



2015 ANNUAL REPORT

Flood Control District of Maricopa County, Arizona

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Flood Control District of Maricopa County

2801 West Durango Street
Phoenix, Arizona 85009
(602) 506-1501
www.fcd.maricopa.gov

Cover photo:

Powerline Flood Retarding Structure Interim Dam Safety Measure No. 1 (IDSM) Project, April 2013: Filter placement and construction of 3,400 additional dam feet.



WELCOME

William "Bill" Wiley, P.E.
Chief Engineer and
General Manager

Although 2015 brought relief from the devastating storms of 2014, we still had significant flooding in some areas and the residual from 2014 to repair. Most significantly, parts of Wickenburg were devastated by flooding in July and efforts to mitigate further flooding are still underway. El Niño was officially declared in the fall of 2015, and although we had above average rainfall in November and a series of storms the second week of January 2016, it has produced less rain than expected. That said, we are ready, and have created an El Niño response plan with other agencies, at all levels.

In 2015, we started work on four major dam rehabs, released a new website, finished maintenance on nearly all of our structures affected by the 2014 storms, added teleconferencing tools, worked with Gilbert on the use of Chandler Heights basin as a regional park site, completed two Kaizens (ROW and FUP and implemented nearly 90 percent of all action items), released enhanced FLO-2D tools, updated floodplains in several areas including on the Salt and Gila rivers, accelerated work on the Laveen 27th Avenue basin, and worked on numerous high-profile studies.

Additionally, as we prepared for El Niño, we distributed 1,500 sandbags in Laveen, finished the Loop 303 drainage project, adopted a new resolution to allow recreational use of our properties, and completed both a Comprehensive Report and a Floodplain Management plan. In the last year, we also published the 2014 FCD Annual Report; an updated Drainage Policy/Standards manual, and our work was recognized nationally when staff received EIGHT National Association of Counties (NACo) Achievement Awards.

Our efforts to improve customer service and transparency have not gone unnoticed. We held our first Annual Public Forum on September 8th and continued holding our Flood Stakeholder Group and Advisory Board meetings. These, coupled with improvements made through the Kaizens and taskforces (website, forms, streamlined processes, etc.), our customer satisfaction and support continues to grow.

Looking forward, the FCD will continue to work with stakeholders and pursue partnerships to improve flood protection and community recreational opportunities. We are also committed to continue to look for ways to improve customer service. To this end, in 2016, we

are installing an online ROW permitting system. This will allow us to electronically receive and process ROW permits to reduce time and errors. The online tool will save an estimated \$500–\$2,000 per submittal for our customers. There are more changes to come, and we'll keep you up to date at www.fcd.maricopa.gov.

Our concerted efforts to promote water conservation will heighten in 2016. Because Arizona and the entire Southwest is in the middle of a 15-year drought, it is important we do our part to reduce water usage and look for ways to preserve our "fleeting" flood resources. With that in mind, we have adopted 5-year goals to reduce FCD landscaping water by 50 percent, and we are already well on our way! Additionally, we are committed to evaluating water conservation options in all new FCD structures and 50 percent of our existing structures over the same time period. We feel it's the right thing to do.

It is a busy time at the Flood Control District, and we have important jobs to do. With the help of our stakeholders, we will continue to be a great community partner.

WINTER STORM UPDATE

An unsettled and wet weather pattern unfolded across the desert southwest the first full week in January (Jan. 4–7) as a series of four upper level disturbances moved across Arizona. The weather systems brought much needed and widespread precipitation to southcentral Arizona in the form of valley rain and mountain snow. As much as 3.00"–4.00" of precipitation fell across northern and eastern high-terrain regions of Maricopa County, while in and around the Phoenix Valley four day totals ranged from 0.75"–2.00". Due to extended periods of moderate rainfall, runoff flowed through some area washes later in the week. This led to some road closures at unbridged wash crossings, while other areas saw minor water ponding problems. All-in-all, FCD structures operated as planned and without issue. El Niño is still ongoing and may continue to enhance weather through April.

2015 BOARD OF DIRECTORS



Steve Chucri
Chairman
District 2



Denny Barney
District 1



Andy Kunasek
District 3



Clint Hickman
District 4



Steve Gallardo
District 5

2015 FLOOD CONTROL ADVISORY BOARD

DeWayne Justice, Chairman
Melvin Martin Vice-Chairman
Hemant Patel, Secretary
Gregg Monger
Dick Schaner
Ray Dovalina, Ex Officio
Bob Larchick, Ex Officio

ABOUT THE DISTRICT

The Flood Control District of Maricopa County (FCD) is a political subdivision of the state of Arizona. The Maricopa County Board of Supervisors serve as FCD's Board of Directors, which in turn receives counsel from the Flood Control Advisory Board (FCAB). Seven county citizens make up the FCAB.

