



The Flood Control District of Maricopa County

ANNUAL MEETING (9-10-2015)

IT DOESN'T RAIN IN ARIZONA





WEATHER ALERT

com

MONSOON MAYHEM: WATER RESCUE IN PHOENIX

19TH AVE. & DOBBINS

#abc15

abc 15

Laveen August 12, 2014

Near Skunk Creek

August 19, 2014



Photo courtesy of KNXV-TV ABC 15

New River

September 8, 2014



Photo courtesy of KNXV-TV ABC 15

Interstate 10 at 43rd Avenue

September 8, 2014



Photo courtesy of KNXV-TV ABC 15



Mesa, Arizona
September 8, 2014

Photo courtesy of KNXV-TV ABC 15

Monsoon 8/31/2015

BREAKING NEWS

SEVERE FLOODING IN WICKENBURG



abc 15

ARIZONA

6:54 91°



Wickenburg
7/18/2015



Monsoon 8/31/2015
16th St & Van Buren

Courtesy 12 News



Monsoon 8/31/2015

Courtesy 12 News



Monsoon 8/31/2015
19th Ave. & Thomas Ave.
Courtesy 12 News

Monsoon 8/31/2015
Semi Truck Overturned
Courtesy 12 News



Who is responsible for flood control?

(EVERYONE)

However assistance with flood-related issues depends on the size and location of the flood.

Homeowners

Homeowners
Associations

Cities
&
Towns

Flood Control
District

Flood Control District of Maricopa County

- Established in 1959
- 55 years of flood hazard mitigation



Capitol Ferry Service
Feb. 4, '05.

Arizona State Capitol, 1905

ANDREWS - Photo.

Flood Control District

Corp of Engineers

FEMA

EPA/ADEQ

ADWR

Other

CORPS

- Permitting
- 404
- 408
- Levee
Inspections

FEMA

- Flood Regs
- NFIP-Permitting
- LOMR/CLOMR
- FIRMS-Insurance
- CRS
- Levee Certification

EPA/ADEQ

- Storm Water
- Dust-MCAQ
- NEPA

ADWR

- Dam Safety/EAPS
- Permitting
- Floodplain Mgmt

OTHER

- En Species Act
- SHPO
- OSHA
- ADEM/McDEM
- FCC
- NRCS
- Local Jurisdiction

What Do We Do?

Mission: provide flood hazard identification, regulation, remediation, and education to the people in Maricopa County so that they can reduce their risks of injury, death, and property damage due to flooding while enjoying the natural and beneficial values served by floodplains.

The District provides risk reduction and economic development opportunities by addressing flooding hazards.

- Identification & Planning
- Delineations
- Permitting and Insurance
- New Capital Projects
- Maintain Structures
- ALERT Flood Warning

What Do We Do?

Identification & Planning

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graph TD; A[Identification & Planning] --> B[Delineations]; A --> C[New Capital Projects]; B --> D[Permitting & Insurance]; C --> E[Maintain Structures]; D --> F[ALERT Flood Warning]; E --> F;
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Delineations

New Capital Projects

Permitting & Insurance

Maintain Structures

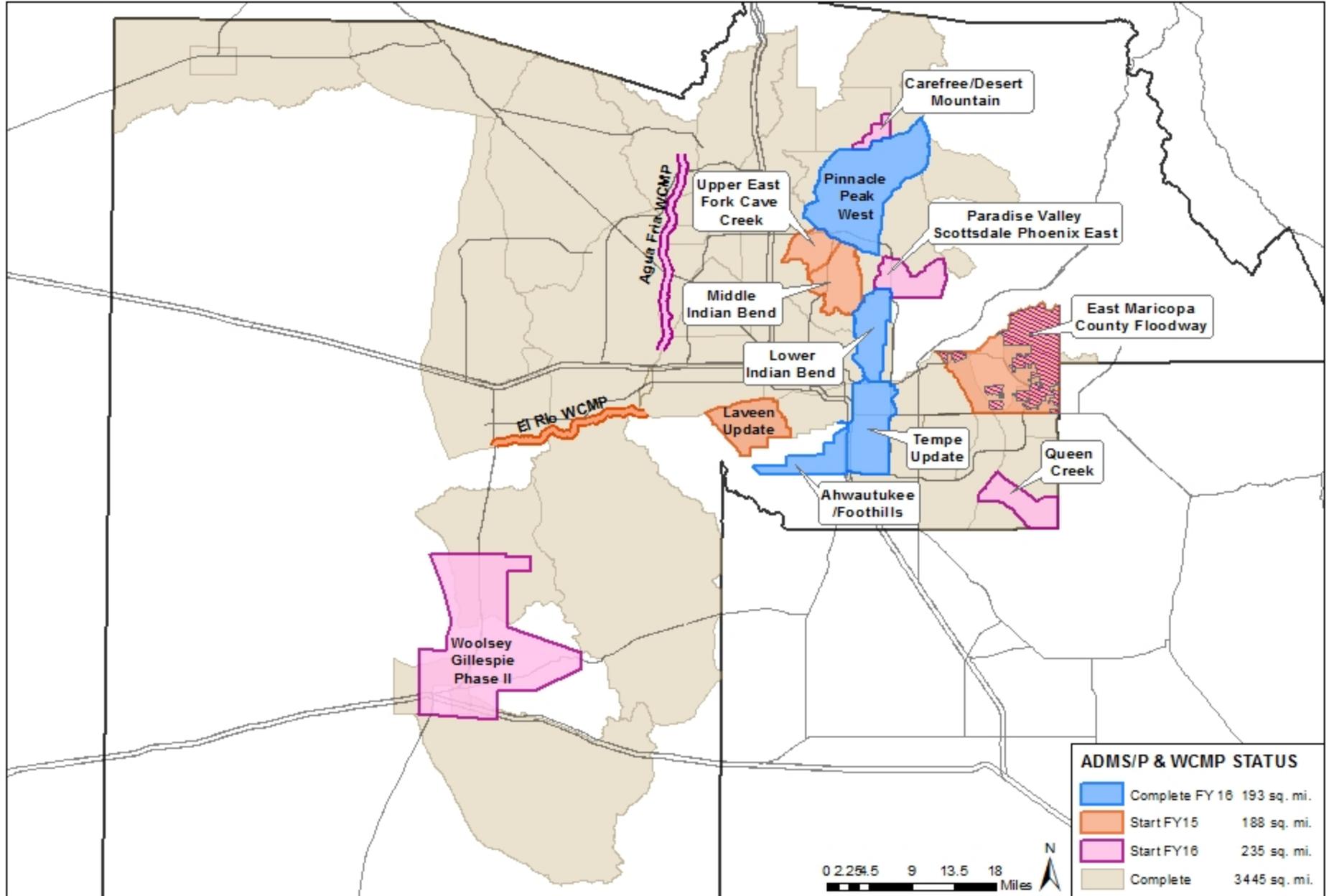
ALERT Flood Warning



Identification & Planning

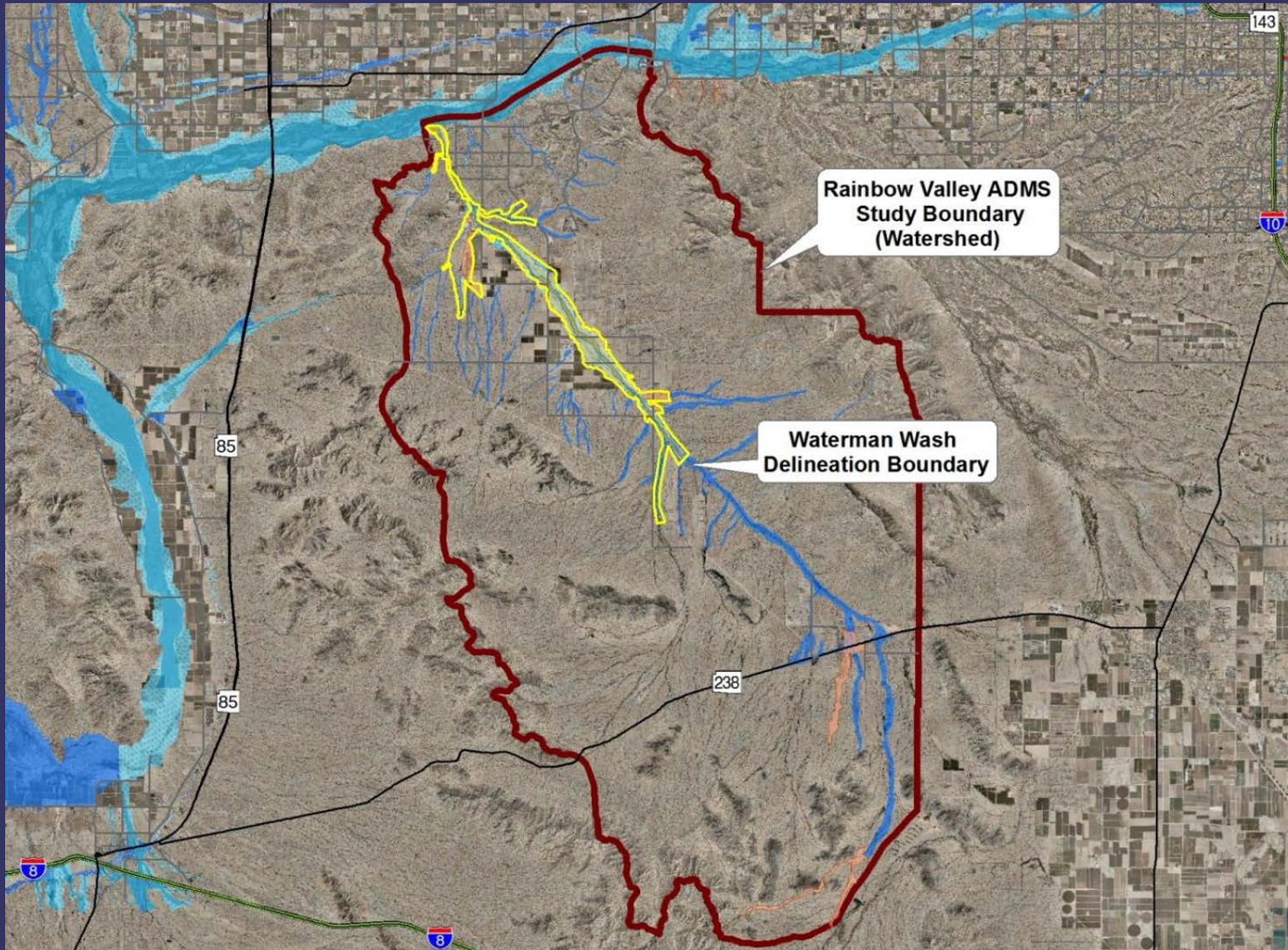
- Mandated: A.R.S. 48-3616
- Comprehensive Plan
 - 5-Year Update Cycle
 - Summary of Area Drainage Plans/Studies
 - Based on watershed
 - Updated based on:
 - Land use changes
 - Technique changes in modeling

