

Introductions

- Around-the-room Introductions
 - Name, Title, and Agency
 - Years with Agency
 - Agency's role in flood mitigation



Safety Moment

FLU SAFETY

- Flu season started early in AZ
 - 6 confirmed cases
 - More robust
 - 14,000 cases last year
- Symptoms
 - Fever (though not necessary)
 - Aches
 - Fatigue
 - Cough / sore throat
 - Congestion
 - Vomiting



- Prevention
 - Get vaccinated (before end of Oct.)
 - Wash hands
 - Cover your mouth
 - Avoid touching eyes, nose, mouth
 - Stay home when sick (24 hrs after fever)



Welcome from Mr. Fulton

- Thank you for joining us today
- We appreciate your time and participation



Agenda

- Introduction
- Overview of Featured District Programs
- Hazards Identified in 2015 Plan
- Where We are Now
 - Status of 2015 Plan Goals & Action Plan
- Where We Want to Be
 - 2020 Planning Goals
- Next Steps



Overview of NFIP

- National Flood Insurance Program
 - Flood Insurance
 - Community Rating System (CRS)
 - FCDMC = Class 4 Community
 - Changes within the NFIP/CRS Program
 - Additional emphasis on open space
 - Distribution of outreach materials
 - Additional use of social media
 - Future Risk Map 2.0



Overview of Floodplain Management Plan

- How was it previously developed?
- Your role as a participant
- Review of FMP Committee Timeline
 - 4 meetings over the next 3 months
- Purpose of the Floodplain Management Plan (FMP)



Other Concurring Plans

- FCDMC Comprehensive Report & Program
- FCDMC Strategic Plan



Overview of Featured District Programs 2019

- Don Rerick
 - Hazard Identification Studies and Plans, Programs/Projects
- Charlie Klenner
 - Operations and Maintenance
- Cathy Regester
 - Permitting and Delineations





Cradle-to-Grave Project Development



Don Rerick, P.E.

Planning and Project Management Division Manager

Background:

What do we mean by “Cradle-to-Grave” delivery?

PPM division oversees project activities from hazard identification through project construction completion.

What does this approach accomplish?

- Ensures accountability.
 - Maximizes communication and consistency.
 - Minimizes rework and change orders.
 - Ensures efficient use of resources.
- 

Background:



FY20 Funding:

\$81 Million Capital project fund

\$37 Million operating fund

Regional projects within 12 client cities

Regional projects with state and federal agencies

Dam rehabilitation projects with federal agencies

“Cradle-to-Grave”:

Process Overview



Hazard Identification



Mitigation Planning



Project Prioritization



Project Development



Project Design



Project Construction



Project Turnover

Hazard Identification:

Area Drainage Master Study

Planning Branch



Extensive regional studies

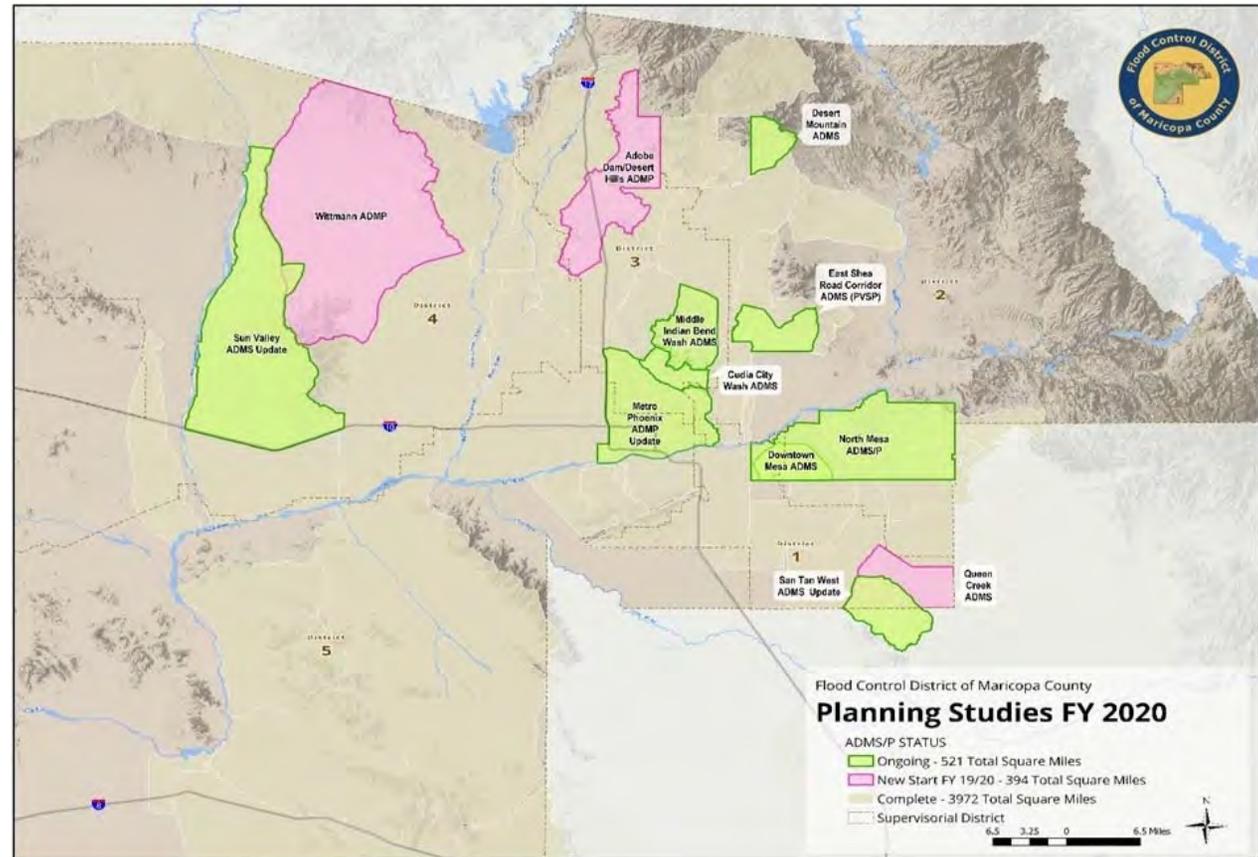
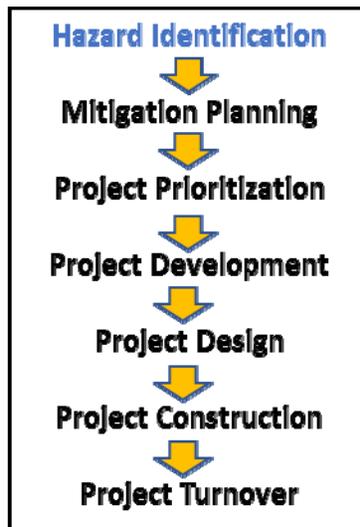
Details physical characteristics and hydrology of study area