Our pledge is to be responsive to our clients in an efficient, effective, and fiscally responsible manner. We will show personal integrity and professionalism in all our actions. We will display continuous improvement, innovative thinking, and technical expertise in our daily work. We are stewards of the public's trust, and are aware of how our actions effect current and future generations.

WHAT DOES THE FLOOD CONTROL DISTRICT DO?

Flood Hazard Identification

FCD conducts drainage and flood studies throughout Maricopa County. These studies identify areas of flood risk and potential solutions.

Structures

Based on flood risk priorities and if funding is available, FCD builds flood control structures such as dams, levees, channels, basins, and storm drains. FCD cost shares on structures and maintenance with cities and other agencies.

Floodplain Use Permits and Inspections

The Flood Control District (FCD) is responsible for providing regional flood protection in all of Maricopa County and local flood protection in unincorporated Maricopa County. FCD is not responsible for all floodplain regulation in the County as some municipalities handle their own floodplain management.

FCD issues Floodplain Use Permits for construction in floodplains for: Buckeye, Carefree, Cave Creek, Chandler, El Mirage, Gila Bend, Guadalupe, Litchfield Park, Mesa, Queen Creek, Surprise, Tolleson, Youngtown, and Wickenburg.

The County Planning and Development Department issues Floodplain Use Permits for the unincorporated county. The communities of Avondale, Fountain Hills, Gilbert, Glendale, Goodyear, Paradise Valley, Peoria, Phoenix, Scottsdale, and Tempe, perform their own floodplain management activities and permitting.

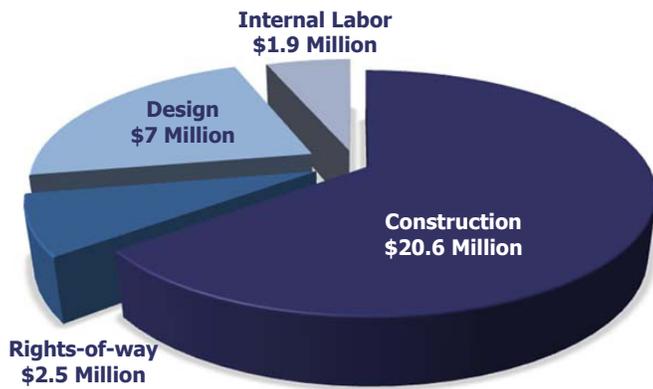
For the convenience for residents living in unincorporated county, Maricopa County Planning and Development (P&D) engineers issue Floodplain Use Permits. P&D staff also fulfill entitlement case inquiries (zoning, plats, special use) on behalf of FCD. Floodplain Use Permits for the other 14 communities are processed at FCD.

10 Significant Accomplishments in Fiscal Year 2015/2016

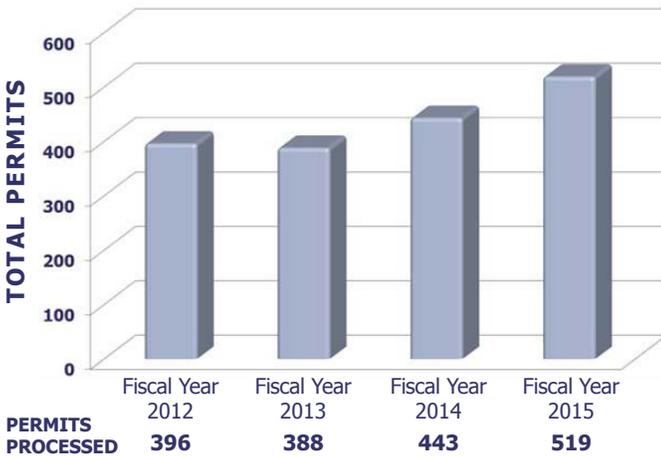
- 1 Levy approved to fund additional flood control structures/maintenance/rehabilitation
- 2 Kaizens conducted to improve floodplain use permit Right of Way process (90% completion)
- 3 Sonoqui Wash drainage projects Phase 3
- 4 Partnered with Gilbert on use of the Chandler Heights Basin as a regional park site
- 5 New website launched spring 2015—www.fcd.maricopa.gov
- 6 El Rio Vegetation Management Plan released
- 7 Flood Resource Guide created to help residents prepare for flooding
- 8 5-Year Floodplain Management Plan updated—Fall 2015
- 9 Loop 303 Channel project completed with ADOT as a partner
- 10 Completed maintenance on structures affected by 2014 storms