PLANNING STUDIES FY 2016/2017

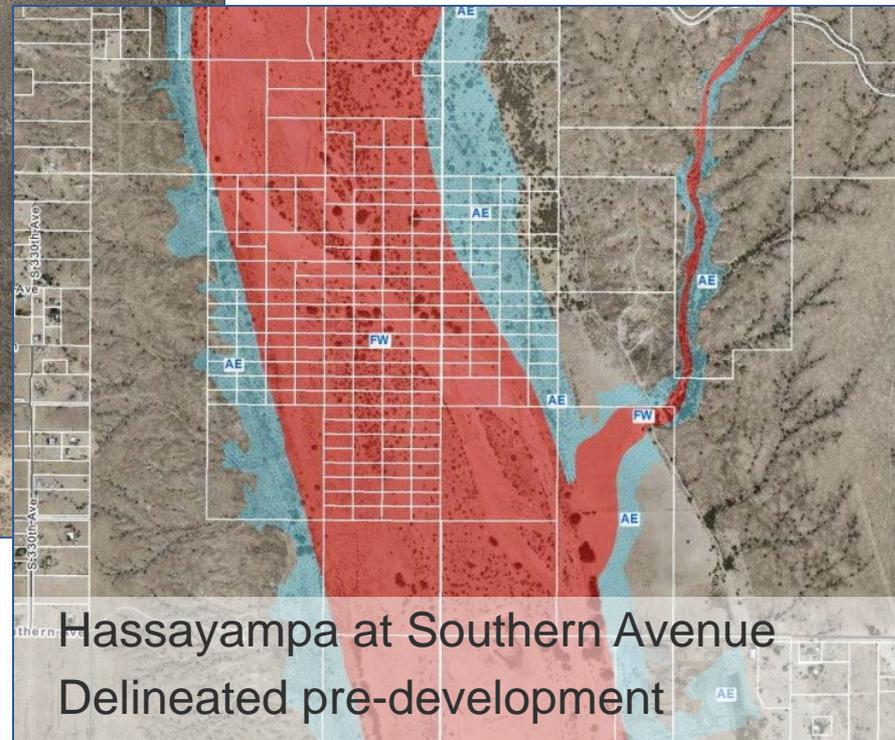


Area Drainage Master Study Area

including a Delineation Study Area



Floodplain Delineation





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graph TD; A[Identification & Planning] --> B[Delineations]; B --> C[Permitting & Insurance];
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Identification & Planning

Delineations

Permitting & Insurance

Permitting

- Mandated: A.R.S. 48-3609
- Required with delineation
 - Unincorporated County
 - 14 Communities
 - Sand & Gravel Operations

Insurance

- Mandated: A.R.S. 48-3609
- Carry out requirements of National Flood Insurance Program



Flood Control District of Maricopa County

Permit No. _____ Received Stamp

For District use only

FLOODPLAIN USE PERMIT APPLICATION

Application Information

Residential Commercial Sand & Gravel CLOMR/LOMR

Name: _____

Mailing Address: _____ City: _____ State: _____ ZIP: _____

Phone Number: _____ Alternate Phone Number: _____

E-Mail: _____

Property Owner YES NO

If no the following is required:

A signed and notarized Property Owner Authorization form if the owner wishes to grant an agent, contractor, or consultant authority to make decisions on this application

OR

A signed acknowledgement from the property owner that a Floodplain Use Permit is being sought and, if applicable, designation of an operator authorized to mine the property. (for permits for extraction of sand and gravel or other materials)

Property Information

Property Address: _____ City: _____ State: _____ ZIP: _____

Assessor Parcel Number(s): _____

(if multiple APNs please include in the Purpose of Application description)

Cross Streets: _____ Section: _____ Township: _____ Range: _____ ¼ Section: _____

Basement: Yes No As-Built

Purpose of Application:

APPLICANT SIGNATURE _____ DATE _____

FCDMC Rev. 7/1/2013



Flood Control District of Maricopa County

WARNING AND DISCLAIMER OF LIABILITY

A Floodplain Regulation for Maricopa County has been in force since February 25, 1974. The current version of the Floodplain Regulation for Maricopa County, Arizona was adopted on August 4, 1986, and amended March 23, 1987, April 6, 1988, September 18, 1989, September 3, 1991, December 15, 1993, November 1, 2000, December 20, 2006, November 30, 2011, April 9, 2014, and June 25, 2014. The intent of the Regulations is to prevent the dangerous and expensive misuse of floodplains in Maricopa County.

A Floodplain as defined in the Regulations is the areas adjoining the channel of a watercourse susceptible to inundation by a base flood including areas where drainage is or may be restricted by man-made structures that have been or may be covered partially or wholly by flood water from the 100-year flood.

Depending on the location of your property it could possibly be inundated by greater frequency flood events (those occurring more often). A flood greater in magnitude than the 100-year flood could also occur.

The review your development has undergone is solely for the purpose of determining if your application conforms with the written requirements of the Floodplain Regulation for Maricopa County. It is not to be taken as a warranty. Compliance with this Regulation does not insure complete protection from flooding. The Floodplain Regulation meets established standards for floodplain management, but neither this review nor the Regulation take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions all of which may have an adverse affect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

In consideration for the issuance of the requested permit the applicant, owner, agent, engineer and their successors agree to hold the District harmless from any onsite or offsite damages of any kind arising from the development of the subject property in accordance with their submittals as outlined in the attached permit

I have read and understand the above WARNING AND DISCLAIMER OF LIABILITY.

Permit Number _____ Owner or Agent _____ Date _____

FCDMC Rev. 6/26/2014

A photograph of a residential street in Mesa, Arizona, completely flooded with murky water. In the background, a two-story house is visible. Several cars are parked along the street, partially submerged. A person is standing in the water near a boat in the foreground. The scene illustrates the impact of flooding on a community.

Why should you have flood insurance?

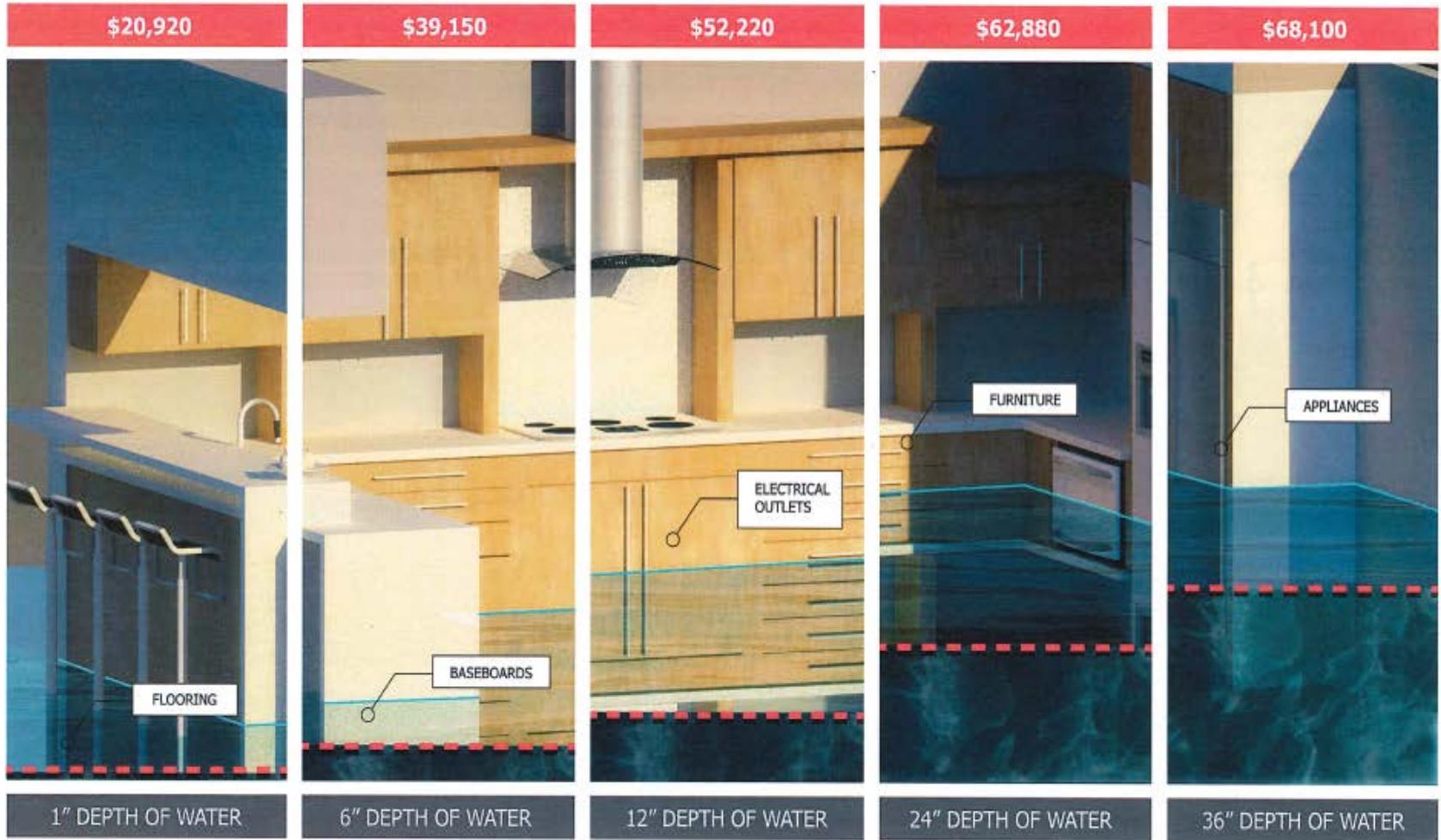
- Ranked No. 1 disaster
- Losses - \$8.2 billion over 30 years
- ~25% of claims are outside floodplains

The County needs to stay in good standing in the NFIP for residents to purchase flood insurance and communities to get federal disaster assistance.

Mesa, Arizona
September, 2014



ESTIMATED COST OF FLOODING IN A 2,000 SQ. FT. HOUSE



FLOOD DAMAGE COST DATA PROVIDED BY: FLOODSMART.GOV, NATIONAL FLOOD INSURANCE PROGRAM. COSTS ARE APPROXIMATE AND CUMULATIVE [2014]

Insurance

How much does it cost?

- Average homeowner cost \$400-600/year

What is covered?

- One building and its contents.
- Physical damage to property & possessions from flooding.





