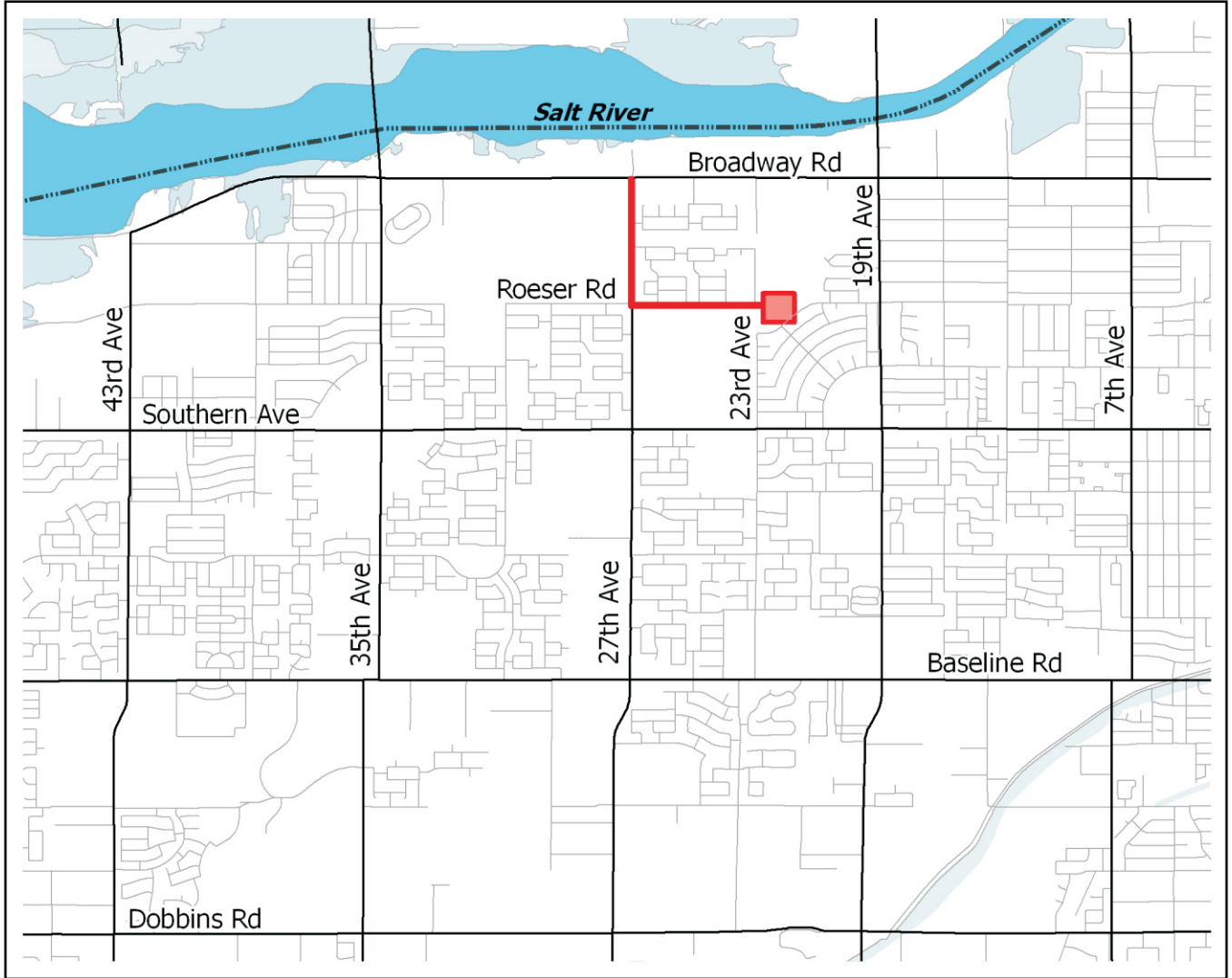
The 23rd Avenue and Roeser Road Detention Basin and Storm Drain is identified as an element of regional flood control infrastructure as defined by the recommended plan for the South Phoenix/Laveen Drainage Improvement Project. A 10-acre detention basin, to be located on the northeast corner of 23rd Avenue and Roeser Road, will intercept flows from the north and the east. The basin will be designed to intercept flows from a 100-year storm and will then discharge flows into a storm drain system along Roeser Road between 27th Avenue and Broadway Road. This storm drain will then discharge into a previously constructed 108-inch storm drain that will convey the flows from Broadway Road to the Salt River.

The City of Phoenix is the lead agency for all project tasks and will own, operate and maintain the completed project. The City and District are sharing equally in project costs.

Design and storm drain construction are complete. Basin construction completion is anticipated during Fiscal Year 2010.

### Fiscal Year

FY 2010	\$635,000
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$645,000



**Legend**

- Proposed Storm Drains (117.09.31)
- Proposed Basin (117.09.31)
- Floodplain
- Floodway

---

# Arizona Canal Diversion Channel Improvements

PCN: 118.01.30

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 3, 4

Jurisdiction: Phoenix

Origination: FY 2011 Prioritization Procedure

Resolution(s): FCD 2008R016

IGA(s): None

The U.S. Army Corps of Engineers, in partnership with the District, constructed the Arizona Canal Diversion Channel (ACDC) in the 1980s. The District owns, operates and maintains the channel.

Storm drain inlet pipes have begun to exhibit cracking along vertical-walled segments of the ACDC. This cracking, if unaddressed, would allow storm water flows entering the wall backfill to saturate and further consolidate, potentially jeopardizing the integrity of the 20-foot vertical wall.

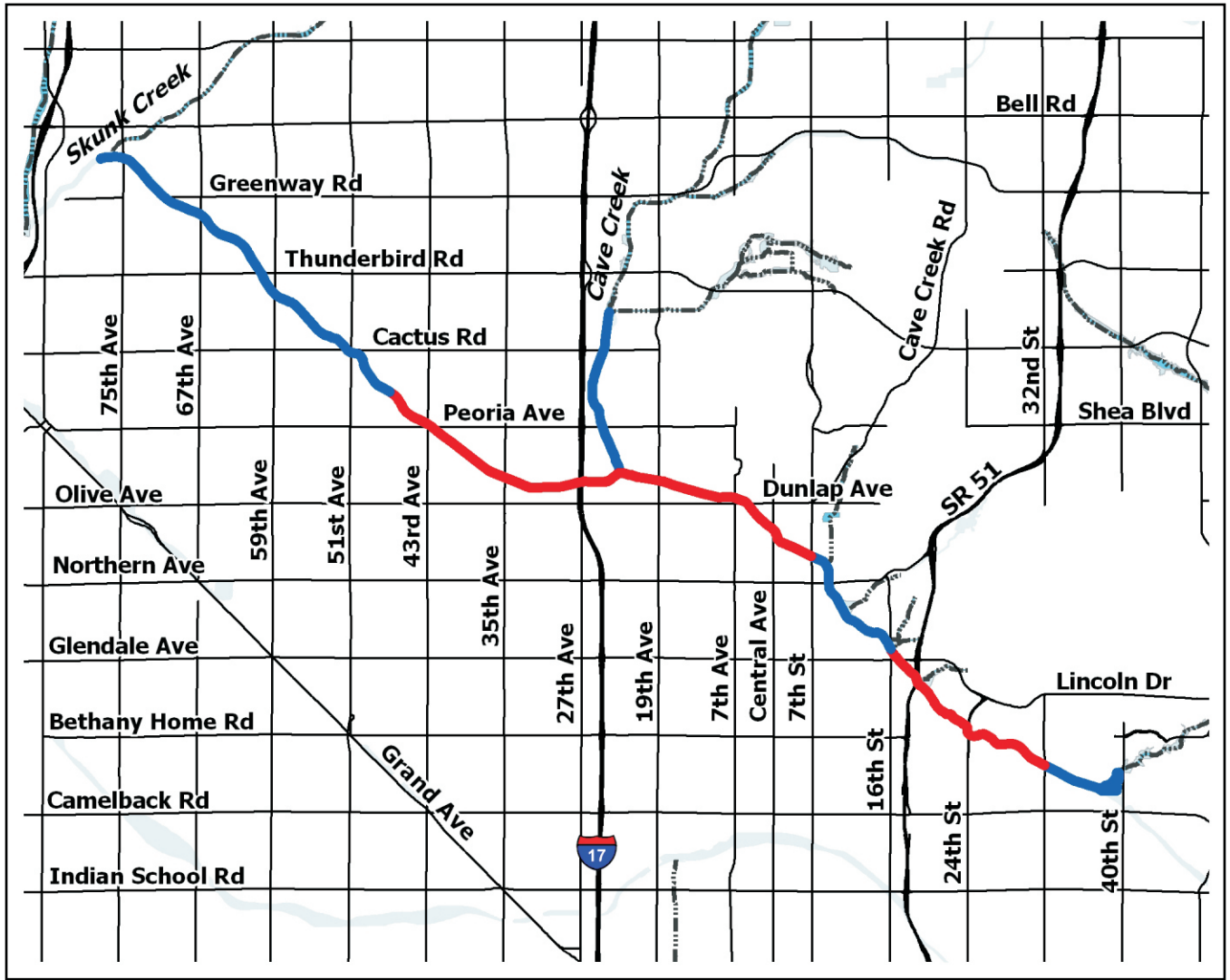
This project will address this deficiency and will involve engineered storm drain improvements to extend the life of the channel wall. The project is phased to allow for the exploration of multiple solutions.

The project will be accomplished unilaterally by the District. Substantial completion is anticipated by Fiscal Year 2011.

### **Fiscal Year**

---

FY 2010	\$560,000
FY 2011	\$560,000
FY 2012	\$10,000
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$1,130,000



**Legend**

- Arizona Canal Diversion Channel
- Arizona Canal Diversion Channel - Improvement Area
- Floodplain
- Floodway

---

# Rittenhouse Basin

PCN: 121.03.32

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Gilbert

Origination: FY 2001 Prioritization Procedure

Resolution(s): FCD 2001R006

IGA(s): FCD 2004A007

The District's East Maricopa Floodway (EMF) Mitigation Study identified drainage and flooding issues associated with the 15,000 cfs 100-year flow exceeding the EMF's 8,500 cfs capacity. The study proposed two large off-line detention basins – the Rittenhouse and Chandler Heights Basins – to mitigate EMF flows.

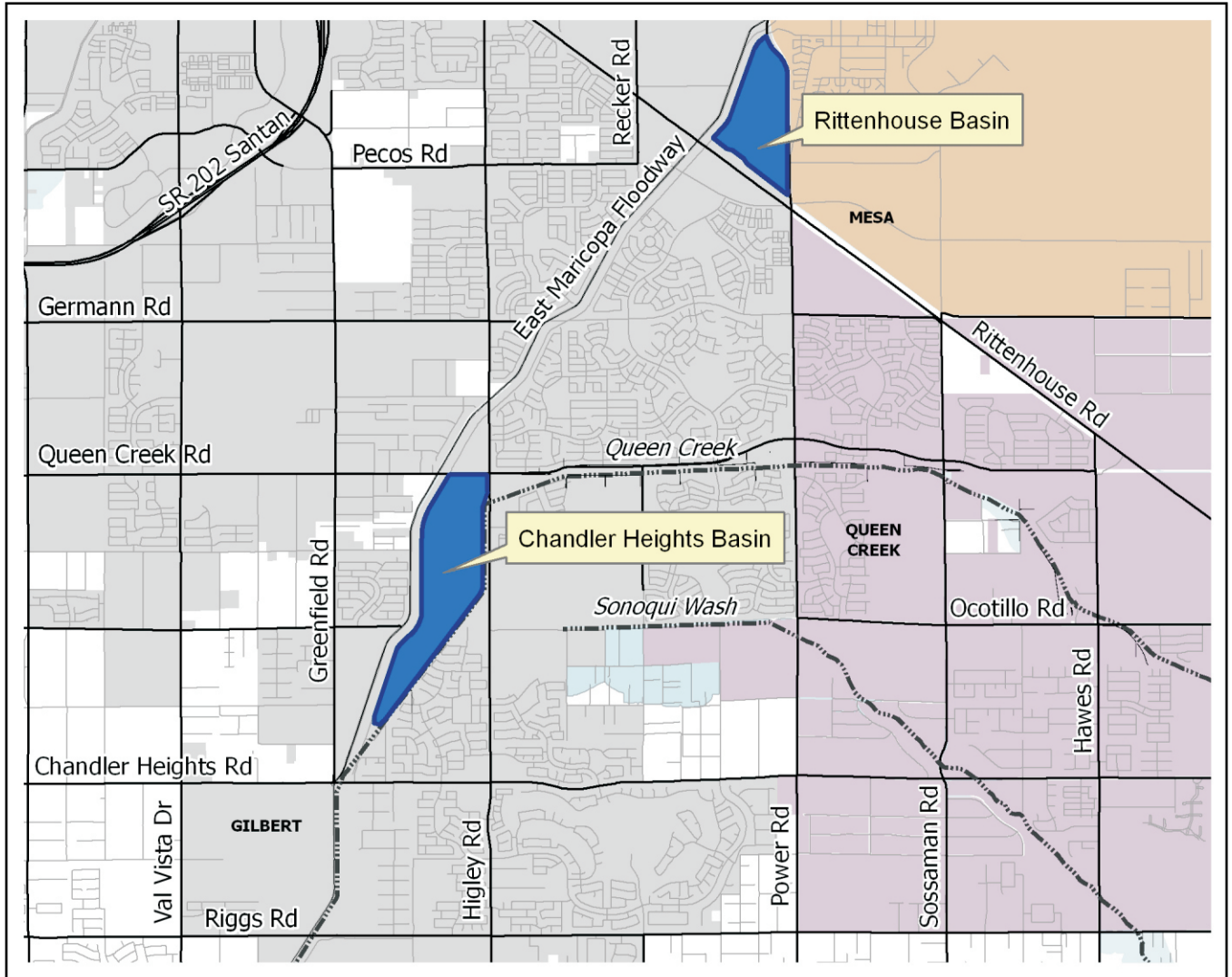
Rittenhouse Basin construction is being accomplished in multiple phases. Design and the first phase of construction have been completed, and the second phase of construction is in progress, with completion expected during Fiscal Year 2010.

Although basin construction is being accomplished by the District alone, the Town of Gilbert will fund recreational amenities and assume certain operation and maintenance obligations. In April 2009, the Town purchased a recreational use easement on the 160-acre basin site, generating approximately \$11 million in District revenue and partially offsetting the project's cost.

### **Fiscal Year**

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FY 2010	\$5,585,000
FY 2011	\$10,000
FY 2012	\$5,000
FY 2013	\$5,000
FY 2014	\$1,995,000
5-Year Program	<hr/> \$7,600,000



**Legend**

- Basins
- Gilbert
- Mesa
- Queen Creek
- Floodplain
- Floodway

---

# Chandler Heights Basin

PCN: 121.03.33

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Gilbert

Origination: FY 2001 Prioritization Procedure

Resolution(s): FCD 2001R006

IGA(s): None

The District's East Maricopa Floodway (EMF) Mitigation Study identified drainage and flooding issues associated with the 15,000 cfs 100-year flow exceeding the EMF's 8,500 cfs capacity. The study proposed two large off-line detention basins – the Rittenhouse and Chandler Heights Basins – to mitigate EMF flows.

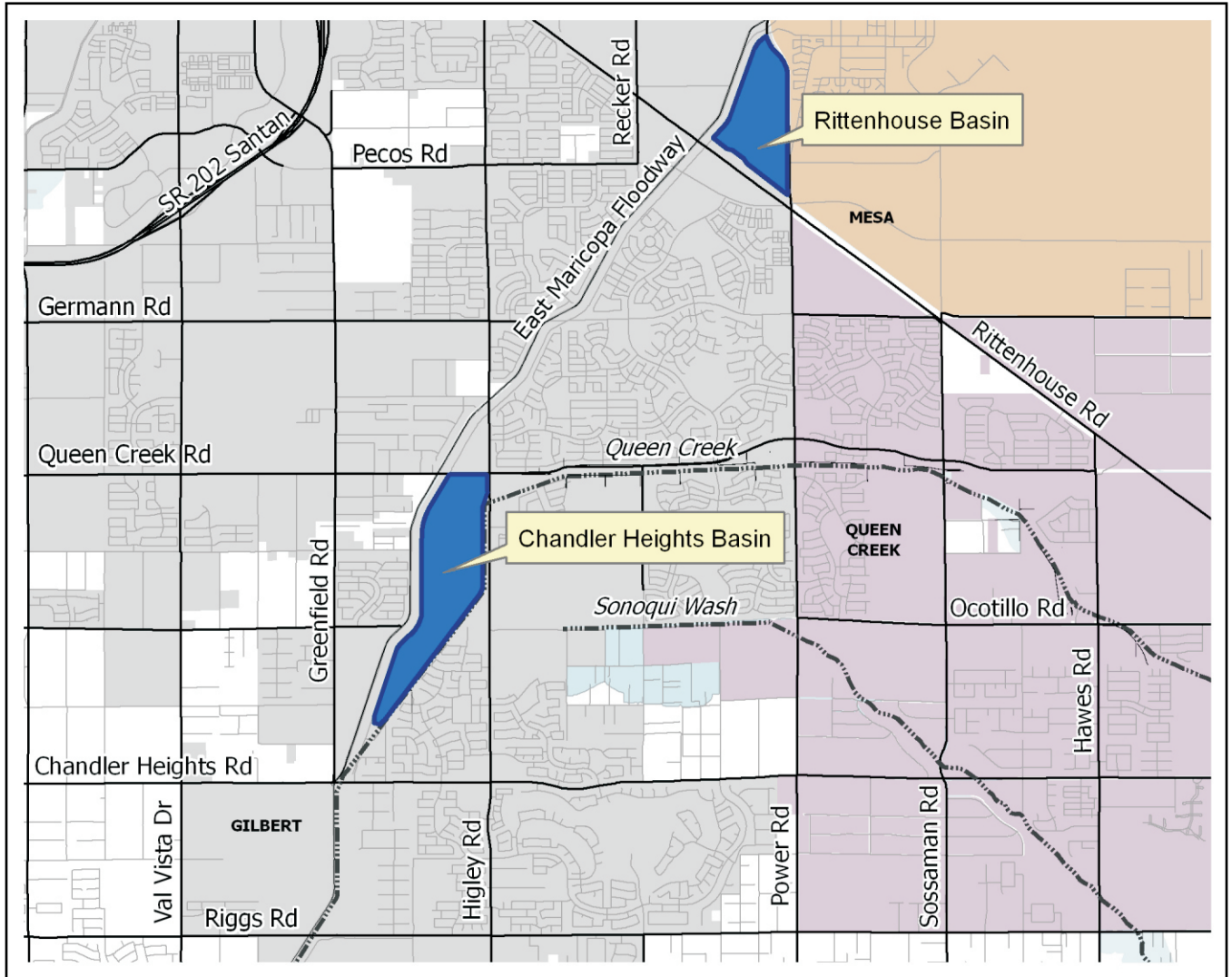
Chandler Heights Basin reduces flows from the Queen Creek and Sonoqui washes into the EMF. Construction is being accomplished in five phases. Design and the first two phases of construction have been completed. Future phases of construction will involve excavation of an additional 3 million cubic yards of material, and will be accomplished as funding becomes available.

Although basin construction is being accomplished by the District alone, it is anticipated that the Town of Gilbert will purchase an easement on the completed basin site, fund recreational amenities and assume certain operation and maintenance obligations in the future.

### **Fiscal Year**

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FY 2010	\$5,000
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$40,000
FY 2014	\$9,180,000
5-Year Program	<hr/> \$9,245,000



**Legend**

- Basins
- Gilbert
- Mesa
- Queen Creek
- Floodplain
- Floodway

---

# East Maricopa Floodway Low Flow Channel

PCN: 121.XX.X1

## Jeff Riddle, P.E., Project Manager

602-506-4602

jrr@mail.maricopa.gov

Supervisory District: 1, 2

Jurisdiction: Gilbert, Mesa

Origination: FY 2011 Prioritization Procedure

Resolution(s): FCD 2009R006

IGA(s): None

The United States Soil Conservation Service (now Natural Resources Conservation Service) completed the East Maricopa Floodway (EMF) in 1989 in partnership with the District and others. This 27-mile-long earthen channel runs parallel to the Roosevelt Water Conservation District canal from north of Brown Road to Hunt Highway, and continues in a southwesterly direction through the Gila River Indian Community to an outlet at the Gila River. The EMF is a principal flood control feature for the east valley, intercepting floodwater flow impacting the Buckhorn-Mesa, Apache Junction-Gilbert and Williams-Chandler watersheds. The EMF is operated and maintained by the District, with the exception of segments that run through privately owned golf courses.

Due to the topography of the area, the EMF has a particularly shallow slope. Combined with the EMF's earthen bottom, this causes nuisance ponding along much of the structure. In addition to causing mosquito control issues, this creates maintenance difficulties, as maintenance equipment is unable to function in the saturated channel bottom.

The District intends to modify the EMF's drop structures, construct a concrete low flow channel and construct associated low flow inlet features to capture and convey nuisance flows while facilitating proper maintenance.

Implementation will be phased, with a first phase of construction anticipated in Fiscal Year 2011.

### Fiscal Year

FY 2010	\$50,000
FY 2011	\$1,100,000
FY 2012	\$50,000
FY 2013	\$1,100,000
FY 2014	\$1,100,000
5-Year Program	<u>\$3,400,000</u>



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# Tres Rios

PCN: 126.01.31

## Don Rerick, P.E., Project Manager

602-506-4878

djr@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix, Avondale, Unincorporated Maricopa County

Origination: U.S. Army Corps of Engineers Feasibility Study

Resolution(s): FCD 2004R005

IGA(s): FCD 2004A017

The Tres Rios Project is a federal project under the auspices of the U.S. Army Corps of Engineers and sponsored locally by the City of Phoenix.

The project is located along the Salt and Gila rivers, from about 83rd Avenue to the Agua Fria River, and consists of the restoration of habitat within and along the river. It involves construction of wetlands; open water marshes and riparian corridors; and a flood control levee along the north bank of the river from approximately 105th Avenue to El Mirage Road to remove property and homes along the river from the floodplain.

The District's participation, in accordance with the project resolution and IGA, includes design review and coordination, \$2 million in levee construction funding, operation and maintenance of the levee and contribution of District-owned land required for the project.

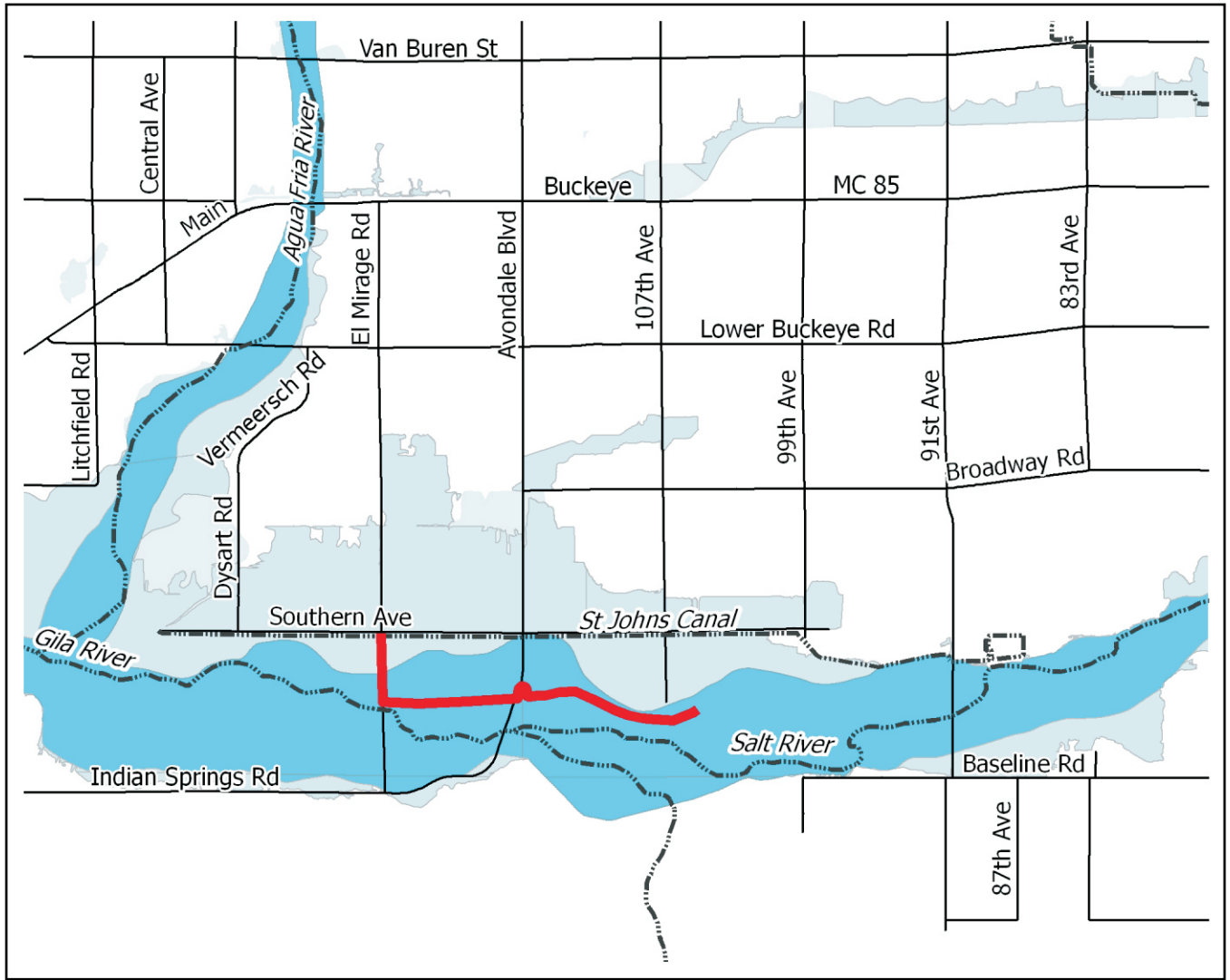
The levee design and construction will occur in three phases - from 105th to 115th Avenue, from 115th to 123rd Avenue and along El Mirage Road north to Southern Avenue. Construction of the first two phases is complete. Construction of the third phase has not yet been scheduled, and District participation will be limited to design review and operation and maintenance.

Subsequent to the formulation of the District's FY 2010 - FY 2014 Capital Improvement Program, the advancement of the third construction phase was delayed. The District will correspondingly delay its associated \$1,000,000 payment to the City of Phoenix to FY 2010, subject to budget adjustment approvals by the District's Board of Directors.

### Fiscal Year

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FY 2010	\$25,000
FY 2011	\$15,000
FY 2012	\$15,000
FY 2013	\$15,000
FY 2014	\$15,000
5-Year Program	<hr/> \$85,000



**Legend**

- Proposed Levee
- Floodplain
- Floodway

---

# Gila River Bank Stabilization

PCN: 126.02.30

Citrus Road to Perryville Road

## Jennifer Pokorski, CFM, Project Manager

602-506-4695

jmp@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Unincorporated Maricopa County

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2008R011

IGA(s): Pending

The District, in cooperation with the City of Avondale, City of Goodyear and Town of Buckeye, completed the El Rio Watercourse Master Plan (WCMP) in 2006. The El Rio WCMP outlines a recommended alternative for managing the 17.5 miles of the Gila River from the confluence with the Agua Fria River to the State Route 85 bridge. The recommended alternative includes soft structural levee/bank protection, floodplain management, vegetation management, and it facilitates recreational and wildlife habitat enhancements.

This project, jointly requested by the Town of Buckeye and the Buckeye Water Conservation and Drainage District, implements the portion of the levee/bank protection recommended in the El Rio WCMP from the Citrus Road alignment to the Perryville Road alignment.

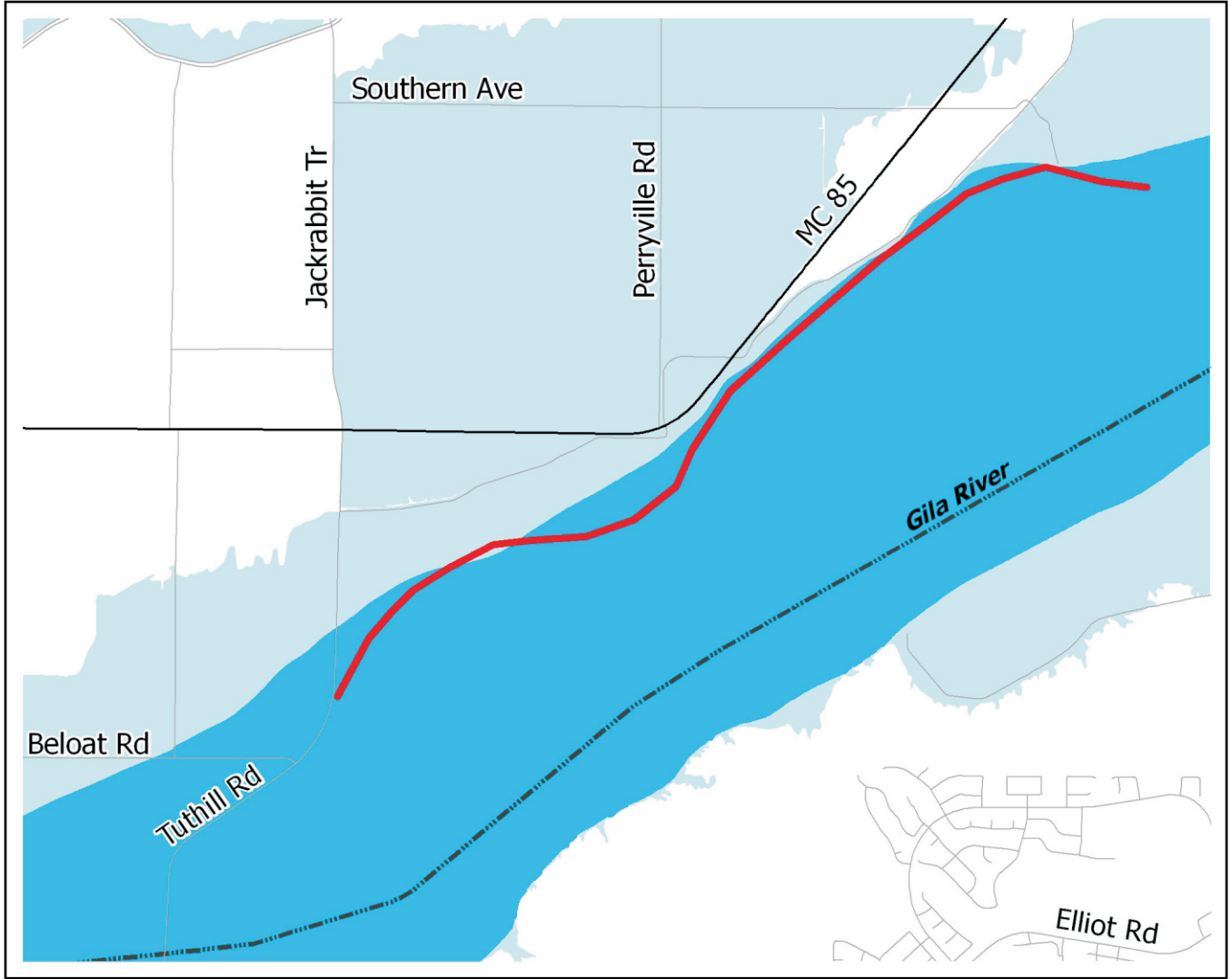
The District has initiated a pre-design effort for the bank protection.

Intergovernmental agreements with project partners are required before final design, rights-of-way acquisition and construction are initiated.

### Fiscal Year

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FY 2010	\$30,000
FY 2011	\$330,000
FY 2012	\$840,000
FY 2013	\$3,670,000
FY 2014	\$3,670,000
5-Year Program	<hr/> \$8,540,000



**Legend**

- Gila River Bank Protection/Levee Area
- Effective Floodplain
- Floodway

---

# White Tanks FRS No.4 Outlet Channel

PCN: 201.01.31

## Valerie Swick, P.E., Project Manager

602-506-2929

vas@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Buckeye

Origination: FY 2007 Prioritization Procedure

Resolution(s): Pending

IGA(s): Pending

The District's Buckeye Area Drainage Master Plan (ADMP) examined alternatives to convey flows from White Tanks FRS No.4's impoundment area to the Gila River. The ADMP recommends a channel designed to intercept and convey the 100-year flood flow along its length, while simultaneously serving as an outlet to the dam.