Capital Improvement Program

District expended—\$32 million



Floodplain Use Permits Processed



Studies in Progress

	Supervisor District	Estimated Completion Date
Ahwatukee Foothills ADMS	1, 5	May 2016
Upper East Fork Cave Creek ADMS	3	October 2016
Lower Indian Bend Wash ADMS	1, 2, 3	October 2016
Middle Indian Bend Wash ADMS (PVSP West)	4	December 2016
Tempe ADMS	1, 5	July 2016
Pinnacle Peak West ADMS	2, 3	July 2016
Laveen Hydrological Study	5	September 2016

Dam Safety Rehabilitation

	Supervisor District	Estimated Substantial Completion Date
White Tanks Flood Retarding Structure (FRS) No. 4	4	January 2017
Powerline FRS	1, 2	September 2018
Vineyard Road FRS	1, 2	September 2018
Buckeye FRS No. 1	4	August 2017
Cave Buttes Dam Phase 1	3	Fiscal Year 19/20
Cave Buttes Dam Phase 2	3	Fiscal Year 19/22
McMicken Dam	4	Fiscal Year 20/30

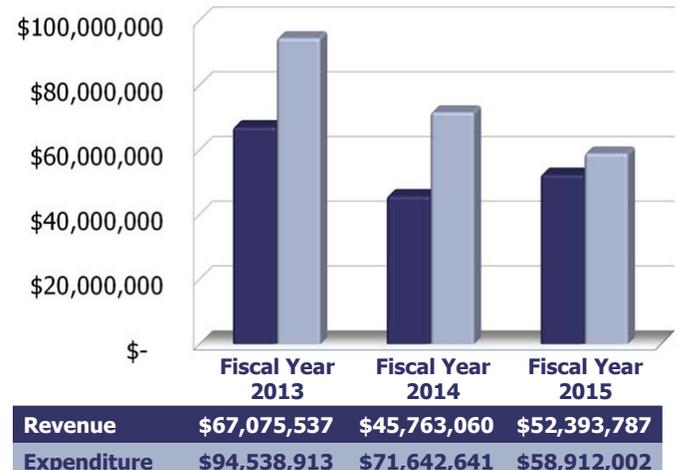
Flood Warning ALERT Station Data

Installed 13 new ALERT weather gages in conjunction with partner agencies

ALERT Center staff received 90 percent customer service satisfaction for the Flood Control District's Flood Warning notification system.