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graph TD; A[Identification & Planning] --> B[New Capital Projects]; B --> C[Maintain Structures];
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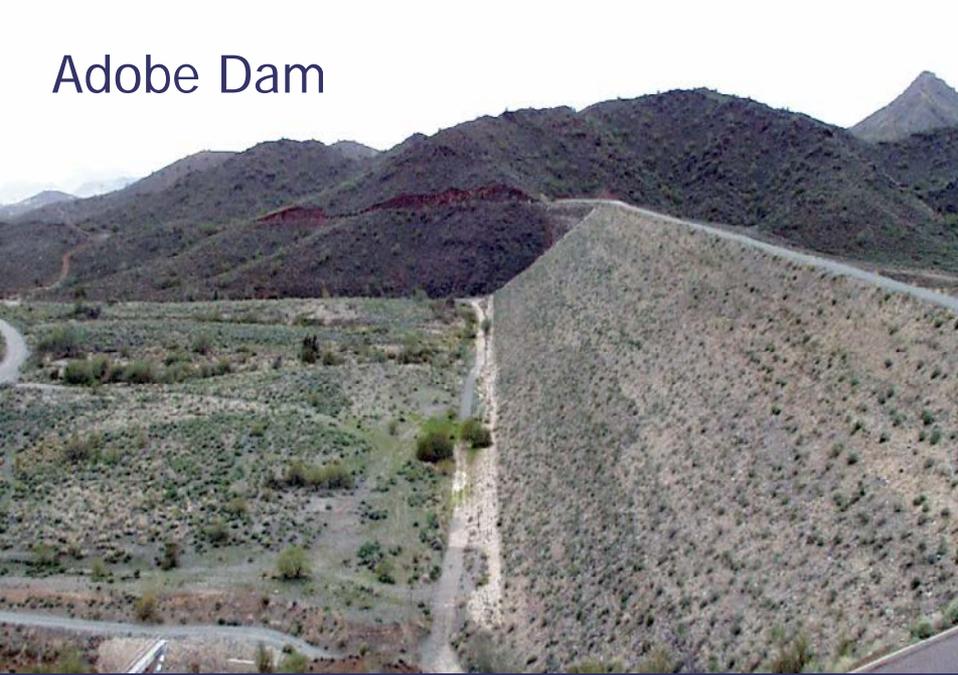
Identification & Planning

New Capital Projects

Maintain Structures

- Implied Mandate
- Must maintain our structures
 - Inspect
 - Routine Maintenance
 - Rehabilitation or Redesign

Adobe Dam



10th Street Basin



Our Structures

Bethany Home
Outfall Channel

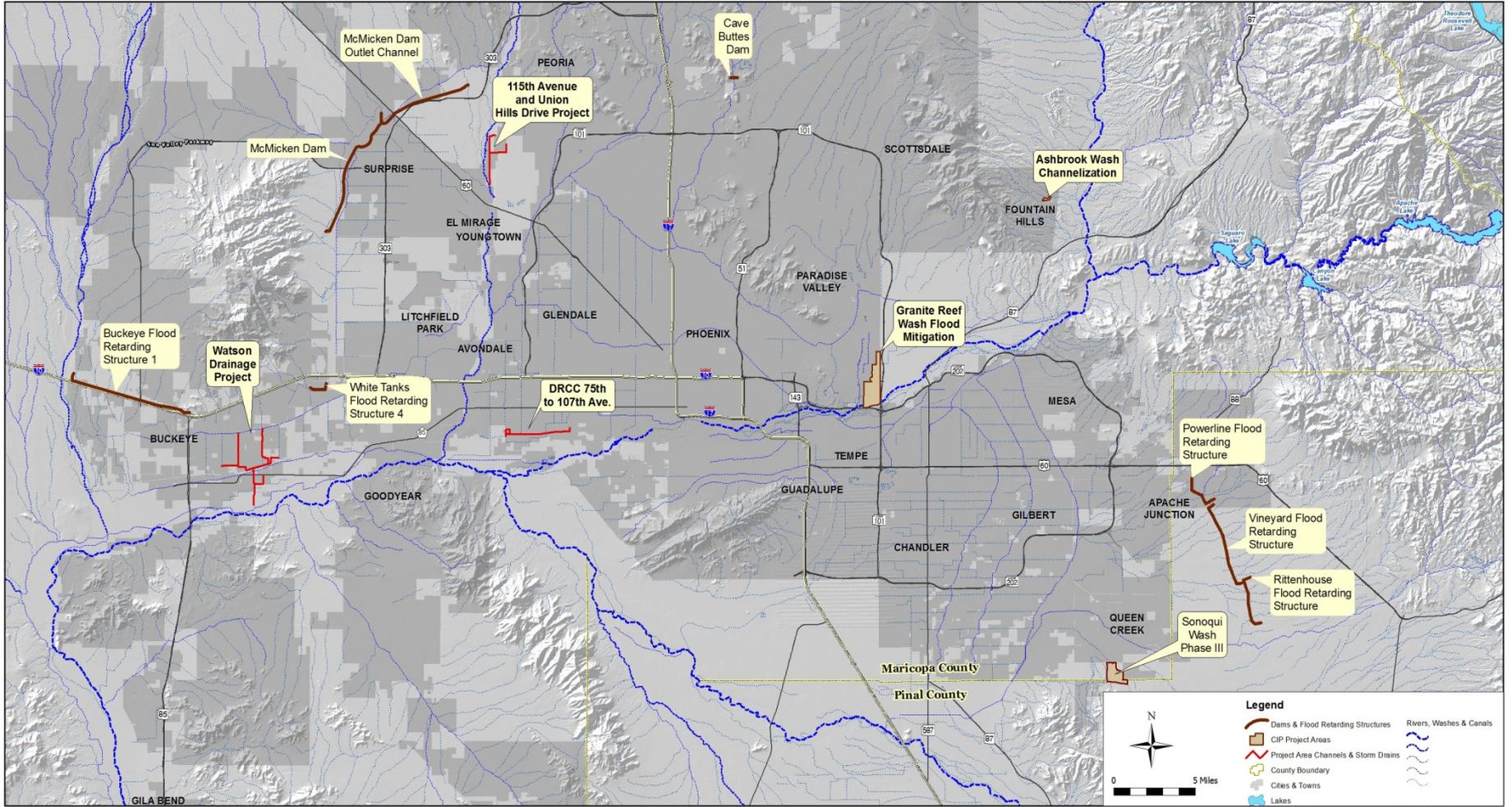


East Maricopa Floodway

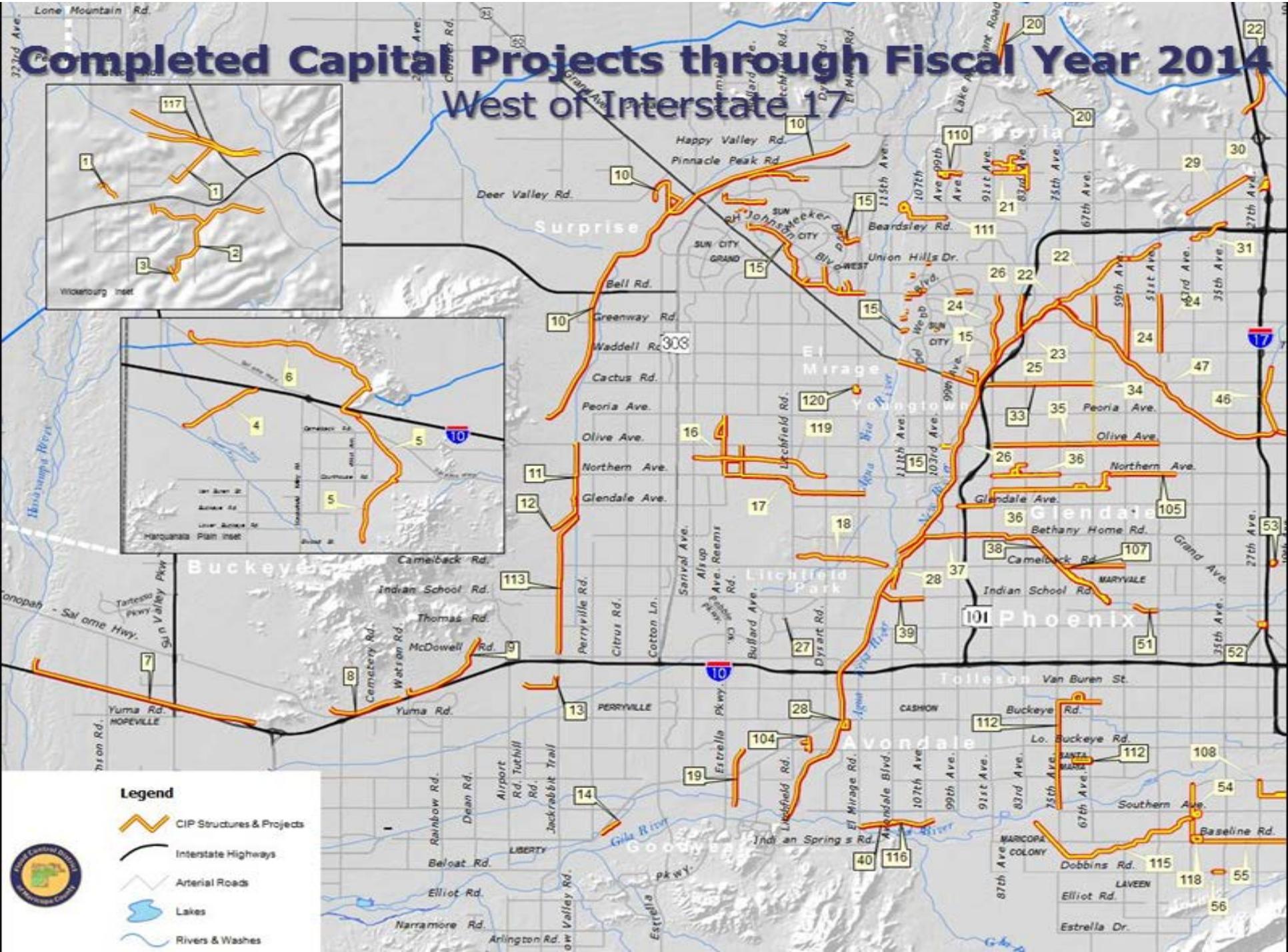
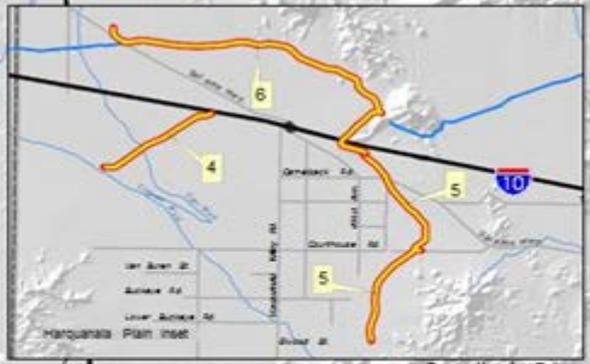
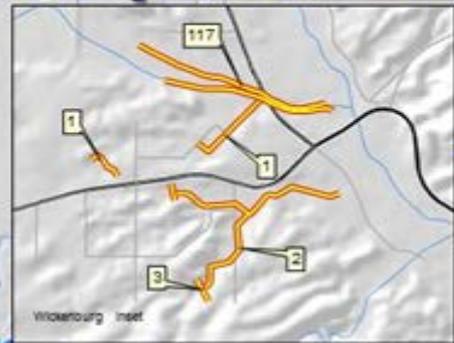




