



# Five-Year Capital Improvement Program

Fiscal Years 2011 to 2015





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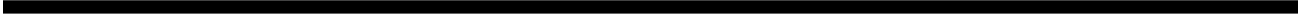
# Reems Road Channel and Basin

## Basin Completed October 2010



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# Siphon Draw Drainage Improvements Basin Completed February 2011





## **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 projects.

### **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 Capital Improvement Program – the revolving 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, this plan 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.

Capital projects account for approximately 65% of the District's annual expenditures.

The District manages its Capital Improvement Program as mandated by state statutes under the direction established by the following Board of Directors policy resolutions:

- FCD 88-08A, General Funding Policy
- 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 Capital Improvement Program, all capital projects are evaluated under the Capital Improvement Program 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 capital projects for possible funding.

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

The District hosts 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 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 funding toward a project recommended under the 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 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 demolishes structures on purchased properties.

## **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, and County taxpayers do not pay for interest charges on District structures. Since much of the District's revenues are spent on the capital projects, taxpayers are investing in the future of the County, their property and their safety.

### **3.2 Flood Control Tax Levy Overview**

The majority of the District's revenue is derived from a flood control tax applied to secondary 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.

### **3.3 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 reverse in Fiscal Year 2011, consistent with the recent decline in the real estate market and lagging value assessments.

The District positioned itself to sustain operating capabilities during years of reduced tax revenues by developing a long-term revenue and expenditure forecasting model that identified the need to build fund balance reserves. The District executed recommendations of that plan, holding its capital budget fixed during periods of revenue growth and selling excess property.

In parallel, 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 35% below engineers' estimates since December 2007. The corresponding \$26 million savings has allowed the District to accelerate capital projects, putting flood hazard mitigation structures in place both ahead of schedule and under budget.

District Tax Rates by Fiscal Year

<u>Fiscal Year</u>	<u>Tax Rate</u>	<u>Tax Revenue</u>
2011	0.1489	\$68,019,592*
2010	0.1367	\$72,659,843
2009	0.1367	\$72,672,487
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

\*Value reports total tax levy and does not reflect projected uncollected taxes.

**3.4 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 2011 through 2015. Fiscal Year 2011 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 2012 through 2015 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 Capital Improvement Program is a function of District revenue projections. The five-year program reflected in this booklet assumes that District revenue will support an annual \$60 million Capital Budget from Fiscal Year 2011 through Fiscal Year 2015. 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 period; they do not represent total historical or anticipated project costs.

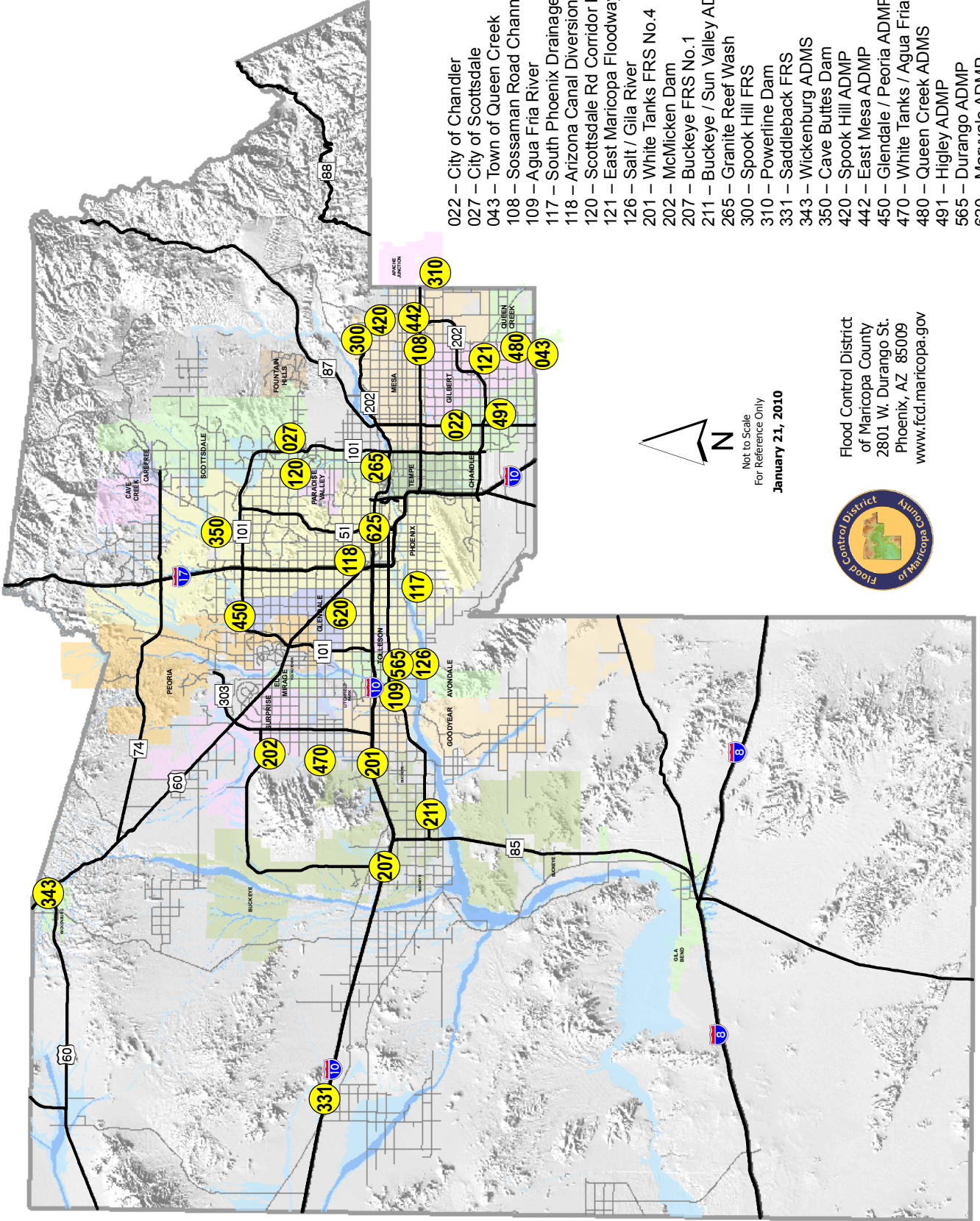
Included with each project description is the name and contact information for the responsible project manager. Project managers may also be contacted through the general District switchboard at 602-506-1501.

This report is available at: [www.fcd.maricopa.gov/Projects/PPM/cip.aspx](http://www.fcd.maricopa.gov/Projects/PPM/cip.aspx), and project status updates are published at [www.fcd.maricopa.gov/Projects/PPM/projStruct.aspx](http://www.fcd.maricopa.gov/Projects/PPM/projStruct.aspx).



# Flood Control District of Maricopa County CAPITAL IMPROVEMENT PROGRAM

Fiscal Years 2011 - 2015



- 022 – City of Chandler
- 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
- 120 – Scottsdale Rd Corridor DMP
- 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
- 350 – Cave Buttes Dam
- 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
- 620 – Maryvale ADMP
- 625 – Metro ADMP



Not to Scale  
For Reference Only  
**January 21, 2010**



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



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# Central Chandler Storm Drain Improvements

PCN: 022.01.32

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

602-506-4732

mwd@mail.maricopa.gov

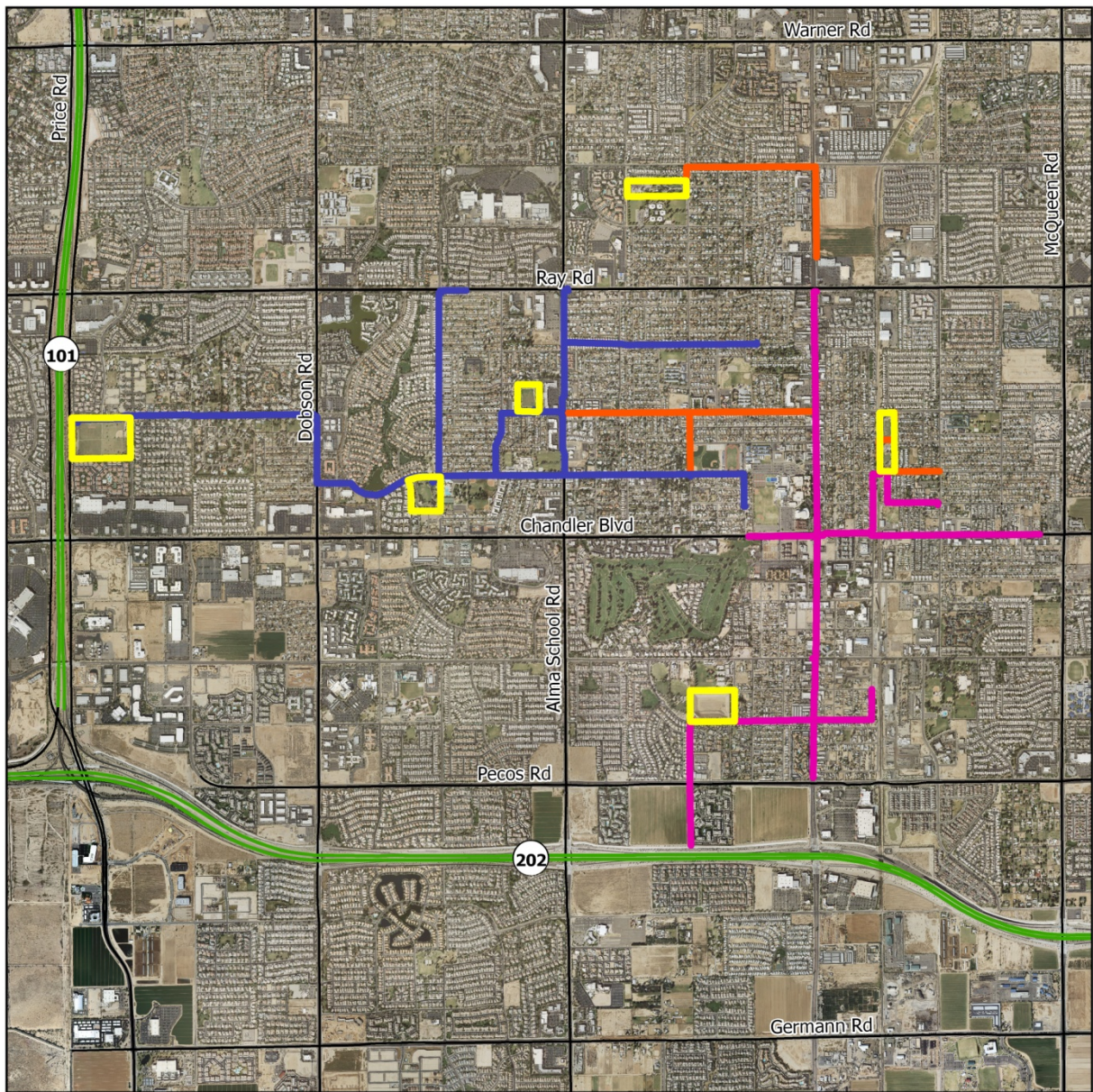
District: 1  
Jurisdiction: Chandler  
Origin: FY 2009 Prioritization Procedure  
Resolution: FCD 2008R004  
Agreement: Pending

The city of Chandler’s downtown area was developed in the 1940s to 1960s, prior to the adoption of city on-site retention policies, and has been subject to historic flooding problems. The area is largely flat and primarily drains through the city’s Arizona Avenue and Alma School storm drain systems; however, the drainage system also makes use of the Salt River Project “Chandler Drain” irrigation tailwater system.

Recommended by the city’s Storm Water Master Plan Update, the Central Chandler Storm Drain Improvements Project removes all local drainage connections to the Chandler Drain, reducing the chances of pollutants from this irrigation system being introduced into the city’s storm drain system, establishes a distinct city storm drain system and provides a 10-year level of protection to the two-square-mile affected area.

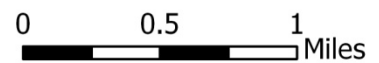
The District anticipates entering a cost-share agreement for design and construction of the project; however, implementation of the project has been delayed due to a lack of city funding.

Fiscal Year	Budget
FY 2011	\$5,000
FY 2012	\$5,000
FY 2013	\$15,000
FY 2014	\$155,000
FY 2015	\$1,310,000
5-Year Program	\$1,490,000



**Legend**

- Existing Basin
- Existing Alma School Drain
- Existing Arizona Avenue Drain
- Central Chandler Storm Drain Improvements



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# Upper Camelback Wash Drainage Improvements

PCN: 027.10.32

**Afshin Ahouraiyan, P.E., Project Manager**  
602-506-4519  
afa@mail.maricopa.gov

District: 2  
Jurisdiction: Scottsdale  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2009R001  
Agreement: 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 most of the area.

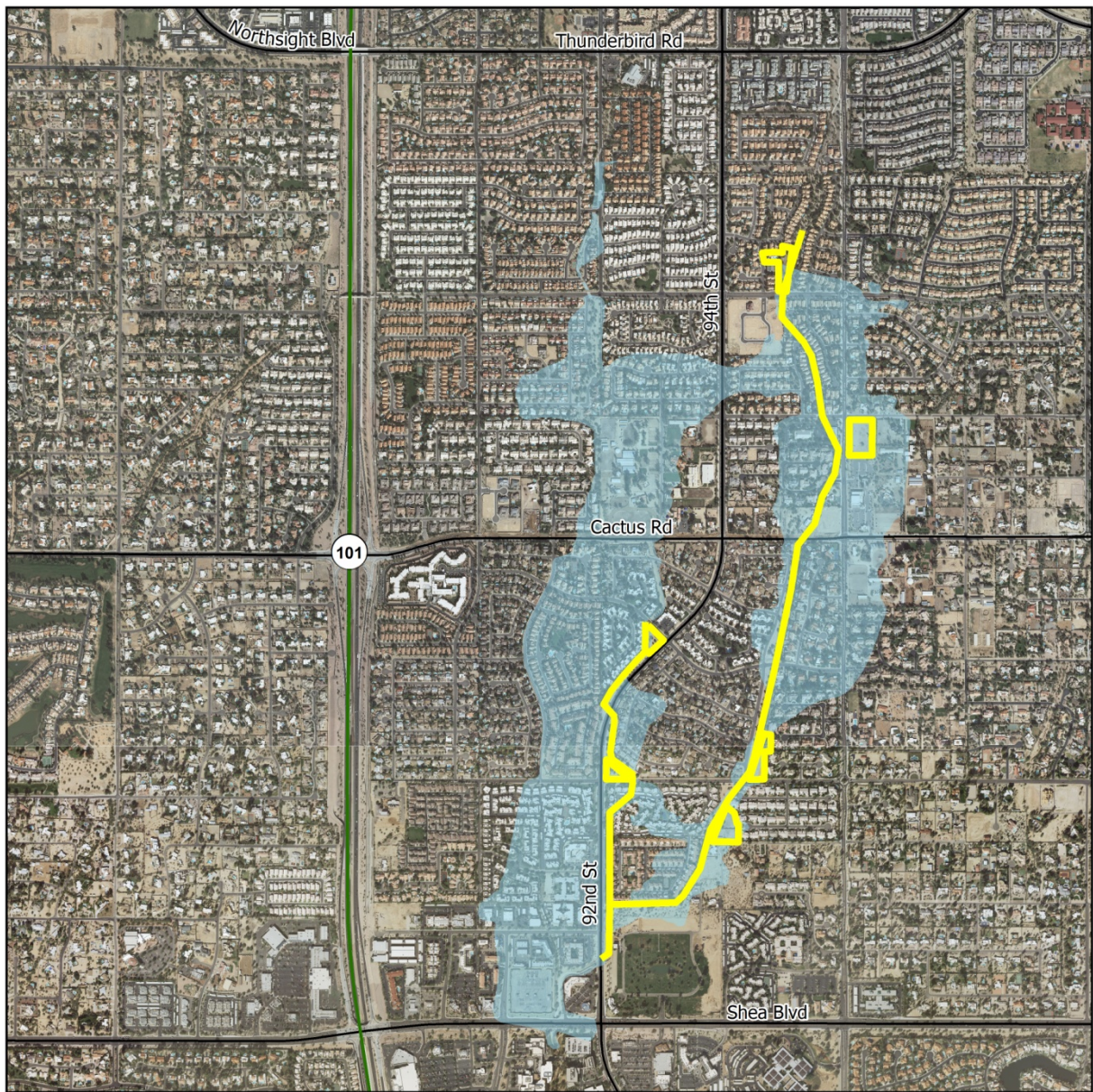
In advance of District participation, the city initiated design of the project, acquired rights-of-way and, during the widening of Cactus Road, constructed box culverts to accommodate the project.

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.

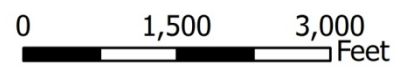
<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$3,550,000
FY 2012	\$3,550,000
FY 2013	\$10,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$7,110,000

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**Legend**

-  Upper Camelback Wash Drainage Improvements
-  Potential Floodplain



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# 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

District: 1  
Jurisdiction: Queen Creek  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2009R004  
Agreement: FCD 2009A003

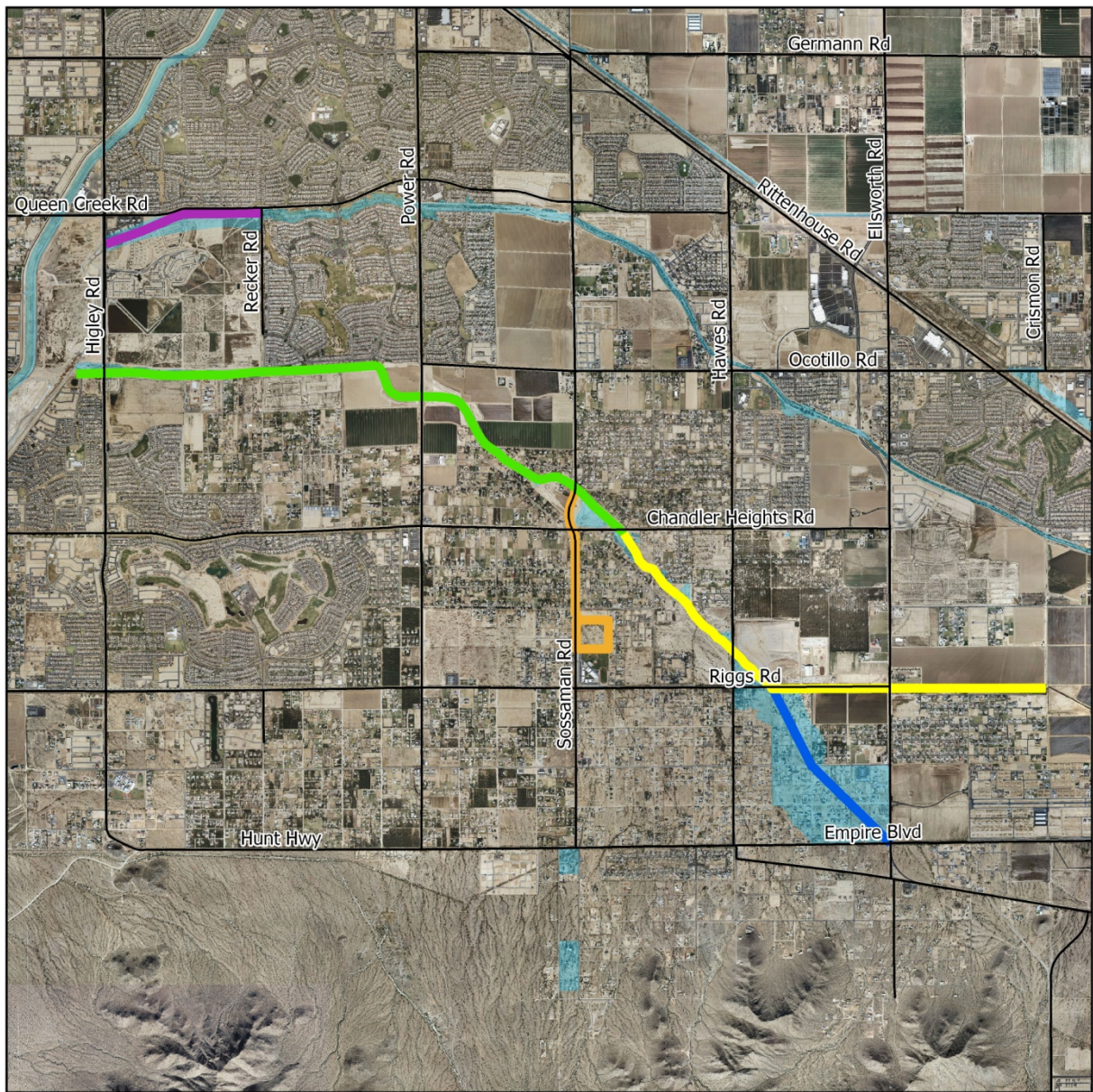
The town of Queen Creek completed the Cloud Road Channel capacity study in March 2003. The study recommended construction of a new basin and outlet in the area of Cloud Road and Sossaman Road to mitigate historical flooding to nearby homes along Cloud Road to the west.

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 in progress under the town's lead. 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	Budget
FY 2011	\$55,000
FY 2012	\$5,000
FY 2013	\$15,000
FY 2014	\$2,040,000
FY 2015	\$20,000
5-Year Program	\$2,135,000



**Legend**

- Existing Sonoqui Wash Improvements (Phase I)
- Sonoqui Wash Improvements (Phase II)
- Sonoqui Wash Improvements (Phase III)
- Cloud Rd. and Sossaman Rd. Basin and Outlet
- Queen Creek Channel (Recker Rd. to Higley Rd.)
- Floodplain
- Floodway



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# Sossaman Road Channel Improvements

PCN: 108.01.31

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

602-506-4732

mwd@mail.maricopa.gov

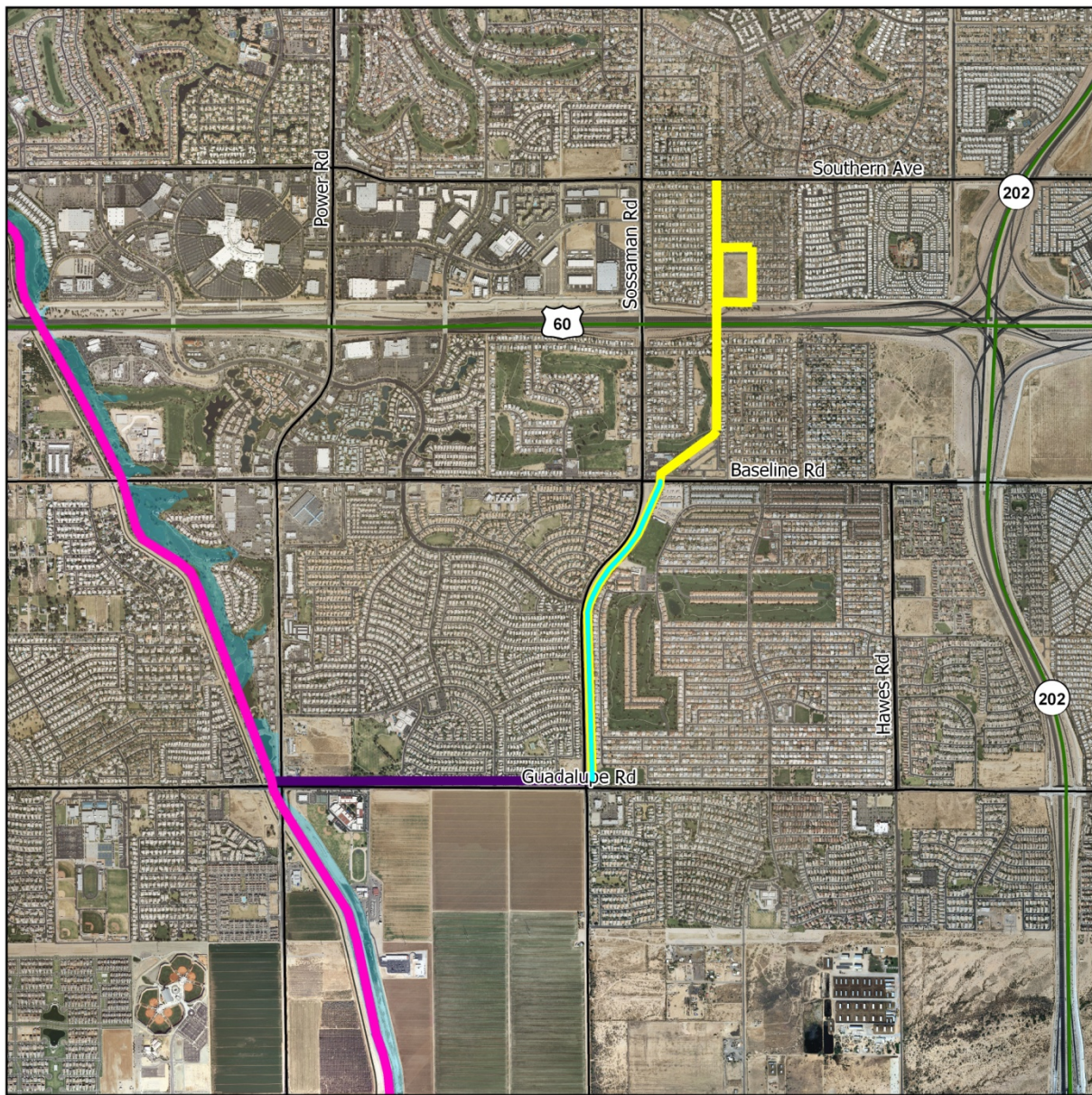
District: 2  
Jurisdiction: Mesa  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2009R005  
Agreement: None

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 to convey regional stormwater flows as part of a Maricopa County Highway Department project for Sossaman Road in 1981. The channel segment 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.

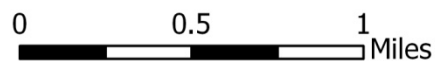
Design of these structural recommendations has been completed, and construction is in progress.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$10,000



**Legend**

- Existing Sossaman Channel and Basin
- Improvement Area
- Existing Guadalupe Box and Channel
- Existing East Maricopa Floodway
- Floodplain
- Floodway



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# Agua Fria River Levee Safety Improvements

PCN: 109.02.30

**Greg Jones, P.E., Project Manager**  
602-506-5537  
glj@mail.maricopa.gov

District: 5  
Jurisdiction: Avondale  
Origin: FY 2005 Prioritization Procedure  
Resolution: FCD 2008R009  
Agreement: FCD 2008A010

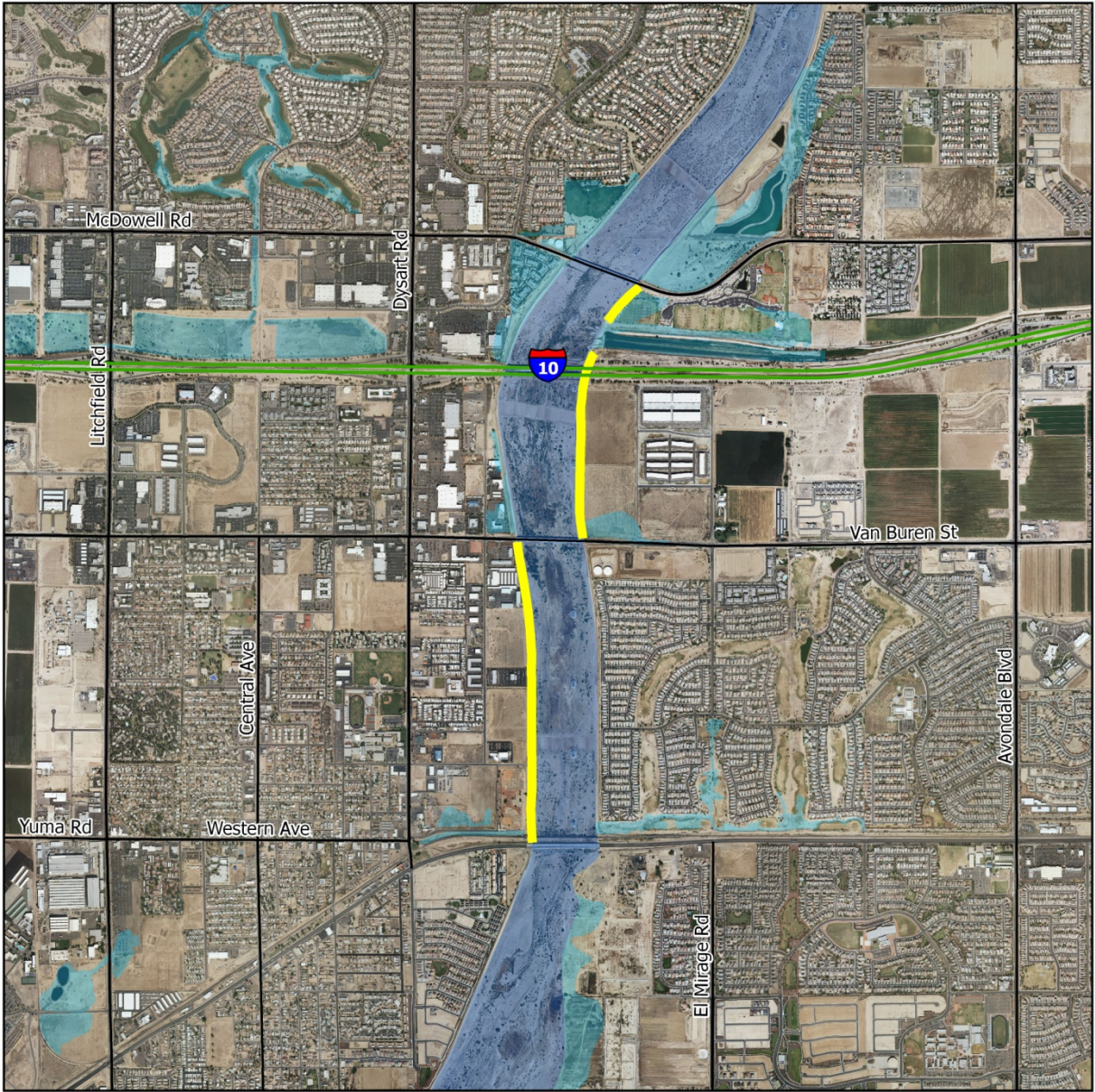
Channelization of the Agua Fria River, completed by the District and the U.S. Army Corps of Engineers in the 1980s, included construction of soil cement levees. The District entered IGA 2001A009 with the city of Avondale, granting the city a non-exclusive easement over certain District fee-held land,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

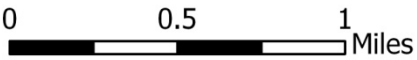
The city, under the IGA, will act as lead agency for installation of the pipe rail, and will assume operation and maintenance responsibility over the installed railing.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$5,000
FY 2012	\$5,000
FY 2013	\$5,000
FY 2014	\$220,000
FY 2015	\$20,000
5-Year Program	\$255,000



**Legend**

- Agua Fria Levee Improvement Area
- Floodplain
- Floodway



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# Laveen Area Conveyance Channel

PCN: 117.08.31

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

602-506-2943

bao@mail.maricopa.gov

District: 5  
Jurisdiction: Phoenix  
Origin: FY 2002 Prioritization Procedure  
Resolution: FCD 2000R011  
Agreement: FCD 2000A021, 2000A021A, 2000A021B

The Laveen Area Conveyance Channel Project improved the Maricopa Drain into a regional flood control facility capable of containing and conveying a 100-year flood event in the Laveen area from 43rd Avenue to the Salt River – a distance of approximately 5.8 miles. An associated flood detention basin at 43rd Avenue and Southern Avenue mitigates peak flood flows getting to the conveyance channel. The peak discharge at the outfall of the channel for the 100-year storm event is estimated to be 2,800 cubic feet per second.

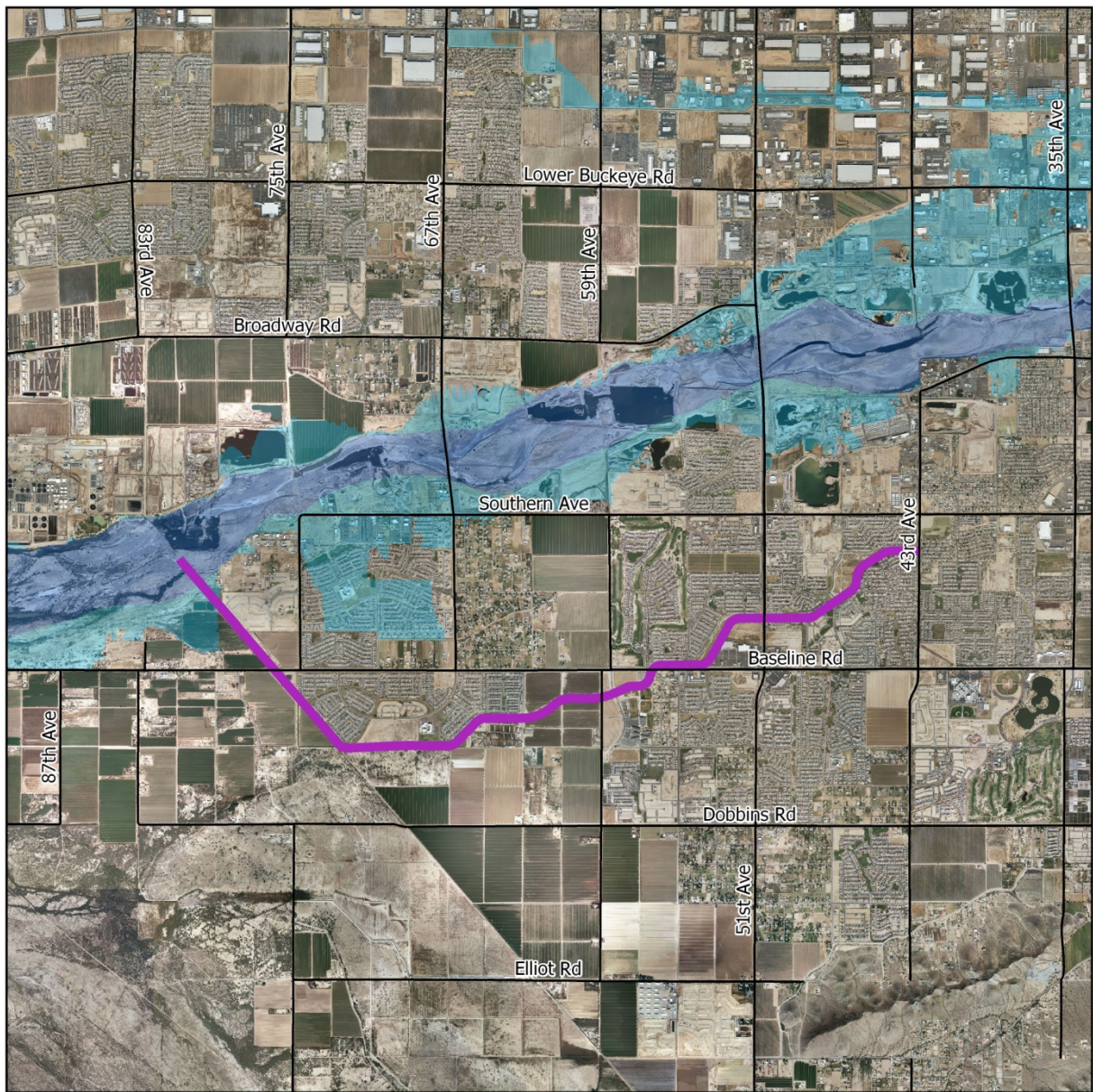
The channel and basin are grass-lined, and a concrete low-flow channel carries tailwater to the Salt River.

This project was constructed by a public-private partnership involving the Flood Control District, city of Phoenix, Maricopa County Department of Transportation and the Salt River Project.




The District's project involvement is complete, with the exception of litigation related to project rights-of-way condemnations, and the project is being maintained by the city of Phoenix.

Landscaping by the city is ongoing to allow the channel and basin to function as city park facilities.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$15,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$15,000



**Legend**

-  Laveen Area Conveyance Channel
-  Floodplain
-  Floodway



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# 23rd Avenue and Roeser Road Storm Drain and Detention Basin

PCN: 117.09.31

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

602-506-4771

csv@mail.maricopa.gov

District: 5  
Jurisdiction: Phoenix  
Origin: FY 2005 Prioritization Procedure  
Resolution: FCD 2003R008  
Agreement: FCD 2003A004, 2003A004A

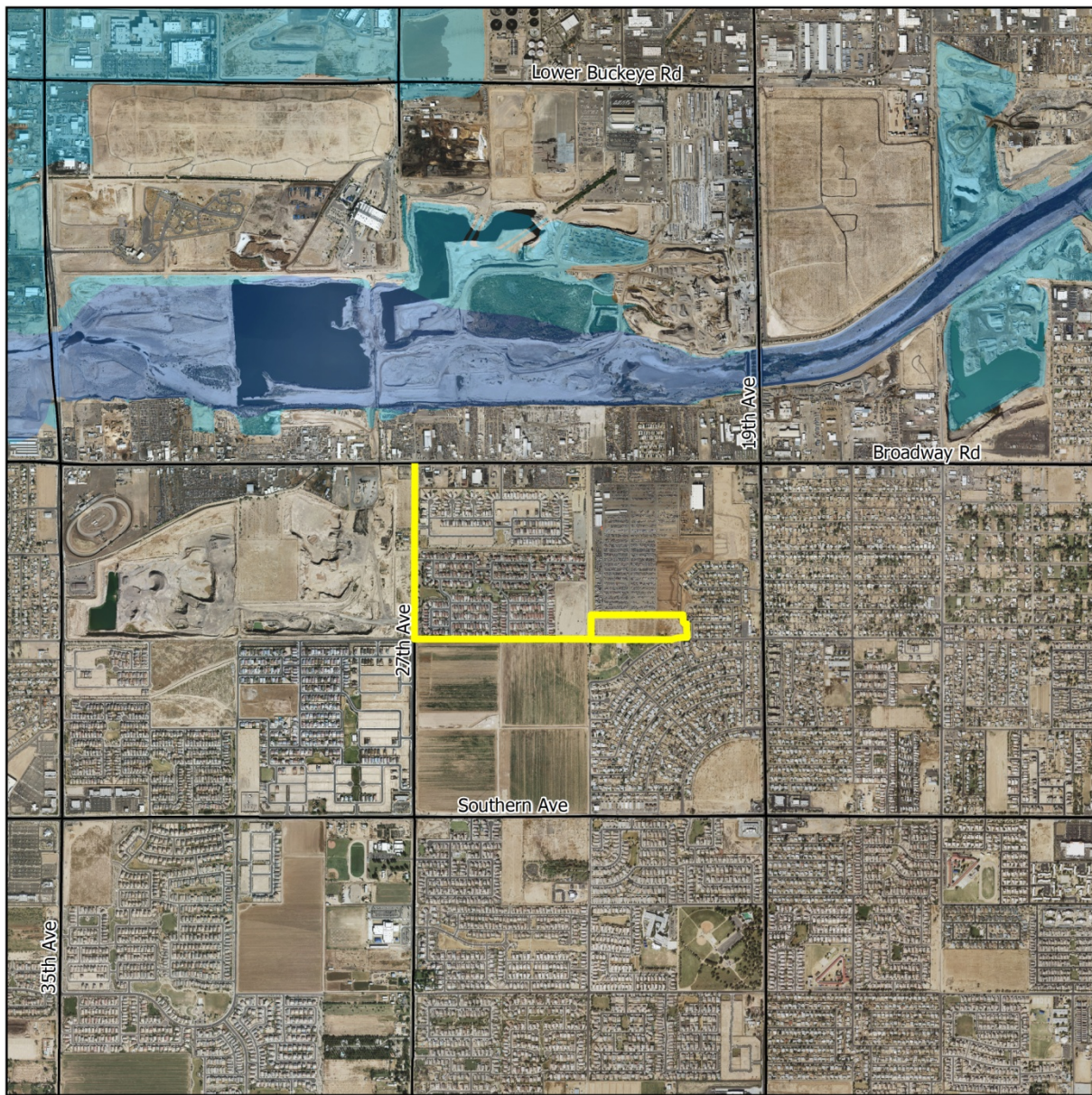
The 23rd Avenue and Roeser Road Detention Basin and Storm Drain are regional infrastructure components of the South Phoenix/Laveen Drainage Improvement Project.