Fifty percent of all ALERT Stations were upgraded to ALERT II technology

Revenue and Expenditures

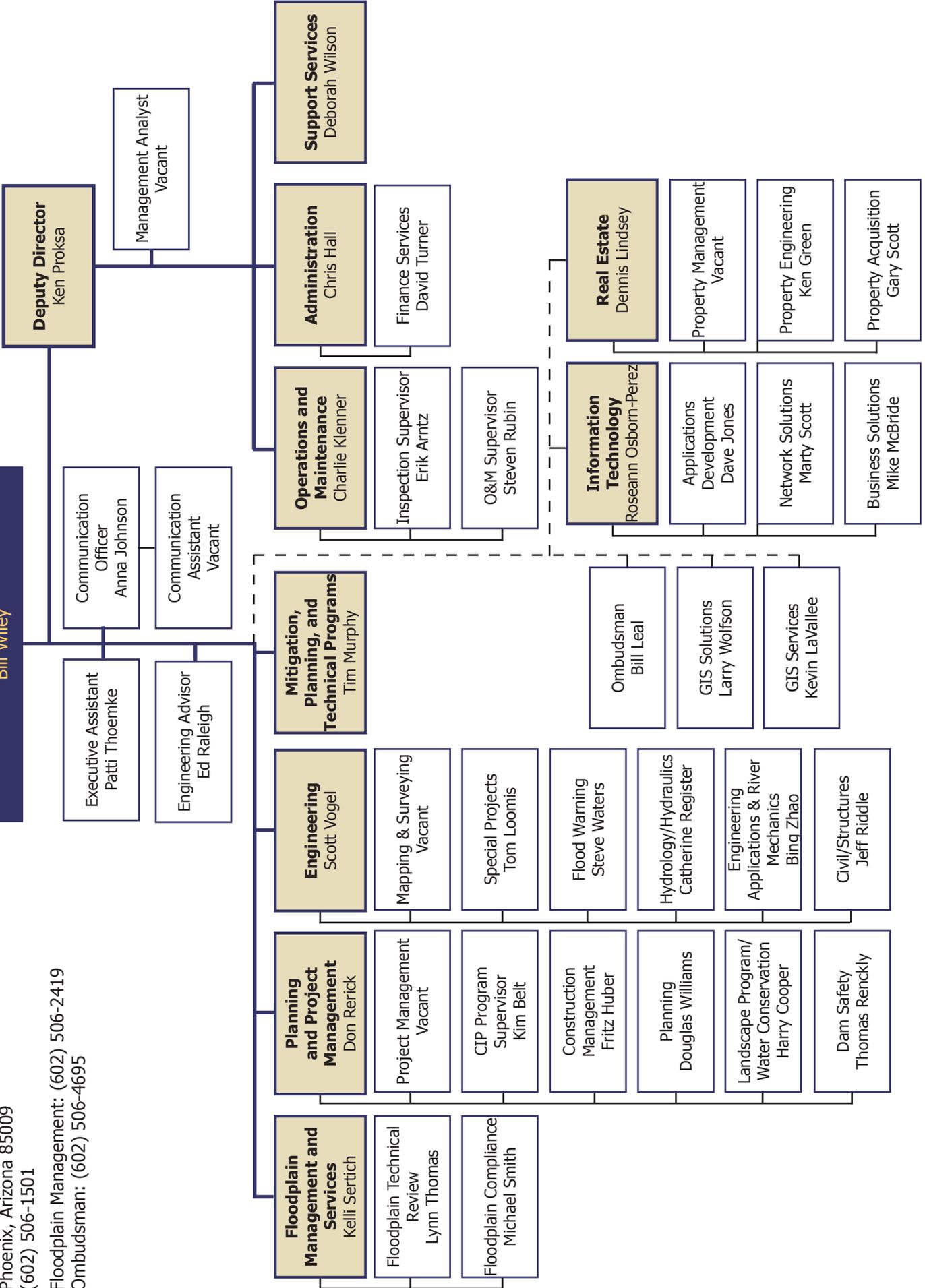


Flood Control District of Maricopa County

2801 West Durango Street
Phoenix, Arizona 85009
(602) 506-1501

Floodplain Management: (602) 506-2419
Ombudsman: (602) 506-4695

Chief Engineer and General Manager Bill Wiley



PROJECTS & PLANNING

The FCD annual budget is divided into two buckets: an operating budget that funds routine operations, and a capital budget that funds new structures or major repairs—aka, Capital Improvement Program (CIP). The operating budget is generally fixed by an annual operating target; revenue in excess of the operating target may be available for the CIP. The CIP project budget varies from year-to-year and is dependent on the availability of funds, grants and cost-share.

Projects in the CIP have been identified through the FCD planning process, operations and maintenance staff, or project partners.

2015 Completed Projects

Wickenburg Area Drainage Master Plan (District 4)

Gila Bend Area Drainage Master Plan Update (District 5)

Avondale Area Drainage Master Study (District 4)



Trenching machine excavating on the Buckeye FRS 1 Rehabilitation Project

Capital Improvement Projects

Sonoqui Wash Phase 3

Loop 303 Channel

Buckeye Flood Retarding Structure 1 Rehabilitation Project Phase 1

Upper Camelback Wash Improvements

2015 DEPARTMENT HIGHLIGHTS



FCD Wins Unprecedented 8 NACo Awards

Last year, the National Association of Counties (NACo) awarded FCD project teams EIGHT awards. NACo annually recognizes innovative programs in county government throughout the nation with Achievement Awards. This program allows counties to promote successes and share best practices.

Each application is judged on its own merits and not against other applications received. Awards are given in 21 categories, culminating with an awards luncheon at the NACo Annual Conference and Exposition. NACo is the only national association that represents county governments in the United States (naco.org).

Programs recognized included:

- FCD Inquiry Tracking System
- Vehicle & Equipment Maintenance Request Tracking System (VERT)
- River Mechanics Design Procedures
- Sunflower Burn Area Interactive Data Display Map
- Small Projects Assistance Program
- Online Library Search System
- Report a Flood Tool
- Floodplain Management System Database-Management Tool.

Mesa, Arizona—September 2012



Who is Responsible for Flood Control?

Everyone (homeowners, homeowner's associations-or HOA's, cities and towns, and the Flood Control District of Maricopa County) is responsible for flood-related issues depending on the size and location of the flood.

HOMEOWNERS are responsible for flood control on their own property, including drainage in their front and back yard.