CIP Projects



Completed Capital Projects through Fiscal Year 2014 West of Interstate 17

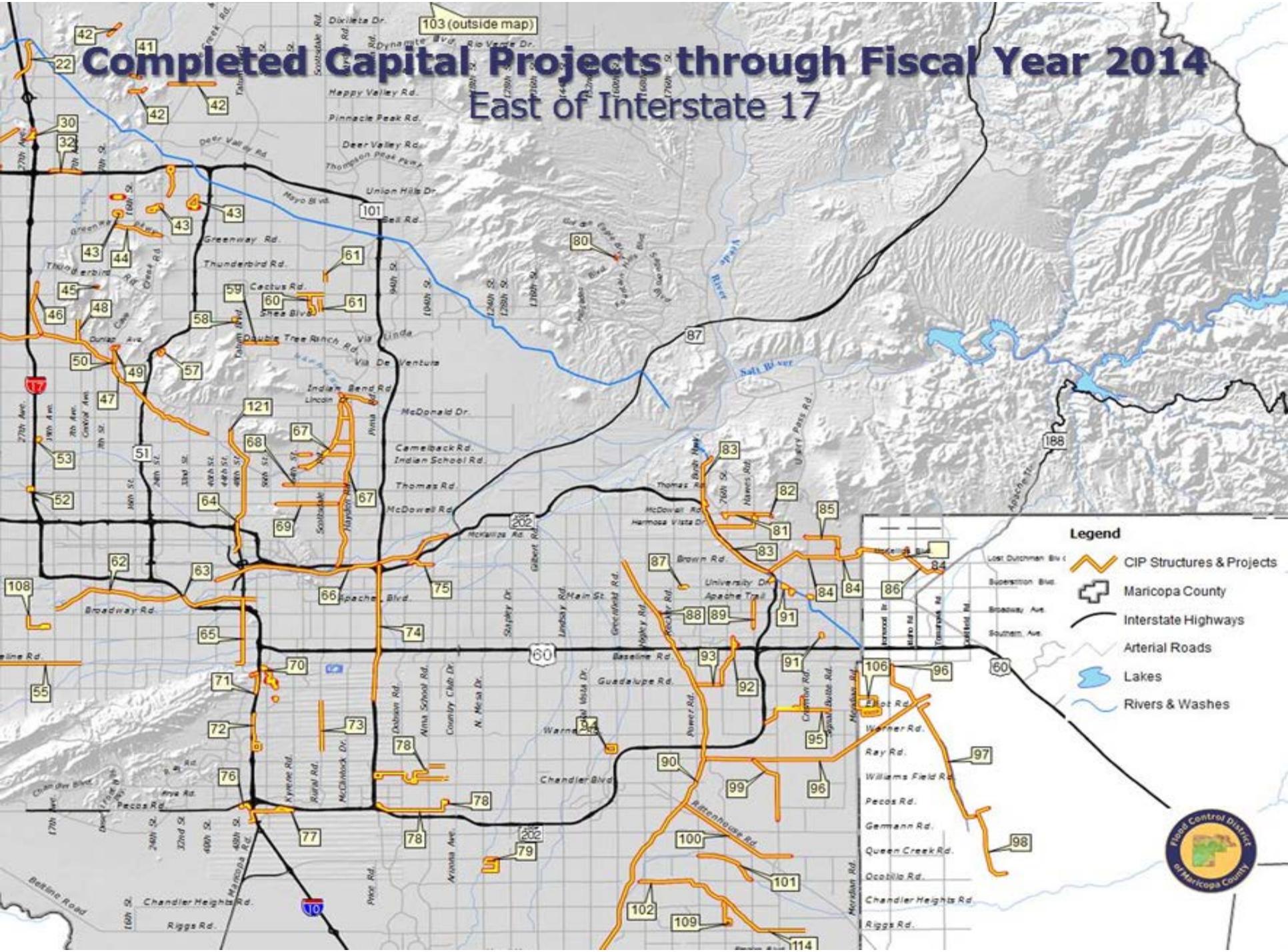


Legend

-  CIP Structures & Projects
-  Interstate Highways
-  Arterial Roads
-  Lakes
-  Rivers & Washes



Completed Capital Projects through Fiscal Year 2014 East of Interstate 17



Legend

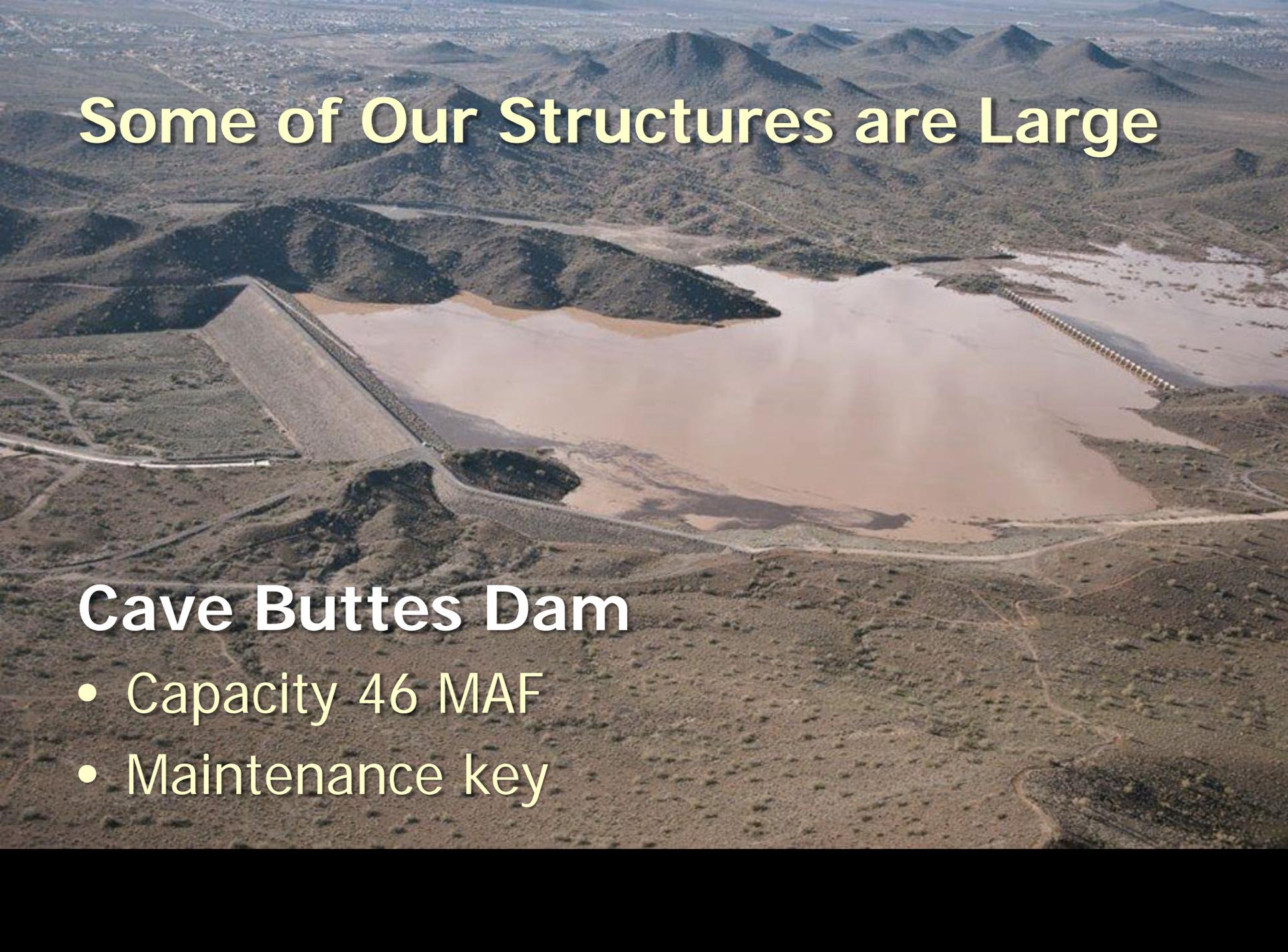
-  CIP Structures & Projects
-  Maricopa County
-  Interstate Highways
-  Arterial Roads
-  Lakes
-  Rivers & Washes