Identifies flooding hazards

Total of 12 study areas range from 15 to 300 square miles each

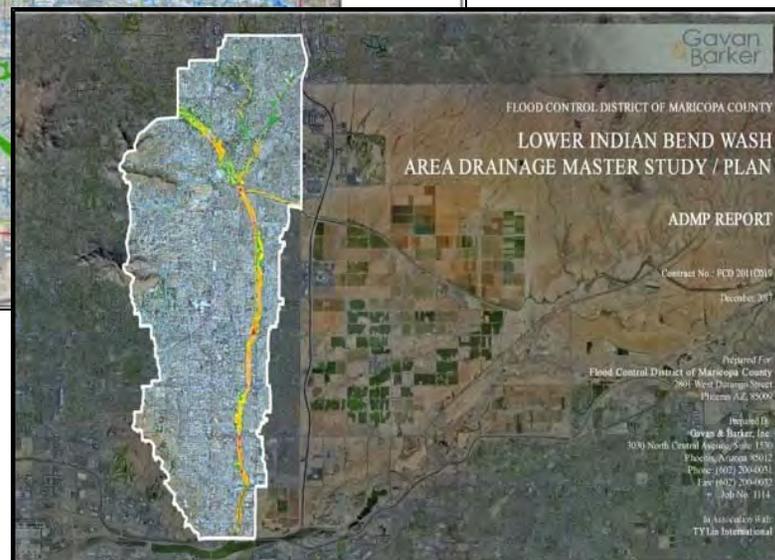
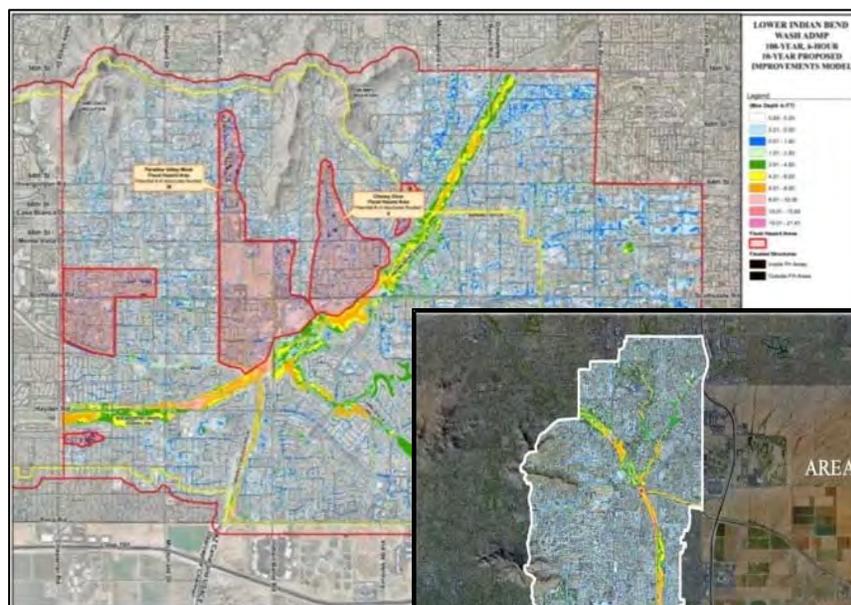
Mitigation Planning:

Area Drainage Master Studies/Plans Planning Branch



Hazard Identification:

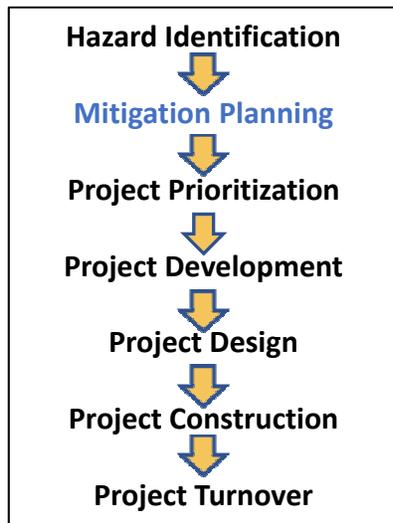
Area Drainage Master Study
Planning Branch



Lower Indian Bend Wash Area Drainage Master Study
27 Square Miles

Mitigation Planning:

Area Drainage Plans
Planning Branch



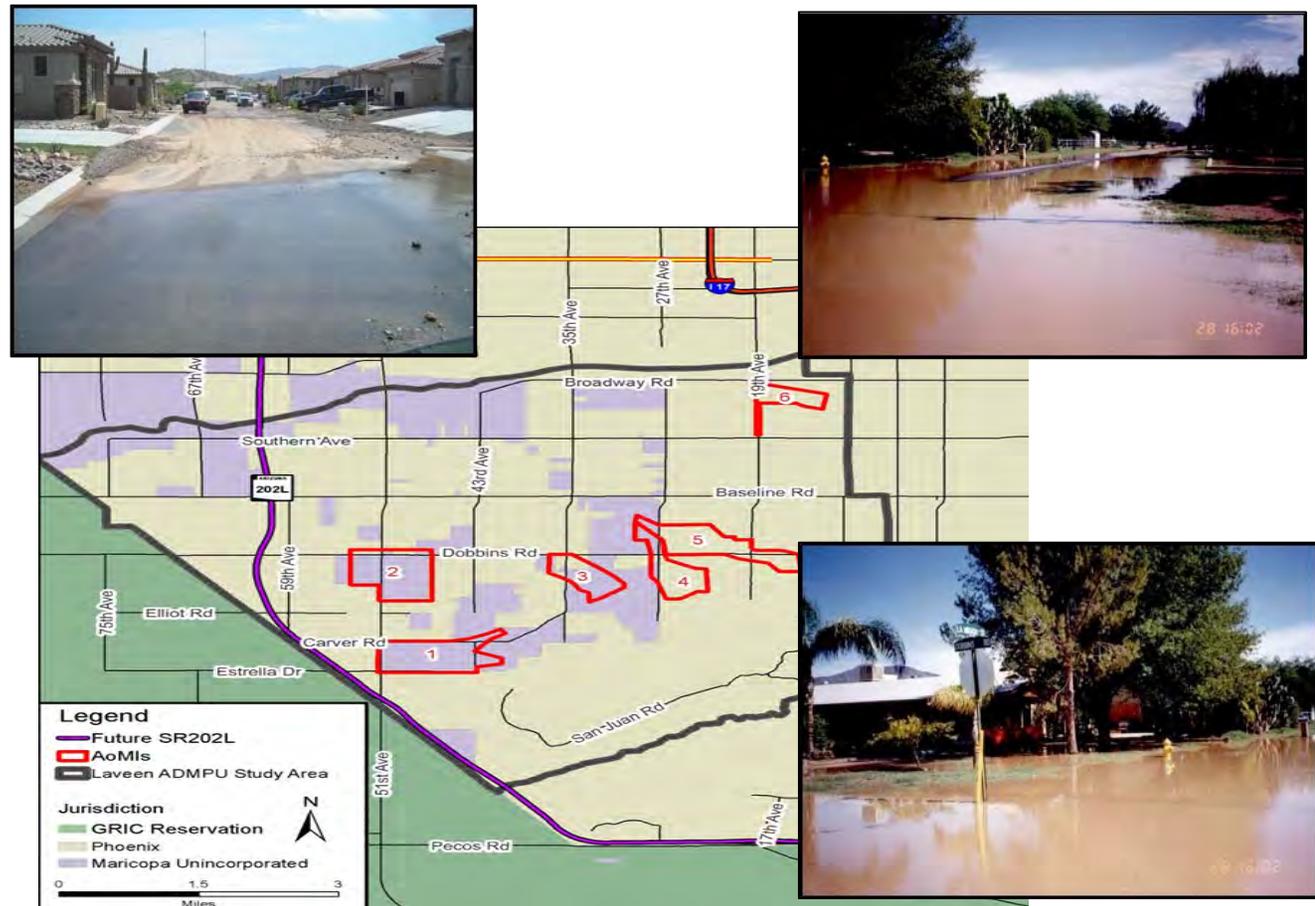
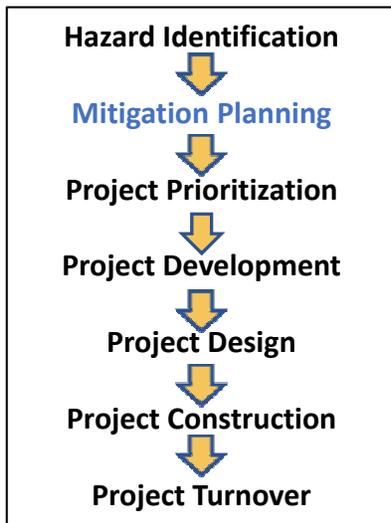
Develop implementable, cost-effective hazard mitigation alternatives acceptable to the public and stakeholder agencies

Attempt to develop solutions that can be implemented via:

- District/community partnerships - CIP
- Community/developer coordination

Mitigation Planning:

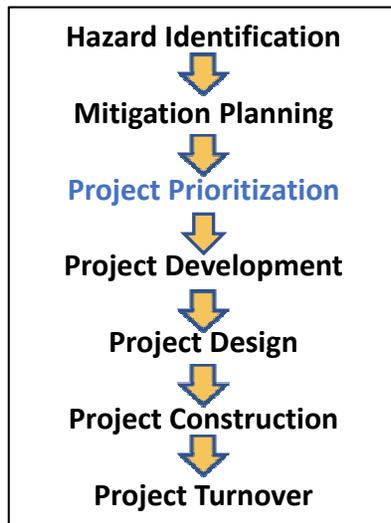
Area Drainage Plans
Planning Branch



Laveen Area Drainage Master Plan
37 Square Miles

Project Prioritization:

CIP/Policy Branch



Capital Improvement Program Prioritization Procedure (CIPPP)

Annual formal evaluation of projects submitted by municipalities and FCDMC

Eight evaluation criteria applied, with criteria centered on:

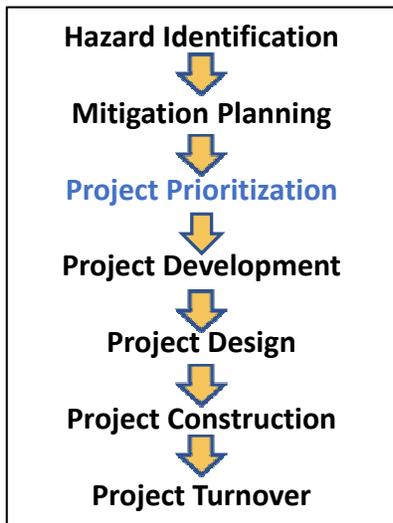
- Flood hazard mitigation benefits
- Cost
- Ancillary Benefits

Sequential reviews by Project Evaluation Committee, Director, and Citizens' Advisory Board

Results in filtered list of structural projects recommended for further development consideration

Project Prioritization:

CIP/Policy Branch



Project No. 2 Name: (EMADMPU) Rittenhouse Zone Sports Complex Basin
Requested By: Town of Queen Creek
Project Description: Project will consist of the design and construction of the regional drainage basin for Rittenhouse Zone as identified in the EMADMPU.

Factor	Low	Med.	High	PEC Points
Funding Commitment and Agency Priority	0	1.4	5-12	10
This project ranks 1 out of 1 for the Town of Queen Creek. The total project cost is estimated to be \$5,000,000 and funding is currently identified in the City's 5-year plan.				
Flood Control/Drainage Master Plan Element	Low	Med.	High	7
The Flood Control District's East Mesa Area Drainage Master Plan Update - Rittenhouse Zone identified the proposed project. Basin is ranked "high" in the study.				
Flooding Threat	Low	Med.	High	12
Documented flooding has occurred in the area. The study area is a mix of residential, industrial, and agricultural development. Portions of the area are experiencing rapid changes, converting agricultural and industrial uses to commercial and residential. Based on the hydrology updates, it appears that most of the existing infrastructure does not meet current District floodplain policies. Infrastructure may be overtopped by the 100-year peak discharge at some locations.				
Level of Protection	100% 0	10-90% 0.7	100% 0-10	0
The project will provide a 100-year level of protection.				
Area Protected	Low	Med.	High	17
The area protected by the proposed improvements includes an estimated 113 million in residential, industrial and commercial buildings. The number of public buildings is 4 and 1 school site. Amount of cultivated acreage is 1000.				
Auxiliary Benefits	Low	Med.	High	10
Auxiliary benefits include: Water conservation opportunities: the town plans to install a recharge lake at the park and removing this area from flooding will allow this fully funded project to move forward. Water Quality - storm water will be held in a basin prior to discharge into Rittenhouse shared system. Multi-use features - basin to be used as multi-use field for all sports and will include walking and bike trails.				
Level of Partner(s) Participation	Low	Med.	High	9
The proposed cost for this project is \$5,000,000. The City is proposing a 50/50 cost share where the Town will provide 10% of the funding. Town has already purchased the land for the basin - \$3,047,833.29/				
OSM Costs to the District	Low	Med.	High	6
The Flood Control District will not be responsible for the costs of operation or maintenance of this basin.				
Committee Recommendation: Recommend				Total 80

Table Two: FY 2019/2020 Capital Improvement Program Prioritization Procedure Results

Table 1A: Projects Recommended for Inclusion in the District's Capital Improvement Program

No.	Project Name	Special Priority	PEC Avg. Score	District Cost	Est. Total Cost	PEC Recommendation
1.	Rittenhouse Zone Sports Complex Basin	Queen Creek (1)	80	\$ 2,000,000	\$ 5,000,000	Recommended
2.	Rittenhouse Zone Sports Complex Basin	Queen Creek (1)	80	\$ 2,000,000	\$ 5,000,000	Recommended