HOA's are responsible for flood control through local facilities within their community (1 to 100-year floods). They also maintain development to protect their community such as drainage channels and basins, and they set and enforce community building regulations.

CITIES AND TOWNS control flooding on street-level/drainage floods within city limits (1 to 100-year floods). Cities and towns also set and enforce community building regulations.

THE FLOOD CONTROL DISTRICT (FCD) of MARICOPA COUNTY (602-506-1501) controls regional, large flood events (10 to 100-year floods). The FCD does this through building and maintaining large structures such as dams, basins and channels. FCD works closely with FEMA, Army Corps of Engineers and other federal agencies to obtain project funding. The FCD helps reduce risk of flooding by adopting and enforcing floodplain regulations.

State and Federal government also works with the Flood Control District. Arizona Department of Water Resources is the lead on floodplain management and dam safety issues. FEMA and the Army Corps of Engineers provide resources and federal permitting. In unincorporated areas of Maricopa County, citizens should contact the Department of Planning and Development.

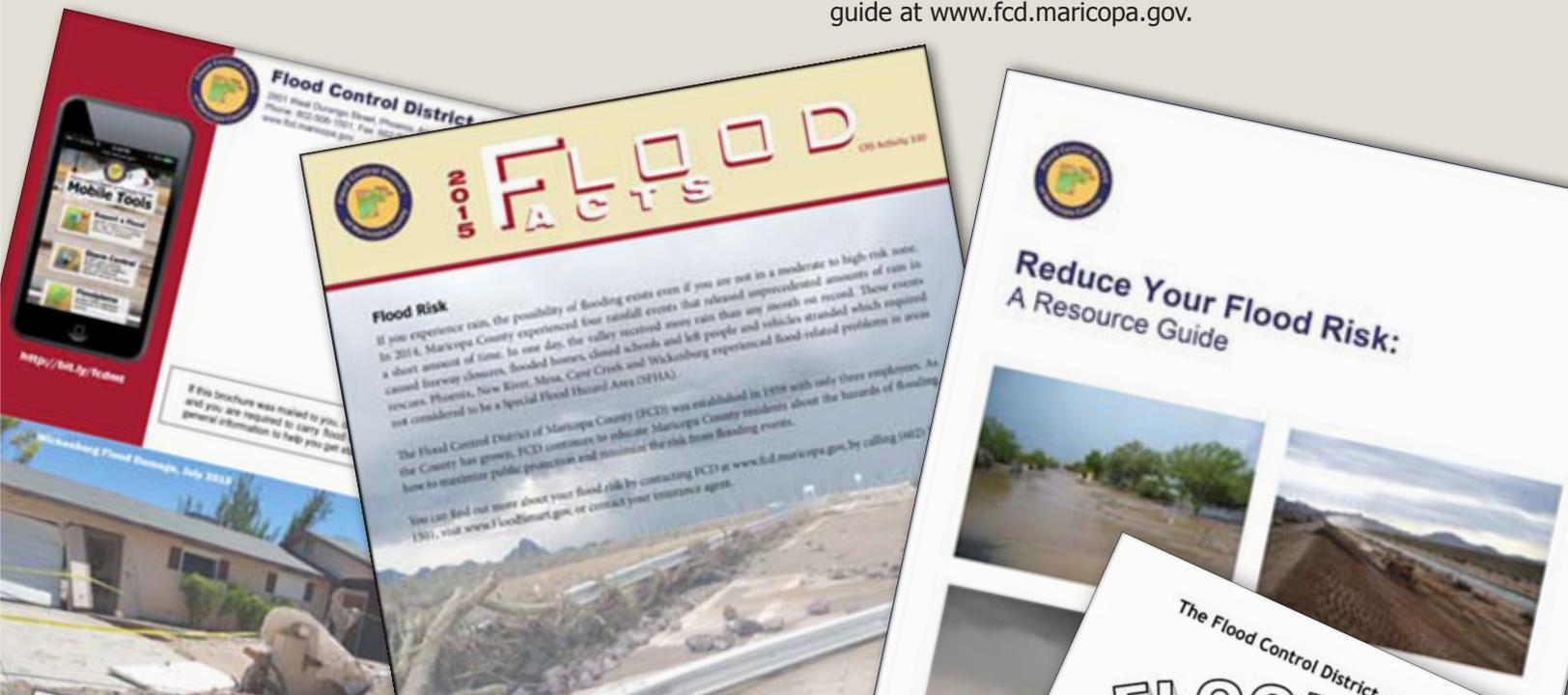
Valuable Tools to Help You Evaluate Your Risk for Flooding

2015 Flood Facts Publication

The latest edition of Flood Facts is available now to residents in Maricopa County. Flood Facts is an annual publication from FCD that includes flood-related terminology definitions, information about federal disaster assistance, permit requirements and where to get a permit, floodplain development and regulations, tips to help reduce your risk for flood damage, and much more. This 16-page guide is available at fcd.maricopa.gov.