Some of Our Structures are Large

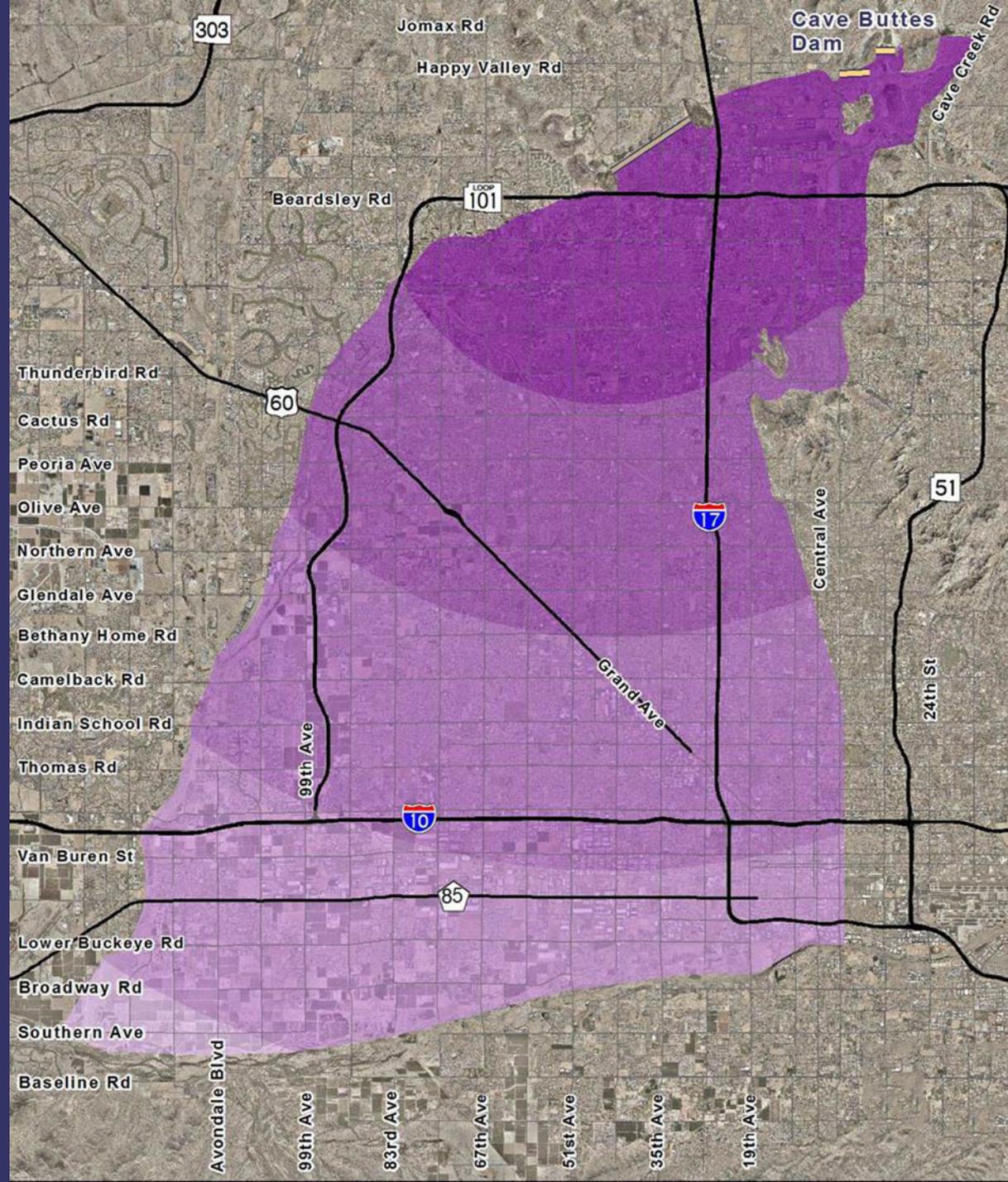
Cave Buttes Dam

- Capacity 46 MAF
- Maintenance key



Cave Butte Dam Protected Area

254 Square Miles benefit from dam



Maintain Structures

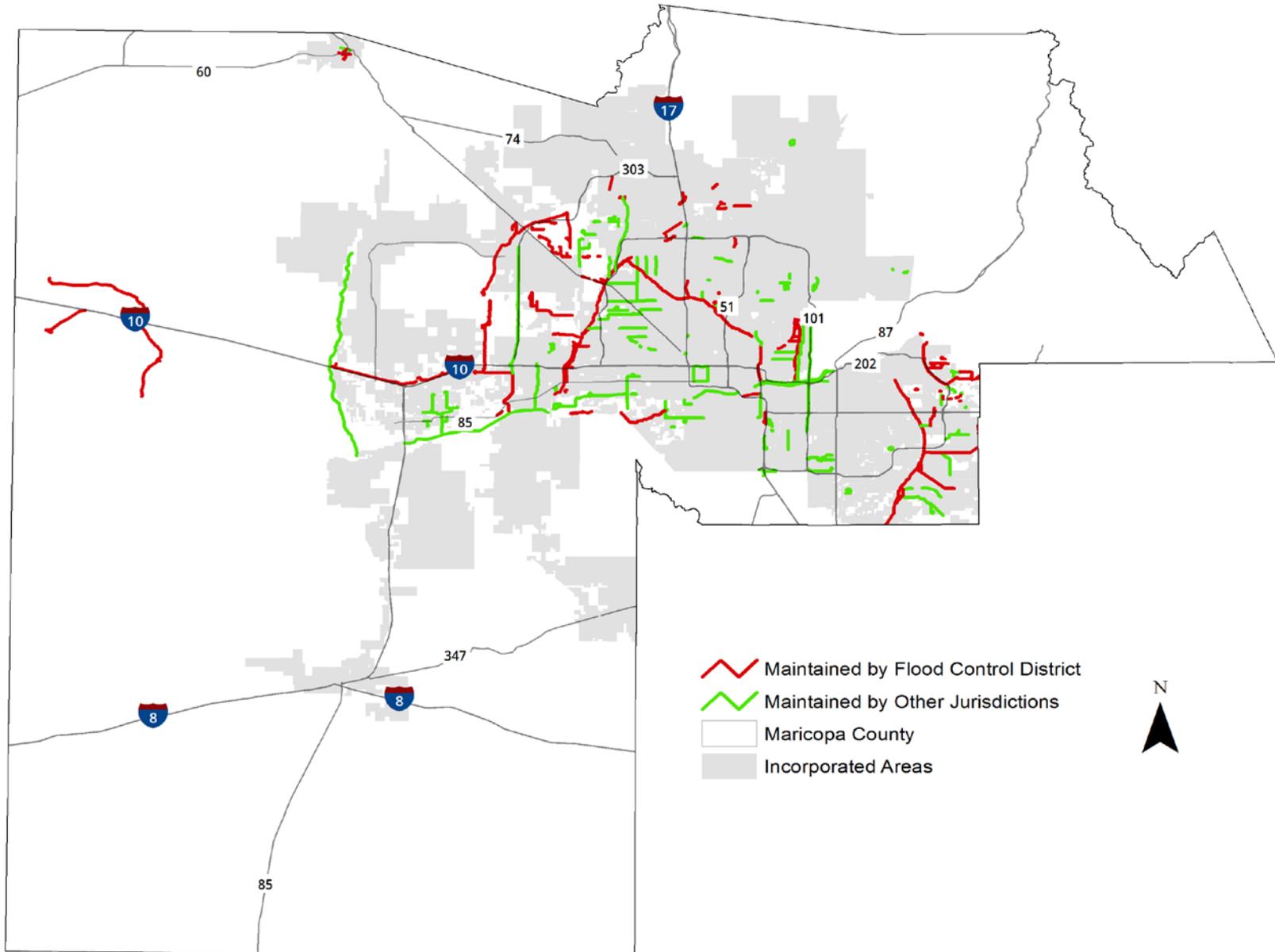


Dam Rehab – NRCS

Buckeye FRS No. 1



Project Jurisdiction





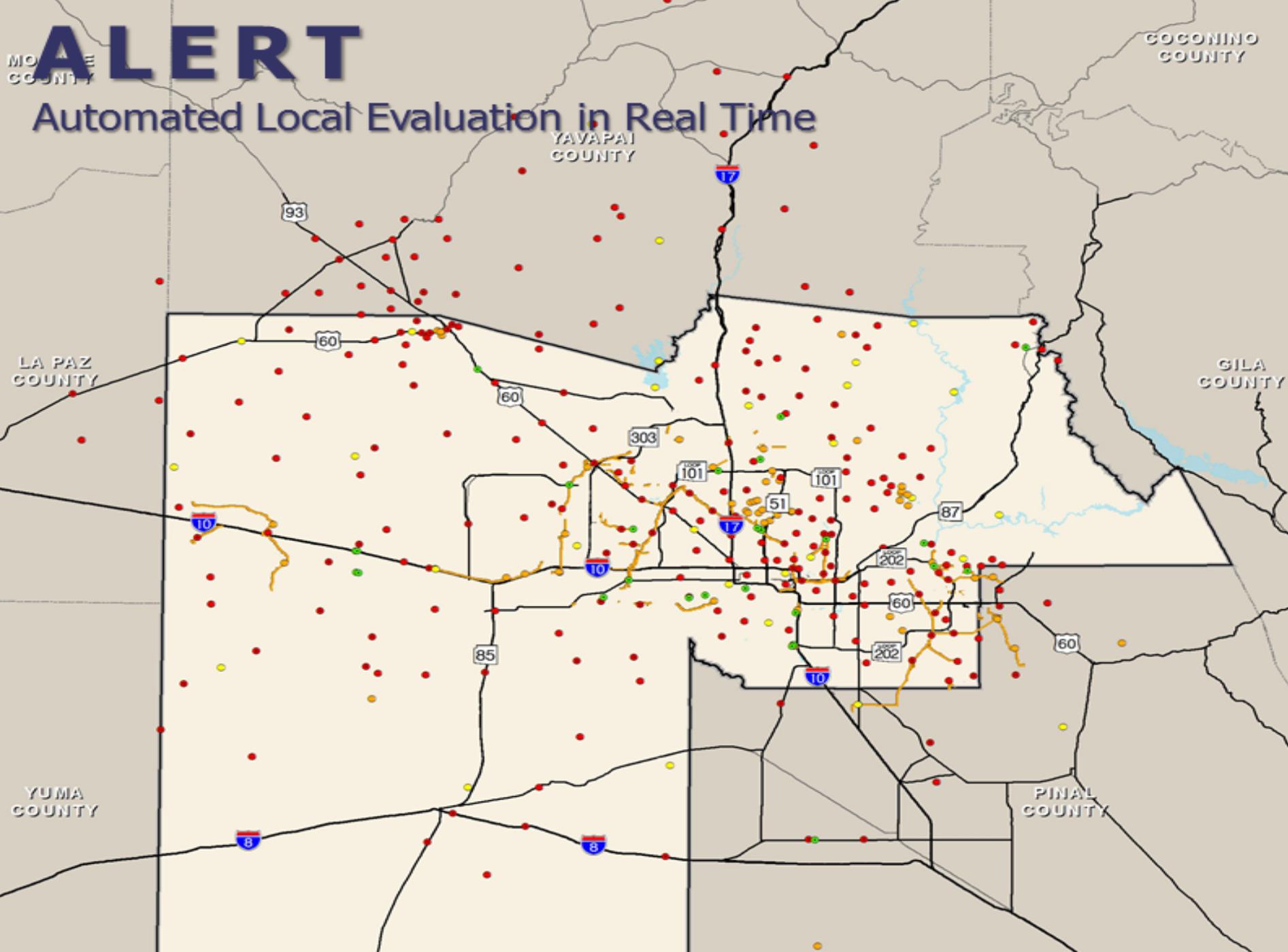
Identification & Planning

- Authority: A.R.S. 48-3603
- Warning System:
 - Gauges and Weather Stations
 - Linked to County Emergency Operation Center
 - Notifies: police, fire and transportation emergency responders