A 10-acre detention basin, 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 the District are sharing equally in project costs.

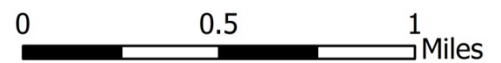
Design and storm drain construction are complete. Basin construction is in progress and will be completed early in Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$365,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$365,000



**Legend**

- 23rd Ave. & Roeser Rd. Basin & Storm Drain
- Floodplain
- Floodway



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# Arizona Canal Diversion Channel Improvements

PCN: 118.01.30

**Gary Wesch, P.E., Project Manager**  
602-506-4592  
garywesch@mail.maricopa.gov

District: 3, 4  
Jurisdiction: Phoenix  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2008R016  
Agreement: None

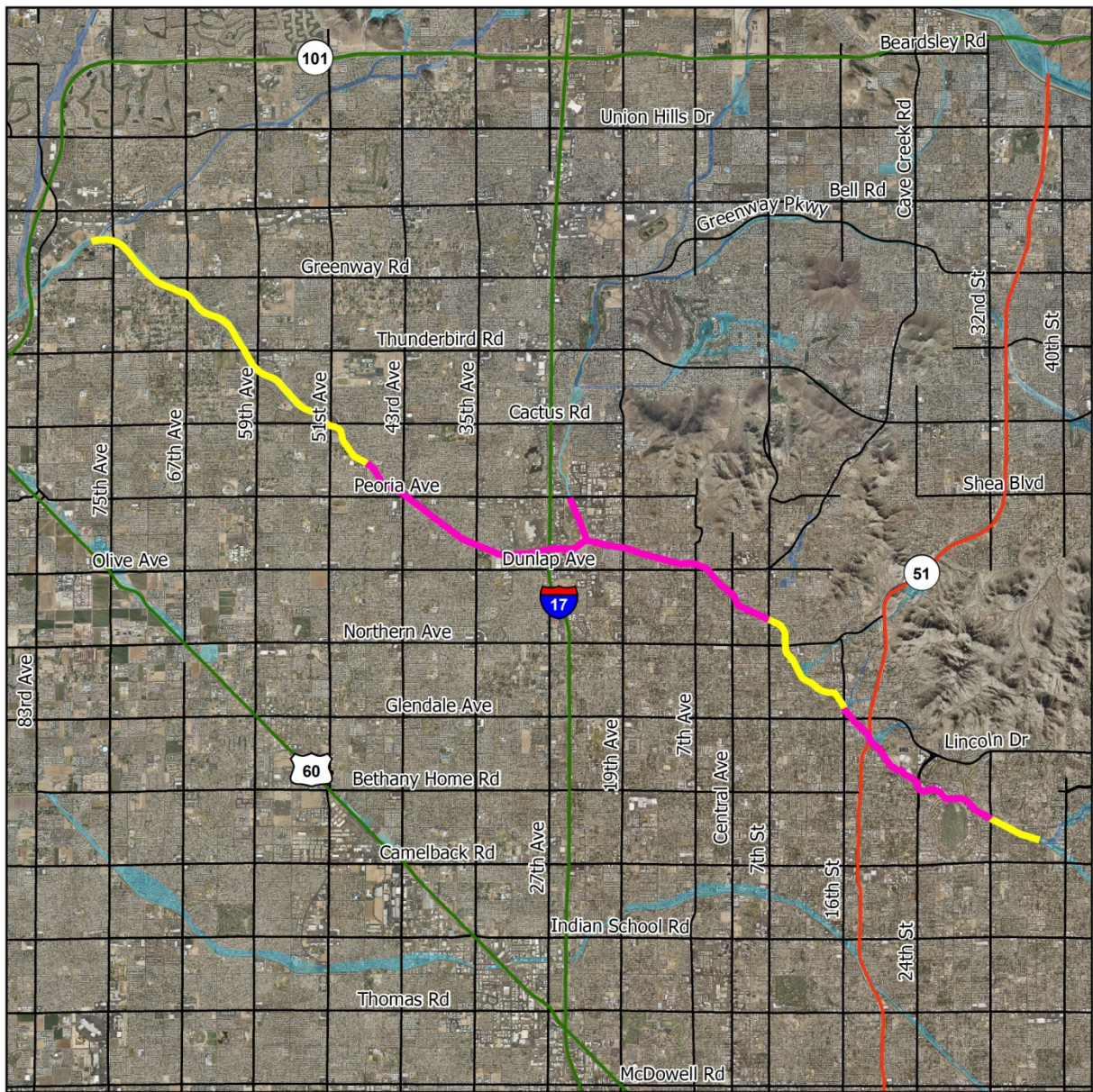
The U.S. Army Corps of Engineers, in partnership with the District, constructed the Arizona Canal Diversion Channel (ACDC) in the 1980s. The District owns, operates and maintains the channel.

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.

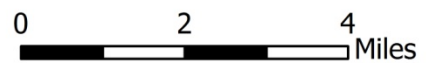
Construction is in progress, and all phases are expected to be completed during Fiscal Year 2011.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$333,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$333,000



**Legend**

- Channel Areas to be Improved
- Channel Areas to Remain Unmodified
- Floodplain
- Floodway



---

# Berneil Channel Modifications

PCN: 120.XX.X1

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

602-506-4519

afa@mail.maricopa.gov

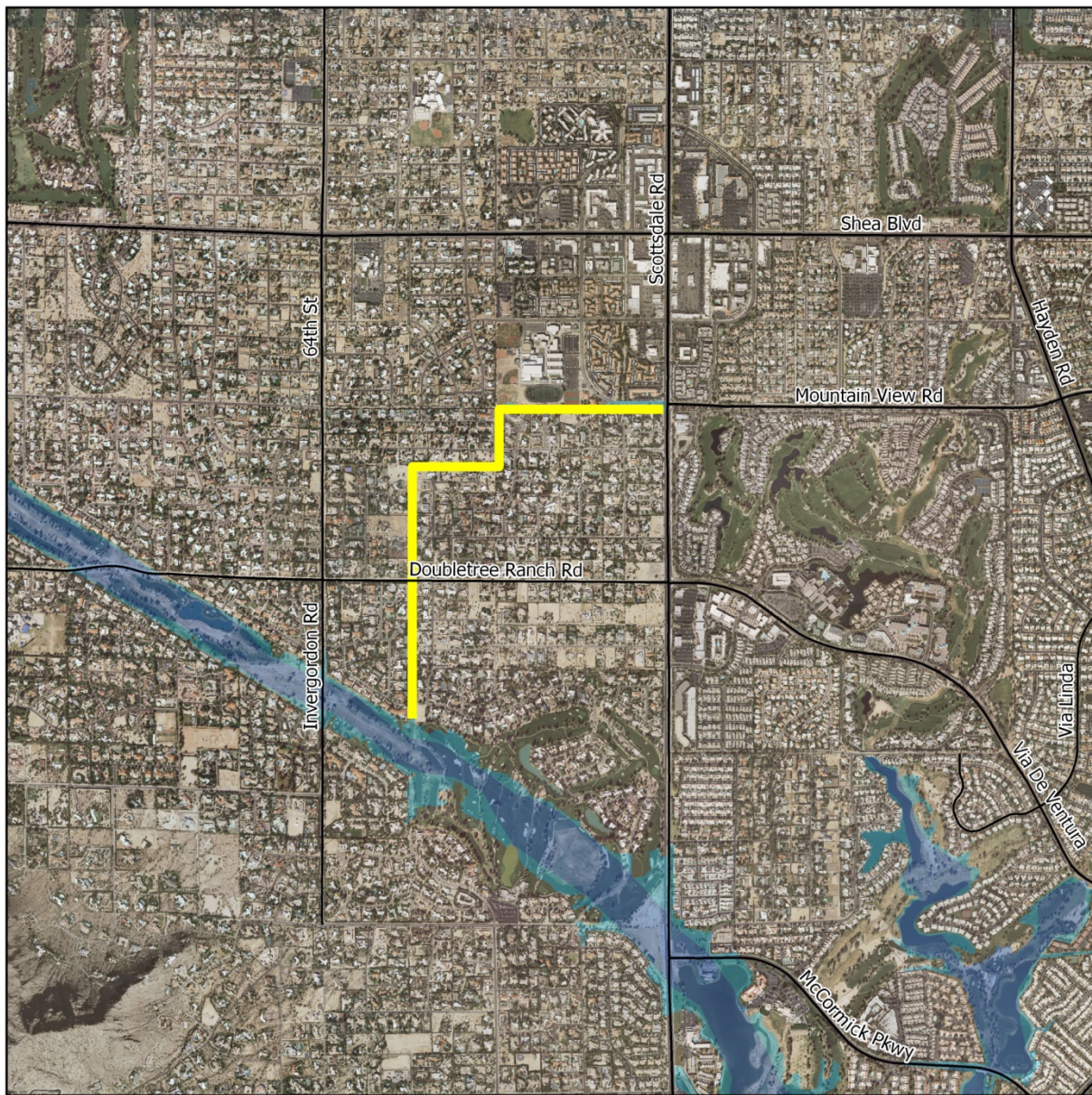
District: 2, 3  
Jurisdiction: Paradise Valley  
Origin: FY 2010 Prioritization Procedure  
Resolution: Pending  
Agreement: Pending

The Berneil Channel is operated and maintained by the town of Paradise Valley and generally conveys storm water between Scottsdale Road at Mountain View Road southwest to the Indian Bend Wash at approximately the 66th Street alignment. The channel is undersized for the 100-year event; in sections, it is unable to contain events of a 2-year return frequency.




The town submitted a project for modification of the Berneil Channel to the District's prioritization procedure, and the project was recommended. Ideally, a modification project would increase channel capacity to convey the 100-year event, but funding constraints may limit capacity improvements to address 10-year events.

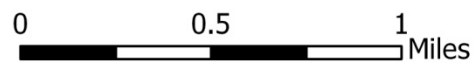
The town has completed a preliminary project study. Advancement of the project to final design and construction is largely dependent upon the availability of town funding.

Fiscal Year	Budget
FY 2011	\$0
FY 2012	\$5,000
FY 2013	\$700,000
FY 2014	\$30,000
FY 2015	\$6,150,000
5-Year Program	\$6,885,000



**Legend**

-  Berneil Channel Modifications
-  Floodplain
-  Floodway



---

# Rittenhouse Basin

PCN: 121.03.32

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

602-506-4771

csv@mail.maricopa.gov

District: 1  
Jurisdiction: Gilbert  
Origin: FY 2001 Prioritization Procedure  
Resolution: FCD 2001R006  
Agreement: FCD 2004A007

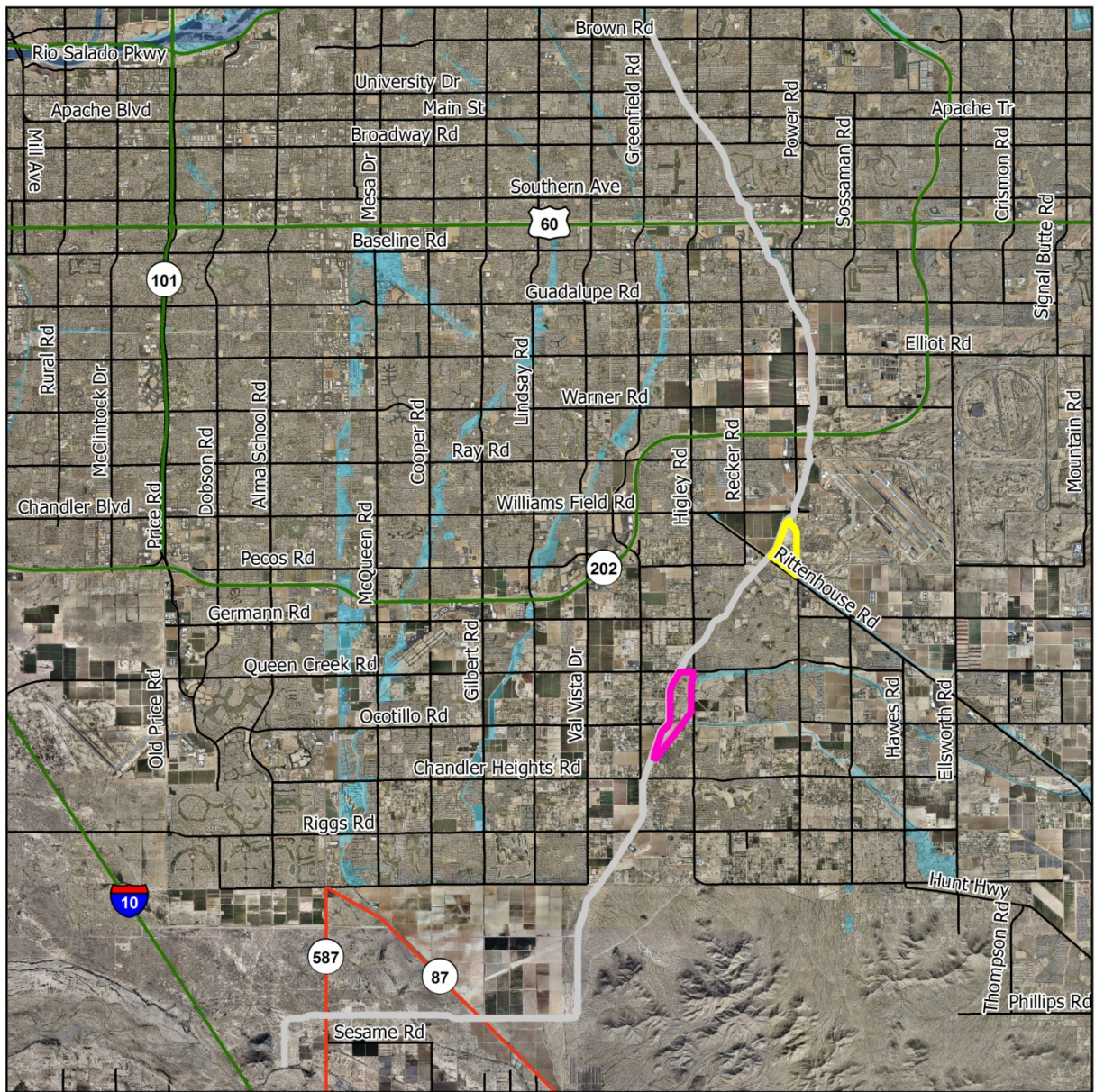
The U.S. Soil Conservation Service (now Natural Resources Conservation Service) completed the East Maricopa Floodway (EMF) in 1989 in partnership with the District and others. This 27-mile long earthen channel runs parallel to the Roosevelt Water Conservation District canal from north of Brown Road to 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.

The District initiated a study to examine EMF capacity following development of the adjacent area and identified drainage and flooding issues associated with the 15,000 cubic-feet-per-second (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.

Excavation of the Rittenhouse Basin is nearly complete. The town of Gilbert will fund recreational amenities and assume certain operation and maintenance obligations.

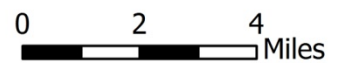
In April 2009, the town purchased a recreational use easement on the 160-acre basin site, generating approximately \$11 million in District revenue and partially offsetting the project's cost.

Fiscal Year	Budget
FY 2011	\$40,000
FY 2012	\$5,000
FY 2013	\$5,000
FY 2014	\$5,000
FY 2015	\$10,000
5-Year Program	\$65,000



**Legend**

- Rittenhouse Basin
- Chandler Heights Basin
- Existing East Maricopa Floodway
- Floodplain
- Floodway



---

# Chandler Heights Basin

PCN: 121.03.33

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

602-506-4771

csv@mail.maricopa.gov

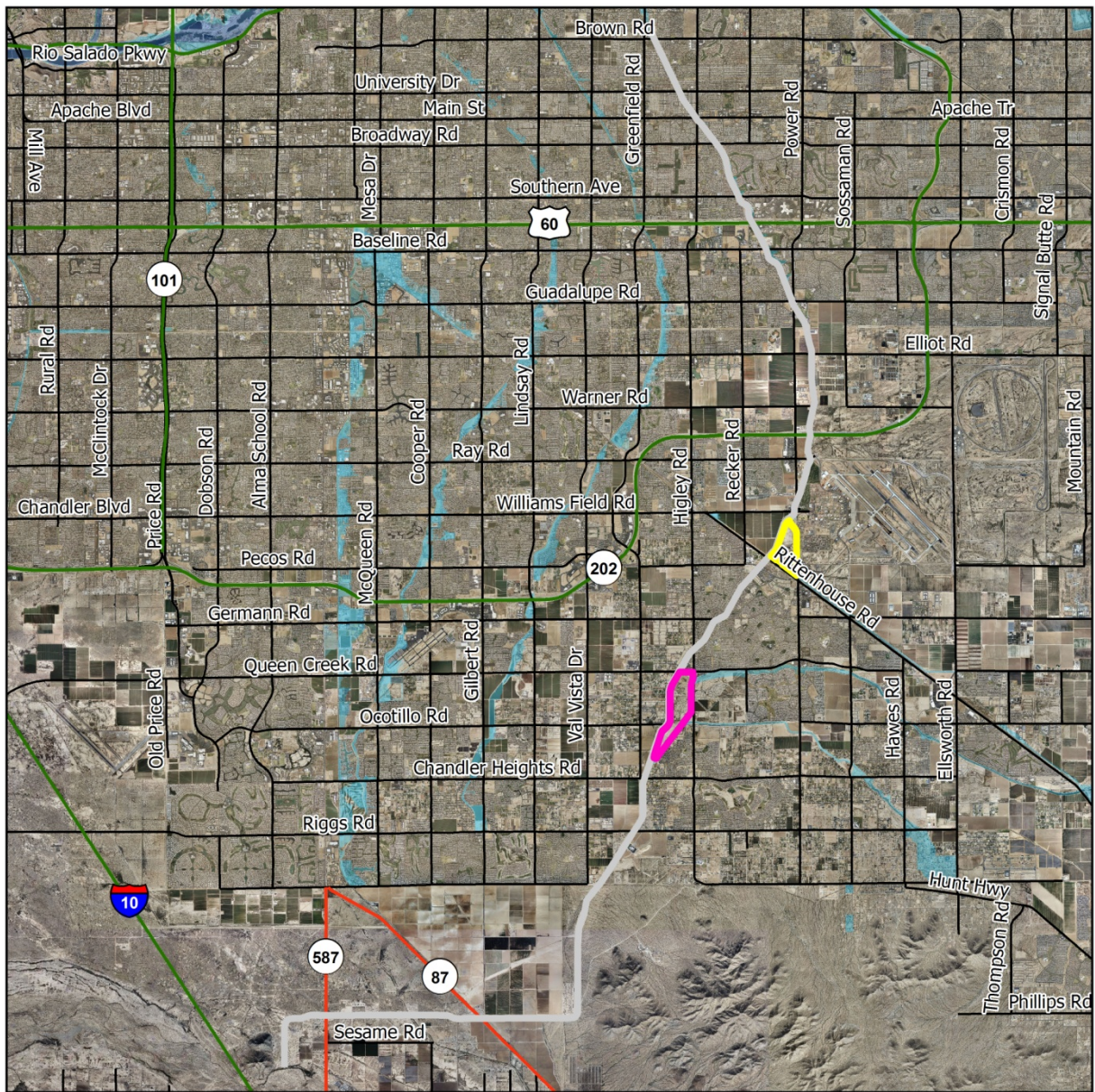
District: 1  
Jurisdiction: Gilbert  
Origin: FY 2001 Prioritization Procedure  
Resolution: FCD 2001R006  
Agreement: FCD 2004A007

The U.S. 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.

The District initiated a study to examine EMF capacity following development of the adjacent area and identified drainage and flooding issues associated with the 15,000 cubic-feet-per-second (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.

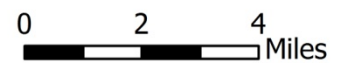
The Chandler Heights Basin will reduce flows from the Queen Creek and Sonoqui washes into the EMF. Construction is being accomplished in five phases. Design and the first two phases of construction have been completed. Future phases of construction will involve excavation of an additional 3 million cubic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

Fiscal Year	Budget
FY 2011	\$5,000
FY 2012	\$5,000
FY 2013	\$5,000
FY 2014	\$5,000
FY 2015	\$8,150,000
5-Year Program	\$8,170,000



**Legend**

- Rittenhouse Basin
- Chandler Heights Basin
- Existing East Maricopa Floodway
- Floodplain
- Floodway



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# East Maricopa Floodway Low Flow Channel

PCN: 121.XX.X1

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

602-506-4771

csv@mail.maricopa.gov

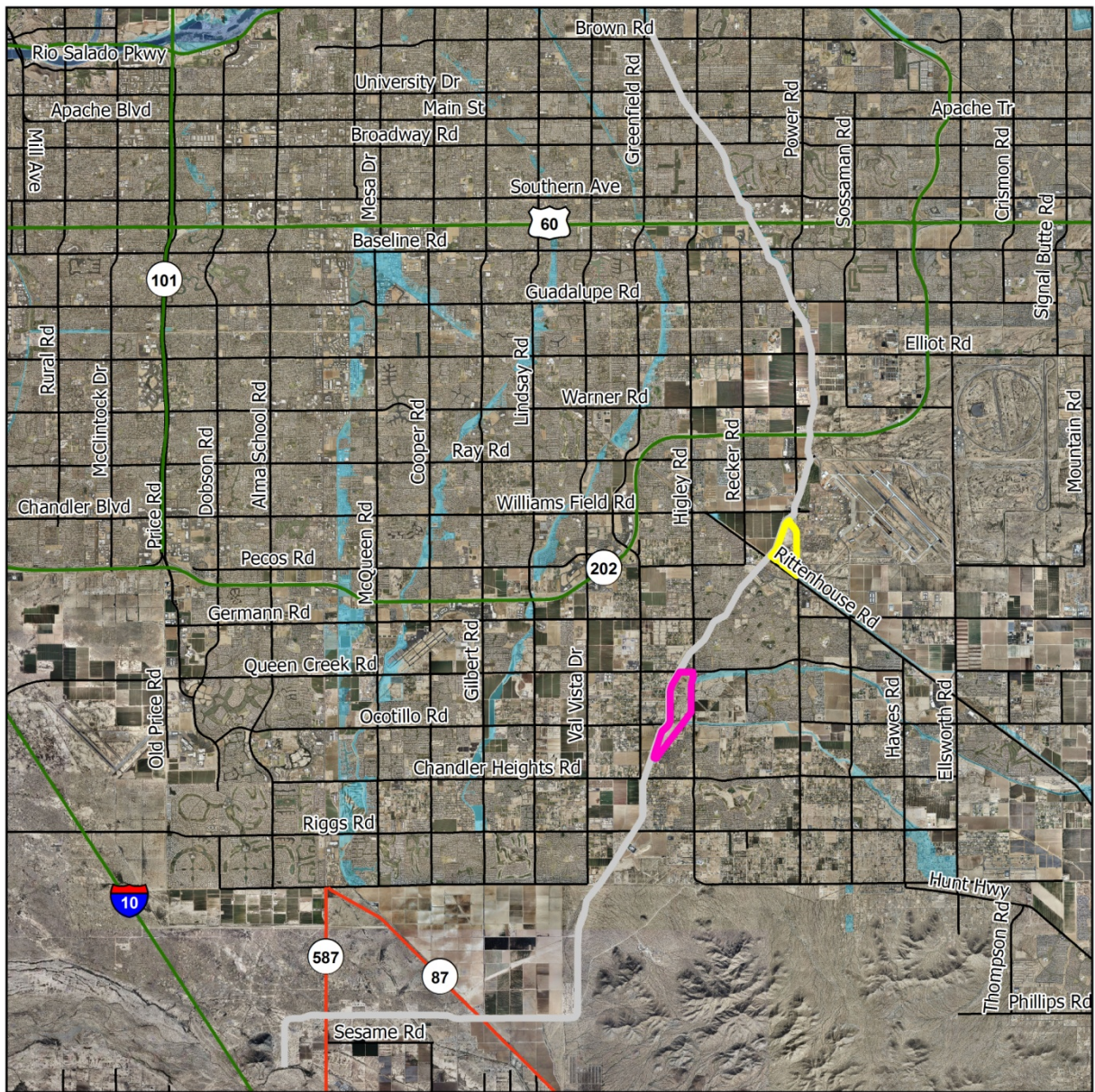
District: 1, 2  
Jurisdiction: Gilbert, Mesa  
Origin: FY 2011 Prioritization Procedure  
Resolution: Pending  
Agreement: None

The U.S. 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.

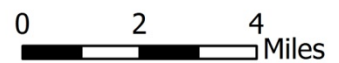
The District is attempting to address these issues through comparatively minor maintenance modifications; however, should the issues remain, the District would construct a concrete low flow channel along much of the length of the EMF.

Fiscal Year	Budget
FY 2011	\$0
FY 2012	\$0
FY 2013	\$70,000
FY 2014	\$1,100,000
FY 2015	\$1,100,000
5-Year Program	\$2,270,000



**Legend**

- Rittenhouse Basin
- Chandler Heights Basin
- Existing East Maricopa Floodway
- Floodplain
- Floodway



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# Tres Rios

PCN: 126.01.31

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

602-506-4878

djr@mail.maricopa.gov

District: 5  
Jurisdiction: Phoenix, Avondale, Unincorporated Maricopa County  
Origin: U.S. Army Corps of Engineers Feasibility Study  
Resolution: FCD 2004R005  
Agreement: FCD 2004A017

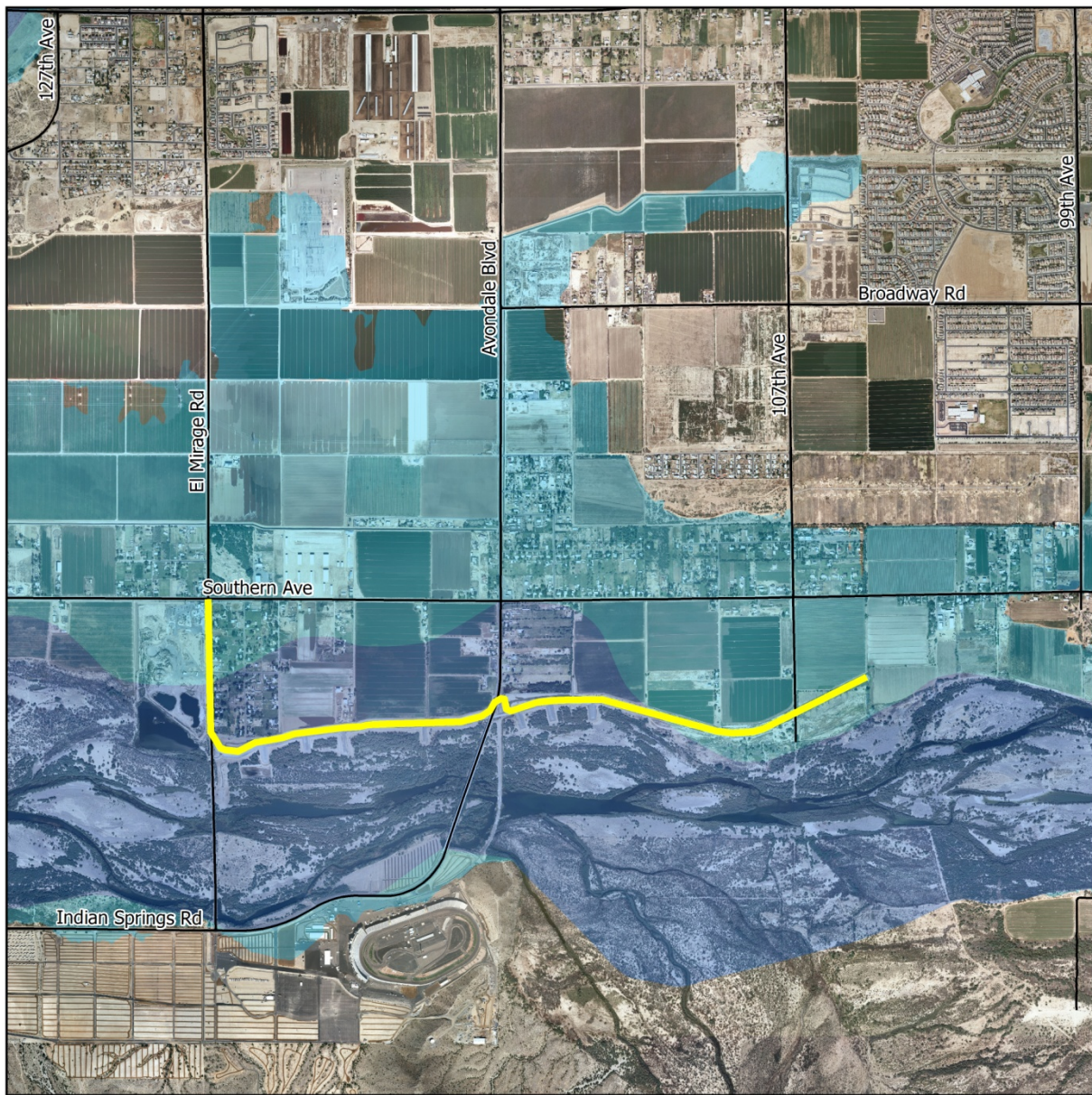
The Tres Rios Project is a federal project under the auspices of the U.S. Army Corps of Engineers and sponsored locally by the city of Phoenix.

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.

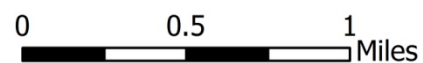
The levee design and construction were segmented in three phases – from 105th to 115th Avenue, from 115th to 123rd Avenue and along El Mirage Road north to Southern Avenue. Construction of the first two phases is complete. Construction of the third phase is scheduled for mid-2010, and District participation will be limited to design review and operation and maintenance.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$10,000



**Legend**

- Tres Rios
- Floodplain
- Floodway



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# White Tanks FRS No.4 Outlet

PCN: 201.01.31

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

602-506-4771

csv@mail.maricopa.gov

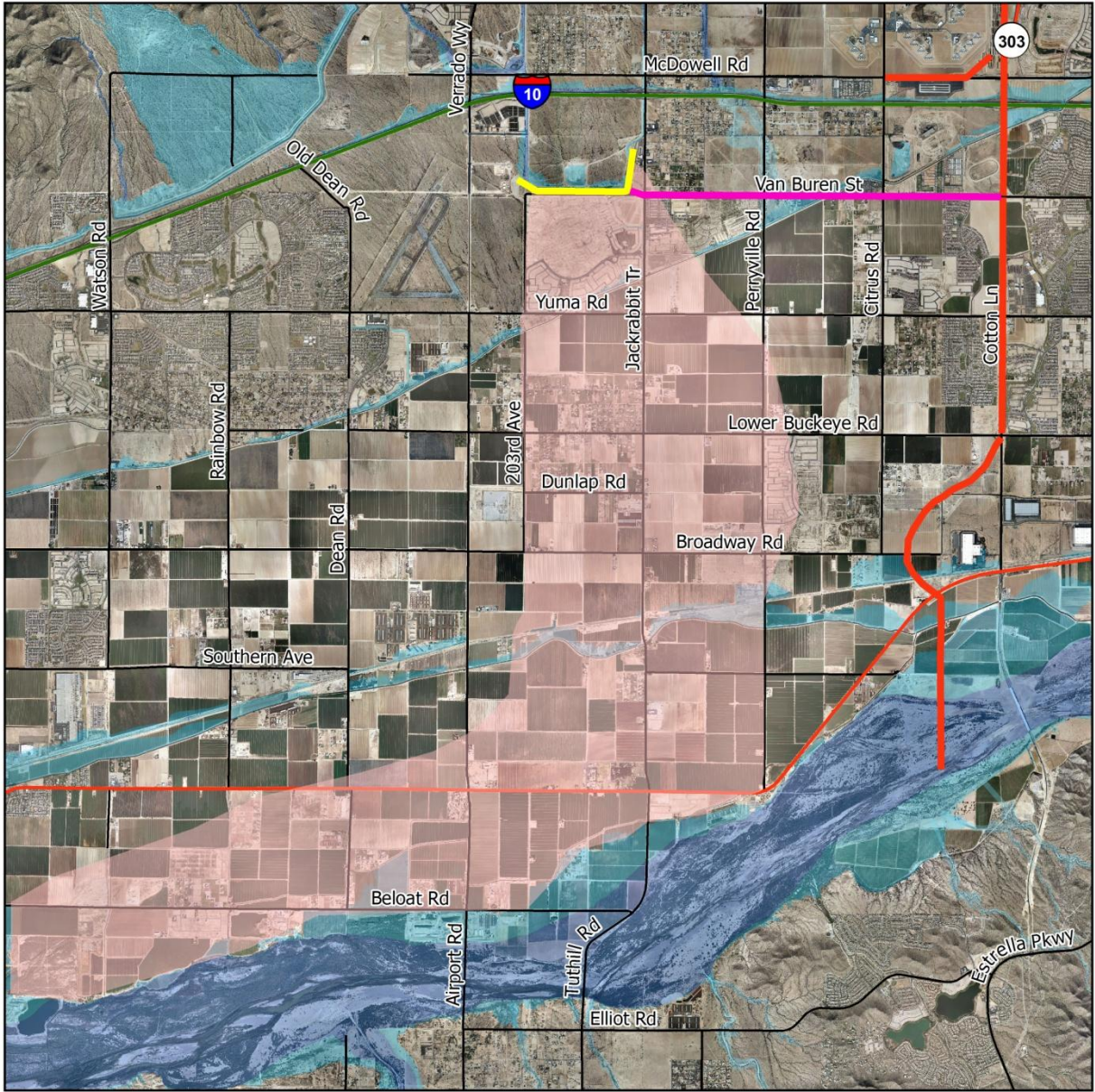
District: 4  
Jurisdiction: Buckeye, Unincorporated Maricopa County  
Origin: FY 2007 Prioritization Procedure  
Resolution: Pending  
Agreement: None

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.

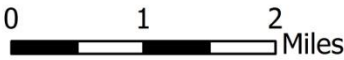
Due to the lack of project partner funding for an ADMP-level alternative, the District has initiated a design concept report to re-evaluate lower cost, unilateral dam outlet alternatives, and it is anticipated that final design of a selected dam outlet alternative will be initiated during Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$1,225,000
FY 2012	\$550,000
FY 2013	\$6,250,000
FY 2014	\$10,000
FY 2015	\$0
5-Year Program	\$8,035,000



**Legend**

- White Tanks FRS No. 4
- White Tanks FRS No. 4 Outlet
- Loop 303 Drainage Improvements
- White Tanks FRS No. 4 Dam Break Inundation Area
- Floodplain
- Floodway



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# White Tanks FRS No.4 Rehabilitation

PCN: 201.02.31

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

602-506-4730

djd@mail.maricopa.gov

District: 4  
Jurisdiction: Buckeye  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2008R0005  
Agreement: Pending

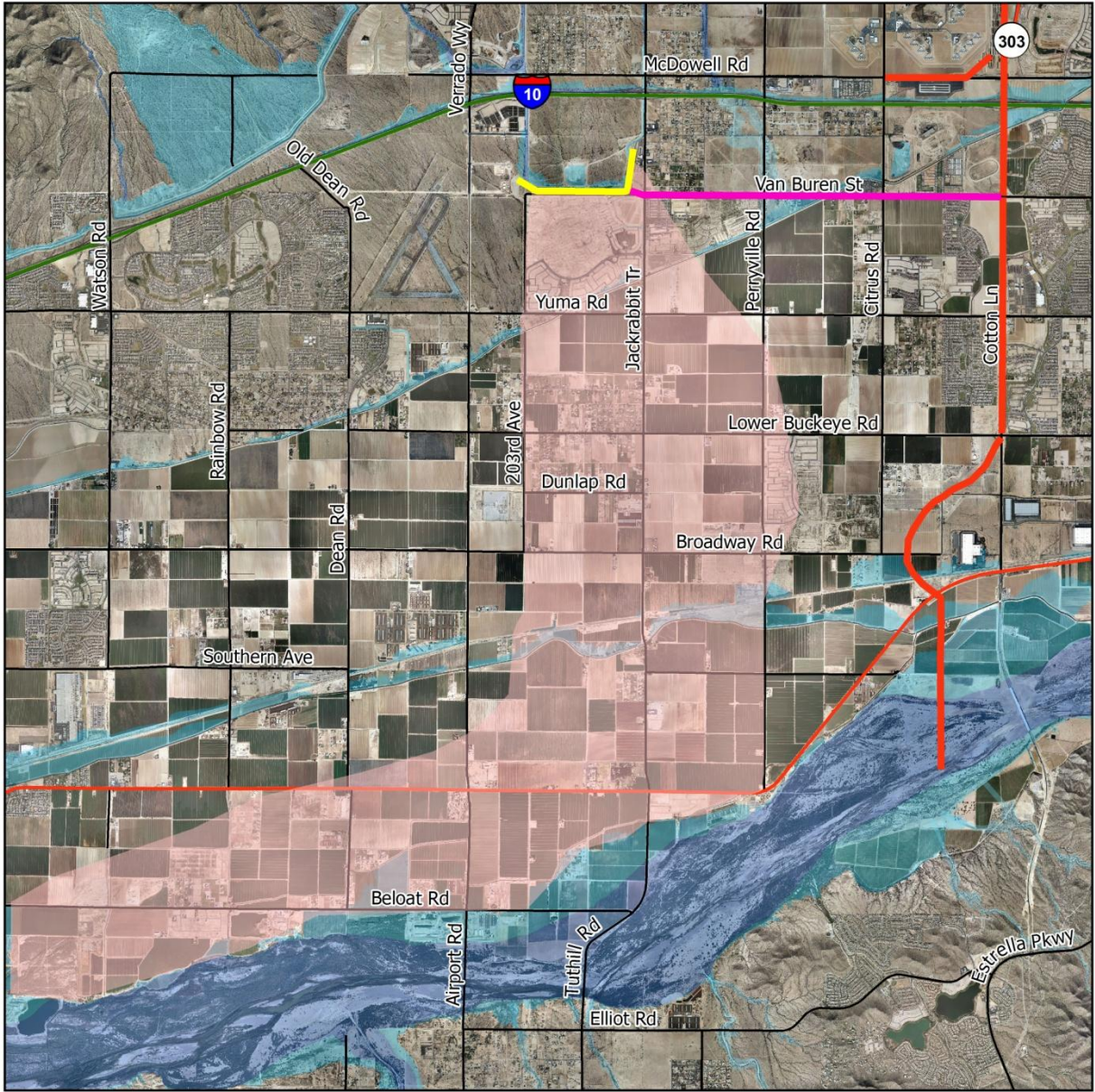
White Tanks Flood Retarding Structure (FRS) No.4 was constructed in 1954 by the Natural Resources Conservation Service (NRCS) (then Soil Conservation Service). By agreement, the District operates and maintains the structure.