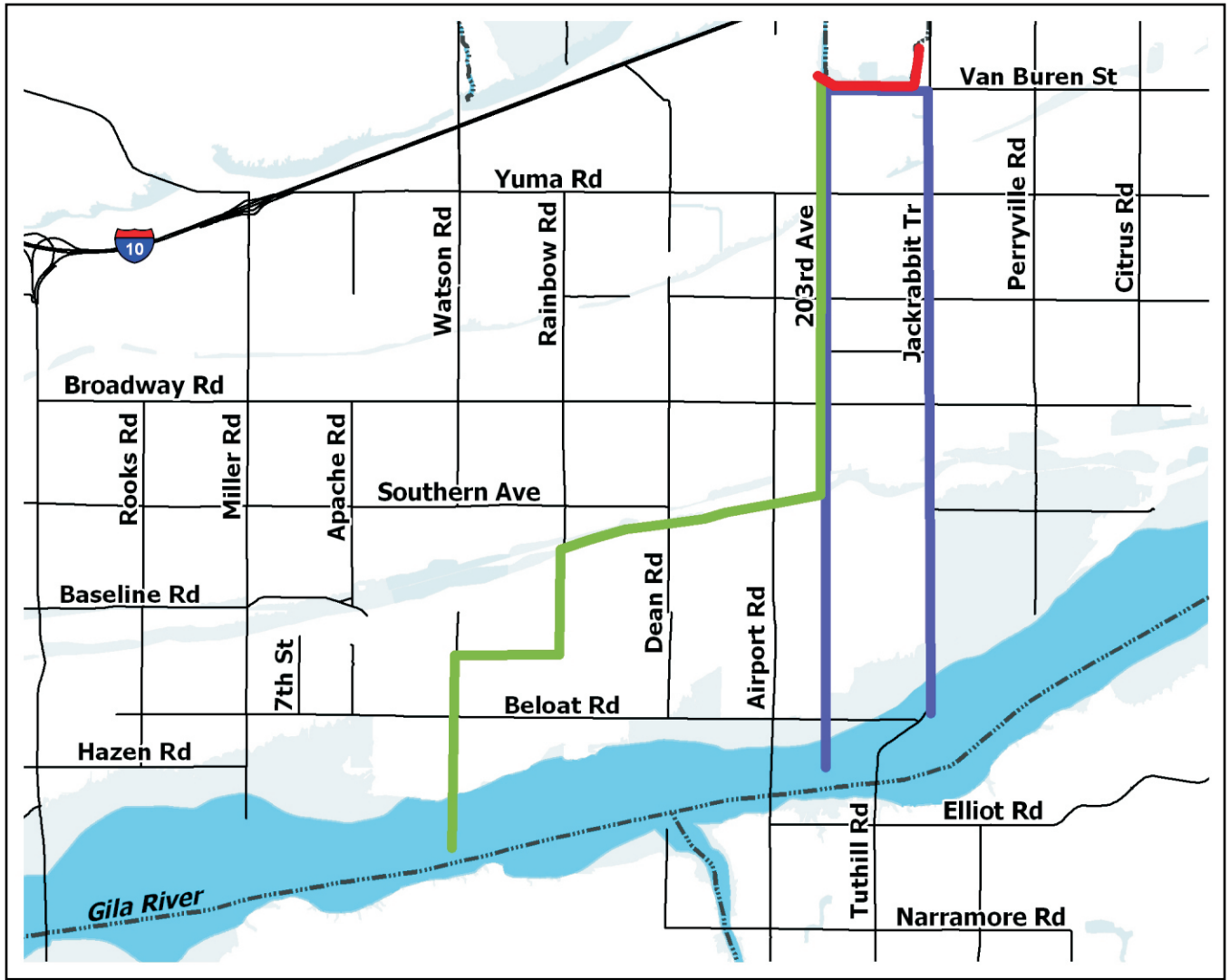
Construction of a facility serving solely as an outlet to the dam remains a feasible alternative satisfying dam safety requirements, although it would not provide the regional flood protection intended by the ADMP. The alternative ultimately implemented depends on partnering opportunities, primarily with the Town of Buckeye.

Advance land acquisition is scheduled late in the five-year budget, and the District anticipates completing a Candidate Assessment Report in Fiscal Year 2010 to further refine potential structural elements and to identify the alternative to be implemented.

### Fiscal Year

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FY 2010	\$10,000
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$20,000
FY 2014	\$6,100,000
5-Year Program	<hr/> \$6,150,000



**Legend**

- White Tanks FRS No. 4
- Potential Base-Flow Alternatives
- ADMP Recommended Alternative
- Surface Water Line
- FEMA Floodplain
- FEMA Floodway

---

# White Tanks FRS No.4 Rehabilitation

PCN: 201.02.31

## Dave Degerness, P.E., Project Manager

602-506-4730

djd@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Buckeye

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2008R005

IGA(s): Pending

White Tanks Flood Retarding Structure (FRS) No.4 was constructed in 1954 by the Natural Resources Conservation Service (NRCS) (then Soil Conservation Service). By agreement, the District operates and maintains the structure.

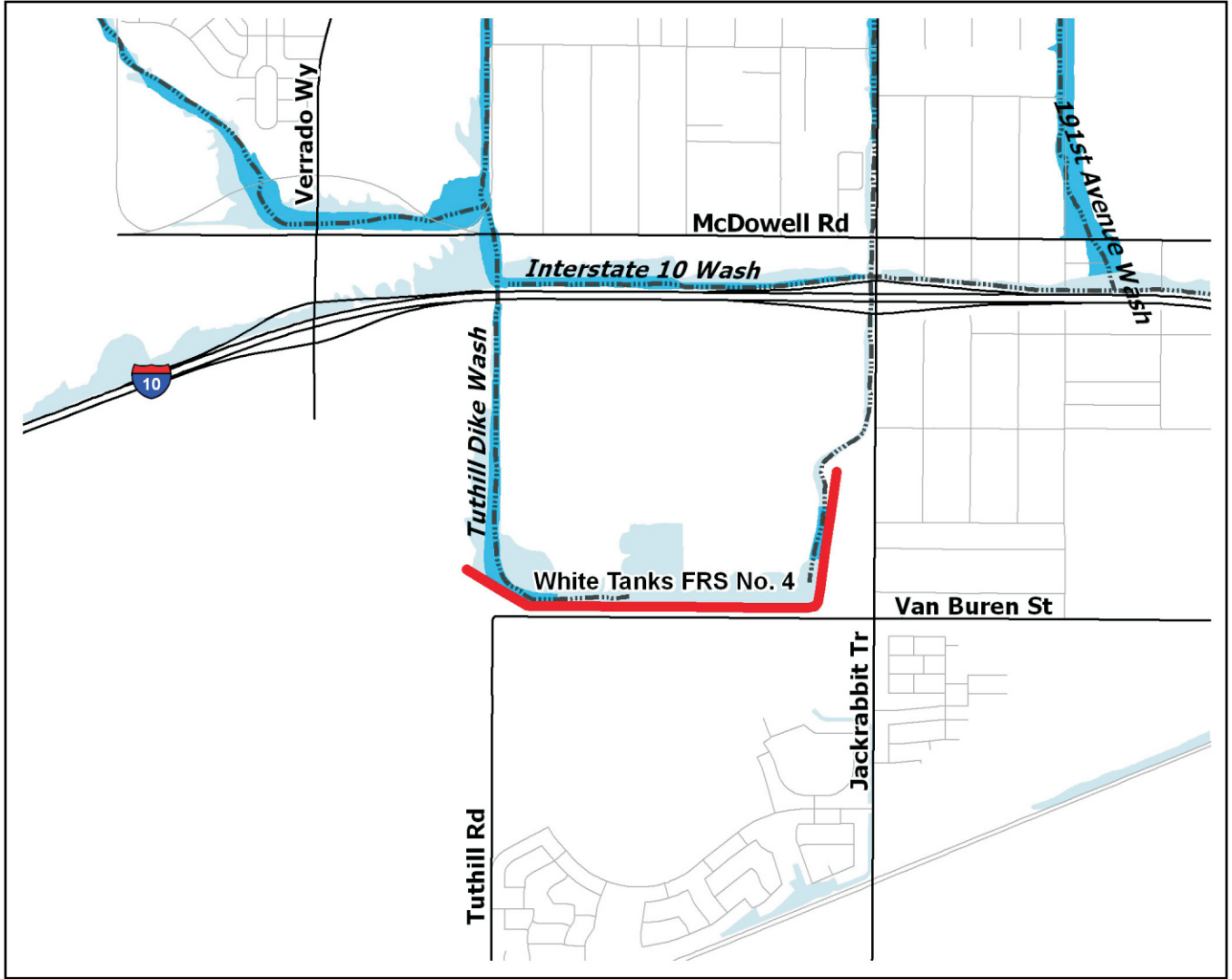
The District completed Phase I Assessments for White Tanks FRS No.4, and the Arizona Department of Water Resources (state agency with regulatory authority) classified the dam as having safety deficiencies; corrective action is required to bring the dam into compliance with dam safety standards and requirements. Deficiencies include transverse cracking of the embankment, inadequate left and right spillways and unprotected corrugated metal pipe outlets. NRCS identified these same deficiencies as requiring corrective action.

The District submitted an application to NRCS for federal funding assistance under Public Law 106-472 (Small Watershed Amendment) in May 2004. The District has entered into a watershed agreement with NRCS as a precursor to an intergovernmental agreement, and design is in progress.

Construction notice to proceed is anticipated in Fiscal Year 2011.

### Fiscal Year

FY 2010	\$1,078,000
FY 2011	\$10,680,000
FY 2012	\$60,000
FY 2013	\$0
FY 2014	\$0
5-Year Program	<u>\$11,818,000</u>



**Legend**

- White Tanks FRS No. 4
- Floodplain
- Floodway

---

# McMicken Dam Project

PCN: 202.02.31

## Michael Greenslade, P.E., Project Manager

602-506-5426

mdg@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Surprise

Origination: FCD Staff Recommendation - Phase II Structures Assessment Program

Resolution(s): FCD 2007R010 (Land Acquisition)

IGA(s): Pending

The McMicken Dam Project was constructed by the U.S Army Corps of Engineers in 1954 and 1955 to protect Luke Air Force Base, the Litchfield Park Naval Air Facility and agricultural activities in the area from flooding; it also provides flood protection for critical public facilities and infrastructure including hospitals, schools, police and fire stations, freeways and other public roadways, railroads and the Beardsley Canal. The McMicken Dam Project includes McMicken Dam itself (approximately nine miles in length), the McMicken Dam Outlet Channel (approximately six miles in length) and the McMicken Dam Outlet Wash (approximately four miles in length) that discharges to the Agua Fria River.

The ability of the McMicken Dam Project to maintain the current level of flood protection for the benefit of the public in an increasingly urbanized environment is in question due to significant concerns regarding aging infrastructure, land subsidence, earth fissuring,

urbanization encroachment and current dam safety standards. These dam safety issues have led the District to determine that an overall rehabilitation or replacement of the dam is required. Alternatives may include a modified dam, floodways or basins which will provide a minimum of 100-year flood protection. The District has pursued, and continues to pursue, federal funding assistance for this project.

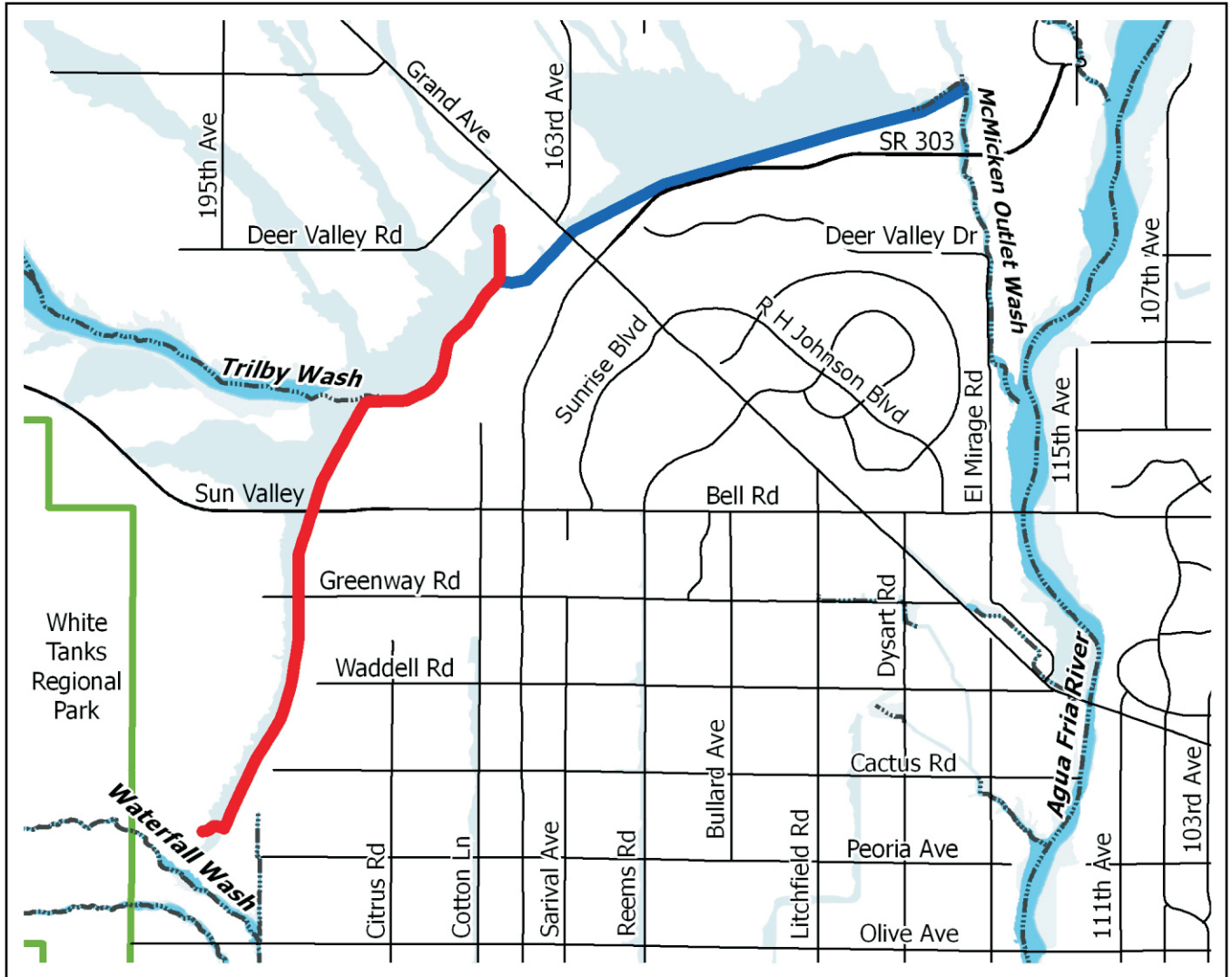
Project planning will include the coordination of any interested stakeholders for the incorporation of a recreational cost share component to the rehabilitation project.

The Corps of Engineers has initiated a feasibility study for the project under a cost share agreement with the District known as the Trilby Wash Feasibility Study. Upon completion of the study in 3 years, the District will seek federal funding for design and construction of the project.

### **Fiscal Year**

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FY 2010	\$10,000
FY 2011	\$480,000
FY 2012	\$1,200,000
FY 2013	\$80,000
FY 2014	\$8,180,000
5-Year Program	<hr/> \$9,950,000



**Legend**

- █ McMicken Dam
- █ McMicken Dam Outlet Channel
- █ White Tank Mountain Regional Park Boundary
- █ FEMA Floodplain
- █ FEMA Floodway

---

# Buckeye FRS No.1 Rehabilitation

PCN: 207.01.31

## Sam Sherman, P.E., Project Manager

602-506-3639

samsherman@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Buckeye

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2009R007

IGA(s): Pending

Buckeye FRS No.1 is the westernmost of a series of three flood control dams designed and built by the Soil Conservation Service (now the Natural Resources Conservation Service, or NRCS). The dam, built in 1974, is located along the southern slopes of the White Tank Mountains and parallels the north side of Interstate 10 for 7.1 miles between SR-85 and the Hassayampa River. The dam is operated and maintained by the District and is regulated by the Arizona Department of Water Resources (ADWR).

Since its construction, the dam has experienced considerable embankment cracking. ADWR has identified the embankment cracking in Buckeye FRS No.1 as a dam safety deficiency requiring corrective action. The District has requested NRCS federal cost share assistance under Public Law 106-472 for a rehabilitation project to

address dam safety concerns and to maintain flood control benefits to downstream properties for the next 100 years.

The District completed a planning-level assessment of potential alternatives, including a modified dam, a channel/levee system and combinations of both providing a minimum of 100-year flood protection. The selected alternative consists of dam rehabilitation.

Design is scheduled to begin in Fiscal Year 2010.

### Fiscal Year

FY 2010	\$1,480,000
FY 2011	\$5,780,000
FY 2012	\$9,880,000
FY 2013	\$80,000
FY 2014	\$0
5-Year Program	<u>\$17,220,000</u>



**Legend**

- Buckeye FRS No.1
- Buckeye FRS No.2
- Buckeye FRS No.3
- Floodplain
- Floodway

---

# Downtown Buckeye Regional Basin & Storm Drain

PCN: 211.03.31

**Mike Duncan, P.E., CFM, Project Manager**

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Buckeye

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2006R007

IGA(s): FCD 2006A014

The Town of Buckeye historically experienced flooding conditions downtown in the vicinity of Monroe Avenue (MC 85). The District completed a Candidate Assessment Report that identified potential structural solutions: a 10-year storm drain system and outfall and 100-year retention basins.

This project will relieve historic downtown Buckeye of frequent flooding by implementing storm drains, channels, retention basins, and an outlet. The project will mitigate flood damages to residential, commercial, government and industrial properties, while increasing traffic safety and improving the community's flood insurance program rating.

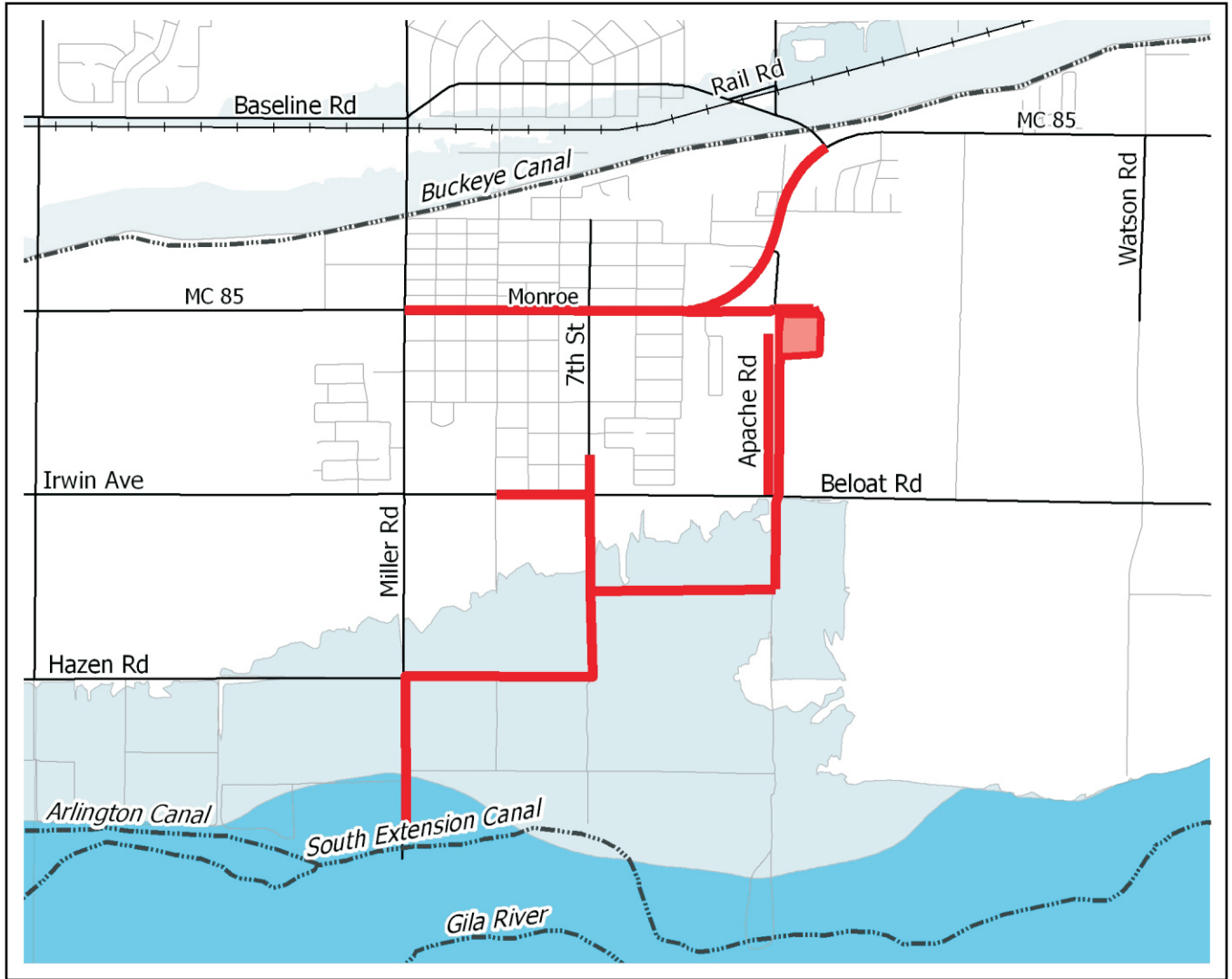
The project's IGA commits the District to provide 50 percent reimbursement to the Town of Buckeye (the project's lead agency).

Final design by the Town is in progress. Construction scheduling is primarily dependent upon the availability of Town funding.

## **Fiscal Year**

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FY 2010	\$162,000
FY 2011	\$1,010,000
FY 2012	\$10,000
FY 2013	\$5,020,000
FY 2014	\$10,000
5-Year Program	<hr/> \$6,212,000



**Legend**

- Proposed Basin
- Storm Drains and Open Channels Outfalls
- Floodplain
- Floodway

---

# Granite Reef Wash Drainage Improvements

PCN: 265.XX.X1

## Afshin Ahouraiyan, P.E., Project Manager

602-506-4519

afa@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Scottsdale

Origination: FY 2009 Prioritization Procedure

Resolution(s): Pending

IGA(s): Pending

The City of Scottsdale has historically experienced flooding in developed areas along Granite Reef Wash. The City initiated a study to propose solutions to this flooding hazard and has recommended installation of a drainage system, principally along the Pima Road alignment, from Thomas Road south to the Salt River.

In addition to mitigating flooding in the immediate residential area, the project would reduce flood flows to the Salt River Pima-Maricopa Indian Community's (SRPMIC's) undeveloped Section Twelve, at the junction of SR-101L and SR-202L.

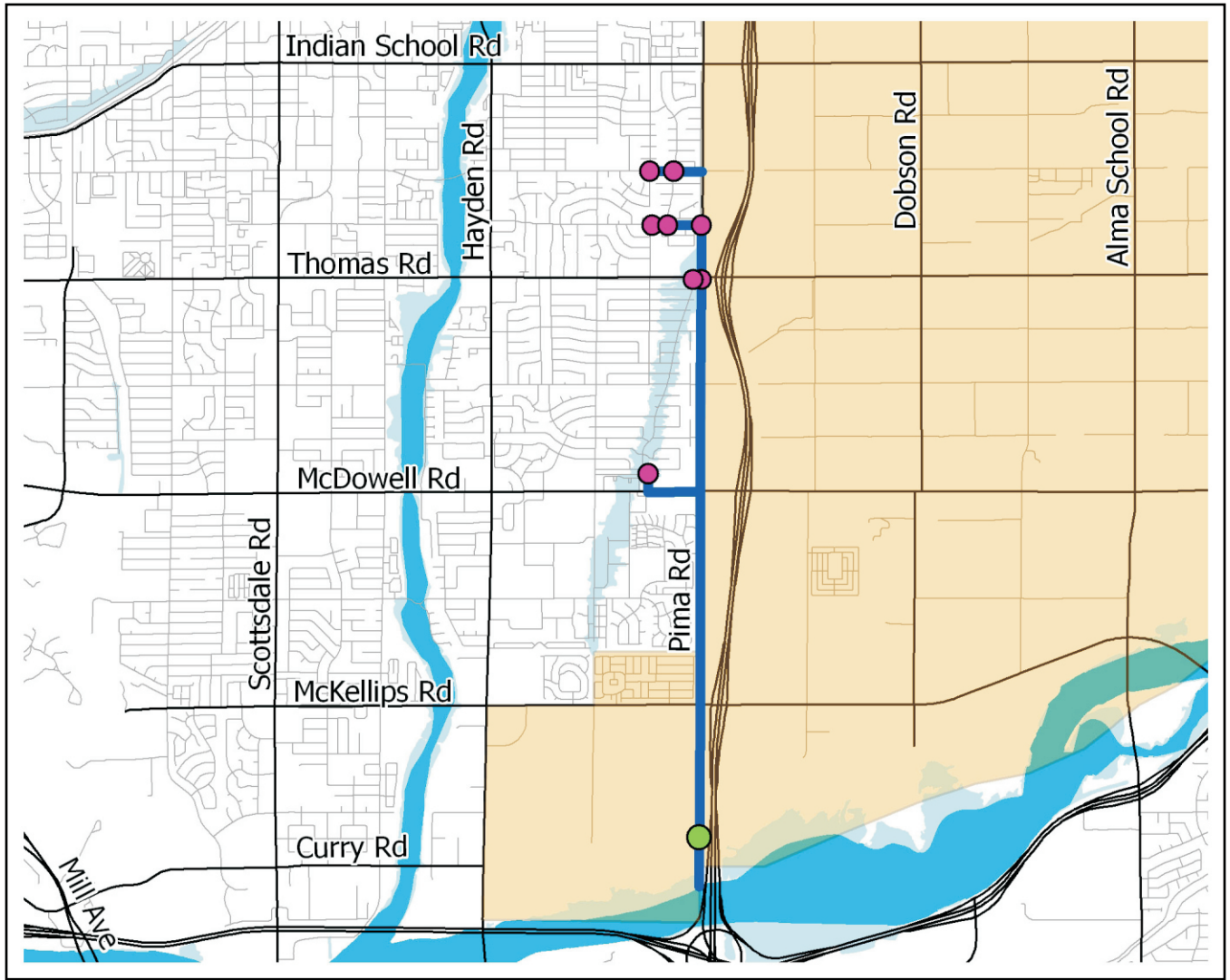
Prior to entering an IGA with the District, the City will obtain SRPMIC agreement and is attempting to identify additional funding sources to generate a combined 50-percent funding match.

Final design is tentatively projected to begin in Fiscal Year 2013.

### **Fiscal Year**

---

FY 2010	\$0
FY 2011	\$0
FY 2012	\$10,000
FY 2013	\$1,020,000
FY 2014	\$10,000
5-Year Program	<hr/> \$1,040,000



**Legend**

- Proposed Flap-Gated Outfall
- Proposed Interception Structure
- Proposed Storm Drain
- SRPMIC
- Floodplain
- Floodway

---

# Spook Hill FRS/ Red Mountain Freeway (Loop 202) Modification

PCN: 300.01.31

**Michael Greenslade, P.E., Project Manager**

602-506-5426

mdg@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa

Origination: FCD Staff Recommendation - Phase II Structures Assessment Program

Resolution(s): FCD 2003R005

IGA(s): FCD 2004A009

Spook Hill FRS is a structural plan element of a Watershed Work Plan, prepared by the Natural Resources Conservation Service (formerly Soil Conservation Service) in January 1963, for the Buckhorn-Mesa Watershed Project located in Maricopa and Pinal counties. The dam was designed to impound floodwaters for a 100-year flood event and direct flows in excess of the 100-year flood event through an emergency spillway.

The Arizona Department of Transportation (ADOT) was the lead agency in an effort to modify Spook Hill FRS to accommodate construction of the Power Road to University Drive segment of the Loop 202 freeway, which passes over the dam and within the dam's floodway. Modifications were completed in Fiscal Year 2009 and corrected all identified

dam safety deficiencies through installation of a central filter throughout the dam to protect against cracking, slope erosion repair and replacement of the principal spillway.

The District will provide easements to ADOT on District land, generating revenue that is expected to completely offset its \$5 million contribution to the modification costs.

Easement value is under legal negotiation, and the project remains active pending settlement.

## **Fiscal Year**

---

FY 2010	\$100,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$100,000



**Legend**

- Freeway Overpass
- Spook Hill FRS
- Red Mountain Freeway
- FEMA Floodplain
- County Boundary
- Apache Junction FRS
- Apache Junction Floodway
- Bulldog Floodway
- Signal Butte FRS
- Signal Butte Floodway
- Spook Hill Floodway

---

# Powerline / Vineyard / Rittenhouse FRS Rehabilitation or Replacement

PCN: 310.01.30

**Felicia Terry, P.E., CFM, Project Manager**

602-506-8111

fet@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Mesa, Gilbert, Queen Creek

Origination: FY 2011 Prioritization Procedure

Resolution(s): FCD 2008R019

IGA(s): Pending

The Powerline, Vineyard Road and Rittenhouse (PVR) Flood Retarding Structures (FRSs) are located in northwest Pinal County, south of Apache Junction and parallel to the Central Arizona Project (CAP) canal between Baseline Road and Ocotillo Road. Per its agreements with the Soil Conservation Service (now Natural Resources Conservation Service, or NRCS), the District operates and maintains the structures. The FRSs protect approximately 169 square miles of residential, commercial and agricultural land in Maricopa and Pinal Counties from being flooded, and protect structures such as the CAP canal, Williams Gateway Airport and the Loop 202 San Tan Freeway.

The Arizona Department of Water Resources recently reclassified the PVR FRSs as high hazard potential, medium size structures. The

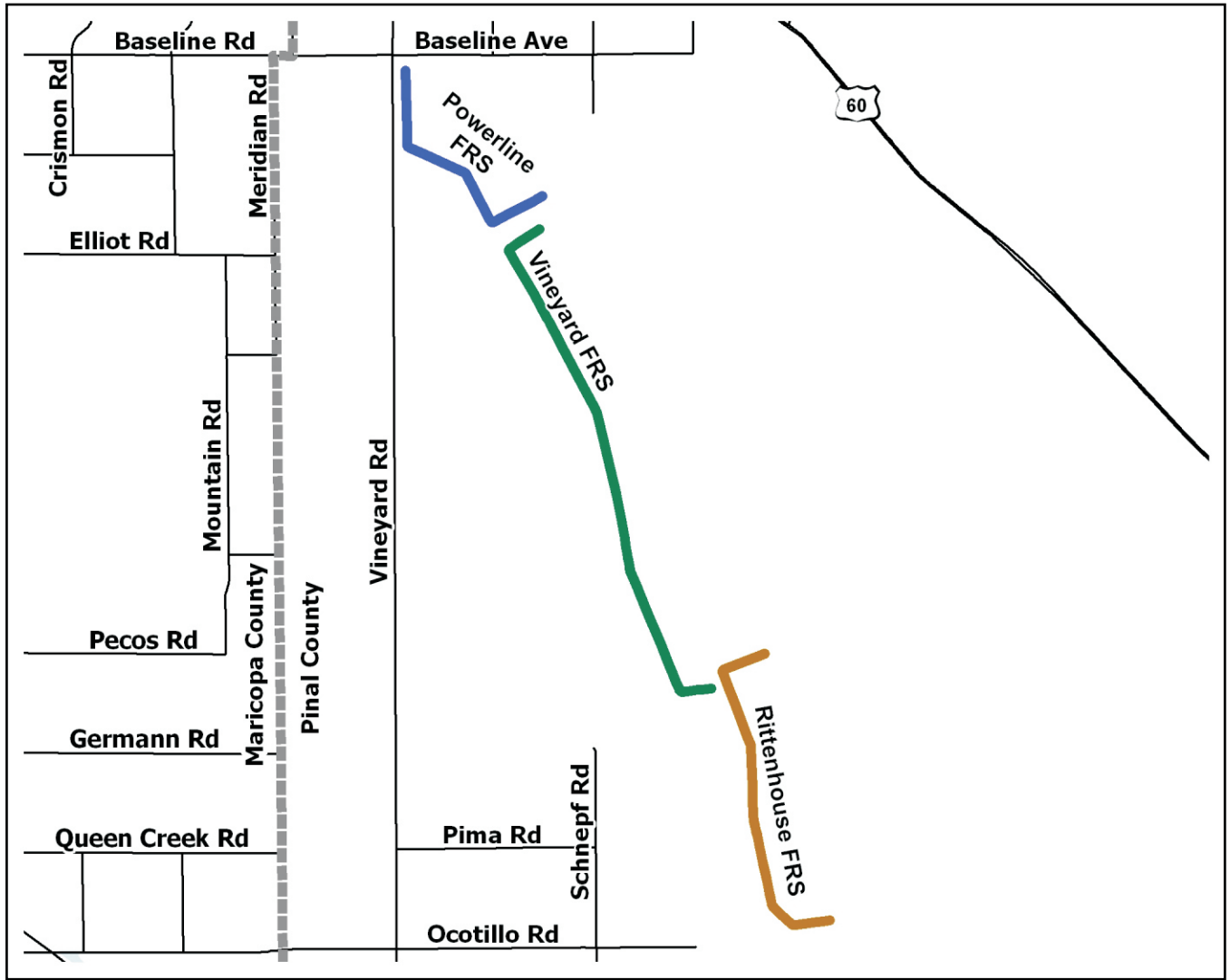
District prepared a Final Failure Mode Analysis Report, Structures Assessment Program Phase I (FFMA), in July 2002, that identified defects in the structures due to the age of the structures, proximity to fissures, subsidence of the area and cracking caused by drying shrinkage. The FFMA recommended rehabilitation of the structures which could include structural improvements to the dam or replacement of the dams with channels, basins or other flood control facilities.