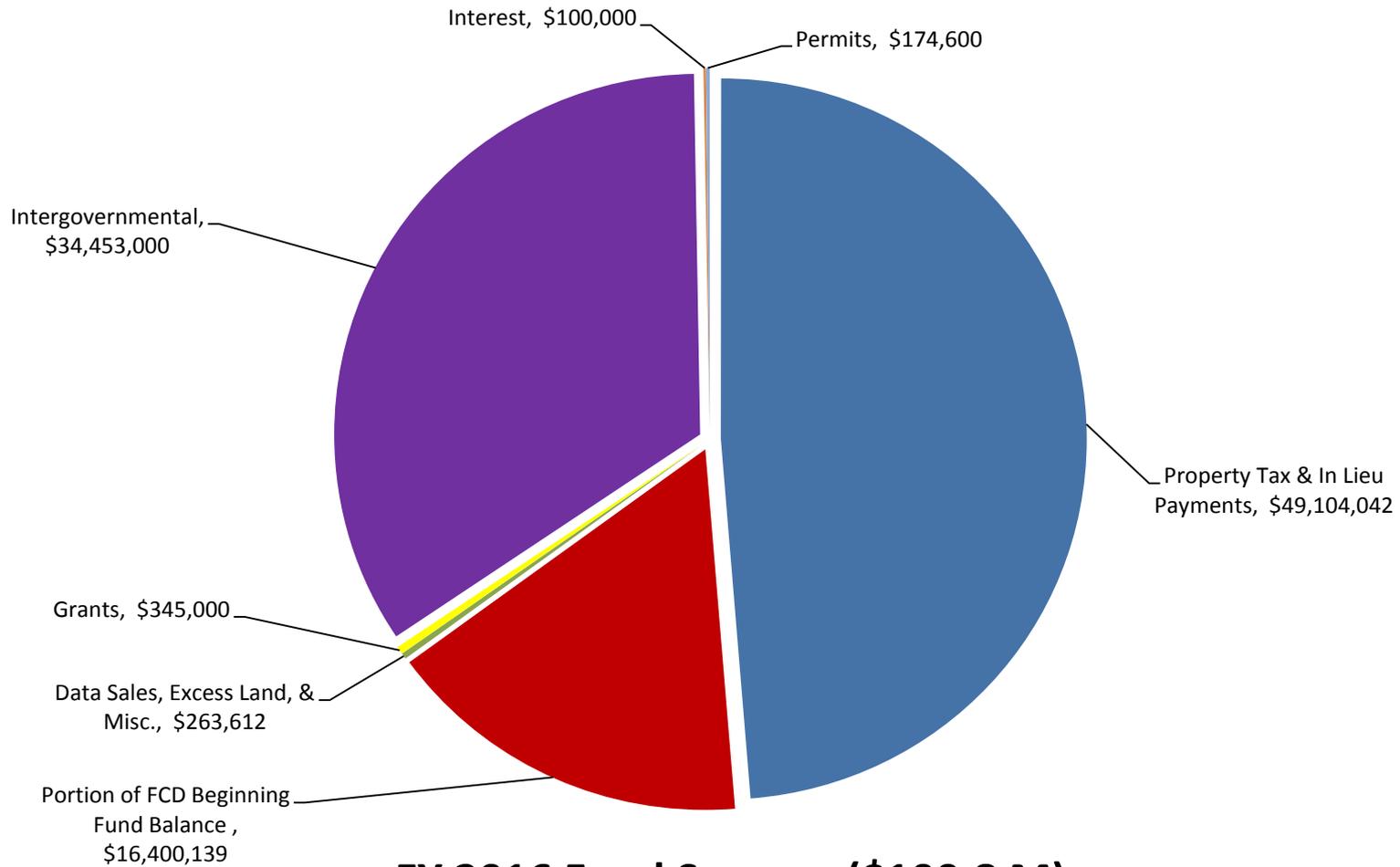
ALERT Flood Warning

ALERT

Automated Local Evaluation in Real Time

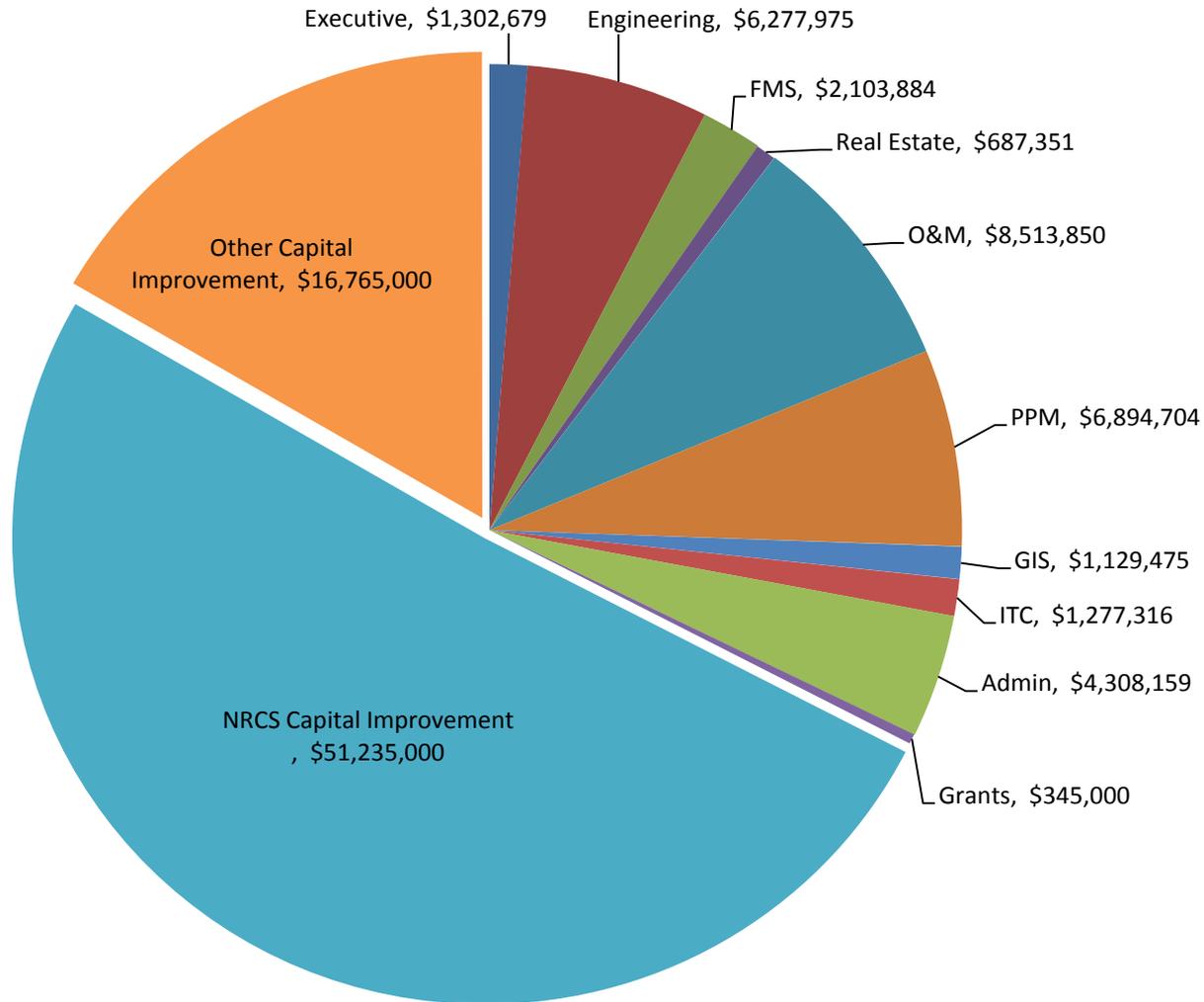


FY 2016 Revenues:



FY 2016 Fund Sources (\$100.8 M)

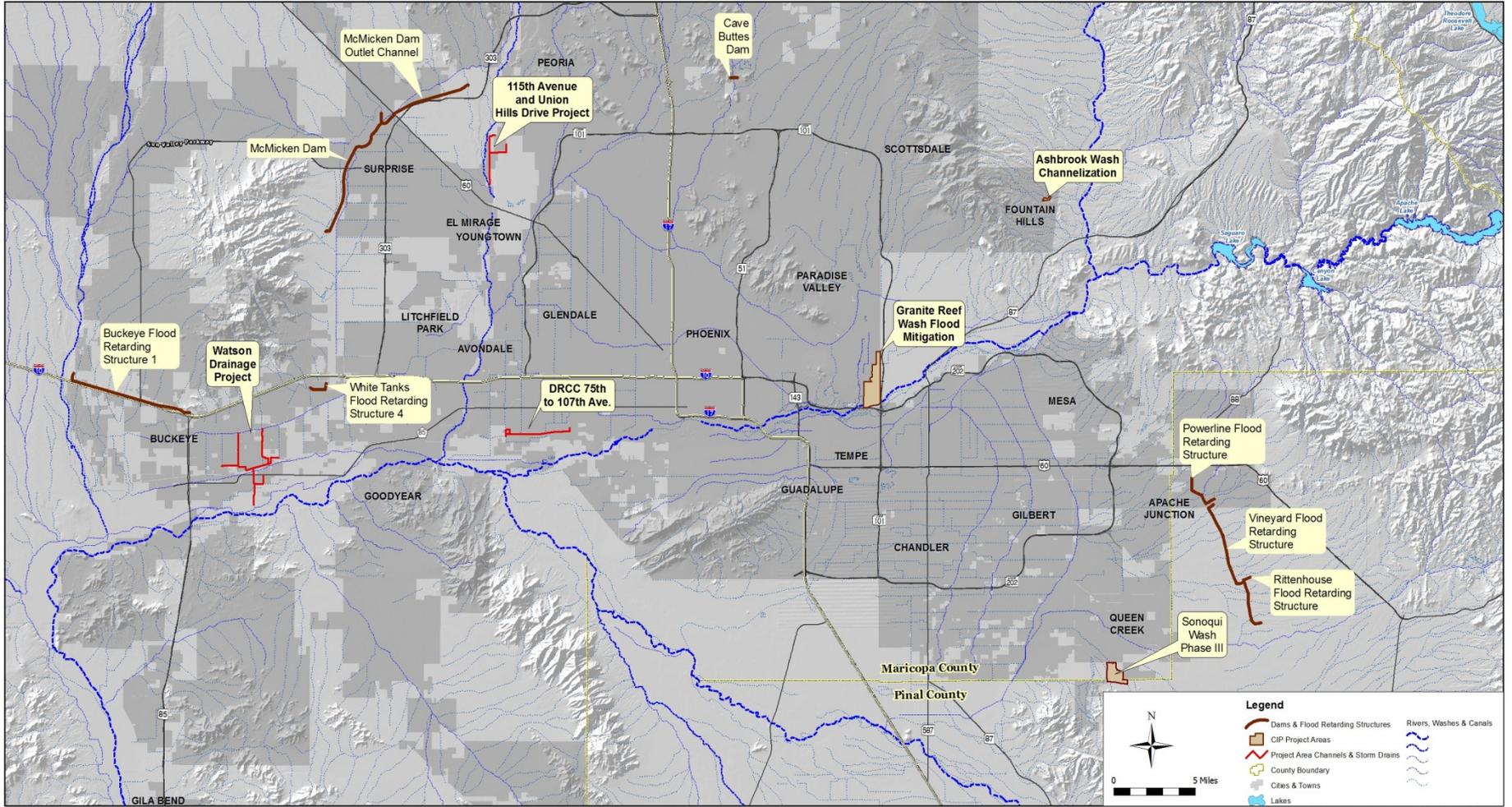
FY 2016 Expenditures:



FY 2016 Budgeted Expenditures (\$100.8 M)