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 Rehabilitation Amendments) 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.

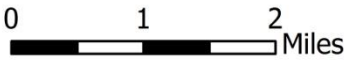
Construction notice to proceed is anticipated in Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$2,145,000
FY 2012	\$7,750,000
FY 2013	\$40,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$9,935,000



**Legend**

- White Tanks FRS No. 4
- White Tanks FRS No. 4 Outlet
- Loop 303 Drainage Improvements
- White Tanks FRS No. 4 Dam Break Inundation Area
- Floodplain
- Floodway



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# McMicken Dam Project Rehabilitation or Replacement

PCN: 202.02.31

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

602-506-3639

samsherman@mail.maricopa.gov

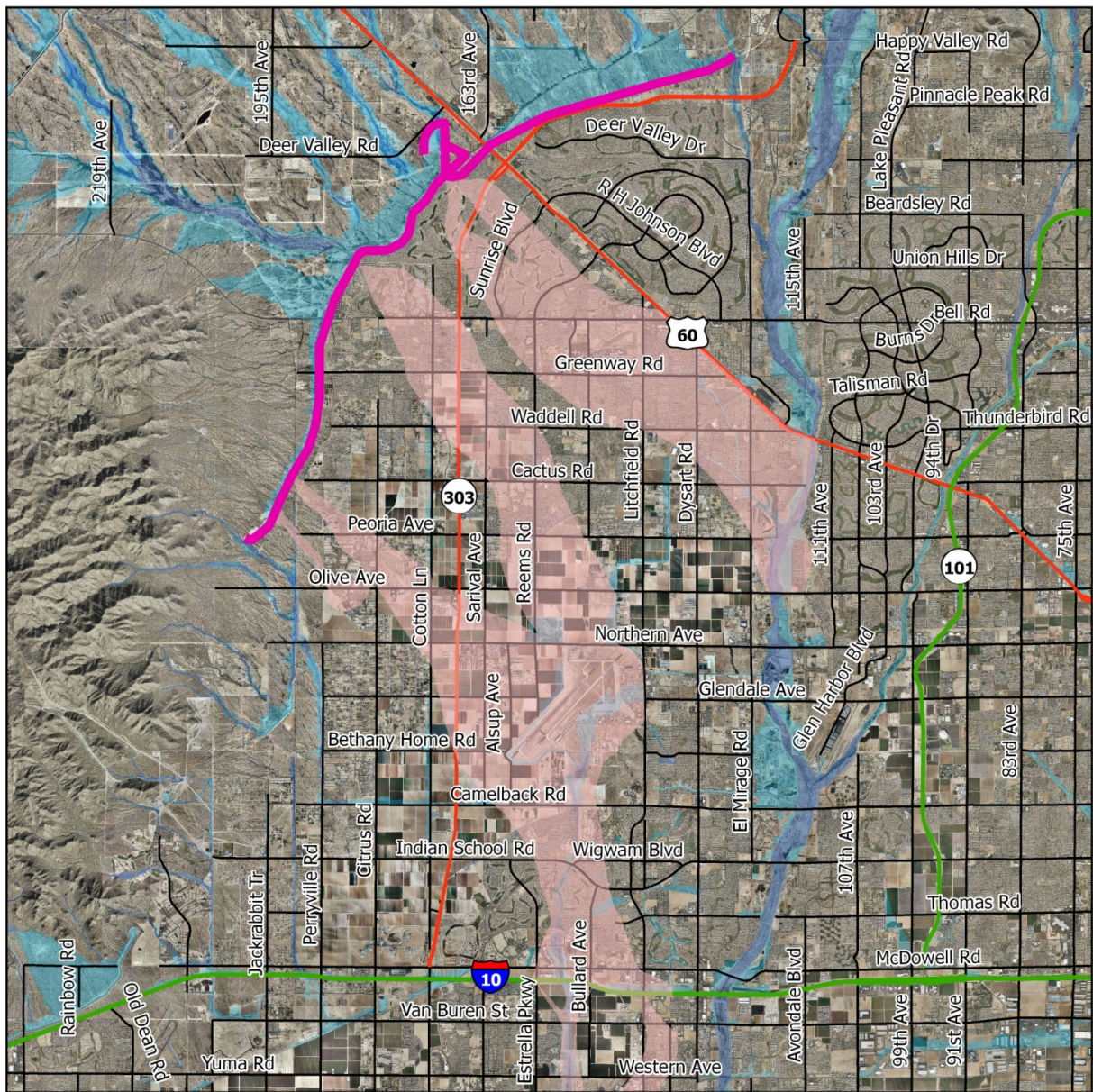
District: 4  
Jurisdiction: Surprise  
Origin: Phase II Structures Assessment / Prioritization Pending  
Resolution: Pending  
Agreement: Pending

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 its age, land subsidence, earth fissuring, urbanization encroachment and current dam safety standards. These 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.

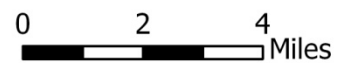
The Corps of Engineers initiated a feasibility study for the project under a cost share agreement with the District known as the Trilby Wash Feasibility Study. Upon completion of the study, the District will seek federal funding for implementation of the study's recommendations.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$10,000
FY 2014	\$10,000
FY 2015	\$1,150,000
5-Year Program	\$1,190,000



**Legend**

- McMicken Dam
- McMicken Dam Break Inundation Area
- Floodplain
- Floodway



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# Buckeye FRS No.1 Rehabilitation

PCN: 207.01.31

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

602-506-3639

samsherman@mail.maricopa.gov

District: 4  
Jurisdiction: Buckeye  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2009R007  
Agreement: Pending

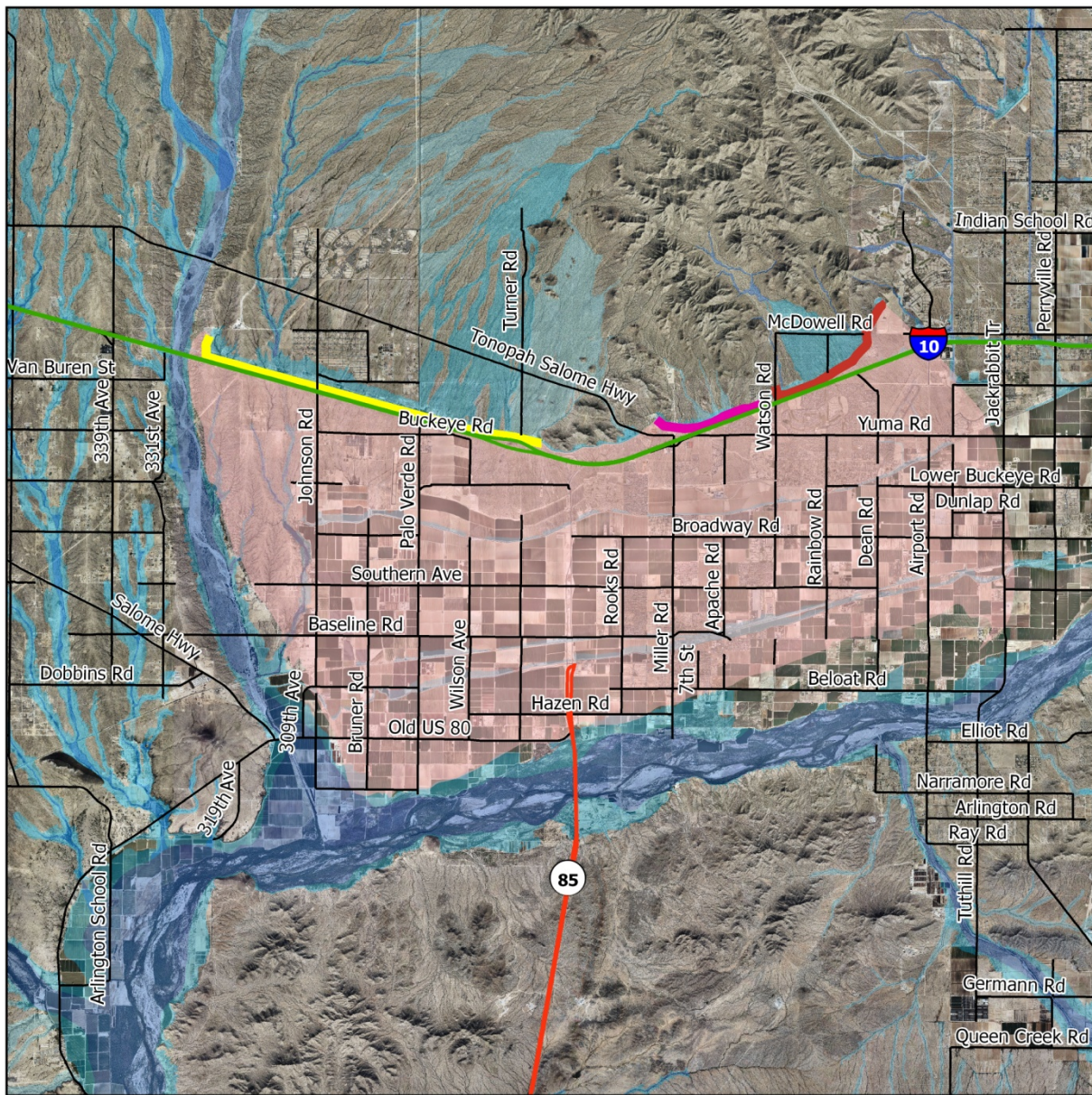
Buckeye FRS No.1 is the westernmost of a series of three flood control dams designed and built by the Soil Conservation Service (now the Natural Resources Conservation Service, or NRCS). The dam, built in 1974, is located along the southern slopes of the White Tank Mountains and parallels the north side 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.

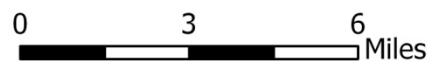
Design is in progress.

Fiscal Year	Budget
FY 2011	\$520,000
FY 2012	\$200,000
FY 2013	\$12,850,000
FY 2014	\$2,300,000
FY 2015	\$60,000
5-Year Program	\$15,930,000



**Legend**

- █ Buckeye FRS No. 1
- █ Buckeye FRS No. 2
- █ Buckeye FRS No. 3
- █ Buckeye FRS No. 1 Dam Break Inundation Area
- █ Floodplain
- █ Floodway



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# Downtown Buckeye Regional Basin and Storm Drain

PCN: 211.03.31

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

602-506-4732

mwd@mail.maricopa.gov

District: 4  
Jurisdiction: Buckeye  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2006R007  
Agreement: FCD 2006A014

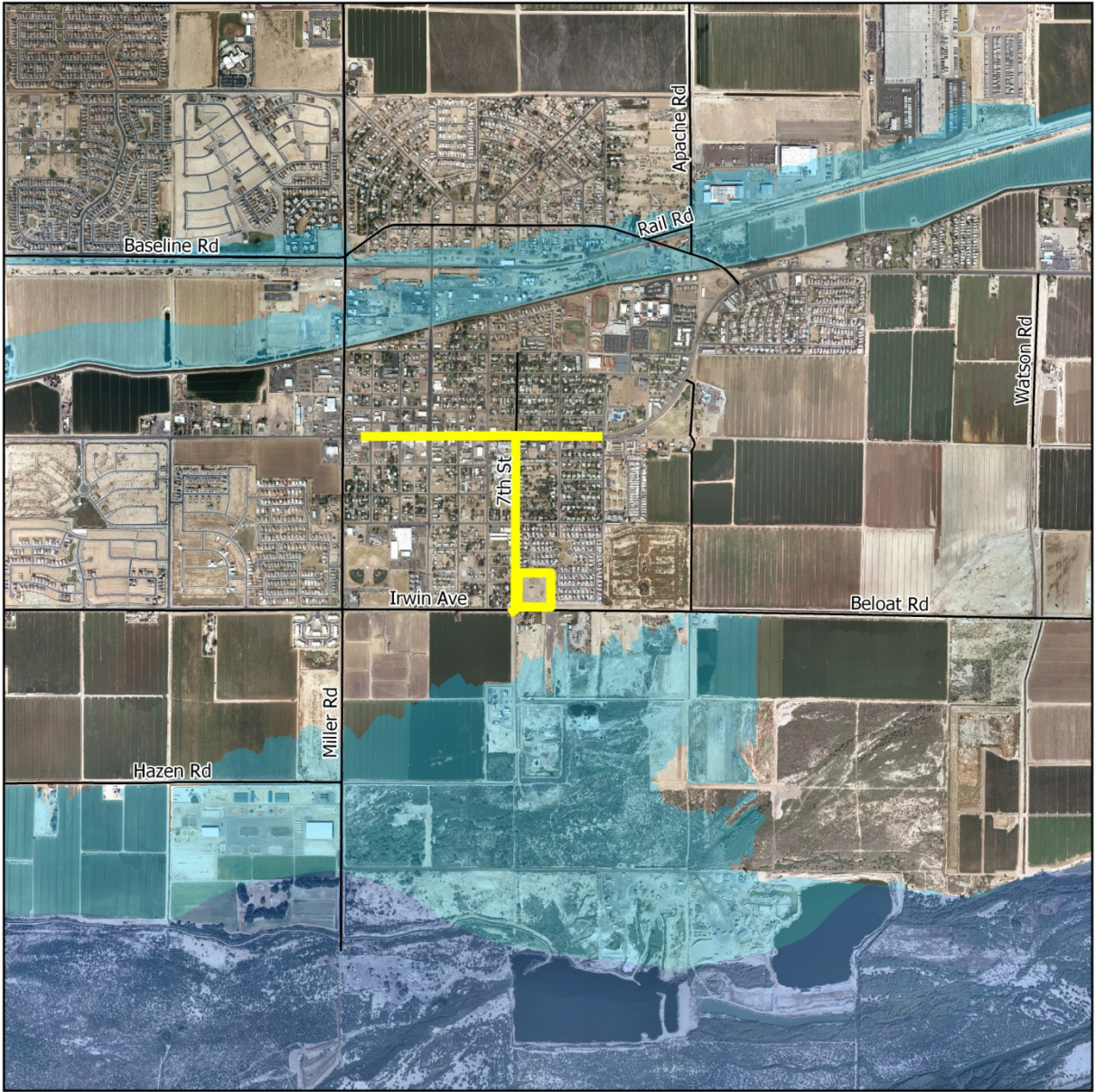
The town of Buckeye historically experienced flooding conditions downtown in the vicinity of Monroe Avenue (MC 85). The District completed a study that identified potential structural solutions: a 10-year storm drain system and outfall and 100-year retention basins.

This project will relieve historic downtown Buckeye of frequent flooding by implementing storm drains, channels, a retention basin, and an outlet. The project will mitigate flood damages to residential, commercial, governmental and industrial properties, while increasing traffic safety.




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

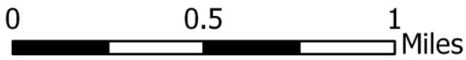
Final design by the town is in progress. Construction scheduling is primarily dependent upon the availability of town funding.

Fiscal Year	Budget
FY 2011	\$20,000
FY 2012	\$20,000
FY 2013	\$245,000
FY 2014	\$1,620,000
FY 2015	\$20,000
5-Year Program	\$1,925,000



**Legend**

-  Downtown Buckeye Storm Drain Project
-  Floodplain
-  Floodway



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# SR-85 Oglesby Outfall Channel

PCN: 211.XX.X1

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

602-506-2943

bao@mail.maricopa.gov

District: 4  
Jurisdiction: Buckeye  
Origin: FY 2011 Prioritization Procedure  
Resolution: Pending  
Agreement: Pending

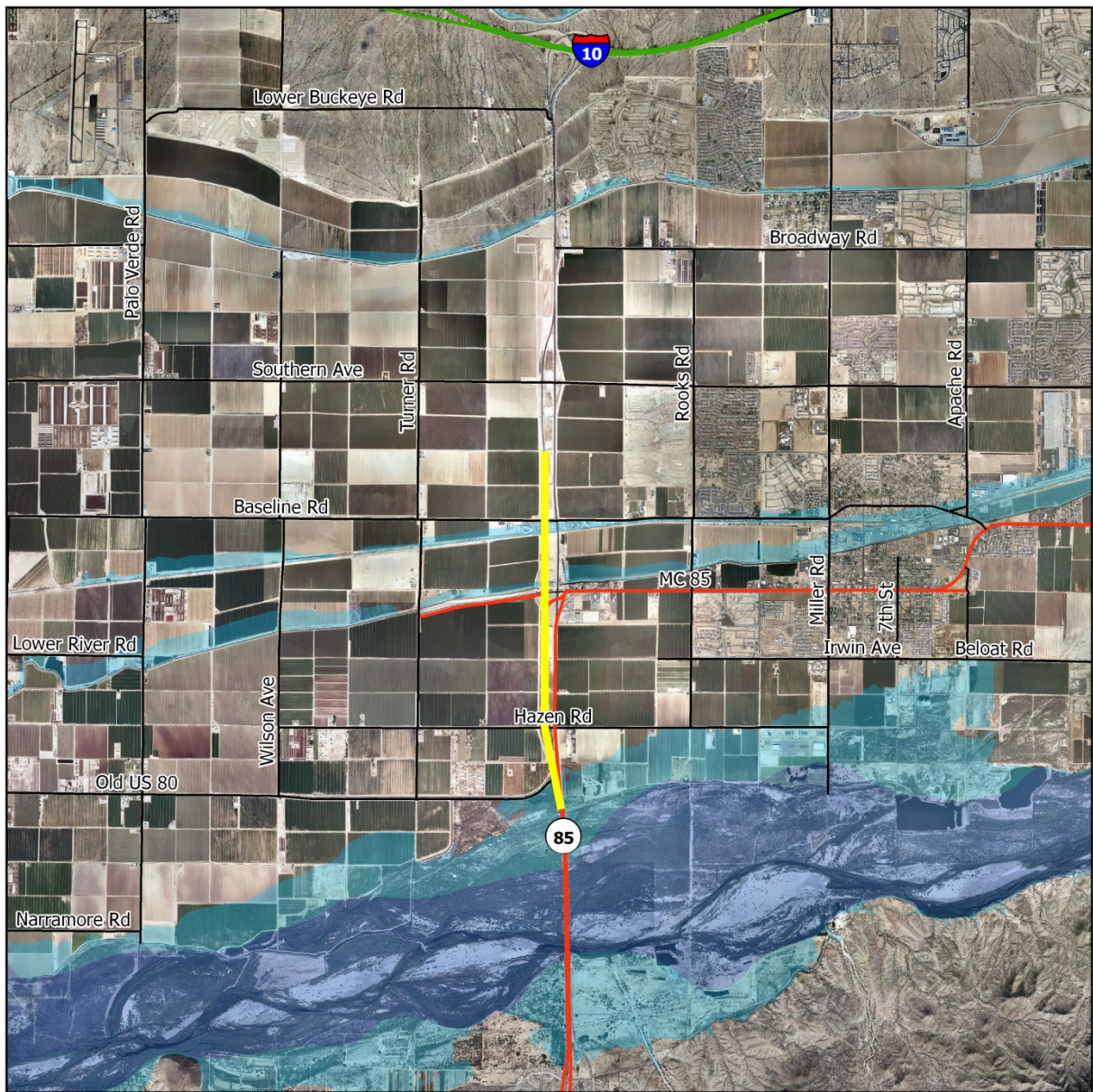
The District completed the Buckeye Area Drainage Master Plan (ADMP) in June 2009. The ADMP recommended construction of five north-south regional drainage channels and basins to capture regional storm water flow and convey it to the Gila River: the White Tanks System, the Watson System, the Rooks System, the Oglesby System, and the Palo Verde System.

The Oglesby System's outfall would be constructed as a co-use Arizona Department of Transportation/District facility, built in conjunction with SR-85 improvements from north of Baseline Road to the Gila River. ADOT has tentatively agreed to this plan, which would require ADOT to upsize its planned freeway channel to accommodate regional flows in exchange for District cost share participation.

The portion of the Oglesby System upstream of SR-85 would be completed in the future – likely without the use of public funding – as the area develops.

Project schedule is dependent upon the availability of state funding to construct SR-85 improvements.

Fiscal Year	Budget
FY 2011	\$5,000
FY 2012	\$5,000
FY 2013	\$420,000
FY 2014	\$4,060,000
FY 2015	\$10,000
5-Year Program	\$4,500,000



**Legend**

- SR-85 / Oglesby Channel
- Floodplain
- Floodway



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# Granite Reef Wash Drainage Improvements

PCN: 265.XX.X1

**Afshin Ahouraiyan, P.E., Project Manager**  
602-506-4519  
afa@mail.maricopa.gov

District: 2  
Jurisdiction: Scottsdale, Salt River Pima-Maricopa Indian Community  
Origin: FY 2009 Prioritization Procedure  
Resolution: Pending  
Agreement: 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 Chapparal Road south to McKellips Road. The alignment of the system's outfall to the Salt River remains to be identified.

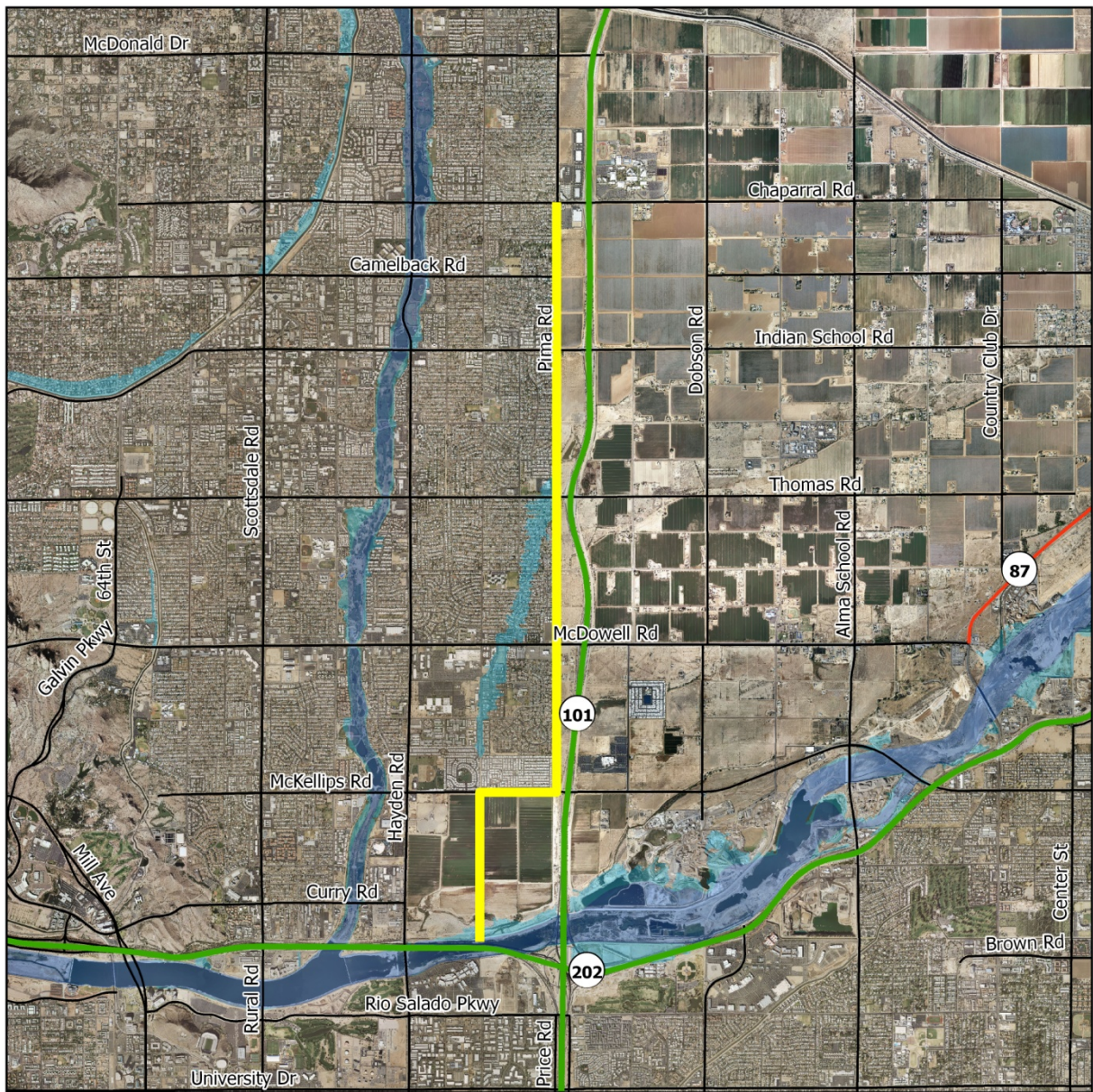
In addition to mitigating flooding in the immediate residential area, the project would reduce flood flows to the Salt River Pima-Maricopa Indian Community's (SRPMIC's) undeveloped Section Twelve, at the junction of SR-101L and SR-202L.

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.

Improvements would be implemented in conjunction with Pima Road widening between Via de Ventura and McDowell Road.

The initiation of final design is awaiting the identification of the selected outfall alignment by SRPMIC and the city.

Fiscal Year	Budget
FY 2011	\$1,060,000
FY 2012	\$1,060,000
FY 2013	\$8,060,000
FY 2014	\$8,060,000
FY 2015	\$7,060,000
5-Year Program	\$25,300,000



**Legend**

- Granite Reef Wash Drainage System (Potential Alignment)
- Floodplain
- Floodway



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# Spook Hill FRS Modifications

PCN: 300.01.31

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

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

District: 2  
Jurisdiction: Mesa  
Origin: Phase II Structures Assessment Program  
Resolution: FCD 2003R005  
Agreement: FCD 2004A009, 2004A009A, 2004A009B

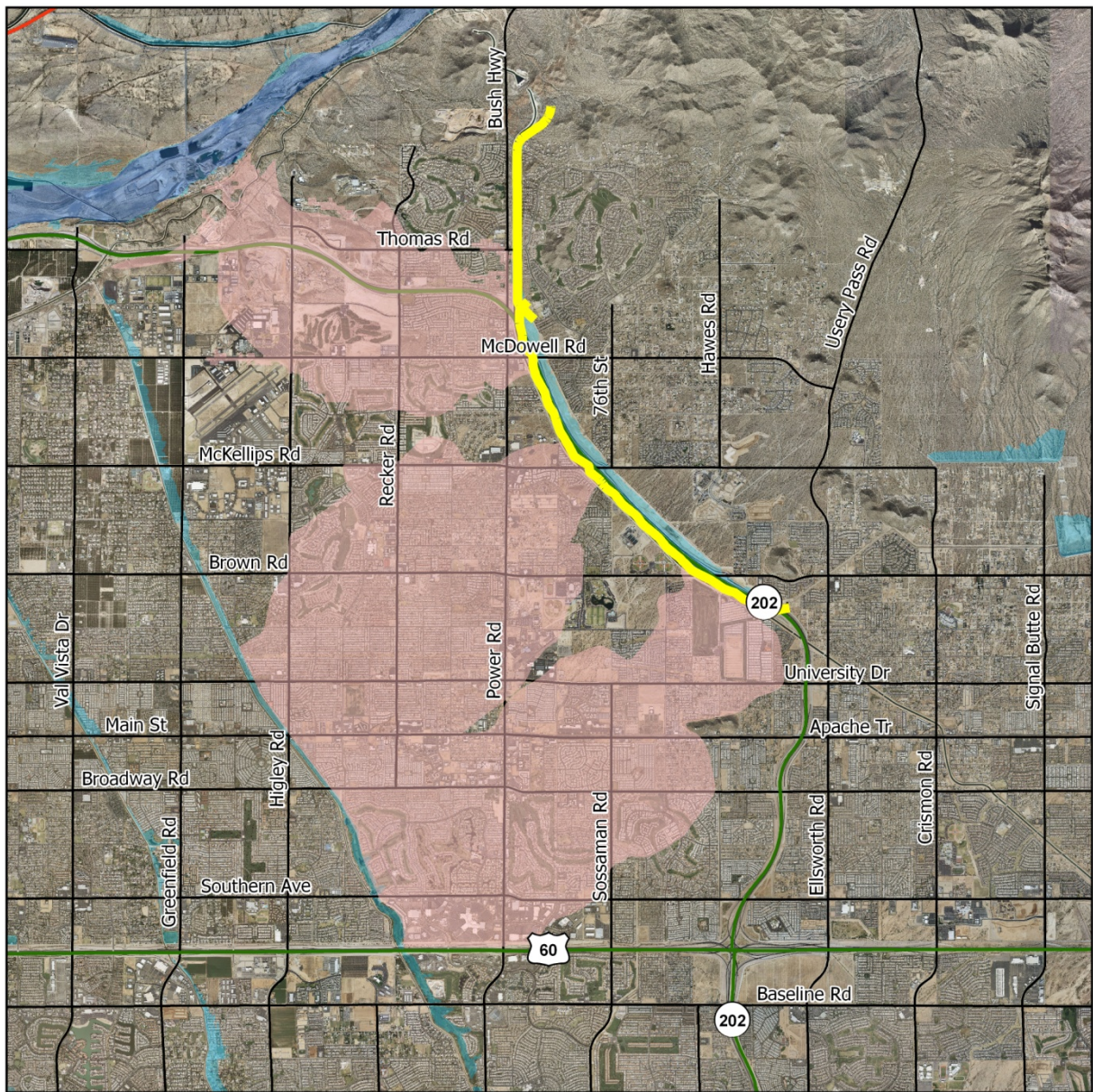
Spook Hill Flood Retarding Structure (FRS) is a structural plan element of a Watershed Work Plan, prepared by the Natural Resources Conservation Service (formerly Soil Conservation Service) in January 1963, for the Buckhorn-Mesa Watershed Project located in Maricopa and Pinal counties. The dam, constructed in 1980, 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 floodwater impoundment pool. 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 dispute, and the project remains active pending settlement.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$40,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$40,000



**Legend**

- Spook Hill FRS and Floodway
- Spook Hill FRS Dam Break Inundation Area
- Floodplain
- Floodway



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# Powerline / Vineyard / Rittenhouse FRS Rehabilitation or Replacement

PCN: 310.01.30

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

602-506-8111

fet@mail.maricopa.gov

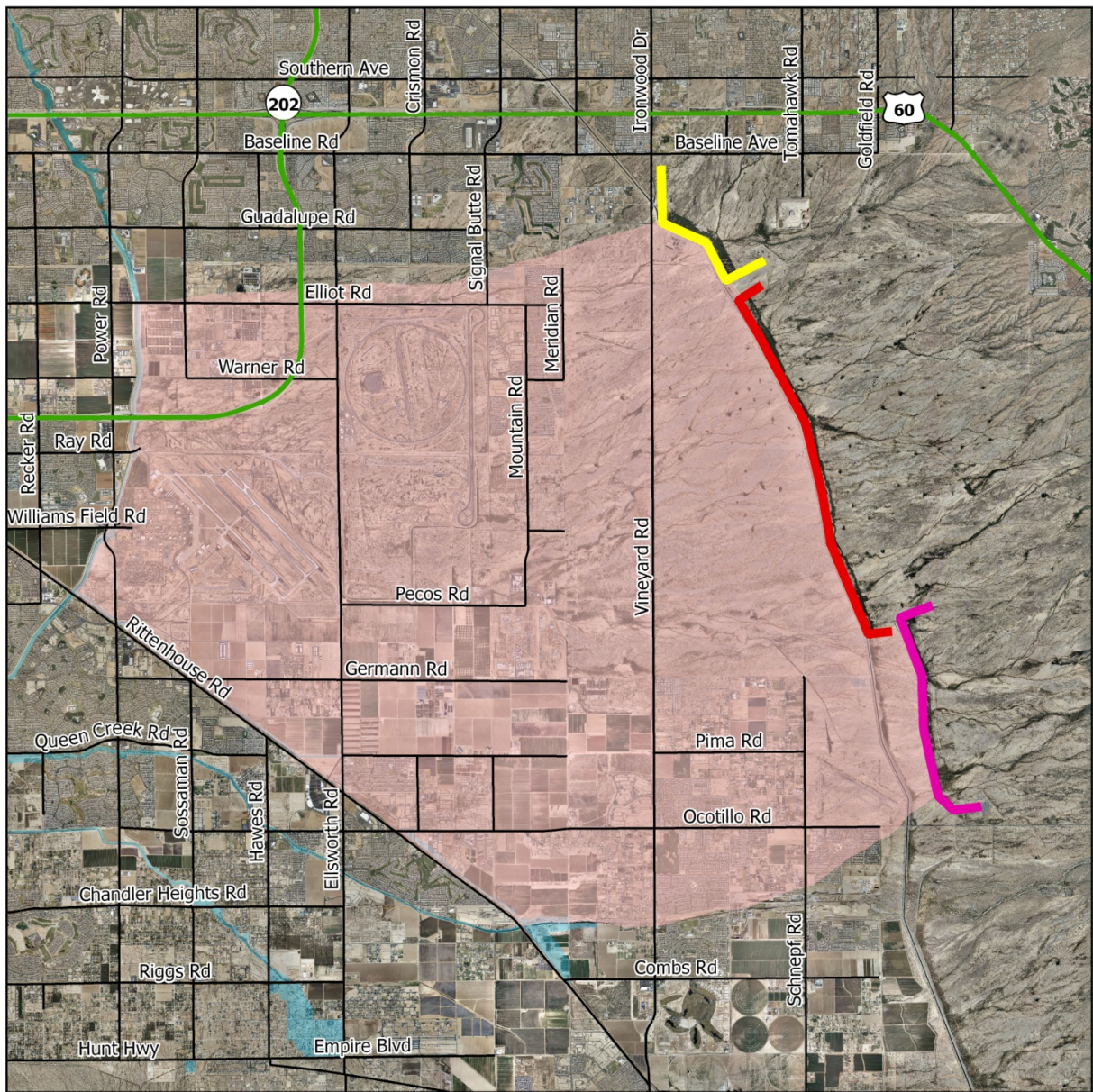
District: 1  
Jurisdiction: Mesa, Gilbert, Queen Creek  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2008R019  
Agreement: Pending

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 mitigate a flooding hazards impacting approximately 169 square miles of residential, commercial and agricultural land in Maricopa and Pinal counties, and protect structures such as the CAP canal, Phoenix-Mesa 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.

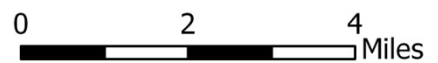
The District has initiated a study to evaluate alternatives and propose an ultimate recommended solution for the structures. Following alternative selection, the District would pursue federal cost share funding.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$970,000
FY 2012	\$300,000
FY 2013	\$1,650,000
FY 2014	\$1,650,000
FY 2015	\$5,150,000
5-Year Program	\$9,720,000



**Legend**

- Powerline FRS
- Vineyard FRS
- Rittenhouse FRS
- Combined Dam Break Inundation Areas
- Floodplain
- Floodway



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# Powerline FRS Fissure Risk Zone Mitigation

PCN: 310.01.31

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

602-506-1251

drl@mail.maricopa.gov

District: 1  
Jurisdiction: Mesa  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2008R015  
Agreement: Pending

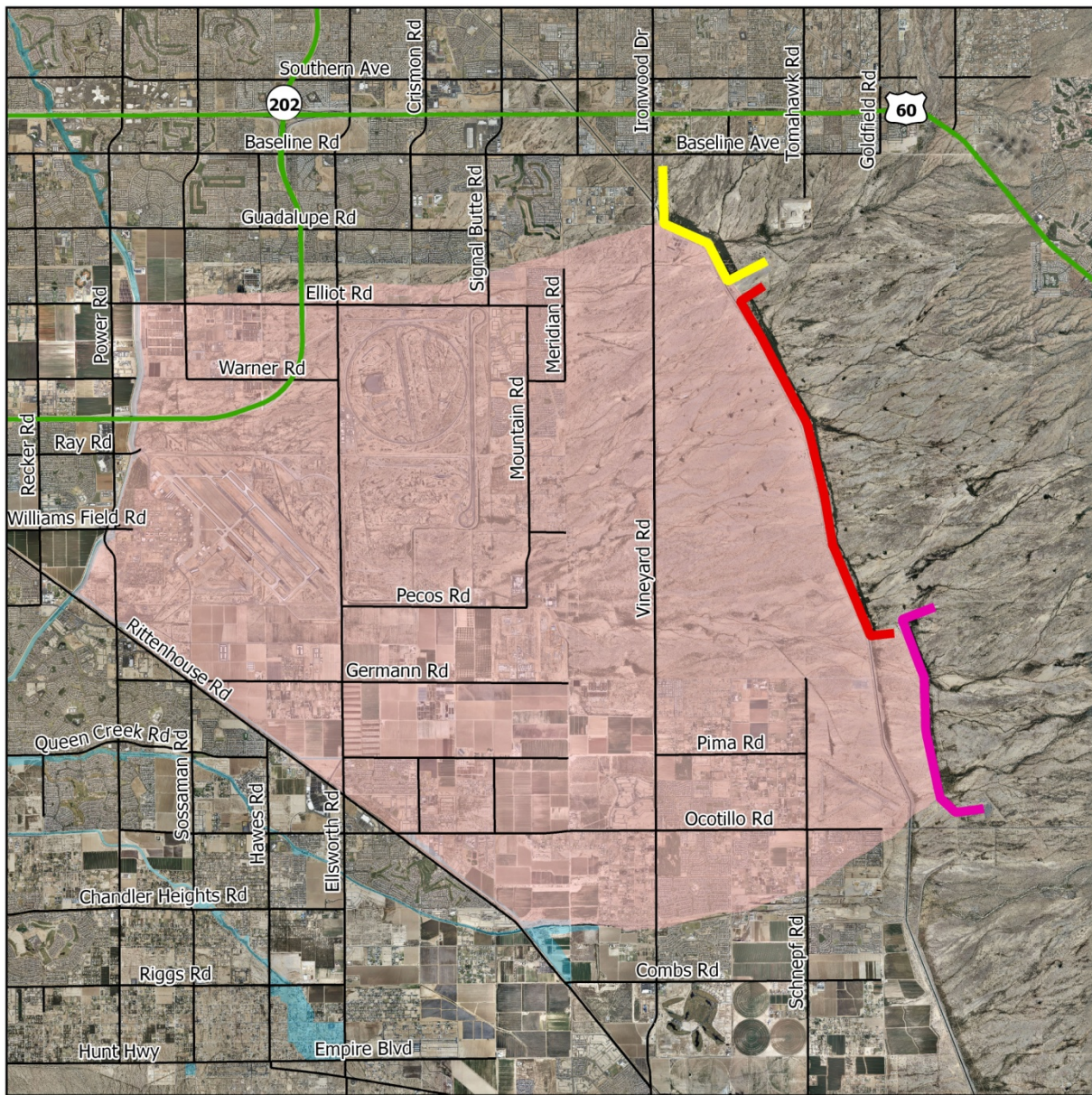
The Powerline, Vineyard Road and Rittenhouse (PVR) Flood Retarding Structures (FRSs) are located in northwest Pinal County, south of Apache Junction and parallel to the Central Arizona Project (CAP) canal between Baseline Road and Ocotillo Road. Per its agreements with the Soil Conservation Service (now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

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. 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 include engineered, preventative revisions to a segment of the dam.