The District anticipates initiating a study in Fiscal Year 2010 to propose an ultimate recommended solution for the structures. Following alternative selection, the District would pursue federal cost share funding, with implementation likely occurring outside the Five-Year CIP.

## **Fiscal Year**

---

FY 2010	\$950,000
FY 2011	\$950,000
FY 2012	\$50,000
FY 2013	\$50,000
FY 2014	\$50,000
5-Year Program	<hr/> \$2,050,000



**Legend**

- Powerline FRS
- Rittenhouse FRS
- Vineyard FRS
- County Boundary

---

# Powerline FRS Fissure Risk Zone Mitigation

PCN: 310.01.31

## Dan Lawrence, P.E., Project Manager

602-506-1251

drl@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Mesa (Primary Benefitted Area)

Origination: FY 2010 Prioritization Procedure

Resolution(s): FCD 2008R015

IGA(s): None

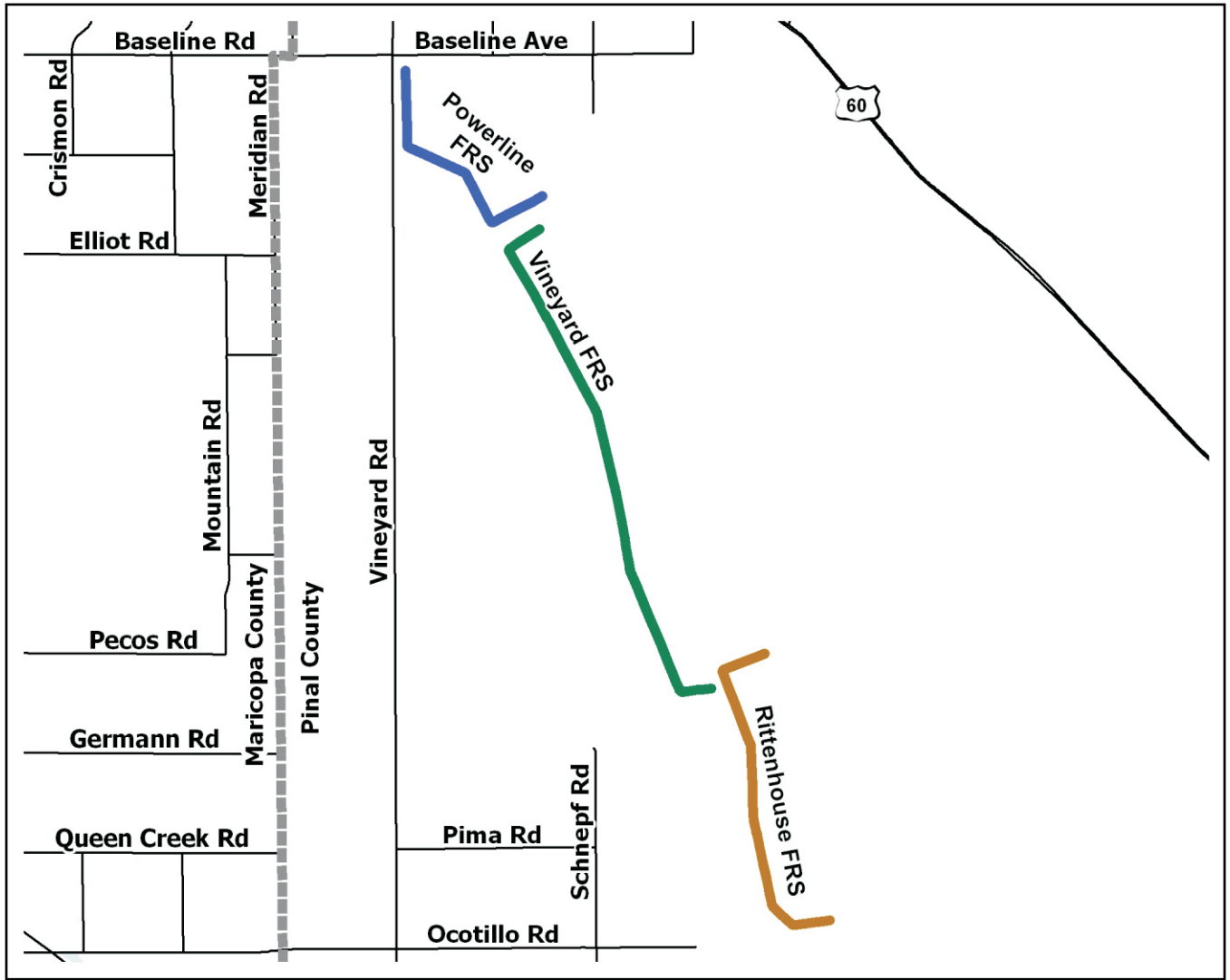
The District identified an earth fissure at Powerline FRS leading the Arizona Department of Water Resources to classify the dam as "unsafe, non-emergency, elevated risk."

Appropriate flood ALERT inspection and warning procedures have been put in place for this site-specific condition at the dam. The District anticipates site-specific dam safety remedial work, otherwise known as interim dam safety measures, will be required to assure the safety of the dam until its overall rehabilitation or replacement. Remedial work will likely include engineered, preventative revisions to a segment of the dam.

Final design is scheduled for Fiscal Year 2010.

### Fiscal Year

FY 2010	\$390,000
FY 2011	\$5,150,000
FY 2012	\$40,000
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$5,580,000



**Legend**

- Powerline FRS
- Rittenhouse FRS
- Vineyard FRS
- ▬▬▬▬ County Boundary

---

# Saddleback FRS Modifications

PCN: 331.01.30

## Sam Sherman, P.E., Project Manager

602-506-3639

samsherman@mail.maricopa.gov

Supervisory District: 4, 5

Jurisdiction: Unincorporated Maricopa County

Origination: FY 2011 Prioritization Procedure

Resolution(s): Pending

IGA(s): None

The Saddleback Flood Retarding Structure (FRS), located just south of Interstate 10, is a compact earth-fill dam operated and maintained by the District that receives floodwaters discharged from the Harquahala FRS and runoff water from a more than 22-square-mile drainage area. The floodwater is conveyed to the Saddleback Diversion Channel via the principal spillway and outfalls south at the tributary of Centennial Wash.

Saddleback FRS has experienced erosion issues and longitudinal cracking. In the interest of public safety, the District has identified a need to modify the central material zone of the dam known as the central filter, to address the longitudinal cracking, and a need to implement erosion hazard mitigation measures.

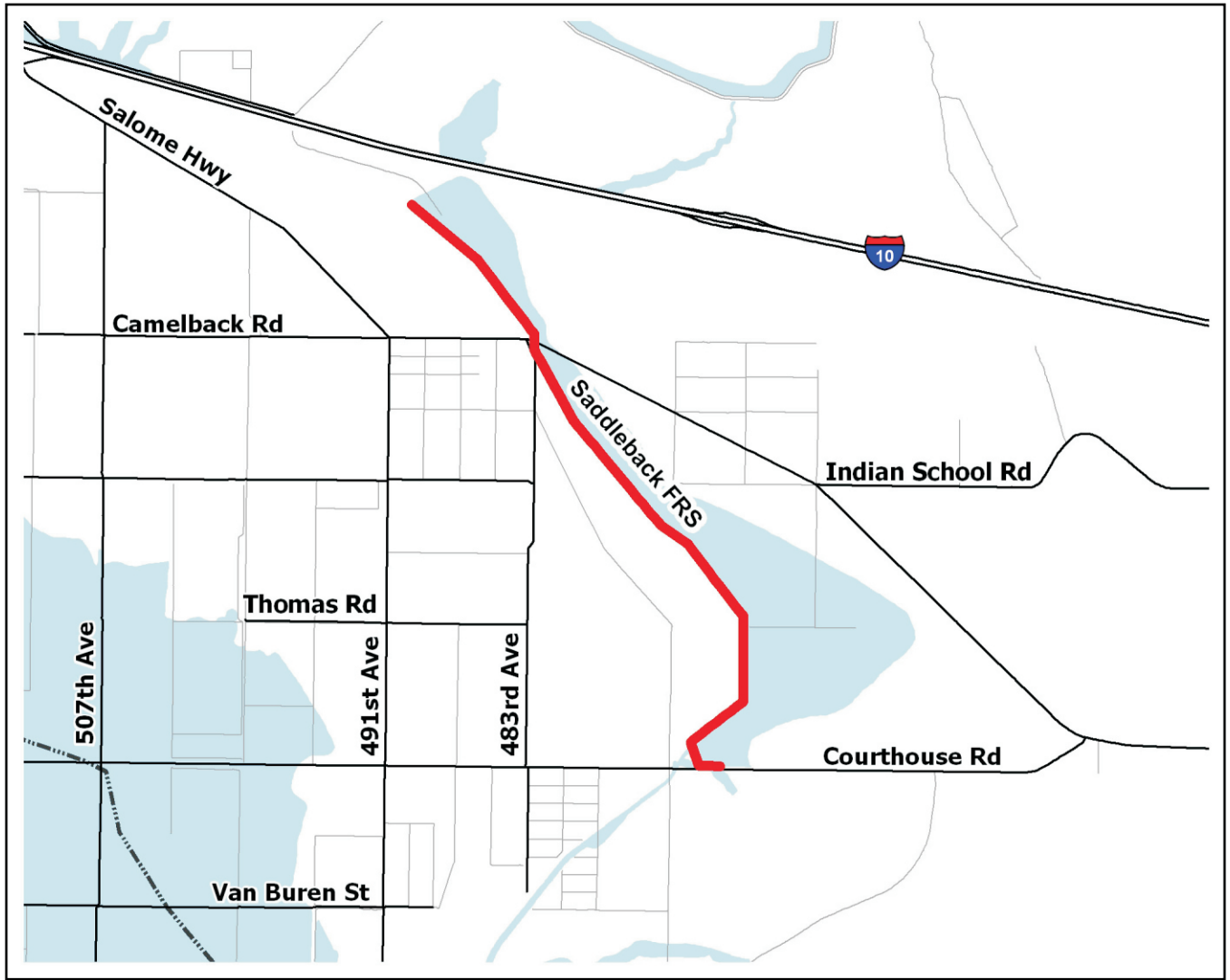
Design of these modifications will commence in Fiscal Year 2010, with construction following.

The District is pursuing funding assistance from the Natural Resources Conservation Service (federal sponsor of the dam).

Note: the need for this project was identified subsequent to the preparation of the District's proposed FY 2010 Capital Improvement Program budget. Funding will be requested through budget adjustment requests and in future five-year Capital Improvement Program submittals.

### Fiscal Year

FY 2010	\$0
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	\$0



**Legend**

-  Saddleback FRS
-  Floodplain
-  Floodway

---

# Wickenburg Downtown Flooding Hazard Mitigation

PCN: 343.01.31

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Wickenburg

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2005R008

IGA(s): FCD 2005A012, 2006A004

The Wickenburg Downtown Flooding Hazard Mitigation project includes approximately 5,000 feet of channel and levee improvements to capture the floodplain associated with Sol's Wash and a tributary, Hospital Wash, and convey 100-year flows from upstream of Tegner Street to the Hassayampa River.

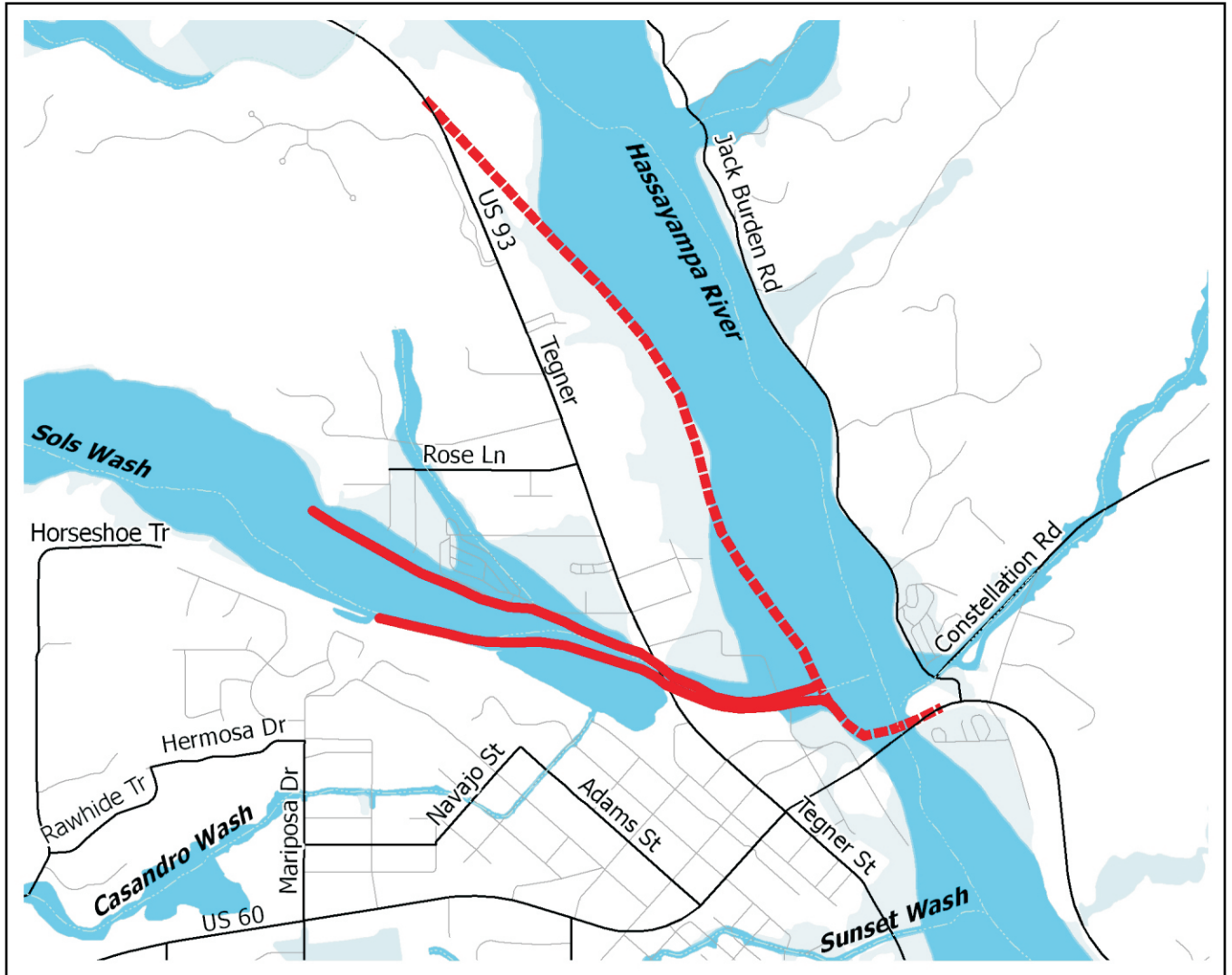
The project provides a 100-year level of protection to portions of the Wickenburg downtown area subject to flooding and will provide flood control benefits along much of Sol's Wash within the Wickenburg town limits. It also conveys the 100-year flows to the Highway 93 Interim Bypass Bridge over Sol's Wash, allowing the Interim Bypass embankment to be constructed as a levee to contain the Hassayampa River floodplain in the area.

Construction was completed in Fiscal Year 2009. The project remains active pending a right-of-way court action anticipated to be completed in Fiscal Year 2010.

### **Fiscal Year**

---

FY 2010	\$10,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$10,000



**Legend**

- Proposed Levee & Channel Excavation
- - - Proposed US 93 Alignment
- FEMA Floodplain
- FEMA Floodway

---

# Cave Buttes Dam Remediation

PCN: 350.XX.X1

## Dennis Duffy, P.E., Project Manager

602-506-4603

dmd@mail.maricopa.gov

Supervisory District: 3

Jurisdiction: Phoenix

Origination: FY 2011 Prioritization Procedure

Resolution(s): Pending

IGA(s): None

Cave Buttes Dam was constructed in 1980 under a District partnership with the U.S. Army Corps of Engineers, functionally replacing the Corps' 1923-era Cave Creek Dam. Cave Buttes Dam is operated and maintained by the District.

A substantial flood event in 1993 resulted in a significant impoundment of water behind the dam, and seepage occurred along the dam's left abutment. To prevent deterioration of embankment material from recurring seepage, the District pursued an analysis and investigation of the issue.

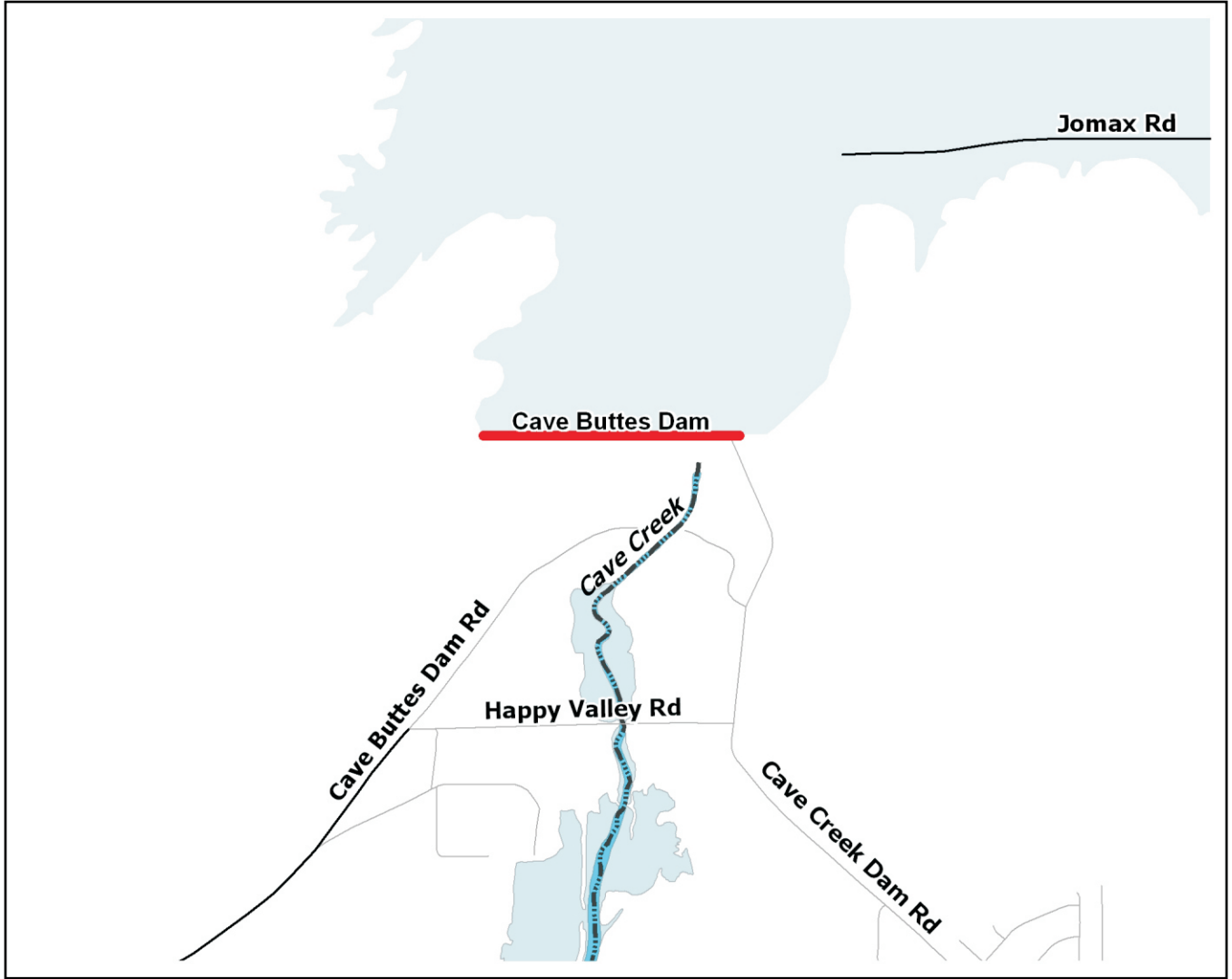
This investigation has indicated that permanent remedial action is required.

Remediation will likely include the construction of an outlet with a drainage channel and a seepage collection system at the downstream toe and abutment contacts. Final design is anticipated in Fiscal Year 2010, with construction immediately following.

### **Fiscal Year**

---

FY 2010	\$345,000
FY 2011	\$1,585,000
FY 2012	\$60,000
FY 2013	\$20,000
FY 2014	\$0
5-Year Program	<hr/> \$2,010,000



**Legend**

-  Cave Buttes Dam
-  Floodplain
-  Floodway

---

# Cave Buttes Dam Additional Access Rights Acquisition

PCN: 350.XX.X2

## Hedy Hall, Right-of-Way Agent

602-506-4897

hhall@mail.maricopa.gov

Supervisory District: 3

Jurisdiction: Phoenix

Origination: N/A

Resolution(s): FCD 2009R002

IGA(s): None

Cave Buttes Dam was constructed in 1980 under a District partnership with the U.S. Army Corps of Engineers, functionally replacing the Corps' 1923-era Cave Creek Dam. Cave Buttes Dam is operated and maintained by the District.

A survey of District land rights identified additional rights required for operations and maintenance access to the structure.

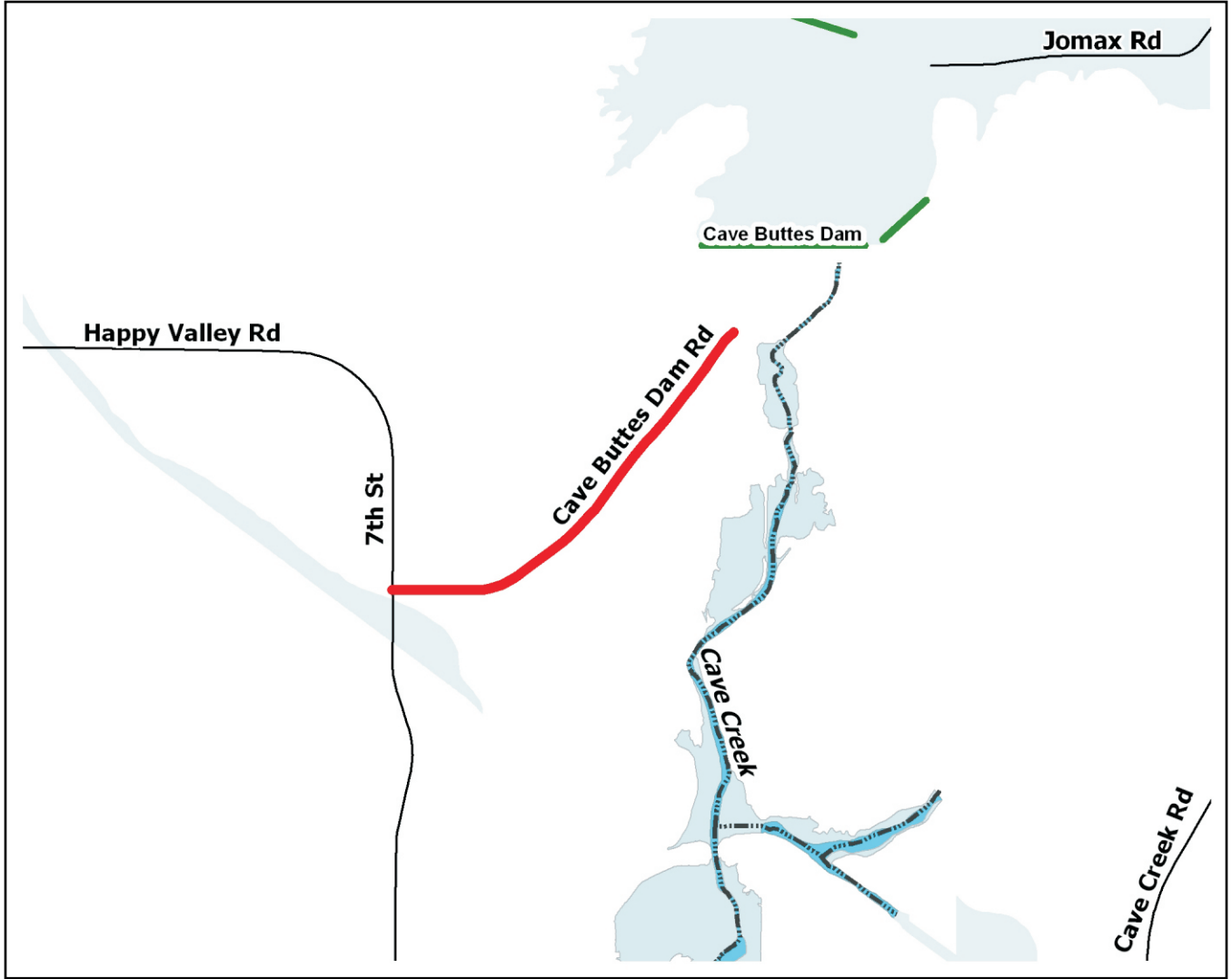
The District intends to acquire a roadway easement from the Arizona State Land Department. Due to State auction scheduling time lines, acquisition will likely be a multiple fiscal year process.

Note: this project originated subsequent to the drafting of the District's proposed FY 2010 - FY 2014 Capital Improvement Program. Project funding will be requested through a budget amendment proposal, and in subsequent Capital Improvement Program proposals.

### **Fiscal Year**

---

FY 2010	\$0
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$0



**Legend**

- Proposed Access
- Rights Acquisition
- Floodplain
- Floodway

---

# New River

PCN: 400.06.31

Grand Avenue to Skunk Creek including Paradise Shores

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Peoria

Origination: FY 2003 Prioritization Procedure

Resolution(s): FCD 2000R013

IGA(s): FCD 2002A010, 2004A004, 2007A006

The District's Middle New River Watercourse Master Plan identified projects to improve the conveyance capacity of New River and provide bank protection.

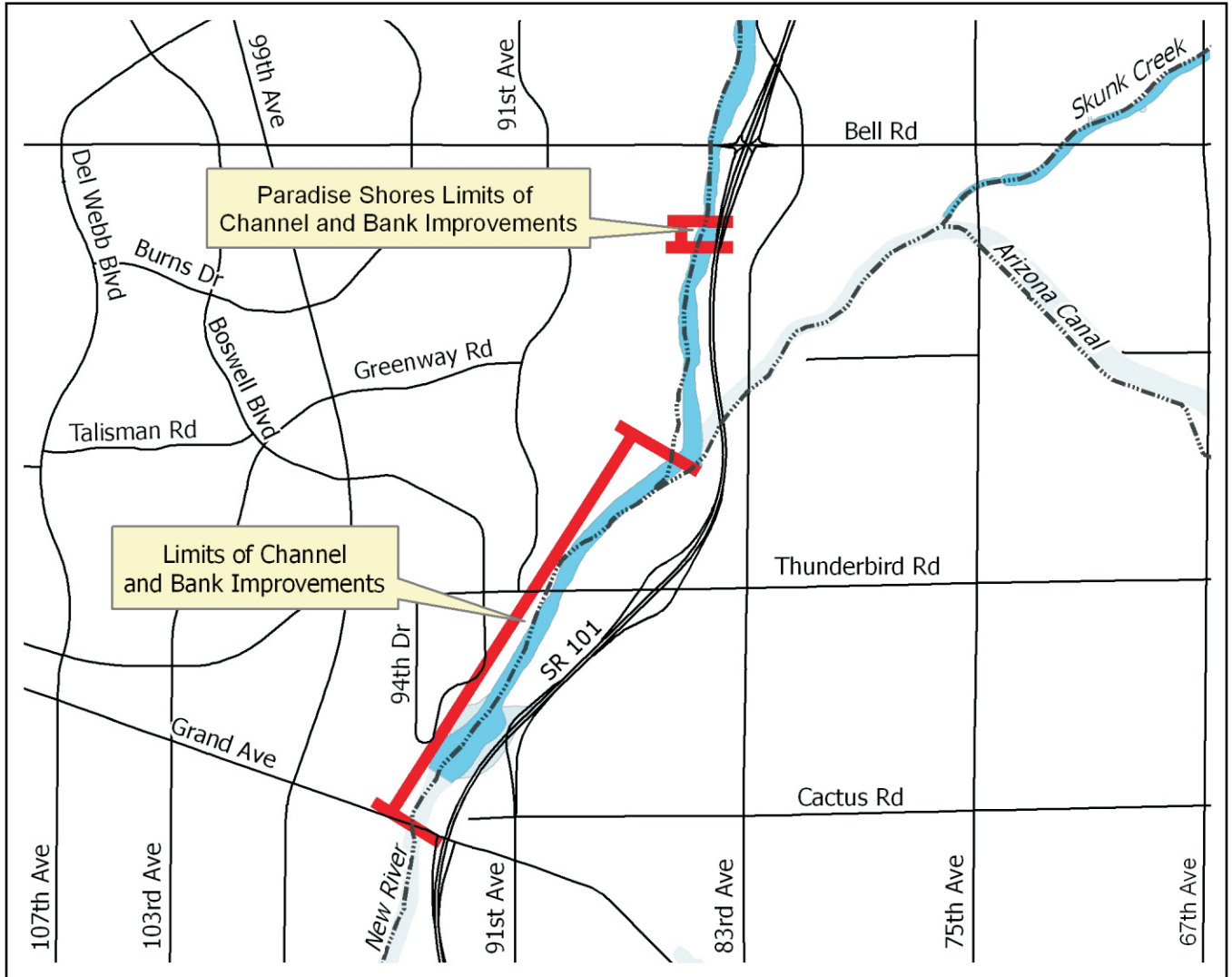
Improvements include channelization and bank protection for approximately two miles of New River and an 800-foot reach on the west side of New River south of Bell Road.

With the City of Peoria as a project partner, construction has been completed with the exception of channelization at the Thunderbird Road crossing. The City of Peoria is acting as the lead agency for construction at Thunderbird Road, being completed in conjunction with road improvements.

District reimbursement to the City is projected in Fiscal Year 2010 following the completion of construction.

### Fiscal Year

FY 2010	\$560,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$560,000



- Legend**
- Project Limits
  - Floodplain
  - Floodway

---

# Hermosa Vista/Hawes Road Storm Drain and Basin

PCN: 420.02.31

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa, Unincorporated Maricopa County

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2002R008

IGA(s): FCD 2004A002, 2007A009

The Spook Hill Area Drainage Master Plan (ADMP), completed in 2002, identified regional flood control infrastructure necessary for a 35-square-mile area located in northeast Mesa. The ADMP watershed extends from the Userly Mountains on the north and the Apache Trail on the east, to the Buckhorn-Mesa structures on the west and south.

The Hermosa Vista/Hawes Road Storm Drain and Basin project is the first scheduled project in support of this ADMP and involves construction of a storm drain from Spook Hill FRS, along Hermosa Vista Drive, Hawes Road and McDowell Road. The storm drain connects to a local basin and a detention basin constructed at Hawes Road and Culver Street as a component of this project.

The project will provide protection in conjunction with drainage infrastructure constructed by the McDowell Road and Oak Street projects.

Construction is substantially complete. Elements within Mesa's city limits will be maintained by the City; elements in unincorporated Maricopa County will be maintained by the District.