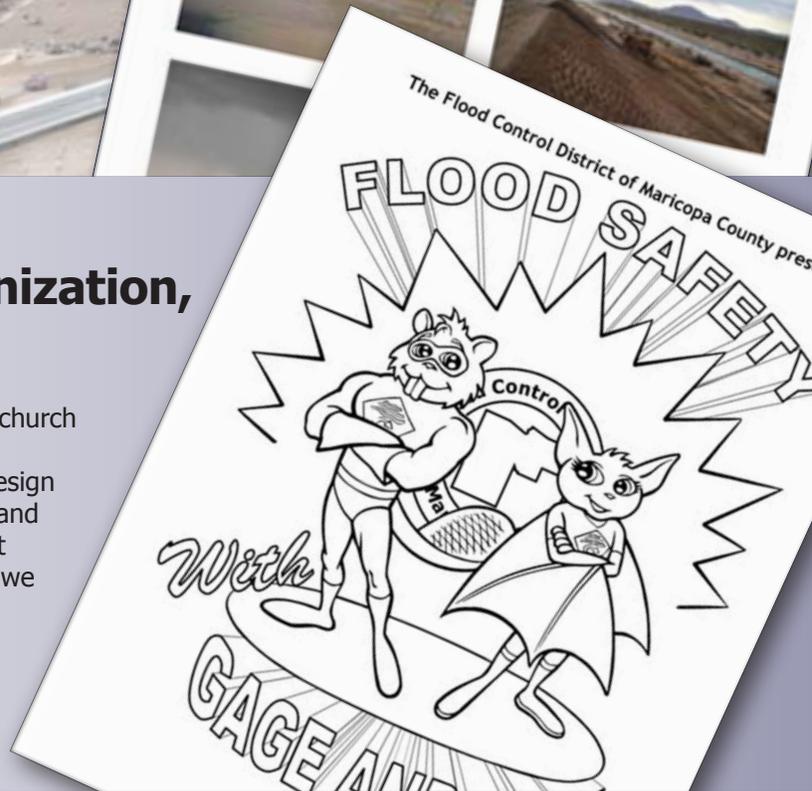
Flood Resource Guide

Hot off the presses this past holiday season, the Reduce Your Flood Risk: A Resource Guide is a 31-page booklet to answer the most commonly asked questions we receive about flood hazards, and floodplain management. We asked residents what they wanted to know, and this guide became a reality due to their input. In this expanded publication you'll find information about your risk for flooding, flood insurance, tips to maintain drainage around your home, flood safety tips to protect your family and property, the do's and don'ts of floodplain uses, and much more information. Find this guide at www.fcd.maricopa.gov.



FCD Can Present to Your Organization, Business Group or School

Are you looking for a speaker to visit your Rotary club, HOA, church group, or do you need an educational lesson for your library program, or for a group of students? FCD staff can custom design a presentation with your specific needs in mind. For all-ages and most scenarios, we can speak to your group about the permit process, basics of flood control or how flooding can occur, or we can talk about rainfall and water flow. We even have original flood safety activity books for elementary school students. The booklets help FCD to teach children what it means to be safe from flooding. To coordinate a Flood Control District presentation for your group, please call (602) 506-6762.



RAINFALL & WEATHER



Rainfall and streamflow information that is used by FCD, county emergency departments and National Weather Service is provided by 321 automatic rain gages, 199 automatic stream gages, and 38 automatic weather stations located throughout the county.

According to the FCD, the 2015 monsoon season was much drier than normal. Much of the county saw below-to well below-average rainfall totals for the season. Many of the traditional wetter, higher terrain, locals remained very dry.