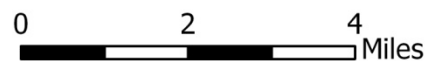
Final design is in progress, and construction is anticipated to begin in Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$2,228,000
FY 2012	\$2,970,000
FY 2013	\$10,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$5,208,000



**Legend**

- Powerline FRS
- Vineyard FRS
- Rittenhouse FRS
- Combined Dam Break Inundation Areas
- Floodplain
- Floodway



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# Saddleback FRS Modifications

PCN: 331.01.30

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

602-506-3639

samsherman@mail.maricopa.gov

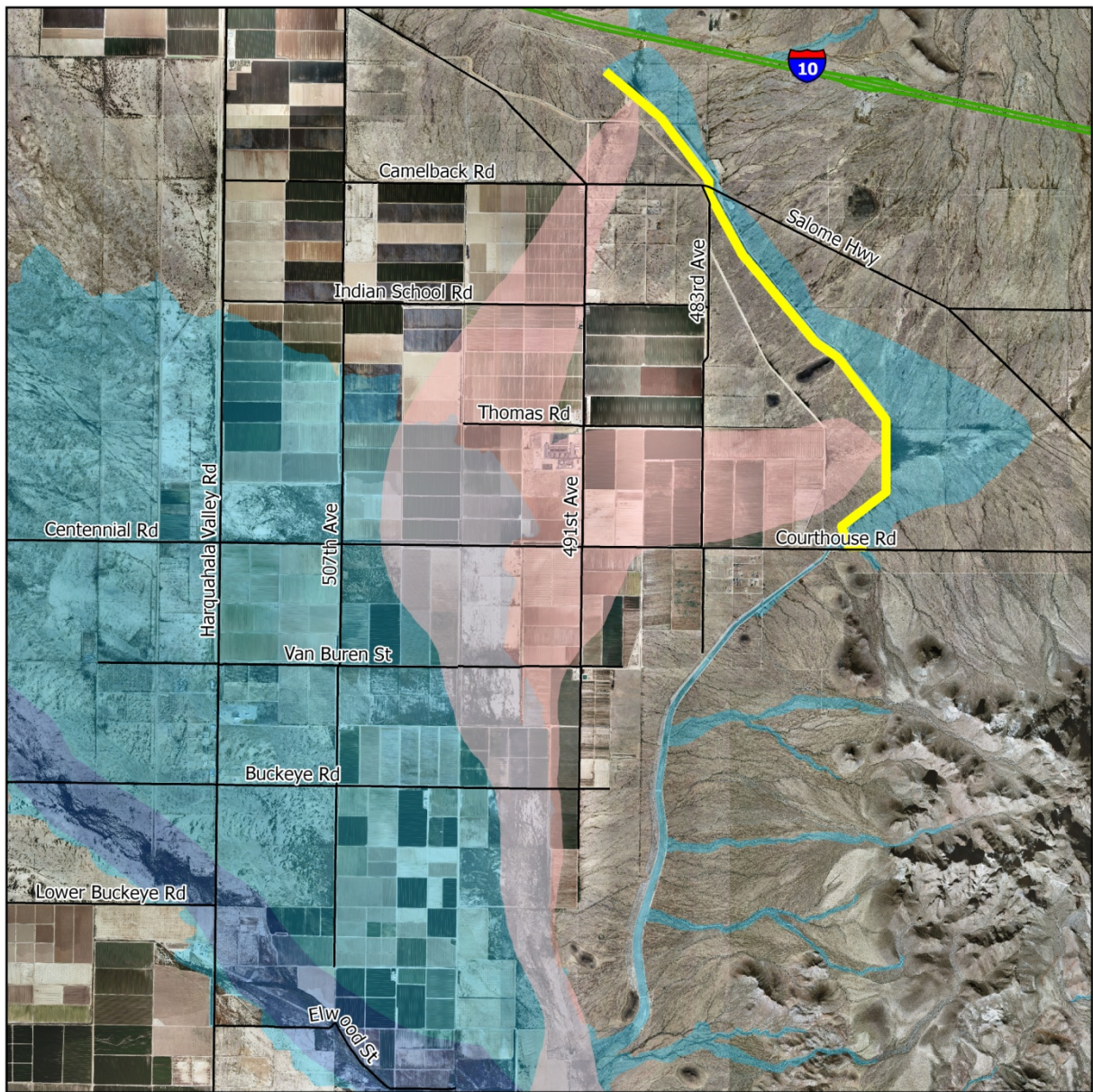
District: 4, 5  
Jurisdiction: Unincorporated Maricopa County  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2009R008  
Agreement: Pending

The Saddleback Flood Retarding Structure (FRS), located just south of Interstate 10 in western Maricopa County, 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 measures to minimize erosion.

Design of these modifications is in progress, and the District is pursuing funding assistance from the Natural Resources Conservation Service (federal sponsor of the dam).

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$330,000
FY 2012	\$3,530,000
FY 2013	\$20,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$3,880,000



**Legend**

- Saddleback FRS
- Saddleback FRS Dam Break Inundation Area
- Floodplain
- Floodway



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# Wickenburg Downtown Flooding Hazard Mitigation

PCN: 343.01.31

**Scott Vogel, P.E., Project Manager**  
602-506-4771  
csv@mail.maricopa.gov

District: 4  
Jurisdiction: Wickenburg  
Origin: FY 2005 Prioritization Procedure  
Resolution: FCD 2005R008  
Agreement: 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.

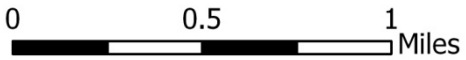
Construction was completed in Fiscal Year 2009. The project remains active pending a right-of-way court action anticipated to be completed in Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$15,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$15,000



**Legend**

- Wickenburg Downtown Flooding Hazard Mitigation Project
- Floodplain
- Floodway



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# Cave Buttes Dam Modifications

PCN: 350.01.30

**Dennis Duffy, P.E., Ph.D., Project Manager**

602-506-4603

dmd@mail.maricopa.gov

District: 3  
Jurisdiction: Phoenix  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2009R009  
Agreement: 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.

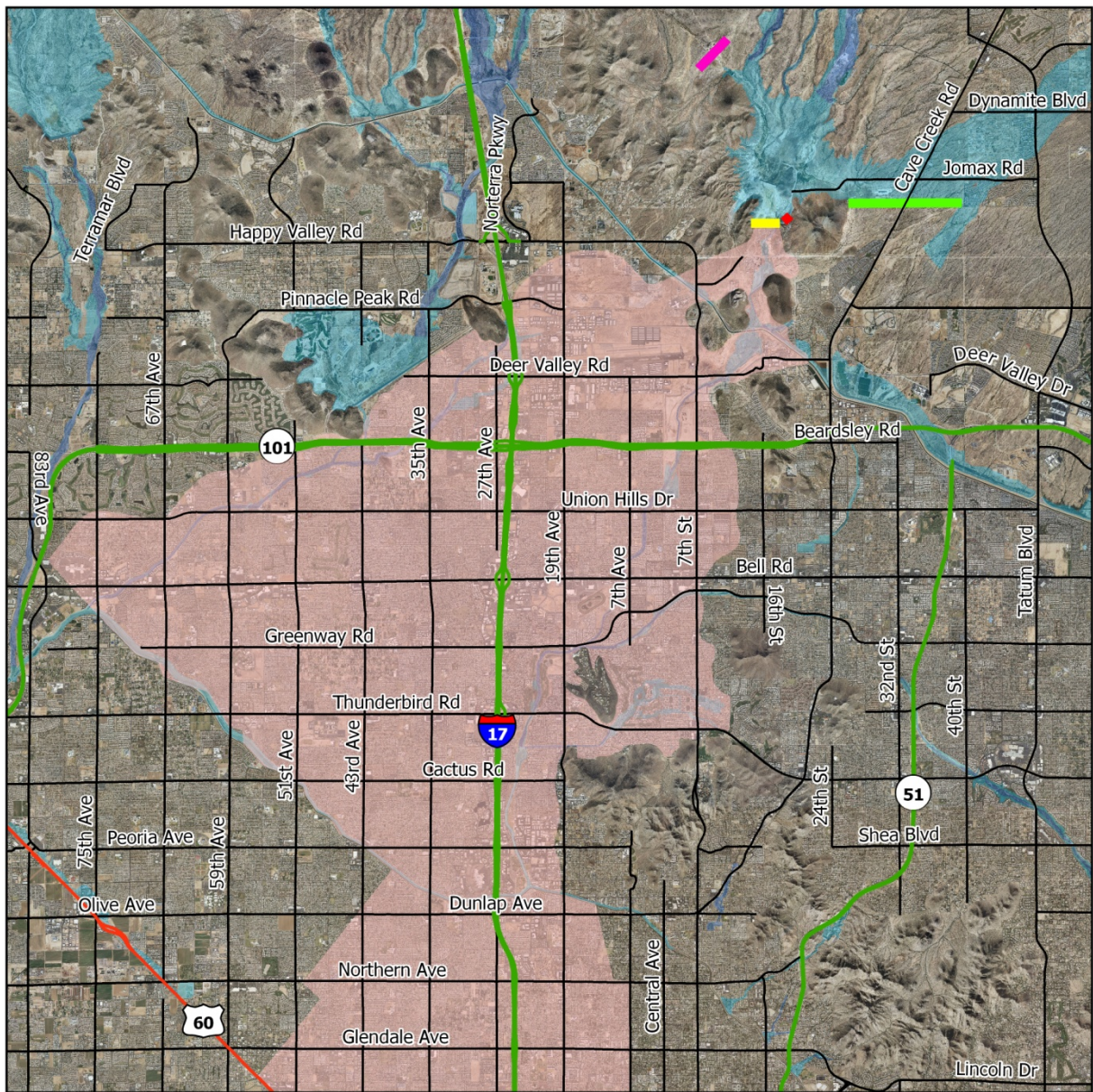
A substantial flood event in 1993 resulted in a significant impoundment of water behind the dam, and seepage occurred along the dam's left abutment. To prevent deterioration of embankment material from recurring seepage, the District pursued an analysis and investigation of the issue.

This investigation has indicated that permanent remedial action is required.

Remediation will likely include the construction of an additional outlet with a drainage channel and a seepage collection system at the downstream toe and abutment contacts of the main dam and dikes 1 and 2.

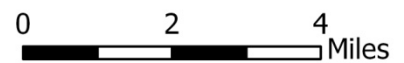
Final design is expected to be completed in Fiscal Year 2011, with construction immediately following permit approval.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$240,000
FY 2012	\$100,000
FY 2013	\$2,380,000
FY 2014	\$2,970,000
FY 2015	\$50,000
5-Year Program	\$5,740,000



**Legend**

- Cave Buttes Dam
- Cave Buttes Dam Dike No. 3
- Cave Buttes Dam Dike No. 2
- Cave Buttes Dam Dike No. 1
- Cave Buttes Dam Break Inundation Area
- Floodplain
- Floodway



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# Cave Buttes Dam Access Rights Acquisition

PCN: 350.01.31

## Hedy Hall, Right-of-Way Agent

602-506-4897

hhall@mail.maricopa.gov

District: 3  
Jurisdiction: Phoenix  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2009R002  
Agreement: 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.

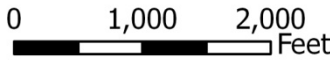
The District intends to acquire a roadway easement from the Arizona State Land Department. Due to state auction scheduling time lines, acquisition will be a multiple fiscal year process.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$23,000
FY 2012	\$510,000
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$533,000



**Legend**

- Cave Buttes Dam
- Cave Buttes Dam Access Acquisition
- Floodplain
- Floodway



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# Oak Street Detention Basin and Storm Drain

PCN: 420.04.31

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

602-506-4519

afa@mail.maricopa.gov

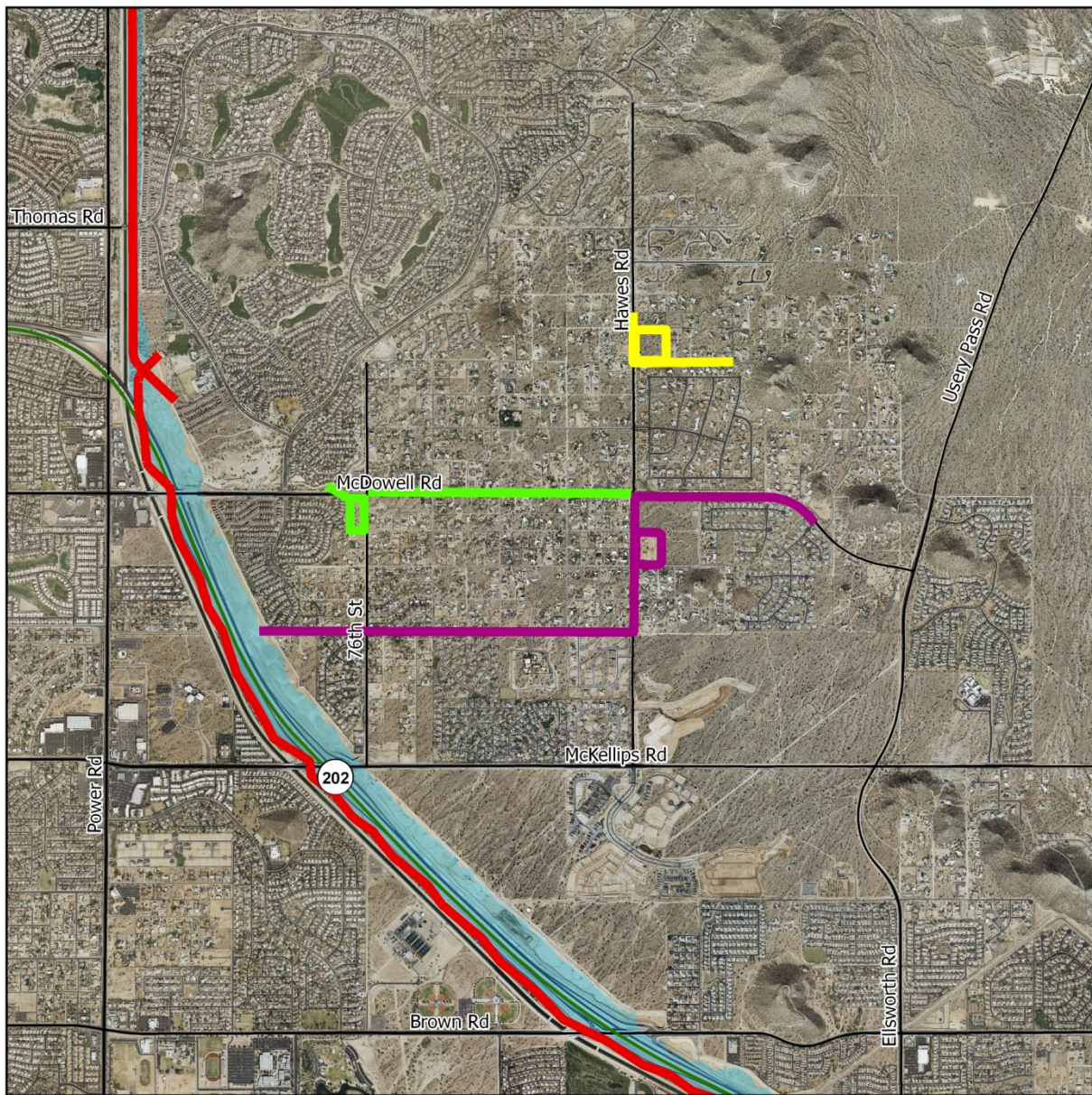
District: 2  
Jurisdiction: Mesa, Unincorporated Maricopa County  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2002R008  
Agreement: FCD 2009A008

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 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.

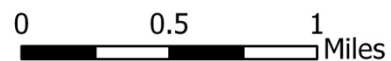
Design is in progress under the District's lead in partnership with the city of Mesa. Construction schedule will be driven by city of Mesa funding authorization under a future city bond.

Fiscal Year	Budget
FY 2011	\$200,000
FY 2012	\$20,000
FY 2013	\$30,000
FY 2014	\$3,200,000
FY 2015	\$30,000
5-Year Program	\$3,480,000



**Legend**

- Oak St. Basin and Storm Drain
- Existing Hermosa Vista Dr. & Hawes Rd. Storm Drain and Basin
- Existing McDowell Rd. Storm Drain and Basin
- Existing Spook Hill FRS and Floodway
- Floodplain
- Floodway



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# Ellsworth Road and McKellips Road Drainage System

PCN: 420.05.31

**Afshin Ahouraiyan, P.E., Project Manager**  
602-506-4519  
afa@mail.maricopa.gov

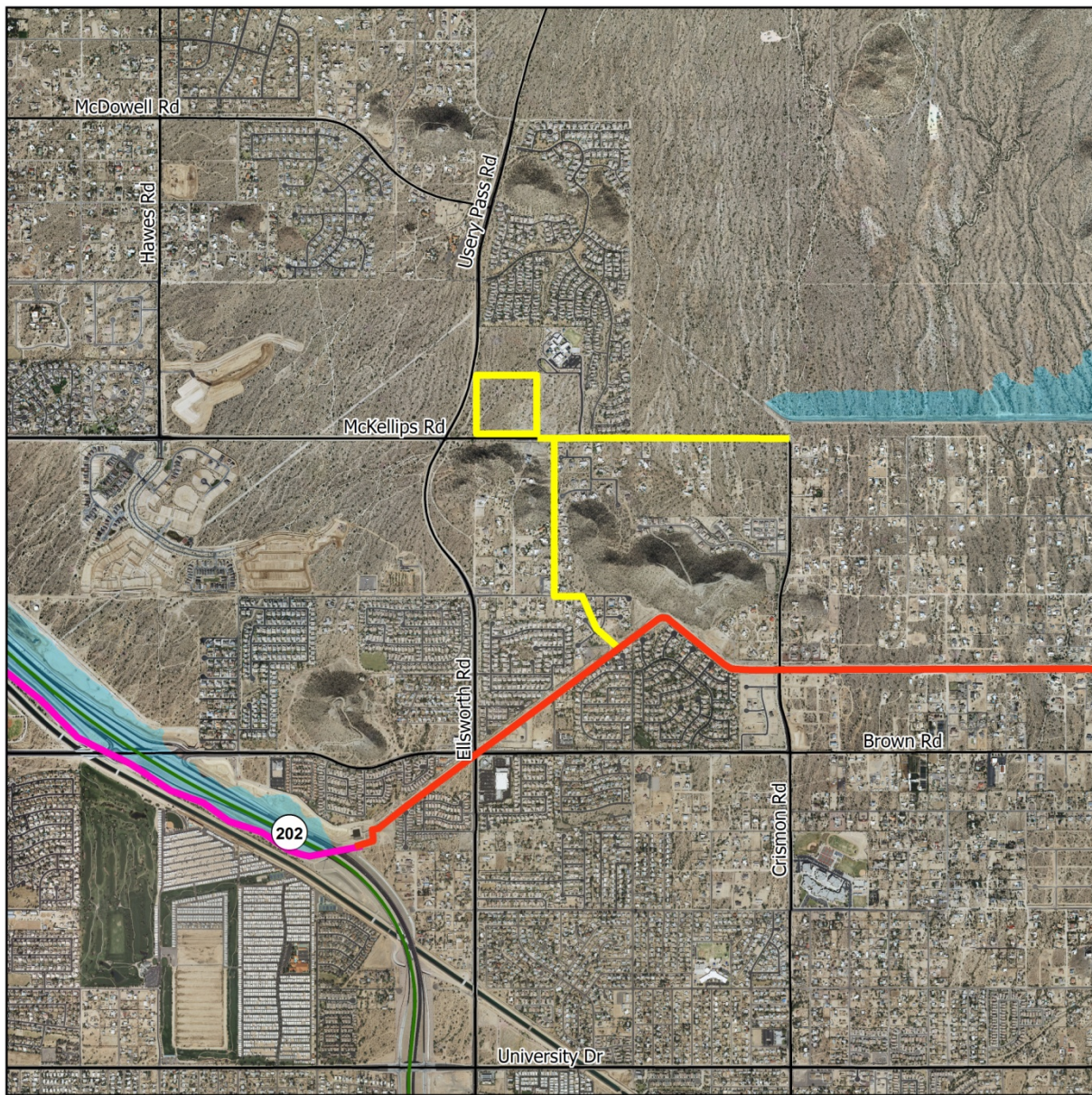
District: 2  
Jurisdiction: Mesa  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2002R008  
Agreement: Pending

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 Utery 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 a combination of open channel and storm drain east along McKellips Road and south along 94th Street. 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.

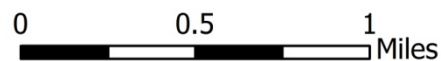
A design concept report has been accomplished unilaterally by the District. This effort will accomplish an update to the ADMP for the subject project. Final design and construction schedules will be driven by city funding authorization under a future city bond.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$20,000
FY 2013	\$600,000
FY 2014	\$4,140,000
FY 2015	\$30,000
5-Year Program	\$4,800,000



**Legend**

- Ellsworth Rd. & Mckellips Rd. Drainage Improvements
- Existing Signal Butte Floodway
- Existing Spook Hill FRS and Floodway
- Floodplain
- Floodway



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# Siphon Draw Drainage Improvements

PCN: 442.11.31

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

602-506-2943

bao@mail.maricopa.gov

District: 1  
Jurisdiction: Mesa  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2003R003  
Agreement: FCD 2006A005, 2008A005, 2009A005

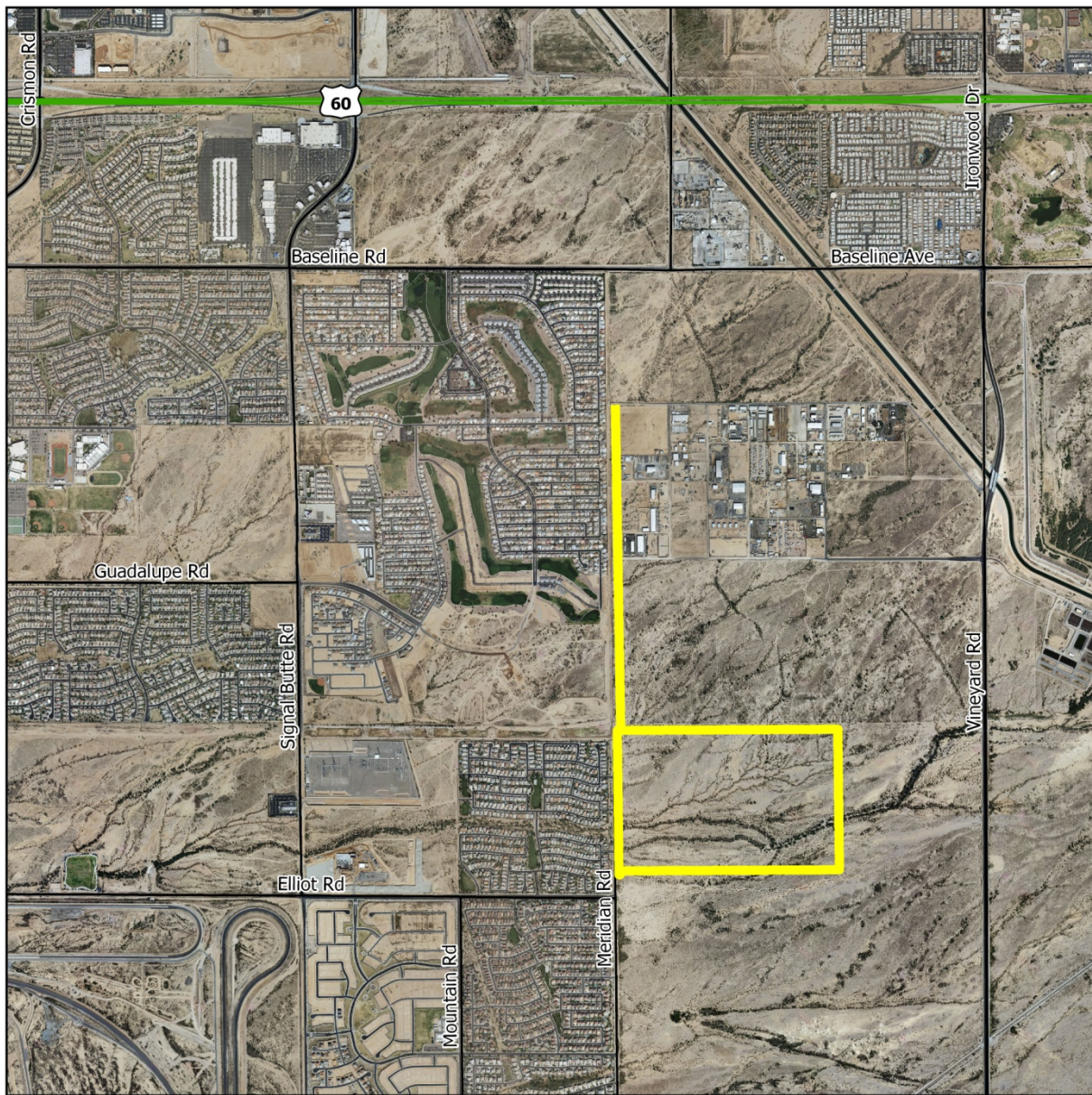
The Siphon Draw project is the final element of the recommended plan for the East Mesa ADMP for the area south of the Superstition Freeway and north of Warner Road. The project includes a channel along Meridian Road that intercepts flows entering Maricopa County from Pinal County and conveys the flow to a detention basin constructed east of Meridian Road and north of Elliot Road.

The District is serving 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.

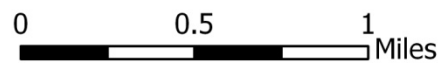
Construction of the basin is complete, and the first phase of the channel construction is in progress. Future channel phases, which have not been designed, may be implemented in conjunction with future roadway improvements.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$70,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$70,000



**Legend**

- Siphon Draw Drainage Improvements
- Floodplain
- Floodway



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# East Mesa Drains Reach 4 and Reach 7 Improvements

PCN: 442.12.31

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

602-506-4732

mwd@mail.maricopa.gov

District: 2  
Jurisdiction: Unincorporated Maricopa County  
Origin: FY 2005 Prioritization Procedure  
Resolution: FCD 2007R011  
Agreement: None

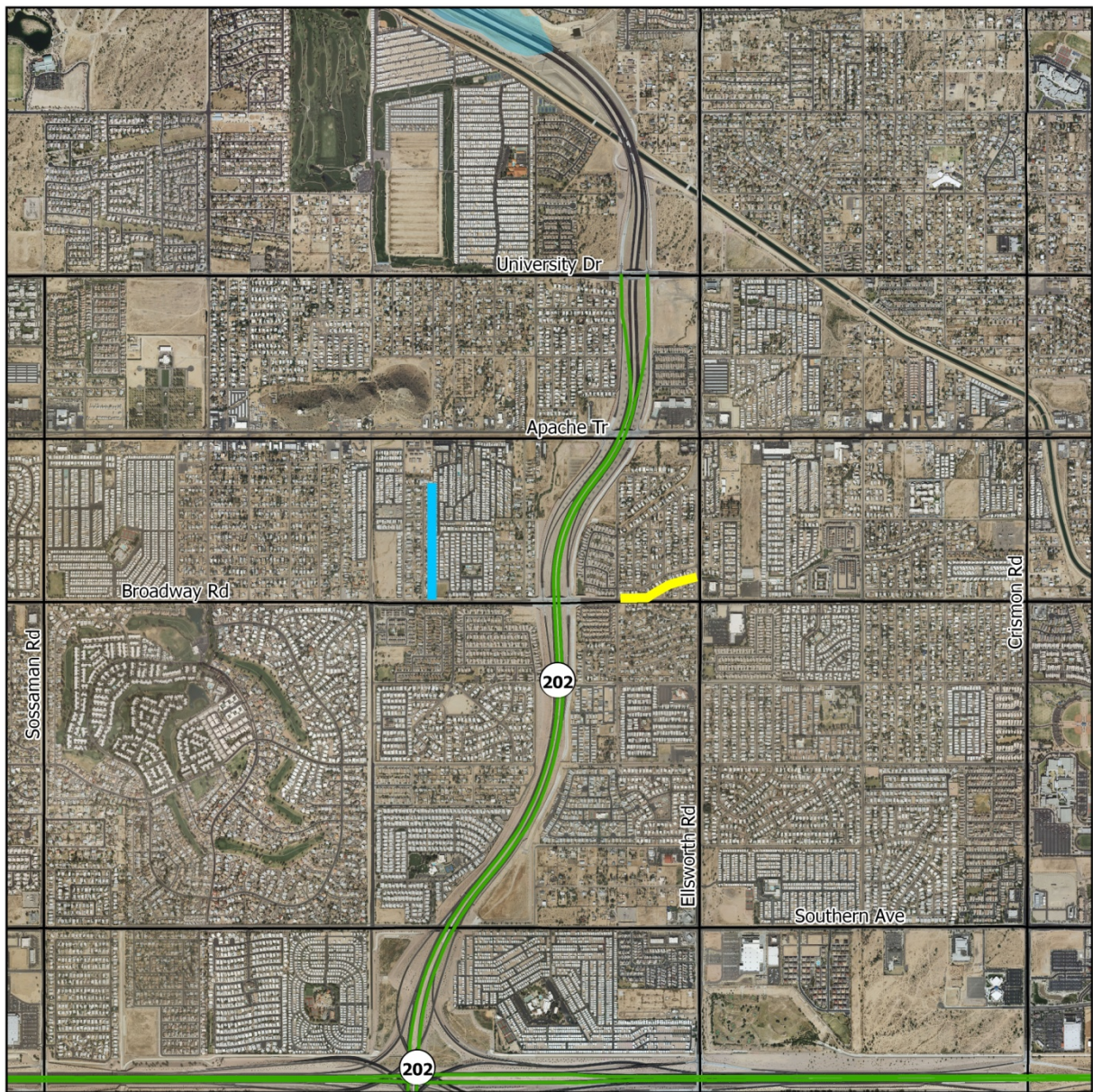
In June 1994, the District assumed maintenance responsibility (previously held by the Maricopa County Department of Transportation) for the East Mesa Drains, 11 dedicated local drainage easements in unincorporated Maricopa County.

The District conducted a study 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.

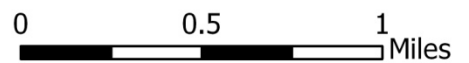
The project is being accomplished unilaterally and includes the installation of concrete lining. Construction is in progress.

Fiscal Year	Budget
FY 2011	\$30,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$30,000



**Legend**

- East Mesa Drain No. 4
- East Mesa Drain No. 7
- Floodplain
- Floodway



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# Rose Garden Lane Channel and Basin

PCN: 450.02.32

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

602-506-4771

csv@mail.maricopa.gov

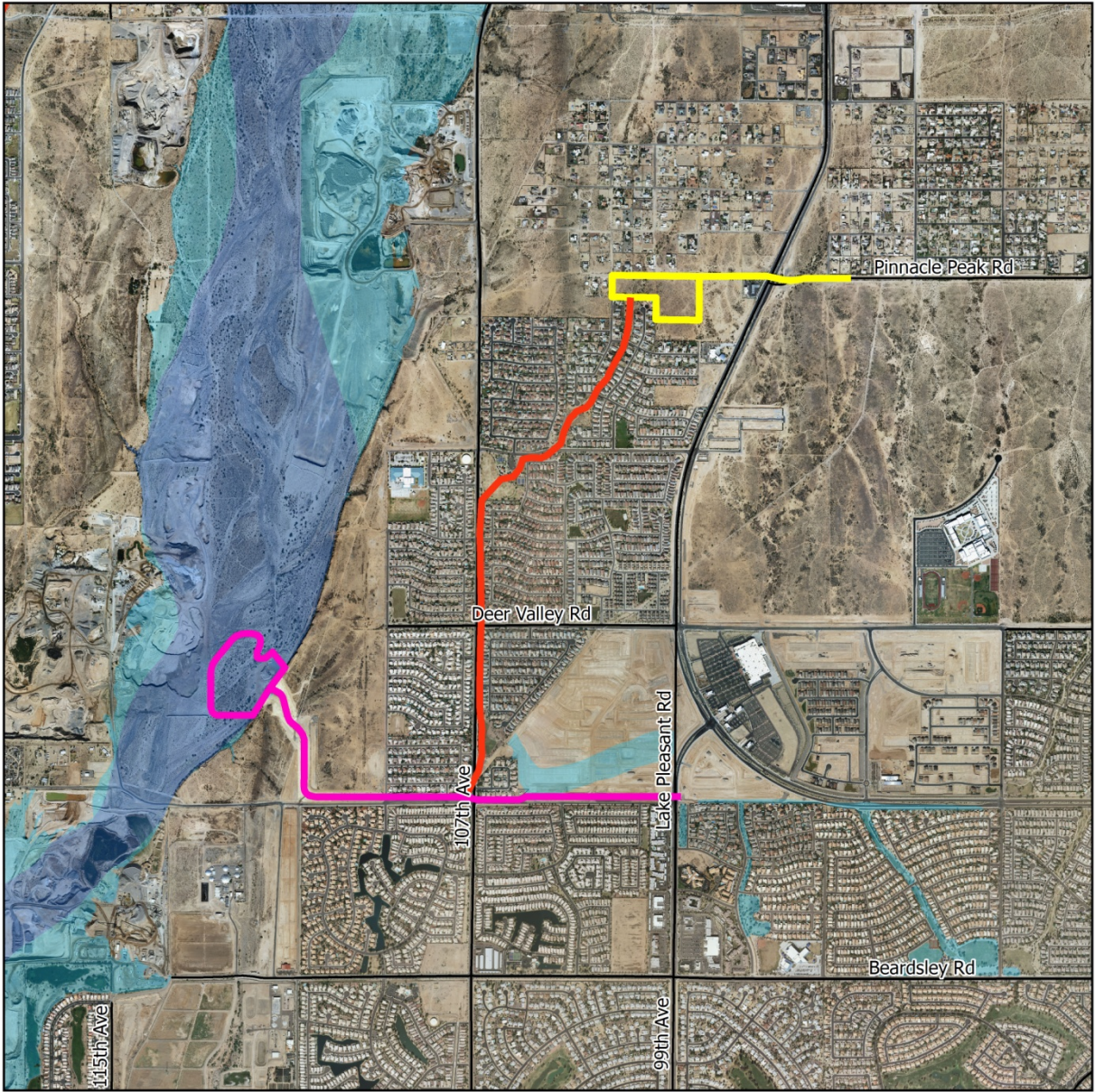
District: 4  
Jurisdiction: Peoria  
Origin: FY 2003 Prioritization Procedure  
Resolution: FCD 2001R012  
Agreement: FCD 2003A012, 2003A012A, 2005A007

The District completed the Glendale/Peoria Area Drainage Master Plan Update (ADMPU) in May 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.

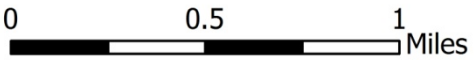
The city is the lead agency for all project tasks. Channel construction is complete. Basin construction is being accomplished through a material auction at no cost to the public.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$20,000



**Legend**

- Pinnacle Peak Road and 99th Avenue
- Existing Drainage Conveyance Corridor
- Rose Garden Lane Channel and Basin
- Floodplain
- Floodway



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# Northern Avenue Storm Drain 47th Avenue to 63rd Avenue

PCN: 450.03.34

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

602-506-4592

[garywesch@mail.maricopa.gov](mailto:garywesch@mail.maricopa.gov)

District: 4  
Jurisdiction: Glendale  
Origin: FY 2010 Prioritization Procedure  
Resolution: FCD 2008R020  
Agreement: FCD 2009A004

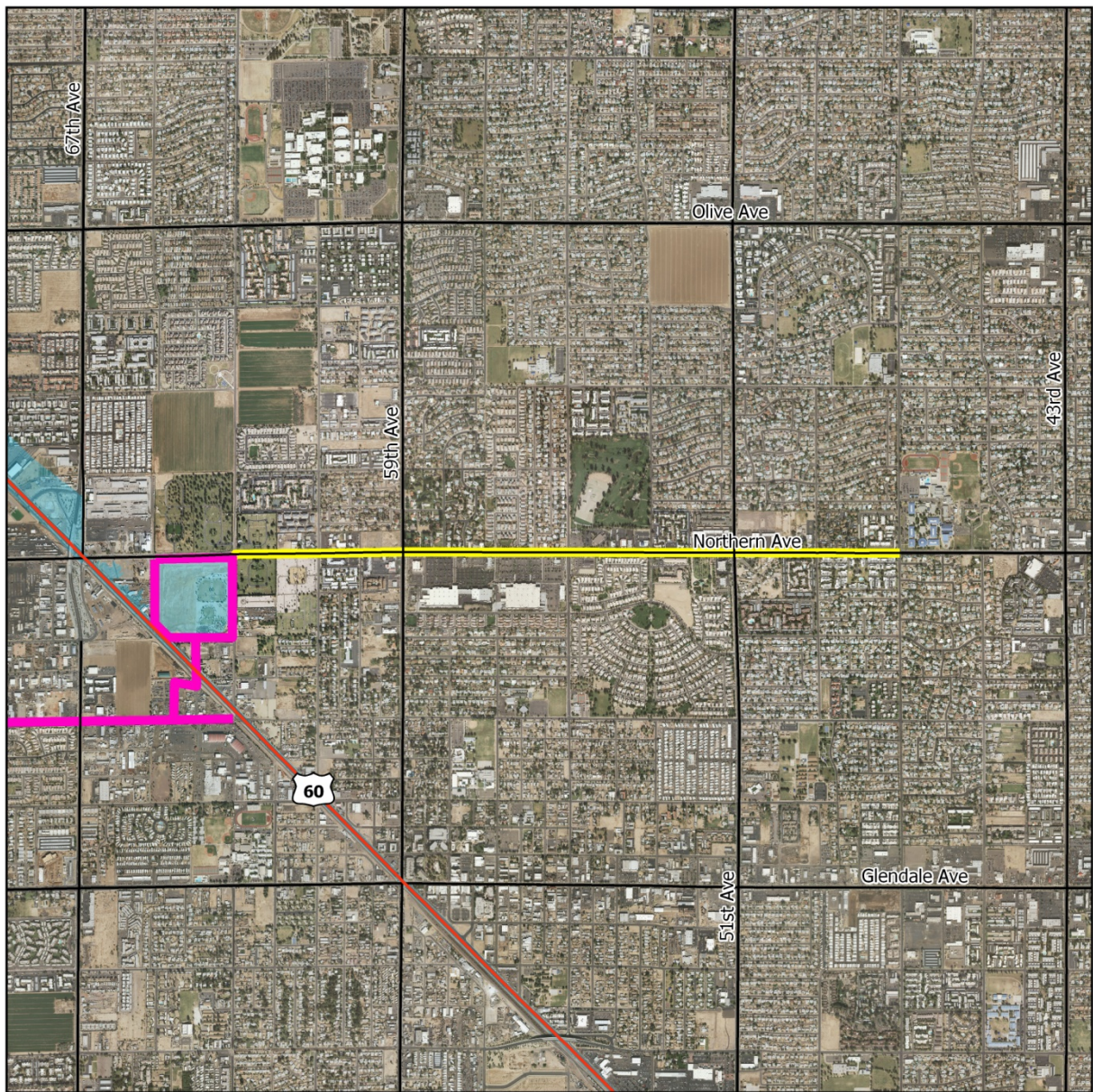
The District completed the Glendale/Peoria Area Drainage Master Plan (ADMP) in 1987. The District partnered with the city of Glendale, city of Peoria and other agencies to construct the Northern and Orangewood Storm Drain and Basin project in 2001 in accordance with the ADMP. The project included a basin 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 unilaterally accomplished and funded project design. The District is sharing 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.