CIP Projects



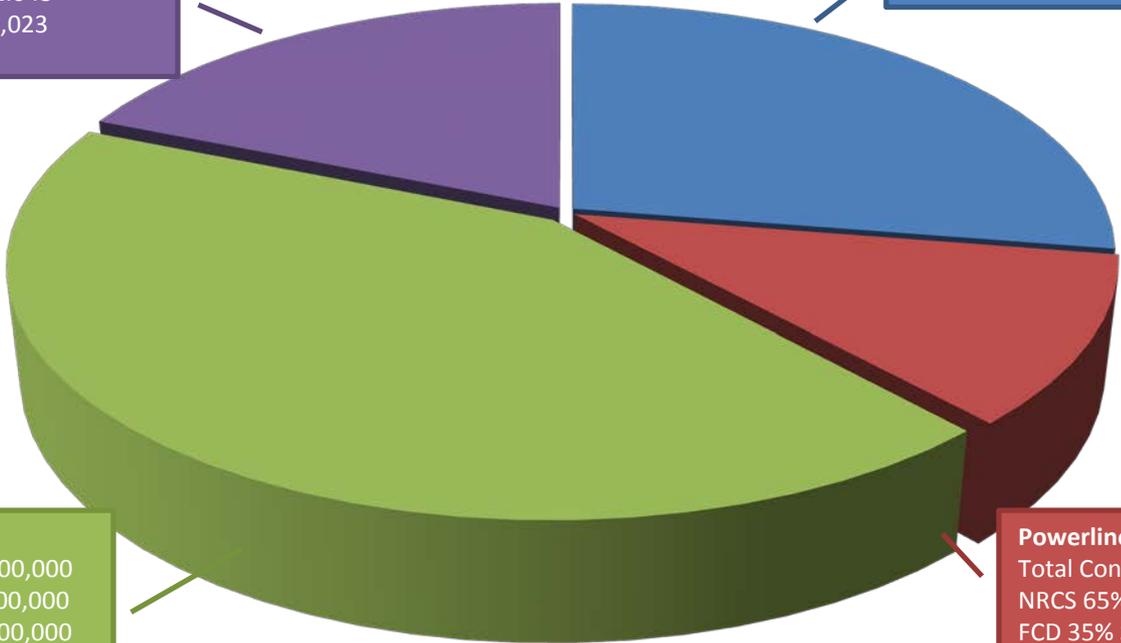
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Flood Control District of Maricopa County, GIS Division, 8/31/2015

NRCS FUNDED DAM REHAB PROJECTS 2015 - 2019

White Tanks FRS No. 4
 Total Construction Cost: \$27,940,066
 NRCS 65% Share: \$18,161,043
 FCD 35% Share: \$ 9,779,023

Buckeye FRS No. 1
 Total Construction Cost: \$41,095,145
 NRCS 65% Share: \$26,711,844
 FCD 35% Share: \$14,383,301



Vineyard FRS
 Total Construction Cost: \$64,000,000
 NRCS 65% Share: \$41,600,000
 FCD 35% Share: \$22,400,000

Powerline
 Total Construction Cost: \$16,000,000
 NRCS 65% Share: \$10,400,000
 FCD 35% Share: \$ 5,600,000

Total Construction Costs : \$149,035,211
NRCS 65% Share: \$ 96,872,887
FCD 35% Share: \$ 52,162,324

Tier 1 & 2 Capital Projects

PROJECT	COST
115th Ave/Union Hills Dr. Drainage Impr. Phase I	\$3,790,000
115th Ave/Union Hills Dr. Drainage Impr. Phases 2 & 3	\$8,405,000
20th Ave. and Tumey Ave. Detention Basin	\$13,000,000
27th Ave. & South Mountain Ave. Basin	\$4,875,000
27th Avenue and Dobbins Road Detention Basin Project	\$6,700,000
Agua Fria Boulevard Scour Protection Grade Control	\$2,000,000
Agua Fria River Levee Safety Improvements	\$440,000
ALERT2 System Upgrades	\$255,000
Ashbrook Wash Improvements	\$2,085,000
AT&SF Channel	\$6,377,000
Berneil Channel Modifications	\$4,050,000
Bethany Home Rd. Storm Drain (58th Ave. to 79th Ave.)	\$18,800,000
Bethany Home Road Storm Drain (51st Ave. to 59th Ave.)	\$3,150,000
Buckeye FRS No. 1 Rehabilitation Phase 2	\$38,100,000
Bullard Wash (Phase II)	\$12,500,000
Camelback Road Storm Drain (Arcadia Phase III)	\$5,310,000
Cave Buttes Dam Modifications Phase 1	\$5,040,000
Cave Buttes Dam Modifications Phase 2	\$4,720,000
Central Chandler Storm Drain Improvements	\$2,800,000
Chandler Heights Basin	\$8,500,000
Circle K Park Detention Basin and Storm Drain	\$16,800,000
Downtown Buckeye Regional Basin & Storm Drain	\$3,778,900
DRCC (107th Ave. to Agua Fria)	\$6,320,000
DRCC (75th Ave. to 107th Ave.)	\$11,365,000
East Maricopa Floodway Low Flow Channel	\$2,300,000
Ellsworth Rd. & McKellips Rd. Drainage System	\$4,800,000
Floodprone Property Acquisition Program	\$1,000,000
Granite Reef Wash Drainage Improvements	\$21,375,000
Guadalupe FRS Modifications	\$3,000,000
Happy Valley Channel	\$2,260,000
Harquahala FRS Erosion Hazard Reduction	\$2,000,000
Highline Western Canal Storm Drain	\$3,980,000
Jefferson St. and I-17 Storm Drain	\$3,100,000
Land Rights Acquisition Program	\$1,000,000
Loma Vista Corridor Drainage Improvement Project	\$2,670,000
Luke Air Force Base Flood Mitigation Improvements	\$5,975,000

PROJECT	COST
Maintenance Road Paving (Dust Abatement) Program	\$1,500,000
McCormick Stillman Railroad Park/Lincoln Drive Drainage	\$6,703,400
McMicken Dam Outfall Channel	\$16,400,000
McMicken Dam Rehabilitation Phases 1 & 2	\$33,495,000
McMicken Dam Rehabilitation Phase 3	\$13,370,500
McMicken Dam Rehabilitation Phase 4	\$17,851,000
McMicken Dam Rehabilitation Phase 5	\$28,781,850
Meridian North and South Channels	\$2,400,000
New River Dam Outlet Improvements	\$1,000,000
Northern Parkway Drainage Improvements Phase 2	\$7,246,000
Oak St. Detention Basin and Storm Drain	\$3,480,000
Oglesby Drainage System	\$37,400,000
Palo Verde Drainage System	\$93,700,000
Pecos North and South Detention Basins	\$15,500,000
Pecos Road Channel	\$14,000,000
Pinnacle Peak Road and 67th Avenue Drainage Impr.	\$6,500,000
Powerline FRS Replacement & Decommissioning	\$18,770,000
Rittenhouse Road FRS	\$8,200,000
Rooks Drainage System	\$45,500,000
Saddleback FRS Modifications	\$20,000,000
Sand Tank Wash Flood Control Improvements	\$11,707,000
Skunk Creek Channel at Pinnacle Peak Rd. and 35th Ave.	\$8,500,000
Skunk Creek Levees at CAP	\$8,900,000
Skyline Wash Basin and Outlet	\$6,800,000
Small Projects Assistance Program	\$30,000,000
Sonoqui Wash Channelization Phase IIIB	\$1,000,000
South Gila Bend Drainage Improvements	\$283,000
South Phoenix/Laveen Drainage Improvement Project	\$11,300,000
SR-85/Oglesby Outfall Channel	\$14,000,000
Van Buren St. Channel (99th Ave. to Agua Fria River)	\$7,450,000
Vineyard FRS Rehabilitation	\$57,395,845
Waddell Rd. Drainage Improvements	\$772,000
Watson Drainage System	\$40,788,000
White Tanks FRS No. 4 Outlet	\$8,035,000
White Tanks FRS No. 4 Rehabilitation Phase 2	\$24,108,000

\$865,457,495

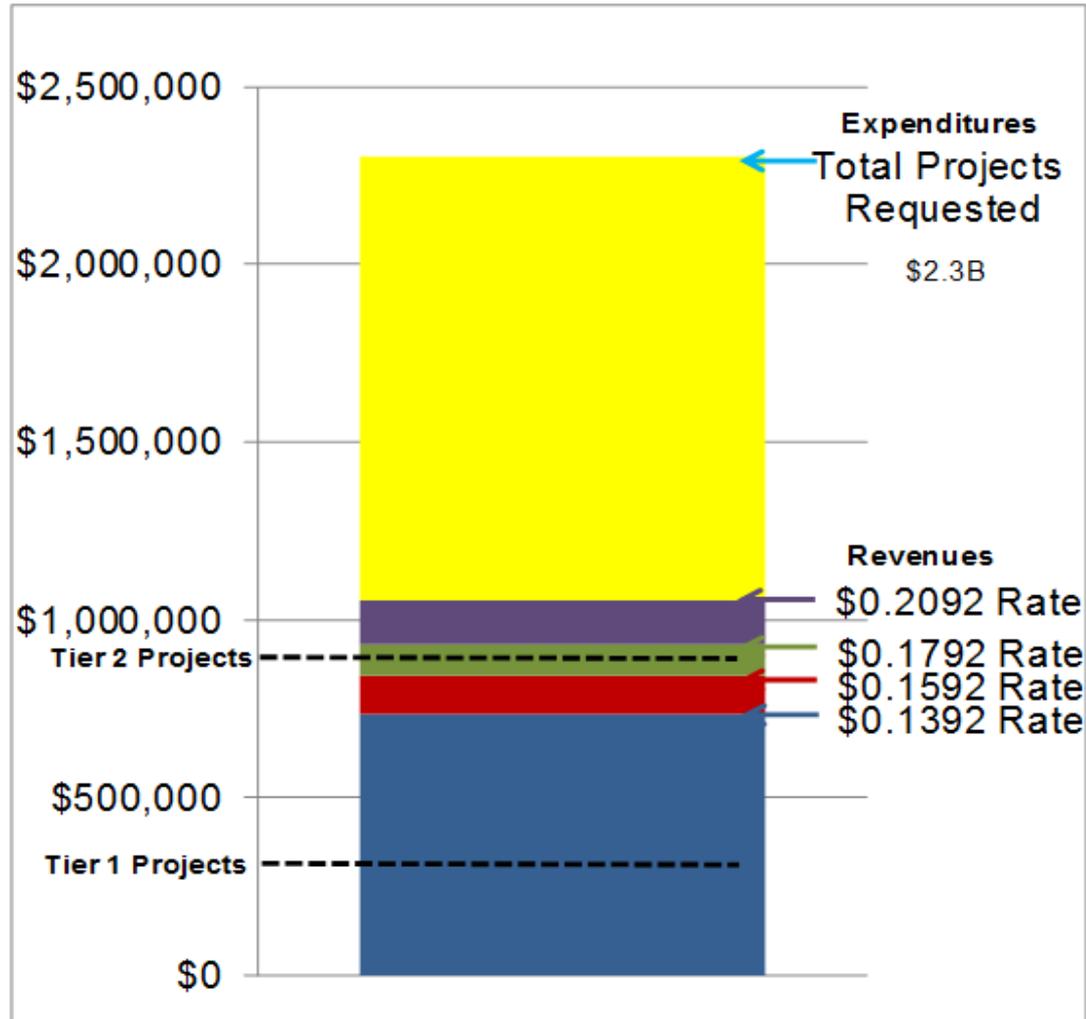
Flood Control Needs

17 agencies responded to the October request in identifying flood control requests and priorities.