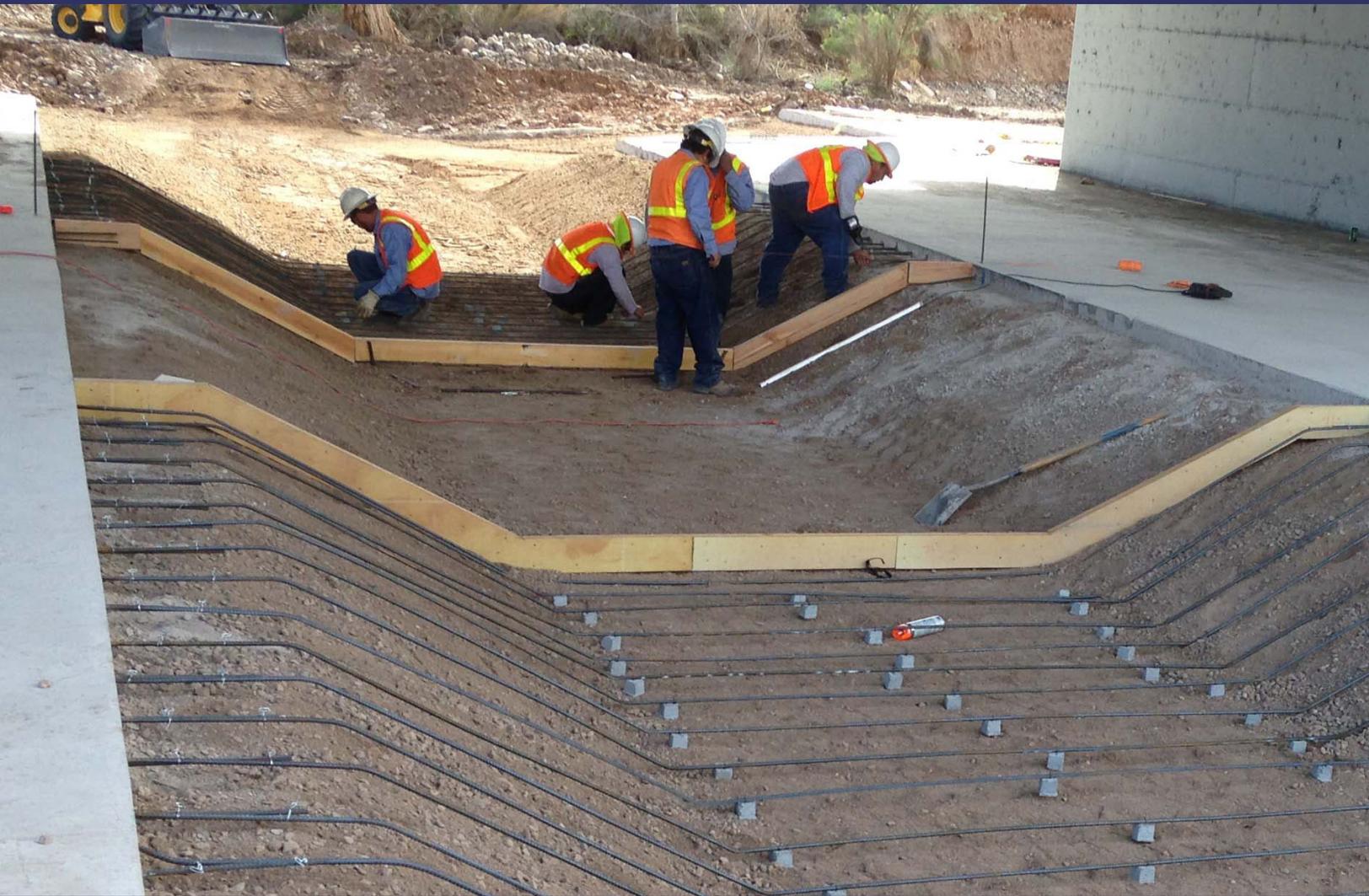
Above-average rain fell across northwestern portions of the county and across the southern urban corridor, including parts of the southeast Valley.

After an abnormally wet May and early June, the monsoon season began the last week of June, when heavy rain fell across Aguila, Wickenburg, and the lower Bradshaw Mountains. Daily isolated thunderstorm activity continued through July 5, before heavy rain fell across the West Valley during the early morning hours of July 6.

A localized, but historic rain event moved across the Wickenburg area during the evening of Saturday, July 18. An unstable atmosphere associated with the remnants of Hurricane Dolores led to the formation of a thunderstorm that dropped torrential rains over northwestern Maricopa County. The storm produced anywhere from 2" to 5" of rain over a three-hour period with much of the rainfall occurring in a 60-90 minute window. Heavy rainfall in the short period of time led to significant flash flooding in and around the Town of Wickenburg.

A complete storm overview of this event was generated by the FCDMC and can be viewed at www.fcd.maricopa.gov/wick2015storm. It's worth noting that above-average rainfall was recorded last year at Sky Harbor International Airport for the fourth-consecutive season. The official rainfall total, as reported by the National Weather Service-Phoenix office, was 3.29" which was the 35th wettest year, in a 121 year period of record.