### Fiscal Year

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FY 2010	\$10,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$10,000



**Legend**

-  Existing Local Storm Drain and Basin
-  Hermosa Vista/ Hawes Road Project
-  McDowell Road Project
-  Oak Street Project
-  Red Mountain Freeway
-  Spook Hill FRS
-  Spook Hill Floodway
-  Floodplain
-  Floodway

---

# McDowell Road Basin & Storm Drain

PCN: 420.03.31

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa, Unincorporated Maricopa County

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2002R008

IGA(s): FCD 2004A002, 2006A008

The Spook Hill Area Drainage Master Plan (ADMP), completed in 2002, identified regional flood control infrastructure necessary for a 35-square-mile area located in northeast Mesa. The ADMP watershed extends from the Utery Mountains on the north and the Apache Trail on the east, to the Buckhorn-Mesa structures on the west and south.

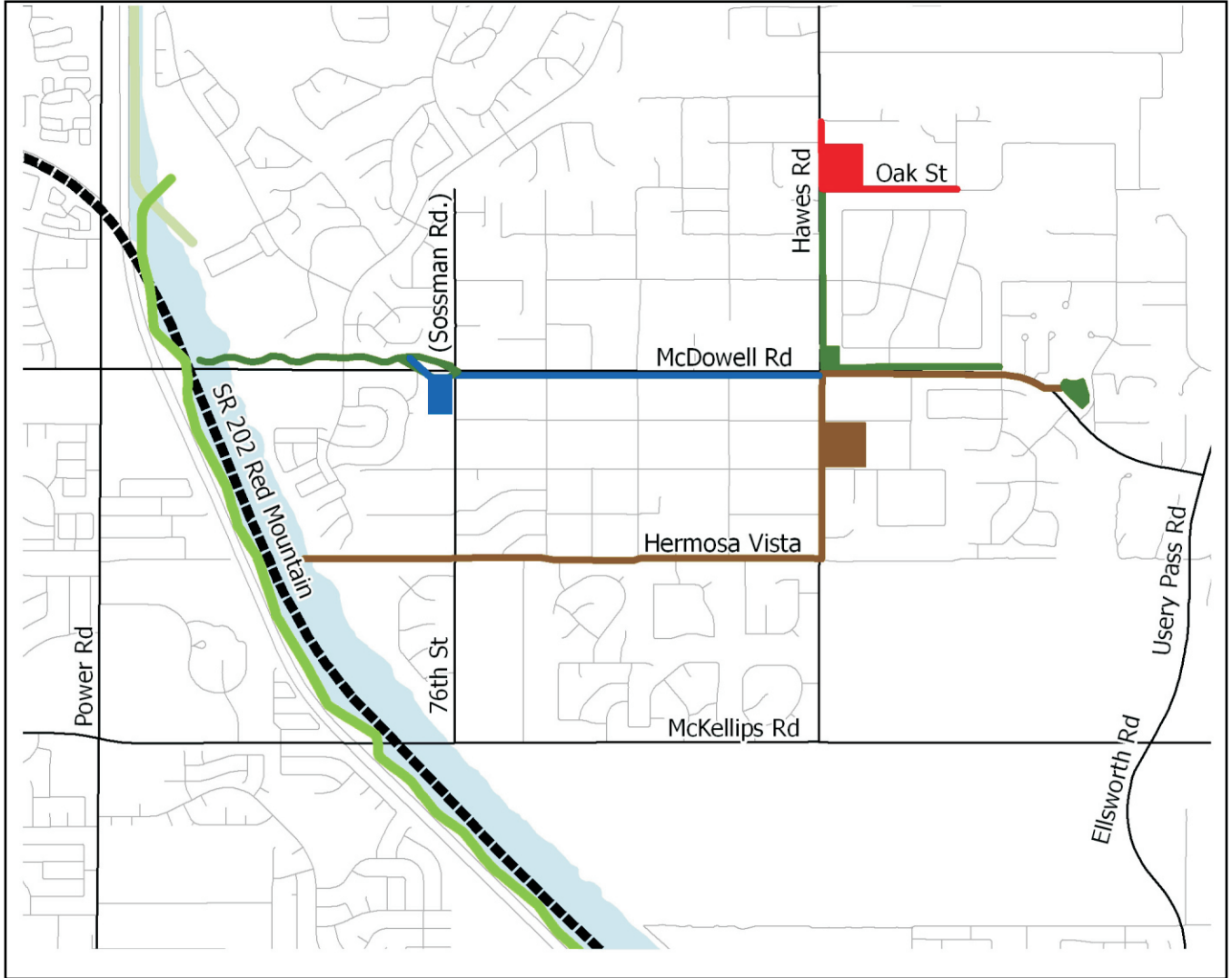
The McDowell Road Basin and Storm Drain project is the second scheduled project in support of this ADMP and involves construction of a basin at McDowell Road and 76th Street (Sossaman Road) and a storm drain east along McDowell Road to Hawes Road. This project will provide protection in conjunction with drainage infrastructure constructed by the Hermosa Vista/Hawes Road and Oak Street projects.

Construction is in progress, with completion anticipated in Fiscal Year 2010.

### Fiscal Year

---

FY 2010	\$2,063,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$2,063,000



**Legend**

-  Existing Local Storm Drain and Basin
-  Hermosa Vista/Hawes Road Project
-  McDowell Road Project
-  Oak Street Project
-  Red Mountain Freeway
-  Spook Hill FRS
-  Spook Hill Floodway
-  Floodplain
-  Floodway

---

# Oak Street Detention Basin and Storm Drain

PCN: 420.04.31

## Afshin Houraiyan, P.E., Project Manager

602-506-4519

afa@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa, Unincorporated Maricopa County

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2002R008

IGA(s): Pending

The Spook Hill Area Drainage Master Plan (ADMP), completed in 2002, identified regional flood control infrastructure necessary for a 35-square-mile area located in northeast Mesa. The ADMP watershed extends from the Userly Mountains on the north and the Apache Trail on the east, to the Buckhorn-Mesa structures on the west and south.

The Oak Street Detention Basin and Storm Drain project is the third scheduled project in support of this ADMP and involves construction of a basin at Oak Street and Hawes Road, and storm drains east along Oak Street and north along Hawes Road. The project will provide protection in conjunction with drainage infrastructure constructed by the Hermosa Vista/Hawes Road and McDowell Road projects.

Design is anticipated to begin in Fiscal Year 2010, pending the formulation of an IGA between the District and the City of Mesa. Construction schedule will be driven by City funding authorization under a future City bond.

### **Fiscal Year**

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FY 2010	\$540,000
FY 2011	\$380,000
FY 2012	\$40,000
FY 2013	\$40,000
FY 2014	\$2,150,000
5-Year Program	<hr/> \$3,150,000



**Legend**

-  Existing Local Storm Drain and Basin
-  Hermosa Vista/Hawes Road Project
-  McDowell Road Project
-  Oak Street Project
-  Red Mountain Freeway
-  Spook Hill FRS
-  Spook Hill Floodway
-  Floodplain
-  Floodway

---

# Ellsworth Road and McKellips Road Drainage System

PCN: 420.05.31

## Afshin Houraiyan, P.E., Project Manager

602-506-4519

afa@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Mesa

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2002R008

IGA(s): Pending

The Spook Hill Area Drainage Master Plan (ADMP), completed in 2002, identified regional flood control infrastructure necessary for a 35-square-mile area located in northeast Mesa. The ADMP watershed extends from the Userly Mountains on the north and the Apache Trail on the east, to the Buckhorn-Mesa structures on the west and south.

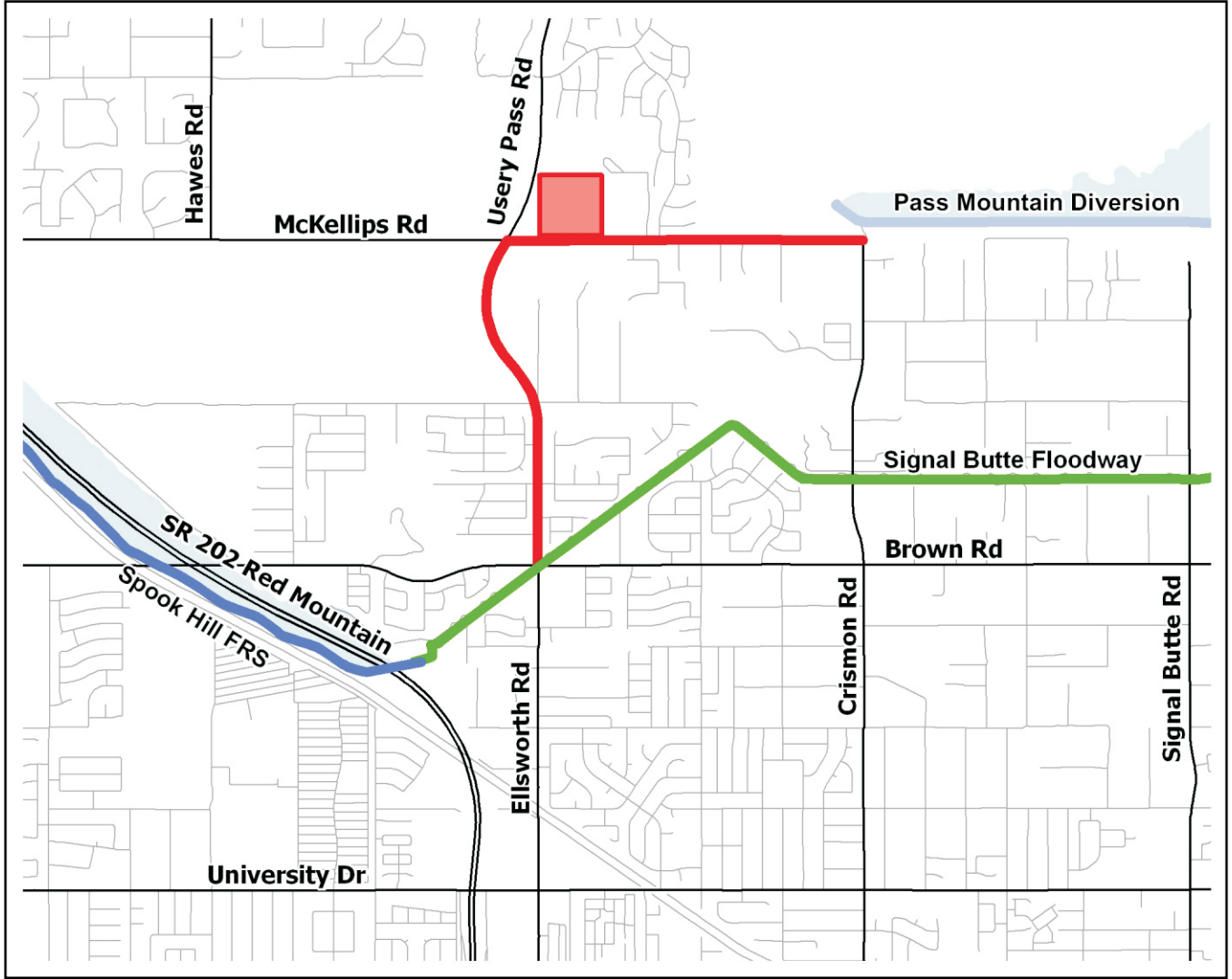
The Ellsworth Road and McKellips Road project is the fourth scheduled project in support of this ADMP and likely will involve construction of a basin at Ellsworth Road and McKellips Road, and storm drains south along Ellsworth Road and east along McKellips Road. The basin rights-of-way are in place, owned by the City of Mesa. The project will provide protection to local, previously developed subdivisions, where historic flooding has been noted.

A design concept report is being accomplished unilaterally by the District. This effort will accomplish an update to the ADMP for the subject project. Final design and construction schedules will be driven by City funding authorization under a future City bond.

### **Fiscal Year**

---

FY 2010	\$80,000
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$10,000
FY 2014	\$10,000
5-Year Program	<hr/> \$120,000



- Legend**
- Proposed Storm Drains/Channels
  - Proposed Basin
  - Pass Mountain Diversion
  - Signal Butte Floodway
  - Spook Hill FRS
  - Floodplain

---

# Siphon Draw Drainage Improvements

PCN: 442.11.31

## **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Mesa

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2003R003

IGA(s): FCD 2006A005, 2008A005

The Siphon Draw project is the final element of the recommended plan for the East Mesa ADMP for the area south of the Superstition Freeway and north of Warner Road.

The project includes a channel along Meridian Road that intercepts the flow entering Maricopa County from Pinal County and conveys the flow to a detention basin constructed east of Meridian Road and north of Elliot Road.

The District will serve as the lead agency for implementation of this project, with the City of Mesa as a project cost share partner.

The District negotiated an agreement with the Arizona State Land Department to minimize project costs, authorizing the District to stockpile excavated material in State rights-of-way adjacent to the basin site. This provides a mutual benefit, as the excavated material will

be available for the State to offer future developers of the State's land.

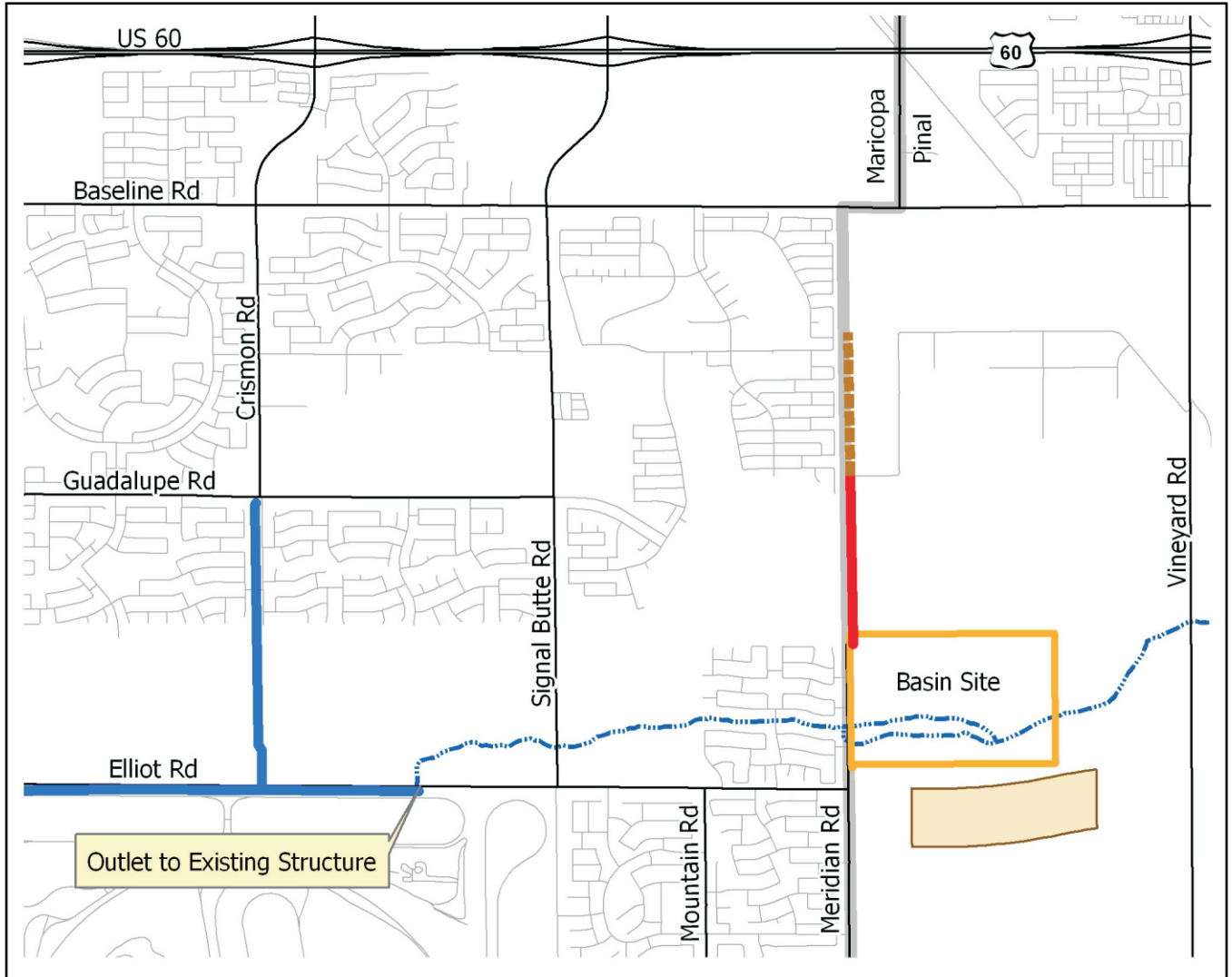
The design of the basin and the first phase of channel is complete.

Construction of the basin is in progress. Construction of the channel along Meridian Road will follow in phases, pending partnering agreements. The first phase of channel construction is anticipated to begin in Fiscal Year 2010.

### **Fiscal Year**

---

FY 2010	\$4,660,000
FY 2011	\$20,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$4,680,000



**Legend**

-  Basin Site
-  Stockpile
-  Siphon Draw Wash
-  County Boundary
-  Channel Reach 1
-  Channel Reach 2
-  Existing Facilities

---

# East Mesa Drain Reaches 4 & 7 Modification

PCN: 442.12.31

**Mike Duncan, P.E., CFM, Project Manager**  
602-506-4732  
mwd@mail.maricopa.gov

Supervisory District: 2

Jurisdiction: Unincorporated Maricopa County

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2007R011

IGA(s): None

In June 1994, the District assumed maintenance responsibility (previously held by MCDOT) for the East Mesa Drains, 11 dedicated local drainage easements in Unincorporated Maricopa County. The District conducted a Candidate Assessment Report in April 2004 to investigate improvement alternatives to mitigate the extensive maintenance costs associated with the drains. The consensus of the District identified Reaches 4 and 7 as the best targets for structural improvements to decrease maintenance costs.

The bottom and side slopes of the Reach 4 channel have experienced scour erosion maintenance complications associated with trees and trash; the Reach 7 channel has experienced chronic erosion from inflows across its east bank.

The project will be unilateral and will include installation of concrete lining. Design is being completed in part by District staff, and construction is anticipated to be complete by Fiscal Year 2011.

## **Fiscal Year**

---

FY 2010	\$1,165,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$1,165,000



**Legend**

- East Mesa Drains - Reach #4
- East Mesa Drains - Reach #7
- Floodplain
- Floodway

---

# Rose Garden Lane Channel

PCN: 450.02.32

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Peoria

Origination: FY 2003 Prioritization Procedure

Resolution(s): FCD 2001R012

IGA(s): FCD 2003A012, 2003A012A, 2005A007

The District completed the Glendale/Peoria Area Drainage Master Plan Update (ADMPU) in May of 2001. The ADMPU made several recommendations for regional drainage infrastructure to provide 100-year protection for the watershed. The Rose Garden Lane Channel is a high priority recommendation of the ADMPU and ranks as a high priority flood control project for the City of Peoria. The City of Peoria adopted the recommendations of the ADMPU in May 2001, and the Board of Directors of the District adopted the ADMPU recommendations in December 2001.

This project involves construction of an open channel along the north side of Rose Garden Lane and a basin at the Agua Fria River outfall, and the project will provide a 100-year level of protection for an area between approximately

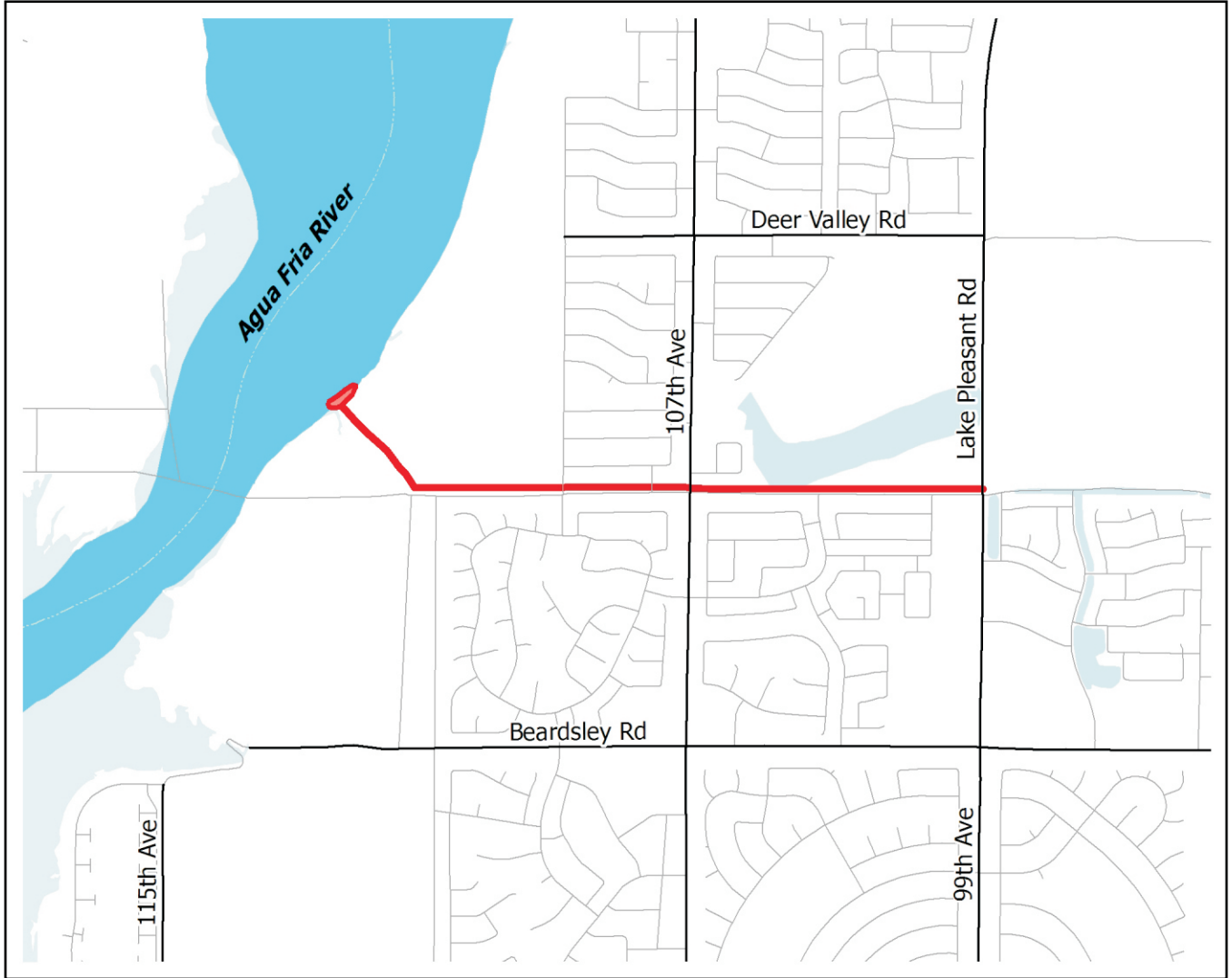
Lake Pleasant Road and the Agua Fria River, south of Rose Garden Lane. The channel will accept flows that currently flow over Rose Garden Lane and overflow the Beardsley Channel and convey them to the Agua Fria River.

Intergovernmental agreements between the District and the City of Peoria are in place for design and construction of the project, and the City is the lead agency for all tasks. Channel construction is complete. Basin construction is awaiting acquisition of rights-of-way from Arizona State Land Department, with contract award expected in Fiscal Year 2010.

### **Fiscal Year**

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FY 2010	\$1,228,000
FY 2011	\$1,300,000
FY 2012	\$10,000
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$2,538,000



**Legend**

- Proposed Basin
- Rose Garden Lane Channel
- FEMA Floodplain
- FEMA Floodway

---

# Northern Avenue Storm Drain

PCN: 450.03.34

47th Avenue to 63rd Avenue

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Glendale

Origination: FY 2010 Prioritization Procedure

Resolution(s): FCD 2008R020

IGA(s): FCD 2009A004

The District completed the Glendale/Peoria Area Drainage Master Plan (ADMP) in 1987. The District partnered with the City of Glendale, City of Peoria and other agencies to construct the Northern and Orangewood Storm Drain and Basin project in 2001 in accordance with the ADMP. The project included a basin at 63rd Avenue and Northern Avenue, and storm drains along Northern Avenue and Orangewood Avenue, with an ultimate outfall at the New River.

The Northern Avenue Storm Drain Project, also a recommended component of the Glendale/Peoria ADMP, enhances the efficiency of the previously constructed project, directing storm water to the basin at 63rd Avenue, while mitigating flooding hazards historically affecting the downstream developed area.

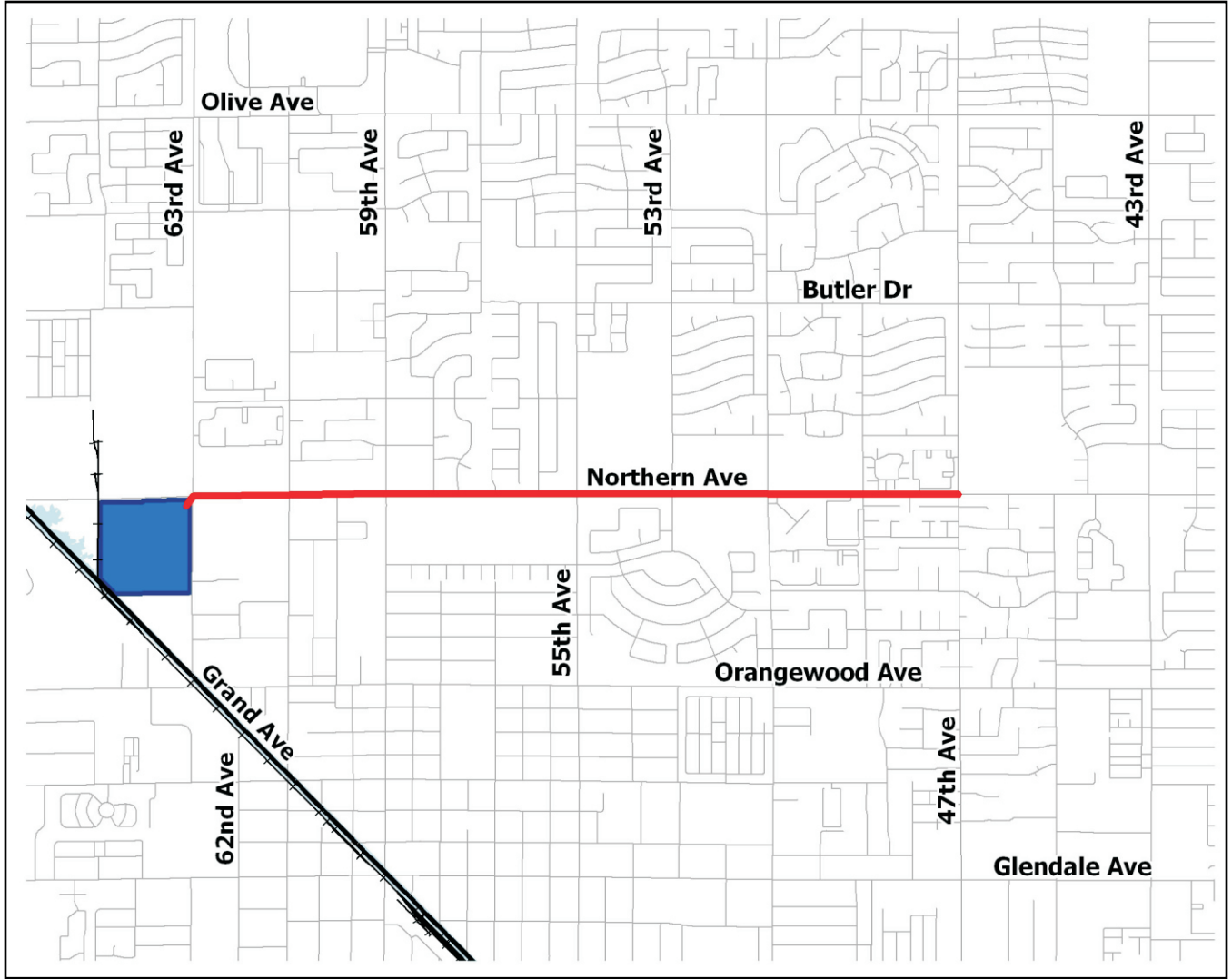
The City of Glendale has unilaterally funded project design. The District will share storm drain construction costs with the City, with the District's contribution being limited to \$7,000,000. Per the IGA terms, the District made this cash contribution upon award of the construction contract, and the District's financial obligation under the IGA is complete.

Construction is anticipated to be completed in Fiscal Year 2010. The City of Glendale is the lead agency for the project and will own, operate and maintain the completed project.

### Fiscal Year

---

FY 2010	\$10,000
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$20,000



**Legend**

-  Northern Avenue Storm Drain (47th Ave. to 67th Ave.)
-  Atchison Topeka & Santa Fe Railroad
-  Northern & Orangewood Project
-  Floodplain
-  Floodway

---

# 67th Avenue Storm Drain

PCN: 450.05.30

Olive Avenue to the Arizona Canal Diversion Channel

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Glendale, Peoria

Origination: FY 2000 Prioritization Procedure

Resolution(s): FCD 85-03, 99-08

IGA(s): FCD 99015, 99015A

The City of Glendale is the lead agency for this project, which will provide 10-year drainage protection for a three-square-mile area lying within jurisdictional boundaries of the cities of Glendale and Peoria. The project consists of drainage pipes and catch basins, and will be constructed in rights-of-way provided by the City of Glendale. The outfalls for the project were constructed by the District along 67th Avenue and Cactus Road, and 67th Avenue and Olive Avenue, and are owned and operated by the City of Peoria.

The first phase of the project involved the installation of 200 feet of storm drain at the intersection of 67th Avenue and Peoria Avenue.

The second phase of the project includes the remaining storm drain design and construction along 67th Avenue from Cactus Road to the Arizona Canal Diversion Channel.

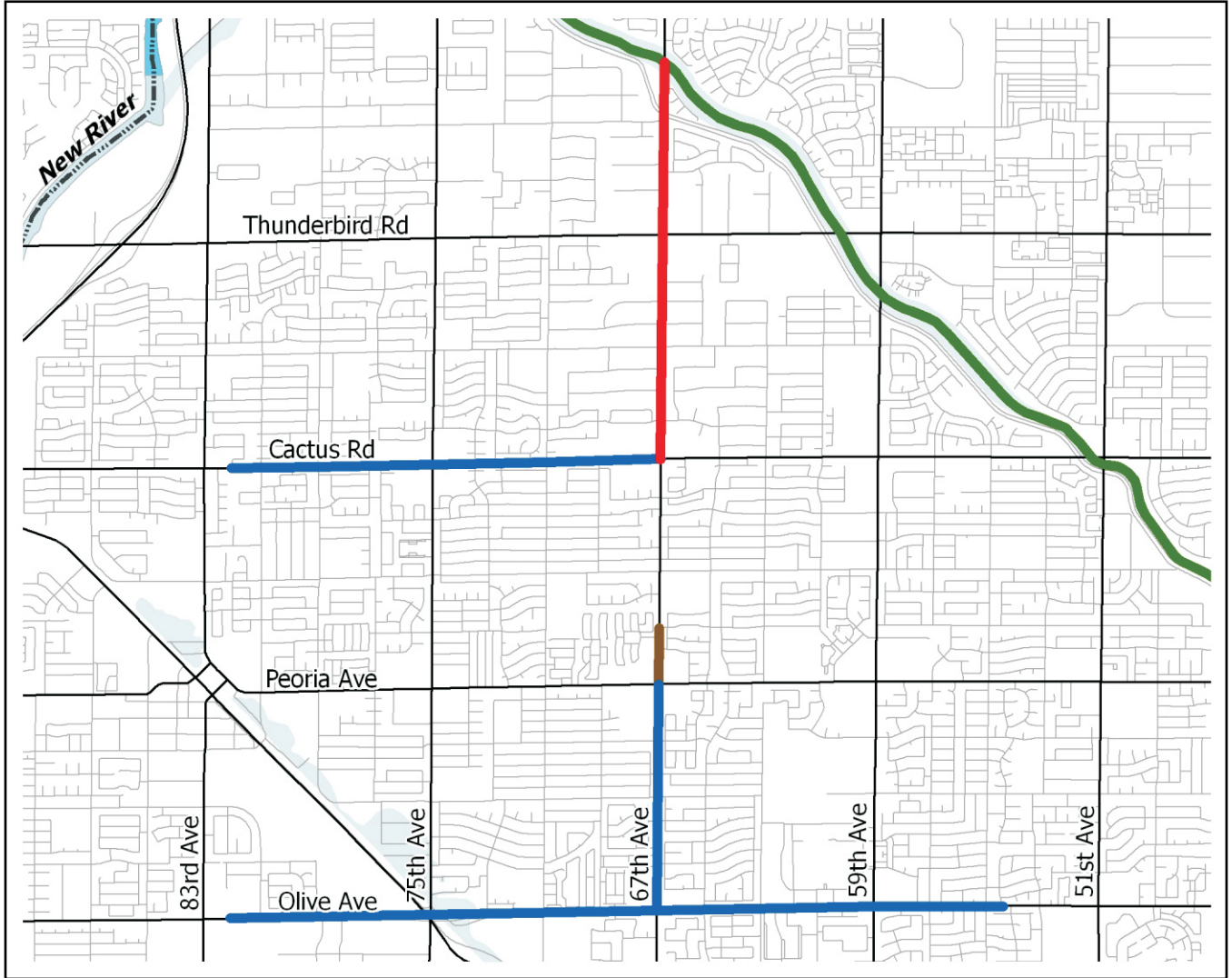
The project is substantially complete, with the District having contributed 50 percent of the project costs.