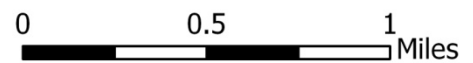
Construction is anticipated to be completed in Fiscal Year 2011. The city of Glendale is the lead agency for the project and will own, operate and maintain the completed project.

Fiscal Year	Budget
FY 2011	\$15,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$15,000



**Legend**

- Northern Avenue Storm Drain (47th Ave. to 63rd Ave.)
- Existing Northern & Orangewood Storm Drain and Basin
- Floodplain
- Floodway



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# Pinnacle Peak Road and 99th Avenue Drainage Improvements

PCN: 450.06.31

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

602-506-2943

bao@mail.maricopa.gov

District: 4  
Jurisdiction: Peoria  
Origin: FY 2007 Prioritization Procedure  
Resolution: FCD 2001R012  
Agreement: FCD 2008A013

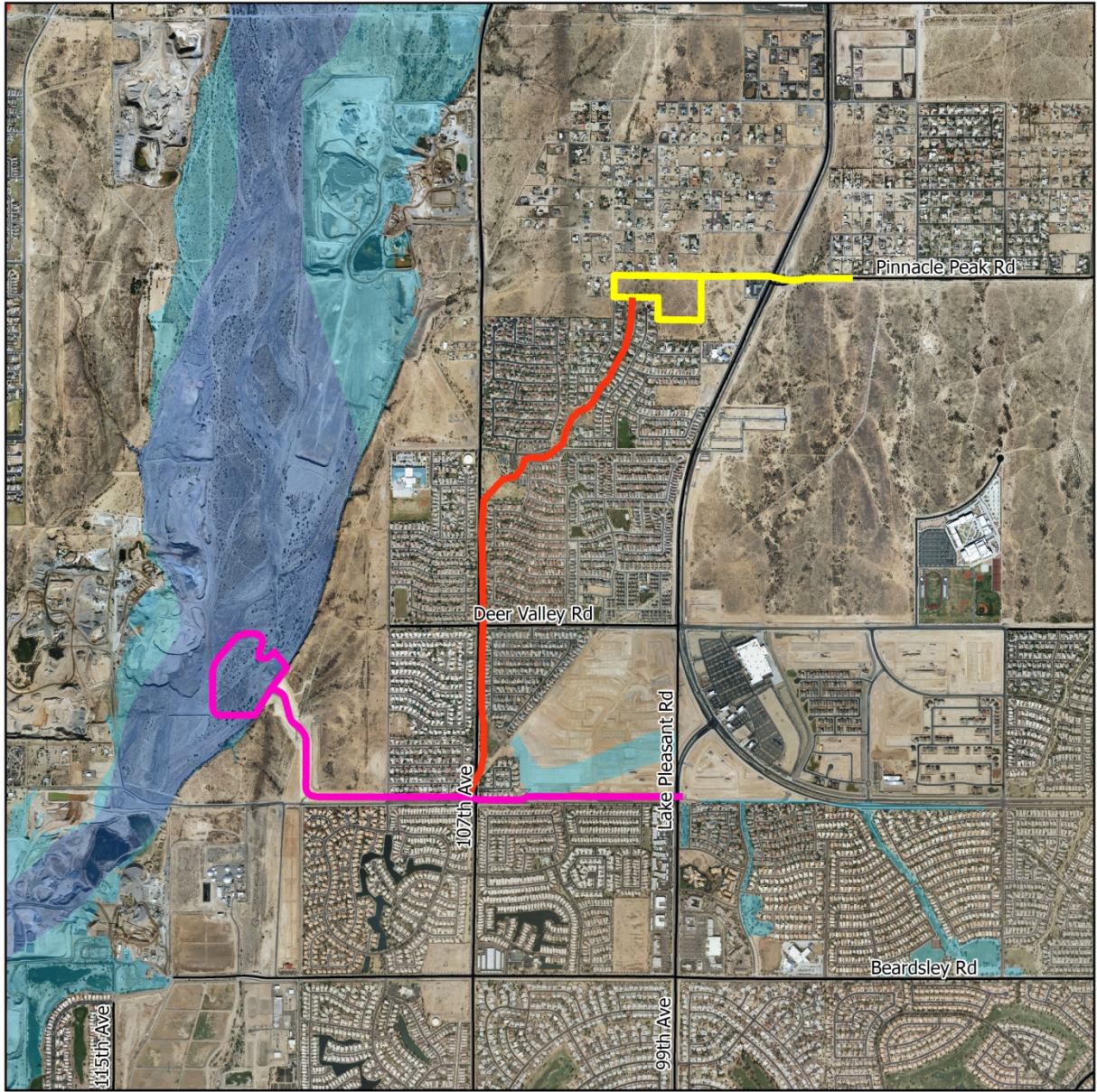
The District and the cities of Glendale and Peoria developed the Glendale/Peoria Area Drainage Master Plan Update (ADMPU) to identify existing and future drainage and flooding problems in the watershed, and to develop cost-effective solutions to alleviate those problems. The ADMPU recommended a number 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.

Project design is in progress. Value engineering conducted during the early stages of design resulted in substantial changes to the ADMPU recommendations, replacing much of the channel work with basin construction to save costs and avoid full takes of residential properties.

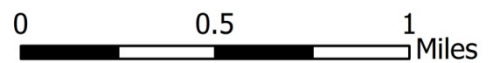
Construction is anticipated to begin in Fiscal Year 2012.

Fiscal Year	Budget
FY 2011	\$954,000
FY 2012	\$1,985,000
FY 2013	\$1,935,000
FY 2014	\$30,000
FY 2015	\$0
5-Year Program	\$4,904,000



**Legend**

- Pinnacle Peak Road and 99th Avenue
- Existing Drainage Conveyance Corridor
- Rose Garden Lane Channel and Basin
- Floodplain
- Floodway



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# White Tanks FRS No.3 Rehabilitation

PCN: 470.04.30

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

602-506-5426

mdg@mail.maricopa.gov

District: 4  
Jurisdiction: Unincorporated Maricopa County  
Origin: FY 1998 Prioritization Procedure  
Resolution: FCD 2004R004  
Agreement: FCD 98032, 2004A006, 2004A006A-E, 2009A013, 2009A013A

White Tanks Flood Retarding Structure (FRS) No.3 was constructed in 1954 as an earth-fill dam designed to impound stormwater runoff from the White Tank Mountains and release it through three outlets or over an emergency spillway located at the southern edge of the structure. The U.S. Soil Conservation Service, now the Natural Resources Conservation Service (NRCS), was the federal sponsor for construction. The dam is operated and maintained by the District.

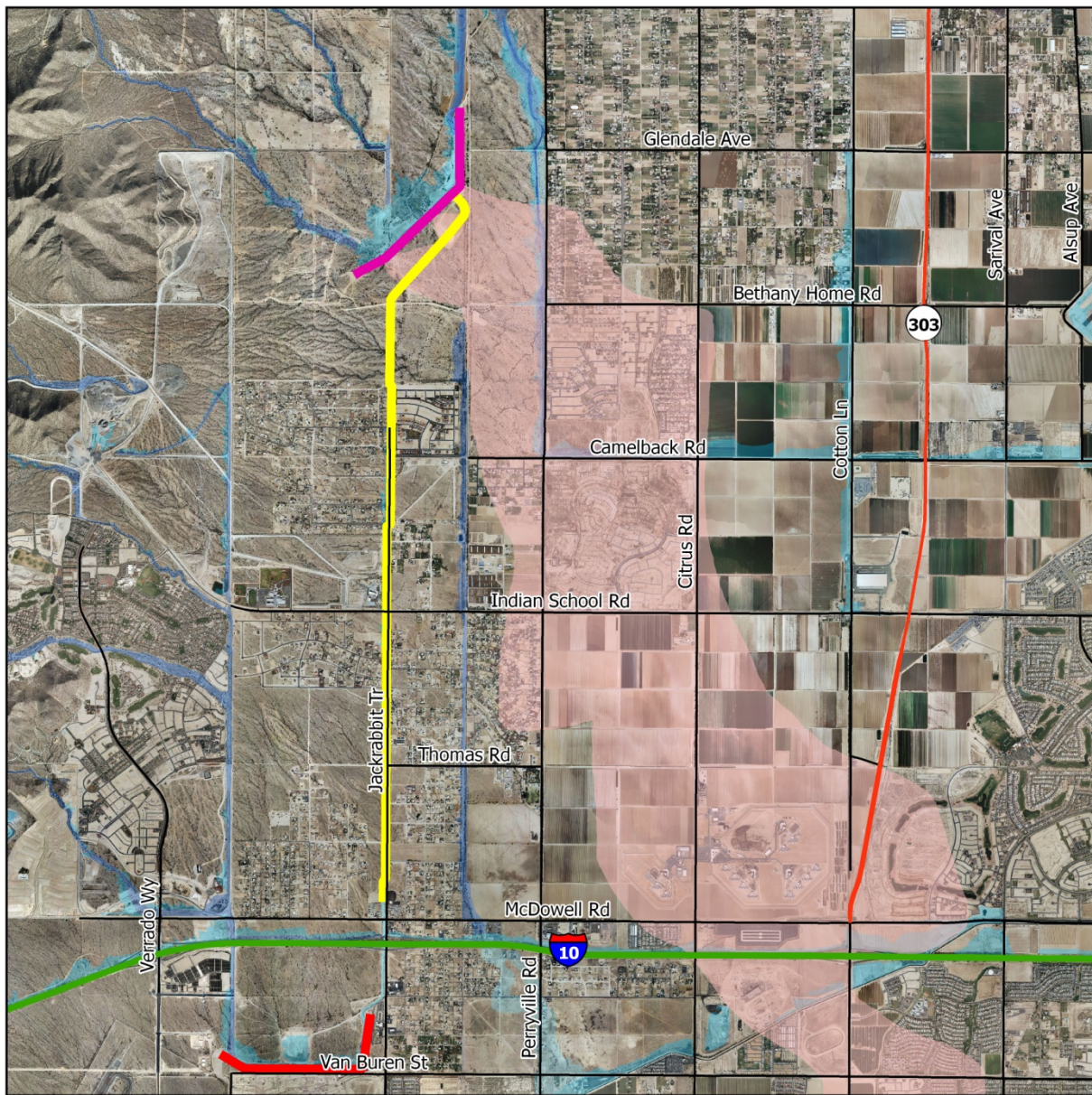
Following the identification of dam safety deficiencies, in Fiscal Year 2004, the District contracted an alternative evaluation and chose to modify the dam. The first phase of dam modification is complete.

White Tanks FRS No.3 is ranked first in the nation by NRCS under its dam rehabilitation priority ranking process, and the District and NRCS are sharing project costs under the auspices of the "Small Watershed Rehabilitation Amendments" (Public Law 106-472).

The first phase of the rehabilitation is complete and included plugging and abandoning two of the three 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.

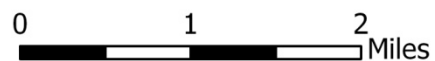
The second phase is in progress and includes a new emergency spillway drop structure and non-fissure risk zone embankment segments, and plugging and abandoning the third existing CMP outlet.

Fiscal Year	Budget
FY 2011	\$5,083,000
FY 2012	\$100,000
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$5,183,000



**Legend**

- White Tanks FRS No. 3
- White Tanks FRS No. 3 Outlet Channel
- White Tanks FRS No. 4
- White Tanks FRS No. 3 Dam Break Inundation Area
- Floodplain
- Floodway



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# White Tanks FRS No.3 Outlet Channel

PCN: 470.04.32

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

602-506-4592

[garywesch@mail.maricopa.gov](mailto:garywesch@mail.maricopa.gov)

District: 4  
Jurisdiction: Buckeye, Unincorporated Maricopa County  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2004R011, 2004R011A  
Agreement: None

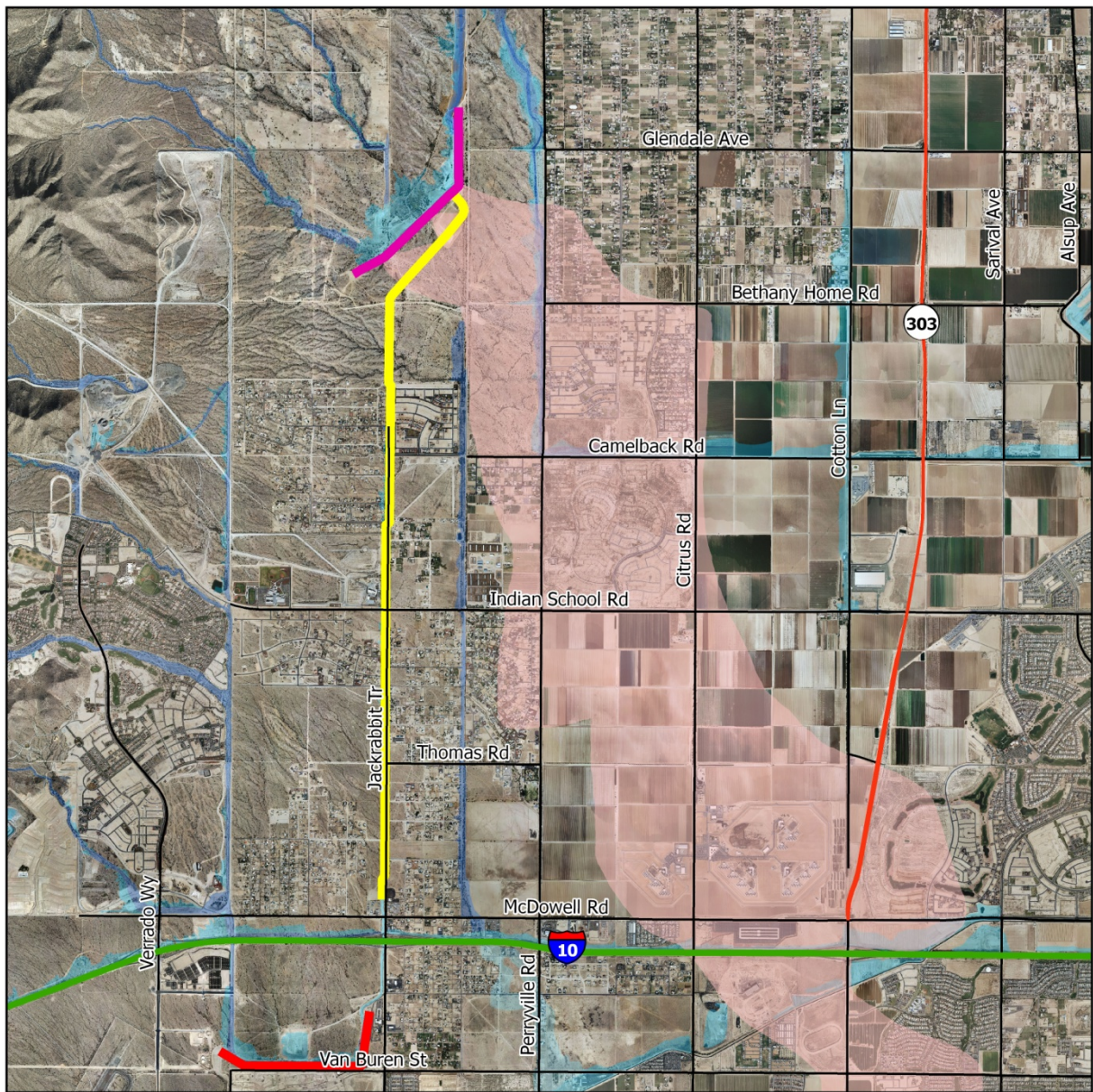
White Tanks Flood Retarding Structure (FRS) No.3 was constructed in 1954 as an earth-fill dam designed to impound stormwater runoff from the White Tank Mountains and release it through three outlets or over an emergency spillway located at the southern edge of the structure. The U.S. Soil Conservation Service, now the Natural Resources Conservation Service (NRCS), was the federal sponsor for construction. The dam is operated and maintained by the District.

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 project, storm water conveyed by this project would subsequently be conveyed to the Gila River.

The District anticipates completing the project unilaterally, and final design is in progress.

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

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$7,676,000
FY 2012	\$9,170,000
FY 2013	\$30,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$16,876,000



**Legend**

- White Tanks FRS No. 3
- White Tanks FRS No. 3 Outlet Channel
- White Tanks FRS No. 4
- White Tanks FRS No. 3 Dam Break Inundation Area
- Floodplain
- Floodway



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# Bullard Wash Phase II

PCN: 470.13.31

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

602-506-4771

csv@mail.maricopa.gov

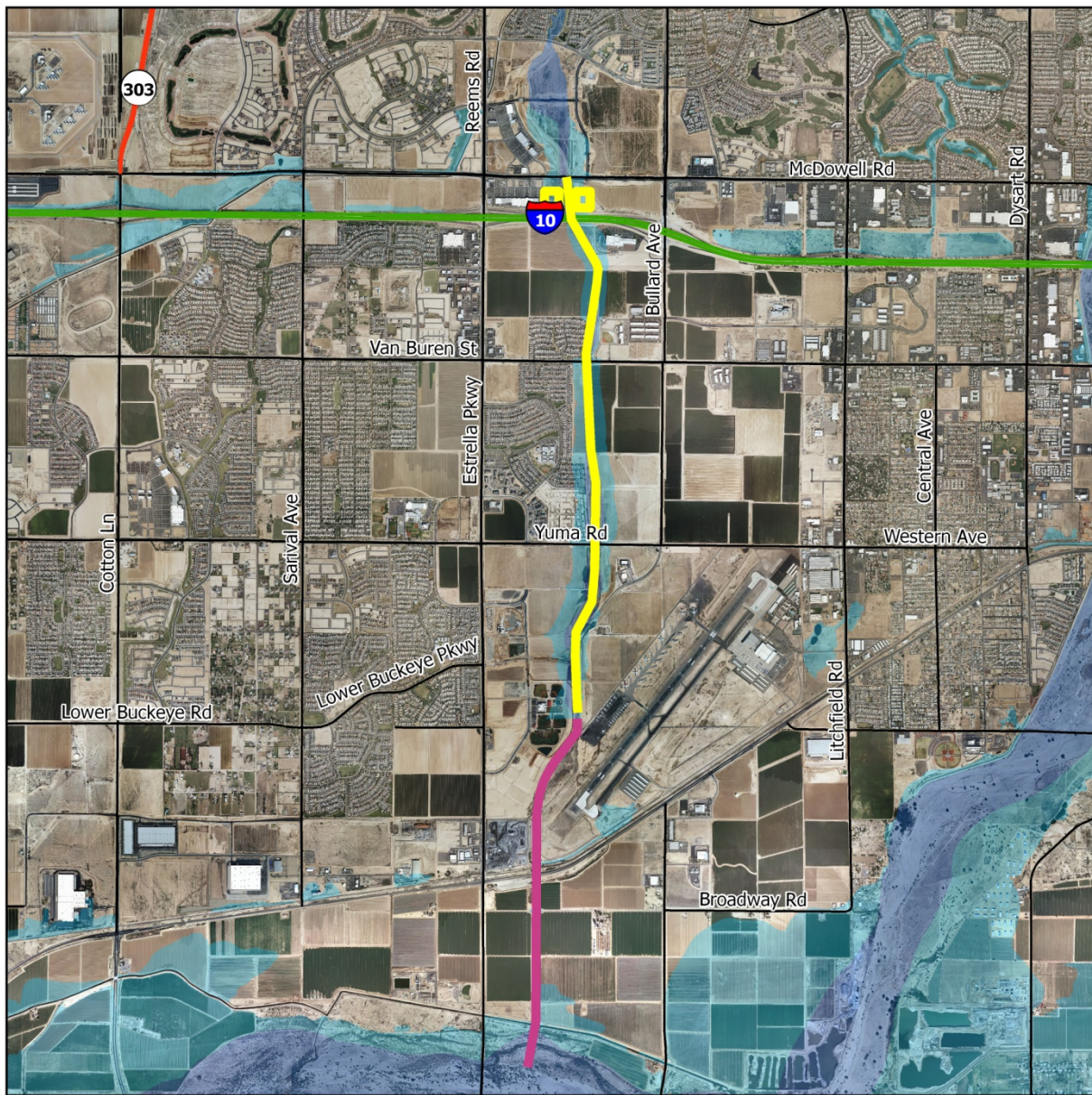
District: 4, 5  
Jurisdiction: Goodyear  
Origin: FY 2002 Prioritization Procedure  
Resolution: FCD 2000R016, 2000R016A  
Agreement: FCD 2001A006, 2003A002, 2006A010, 2003A011

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 by the District in partnership with the city of Goodyear. 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, reducing the floodplain width and protecting 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 Road to I-10 is complete, and IGAs with the city for construction of the project are in place.

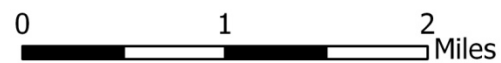
Construction timing is dependent upon the availability of District and city funding and will likely be phased.

Fiscal Year	Budget
FY 2011	\$5,000
FY 2012	\$2,620,000
FY 2013	\$5,120,000
FY 2014	\$3,120,000
FY 2015	\$30,000
5-Year Program	\$10,895,000



**Legend**

- Bullard Wash (Phase II)
- Existing Bullard Wash (Phase I)
- Floodplain
- Floodway



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# Loop 303 Drainage Improvements

PCN: 470.14.31

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

602-506-4732

mwd@mail.maricopa.gov

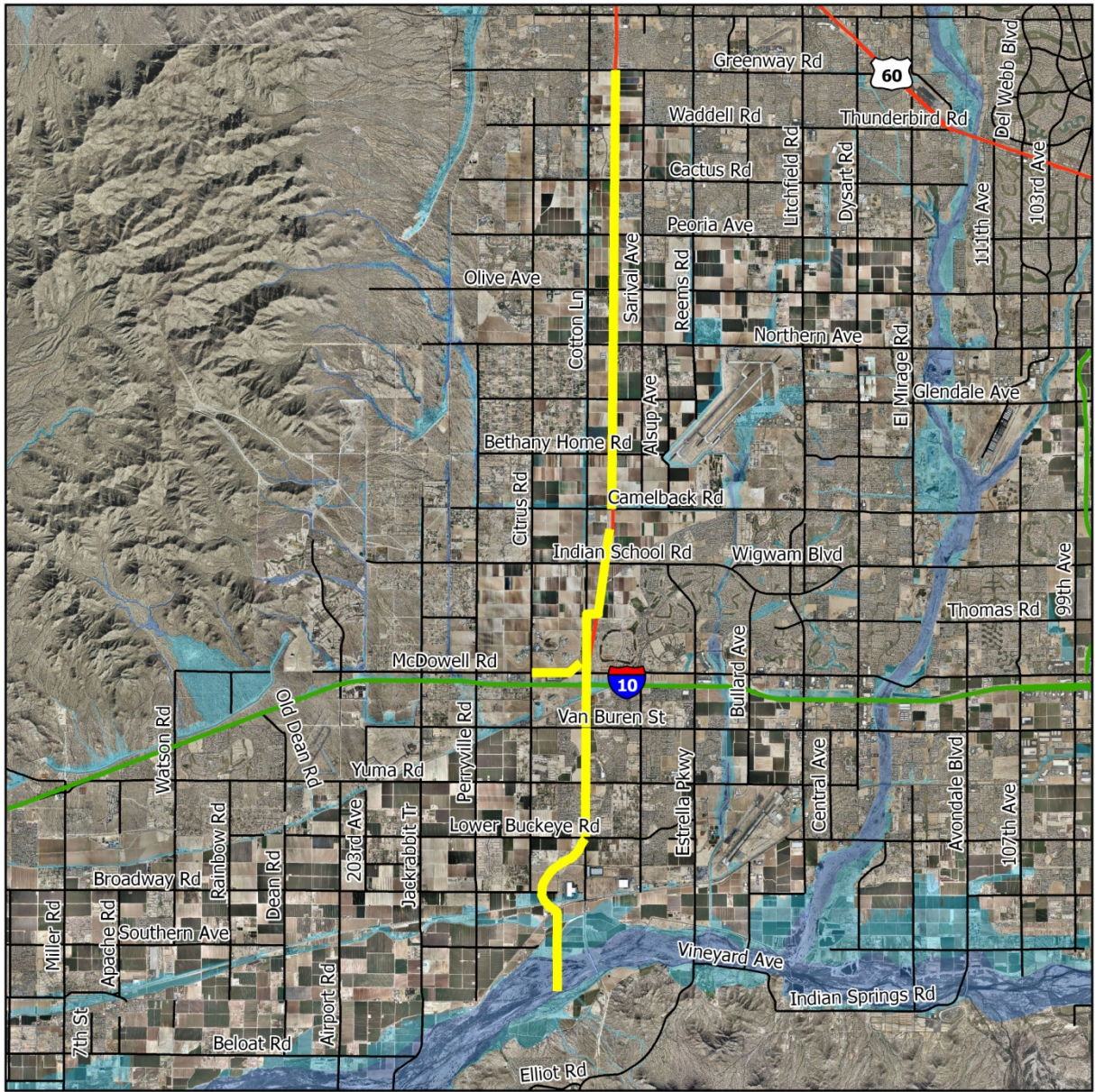
District: 4  
Jurisdiction: Avondale, Buckeye, Glendale, Goodyear, Phoenix, Surprise  
Origin: FY 2006 Prioritization Procedure  
Resolution: FCD 2005R017  
Agreement: FCD 2007A005

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 is partnering with the Arizona Department of Transportation (ADOT) in this regional project. The District will construct drainage solutions from approximately 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.

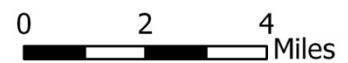
A pre-design for elements of the project is complete, basin rights-of-way have been acquired, and final design is anticipated to be completed by Fiscal Year 2012.

Fiscal Year	Budget
FY 2011	\$2,575,000
FY 2012	\$8,350,000
FY 2013	\$7,360,000
FY 2014	\$6,350,000
FY 2015	\$50,000
5-Year Program	\$24,685,000



**Legend**

- Loop 303 Drainage Improvements
- Floodplain
- Floodway



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# Northern Parkway Drainage Improvements

PCN: 470.15.31

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

District: 4  
Jurisdiction: Glendale  
Origin: FY 2007, FY 2008, FY 2009 Prioritization Procedures  
Resolution: FCD 2007R002  
Agreement: Pending

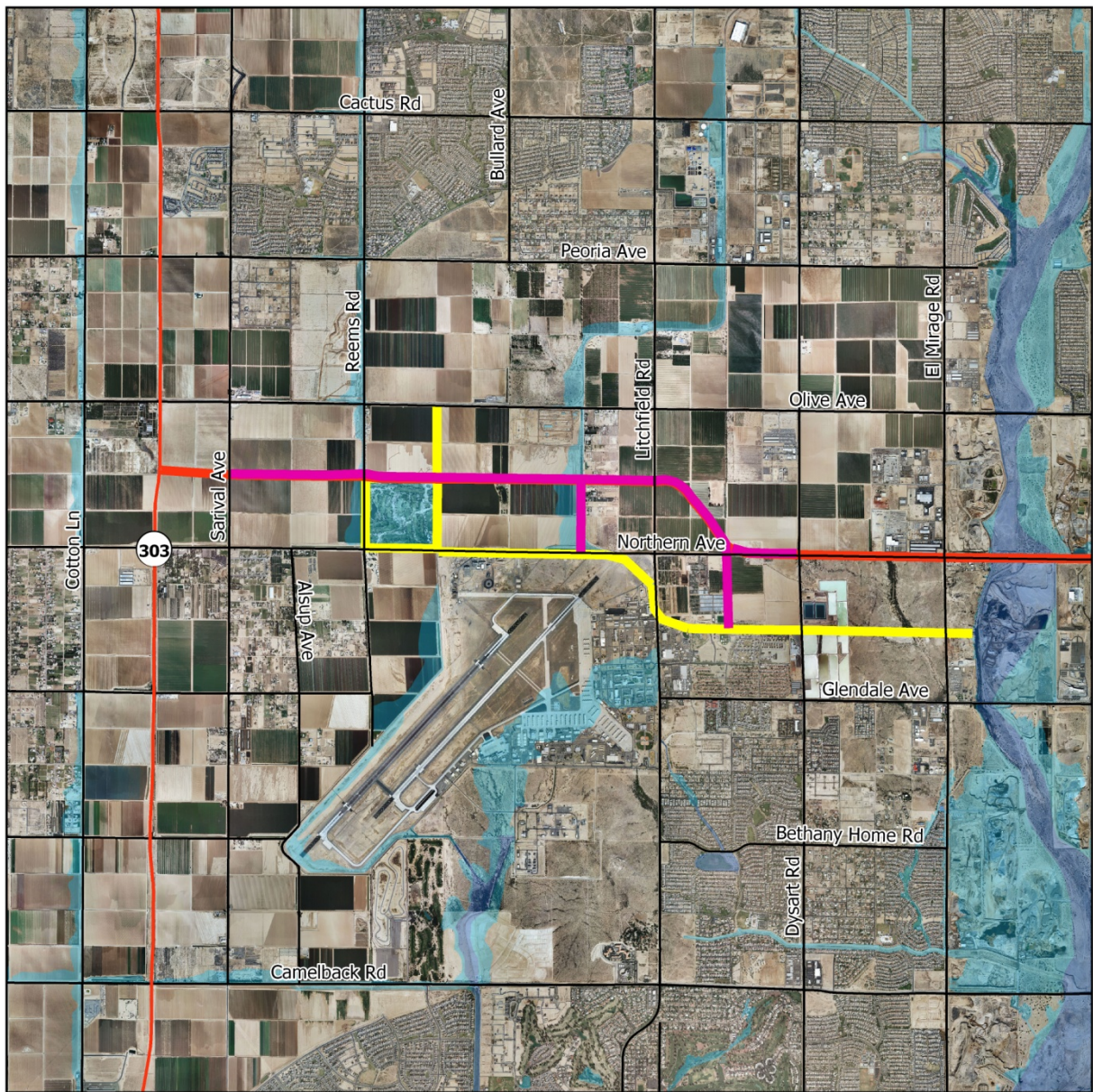
The Maricopa County Department of Transportation (MCDOT)/Glendale Northern Parkway project will construct a drainage channel along the north side of the parkway from approximately Sarival Avenue to Dysart Road, subsequently connecting to the Dysart Drain at multiple locations.

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.

MCDOT is acting as the lead agency for roadway and drainage design and construction.

Fiscal Year	Budget
FY 2011	\$560,000
FY 2012	\$20,000
FY 2013	\$20,000
FY 2014	\$20,000
FY 2015	\$4,080,000
5-Year Program	\$4,700,000



**Legend**

- Northern Parkway Channel
- Northern Parkway Alignment (Approximate)
- Existing Dysart Drain
- Floodplain
- Floodway



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# Elm Lane Drainage Mitigation

PCN: 470.16.31

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

602-506-4732

mwd@mail.maricopa.gov

District: 5  
Jurisdiction: Avondale  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2007R003  
Agreement: FCD 2007A008

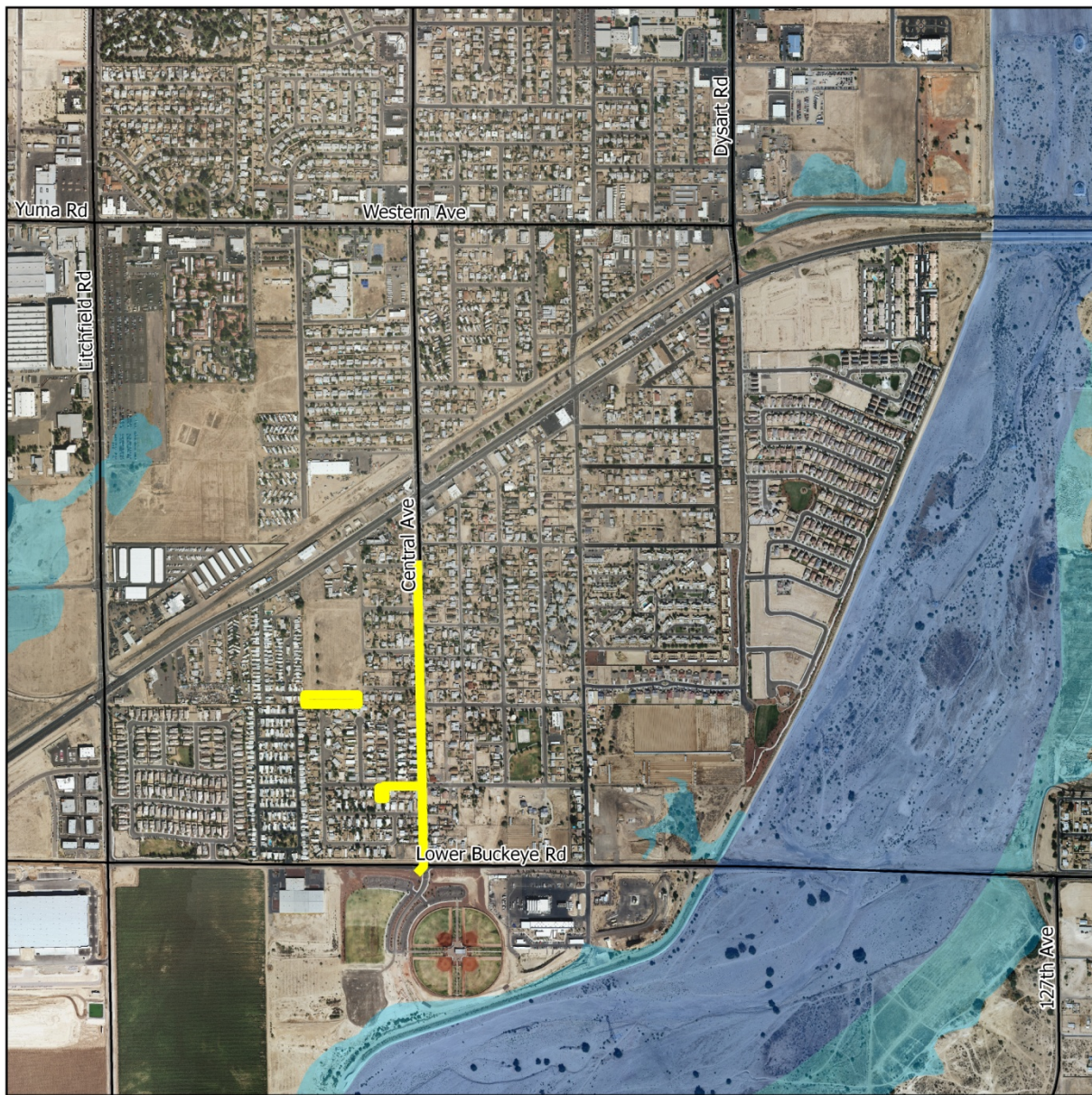
The Elm Lane Drainage Mitigation Project at Central Avenue and Elm Lane in the city of Avondale involves the construction of 0.8 miles of storm drain with catch basins, retention basins and an outfall culvert. The project resulted from an alternatives study conducted by the city in response to flooding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

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

The city is acting as the project's lead agency, the District is sharing in 50 percent of the total project cost, and the completed project will be maintained by the city.

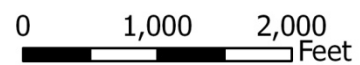
Construction is anticipated to be completed by Fiscal Year 2011.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$10,000
5-Year Program	\$10,000



**Legend**

- Elm Lane Drainage Mitigation Project
- Floodplain
- Floodway



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# Sonoqui Wash Channelization Phase II

PCN: 480.04.32

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

602-506-4592

[garywesch@mail.maricopa.gov](mailto:garywesch@mail.maricopa.gov)

District: 1  
Jurisdiction: Queen Creek  
Origin: FY 2006 and FY 2007 Prioritization Procedures  
Resolution: FCD 2001R001  
Agreement: FCD 2008A008, 2009A011

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.