- 200 total projects submitted
 - 162 new agency CIP projects & studies requested for a total estimated cost of: \$1,299,749,050
- 11 Unincorporated Maricopa County project/program needs:
 - Total estimated cost of UMC needs: \$137,194,000
- Tier 1 Projects (agreements in place): \$281,718,500
- Tier 2 Projects (few agreements in place): \$583,738,995
 - Total estimated Tier 1 & 2 cost: \$865,457,495

TOTAL ESTIMATED REQUESTS: \$2,302,400,545

Needs Vs. 10-year Revenue





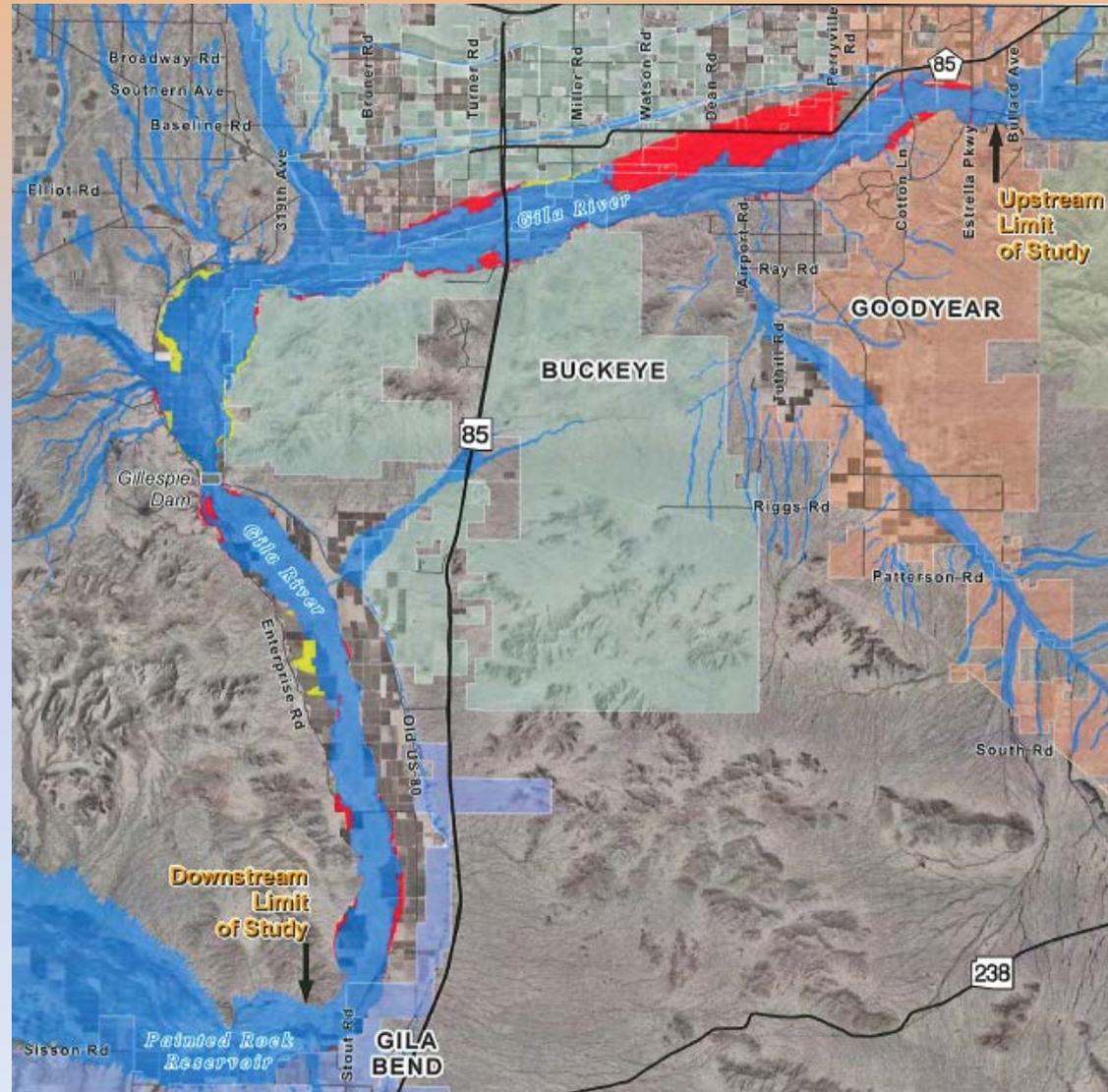
Current Topics



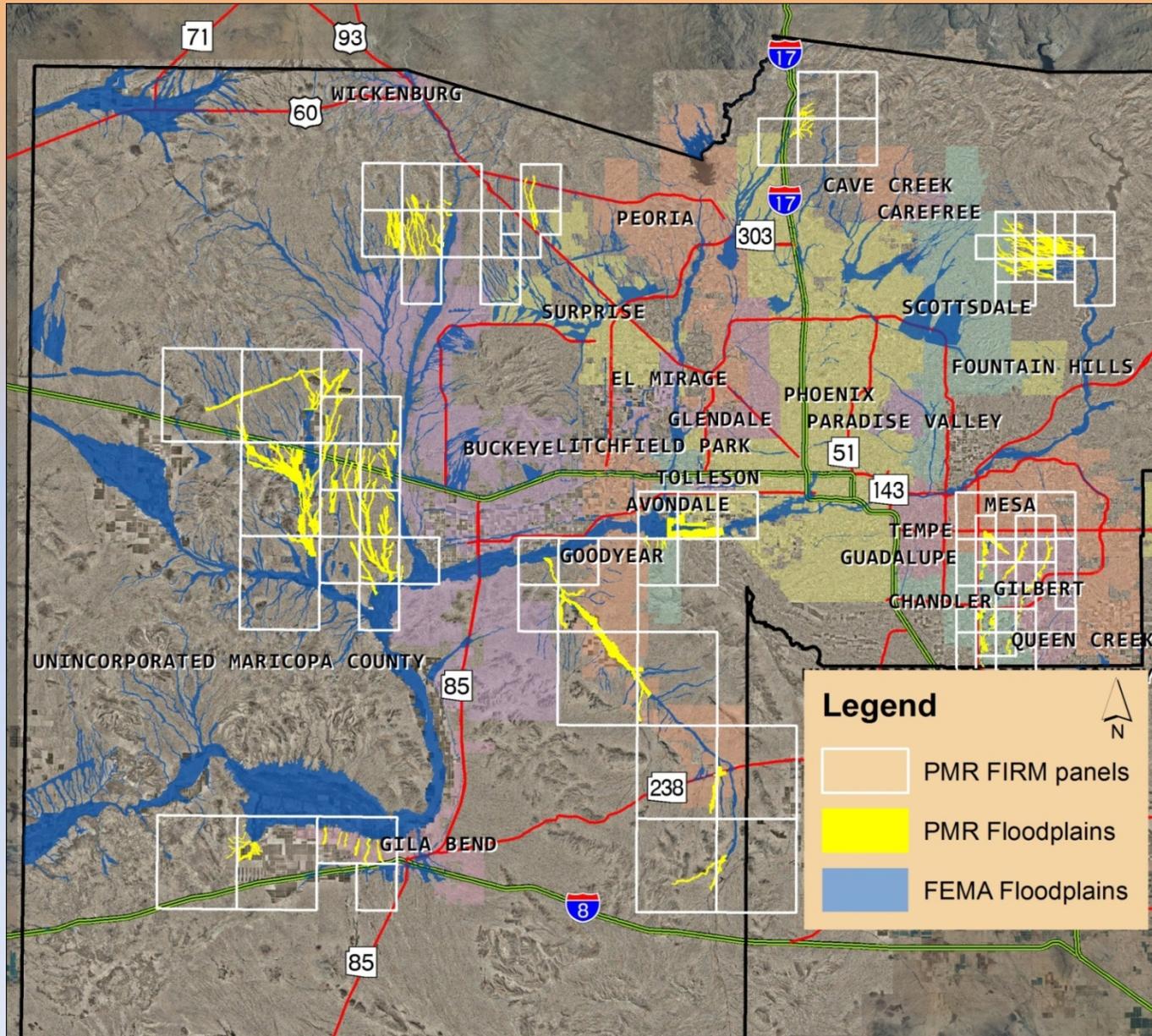
Key Regulatory Issues:

- Waters of the United States (**WOTUS**)
- Federal Flood Risk Management Standard (**FFRMS**)
- Endangered Species Act – Sonoran Desert Tortoise
- Phase II MS4 – Storm Water Program

Lower Gila Delineation Salt Cedar



New FIRM Maps



Laveen – 27th Avenue Basin



Kaizens: ROW & FUP (ongoing)





Scrolling banner not available in Internet Explorer 9 or below.

Important News

- [Draft El Rio Flood Hazard Mitigation Report](#)
- [Board of Supervisors Approve I-10 Protective Upgrades](#)
- [Floodplain Management Plan 2015 Update](#)
- [Maricopa County's Enhanced Regulatory Outreach Program \(EROP\)](#)

How Do I...?

- [Find current and historical rainfall & stream data?](#)
- [Find flood hazard information for my property?](#)
- [Learn about, or purchase, flood insurance?](#)
- [Find out the status of a permit?](#)
- [Learn about current/upcoming projects in my area?](#)
- [View flood hazard study information?](#)
- [Find real estate auctions, sales and leases?](#)
- [Register to be a vendor?](#)
- [Report a flood?](#)
- [Request maintenance on a flood control property?](#)

Current Weather

Flood Control District Weather Station
Phoenix, AZ

Currently: 94°F
Wind: ESE at 7 MPH
Humidity: 34%
Dewpoint: 61°F
Barometer: 29.71 inches and falling

Last updated: 9/3/2015 4:38:00 PM

[Weather Outlook and Gage Information](#)

Event Calendar

September 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3
4	5	6	7	8	9	10

How To Reach Us

Main
(602) 506-1501

Floodplain Information
(602) 506-2419

Media Inquiries
(602) 506-6762

Citizen Advocate
(602) 506-4695

[Give us your feedback?](#)

NEW FCD Website
As of Spring 2015



Awards 2015

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

What You Can Do

- Protect Yourself
 - Avoid moving water
 - Do not drive on flooded roads
 - Build an emergency kit and be prepared to evacuate
 - Monitor radio, television and Internet during storm events
- Protect Your Property
 - Purchase flood insurance
 - Obtain building permits for new structures
 - Flood-proof existing buildings and utilities
 - Maintain and clear debris from culverts and channels



Questions ?