The City of Glendale will own, operate and maintain the completed project.







### Fiscal Year

---

FY 2010	\$10,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$10,000



**Legend**

-  Phase 1 (450.05.30)
-  Phase 2 (450.05.30)
-  Existing Storm Drain
-  Arizona Canal Diversion Channel
-  Floodplain
-  Floodway

---

# Pinnacle Peak Road Channel

PCN: 450.06.31

89th Avenue to the Agua Fria River

## **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Peoria

Origination: FY 2007 Prioritization Procedure

Resolution(s): FCD 2001R012

IGA(s): FCD 2008A013

The District and the Cities of Glendale and Peoria developed the Glendale/Peoria Area Drainage Master Plan Update (ADMPU) to identify existing and future drainage and flooding problems in the watershed, and to develop cost-effective solutions to alleviate those problems. The ADMPU recommended a number of solutions to flooding problems including a project along Pinnacle Peak Road from 87th Avenue to the Agua Fria River.

The City of Peoria is accomplishing the 100-year conveyance drainage component from 89th Avenue to 99th Avenue through development stipulations. This project provides for drainage from 99th Avenue west to an ultimate outfall in the Agua Fria River.

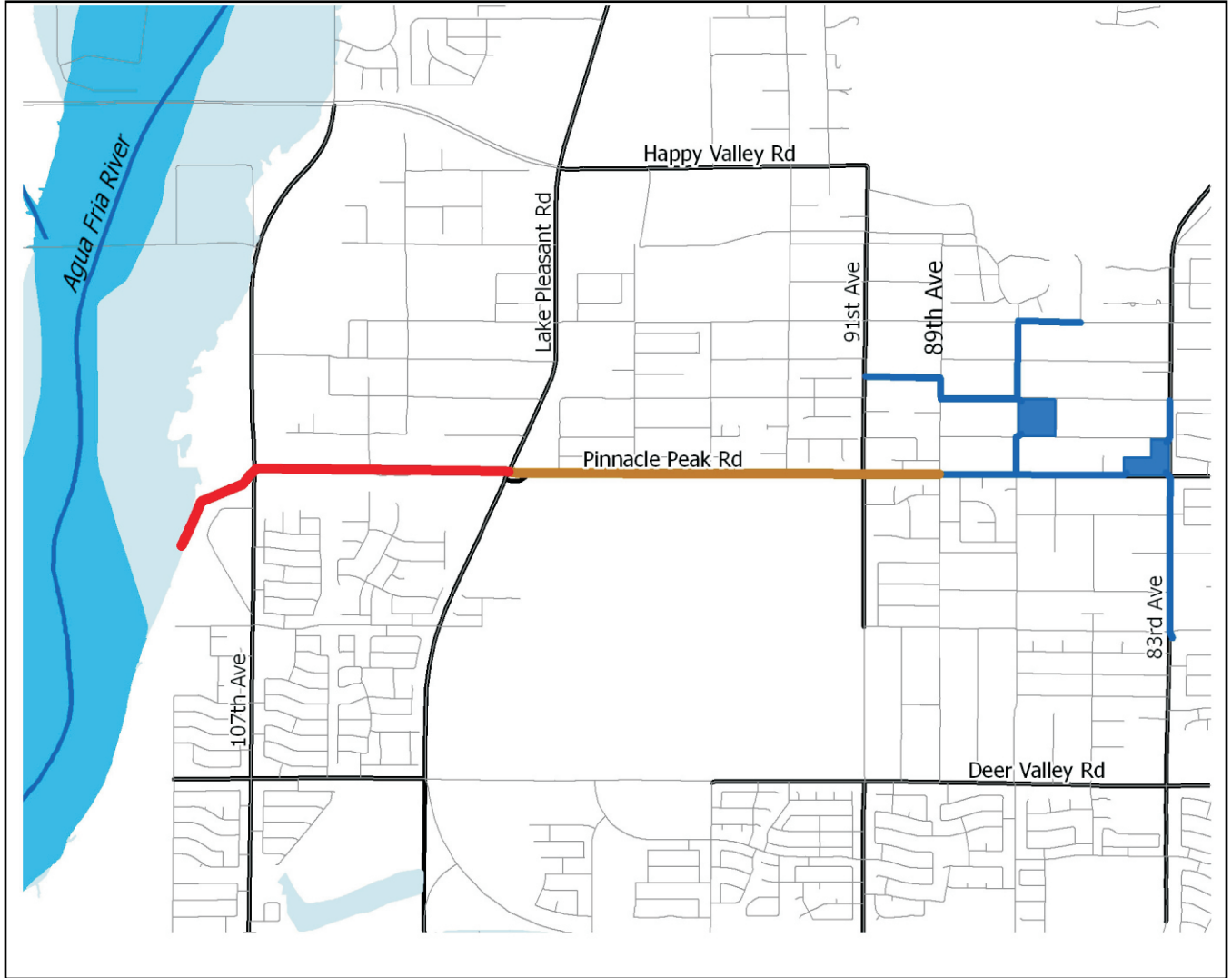
The project will also provide roadway improvements along this alignment. The project may include one or more basins in addition to the proposed channel construction.

Project design is in progress. Rights-of-way acquisition will begin in Fiscal Year 2010, and construction is anticipated by Fiscal Year 2012.

### **Fiscal Year**

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FY 2010	\$4,077,000
FY 2011	\$390,000
FY 2012	\$5,430,000
FY 2013	\$5,400,000
FY 2014	\$20,000
5-Year Program	<hr/> \$15,317,000



**Legend**

- Proposed Open Channel
- Drainage to be implemented by developer
- Existing Storm Drain System
- Existing Basin
- Floodplain
- Floodway

---

# Pinnacle Peak Road and 67th Avenue Drainage Improvements

PCN: 450.08.31

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Glendale, Peoria

Origination: FY 2007 Prioritization Procedure

Resolution(s): FCD 2001R012

IGA(s): Pending

The District and the Cities of Glendale and Peoria developed the Glendale/Peoria Area Drainage Master Plan Update (ADMPU) to identify existing and future drainage and flooding problems in the watershed, and to develop cost-effective solutions to alleviate those problems. The ADMPU recommended a number of solutions to flooding problems including a project along Pinnacle Peak Road from the New River to 67th Avenue, north to Hatfield Road.

The recommended project will capture and convey 100-year storm flows from areas north of Pinnacle Peak Road and east of 67th Avenue, and discharge those flows to the New River. It will provide protection to existing, proposed and future developments downstream of Pinnacle Peak Road.

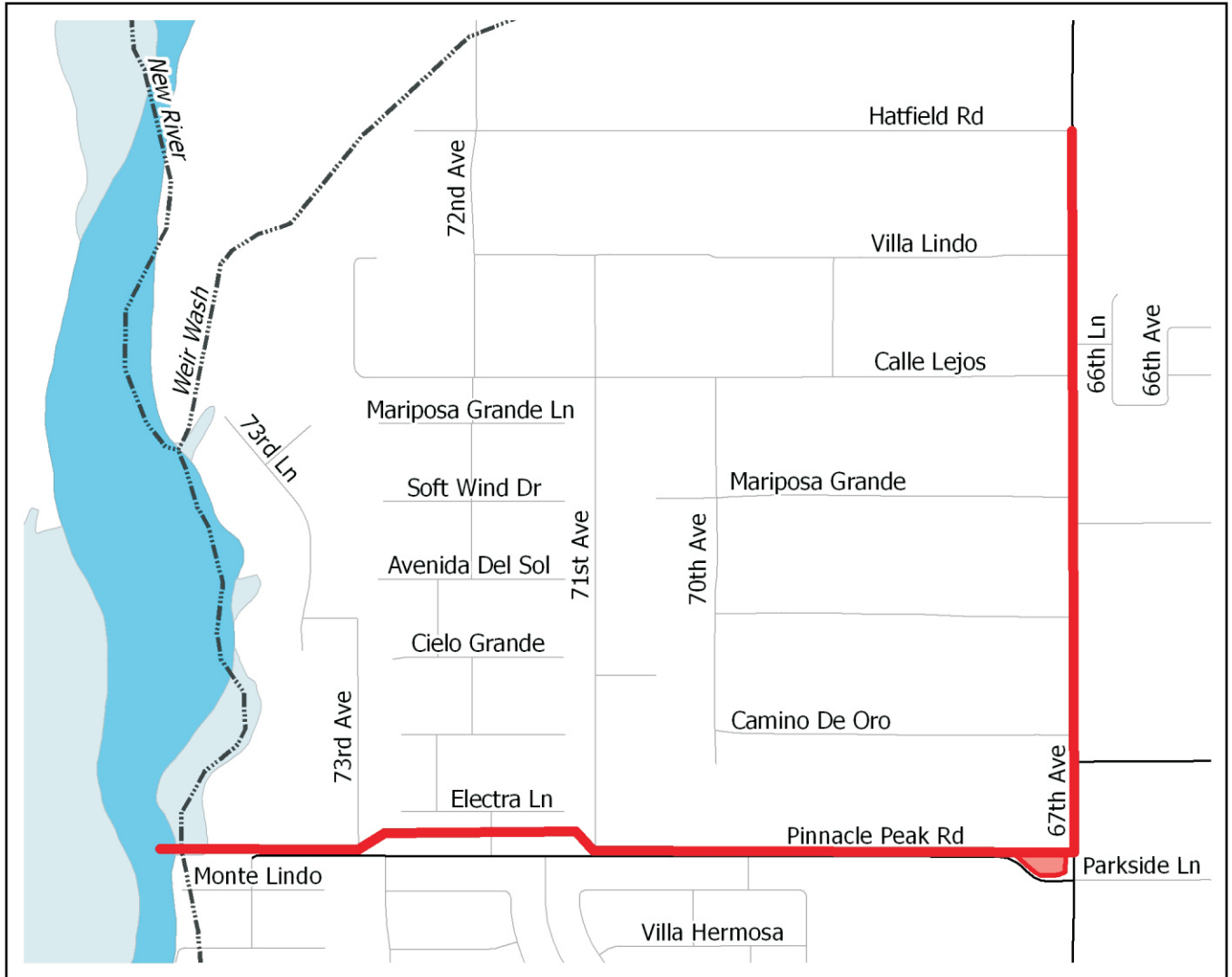
The District anticipates partnering with the City of Peoria. An IGA is required.

Since the drafting of the District FY 2010 - FY 2014 Capital Improvement Program budget, the City of Peoria removed funding for this project from its 5-year capital budget. The District's FY 2011 - FY 2015 Capital Improvement Program proposal will reflect this delay.

### **Fiscal Year**

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FY 2010	\$0
FY 2011	\$510,000
FY 2012	\$1,010,000
FY 2013	\$6,020,000
FY 2014	\$10,000
5-Year Program	<hr/> \$7,550,000



**Legend**

- Proposed Storm Drain
- Proposed Basin
- Floodplain
- Floodway

---

# White Tanks FRS No.3 Modifications

PCN: 470.04.30

## Michael Greenslade, P.E., Project Manager

602-506-5426

mdg@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Unincorporated Maricopa County

Origination: FY 1998 Prioritization Procedure

Resolution(s): FCD 2004R004

IGA(s): FCD 98032, 2004A006, 2004A006A-E

White Tanks FRS No.3 is ranked first in the nation by Natural Resources Conservation Service (NRCS) under their dam rehabilitation priority ranking process. The District and NRCS have proceeded with a rehabilitation project under the "Small Watershed Rehabilitation Amendment" (Public Law 106-472), which authorizes NRCS to assist watershed project sponsors with rehabilitation of aging dams on a 65 percent federal, 35 percent local cost share basis, and NRCS is additionally providing technical assistance for the project. The District and NRCS completed the final work plan and environmental assessment in 2004 and signed an IGA for the project early in Fiscal Year 2005.

In Fiscal Year 2004, the District contracted an alternative evaluation and chose to modify the dam. The first phase of dam modification is complete.

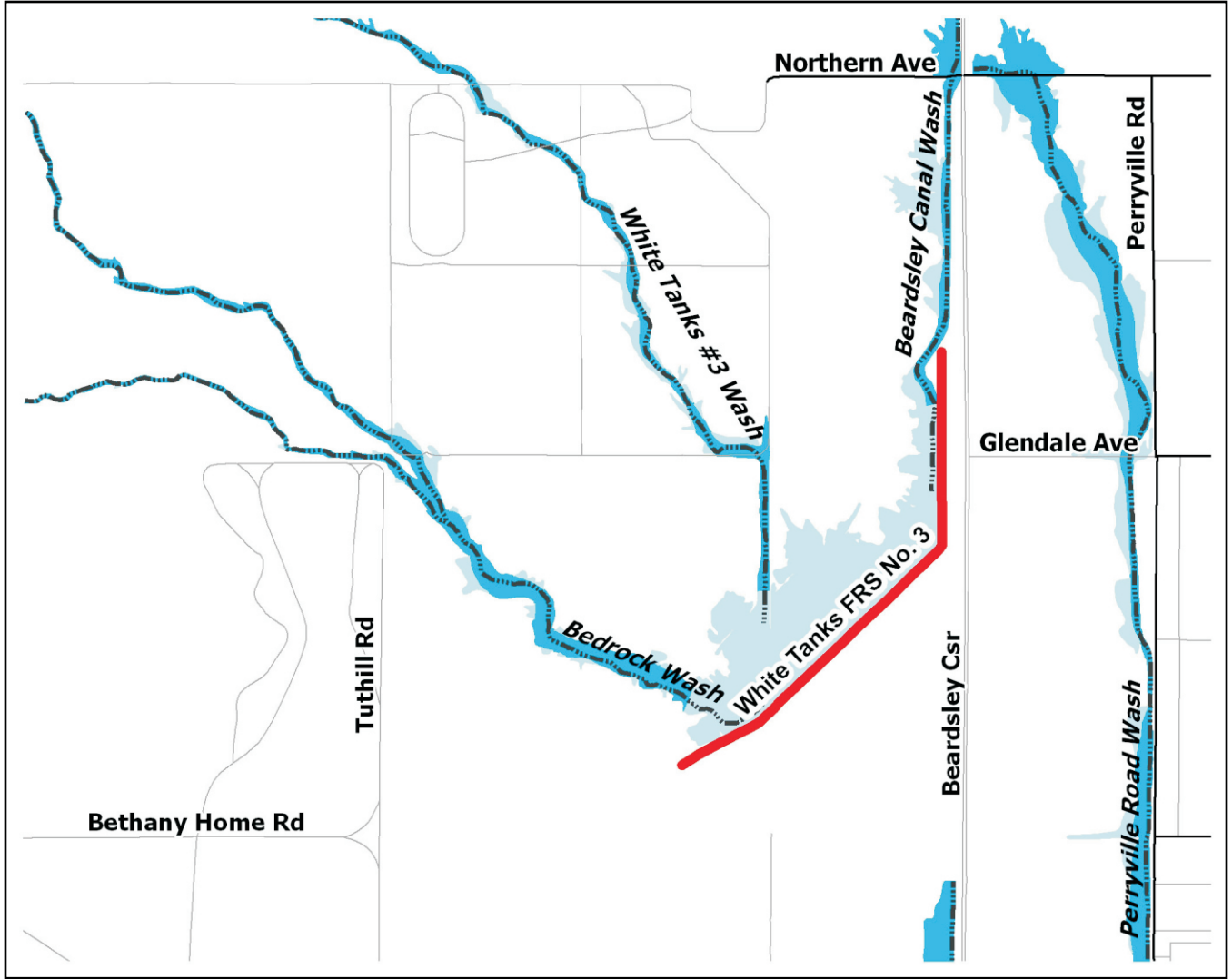
The first phase included plugging and abandoning existing corrugated metal pipe (CMP) outlets, construction of principal pipe outlets to replace the existing CMP outlets and construction of a soil cement embankment section and cutoff walls in the dam's fissure risk zone.

The second phase of design is complete and includes a new emergency spillway drop structure and non-fissure risk zone embankment segments. The second phase of construction is expected to begin in Fiscal Year 2010 pending design approval by ADWR.




### Fiscal Year

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FY 2010	\$9,625,000
FY 2011	\$655,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$10,280,000



**Legend**

-  White Tanks FRS No. 3
-  Floodplain
-  Floodway

---

# White Tanks FRS No.3 Outlet Channel

PCN: 470.04.32

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Buckeye / Unincorporated Maricopa County

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2004R011, 2004R011A

IGA(s): None

In Fiscal Year 2006, the District examined a series of alternatives associated with the rehabilitation of White Tanks FRS No.4. Project recommendations included an outlet channel from White Tanks FRS No.3 to White Tanks FRS No.4.

This project combines soft structural channel and box culvert along a five-mile stretch of Jackrabbit Trail to convey storm water from behind White Tanks FRS No.3 to White Tanks FRS No.4; it provides additional protection from southeasterly flows for residents east of Jackrabbit Trail. After completion of the White Tanks FRS No.4 Outlet Channel project, storm water conveyed by this project would subsequently be conveyed to the Gila River.

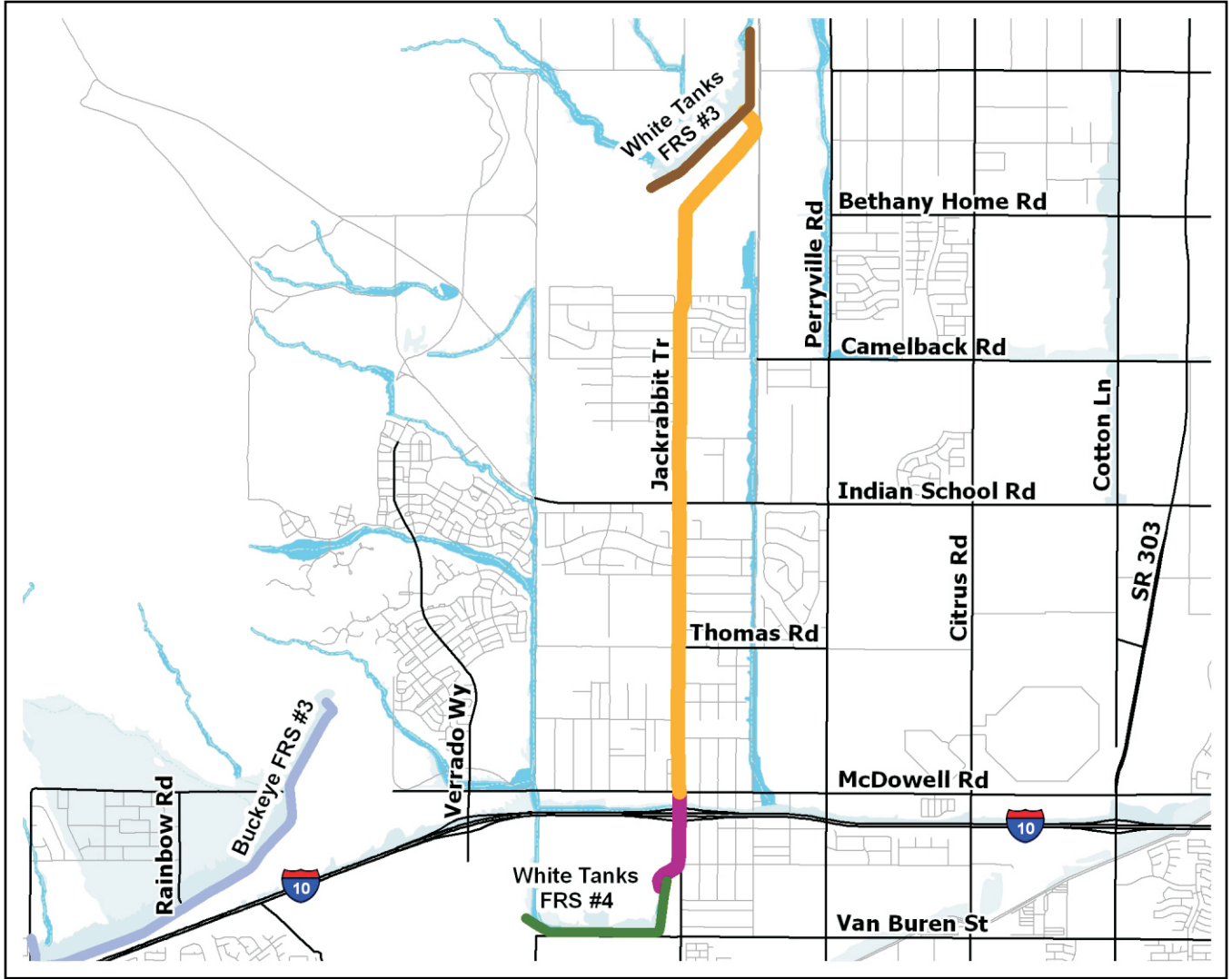
The District anticipates completing the project unilaterally. A pre-design has been completed, and some advance rights-of-way have been acquired. In Fiscal Year 2010, the District anticipates awarding a final design contract and substantially completing rights-of-way acquisition.

Exclusive of future agreements, operations and maintenance of the completed project will be the District's responsibility.

### Fiscal Year

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FY 2010	\$6,795,000
FY 2011	\$510,000
FY 2012	\$5,180,000
FY 2013	\$5,180,000
FY 2014	\$20,000
5-Year Program	<hr/> \$17,685,000



**Legend**

- Buckeye FRS No. 3
- White Tanks FRS No. 3
- White Tanks FRS No. 4
- Proposed Channel
- Existing Channel
- FEMA Floodplain
- FEMA Floodway

---

# Reems Road Channel & Basin

PCN: 470.12.31

## **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Unincorporated Maricopa County, City of Glendale, City of Surprise

Origination: FY 2007 Prioritization Procedure

Resolution(s): FCD 2002R014

IGA(s): FCD 2002A014/A, 2004A019/A, 2006G005, 2007G003, 2008G001

This project includes a flood control channel along the west side of Reems Road from south of Waddell Road to the Dysart Drain at the Falcon Dunes Golf Course, and a 42-acre basin north of Olive Avenue, providing 100-year flood protection.

The District and the City of Surprise have geographically split project responsibilities, with the City being responsible for constructing the channel from Peoria Avenue north to Waddell Road, and the District being responsible for constructing the channel and basin south of Peoria Avenue, and also cost sharing with the City of Surprise on the box culvert to be constructed at Peoria Avenue. MCDOT agreed to cost share to extend box culverts at Olive and Butler to their ultimate length. The District also entered into cost-share agreements with two

developers for extended box culverts on developer-owned property.

Under an additional agreement between the District and MCDOT, MCDOT agreed to provide a nearby stockpile site for material excavated by the District's project. The arrangement reduced contract bid costs for material disposition and will provide further taxpayer benefit by reducing MCDOT's cost for fill material needed for the future Northern Parkway.

Portions of the City of Surprise's component of the project are in place, and the District's component of the project is substantially complete.

### **Fiscal Year**

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FY 2010	\$20,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$20,000



**Legend**

- Reems Basin
- Reems Channel
- Channel Implemented by City of Surprise
- Existing Basin
- Dysart Drain
- Roadway/Channel Crossing
- Railroads
- FEMA Floodplain
- FEMA Floodway

---

# Bullard Wash Phase II

PCN: 470.13.31

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 4 & 5

Jurisdiction: Goodyear

Origination: FY 2002 Prioritization Procedure

Resolution(s): FCD 2000R016, 2000R016A

IGA(s): FCD 2001A006, 2003A002, 2006A010, 2003A011

Bullard Wash is included within the Loop 303 Corridor/White Tanks Area Drainage Master Plan, which recommends wash improvements. Phase I of the project, from the Gila River to Lower Buckeye Road, was constructed as a District/City of Goodyear project. Phase II includes an earthen/greenbelt channel along the Bullard Wash alignment from Lower Buckeye Road to McDowell Road and a detention basin just south of McDowell Road. Landscaping and trails are anticipated along the channel alignment and within the basin.

The project will channelize the floodplain north of the Phoenix-Goodyear Airport. It will reduce the floodplain width and protect the Phoenix-Goodyear Airport and nearby development from flooding. This stormwater would otherwise collect in streets, farm fields and

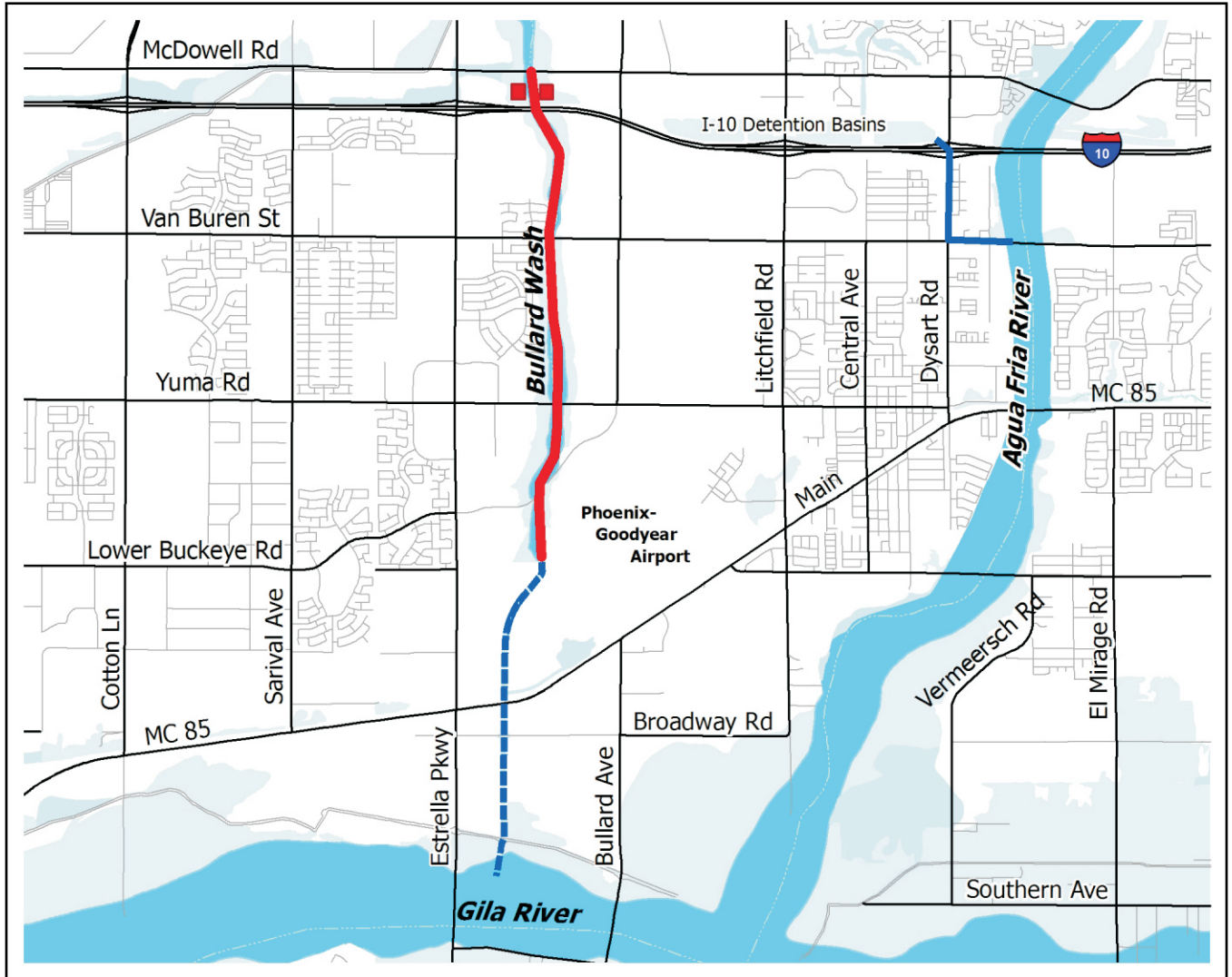
residential and commercial areas. Design of Bullard Wash from Lower Buckeye Parkway to I-10 is complete, and IGAs with the City for construction of the project are in place.

Construction timing is dependent upon the availability of District and City funding and will likely be phased.

### Fiscal Year

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FY 2010	\$10,000
FY 2011	\$3,120,000
FY 2012	\$5,150,000
FY 2013	\$60,000
FY 2014	\$3,180,000
5-Year Program	<hr/> \$11,520,000



**Legend**

- Proposed Basins
- Bullard Channel Proposed Phase II
- Existing Outfall
- - - Bullard Channel Phase I
- FEMA Floodplain
- FEMA Floodway

---

# Loop 303 Drainage Improvements

PCN: 470.14.31

## Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Avondale, Buckeye, Glendale, Goodyear, Phoenix and Surprise

Origination: FY 2006 Prioritization Procedure

Resolution(s): FCD 2005R017

IGA(s): FCD 2007A005

The Loop 303 Corridor/White Tanks ADMP consisted of an area drainage master plan to determine guidelines for stormwater management and structural mitigation measures for flooding in the White Tanks area. This included analysis of approximately 220 square miles of watershed, which extends from Grand Avenue south to the Gila River, and from the White Tank Mountains east to the Agua Fria River. The study identified drainage problems, updated the existing hydrology due to development and new hydrologic methodology, developed cost-effective solutions for a stormwater collection and conveyance system and identified a preferred outfall alternative associated with SR-303L.

The District will partner with the Arizona Department of Transportation (ADOT) in this

regional project. It is expected that the District will construct drainage solutions from Van Buren Street to the Gila River, while ADOT will construct the project from Van Buren Street to approximately Bell Road. Construction of the District's portion of the project will likely precede construction of SR-303L.

Additional partnering agreements with the City of Goodyear are anticipated.

A pre-design for elements of the project is complete, basin rights-of-way have been acquired, and final design is anticipated to begin in Fiscal Year 2010 or 2011.

Construction will likely be phased.

### Fiscal Year

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FY 2010	\$40,000
FY 2011	\$3,032,000
FY 2012	\$10,992,000
FY 2013	\$8,892,000
FY 2014	\$6,380,000
5-Year Program	<hr/> \$29,336,000



**Legend**

- - - - Constructed and Maintained by ADOT
- Constructed and Maintained by FCD
- Floodplain
- Floodway

---

# Northern Parkway Drainage and AT&SF Channel Outfall

PCN: 470.15.31

## Burke Lokey, P.E., Project Manager

602-506-0867

burkelokey@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Glendale, Surprise

Origination: FY 2007, 2008, 2009 Prioritization Procedures

Resolution(s): FCD 2007R002

IGA(s): Pending

The Maricopa County Department of Transportation (MCDOT)/Glendale Northern Parkway project will construct a drainage channel along the north side of the parkway from SR-303L to Dysart Road, subsequently connecting to the Dysart Drain at multiple locations.

These connections to the Dysart Drain will likely serve a dual purpose as the outlet for the District's planned Atchison, Topeka and Santa Fe (AT&SF) regional flood control facility. That project is expected to ultimately provide 100-year protection for local farms and future development, and would involve a partnership between the District and the cities of Glendale and Surprise.