STRUCTURE OPERATION AND MAINTENANCE



Our Operations and Maintenance Division completed maintenance on all FCD structures in 2015. Maintenance starts with inspections as well as repairs to ensure all structures operate as designed. Last year's maintenance also included repairs needed from the September 2014 storm damage. In addition, FCD completed Loop 303 Channel construction and it has now been added to the structure maintenance list. FCD established a West Yard this year to reduce maintenance cost to structures in the West County. The first year of anticipated savings is \$60,000.

Maricopa County Structures Maintained by the District

22 dams
365 acres of basins
165 miles of channel
60+ additional structures (levees, drains and spillways)

2015 Financial Highlights

Preliminary and Unaudited

Revenue Collection Status

	Full Year Revised Budget	Collections Full Year	Collections Remaining
Property Taxes	43,100,665	43,056,304	(44,361)
Licenses & Permits	174,600	347,390	172,790
Partnership Reimbursement	5,700,000	7,131,015	1,431,015
Payments in Lieu	152,482	152,712	230
Interest Earnings	250,000	228,160	(21,840)
Grant Funding	500,000	273,709	(226,291)
Miscellaneous Revenue	343,926	1,204,497	860,571
	<u>50,221,673</u>	<u>52,393,787</u>	<u>2,172,114</u>

Operating Budget - Financial Comparative

	Full Year Budget	Full Year Actual	Funds Remaining
Net Payroll	16,360,746	14,551,359	(1,809,387)
Net Supplies	1,723,98	1,331,671	(392,309)
Net Services	13,363,580	10,721,567	(2,642,013)
Net Capital	1,047,087	901,718	(145,369))
	<u>32,495,393</u>	<u>27,506,315</u>	<u>(4,989,078)</u>

Grants

Services	—	188,808	188,808
Capital	500,000		(500,000)
	<u>500,000</u>	<u>188,808</u>	<u>(311,192)</u>

Capital Improvement Program

	Full Year Budget	Full Year Actual	Funds Remaining
Force Account Payroll	2,000,000	1,915,335	(84,665)
Land Acquisition	1,615,000	1,858,656	243,656
Capital Equipment—Weather Stations	—	1,068,455	1,068,455
Design	4,175,000	7,028,301	2,853,301
Construction	32,210,000	19,534,939	(12,675,061)
	<u>40,000,000</u>	<u>31,405,687</u>	<u>(8,594,313)</u>

Fund Balance Reserves

	Operating Fund	CIP Fund	Total Fund Reserve
Beginning Fund Balance	33,835,545	7,507,905	41,343,450
Total Revenue Collected	45,262,772	7,131,015	52,393,787
Less Expenses	(27,695,123)	(31,405,687)	(59,100,810)
Inventory (Increase/Decrease)	33,939		133,939
Transfer Out/In	(30,000,000)	30,000,000	—
	<u>21,537,133</u>	<u>13,233,233</u>	<u>34,770,366</u>

Look what else happened in 2015...!

It's been a very busy year of Flood Control. This list is of accomplishments expands on those listed on page four of this report. All help ensure safety for Maricopa County residents and prevent flood damage. You can learn more about these projects and structures by visiting www.fcd.maricopa.gov.

1. Construction started in February on the 27th Avenue and South Mountain Basin, Laveen. This is a City of Phoenix construction project, and FCD of Maricopa County is a cost-share partner.
2. FCD helped fund Small Project Assistance Program (SPSP) projects in six Maricopa County municipalities—SPAP is an annual program that helps local municipalities solve small flooding problems for homes and businesses.
3. Numerous software programs were developed by FCD engineers to streamline more accurate computer modeling (storm sediment and water flow) predictions with the intent to benefit the safety of residents and their property.
4. Construction has begun on the 35th Avenue storm drain located between Dobbins and Baseline in Laveen. This is a City of Phoenix and FCD project.
5. New two-dimensional software (FLO2D) has been developed to better determine storm water behavior in County communities.
6. Three Floodplain Delineation studies were completed for the Lower Gila River, Lower Salt River and New River.
7. Ninety-nine Flood Insurance Rate Maps throughout the County were updated by FEMA to more accurately identify flood risk.

Permits & Inspections

(July 2014–June 30, 2015)

Floodplain Use Permits

Unincorporated & Community	519
Fees collected	\$115,350

Inspection & Enforcement

Unincorporated Floodplain Use Permit Inspections*	538
Floodplain Inquiry Cases	161
Number of completed cases	129

*100% turnaround conducted within one day of request.