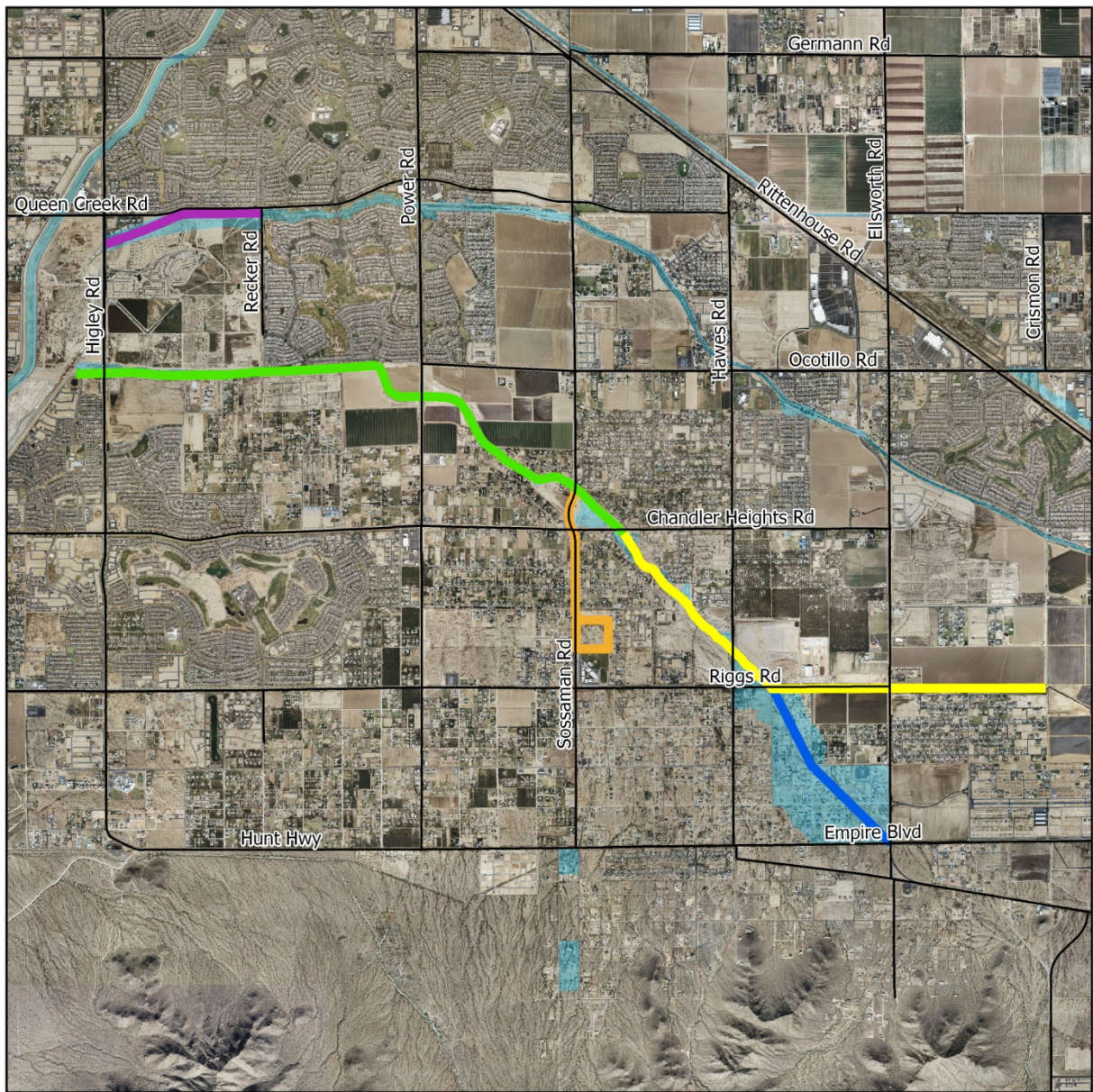
The second phase of Sonoqui Wash Channelization includes the segment of the existing wash southeast from Chandler Heights Road to Riggs Road, and along Riggs Road to Crismon Road. The proposed channel will be designed to collect and convey the 100-year flow to prevent flooding to property adjacent to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

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 project agreements delineate responsibilities to each agency, approximating equal cost share contributions while allowing the District to advance construction of its sub-phase despite a short-term lack of town funding.

Design is in progress, and the District anticipates initiating construction of its sub-phase, from Chandler Heights Road to Ellsworth Road, in the fall of 2010.

Fiscal Year	Budget
FY 2011	\$6,800,000
FY 2012	\$1,140,000
FY 2013	\$30,000
FY 2014	\$5,000
FY 2015	\$5,000
5-Year Program	\$7,980,000



**Legend**

- Existing Sonoqui Wash Improvements (Phase I)
- Sonoqui Wash Improvements (Phase II)
- Sonoqui Wash Improvements (Phase III)
- Cloud Rd. and Sossaman Rd. Basin and Outlet
- Queen Creek Channel (Recker Rd. to Higley Rd.)
- Floodplain
- Floodway



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# Sonoqui Wash Channelization Phase III

PCN: 480.04.34

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

602-506-4592

garywesch@mail.maricopa.gov

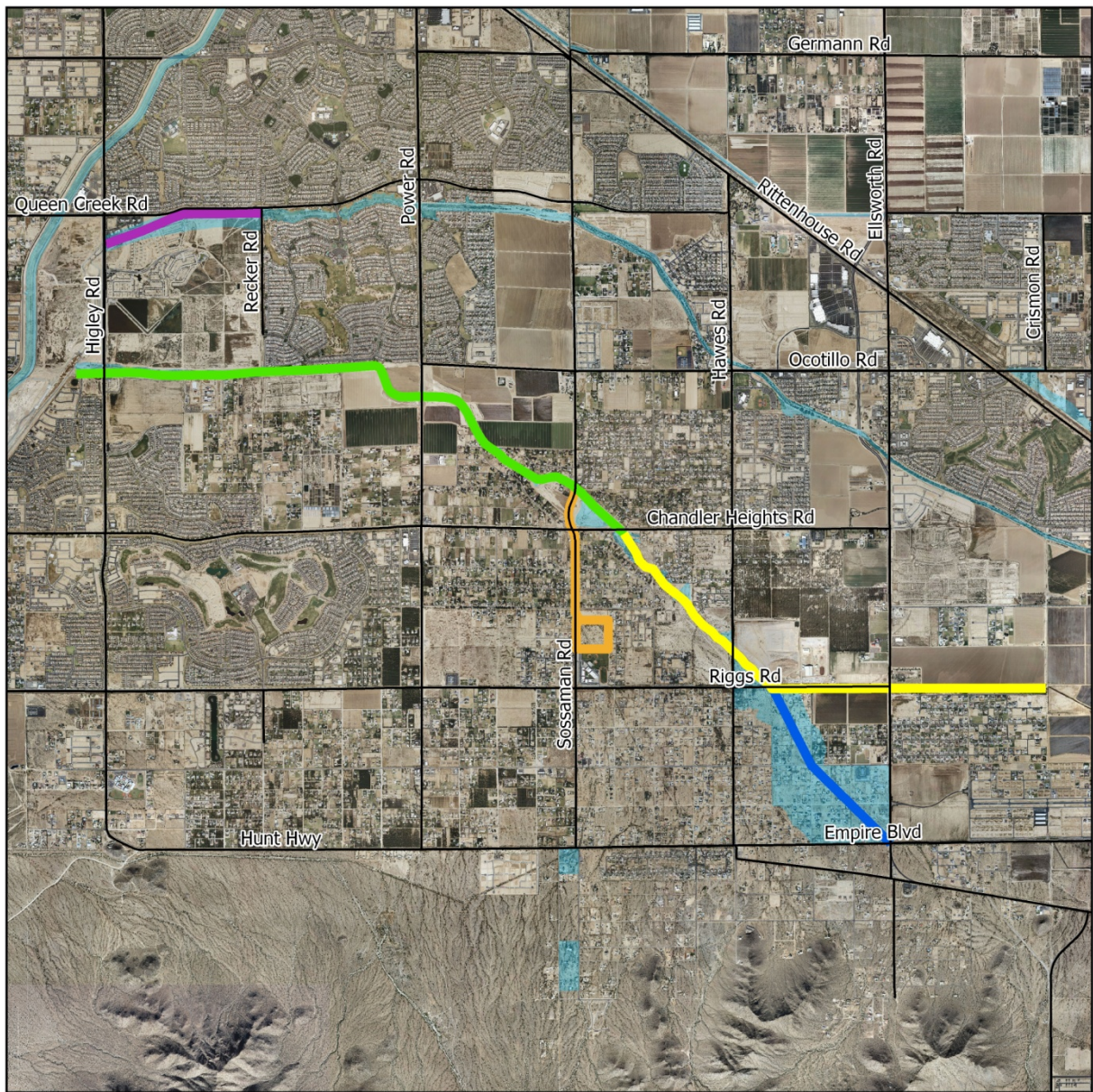
District: 1  
Jurisdiction: Unincorporated Maricopa County  
Origin: FY 2010 Prioritization Procedure  
Resolution: FCD 2001R001  
Agreement: None

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 a floodplain delineated over 345 acres and 217 homes, and provide protection to roads and other infrastructure.

Final design is in progress.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$1,553,000
FY 2012	\$1,080,000
FY 2013	\$1,030,000
FY 2014	\$3,380,000
FY 2015	\$6,680,000
5-Year Program	\$13,723,000



**Legend**

- Existing Sonoqui Wash Improvements (Phase I)
- Sonoqui Wash Improvements (Phase II)
- Sonoqui Wash Improvements (Phase III)
- Cloud Rd. and Sossaman Rd. Basin and Outlet
- Queen Creek Channel (Recker Rd. to Higley Rd.)
- Floodplain
- Floodway



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# Queen Creek Channel Recker Road to Higley Road

PCN: 480.05.31

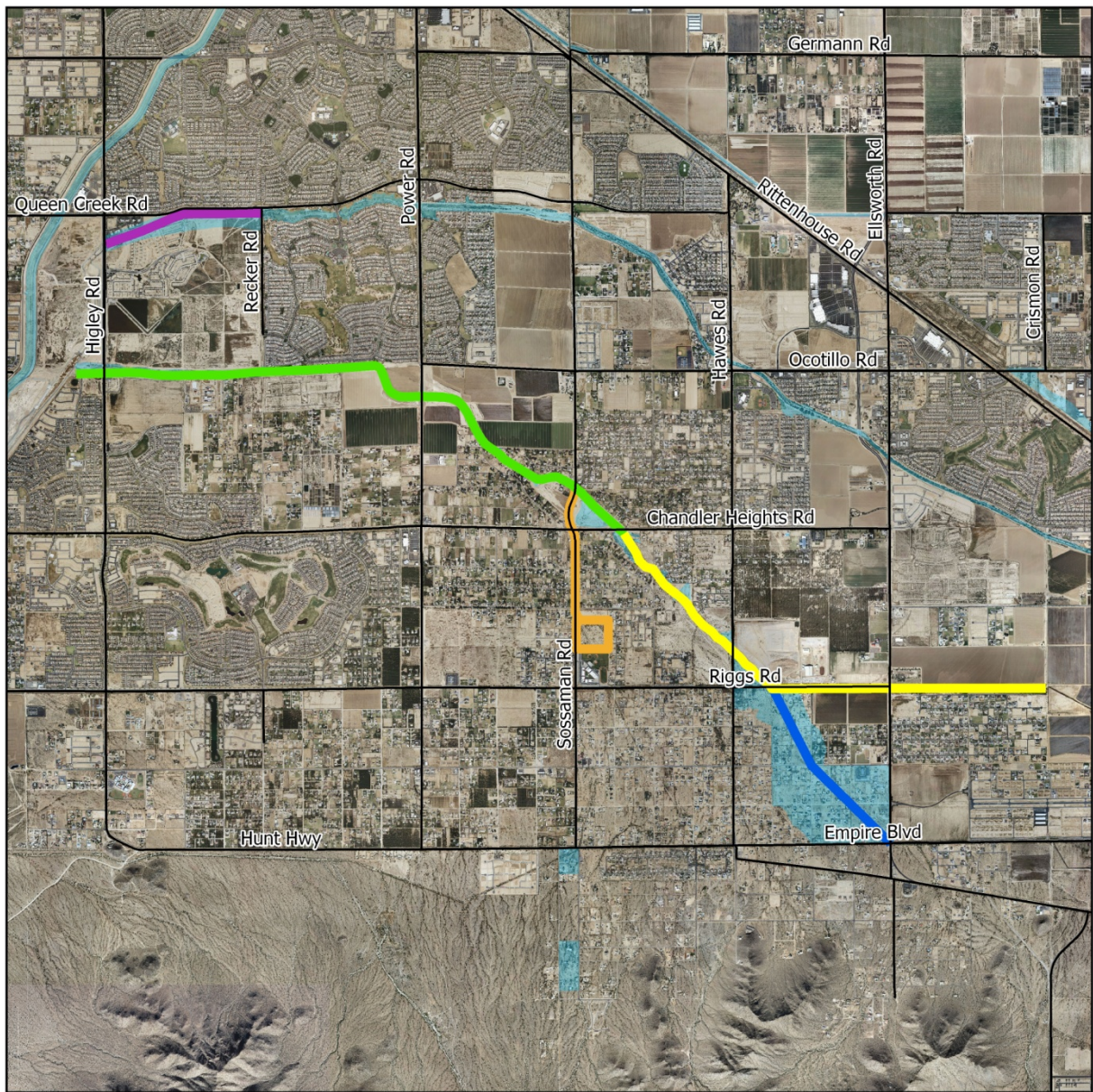
**Scott Vogel, P.E., Project Manager**  
602-506-4771  
csv@mail.maricopa.gov

District: 1  
Jurisdiction: Gilbert  
Origin: FY 2005 Prioritization Procedure  
Resolution: FCD 2004R014  
Agreement: FCD 2005A006

The town of Gilbert proposed improvements to Queen Creek Wash from Recker to Higley roads to complete channel improvements that have already been accomplished upstream of Recker and downstream of Higley. This project replaces the existing wash with a natural desert 100-year capacity channel.

In accordance with the IGA, the town is the lead agency for the project and will own, operate and maintain the completed project; the District's cost share is limited to a cap of \$1 million. The town has completed design and construction, with the exception of landscaping and aesthetic enhancements that are awaiting the resumption of development in the area.

Fiscal Year	Budget
FY 2011	\$5,000
FY 2012	\$5,000
FY 2013	\$5,000
FY 2014	\$5,000
FY 2015	\$5,000
5-Year Program	\$25,000



**Legend**

- Existing Sonoqui Wash Improvements (Phase I)
- Sonoqui Wash Improvements (Phase II)
- Sonoqui Wash Improvements (Phase III)
- Cloud Rd. and Sossaman Rd. Basin and Outlet
- Queen Creek Channel (Recker Rd. to Higley Rd.)
- Floodplain
- Floodway



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# 75th Avenue Storm Drain and Durango Regional Conveyance Channel

PCN: 565.04.31

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

602-506-2943

bao@mail.maricopa.gov

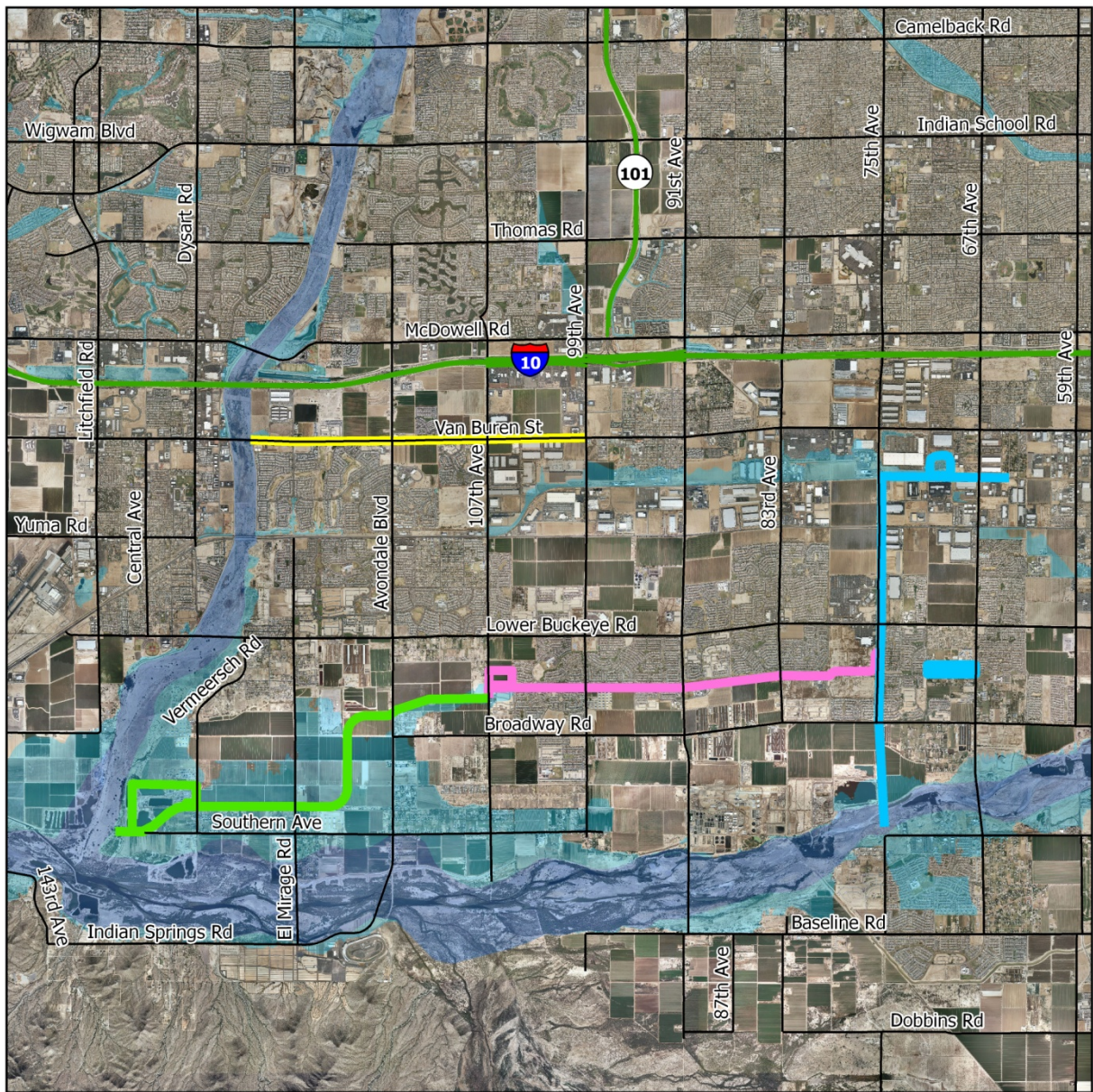
District: 5  
Jurisdiction: Phoenix, Unincorporated Maricopa County  
Origin: FY 2004 Prioritization Procedure  
Resolution: FCD 2002R012, 2002R012A  
Agreement: FCD 2002A015, 2002A015A, 2003A014, 2003A014A

The 75th Avenue Storm Drain and Durango Regional Conveyance Channel (DRCC) project 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 an identified floodplain affecting approximately 71 structures.

The city was the lead agency for design of both the storm drain and the DRCC. The District was the lead agency for construction of the first phase of the DRCC, and construction of that phase is complete. The city 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 utility conflicts and remains to be completed.

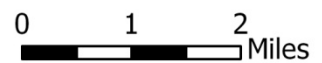
The completed project will be maintained by the city.

Fiscal Year	Budget
FY 2011	\$20,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$20,000



**Legend**

- 75th Ave Storm Drain & Durango Regional Conveyance Channel
- Durango Regional Conveyance Channel (75th Ave. to 107th Ave.)
- Durango Regional Conveyance Channel (107th Ave. to Agua Fria)
- Van Buren Street Channel
- Floodplain
- Floodway



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# Durango Regional Conveyance Channel 107th Avenue to the Agua Fria River

PCN: 565.04.32

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

602-506-5537

glj@mail.maricopa.gov

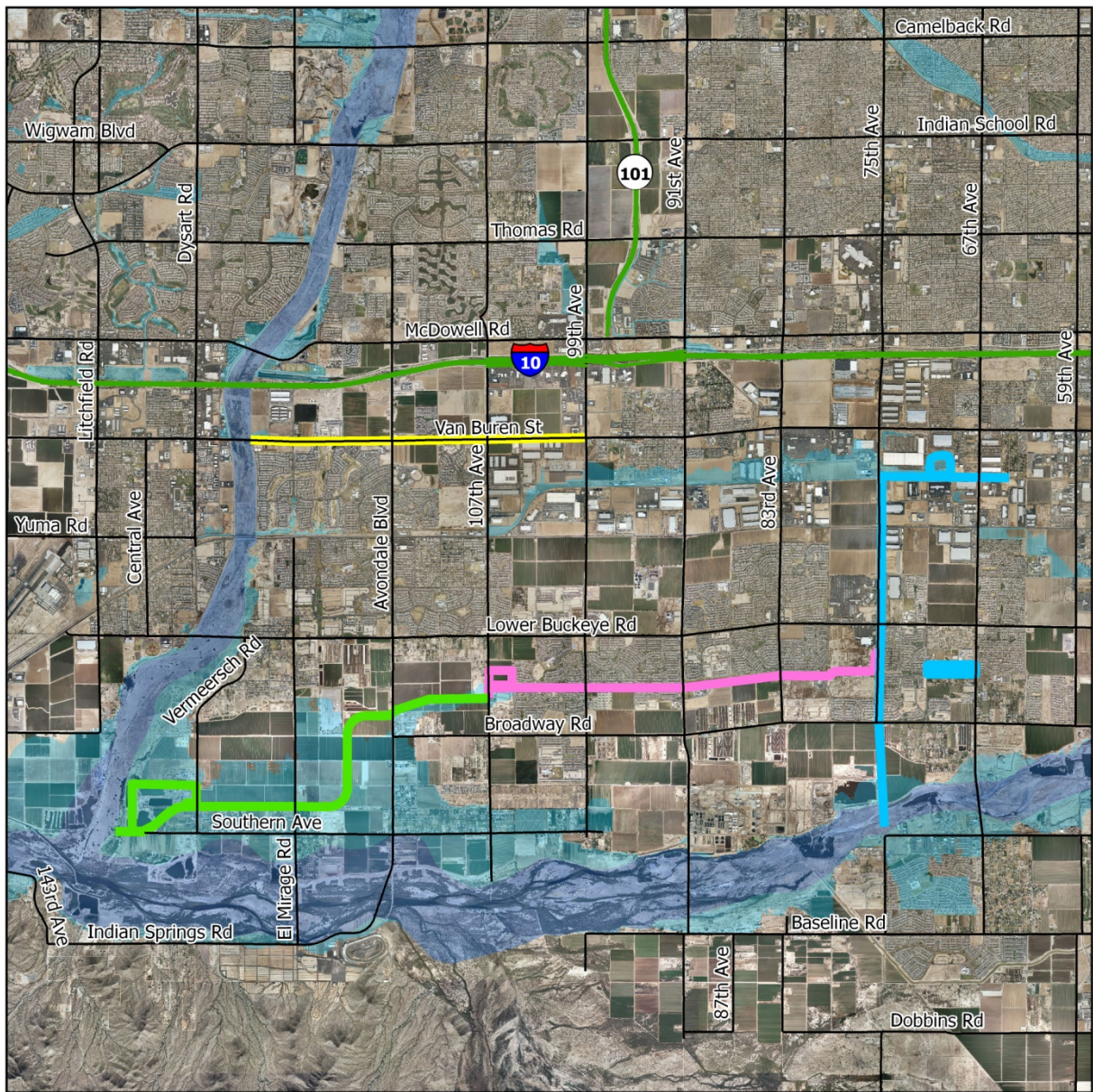
District: 5  
Jurisdiction: Avondale, Unincorporated Maricopa County  
Origin: FY 2003 Prioritization Procedure  
Resolution: FCD 2006R020  
Agreement: Pending

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.

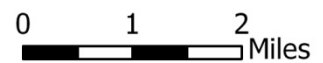
Project implementation is awaiting an IGA between the District and the city of Avondale.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$500,000
FY 2013	\$600,000
FY 2014	\$1,060,000
FY 2015	\$4,150,000
5-Year Program	\$6,320,000



**Legend**

- 75th Ave Storm Drain & Durango Regional Conveyance Channel
- Durango Regional Conveyance Channel (75th Ave. to 107th Ave.)
- Durango Regional Conveyance Channel (107th Ave. to Agua Fria)
- Van Buren Street Channel
- Floodplain
- Floodway



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# Durango Regional Conveyance Channel 75th Avenue to 107th Avenue

PCN: 565.04.33

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

602-506-2943

bao@mail.maricopa.gov

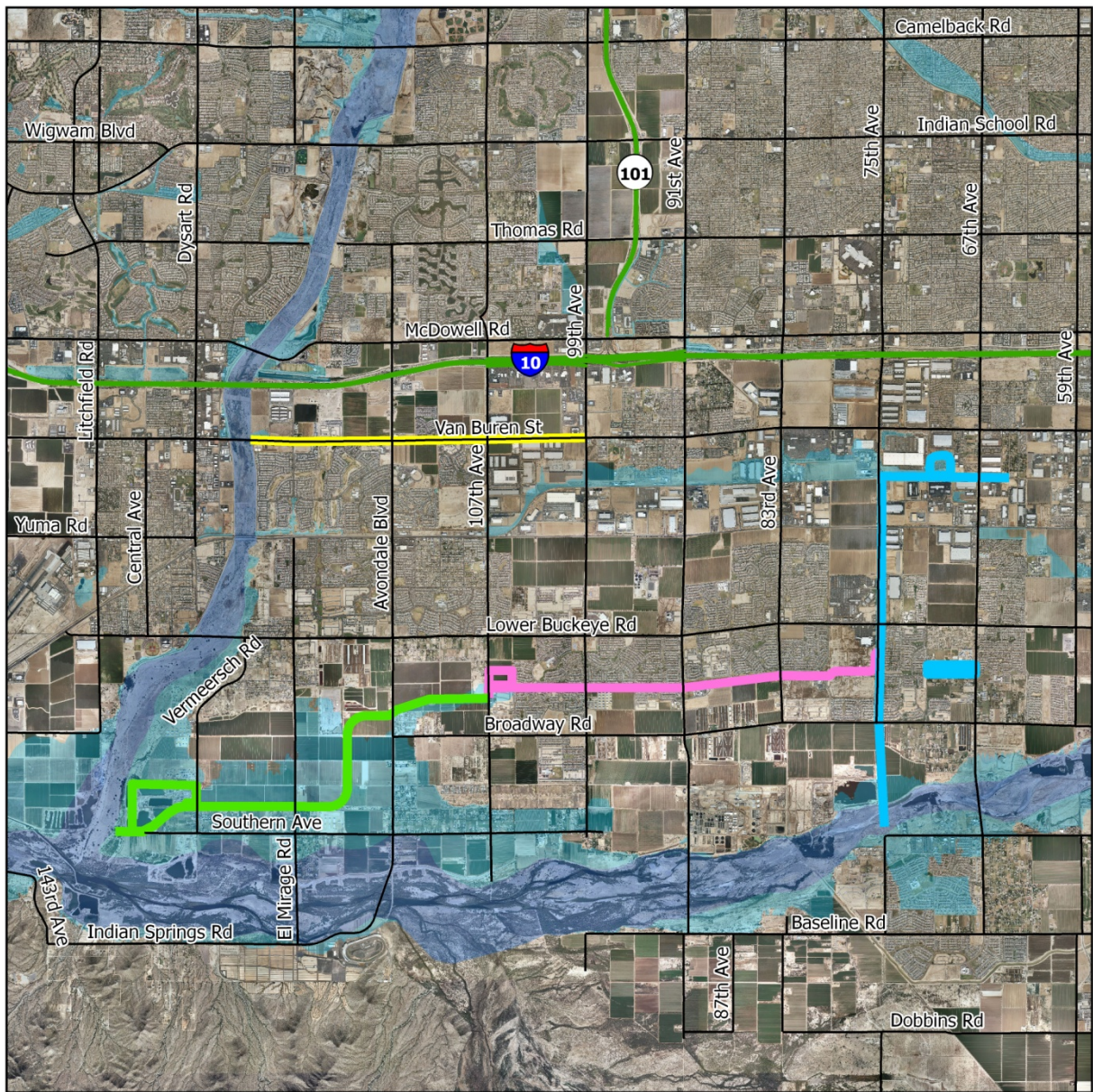
District: 5  
Jurisdiction: Avondale, Unincorporated Maricopa County  
Origin: FY 2003 Prioritization Procedure  
Resolution: FCD 2006R009  
Agreement: FCD 2008A010, 2009A007

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. The project includes design and construction of two basins along the channel alignment, additional channel segments and additional box culverts.

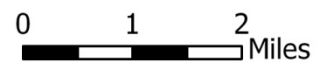
The District, under a cost share agreement with the city of Phoenix, has acquired rights-of-way for the primary project basin at 107th Avenue, and project design is in progress under the District's lead.

Fiscal Year	Budget
FY 2011	\$675,000
FY 2012	\$50,000
FY 2013	\$3,190,000
FY 2014	\$3,180,000
FY 2015	\$20,000
5-Year Program	\$7,115,000



**Legend**

- 75th Ave Storm Drain & Durango Regional Conveyance Channel
- Durango Regional Conveyance Channel (75th Ave. to 107th Ave.)
- Durango Regional Conveyance Channel (107th Ave. to Agua Fria)
- Van Buren Street Channel
- Floodplain
- Floodway



# Van Buren Street Channel 99th Avenue to the Agua Fria River

**Greg Jones, P.E., Project Manager**  
602-506-5537  
glj@mail.maricopa.gov

District: 5  
Jurisdiction: Avondale  
Origin: FY 2011 Prioritization Procedure  
Resolution: Pending  
Agreement: Pending

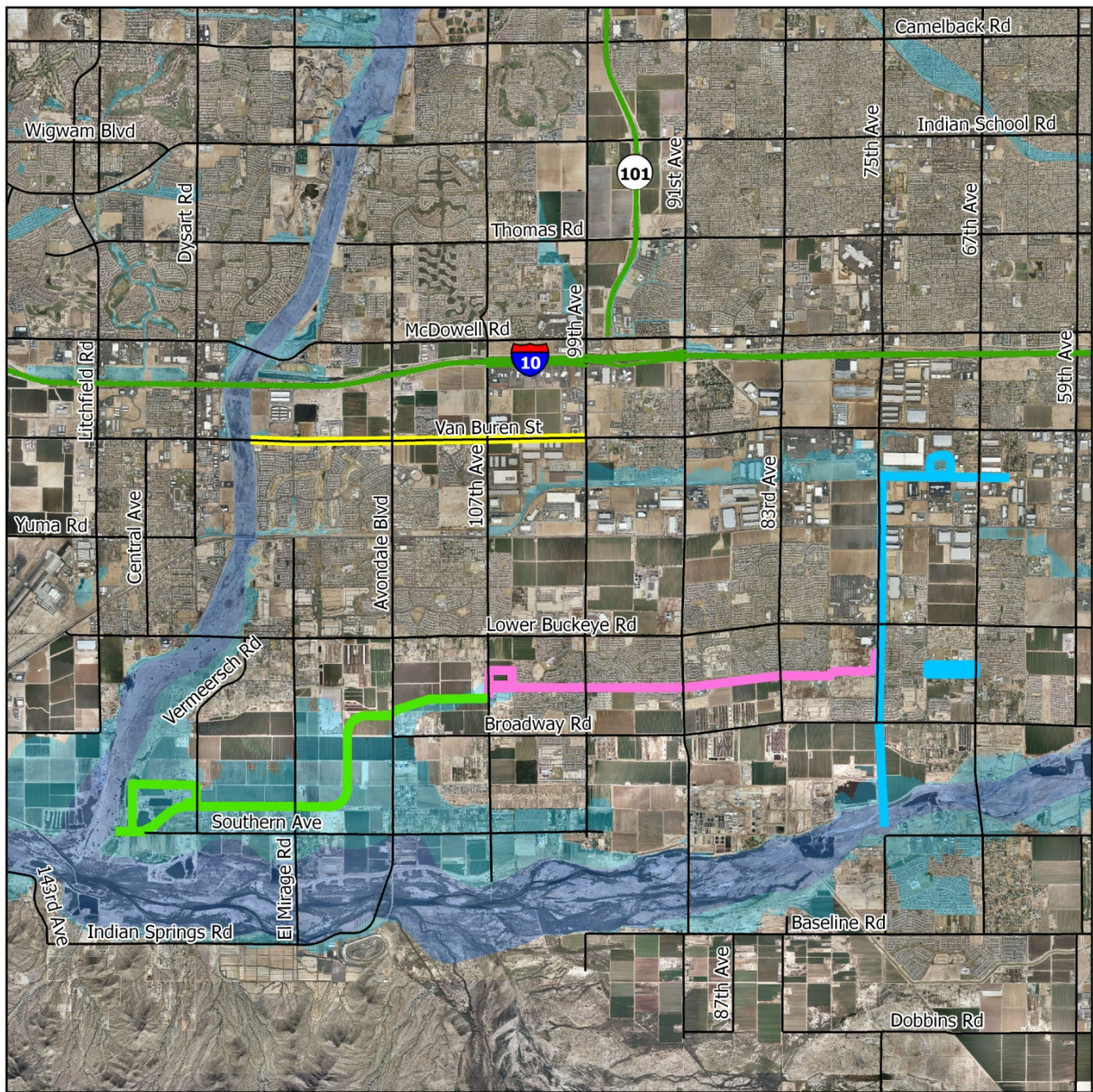
This project, proposed by the city of Avondale, would intercept flows along Van Buren Street and convey them west to the Agua Fria River.

In addition to alleviating an existing flooding hazard at the 99th Avenue and Van Buren Street intersection, the project would complement the existing Durango Regional Outfall Channel and provide the city of Tolleson with additional outlet capacity for a future project to minimize a floodplain impacting Tolleson residents further to the east.

The District is completing a design concept study, as the proposed project would constitute a modification to the District’s previously completed Durango Area Drainage Master Plan.

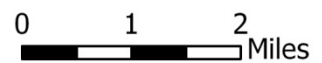
Following completion of the study, the District may negotiate agreements with the cities of Avondale and Tolleson for implementation.

Fiscal Year	Budget
FY 2011	\$200,000
FY 2012	\$230,000
FY 2013	\$20,000
FY 2014	\$2,560,000
FY 2015	\$20,000
5-Year Program	\$3,030,000



**Legend**

- 75th Ave Storm Drain & Durango Regional Conveyance Channel
- Durango Regional Conveyance Channel (75th Ave. to 107th Ave.)
- Durango Regional Conveyance Channel (107th Ave. to Agua Fria)
- Van Buren Street Channel
- Floodplain
- 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

District: 4, 5  
Jurisdiction: Glendale, Phoenix  
Origin: FY 1999 Prioritization Procedure  
Resolution: FCD 98-12, 98-12A  
Agreement: FCD 2000A013, 2002A003

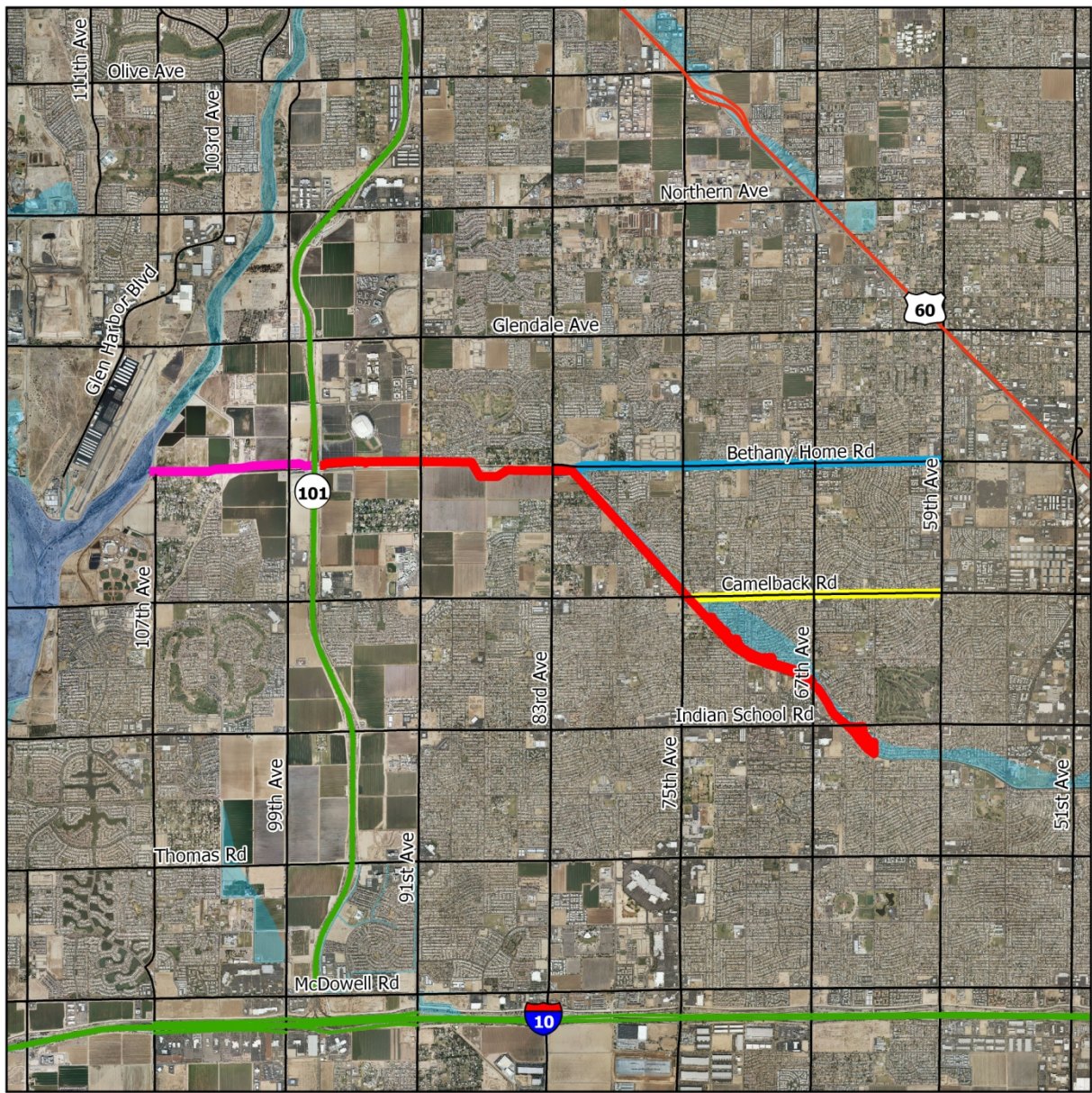
The Bethany Home Outfall Channel project includes a linear basin and channel along the Grand Canal extending westerly from 63rd Avenue to the New River. The channel will have a 100-year capacity and will serve as an outfall for storm drains to be constructed in Camelback Road and Bethany Home Road. The completed system will remove approximately 745 structures from the floodplain. The channel alignment (Phase I and II) is in the cities of Phoenix and Glendale, and unincorporated Maricopa County. Portions of the channel are being used as a trail corridor and linear park.

Phase I of the channel, extending west from the Agua Fria Freeway (Loop 101) to the New River along the Bethany Home Road alignment, was completed by the Arizona Department of Transportation (ADOT) with District participation. ADOT increased the size of its planned channel to accommodate additional flows from the east.