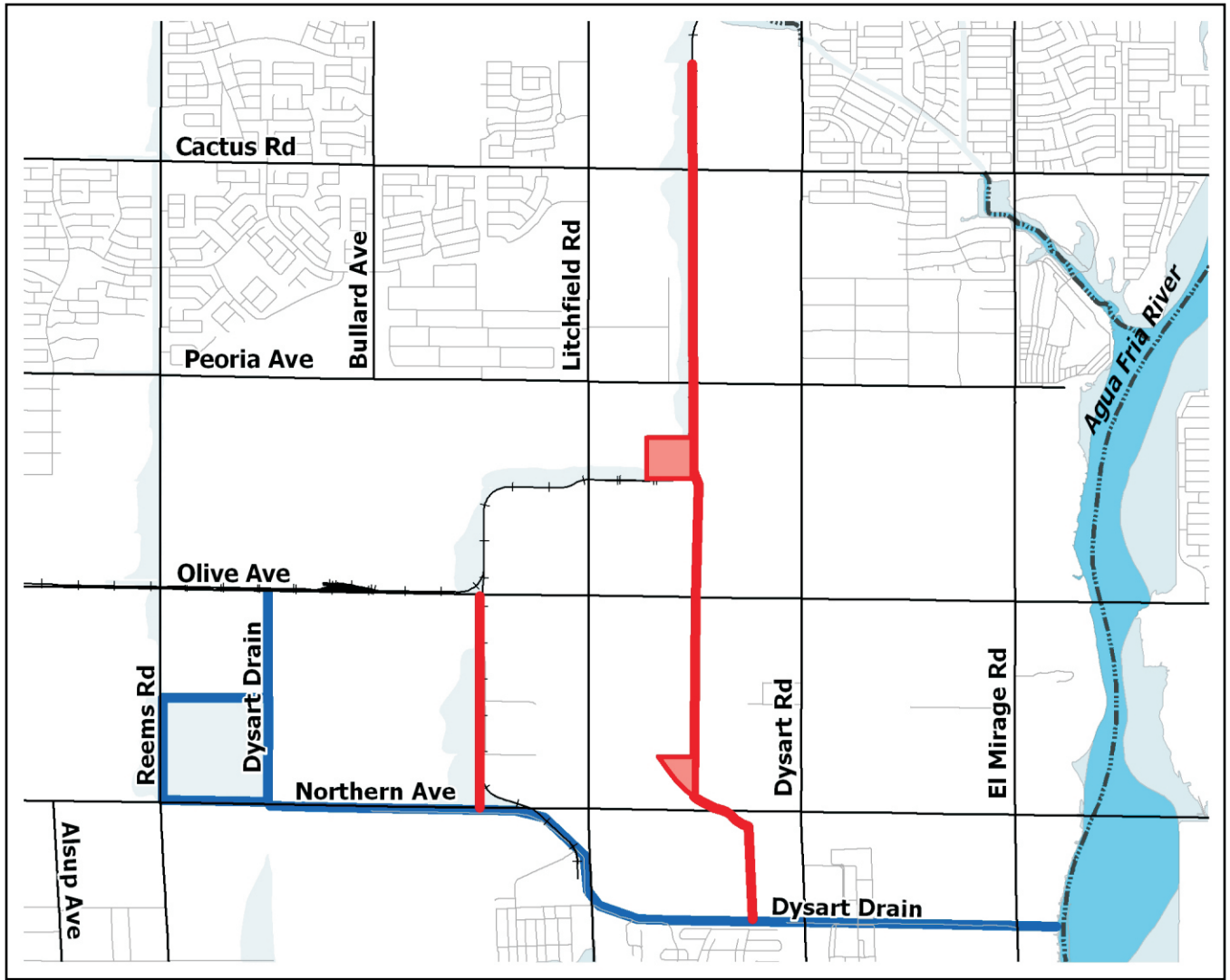
The District intends to enter into a cost-share arrangement with MCDOT and the City of Glendale for design and construction of these joint-use facilities.

A pre-design is expected to begin in Fiscal Year 2010, with MCDOT acting as the lead agency.

### **Fiscal Year**

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FY 2010	\$15,000
FY 2011	\$10,000
FY 2012	\$1,520,000
FY 2013	\$20,000
FY 2014	\$20,000
5-Year Program	<hr/> \$1,585,000



**Legend**

- Proposed Basin
- Proposed Channel
- Atchison Topeka & Santa Fe Railroad
- FCD Structures
- Floodplain
- Floodway

---

# Elm Lane Drainage Mitigation

PCN: 470.16.31

## Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Avondale

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2007R003

IGA(s): FCD 2007A008

The Elm Drainage Mitigation Project at Central Avenue and Elm Lane in Avondale involves the construction of 0.8 miles of storm drain with catch basins, one or two retention basins and an outfall culvert. The project resulted from an alternatives mini-study conducted by the City of Avondale in response to flooding in streets and homes.

The drainage improvements will provide protection from a 10-year storm event.

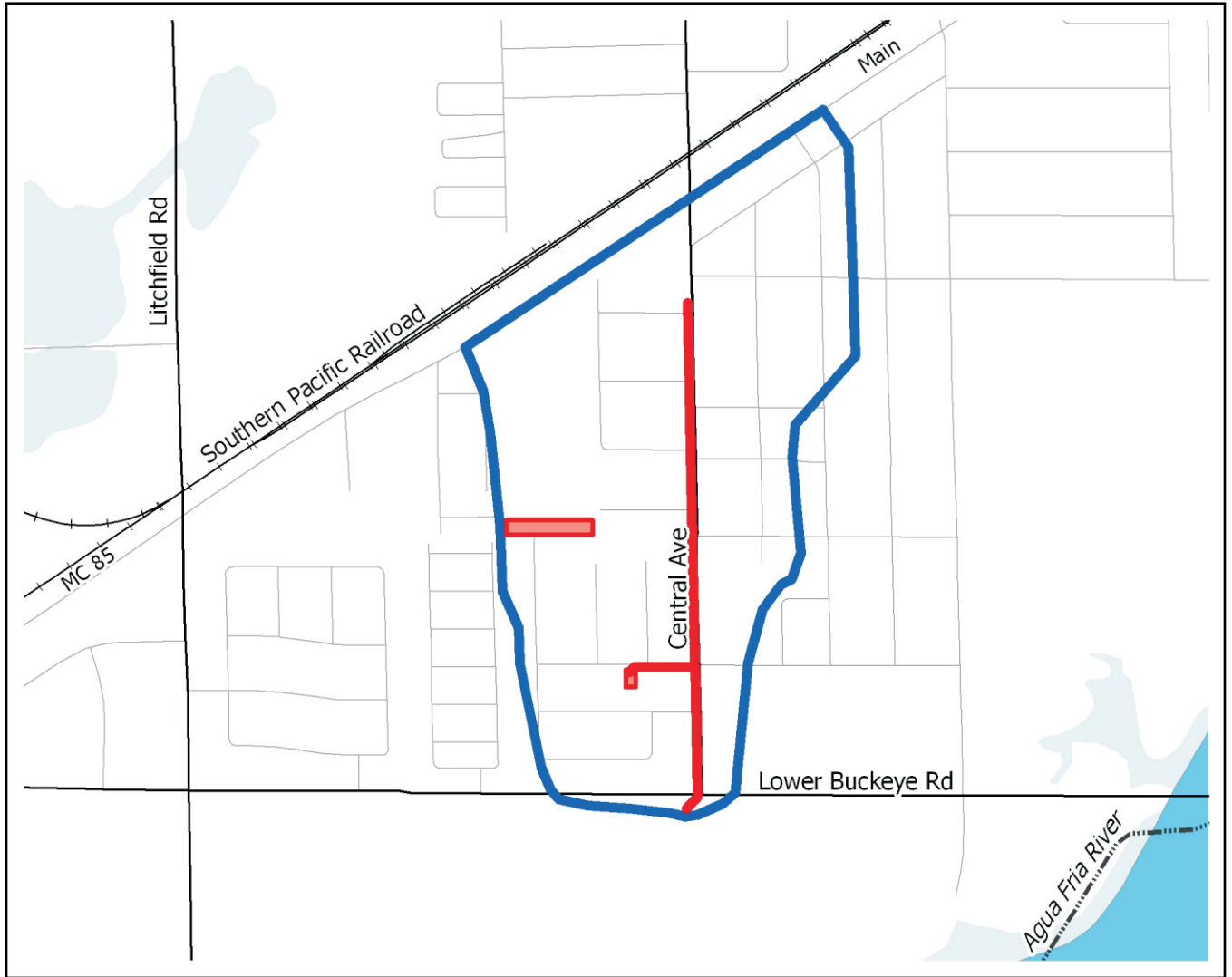
The City of Avondale will act as the project's lead agency, and the District will share in 50-percent of the total project cost.

Construction is anticipated to be completed by Fiscal Year 2011.

### **Fiscal Year**

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FY 2010	\$1,035,000
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$1,045,000



**Legend**

- Proposed Storm Drain
- New Retention Basin
- Drainage Basin Area
- +— Railroad
- Floodplain
- Floodway

---

# Waddell Road Drainage Improvements

PCN: 470.XX.X1

## Debbi Shortal, Project Manager

602-506-1034

dls@mail.maricopa.gov

Supervisory District: 4

Jurisdiction: Surprise

Origination: FY 2001 Prioritization Procedure

Resolution(s): Pending

IGA(s): Pending

The Waddell Road Drainage Improvements Project was originally proposed by the District's 1994 White Tanks/Agua Fria Area Drainage Master Plan. The City of Surprise, under the Fiscal Year 2001 CIP Prioritization Procedure, requested the implementation of the project.

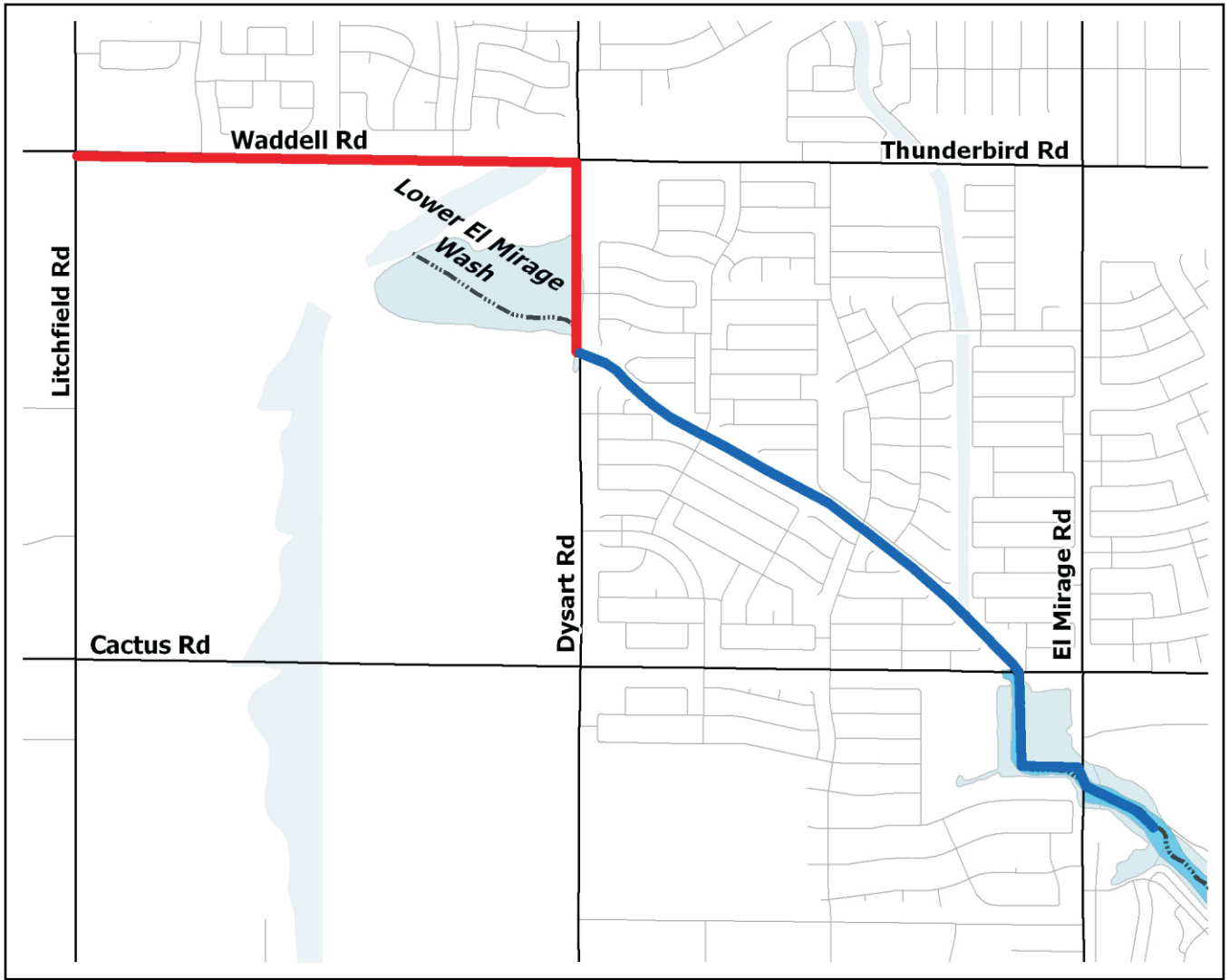
The completed project would provide a 100-year level of flood protection for the Lower El Mirage Watershed in the vicinity of Dysart Road and Waddell Road. The District has completed a candidate assessment report that further defined the project's recommended components.

Further implementation of the project will depend upon the District entering an IGA with the City of Surprise, and upon the implementation of downstream drainage improvements within the jurisdiction of the City of El Mirage.

### Fiscal Year

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FY 2010	\$0
FY 2011	\$10,000
FY 2012	\$50,000
FY 2013	\$480,000
FY 2014	\$2,080,000
5-Year Program	<hr/> \$2,620,000



**Legend**

- Proposed Improvements
- Existing Channel
- Floodplain
- Floodway

---

# Sonoqui Wash Channelization

PCN: 480.04.32

Chandler Heights Road to Crismon Road

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Queen Creek

Origination: FY 2006 and 2007 Prioritization Procedures

Resolution(s): FCD 2001R001

IGA(s): FCD 2008A008

The Queen Creek / Sonoqui Wash Hydraulic Master Plan recommended channelization of Sonoqui Wash. The first phase of Sonoqui Wash Channelization, completed in Fiscal Year 2009, included a basin at approximately Chandler Heights Road and Sossaman Road, channelization northwest to Ocotillo Road and approximately Power Road, and channelization west along the Ocotillo Road alignment to an outfall at Queen Creek Wash at Higley Road.

The second phase of Sonoqui Wash Channelization includes the segment of the existing wash southeast from Chandler Heights Road to Riggs Road, and along Riggs Road to Crismon Road. The proposed channel will be designed to collect and convey the 100-year flow to prevent flooding to property adjacent to the wash.

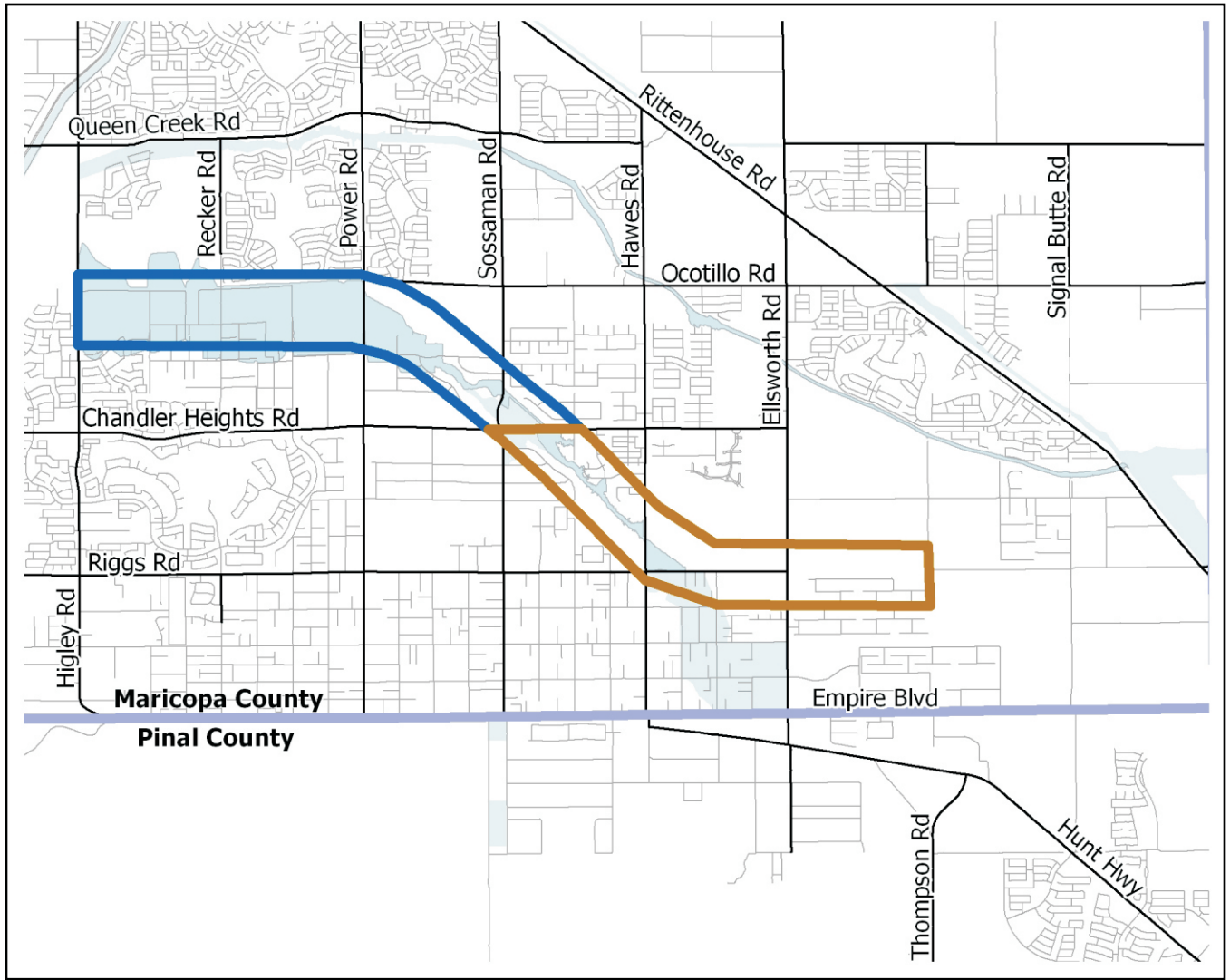
The existing floodplain from Chandler Heights Road to Riggs Road will be contained within the proposed 200-foot-wide channel. The Riggs Road to Crismon Road portion of Sonoqui Wash collects overland flow from the south and conveys it into the main branch of Sonoqui Wash.

This is a joint project between the District and the Town of Queen Creek. The District is acting as lead agency for design, which is in progress. Lead agency responsibilities for rights-of-way acquisition and construction may be split geographically and will be determined by a future IGA.

### Fiscal Year






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FY 2010	\$3,863,000
FY 2011	\$20,000
FY 2012	\$80,000
FY 2013	\$4,180,000
FY 2014	\$60,000
5-Year Program	<hr/> \$8,203,000



**Legend**

**Sonoqui Wash Channelization**

-  Completed Phase I
-  Proposed Phase II
-  County Border
-  Floodplain
-  Floodway

---

# Sonoqui Wash Channelization

PCN: 480.04.34

Main Branch

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Unincorporated Maricopa County

Origination: FY 2010 Prioritization Procedure

Resolution(s): FCD 2001R001

IGA(s): None

The Queen Creek / Sonoqui Wash Hydraulic Master Plan recommended channelization of Sonoqui Wash. The first phase of channelization has been completed. The third phase of Sonoqui Wash Channelization will outfall to the second phase, which is being implemented by the District in partnership with the Town of Queen Creek.

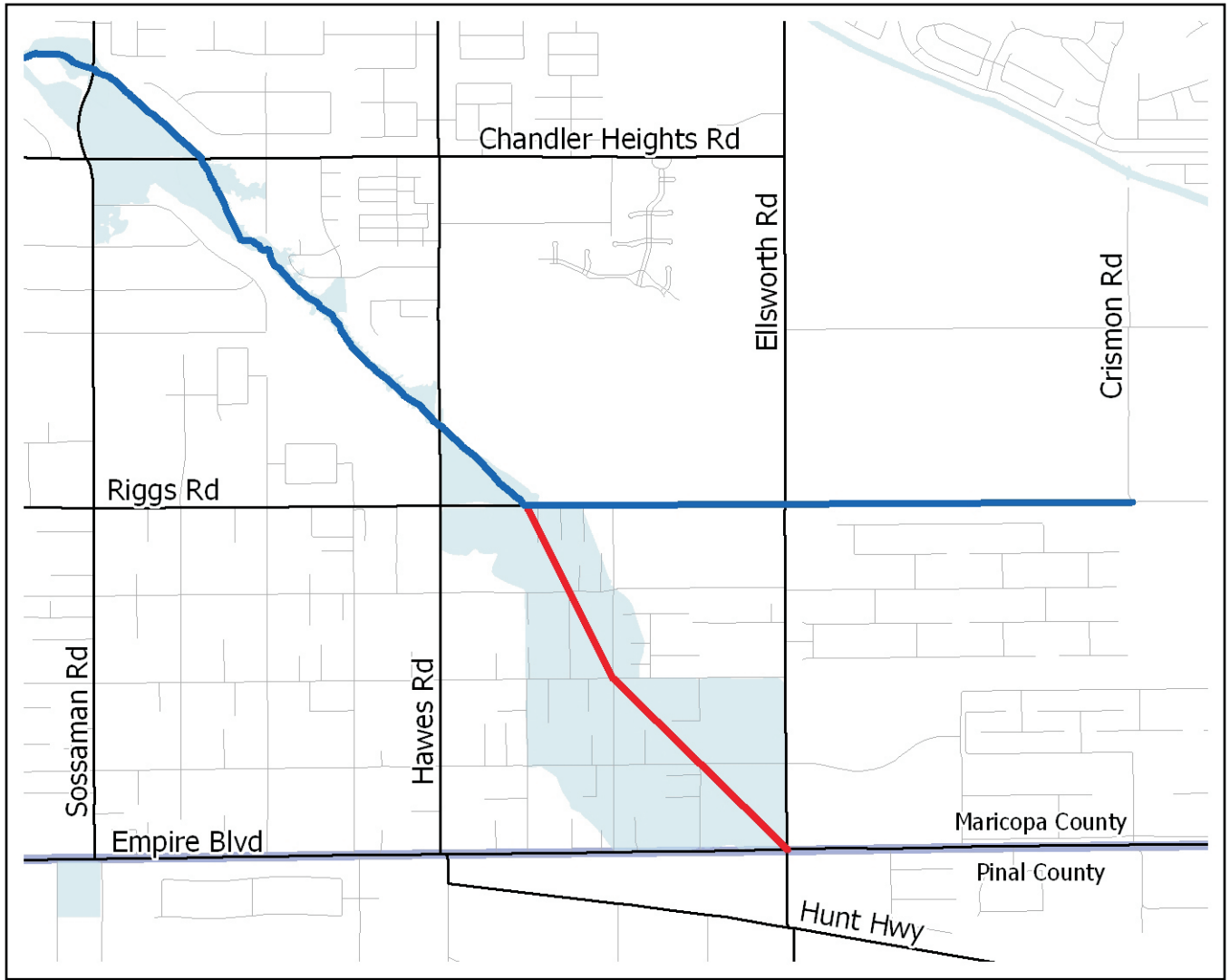
The third phase includes channelization of the main branch of Sonoqui Wash, from Empire Road at Ellsworth Road, northeast to Riggs Road at approximately Hawes Road. This section is located in unincorporated Maricopa County, and the District anticipates funding the project unilaterally. The proposed channel will be designed to collect and convey the 100-year flow, remove 345 acres and 217 homes from the floodplain and provide protection to roads and other infrastructure.

Design is scheduled to begin in Fiscal Year 2010; however, project schedule will be dependent upon the progress of the second phase of channelization.




### **Fiscal Year**

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FY 2010	\$460,000
FY 2011	\$25,000
FY 2012	\$80,000
FY 2013	\$4,180,000
FY 2014	\$4,180,000
5-Year Program	<hr/> \$8,925,000



**Legend**

-  Current and Planned Related Channelization
-  Project Alignment
-  Floodplain
-  Floodway
-  County Border

---

# Queen Creek Road Basin

PCN: 491.04.31

## Gary Wesch, P.E., Project Manager

602-506-4592

garywesch@mail.maricopa.gov

Supervisory District: 1

Jurisdiction: Chandler

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2001R003

IGA(s): FCD 2002A001, 2004A014, 2004A014A

The Queen Creek Road Basin was identified as one element of the recommended plan of the Higley ADMP. The off-line basin alleviates flooding problems along the eastern boundary of the Consolidated Canal as well as flooding to the west caused by possible overtopping of the canal from runoff generated within the study area. The completed basin will retain approximately 158 acre-feet of storage volume for up to a 100-year frequency storm event.

The City of Chandler is the lead agency for project design and construction, and will own, operate and maintain the completed basin. The City plans to develop the basin site into a regional park.

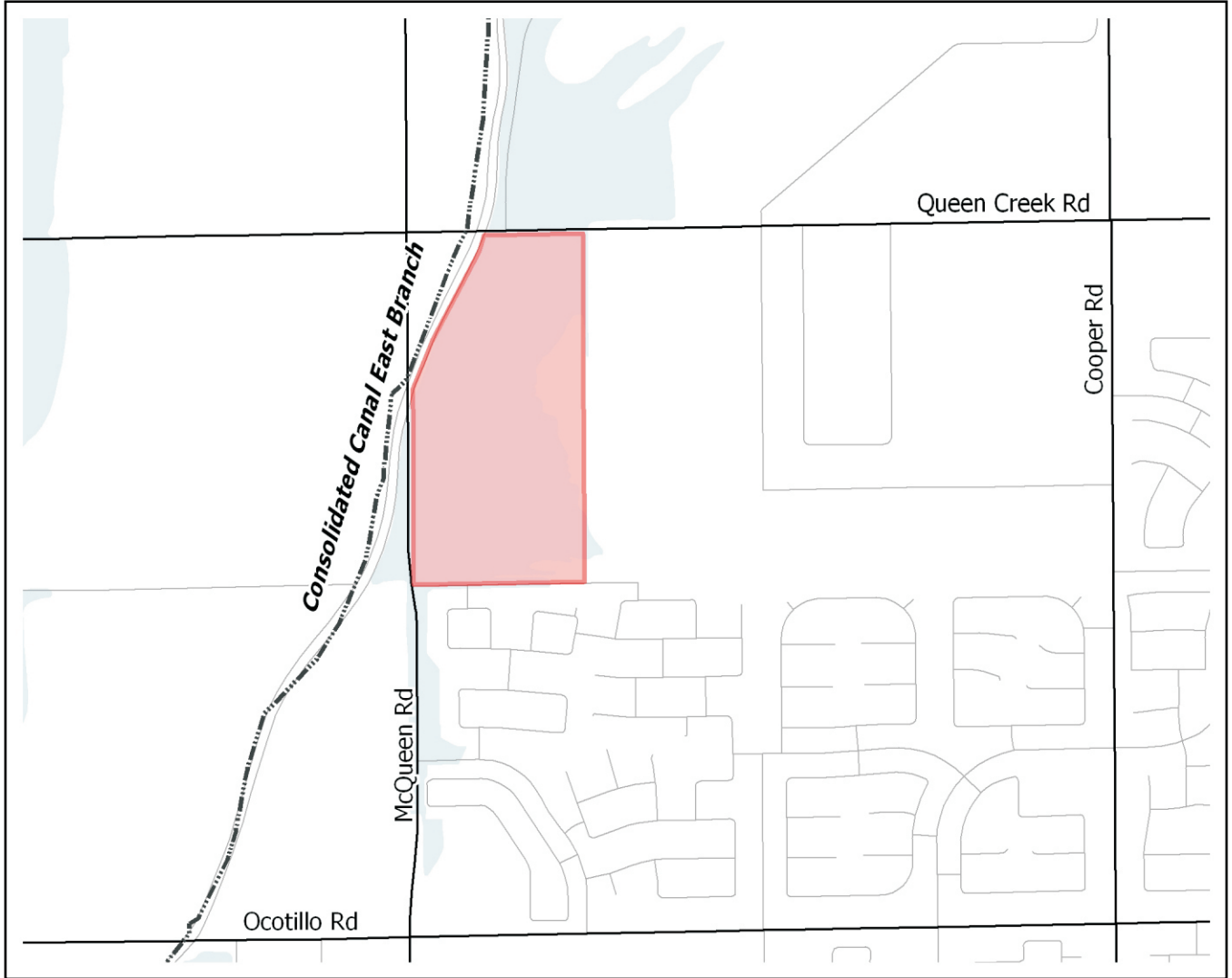
The District is participating in a cost-share IGA, with a contribution not to exceed \$2.2 million.

The flood control elements of the project have been substantially completed, with basin excavation having been completed in Fiscal Year 2009.




Park improvements, which will not involve the District, will occur at a later date.

### Fiscal Year

FY 2010	\$10,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$10,000



**Legend**

-  Queen Creek Road Basin
-  FEMA Floodplain
-  FEMA Floodway

---

# 75th Avenue Storm Drain and Durango Regional Conveyance Channel Phase I

PCN: 565.04.31

## **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix, Unincorporated Maricopa County

Origination: FY 2004 Prioritization Procedure

Resolution(s): FCD 2002R012A

IGA(s): FCD 2002A015, 2002A015A, 2003A014, 2003A014A

The 75th Avenue Storm Drain and Durango Regional Conveyance Channel (DRCC) was recommended by the Durango Area Drainage Master Plan and was requested by the City of Phoenix. The project will provide an interim regional outfall channel and is the first phase of the DRCC project. Project improvements will reduce flooding hazards north of the Union Pacific Railroad and remove approximately 71 structures from an identified floodplain.

The City was the lead agency for design of both the storm drain and the DRCC. The City also assumed lead agency responsibilities for the storm drain construction, construction of the Santa Maria basin and construction of a box culvert at 67th Avenue. The Santa Maria basin and 67th Avenue culvert are complete. Construction of the 75th Avenue storm drain

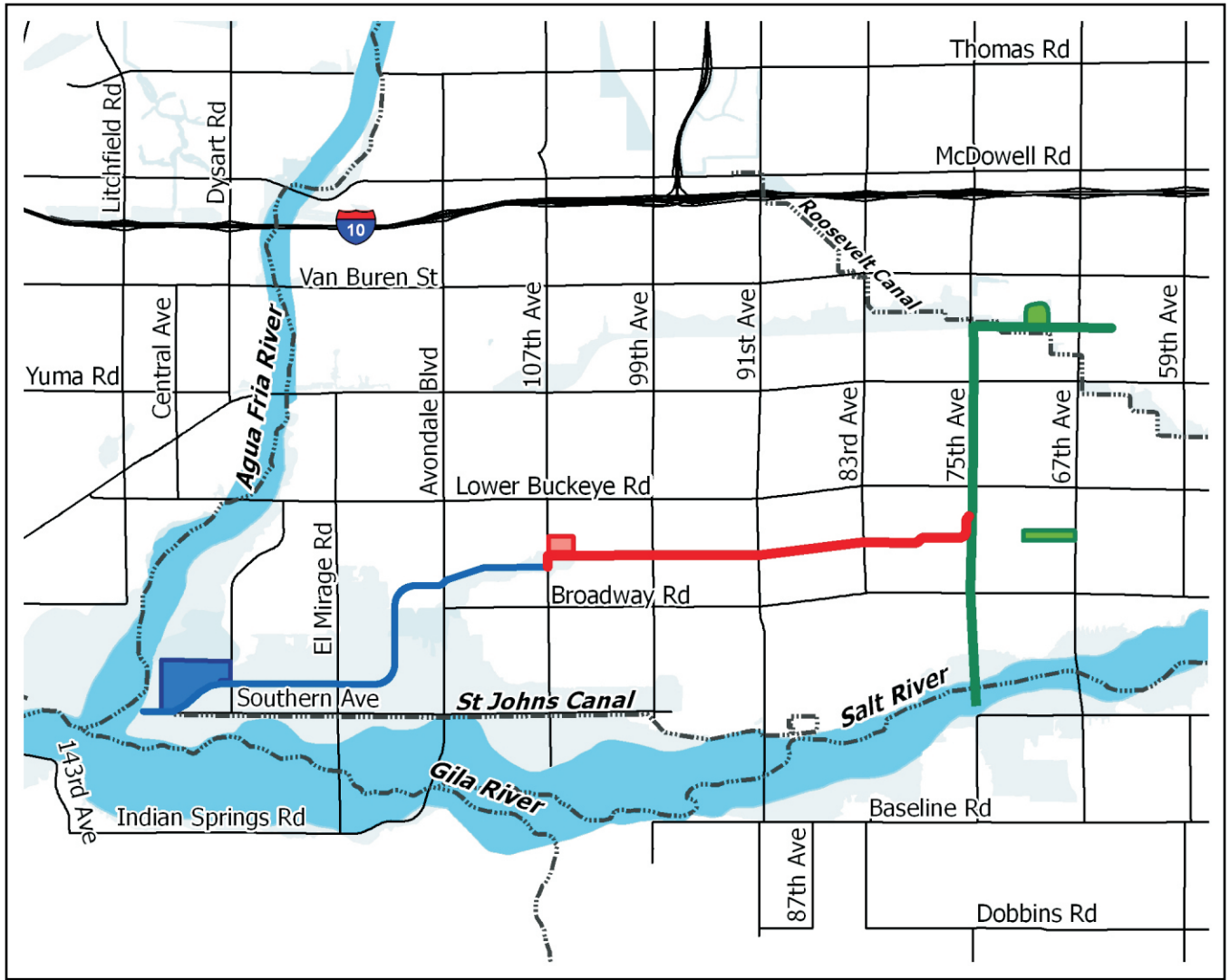
slowed due to permit issues at the railroad crossing. Completion is anticipated in Fiscal Year 2010.

The District is the lead agency for construction of the first phase of the DRCC. The contract was awarded in Fiscal Year 2009, and completion is anticipated in Fiscal Year 2010.

### **Fiscal Year**

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FY 2010	\$1,864,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$1,864,000



**Legend**

- DRCC Phase I
- DRCC Phase II
- DRCC Phase III
- FEMA Floodplain
- FEMA Floodway

---

# Durango Regional Conveyance Channel

## Phase II

PCN: 565.04.32

### Greg Jones, P.E., Project Manager

602-506-5537

glj@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Avondale

Origination: FY 2003 Prioritization Procedure

Resolution(s): FCD 2006R020

IGA(s): Pending

The District completed the Durango Area Drainage Master Plan to develop and evaluate solutions to mitigate flooding hazards in the Durango drainage area. The study recommended a regional channel and basin in the vicinity of the Salt River Project Buckeye Feeder Canal to intercept storm water flows and provide an outfall to the Agua Fria River. The project would reduce flooding hazards and provide a 100-year outfall in the Durango drainage area.

This project constructs the portion of the recommended plan located between 107th Avenue and the Agua Fria River, and between Lower Buckeye Road and Southern Avenue.

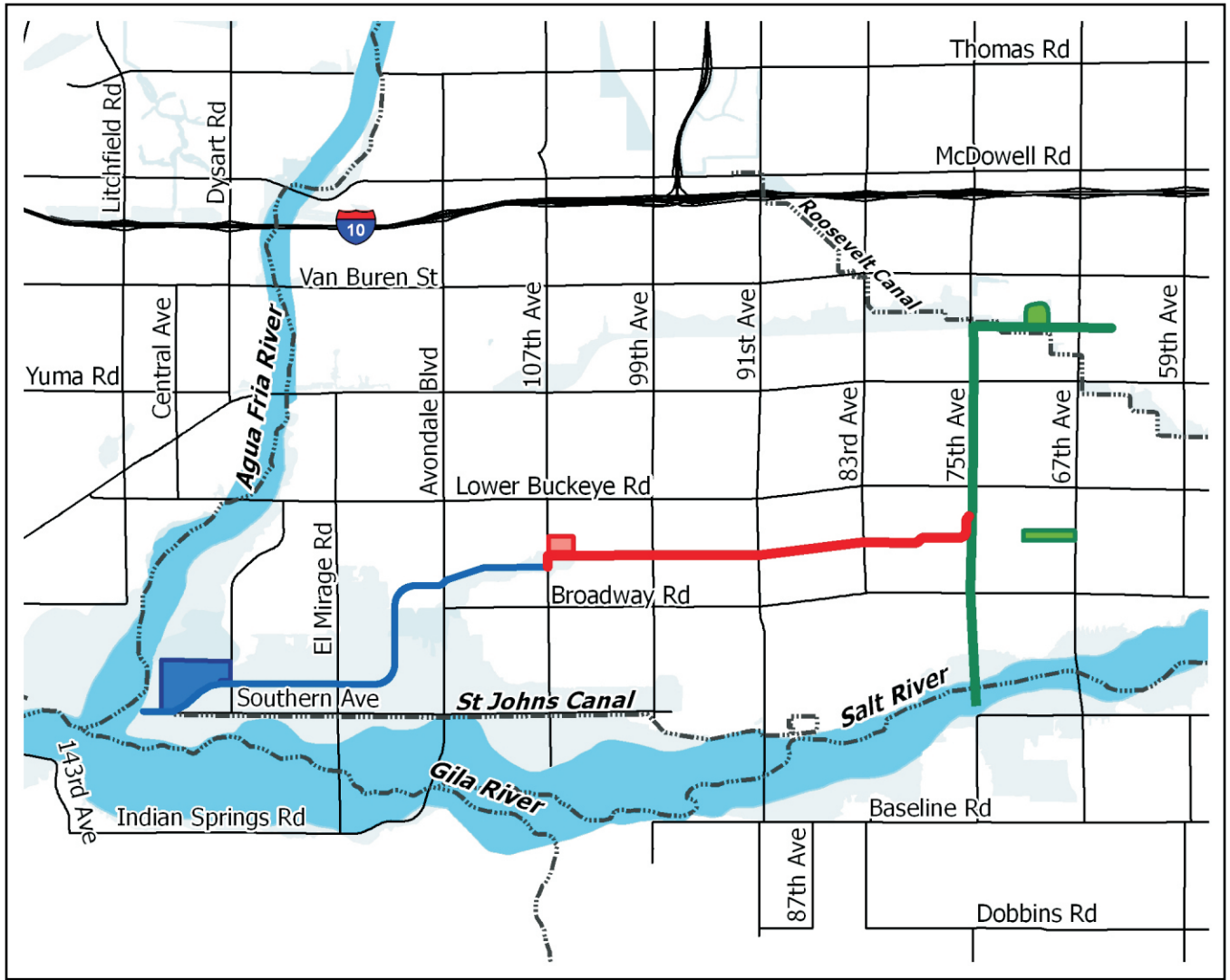
The City of Avondale submitted the project for consideration under the Fiscal Year 2003 Prioritization Procedure, and the District anticipates participating in a cost-share agreement with the City.

Project implementation is awaiting an IGA between the District and the City of Avondale.

### Fiscal Year

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FY 2010	\$40,000
FY 2011	\$2,390,000
FY 2012	\$390,000
FY 2013	\$80,000
FY 2014	\$4,180,000
5-Year Program	<hr/> \$7,080,000



**Legend**

- DRCC Phase I
- DRCC Phase II
- DRCC Phase III
- FEMA Floodplain
- FEMA Floodway

---

# Durango Regional Conveyance Channel

## Phase III

PCN: 565.04.33

### **Bobbie Ohler, P.E., Project Manager**

602-506-2943

bao@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix

Origination: FY 2003 Prioritization Procedure

Resolution(s): FCD 2006R009

IGA(s): FCD 2008A010

The District completed the Durango Area Drainage Master Plan to develop and evaluate solutions to mitigate flooding hazards in the Durango drainage area. The study recommended a regional channel and basin in the vicinity of the Salt River Project Buckeye Feeder Canal to intercept storm water flows and provide an outfall to the Agua Fria River. The project would reduce flooding hazards and provide a 100-year outfall in the Durango drainage area.

This project constructs the portion of the recommended plan located between 75th Avenue and 107th Avenue, one-half mile north of the Broadway Road alignment. The channel was partially constructed as a series of linear retention basins by developers through efforts coordinated by the City of Phoenix.

Construction of a basin (or basins) along the channel alignment is required prior to the construction of box culverts that will connect the linear basins and allow for an outfall to the phase to be constructed west of 107th Avenue.

The District, under a cost share agreement with the City of Phoenix, has acquired rights-of-way for the project basin at 107th Avenue.

The District anticipates acting as lead agency for project design, and completing design in Fiscal Year 2011.

Further project implementation will continue once the District has entered additional IGAs with the City.

### **Fiscal Year**

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FY 2010	\$620,000
FY 2011	\$440,000
FY 2012	\$90,000
FY 2013	\$3,180,000
FY 2014	\$1,680,000
5-Year Program	<hr/> \$6,010,000



**Legend**

- DRCC Phase I
- DRCC Phase II
- DRCC Phase III
- FEMA Floodplain
- FEMA Floodway

---

# Scatter Wash Basin Improvements

PCN: 590.03.31

## Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 3 and 4

Jurisdiction: Phoenix

Origination: FY 2005 Prioritization Procedure

Resolution(s): FCD 2004R012

IGA(s): FCD 2004A016

The Scatter Wash Basin Improvement project originated from an Arizona Department of Transportation (ADOT) proposal and consists of improvements to Scatter Wash at the Interstate-17 crossings, culvert improvements and construction of an off-line basin. The completed improvements will provide a 100-year level of protection.

The District entered into an IGA with ADOT and the City of Phoenix to fund 28 percent of the total project costs, not to exceed \$1,008,000.

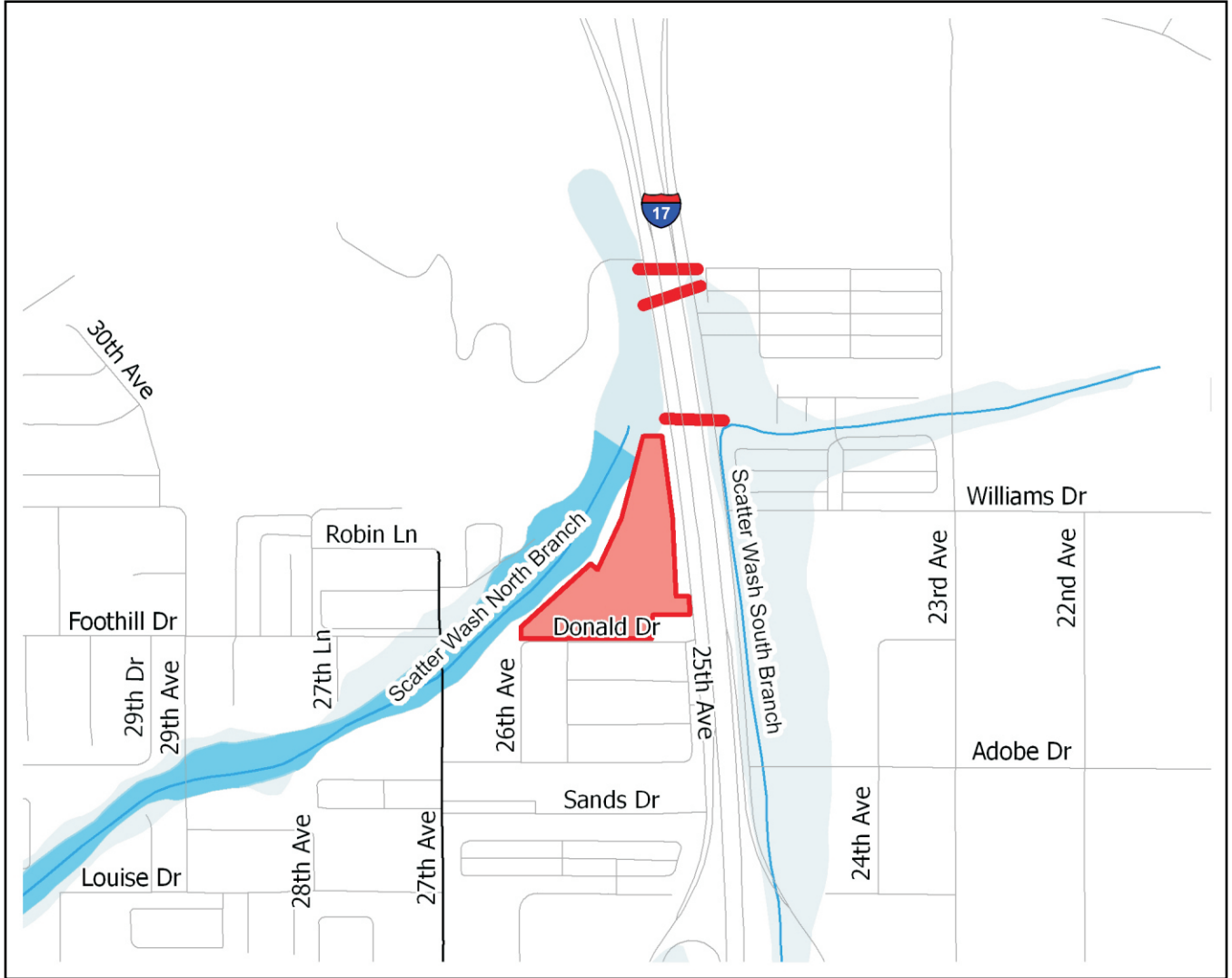
ADOT is the lead agency for design, right-of-way acquisition and construction, and the City and ADOT will share operation and maintenance responsibilities.

Project design and right-of-way acquisition are complete, and construction is underway. The District has completed its cost-share commitment to the project. Construction is anticipated to be completed by mid-Fiscal Year 2010.

### Fiscal Year

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FY 2010	\$5,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$5,000



**Legend**

- Scatter Wash Basin
- Culvert Improvement Area
- FEMA Floodplain
- FEMA Floodway

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# Bethany Home Outfall Channel

PCN: 620.03.32

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 4 and 5

Jurisdiction: Glendale, Phoenix

Origination: FY 1999 Prioritization Procedure

Resolution(s): FCD 98-12, 98-12A

IGA(s): FCD 2000A013, 2002A003

The Bethany Home Outfall Channel project includes a linear basin and channel along the Grand Canal extending westerly from 63rd Avenue to the New River. The project will have a 100-year capacity removing approximately 745 structures from the floodplain. The channel alignment (Phase I and II) is in Phoenix, Glendale and unincorporated Maricopa County. Portions of the channel are being used as a trail corridor and linear park. Phase I of the project, extending west from the Agua Fria Freeway (Loop 101) to the New River along the Bethany Home Road alignment, has been completed by ADOT with District participation. ADOT increased the size of their channel to accommodate additional flows from the east.

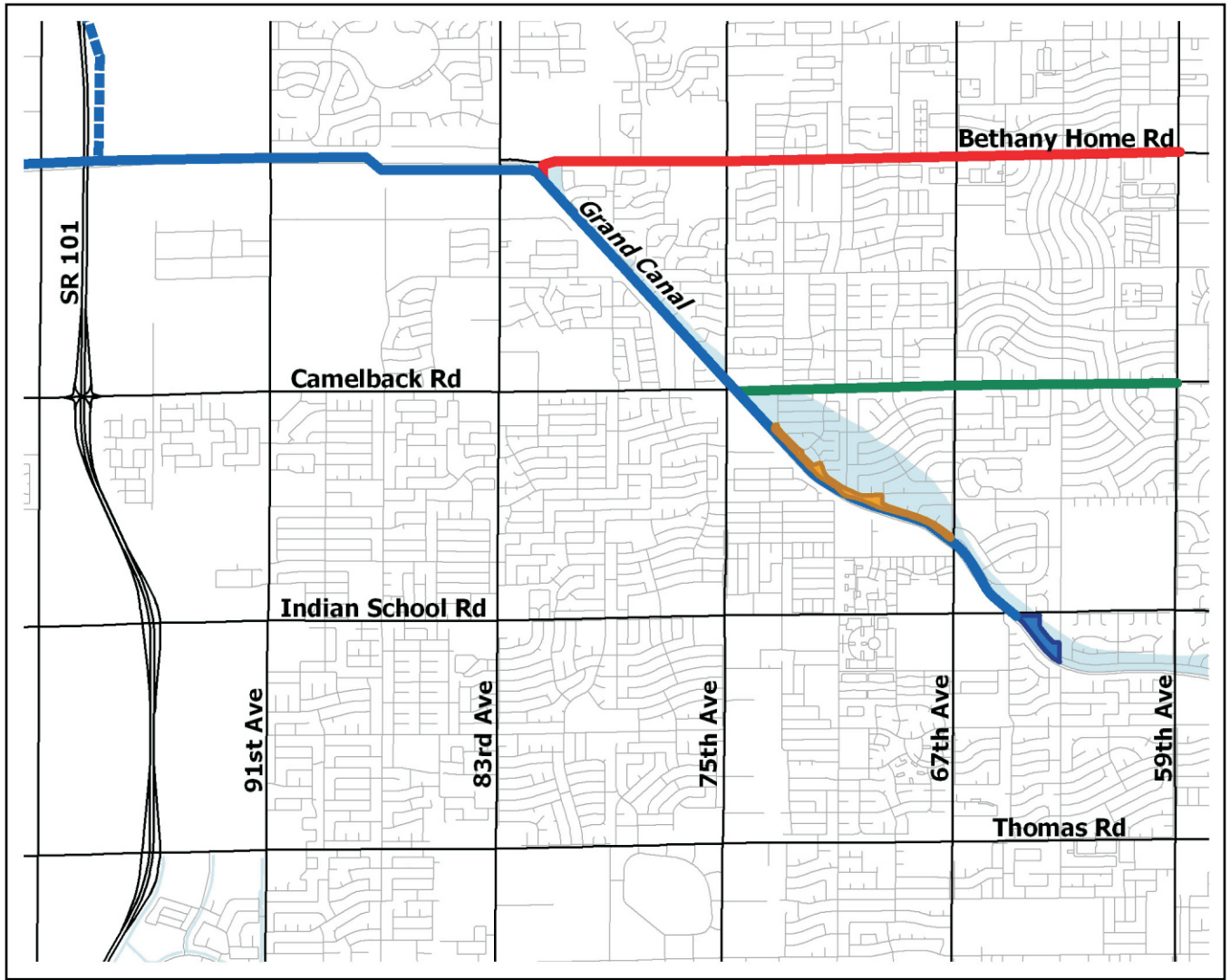
Phase II of the project includes a channel from the Agua Fria Freeway alignment to 63rd Avenue. The ADMP also recommends 10-year capacity storm drains, located within Bethany Home Road and Camelback Road, extending from 59th Avenue to the Outfall Channel. The cost share for the project is approximately 50 percent District, and 25 percent each for the cities of Glendale and Phoenix.

Construction of portions of the project from Loop 101 to 67th Avenue is completed. Completion of construction of the final phase of the primary outfall channel is anticipated in Fiscal Year 2010.

### Fiscal Year

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FY 2010	\$1,714,000
FY 2011	\$0
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
5-Year Program	<hr/> \$1,714,000



**Legend**

- Bethany Home Outfall Channel
- Bethany Home Road Storm Drain
- Camelback Road Storm Drain
- ADOT Channel
- Sunset Detention Basin
- Linear Detention Basin
- FEMA Floodplain
- FEMA Floodway

---

# Camelback Road Storm Drain

PCN: 620.03.33

59th Avenue to 75th Avenue

## Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Glendale, Phoenix

Origination: FY 1999 Prioritization Procedure

Resolution(s): FCD 98-12, 98-12A

IGA(s): FCD 2000A013, 2002A003

This project includes a storm drain system along Camelback Road from approximately 59th Avenue to approximately 75th Avenue. The project will outfall to the existing Bethany Home Outfall Channel system.

The project will include lateral storm drain pipes and catch basins north of Camelback Road as part of the storm water collection system. The project will convey the 10-year frequency storm flows. In combination with a future 10-year storm drain along Bethany Home Road from 59th to 83rd Avenues, a 100-year floodplain south of Camelback Road will be mitigated.

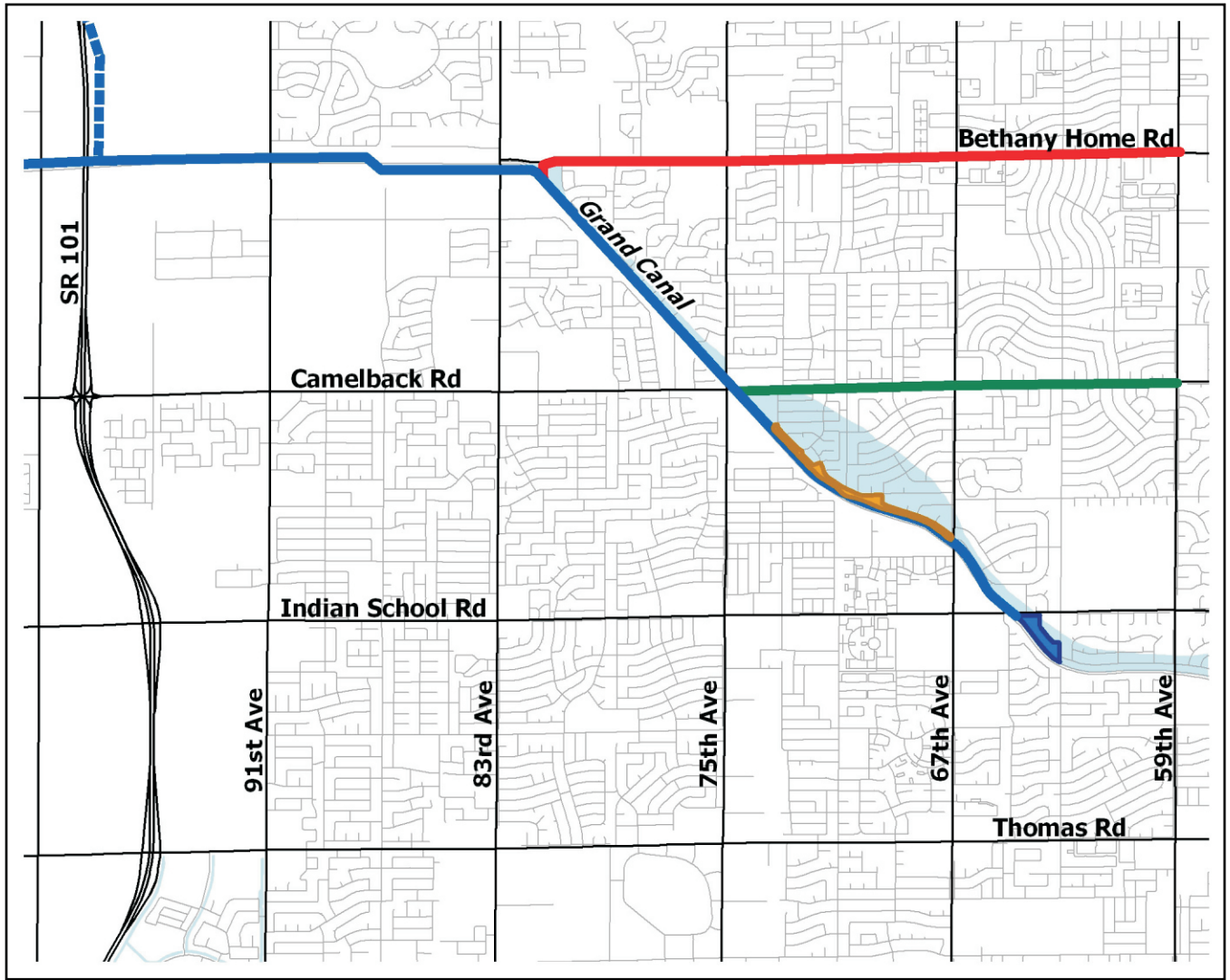
Per the terms of the IGA, the District will fund 50 percent of the project cost, with the cities of Glendale and Phoenix each funding 25 percent.

The District is the lead agency for all project tasks. Project design is in progress. Construction scheduling will depend upon the availability of project partner funding.

### Fiscal Year

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FY 2010	\$644,000
FY 2011	\$170,000
FY 2012	\$7,230,000
FY 2013	\$60,000
FY 2014	\$0
5-Year Program	<hr/> \$8,104,000



**Legend**

- Bethany Home Outfall Channel
- Bethany Home Road Storm Drain
- Camelback Road Storm Drain
- ADOT Channel
- Sunset Detention Basin
- Linear Detention Basin
- FEMA Floodplain
- FEMA Floodway

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# Bethany Home Road Storm Drain

PCN: 620.03.34

79th Avenue to 59th Avenue

## Scott Vogel, P.E., Project Manager

602-506-4771

csv@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Glendale

Origination: FY 1999 Prioritization Procedure

Resolution(s): FCD 98-12, 98-12A

IGA(s): FCD 2000A013, 2002A003

This project includes a storm drain system along Bethany Home Road from approximately 59th Avenue to approximately 79th Avenue, extending a storm drain that was previously constructed along Bethany Home Road between 83rd Avenue and 79th Avenue. The project will outfall to the existing Bethany Home Outfall Channel system. This project will convey the 10-year frequency storm flows. In combination with a future 10-year storm drain along Camelback Road from 59th to 75th Avenues, a 100-year floodplain will be mitigated.

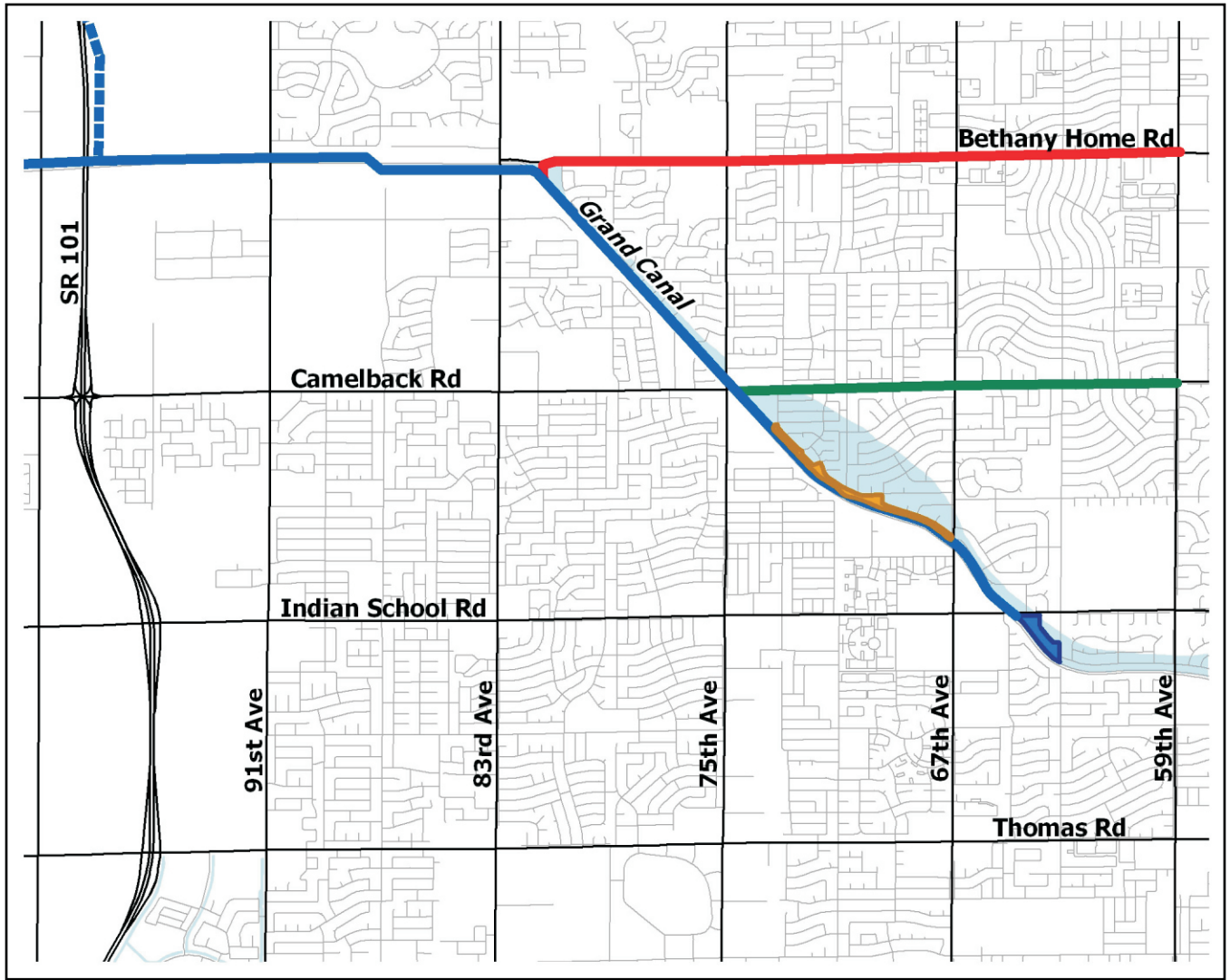
The City of Glendale is expected to serve as the lead agency for the project, with the District contributing 50 percent of project costs.

Design was partially completed by the City of Glendale in 2005. Construction documents will be finalized in Fiscal Year 2010, and construction will follow.

### **Fiscal Year**

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FY 2010	\$160,000
FY 2011	\$1,710,000
FY 2012	\$3,770,000
FY 2013	\$20,000
FY 2014	\$0
5-Year Program	<hr/> \$5,660,000



**Legend**

- Bethany Home Outfall Channel
- Bethany Home Road Storm Drain
- Camelback Road Storm Drain
- ADOT Channel
- Sunset Detention Basin
- Linear Detention Basin
- FEMA Floodplain
- FEMA Floodway

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# Downtown Phoenix Drainage System

PCN: 625.01.30

## Phase I

### Mike Duncan, P.E., CFM, Project Manager

602-506-4732

mwd@mail.maricopa.gov

Supervisory District: 5

Jurisdiction: Phoenix

Origination: FY 2008 Prioritization Procedure

Resolution(s): FCD 2008R001

IGA(s): FCD 2008A001

The Fiscal Year 2008 Prioritization Procedure recommended this project as a component of the Downtown Phoenix Drainage Improvements Project that was concurrently being studied under the Metro Area Drainage Master Plan (ADMP). The Metro ADMP subsequently recommended the Downtown Phoenix Drainage Improvements Project as a subset of its recommended downtown alternative.

The project's conceptual design involves the installation of drainage features along 1st Avenue, from Van Buren Street to Hadley Street; north and south of Jefferson Street from 19th Avenue to 3rd Avenue; and north and south of Fillmore Street from 7th Avenue to 2nd Avenue. Specific alignments will be determined during the final design process. When combined with the complete downtown system

recommended by the ADMP, this project will deliver a 10-year level of protection for the downtown area.

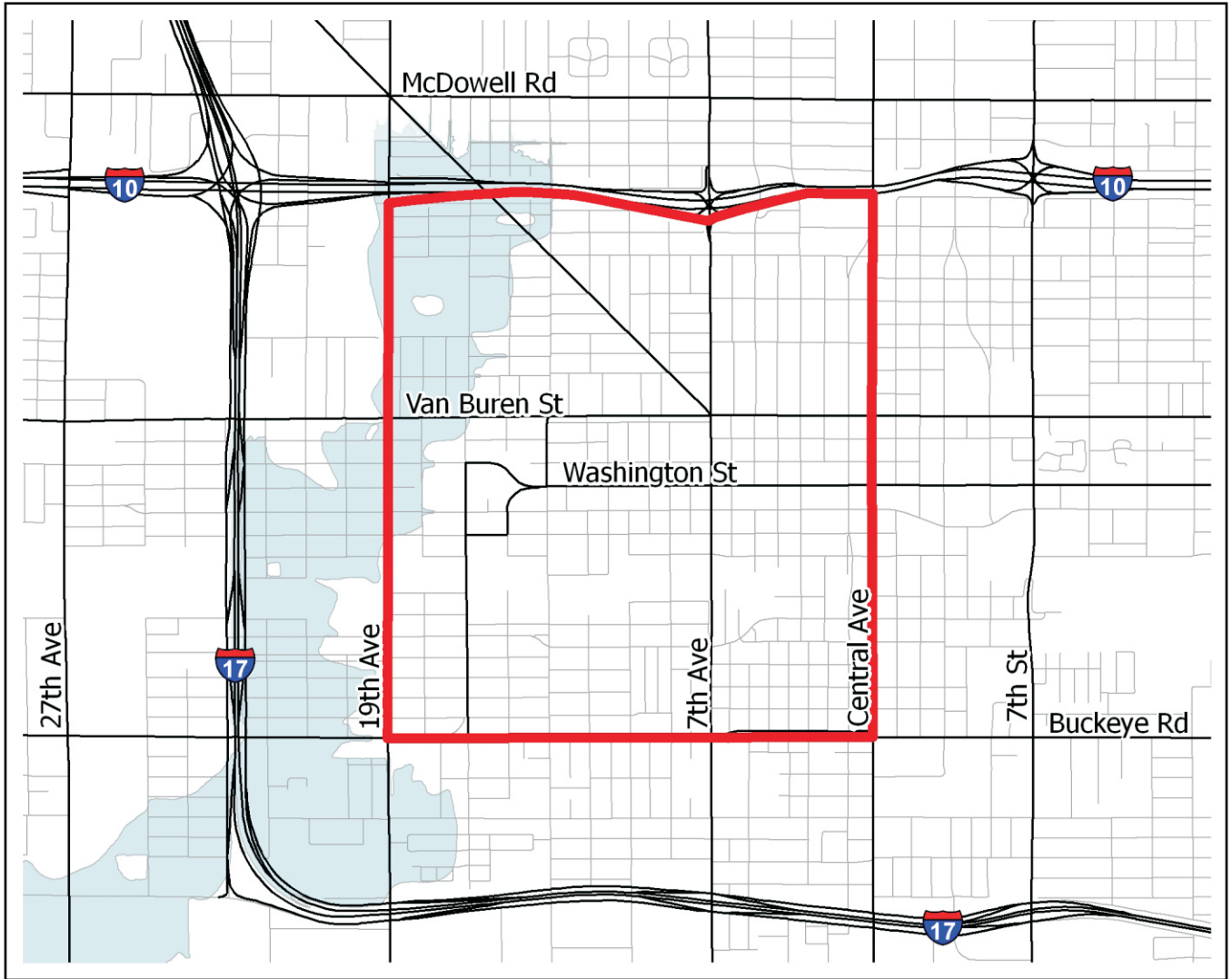
Design of the Jefferson Street and Fillmore Street components is in progress, with construction anticipated in Fiscal Years 2010 through 2012. Design and construction of the 1st Avenue component will likely require the approval of additional funding in a future City bond election.