Phase II of the channel extends from 63rd Avenue south of Indian School Road northwest to the Agua Fria Freeway alignment at Bethany Home Road. The District was the lead agency for construction of this channel, with the cities of Phoenix and Glendale each contributing approximately 25 percent of the cost and inheriting ownership, operation and maintenance of the completed channel.

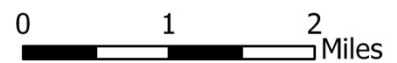
Construction is complete, and final accounting remains to be completed during Fiscal Year 2011.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$10,000



**Legend**

- Existing Bethany Home Outfall Channel (Phase I)
- Bethany Home Outfall Channel (Phase II)
- Bethany Home Rd. Storm Drain (79th Ave. to 59th Ave.)
- Camelback Rd. Storm Drain (59th Ave. to 75th Ave.)
- Floodplain
- Floodway



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# Camelback Road Storm Drain 59th Avenue to 75th Avenue

PCN: 620.03.33

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

District: 5  
Jurisdiction: Glendale, Phoenix  
Origin: FY 1999 Prioritization Procedure  
Resolution: FCD 98-12, 98-12A  
Agreement: FCD 2000A013, 2002A003

The Camelback Road Storm Drain project, resulting from the District's Maryvale Area Drainage Master Study, collects and conveys sheet flow that has historically flooded the Maryvale neighborhood in the cities of Phoenix and Glendale.

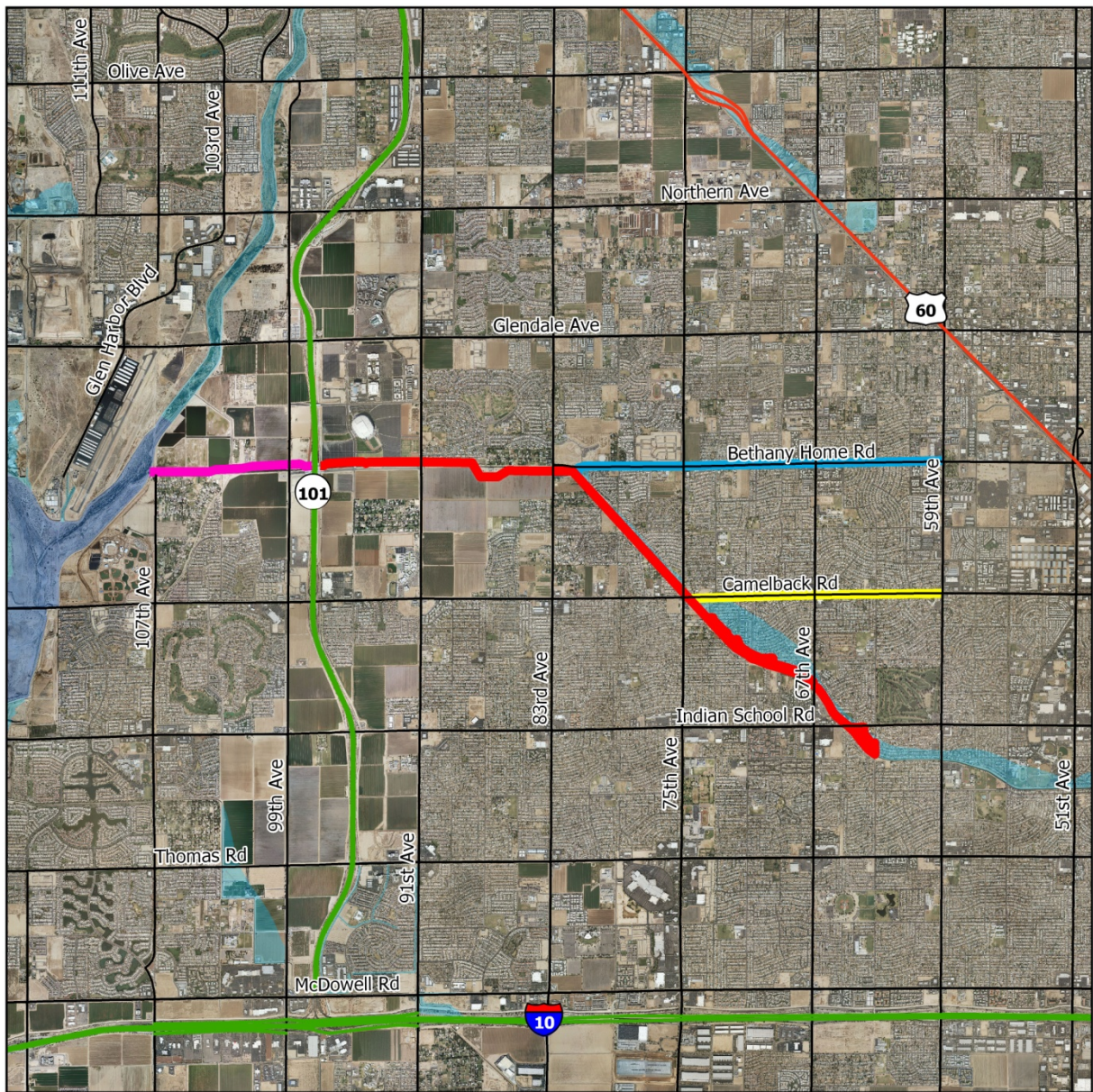
The project consists of a trunk line in Camelback Road with capacity for a 10-year storm event and lateral storm drains aiding in collection. The storm drain ultimately conveys flows to the New River through the Bethany Home Outfall Channel.

The District is the lead agency for project design and construction, and the cities of Phoenix and Glendale are each contributing 25 percent of the project cost.

Construction will likely be completed by Fiscal Year 2012.

Fiscal Year	Budget
FY 2011	\$6,380,000
FY 2012	\$4,050,000
FY 2013	\$20,000
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$10,450,000

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**Legend**

- Existing Bethany Home Outfall Channel (Phase I)
- Bethany Home Outfall Channel (Phase II)
- Bethany Home Rd. Storm Drain (79th Ave. to 59th Ave.)
- Camelback Rd. Storm Drain (59th Ave. to 75th Ave.)
- Floodplain
- Floodway



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# Bethany Home Road Storm Drain 59th Avenue to 79th Avenue

PCN: 620.03.34

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

602-506-4771

csv@mail.maricopa.gov

District: 5  
Jurisdiction: Glendale  
Origin: FY 1999 Prioritization Procedure  
Resolution: FCD 98-12, 98-12A  
Agreement: FCD 2000A013, 2002A003

The Bethany Home Road Storm Drain project, resulting from the District's Maryvale Area Drainage Master Study, collects and conveys sheet flow that has historically flooded the Maryvale neighborhood in the city of Glendale.

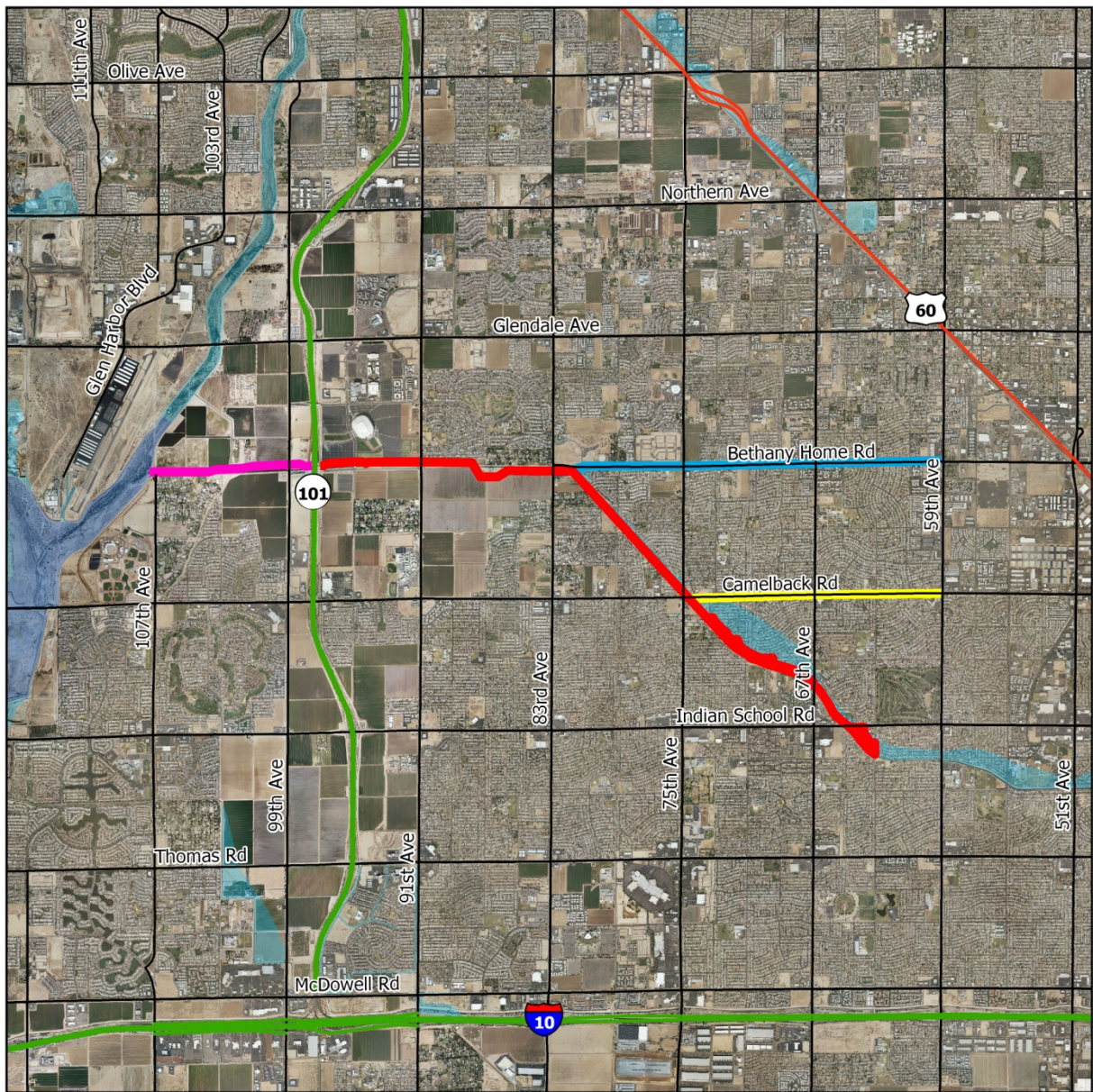
The project consists of a 10-year storm drain in Bethany Home Road that ultimately conveys flows to the New River through the Bethany Home Outfall Channel.

The city of Glendale is the lead agency for project design and construction, and the District will contribute 50 percent of the project cost.

Construction of the storm drain between 71st Avenue to 79th Avenue by the city will likely be completed during Fiscal Year 2011.

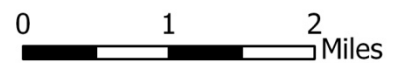
Remaining design and construction will require the identification of additional city funding.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$1,010,000
FY 2012	\$10,000
FY 2013	\$3,020,000
FY 2014	\$20,000
FY 2015	\$10,000
5-Year Program	\$4,070,000



**Legend**

- Existing Bethany Home Outfall Channel (Phase I)
- Bethany Home Outfall Channel (Phase II)
- Bethany Home Rd. Storm Drain (79th Ave. to 59th Ave.)
- Camelback Rd. Storm Drain (59th Ave. to 75th Ave.)
- Floodplain
- Floodway



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# Downtown Phoenix Drainage System Phase I

PCN: 625.01.30

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

602-506-4732

mwd@mail.maricopa.gov

District: 5  
Jurisdiction: Phoenix  
Origin: FY 2008 Prioritization Procedure  
Resolution: FCD 2008R001  
Agreement: FCD 2008A001, 2009A009

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 ADMP. The Metro ADMP subsequently recommended the Downtown Phoenix Drainage Improvements Project as a subset of its recommended downtown alternative.

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.

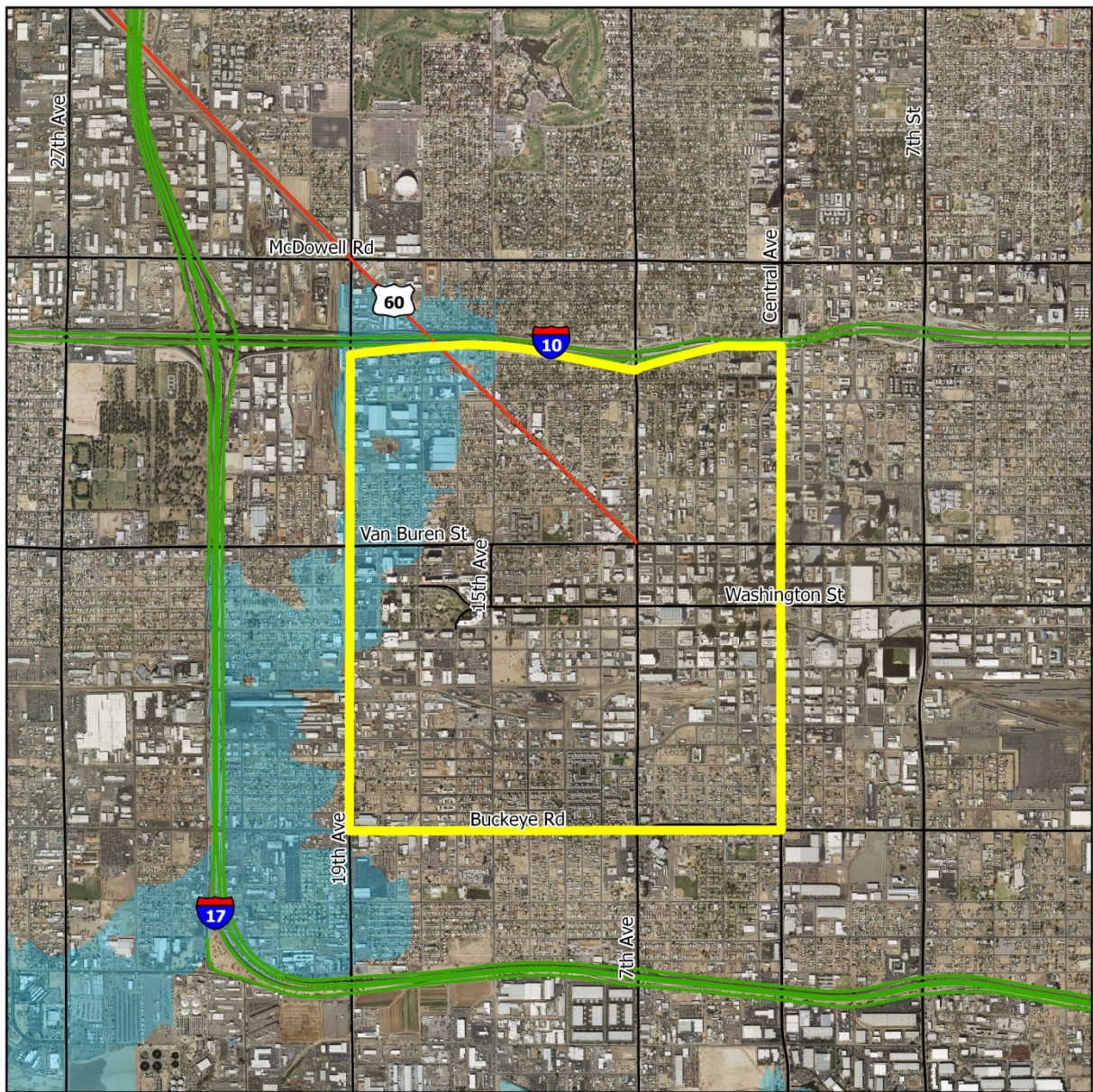
The project's conceptual design involved the installation of drainage features along 1st Avenue, from Van Buren Street to Hadley Street; along Jefferson Street from 19th Avenue to 3rd Avenue; and along Fillmore Street from 9th Avenue to 3rd Avenue. Specific alignments were altered somewhat during final design.

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

Construction of the Fillmore Street and Jefferson Street components is anticipated to be complete by Fiscal Year 2012. Design and construction of the 1st Avenue component will likely require the approval of additional funding in a future city bond election.

The completed project will be owned, operated and maintained by the city.

Fiscal Year	Budget
FY 2011	\$5,020,000
FY 2012	\$20,000
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$5,040,000



**Legend**

- Downtown Phoenix Drainage System (Phase I)
- Floodplain
- Floodway



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# Old Cross Cut Canal Improvements Arizona Canal to Indian School Road

PCN: 625.02.30

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

602-506-2943

bao@mail.maricopa.gov

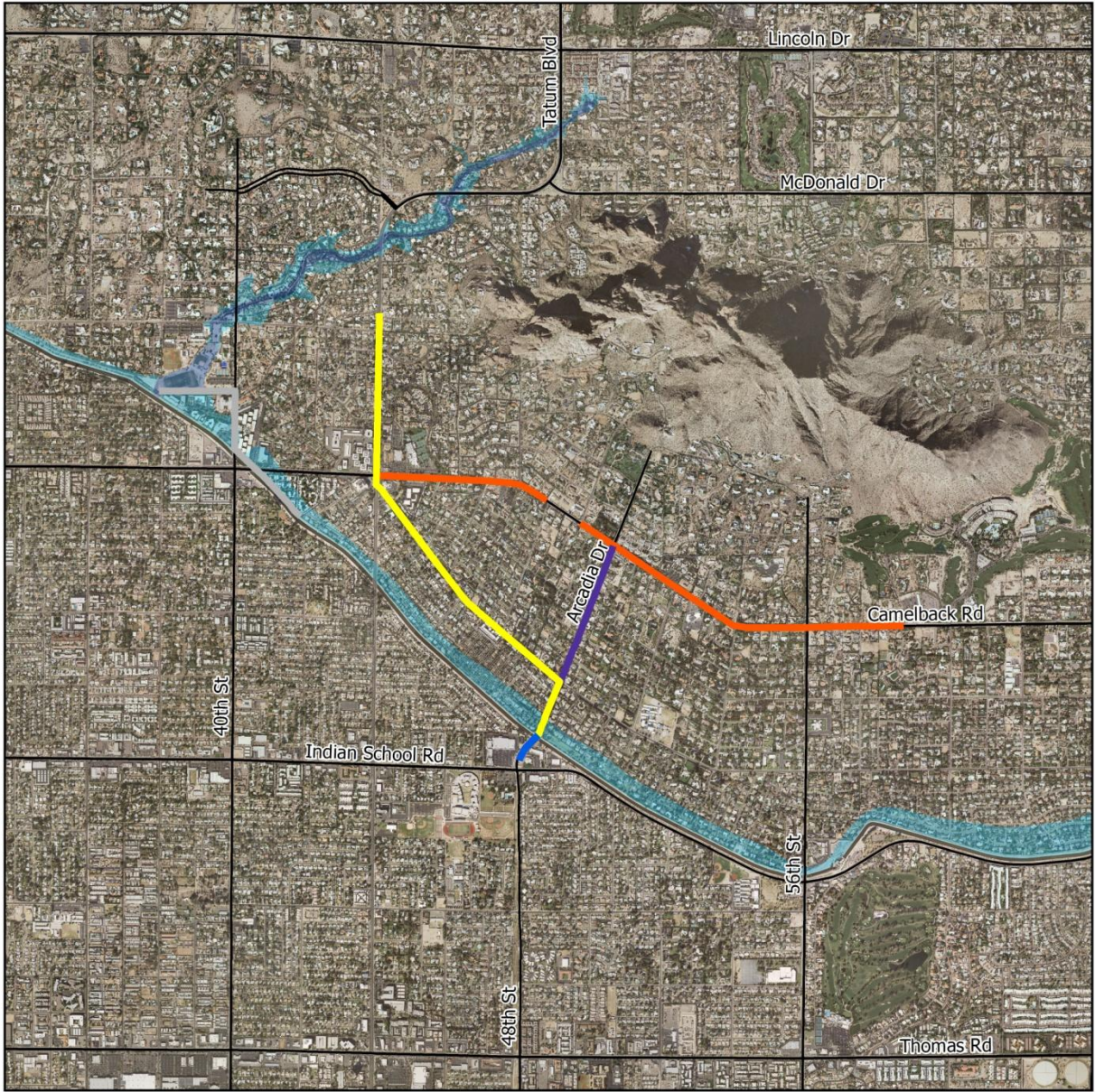
District: 3  
Jurisdiction: Phoenix  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2008R012  
Agreement: FCD 2009A025

The District is partnering with the city of Phoenix for design of the Old Cross Cut Canal Improvements Project. This project will include an extension of the Old Cross Cut Canal from Indian School Road to just downstream of the Arizona Canal, a storm drain under the Arizona Canal connecting the Old Cross Cut extension to future improvements, and associated structures and features.

Once complete, the project will provide an outfall for future storm drains, principally along Camelback Road and Lafayette Boulevard. Collectively, these features will reduce flooding to the Arcadia area resulting from storm water runoff originating from Camelback Mountain that has historically ponded along the Arizona Canal.

The District is the lead agency for design of the project. Design is anticipated to be completed during Fiscal Year 2011. Construction is anticipated to begin in Fiscal Year 2011.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$425,000
FY 2012	\$1,240,000
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$1,665,000



**Legend**

- Old Cross Cut Canal Improvements (Arizona Canal to Indian School)
- Lafayette Interceptor Drain & Outlet
- Arcadia Drive Storm Drain (Camelback Rd. to Lafayette Blvd.)
- Future 40th Street Drain
- Future Camelback Drain
- █ Floodplain
- █ Floodway



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# Lafayette Interceptor Drain & Outlet

PCN: 625.02.31

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

602-506-2943

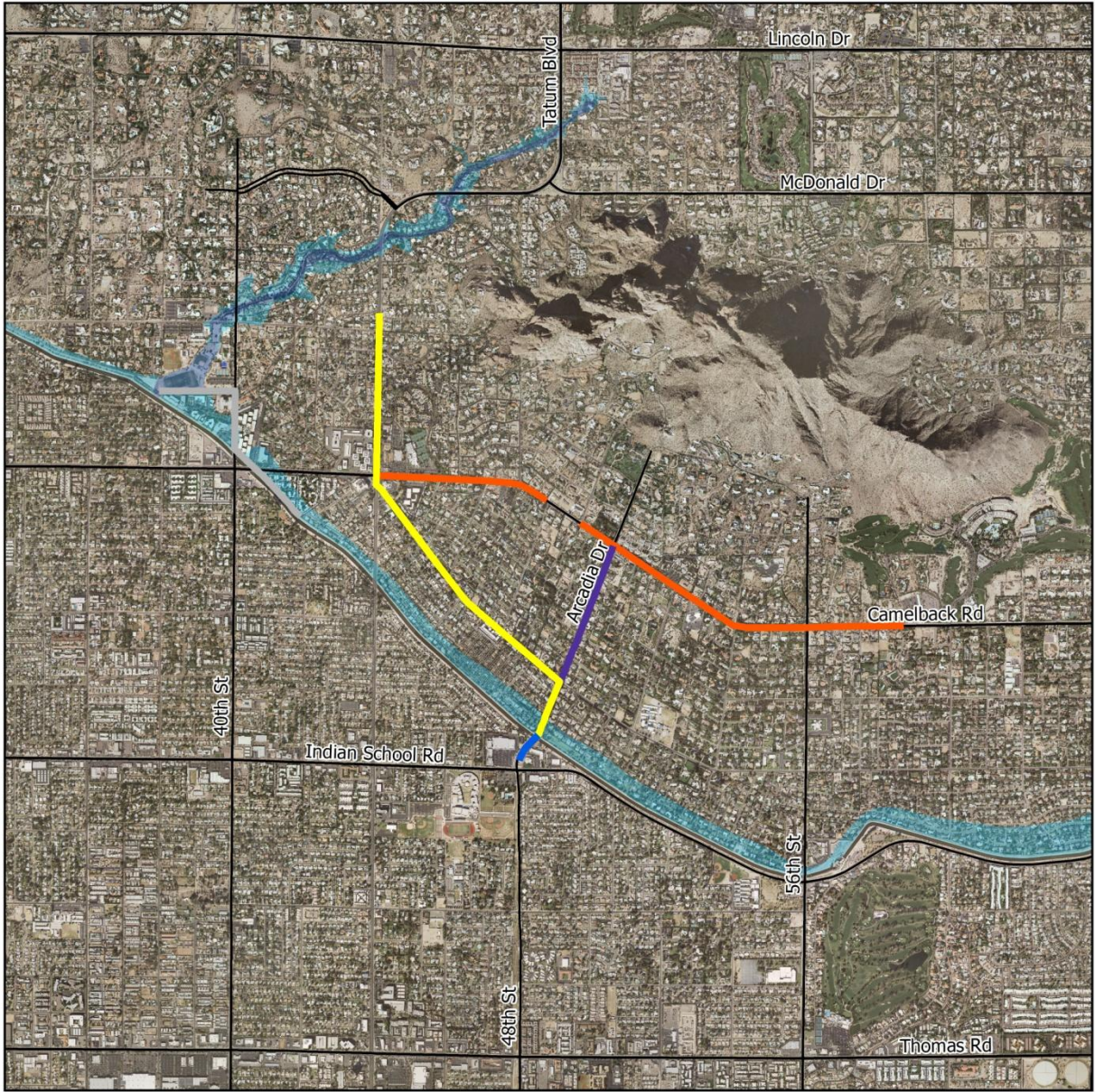
bao@mail.maricopa.gov

District: 3  
Jurisdiction: Phoenix  
Origin: FY 2001 Prioritization Procedure  
Resolution: FCD 2008R012  
Agreement: Pending








The greater Arcadia Area Drainage Improvements Project, recommended by the District's Metro Area Drainage Master Plan, is being accomplished in multiple phases. The first phase includes construction of an outfall – the Old Cross Cut Canal Improvements Project. Later phases will include construction of interceptor drains, primarily in Camelback Road and Lafayette Boulevard, intended to collect flows upstream (north) of the Arizona Canal, and storm drain outlets to the Old Cross Cut Canal.

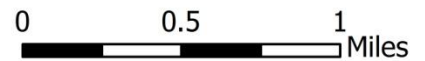
Lafayette Interceptor Drain design is anticipated to begin in Fiscal Year 2011. Construction schedule is dependent on funding availability and may be phased.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$290,000
FY 2012	\$4,000,000
FY 2013	\$30,000
FY 2014	\$20,000
FY 2015	\$4,000,000
5-Year Program	\$8,340,000



**Legend**

-  Old Cross Cut Canal Improvements (Arizona Canal to Indian School)
-  Lafayette Interceptor Drain & Outlet
-  Arcadia Drive Storm Drain (Camelback Rd. to Lafayette Blvd.)
-  Future 40th Street Drain
-  Future Camelback Drain
-  Floodplain
-  Floodway



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# Arcadia Drive Storm Drain Camelback Road to Lafayette Boulevard

PCN: 625.02.32

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

602-506-2943

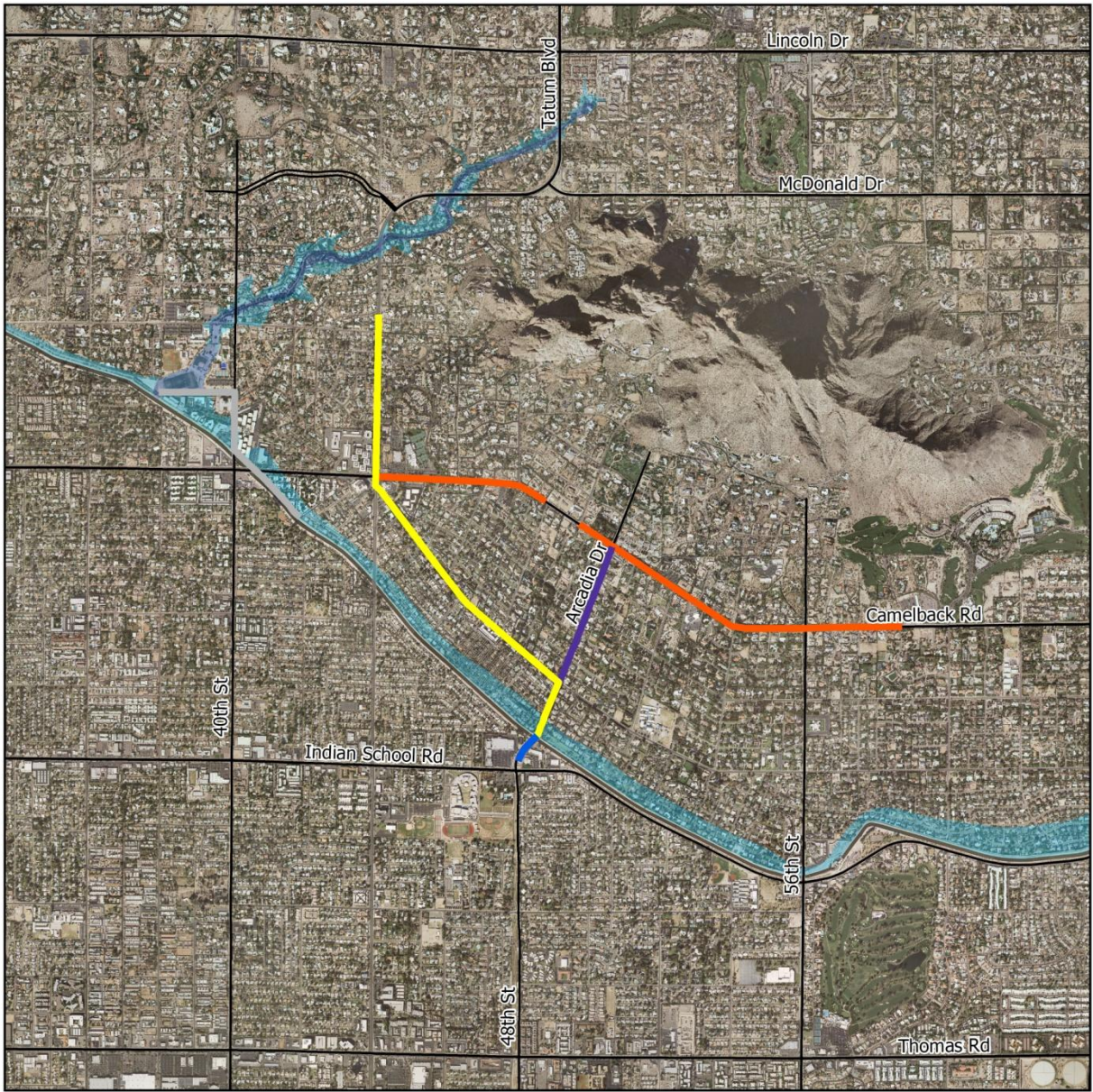
bao@mail.maricopa.gov

District: 3  
Jurisdiction: Phoenix  
Origin: FY 2011 Prioritization Procedure  
Resolution: FCD 2008R012  
Agreement: FCD 2009A025







The greater Arcadia Area Drainage Improvements Project, recommended by the District's Metro Area Drainage Master Plan, is being accomplished in multiple phases. The first phase includes construction of an outfall – the Old Cross Cut Canal Improvements Project. Later phases will include construction of interceptor drains, primarily in Camelback Road and Lafayette Boulevard, intended to collect flows upstream (north) of the Arizona Canal, and storm drain outlets to the Old Cross Cut Canal.

The Arcadia Drive project schedule is dependent on funding availability.

Fiscal Year	Budget
FY 2011	\$10,000
FY 2012	\$10,000
FY 2013	\$10,000
FY 2014	\$1,100,000
FY 2015	\$4,180,000
5-Year Program	\$5,310,000



**Legend**

-  Old Cross Cut Canal Improvements (Arizona Canal to Indian School)
-  Lafayette Interceptor Drain & Outlet
-  Arcadia Drive Storm Drain (Camelback Rd. to Lafayette Blvd.)
-  Future 40th Street Drain
-  Future Camelback Drain
-  Floodplain
-  Floodway



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# East Maricopa Floodway Maintenance Road Paving

PCN: 698.10.30

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

602-506-4771

csv@mail.maricopa.gov

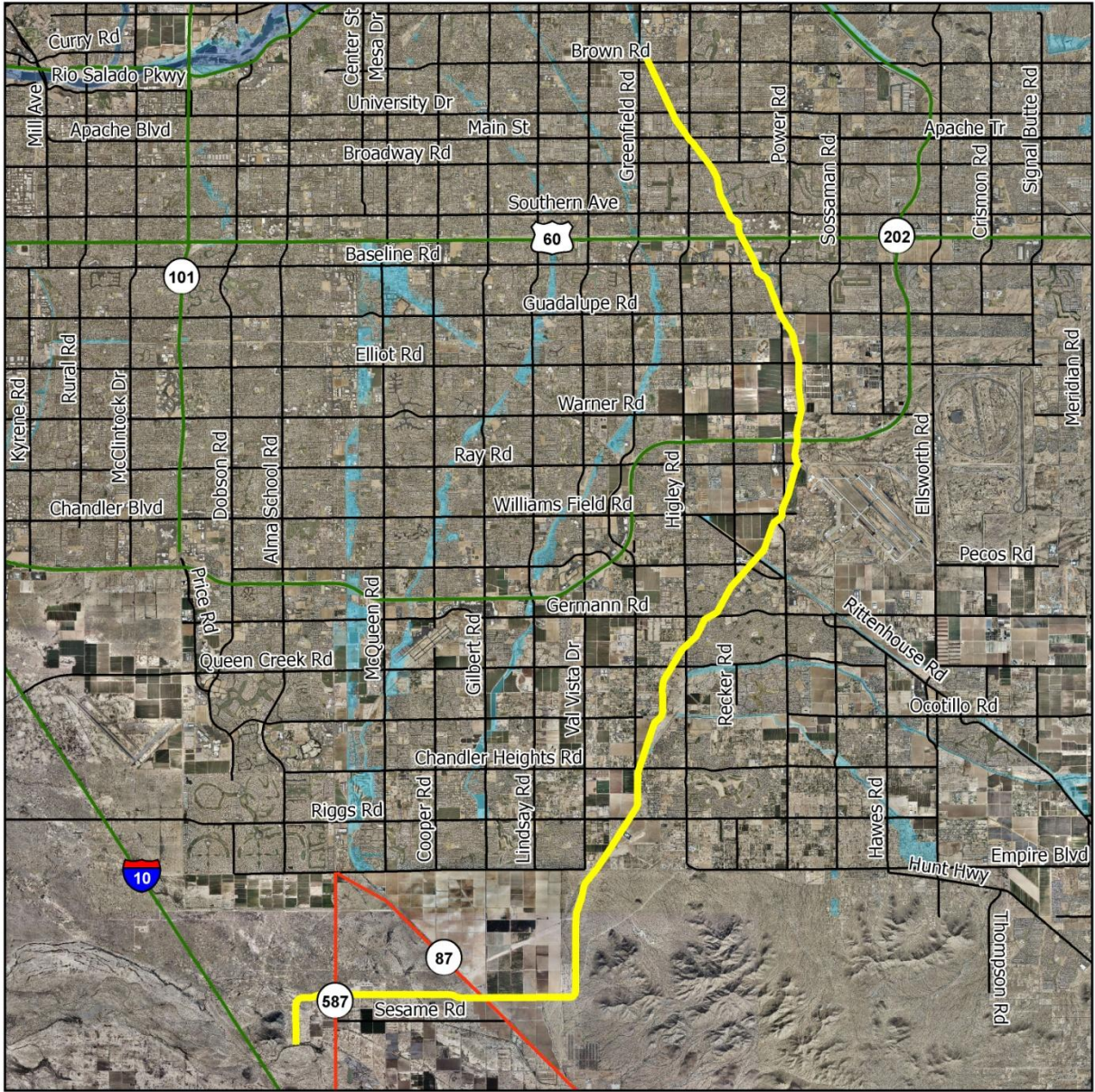
District: 1, 2  
Jurisdiction: Gilbert, Mesa  
Origin: FY 2012 Prioritization Procedure  
Resolution: FCD 2010R004  
Agreement: None

Flood control facilities operated and maintained by the District were commonly built in the past with unpaved dirt maintenance roads. District maintenance activities require the use of these roads, potentially adversely impacting air quality.

This project includes chip-seal improvements to the unpaved East Maricopa Floodway (EMF) maintenance roads. The U.S. Soil Conservation Service (now Natural Resources Conservation Service) completed the 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.

Maintenance road improvements are anticipated to begin in the summer of 2010 and will likely be phased.

Fiscal Year	Budget
FY 2011	\$1,000,000
FY 2012	\$0
FY 2013	\$0
FY 2014	\$0
FY 2015	\$0
5-Year Program	\$1,000,000



**Legend**

- East Maricopa Floodway
- Floodplain
- Floodway



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# Small Project Assistance Program

## Christopher Fazio, Program Manager

602-506-4774

christopherfazio@mail.maricopa.gov

District: All  
Jurisdiction: All  
Origin: Small Project Assistance Program  
Resolution: FCD 2009R003  
Agreement: Various

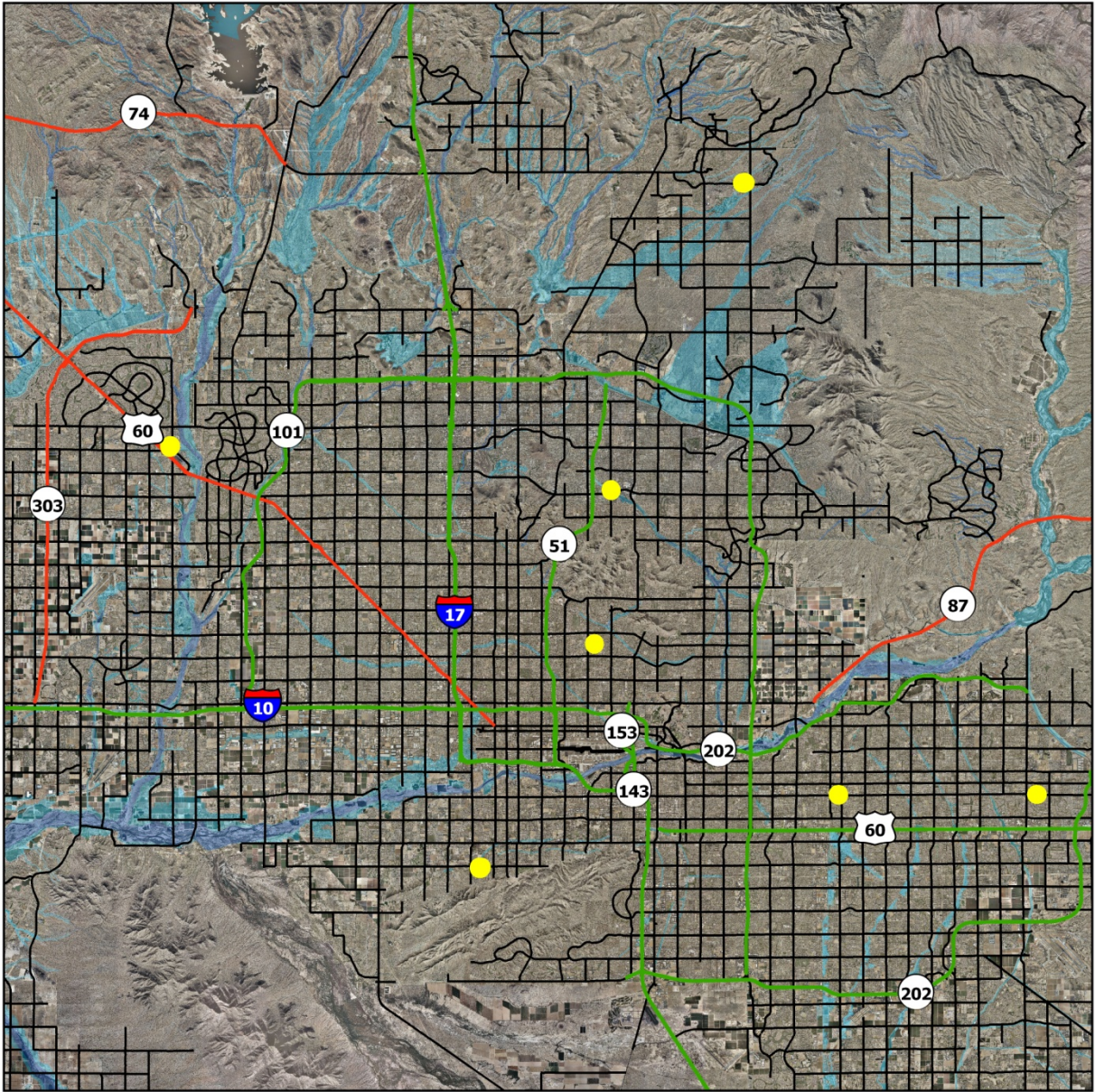
Since 1995, District capital projects have been evaluated under the District’s Capital Improvement Program Prioritization Procedure which promotes the prioritization of capital projects that are regional in nature. However, localized flood hazards exist throughout Maricopa County, and the mitigation of these localized flood hazards, on a limited basis, is consistent with the District’s statutory obligation.