Phoenix is acting as lead agency for project design and construction, and the District intends to contribute 50 percent of the project cost.




### Fiscal Year

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FY 2010	\$2,297,000
FY 2011	\$2,780,000
FY 2012	\$780,000
FY 2013	\$20,000
FY 2014	\$10,000
5-Year Program	<hr/> \$5,887,000



**Legend**

-  Downtown Phoenix Drainage System Improvements (Phase 1)
-  Floodplain
-  Floodway

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# Floodprone Property Assistance Program

## John Hathaway, P.E., Program Manager

602-506-0503

joh@mail.maricopa.gov

Supervisory District: 1, 2, 3, 4, 5

Jurisdiction: Maricopa County

Origination: Floodprone Property Assistance Program

Resolution(s): Pending

IGA(s): N/A

Less than 18 percent of the estimated 9,800 miles of stream corridor in Maricopa County have been mapped with regulatory floodplains and floodways. In many of the mapped areas, development took place prior to the floodplain mapping, and as floodplains were delineated, many residents learned that their homes were within regulatory floodplains.

The Floodprone Property Assistance Program (FPAP) involves the voluntary purchase of properties in flood hazard areas where structural solutions are infeasible or impractical. Program applicants are scored and ranked under objective criteria.

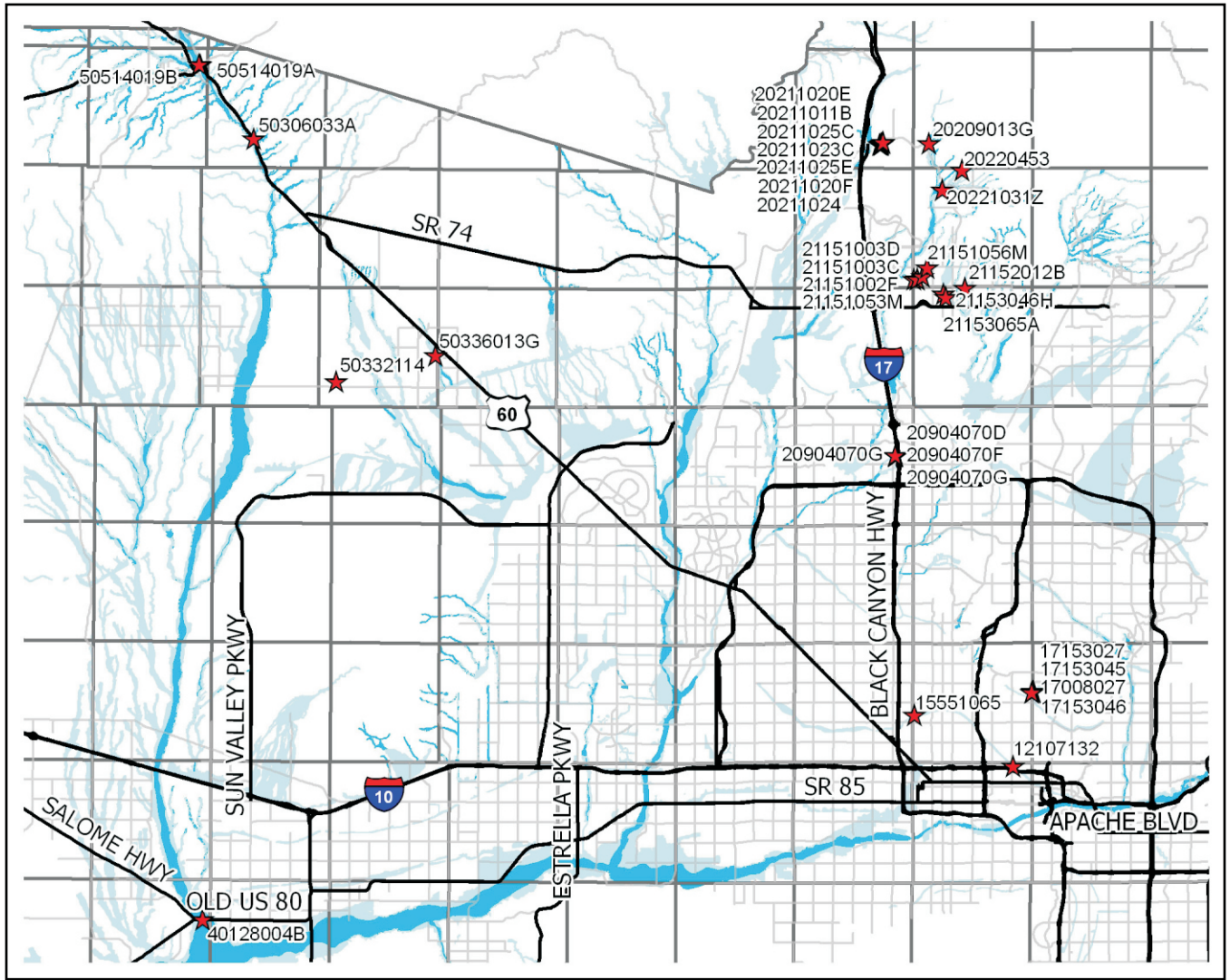
Existing structures on purchased properties are demolished and removed; property may be preserved as open space, sold, or leased for uses compatible with adjacent properties and floodplain regulations.

The Fiscal Year 2010 FPAP program will accomplish land clearing for seven parcels purchased in fiscal years 2008 and 2009, as well as new acquisition of qualifying parcels, subject to budget constraints.

### **Fiscal Year**

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FY 2010	\$1,590,000
FY 2011	\$1,560,000
FY 2012	\$1,560,000
FY 2013	\$1,560,000
FY 2014	\$1,560,000
5-Year Program	<hr/> \$7,830,000



**Legend**

- ★ FPAP Parcels
- Floodplain
- Floodway
- Township & Range

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# Small Project Assistance Program

## Christopher Fazio, Program Manager

602-506-4489

christopherfazio@mail.maricopa.gov

Supervisory District: 1, 2, 3, 4, 5

Jurisdiction: Maricopa County

Origination: Small Project Assistance Program

Resolution(s): FCD 2009R002

IGA(s): Various/Pending

Although the District centers its hazard mitigation efforts on regional solutions, the District recognizes a demand for capital projects mitigating historic flooding hazards impacting developed areas. Flooding hazards of this nature may demand local solutions where regional structures are impractical or cost-prohibitive. The District's sole previously existing procedure for evaluating capital projects – the Prioritization Procedure – is structured to evaluate projects that are regional in nature and is not suitable for effectively evaluating local projects.

The Small Project Assistance Program provides an objective method of evaluating local flood hazard mitigation projects - prioritizing small projects mitigating historic flooding hazards – and provides an efficient mechanism to contribute District staff and funding resources in a limited manner. Under this program, the District objectively evaluates capital projects

submitted by the municipalities of Maricopa County, favoring projects that mitigate frequent historic structural flooding and that are able to be rapidly implemented.

For projects recommended under this program, the District provides a 75 percent contribution towards project construction, with all other project costs being the responsibility of the submitting municipality.

Annual program size is limited to \$2,000,000, and per-project funding is limited to \$250,000.

In Fiscal Year 2010, the District will evaluate the first round of projects proposed under this program, and recommended projects will be funded in Fiscal Year 2011.

The District is implementing this as a pilot program, requiring Board of Directors action to extend beyond Fiscal Year 2012.

### **Fiscal Year**

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FY 2010	\$0
FY 2011	\$2,000,000
FY 2012	\$2,000,000
FY 2013	\$2,000,000
FY 2014	\$2,000,000
5-Year Program	<hr/> \$8,000,000

# Appendices

## Appendix A

### Completed Capital Projects Through Fiscal Year 2009

Project	Location	Year
10th St. Wash Detention Basin No. 1	12th St. and Peoria Ave.	1996
10th St. Wash Detention Basin No. 2	11th St. and Alice Ave.	1997
10th St. Wash Improvements (Alice to ACDC)	10th St., Alice Ave to ACDC at Griswold Rd. alignment	2008
24th Ave. and Camelback Rd. Basin	24th Ave. and Camelback Rd.	2008
26th Ave. and Verde Ln. Basin	Verde Ln. alignment; 26th Dr. to I-17 Frontage Rd.	2007
35th Ave. and Dobbins Rd. Basin and Storm Drain	35th Ave. and Dobbins Rd.	2002
43rd Ave. and Southern Ave. Detention Basin	43rd Ave. and Southern Ave.	2005
43rd Ave. Storm Drain	43rd Ave., Broadway Rd. to Baseline Rd.	2000
48th St. Drain	San Francisco Canal, 48th St. to University Dr.	1981
48th St. Storm Drain	48th St., Baseline Rd. to 48th St. Drain	1988
51st Ave. Storm Drain (Bell Rd. to Thunderbird Rd.)	51st Ave., Bell Rd. to Thunderbird Rd.	1991
59th Ave. Storm Drain (Bell Rd. to ACDC)	59th Ave., Bell Rd. to ACDC	1991
67th Ave. Storm Drain (Bell Rd. to ACDC)	67th Ave., Bell Rd. to ACDC	1990
67th Ave. Storm Drain (Olive Ave. to ACDC)	67th Ave., Olive Ave. to ACDC	2009
7th Ave. Storm Drain (Union Hills Dr. to Cave Creek Wash)	7th Ave., Union Hills Dr. to Cave Creek Wash	1995
83rd Ave. and Pinnacle Peak Rd. Drainage Improvements	Area bounded by Calley Lejos (N), Willisams Rd. (S), 91st Ave. (W), 83rd Ave. (E)	2008
83rd Ave. Grade Control Structure (Skunk Creek)	83rd Ave. and Skunk Creek	2003
91st Ave. and Bell Rd. Drainage	91st Ave., Bell Rd. to Greenway Rd.; Greenway Rd., 91st Ave. to New River	1991
9th Ave. Storm Drain (Peoria Ave. to ACDC)	9th Ave., Peoria Ave. to ACDC	2008
Adobe Dam	Skunk Creek at Deer Valley Rd. alignment and 39th Ave. alignment	1982
Adobe St. Structures over EMF	Adobe St. 1/2 mi. east of Greenfield Rd.	1990
ADOT Pit and Diversion Channel	I-10, Elliot Rd. to 1/4 mi. south of Warner Rd.; I-10 and 1/4 mi. south of Warner Rd.	1987
Agua Fria Channelization	Agua Fria River, Camelback Rd. to 1/4 mi. south of Lower Buckeye Rd.	1988
Alma School Drain	Mclellan Rd. alignment, Tempe Canal at Alma School Rd. to the Salt River	1969
Apache Junction FRS and Floodway	Lost Dutchman Blvd. and Idaho Rd.	1988
Arizona Canal Diversion Channel	Arizona Canal, 37th Street to New River	1994
Avondale Landfill Excavation	Dysart Rd. and Buckeye Rd.	1986
Baseline Rd. Storm Drain	Baseline Rd., 7th Ave. to 43rd Ave.	2002
Beardsley Rd. Drainage System (7th Ave. to 23rd Ave.)	Beardsley Rd., 7th Ave. to 23rd Ave.	1995
Bethany Home Outfall Channel (Phase I)	Bethany Home Rd., SR-101L to New River	2000
Bethany Home Outfall Channel (Phases IIA, IIB and IIC)	Bethany Home Rd., SR-101L to 83rd Ave.; Grand Canal, Bethany Home Rd. to 67th Ave.	2008
Broadway Rd. Collector Channel (Broadway Rd. to EMF)	Approximately 1/2 mi. east of Higley Rd., Broadway Rd south for 1/3 mi. to EMF	1998
Buckeye FRS No. 1	I-10, 331st Ave. to 257th Ave.	1975
Buckeye FRS No. 2	I-10, 254th Ave. to 237th Ave.	1975
Buckeye FRS No. 3	I-10, 235th Ave. to 215th Ave.	1975
Bullard Wash (Phase 1)	Bullard Wash, Lower Buckeye Rd. alignment to Gila River	2001
Bulldog Floodway	Apache Junction FRS to Signal Butte FRS	1988
Cactus Rd. Flood Control System	Cactus Rd., Scottsdale Rd. to 64th St.; 68th St., Cactus Rd. to Mescal Park	1991
Cactus Rd. Storm Drain (67th Ave. to SR-101L)	Cactus Rd., 67th Ave. to Agua Fria Freeway (SR-101L)	1998
Camelback Ranch Levee	Agua Fria River and Camelback Rd.	1999
Camelback Side Drain Extension	Camelback Rd., 64th St. to 68th St; Lafayette Blvd., 64th St. to 68th St.	1986
Carefree Town Center Drainage	Area bounded by Sundance Tr. / Tom Darl. Dr. (NW), Bloody Bas. Rd. / Tranquil Tr. (SE)	2002
Casandro Wash Dam	North of US-60, between Mariposa Dr. alignment and Los Altos Dr. alignment	1996
Casandro Wash Outlet	Jackson St., Navajo St. to Mohave St.; Mohave St., Jackson St. to Casandro Wash	1996
Cave Buttes Dam	16th St. alignment and Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 1	18th St. alignment and Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 2	32nd St. alignment , 1/2 mi. north of Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 3	9th St. alignment and Dixileta Dr. alignment	1980
Cave Creek Channelization	Deer Valley Rd. to Arizona Canal	1991
Cave Creek Dam	16th St. alignment and Jomax Rd. alignment	1923
Centennial Levee	South of I-10, T2N/R9W, T2N/R10W	1985
Central Arizona Project Detention Basin No. 1	Approximately Sossaman Rd. alignment and approximately Mclellan Rd. alignment	2001
Central Arizona Project Detention Basin No. 2	93rd St. and University Dr.	2001
Central Arizona Project Detention Basin No. 3	Approximately 96th St. and University Dr.	2001
Central Arizona Project Detention Basin No. 4	Crismon Rd. and Apache Tr.	2001
Central Arizona Project Detention Basin No. 5	Northeast corner of Cheshire St. and Southern Ave.	2001
Central Chandler Area Drainage System	Area bounded by Ray Rd. (N), Pecos Rd. (S), SR-101L (W), Arizona Ave. (E)	2005
City of Phoenix Dam No. 7 Rehabilitation	Phoenix North Mountain Preserve, approximately 2nd St. and Aster Dr.	2009
Colter Channel	Between Camelback Rd. and Missouri Ave., Litchfield Rd. to Agua Fria River	1995
Doubletree Ranch Road System	Doubletree Ranch Rd., Tatum Blvd to Indian Bend Wash at 58th St. alignment	2004
Dreamy Draw Dam	SR-51 and Northern Ave.	1973
Dysart Drain	Between Olive Ave. and Glendale Ave., Reems Rd. to Agua Fria River	1996
East Maricopa Floodway	Between Val Vista Dr. and Sossaman Rd., Brown Rd. to GRIC to the Gila River	1989
El Mirage Drain	El Mirage Rd., from Deer Valley Rd. to a point 1 1/4 mi. south, to Agua Fria River	1990
Elliot Rd. Basin and Channel	Approx. Elliot Rd., approx. Signal Butte Rd. to SR-202L; Crismon Rd. 0.5 mi. north	2007
Ellsworth Rd. Channel at Phoenix-Mesa Gateway Airport	North and East boundaries of Phoenix-Mesa Gateway Airport	2008
Gila / Salt River Clearing (Gillespie Dam to 91st Ave.)*	Gila / Salt River, Gillespie Dam to 107th Ave.	1985
Gila Drain Storm Drain	Rural Rd., 1/2 mi. south of Guadalupe Rd. to 1/2 mi. south of Warner Rd. (Hanger Park)	1988

Project	Location	Year
Gilbert Crossroads Park Basin	Greenfield Rd. and Ray Rd.	1992
Golden Eagle Park Dam	Golden Eagle Blvd. and Palisades Blvd.	2002
Greenway Parkway Channel (9th St. to Cave Creek Rd.)	Greenway Parkway, 9th St. to Cave Creek Rd.	2002
Guadalupe Box and Channel	Guadalupe Rd., Sossaman Rd. to the EMF at Power Rd.	1989
Guadalupe Drainage Improvement Project	Town of Guadalupe (Various Basins)	2003
Guadalupe FRS	West side of I-10, between Guadalupe Rd. and Baseline Rd.	1975
Harquahala Floodway	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982
Harquahala FRS	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982
Hawes Rd. Channel (Emelita Ave. to Main St.)	Hawes Rd., Apache Tr. (Main St.) To Emelita Ave. (1/2 mi. north of Southern Ave.)	2004
Hermosa Vista / Hawes Rd. Storm Drain and Basin	Area bounded by McDowell Rd. (N), Hermosa Vista Dr. (S), Spook Hill FRS (W), 90th St. (E)	2009
Holly Acres Levee and Bank Stabilization	Gila River North Bank, El Mirage Rd. to 113th Ave.	1984
Indian Bend Wash	Between Hayden Rd. and Scottsdale Rd., Indian Bend Rd. to Salt River at SR-202L	1985
Indian School Rd. Drain (107th Ave. to Agua Fria)	Indian School Rd., 107th Ave. to Agua Fria River	1989
Laveen Area Conveyance Channel	Area bounded by Southern Ave. (N), South Mtn. Ave. alignment (S), GRIC (W), 43rd Ave. (E)	2009
Maryvale Stadium West Inlet Channel	Grand Canal, between Indian School Rd. and Osborn Rd., 57th Ave. to 51st Ave.	2001
McMicken Dam	Area bounded by Grand Ave. (N), Peoria Ave. (S), 165th Ave. (E), 199th Ave. (W)	1956
McMicken Dam Outlet Channel	Extends 5.5 mi. northeast of northeast end of McMicken Dam	1956
New River Channelization (Bethany Home Rd. to Skunk Creek)	New River, Bethany Home Rd. to Olive Ave.	1996
New River Dam	Alignment of 79th Ave. and approximately Pinnacle Vista Rd.	1985
New River Dam Dike No. 1	Lake Pleasant Rd. and Dixileta Dr. Alignment	1985
Northern and Orangewood Storm Drain	Between Butler Dr. and Glendale Ave., 63rd Ave. to Agua Fria River	2001
Northern Ave. Bridge over New River	Northern Ave. and New River	1992
Oak St. Storm Drain (58th St. to Indian Bend Wash)	Oak Street, 58th St. to Indian Bend Wash	2000
Old Cross Cut Canal	48th St., Arizona Canal to McDowell Rd.	1991
Olive Ave. Storm Drain (51st Ave. to 91st Ave.)	Olive Ave., 51st Ave. to 91st Ave.	1995
Osborn Rd. Storm Drain	Between Osborn Rd. and Thomas Rd., 60th St. to Ind. Bend Wash at 76th St. and Earl Dr.	2001
Paradise Valley Detention Basin No. 4	Paradise Valley Community College (Component of Upper E. Fork Cave Creek)	1991
Pass Mountain Diversion Channel	McKellips Rd., Crismon Rd. to Signal Butte Rd., south to behind Signal Butte FRS	1987
Perryville Bank Stabilization	North bank of Gila River, between Perryville Rd. and Cotton Ln.	1984
Powerline Floodway	Powerline FRS, southwest to Ray Rd. alignment at GM, to EMF at Sossaman Rd.	1968
Powerline FRS	US-60 and Guadalupe Rd. alignment	1967
Price Road Drain	SR-101L (Price), Salt River to 1/2 mi. south of Guadalupe Rd. (Carriage Lane Park)	1993
Queen Creek Channel (Hawes to Power)	Queen Creek, Hawes Rd. to Power Rd.	2006
Queen Creek Channel (Recker to Higley)	Queen Creek, Recker Rd. to Higley Rd.	2009
Queen Creek Road Basin	McQueen Rd. and Queen Creek Rd.	2009
Rittenhouse FRS	US-60, Queen Creek Rd. alignment	1969
Rittenhouse Road Channel	Rittenhouse Rd., Queen Creek Rd. to the EMF at Pecos Rd.	1997
Roosevelt Irrigation District Canal Overchute	Litchfield Rd. and RID Canal	1998
Saddleback Diversion Channel	South of I-10, T2N/R8W, T1N/R8W	1981
Saddleback FRS	South of I-10, T2N/R8W, T1N/R8W	1981
Salt River Channel (McClintock Dr. to Price Rd.)	North bank of Salt River, McClintock Dr. to Price Rd.	1998
Salt River Channel (Price Rd. to McKellips Rd.)	Salt River, Price Rd. to McKellips Rd.	1998
Salt River Channel (SR-143 to McClintock Dr.)	Salt River, SR-143 to McClintock Dr.	1991
Salt River Low Flow Ch. (19th Ave. to I-10) (Phx. Rio Salado)	Salt River, 19th Ave. to I-10 at approximately 30th St. alignment	2002
Scatter Wash Channel (43rd Ave. to 35th Ave.)	Scatter Wash, 43rd Ave. to 35th Ave.	1995
Scottsdale Rd. Drainage (Thunderbird to Doubletree Ranch)	Approximately Scottsdale Rd., Thunderbird Rd. to Doubletree Ranch Rd.	2008
Signal Butte Floodway	Between Mclellan Rd. and Adobe Rd., Signal Butte FRS to CAP at Ellsworth Rd.	1984
Signal Butte FRS	Southwest of Signal Butte Rd. and McKellips Rd.	1987
Skunk Creek / ACDC Low Flow Channel	Skunk Creek, New River to 75th Ave.; ACDC, 73rd Ave. to Skunk Creek	2007
Skunk Creek Channel and Levee	Skunk Creek, approximately Jomax Rd. alignment to Central Arizona Project	1983
Skunk Creek Channel Imp. (75th Ave. to 51st Ave.)	Skunk Creek, 75th Ave. to 51st Ave.	2000
Skunk Creek Sports Complex Bank Protection	Skunk Creek, New River to 75th Ave.	1999
Sonoqui Wash Channelization (Higley to Chandler Heights)	Sonoqui Wash, Higley Rd. and Ocotillo Rd. to Chandler Heights Rd. and Sossaman Rd.	2008
Sossaman Channel and Basin	Sossaman Rd., Southern Ave. to Guadalupe Rd. (Basin at US-60)	1977
Southeast Phoenix Regional Drainage System	SR-202L and 48th St.	2002
Southeast Valley Regional Drainage System	SR-202L to Pecos Rd. 1/2 mi. west of Kyrene Rd., to I-10, south to the Gila Drain floodway	2002
Spook Hill FRS and Floodway	SR-202L, Power Rd. to 1/4 mi. south of Brown Rd.; CAP, SR-202L, north 1 1/2 mi.	1979
Spook Hill FRS Rehabilitation	SR-202L, Power Rd. to 1/4 mi. south of Brown Rd.; CAP, SR-202L, north 1 1/2 mi.	2008
Sun City Drains	Sun City, T4N/R1W	1990
Sun City West Drains	Sun City West, T3N/R1E	1990
Sunnycove Dam	Kellis Rd. alignment and Turtleback Ln. alignment	1976
Sunset / Sunnycove Pipeline	Sunnycove Dam, to a point 1 mi. northeast	1976
Sunset Dam	South of US-60, between Cucuracha St. alignment and Whipple Ct. alignment	1976
Tatum Wash Detention Basin	45th St. and Shea Blvd.	1998
University Drive Basin	64th St. and University Dr.	1992
Upper East Fork Cave Creek	Area bounded by SR-101L (N), Bell Rd. (S), 9th St. (W), 32nd St. (E); 4 basins & PVCC	1996
Vineyard FRS	US-60 and Ray Rd. alignment	1968
White Tanks FRS No. 3	Jackrabbit Tr. alignment and Glendale Ave. alignment	1954
White Tanks FRS No. 3 North Inlet Channel	Beardsley Canal, Olive Ave. to White Tanks FRS No. 3	2008
White Tanks FRS No. 4	Jackrabbit Tr. and Van Buren St.	1954
Wickenburg Downtown Flooding Hazard Mitigation	Sol's Wash, approximately Mariposa Dr. alignment to Hassayampa River	2009

\*Initially cleared; conditions subsequently reversed.

## Appendix B

### Projects Not Included in the 5-Year Capital Improvement Program Included in the District 15-Year Plan

#### Recommended by Prioritization Procedures Through Fiscal Year 2010

Cost Estimates Per Original Submittals

Year	Description	Sponsor	Est. District Cost	Est. Total Cost
2000	Meridian North and South Channels	Mesa	1,800,000	2,400,000
2001	Arcadia Area Drainage Project	Phoenix	6,000,000	12,000,000
2002	Bethany Home Rd. Storm Drain (59th Ave. to 51st Ave.)	Glendale	1,575,000	3,150,000
2002	Sand Tank Wash Flood Control Improvements	Gila Bend	10,534,000	11,707,000
2002	South Gila Bend Drainage Improvements	Gila Bend	283,000	283,000
2006	27th Ave. and South Mountain Ave. Detention Basin	Phoenix	1,800,000	3,600,000
2006	43rd Ave. and Baseline Rd. Detention Basin	Phoenix	1,800,000	3,600,000
2006	Gila River Channel at Cotton Lane	MCDOT	2,700,000	14,500,000
2006	Highline Western Canal Storm Drain Improvements	Tempe	1,720,000	3,440,000
2007	Beardsey Rd. Channel Improvements	Peoria	1,300,000	2,600,000
2007	Skunk Creek Channel at Pinnacle Peak Rd. and 35th Ave.	Phoenix	4,250,000	8,500,000
2007	Skunk Creek Levees at the Central Arizona Project	FCDMC	2,670,000	8,900,000
2007	Sonoqui Wash Channel (Crismon to Empire)	Queen Creek	5,300,000	12,500,000
2008	Downtown Phoenix Drainage Improvements (Full Plan)	Phoenix	5,500,000	11,000,000
2008	Happy Valley Parkway Grade Control Structure at Agua Fria	MCDOT	1,000,000	2,000,000
2008	Litchfield Rd. Storm Drain	Litchfield Park	741,108	1,482,216
2008	Pecos North and South Basins	Mesa	11,625,000	15,500,000
2008	Pecos Rd. Channel	Mesa	10,500,000	14,000,000
2008	Upper Ellsworth Drainage System	Mesa	2,320,000	3,570,000
2009	20th Ave. and Turney Ave. Detention Basin and Storm Drain	Phoenix	6,500,000	13,000,000
2009	Las Haciendas Drainage Improvements	Phoenix	100,000	200,000
2010	Agua Fria River Channelization (Northern Pkwy. To Glendale Ave.)	MCDOT	1,155,000	14,083,000
2010	Berneil Channel Drainage Improvements	Paradise Valley	5,500,000	11,000,000
2010	Happy Valley Channel	Surprise	1,130,000	2,260,000
2010	Jefferson St. and I-17 Storm Drain	Phoenix	1,550,000	3,100,000
2010	Martin Acres	Surprise	2,285,000	4,571,000
Total			91,638,108	182,946,216

## Appendix C

### Flood Control District Capital Improvement Program Projected Intergovernmental Revenue

**Fiscal Year 2010 - Fiscal Year 2014**

Values are in Thousands of Dollars

Project	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	5-Year
126.02.30 Gila River Bank Stabilization	0	125	125	1,750	1,750	3,750
201.02.31 White Tanks FRS No. 4 Rehabilitation	0	9,800	0	0	0	9,800
207.01.31 Buckeye FRS No. 1 Rehabilitation	0	5,000	7,000	0	0	12,000
420.02.31 Hermosa Vista / Hawes Rd. Storm Drain and Basin	1,363	0	0	0	0	1,363
420.03.31 McDowell Rd. Basin & Storm Drain	1,277	0	0	0	0	1,277
420.XX.X1 Oak St. Detention Basin and Storm Drain	140	140	0	0	700	980
442.11.31 Siphon Draw Drainage Improvements	1,986	1,080	0	0	0	3,066
450.06.31 Pinnacle Peak Rd. Channel (89th Ave. to Agua Fria River)	1,780	0	4,150	4,150	0	10,080
470.04.30 White Tanks FRS No. 3 Modifications	3,272	0	0	0	0	3,272
470.12.31 Reems Road Channel and Basin	263	0	0	0	0	263
470.13.31 Bullard Wash (Phase II)	0	1,500	2,500	0	1,500	5,500
470.XX.X1 Waddell Rd. Drainage Improvements	0	0	0	200	1,000	1,200
480.04.32 Sonoqui Wash Channelization (Chandler Heights to Crismon)	300	0	0	0	0	300
565.04.31 75th Ave. Storm Drain and DRCC	554	0	0	0	0	554
565.04.33 DRCC (75th Ave. to 107th Ave.)	250	250	0	0	0	500
620.03.32 Bethany Home Outfall Channel	2,088	0	390	0	0	2,478
620.03.33 Camelback Rd. Storm Drain (59th to 75th Ave.)	318	0	3,500	0	0	3,818
Reimbursement Revenue Total	13,591	17,895	17,665	6,100	4,950	60,201

## Appendix D

### Completed Drainage Studies and Master Plans Through Fiscal Year 2009

Title	Type*	Year
Adobe Dam / Desert Hills	ADMP	2003
Agua Fria River	WCMP	2001
Aguila	ADMP	2004
Apache Wash	DMP	1990
Arizona Canal Diversion Channel	ADMP	1995
Buckeye	ADMP	2009
Buckeye / Sun Valley	ADMS	2007
Carefree	DMP	2004
Cave Creek	DMP	2008
Durango	ADMP	2002
East Maricopa County	ADMS	1987
East Maricopa Floodway Capacity Mitigation	Study	2000
East Mesa	ADMP	1998
El Rio	ADMP/WCMP	2006
Fountain Hills	ADMP	1997
Gila Bend	ADMP	2003
Gilbert-Chandler	ADMS	1988
Gilbert-Chandler Update	ADMS	1994
Glendale / Peoria	ADMP	1987
Glendale / Peoria Update	ADMP	2002
Granite Reef Wash	DMP	2002
Higley	ADMP	2000
Laveen	ADMS	1994
Laveen / South Phoenix	ADMP	2001
Loop 303 Corridor / White Tanks Update	ADMP	2002
Lower Hassayampa	WCMP	2007
Maryvale	ADMS	1997
Metro Phoenix	ADMP	2008
Middle New River	WCMP	2001
North Peoria	ADMP	2002
Paradise Valley, Scottsdale, Phoenix	Study	1978
Queen Creek	ADMS	1991
Queen Creek / Sonoqui Wash	HMP	2000
Rio Verde	ADMP	2006
Scottsdale Road Corridor (Paradise Valley, Scottsdale, Phoenix)	DMP	2002
Scottsdale, Tempe, Phoenix	Study	1997
Skunk Creek	WCMP	2001
Southeast Mesa	ADMS	1996
Spook Hill	ADMP	2002
Sun Valley	ADMP	2006
Upper Cave Creek / Apache Wash	WCMP	2001
Upper East Fork Cave Creek	ADMP	1987
Upper New River	ADMP	2008
White Tanks / Agua Fria	ADMS	1992
Wickenburg	ADMS	1992
Wittmann	ADMP	2009
Wittmann	ADMS	1989

\* Acronym list:

ADMP: Area Drainage Master Plan  
 ADMS: Area Drainage Master Study  
 DMP: Drainage Master Plan  
 HMP: Hydraulic Master Plan  
 WCMP: Watercourse Master Plan