The District has developed a Small Project Assistance Program, intended to provide financial assistance to the municipalities of Maricopa County, on a trial basis, in implementing local flood hazard mitigation capital projects. Among other stipulations, the highly structured program authorizes a \$250,000 per-project District cost share cap for construction. Partner agencies have lead responsibilities and will operate and maintain all projects.

For Fiscal Year 2011, seven projects have been selected for District funding that, collectively, will reduce flows that have historically flooded 35 residential and commercial properties.

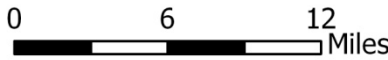
- Broadway Road and 72nd Street Drainage Improvements, Mesa, 2009A018
- Broadway Road Drainage Improvements West of Mesa Drive, Mesa, 2009A019
- 41st Place and Charter Oak Road Drainage Improvement Project, Phoenix, 2009A020
- Campbell Avenue Storm Drain Project (32nd Street to 35th Street), Phoenix, 2009A021
- 15th Avenue and Dobbins Road Channel Project, Phoenix, 2009A022
- Boulder Ridge Flood Reduction Project, Scottsdale, 2009A023
- Jerry Street Drainage Improvements Project, Surprise, 2009A024

Fiscal Year	Budget
FY 2011	\$2,000,000
FY 2012	\$2,000,000
FY 2013	\$2,000,000
FY 2014	\$2,000,000
FY 2015	\$2,000,000
5-Year Program	\$10,000,000



**Legend**

- FY 2011 Small Project Assistance Program Projects
- Floodplain
- Floodway



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# Floodprone Property Assistance Program

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

602-506-0503

joh@mail.maricopa.gov

District: All  
Jurisdiction: All  
Origin: Floodprone Property Assistance Program  
Resolution: Pending  
Agreement: None

The District has completed delineations covering about 68 percent of the approximately 6,000 miles of stream corridors in Maricopa County needing delineation for regulatory purposes. 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 2011 FPAP program will accomplish land clearing for parcels purchased in Fiscal Years 2009 and 2010, as well as new acquisition of qualifying parcels, subject to budget constraints.

<u>Fiscal Year</u>	<u>Budget</u>
FY 2011	\$1,550,000
FY 2012	\$1,550,000
FY 2013	\$1,550,000
FY 2014	\$1,550,000
FY 2015	\$1,550,000
5-Year Program	\$7,750,000



## Appendix A

### Completed Capital Projects Through Fiscal Year 2010 (Alphabetical)

Project	Map ID	Location	Year
10th St. Wash Detention Basin No. 1	49	12th St. and Peoria Ave.	1996
10th St. Wash Detention Basin No. 2	49	11th St. and Alice Ave.	1997
10th St. Wash Improvements (Alice to ACDC)	50	10th St., Alice Ave to ACDC at Griswold Rd. alignment	2008
24th Ave. and Camelback Rd. Basin	53	24th Ave. and Camelback Rd.	2008
26th Ave. and Verde Ln. Basin	52	Verde Ln. alignment; 26th Dr. to I-17 Frontage Rd.	2007
35th Ave. and Dobbins Rd. Basin and Storm Drain	56	35th Ave. and Dobbins Rd.	2002
43rd Ave. and Southern Ave. Detention Basin	54	43rd Ave. and Southern Ave.	2005
43rd Ave. Storm Drain	54	43rd Ave., Broadway Rd. to Baseline Rd.	2000
48th St. Drain	63	San Francisco Canal, 48th St. to University Dr.	1981
48th St. Storm Drain	65	48th St., Baseline Rd. to 48th St. Drain	1988
51st Ave. Storm Drain (Bell Rd. to Thunderbird Rd.)	24	51st Ave., Bell Rd. to Thunderbird Rd.	1991
59th Ave. Storm Drain (Bell Rd. to ACDC)	24	59th Ave., Bell Rd. to ACDC	1991
67th Ave. Storm Drain (Bell Rd. to ACDC)	24	67th Ave., Bell Rd. to ACDC	1990
67th Ave. Storm Drain (Olive Ave. to ACDC)	34	67th Ave., Olive Ave. to ACDC	2009
83rd Ave. and Pinnacle Peak Rd. Drainage Improvements	21	Area bounded by Calley Lejos (N), Willisams Rd. (S), 91st Ave. (W), 83rd Ave. (E)	2008
83rd Ave. Grade Control Structure (Skunk Creek)	25	83rd Ave. and Skunk Creek	2003
91st Ave. and Bell Rd. Drainage	24	91st Ave., Bell Rd. to Greenway Rd.; Greenway Rd., 91st Ave. to New River	1991
9th Ave. Storm Drain (Peoria Ave. to ACDC)	48	9th Ave., Peoria Ave. to ACDC	2008
Adobe Dam	29	Skunk Creek at Deer Valley Rd. alignment and 39th Ave. alignment	1982
Adobe St. Structures over EMF	90	Adobe St. 1/2 mi. east of Greenfield Rd.	1990
ADOT Pit and Diversion Channel	72	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	28	Agua Fria River, Camelback Rd. to 1/4 mi. south of Lower Buckeye Rd.	1988
Alma School Drain	75	Mclellan Rd. alignment, Tempe Canal at Alma School Rd. to the Salt River	1969
Apache Junction FRS and Floodway	86	Lost Dutchman Blvd. and Idaho Rd.	1988
Arizona Canal Diversion Channel	47	Arizona Canal, 37th Street to New River	1994
Avondale Landfill Excavation	28	Dysart Rd. and Buckeye Rd.	1986
Baseline Rd. Storm Drain	55	Baseline Rd., 7th Ave. to 43rd Ave.	2002
Beardsley Rd. Drainage System (7th Ave. to 23rd Ave.)	32	Beardsley Rd., 7th Ave. to 23rd Ave.	1995
Bethany Home Outfall Channel (Phase I)	37	Bethany Home Rd., SR-101L to New River	2000
Bethany Home Outfall Channel (Phases IIA, IIB and IIC)	38	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)	88	Approximately 1/2 mi. east of Higley Rd., Broadway Rd south for 1/3 mi. to EMF	1998
Buckeye FRS No. 1	7	I-10, 331st Ave. to 257th Ave.	1975
Buckeye FRS No. 2	8	I-10, 254th Ave. to 237th Ave.	1975
Buckeye FRS No. 3	9	I-10, 235th Ave. to 215th Ave.	1975
Bullard Wash (Phase 1)	19	Bullard Wash, Lower Buckeye Rd. alignment to Gila River	2001
Bulldog Floodway	84	Apache Junction FRS to Signal Butte FRS	1988
Cactus Rd. Flood Control System	60	Cactus Rd., Scottsdale Rd. to 64th St.; 68th St., Cactus Rd. to Mescal Park	1991
Cactus Rd. Storm Drain (67th Ave. to SR-101L)	33	Cactus Rd., 67th Ave. to Agua Fria Freeway (SR-101L)	1998
Camelback Ranch Levee	28	Agua Fria River and Camelback Rd.	1999
Camelback Side Drain Extension	67	Camelback Rd., 64th St. to 68th St; Lafayette Blvd., 64th St. to 68th St.	1986
Carefree Town Center Drainage	103	Area bounded by Sundance Tr. / Tom Darl. Dr. (NW), Bloody Bas. Rd. / Tranquil Tr. (SE)	2002
Casandro Wash Dam	1	North of US-60, between Mariposa Dr. alignment and Los Altos Dr. alignment	1996
Casandro Wash Outlet	1	Jackson St., Navajo St. to Mohave St.; Mohave St., Jackson St. to Casandro Wash	1996
Cave Buttes Dam	42	16th St. alignment and Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 1	42	18th St. alignment and Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 2	42	32nd St. alignment , 1/2 mi. north of Happy Valley Rd. alignment	1980
Cave Buttes Dam Dike No. 3	42	9th St. alignment and Dixileta Dr. alignment	1980
Cave Creek Channelization	46	Deer Valley Rd. to Arizona Canal	1991
Cave Creek Dam	41	16th St. alignment and Jomax Rd. alignment	1923
Centennial Levee	4	South of I-10, T2N/R9W, T2N/R10W	1985
Central Arizona Project Detention Basin No. 1	91	Approximately Sossaman Rd. alignment and approximately Mclellan Rd. alignment	2001
Central Arizona Project Detention Basin No. 2	91	93rd St. and University Dr.	2001
Central Arizona Project Detention Basin No. 3	91	Approximately 96th St. and University Dr.	2001
Central Arizona Project Detention Basin No. 4	91	Crismon Rd. and Apache Tr.	2001
Central Arizona Project Detention Basin No. 5	91	Northeast corner of Cheshire St. and Southern Ave.	2001
Central Chandler Area Drainage System	78	Area bounded by Ray Rd. (N), Pecos Rd. (S), SR-101L (W), Arizona Ave. (E)	2005
City of Phoenix Dam No. 7 Rehabilitation	45	Phoenix North Mountain Preserve, approximately 2nd St. and Aster Dr.	2009
Colter Channel	59	Between Camelback Rd. and Missouri Ave., Litchfield Rd. to Agua Fria River	1995
Doubletree Ranch Road System	59	Doubletree Ranch Rd., Tatum Blvd to Indian Bend Wash at 58th St. alignment	2004
Dreamy Draw Dam	57	SR-51 and Northern Ave.	1973
Dysart Drain	17	Between Olive Ave. and Glendale Ave., Reems Rd. to Agua Fria River	1996
East Maricopa Floodway	90	Between Val Vista Dr. and Sossaman Rd., Brown Rd. to GRIC to the Gila River	1989
El Mirage Drain	10	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	95	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	99	North and East boundaries of Phoenix-Mesa Gateway Airport	2008
Gila / Salt River Clearing (Gillespie Dam to 91st Ave.)*	NA	Gila / Salt River, Gillespie Dam to 107th Ave.	1985
Gila Drain Storm Drain	73	Rural Rd., 1/2 mi. south of Guadalupe Rd. to 1/2 mi. south of Warner Rd. (Hanger Park)	1988
Gilbert Crossroads Park Basin	94	Greenfield Rd. and Ray Rd.	1992
Golden Eagle Park Dam	80	Golden Eagle Blvd. and Palisades Blvd.	2002
Greenway Parkway Channel (9th St. to Cave Creek Rd.)	44	Greenway Parkway, 9th St. to Cave Creek Rd.	2002
Guadalupe Box and Channel	93	Guadalupe Rd., Sossaman Rd. to the EMF at Power Rd.	1989
Guadalupe Drainage Improvement Project	70	Town of Guadalupe (Various Basins)	2003
Guadalupe FRS	71	West side of I-10, between Guadalupe Rd. and Baseline Rd.	1975
Harquahala Floodway	6	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982

Project	Map ID	Location	Year
Harquahala FRS	6	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982
Hawes Rd. Channel (Emelita Ave. to Main St.)	89	Hawes Rd., Apache Tr. (Main St.) To Emelita Ave. (1/2 mi. north of Southern Ave.)	2004
Hermosa Vista Dr. / Hawes Rd. Storm Drain and Basin	82	Area bounded by McDowell Rd. (N), Hermosa Vista Dr. (S), Spook Hill FRS (W), 90th St. (E)	2009
Holly Acres Levee and Bank Stabilization	40	Gila River North Bank, El Mirage Rd. to 113th Ave.	1984
Indian Bend Wash	67	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)	39	Indian School Rd., 107th Ave. to Agua Fria River	1989
Maryvale Stadium West Inlet Channel	51	Grand Canal, between Indian School Rd. and Osborn Rd., 57th Ave. to 51st Ave.	2001
McDowell Rd. Storm Drain and Basin	81	McDowell Rd., Hawes Rd. to Sossaman Rd. alignment	2010
McMicken Dam	10	Area bounded by Grand Ave. (N), Peoria Ave. (S), 165th Ave. (E), 199th Ave. (W)	1956
McMicken Dam Outlet Channel	10	Extends 5.5 mi. northeast of northeast end of McMicken Dam	1956
New River Channelization (Bethany Home Rd. to Skunk Creek)	26	New River, Bethany Home Rd. to Olive Ave.	1996
New River Improvements (Grand Ave. to Skunk Creek)	26	New River, Grand Ave. to Skunk Creek, including Paradise Shores (1/2 mile south of Bell Rd.)	2009
New River Dam	20	Alignment of 79th Ave. and approximately Pinnacle Vista Rd.	1985
New River Dam Dike No. 1	20	Lake Pleasant Rd. and Dixileta Dr. Alignment	1985
Northern and Orangewood Storm Drain	36	Between Butler Dr. and Glendale Ave., 63rd Ave. to Agua Fria River	2001
Northern Ave. Bridge over New River	26	Northern Ave. and New River	1992
Oak St. Storm Drain (58th St. to Indian Bend Wash)	69	Oak Street, 58th St. to Indian Bend Wash	2000
Old Cross Cut Canal	64	48th St., Arizona Canal to McDowell Rd.	1991
Olive Ave. Storm Drain (51st Ave. to 91st Ave.)	35	Olive Ave., 51st Ave. to 91st Ave.	1995
Osborn Rd. Storm Drain	68	Between Osborn Rd. and Thomas Rd., 60th St. to Ind. Bend Wash at 76th St. and Earll Dr.	2001
Paradise Valley Detention Basin No. 4	43	Paradise Valley Community College (Component of Upper E. Fork Cave Creek)	1991
Pass Mountain Diversion Channel	85	McKellips Rd., Crismon Rd. to Signal Butte Rd., south to behind Signal Butte FRS	1987
Perryville Bank Stabilization	14	North bank of Gila River, between Perryville Rd. and Cotton Ln.	1984
Powerline Floodway	96	Powerline FRS, southwest to Ray Rd. alignment at GM, to EMF at Sossaman Rd.	1968
Powerline FRS	96	US-60 and Guadalupe Rd. alignment	1967
Price Road Drain	74	SR-101L (Price), Salt River to 1/2 mi. south of Guadalupe Rd. (Carriage Lane Park)	1993
Queen Creek Channel (Hawes to Power)	101	Queen Creek, Hawes Rd. to Power Rd.	2006
Queen Creek Road Basin	79	McQueen Rd. and Queen Creek Rd.	2009
Reems Road Channel and Basin	16	Reems Rd. and Olive Ave.	2009
Rittenhouse FRS	98	US-60, Queen Creek Rd. alignment	1969
Rittenhouse Road Channel	100	Rittenhouse Rd., Queen Creek Rd. to the EMF at Pecos Rd.	1997
Roosevelt Irrigation District Canal Overchute	27	Litchfield Rd. and RID Canal	1998
Saddleback Diversion Channel	5	South of I-10, T2N/R8W, T1N/R8W	1981
Saddleback FRS	5	South of I-10, T2N/R8W, T1N/R8W	1981
Salt River Channel (McClintock Dr. to Price Rd.)	66	North bank of Salt River, McClintock Dr. to Price Rd.	1998
Salt River Channel (Price Rd. to McKellips Rd.)	66	Salt River, Price Rd. to McKellips Rd.	1998
Salt River Channel (SR-143 to McClintock Dr.)	66	Salt River, SR-143 to McClintock Dr.	1991
Salt River Low Flow Ch. (19th Ave. to I-10) (Phx. Rio Salado)	62	Salt River, 19th Ave. to I-10 at approximately 30th St. alignment	2002
Scatter Wash Channel and Basin at I-17	30	Scatter Wash at I-17	2010
Scatter Wash Channel (43rd Ave. to 35th Ave.)	31	Scatter Wash, 43rd Ave. to 35th Ave.	1995
Scottsdale Rd. Drainage (Thunderbird to Doubletree Ranch)	61	Approximately Scottsdale Rd., Thunderbird Rd. to Doubletree Ranch Rd.	2008
Signal Butte Floodway	84	Between McLellan Rd. and Adobe Rd., Signal Butte FRS to CAP at Ellsworth Rd.	1984
Signal Butte FRS	84	Southwest of Signal Butte Rd. and McKellips Rd.	1987
Skunk Creek / ACDC Low Flow Channel	23	Skunk Creek, New River to 75th Ave.; ACDC, 73rd Ave. to Skunk Creek	2007
Skunk Creek Channel and Levee	22	Skunk Creek, approximately Jomax Rd. alignment to Central Arizona Project	1983
Skunk Creek Channel Imp. (75th Ave. to 51st Ave.)	22	Skunk Creek, 75th Ave. to 51st Ave.	2000
Skunk Creek Sports Complex Bank Protection	22	Skunk Creek, New River to 75th Ave.	1999
Sonoqui Wash Channelization (Higley to Chandler Heights)	102	Sonoqui Wash, Higley Rd. and Ocotillo Rd. to Chandler Heights Rd. and Sossaman Rd.	2008
Sossaman Channel and Basin	92	Sossaman Rd., Southern Ave. to Guadalupe Rd. (Basin at US-60)	1977
Southeast Phoenix Regional Drainage System	76	SR-202L and 48th St.	2002
Southeast Valley Regional Drainage System	77	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	83	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	83	SR-202L, Power Rd. to 1/4 mi. south of Brown Rd.; CAP, SR-202L, north 1 1/2 mi.	2008
Sun City Drains	15	Sun City, T4N/R1W	1990
Sun City West Drains	15	Sun City West, T3N/R1E	1990
Sunnycove Dam	3	Kellis Rd. alignment and Turtleback Ln. alignment	1976
Sunset / Sunnycove Pipeline	2	Sunnycove Dam, to a point 1 mi. northeast	1976
Sunset Dam	2	South of US-60, between Cucuracha St. alignment and Whipple Ct. alignment	1976
Tatum Wash Detention Basin	58	45th St. and Shea Blvd.	1998
University Drive Basin	87	64th St. and University Dr.	1992
Upper East Fork Cave Creek	43	Area bounded by SR-101L (N), Bell Rd. (S), 9th St. (W), 32nd St. (E); 4 basins & PVCC	1996
Vineyard FRS	97	US-60 and Ray Rd. alignment	1968
White Tanks FRS No. 3	12	Jackrabbit Tr. alignment and Glendale Ave. alignment	1954
White Tanks FRS No. 3 North Inlet Channel	11	Beardsley Canal, Olive Ave. to White Tanks FRS No. 3	2008
White Tanks FRS No. 4	13	Jackrabbit Tr. and Van Buren St.	1954

\*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 2011

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	Beardlsey Rd. Channel Improvements	Peoria	1,300,000	2,600,000
2007	Pinnacle Peak Rd. and 67th Ave. Drainage	Peoria	3,250,000	6,500,000
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
2010	Agua Fria River Channelization (Northern Pkwy. To Glendale Ave.)	MCDOT	1,155,000	14,083,000
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
2011	Lower El Mirage Wash	El Mirage	2,425,800	4,043,000
Total			91,713,908	182,289,216

## Appendix C

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

**Fiscal Year 2011 - Fiscal Year 2015**

Project	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	5-Year
120.XX.X1 Berneil Channel Modifications	0	0	0	0	3,000,000	3,000,000
201.02.31 White Tanks FRS No. 4 Rehabilitation	1,000,000	6,000,000	0	0	0	7,000,000
207.01.31 Buckeye FRS No. 1 Rehabilitation	0	0	10,200,000	1,000,000	0	11,200,000
310.01.30 Powerline/Vineyard/Rittenhouse FRS Rehabilitation/Replacement	0	0	0	0	5,000,000	5,000,000
310.01.31 Powerline FRS Fissure Risk Zone Mitigation	1,000,000	3,000,000	0	0	0	4,000,000
331.01.30 Saddleback FRS Modifications	0	1,000,000	0	0	0	1,000,000
420.04.31 Oak St. Detention Basin and Storm Drain	88,000	0	0	1,000,000	0	1,088,000
420.05.31 Ellsworth Rd. & McKellips Rd. Drainage System	0	0	250,000	2,000,000	0	2,250,000
442.11.31 Siphon Draw Drainage Improvements	427,000	0	0	0	0	427,000
450.06.31 Pinnacle Peak Rd. & 99th Ave. Drainage Improvements	100,000	1,000,000	1,000,000	0	0	2,100,000
470.13.31 Bullard Wash (Phase II)	0	1,250,000	2,500,000	1,500,000	0	5,250,000
565.04.33 DRCC (75th Ave. to 107th Ave.)	221,000	0	0	0	0	221,000
620.03.32 Bethany Home Outfall Channel	317,000	0	0	0	0	317,000
620.03.33 Camelback Rd. Storm Drain (59th to 75th Ave.)	1,500,000	3,000,000	0	0	0	4,500,000
625.02.30 Old Cross Cut Canal (Arizona Canal to Indian School Rd.)	150,000	500,000	0	0	0	650,000
625.02.31 Lafayette Interceptor Drain & Outlet	105,000	2,000,000	0	0	0	2,105,000
Reimbursement Revenue Total	4,908,000	17,750,000	13,950,000	5,500,000	8,000,000	50,108,000

## Appendix D

### Completed Drainage Studies and Master Plans Through Fiscal Year 2010

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
Salt River (Dobson Rd. to 24th St.)	HMP	2010
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



## Completed Capital Projects Through Fiscal Year 2010 (By Map ID)

Map ID	Project	Location	Year
1	Casandro Wash Dam	North of US-60, between Mariposa Dr. alignment and Los Altos Dr. alignment	1996
1	Casandro Wash Outlet	Jackson St., Navajo St. to Mohave St.; Mohave St., Jackson St. to Casandro Wash	1996
2	Sunset / Sunnycove Pipeline	Sunnycove Dam, to a point 1 mi. northeast	1976
2	Sunset Dam	South of US-60, between Cucuracha St. alignment and Whipple Ct. alignment	1976
3	Sunnycove Dam	Kellis Rd. alignment and Turtleback Ln. alignment	1976
4	Centennial Levee	South of I-10, T2N/R9W, T2N/R10W	1985
5	Saddleback Diversion Channel	South of I-10, T2N/R8W, T1N/R8W	1981
5	Saddleback FRS	South of I-10, T2N/R8W, T1N/R8W	1981
6	Harquahala Floodway	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982
6	Harquahala FRS	I-10, T2N/R9W, T3N/R9W, T3N/R10W	1982
7	Buckeye FRS No. 1	I-10, 331st Ave. to 257th Ave.	1975
8	Buckeye FRS No. 2	I-10, 254th Ave. to 237th Ave.	1975
9	Buckeye FRS No. 3	I-10, 235th Ave. to 215th Ave.	1975
10	El Mirage Drain	El Mirage Rd., from Deer Valley Rd. to a point 1 1/4 mi. south, to Agua Fria River	1990
10	McMicken Dam	Area bounded by Grand Ave. (N), Peoria Ave. (S), 165th Ave. (E), 199th Ave. (W)	1956
10	McMicken Dam Outlet Channel	Extends 5.5 mi. northeast of northeast end of McMicken Dam	1956
11	White Tanks FRS No. 3 North Inlet Channel	Bearsley Canal, Olive Ave. to White Tanks FRS No. 3	2008
12	White Tanks FRS No. 3	Jackrabbit Tr. alignment and Glendale Ave. alignment	1954
13	White Tanks FRS No. 4	Jackrabbit Tr. and Van Buren St.	1954
14	Perryville Bank Stabilization	North bank of Gila River, between Perryville Rd. and Cotton Ln.	1984
15	Sun City Drains	Sun City, T4N/R1W	1990
15	Sun City West Drains	Sun City West, T3N/R1E	1990
16	Reems Road Channel and Basin	Reems Rd. and Olive Ave.	2009
17	Dysart Drain	Between Olive Ave. and Glendale Ave., Reems Rd. to Agua Fria River	1996
19	Bullard Wash (Phase 1)	Bullard Wash, Lower Buckeye Rd. alignment to Gila River	2001
20	New River Dam	Alignment of 79th Ave. and approximately Pinnacle Vista Rd.	1985
20	New River Dam Dike No. 1	Lake Pleasant Rd. and Dixileta Dr. Alignment	1985
21	83rd Ave. and Pinnacle Peak Rd. Drainage Improvements	Area bounded by Calley Lejos (N), Willisams Rd. (S), 91st Ave. (W), 83rd Ave. (E)	2008
22	Skunk Creek Channel and Levee	Skunk Creek, approximately Jomax Rd. alignment to Central Arizona Project	1983
22	Skunk Creek Channel Imp. (75th Ave. to 51st Ave.)	Skunk Creek, 75th Ave. to 51st Ave.	2000
22	Skunk Creek Sports Complex Bank Protection	Skunk Creek, New River to 75th Ave.	1999
23	Skunk Creek / ACDC Low Flow Channel	Skunk Creek, New River to 75th Ave.; ACDC, 73rd Ave. to Skunk Creek	2007
24	51st Ave. Storm Drain (Bell Rd. to Thunderbird Rd.)	51st Ave., Bell Rd. to Thunderbird Rd.	1991
24	59th Ave. Storm Drain (Bell Rd. to ACDC)	59th Ave., Bell Rd. to ACDC	1991
24	67th Ave. Storm Drain (Bell Rd. to ACDC)	67th Ave., Bell Rd. to ACDC	1990
24	91st Ave. and Bell Rd. Drainage	91st Ave., Bell Rd. to Greenway Rd.; Greenway Rd., 91st Ave. to New River	1991
25	83rd Ave. Grade Control Structure (Skunk Creek)	83rd Ave. and Skunk Creek	2003
26	New River Channelization (Bethany Home Rd. to Skunk Creek)	New River, Bethany Home Rd. to Olive Ave.	1996
26	New River Improvements (Grand Ave. to Skunk Creek)	New River, Grand Ave. to Skunk Creek, including Paradise Shores (1/2 mile south of Bell Rd.)	2009
26	Northern Ave. Bridge over New River	Northern Ave. and New River	1992
27	Roosevelt Irrigation District Canal Overchute	Litchfield Rd. and RID Canal	1998
28	Agua Fria Channelization	Agua Fria River, Camelback Rd. to 1/4 mi. south of Lower Buckeye Rd.	1988
28	Avondale Landfill Excavation	Dysart Rd. and Buckeye Rd.	1986
28	Camelback Ranch Levee	Agua Fria River and Camelback Rd.	1999
29	Adobe Dam	Skunk Creek at Deer Valley Rd. alignment and 39th Ave. alignment	1982
30	Scatter Wash Channel and Basin at I-17	Scatter Wash at I-17	2010
31	Scatter Wash Channel (43rd Ave. to 35th Ave.)	Scatter Wash, 43rd Ave. to 35th Ave.	1995
32	Bearsley Rd. Drainage System (7th Ave. to 23rd Ave.)	Bearsley Rd., 7th Ave. to 23rd Ave.	1995
33	Cactus Rd. Storm Drain (67th Ave. to SR-101L)	Cactus Rd., 67th Ave. to Agua Fria Freeway (SR-101L)	1998
34	67th Ave. Storm Drain (Olive Ave. to ACDC)	67th Ave., Olive Ave. to ACDC	2009
35	Olive Ave. Storm Drain (51st Ave. to 91st Ave.)	Olive Ave., 51st Ave. to 91st Ave.	1995
36	Northern and Orangewood Storm Drain	Between Butler Dr. and Glendale Ave., 63rd Ave. to Agua Fria River	2001
37	Bethany Home Outfall Channel (Phase I)	Bethany Home Rd., SR-101L to New River	2000
38	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
39	Indian School Rd. Drain (107th Ave. to Agua Fria)	Indian School Rd., 107th Ave. to Agua Fria River	1989
40	Holly Acres Levee and Bank Stabilization	Gila River North Bank, El Mirage Rd. to 113th Ave.	1984
41	Cave Creek Dam	16th St. alignment and Jomax Rd. alignment	1923
42	Cave Buttes Dam	16th St. alignment and Happy Valley Rd. alignment	1980
42	Cave Buttes Dam Dike No. 1	18th St. alignment and Happy Valley Rd. alignment	1980
42	Cave Buttes Dam Dike No. 2	32nd St. alignment, 1/2 mi. north of Happy Valley Rd. alignment	1980
42	Cave Buttes Dam Dike No. 3	9th St. alignment and Dixileta Dr. alignment	1980
43	Paradise Valley Detention Basin No. 4	Paradise Valley Community College (Component of Upper E. Fork Cave Creek)	1991
43	Upper East Fork Cave Creek	Area bounded by SR-101L (N), Bell Rd. (S), 9th St. (W), 32nd St. (E); 4 basins & PVCC	1996
44	Greenway Parkway Channel (9th St. to Cave Creek Rd.)	Greenway Parkway, 9th St. to Cave Creek Rd.	2002
45	City of Phoenix Dam No. 7 Rehabilitation	Phoenix North Mountain Preserve, approximately 2nd St. and Aster Dr.	2009
46	Cave Creek Channelization	Deer Valley Rd. to Arizona Canal	1991
47	Arizona Canal Diversion Channel	Arizona Canal, 37th Street to New River	1994
48	9th Ave. Storm Drain (Peoria Ave. to ACDC)	9th Ave., Peoria Ave. to ACDC	2008
49	10th St. Wash Detention Basin No. 1	12th St. and Peoria Ave.	1996
49	10th St. Wash Detention Basin No. 2	11th St. and Alice Ave.	1997

Map ID	Project	Location	Year
50	10th St. Wash Improvements (Alice to ACDC)	10th St., Alice Ave to ACDC at Griswold Rd. alignment	2008
51	Maryvale Stadium West Inlet Channel	Grand Canal, between Indian School Rd. and Osborn Rd., 57th Ave. to 51st Ave.	2001
52	26th Ave. and Verde Ln. Basin	Verde Ln. alignment; 26th Dr. to I-17 Frontage Rd.	2007
53	24th Ave. and Camelback Rd. Basin	24th Ave. and Camelback Rd.	2008
54	43rd Ave. and Southern Ave. Detention Basin	43rd Ave. and Southern Ave.	2005
54	43rd Ave. Storm Drain	43rd Ave., Broadway Rd. to Baseline Rd.	2000
55	Baseline Rd. Storm Drain	Baseline Rd., 7th Ave. to 43rd Ave.	2002
56	35th Ave. and Dobbins Rd. Basin and Storm Drain	35th Ave. and Dobbins Rd.	2002
57	Dreamy Draw Dam	SR-51 and Northern Ave.	1973
58	Tatum Wash Detention Basin	45th St. and Shea Blvd.	1998
59	Colter Channel	Between Camelback Rd. and Missouri Ave., Litchfield Rd. to Agua Fria River	1995
59	Doubletree Ranch Road System	Doubletree Ranch Rd., Tatum Blvd to Indian Bend Wash at 58th St. alignment	2004
60	Cactus Rd. Flood Control System	Cactus Rd., Scottsdale Rd. to 64th St.; 68th St., Cactus Rd. to Mescal Park	1991
61	Scottsdale Rd. Drainage (Thunderbird to Doubletree Ranch)	Approximately Scottsdale Rd., Thunderbird Rd. to Doubletree Ranch Rd.	2008
62	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
63	48th St. Drain	San Francisco Canal, 48th St. to University Dr.	1981
64	Old Cross Cut Canal	48th St., Arizona Canal to McDowell Rd.	1991
65	48th St. Storm Drain	48th St., Baseline Rd. to 48th St. Drain	1988
66	Salt River Channel (McClintock Dr. to Price Rd.)	North bank of Salt River, McClintock Dr. to Price Rd.	1998
66	Salt River Channel (Price Rd. to McKellips Rd.)	Salt River, Price Rd. to McKellips Rd.	1998
66	Salt River Channel (SR-143 to McClintock Dr.)	Salt River, SR-143 to McClintock Dr.	1991
67	Camelback Side Drain Extension	Camelback Rd., 64th St. to 68th St.; Lafayette Blvd., 64th St. to 68th St.	1986
67	Indian Bend Wash	Between Hayden Rd. and Scottsdale Rd., Indian Bend Rd. to Salt River at SR-202L	1985
68	Osborn Rd. Storm Drain	Between Osborn Rd. and Thomas Rd., 60th St. to Ind. Bend Wash at 76th St. and Earl Dr.	2001
69	Oak St. Storm Drain (58th St. to Indian Bend Wash)	Oak Street, 58th St. to Indian Bend Wash	2000
70	Guadalupe Drainage Improvement Project	Town of Guadalupe (Various Basins)	2003
71	Guadalupe FRS	West side of I-10, between Guadalupe Rd. and Baseline Rd.	1975
72	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
73	Gila Drain Storm Drain	Rural Rd., 1/2 mi. south of Guadalupe Rd. to 1/2 mi. south of Warner Rd. (Hanger Park)	1988
74	Price Road Drain	SR-101L (Price), Salt River to 1/2 mi. south of Guadalupe Rd. (Carriage Lane Park)	1993
75	Alma School Drain	Mclellan Rd. alignment, Tempe Canal at Alma School Rd. to the Salt River	1969
76	Southeast Phoenix Regional Drainage System	SR-202L and 48th St.	2002
77	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
78	Central Chandler Area Drainage System	Area bounded by Ray Rd. (N), Pecos Rd. (S), SR-101L (W), Arizona Ave. (E)	2005
79	Queen Creek Road Basin	McQueen Rd. and Queen Creek Rd.	2009
80	Golden Eagle Park Dam	Golden Eagle Blvd. and Palisades Blvd.	2002
81	McDowell Rd. Storm Drain and Basin	McDowell Rd., Hawes Rd. to Sossaman Rd. alignment	2010
82	Hermosa Vista Dr. / Hawes Rd. Storm Drain and Basin	Area bounded by McDowell Rd. (N), Hermosa Vista Dr. (S), Spook Hill FRS (W), 90th St. (E)	2009
83	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
83	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
84	Bulldog Floodway	Apache Junction FRS to Signal Butte FRS	1988
84	Signal Butte Floodway	Between Mclellan Rd. and Adobe Rd., Signal Butte FRS to CAP at Ellsworth Rd.	1984
84	Signal Butte FRS	Southwest of Signal Butte Rd. and McKellips Rd.	1987
85	Pass Mountain Diversion Channel	McKellips Rd., Crismon Rd. to Signal Butte Rd., south to behind Signal Butte FRS	1987
86	Apache Junction FRS and Floodway	Lost Dutchman Blvd. and Idaho Rd.	1988
87	University Drive Basin	64th St. and University Dr.	1992
88	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
89	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
90	Adobe St. Structures over EMF	Adobe St. 1/2 mi. east of Greenfield Rd.	1990
90	East Maricopa Floodway	Between Val Vista Dr. and Sossaman Rd., Brown Rd. to GRIC to the Gila River	1989
91	Central Arizona Project Detention Basin No. 1	Approximately Sossaman Rd. alignment and approximately Mclellan Rd. alignment	2001
91	Central Arizona Project Detention Basin No. 2	93rd St. and University Dr.	2001
91	Central Arizona Project Detention Basin No. 3	Approximately 96th St. and University Dr.	2001
91	Central Arizona Project Detention Basin No. 4	Crismon Rd. and Apache Tr.	2001
91	Central Arizona Project Detention Basin No. 5	Northeast corner of Cheshire St. and Southern Ave.	2001
92	Sossaman Channel and Basin	Sossaman Rd., Southern Ave. to Guadalupe Rd. (Basin at US-60)	1977
93	Guadalupe Box and Channel	Guadalupe Rd., Sossaman Rd. to the EMF at Power Rd.	1989
94	Gilbert Crossroads Park Basin	Greenfield Rd. and Ray Rd.	1992
95	Elliot Rd. Basin and Channel	Approx. Elliot Rd., approx. Signal Butte Rd. to SR-202L; Crismon Rd. 0.5 mi. north	2007
96	Powerline Floodway	Powerline FRS, southwest to Ray Rd. alignment at GM, to EMF at Sossaman Rd.	1968
96	Powerline FRS	US-60 and Guadalupe Rd. alignment	1967
97	Vineyard FRS	US-60 and Ray Rd. alignment	1968
98	Rittenhouse FRS	US-60, Queen Creek Rd. alignment	1969
99	Ellsworth Rd. Channel at Phoenix-Mesa Gateway Airport	North and East boundaries of Phoenix-Mesa Gateway Airport	2008
100	Rittenhouse Road Channel	Rittenhouse Rd., Queen Creek Rd. to the EMF at Pecos Rd.	1997
101	Queen Creek Channel (Hawes to Power)	Queen Creek, Hawes Rd. to Power Rd.	2006
102	Sonoqui Wash Channelization (Higley to Chandler Heights)	Sonoqui Wash, Higley Rd. and Ocotillo Rd. to Chandler Heights Rd. and Sossaman Rd.	2008
103	Carefree Town Center Drainage	Area bounded by Sundance Tr. / Tom Darl. Dr. (NW), Bloody Bas. Rd. / Tranquil Tr. (SE)	2002
NA	Gila / Salt River Clearing (Gillespie Dam to 91st Ave.)*	Gila / Salt River, Gillespie Dam to 107th Ave.	1985

\*Initially cleared; conditions subsequently reversed.