Table 2B: Projects Not Recommended for Inclusion in the District's Capital Improvement Program

No.	Project Name	Special Priority	PEC Avg. Score	District Cost	Est. Total Cost	PEC Recommendation
None						

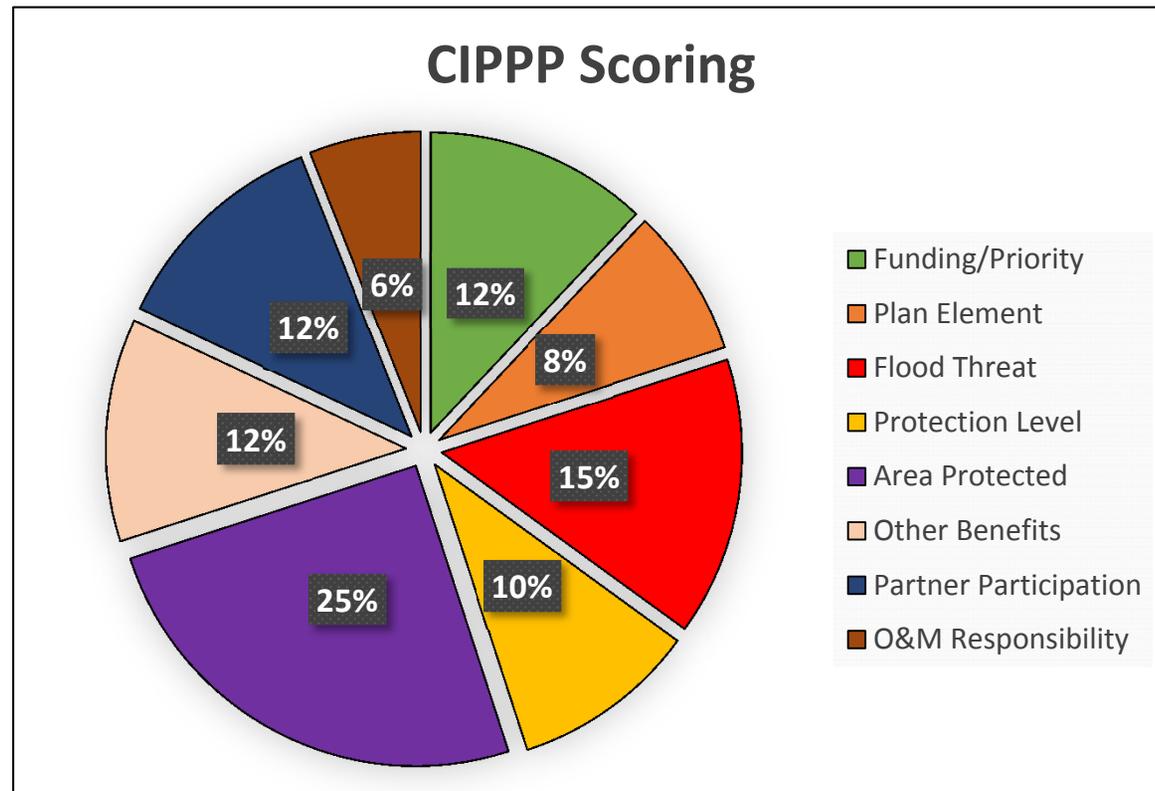
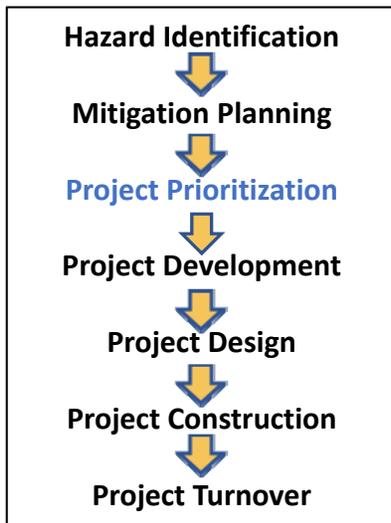
Table 2C: Projects Deferred for Further Analysis

No.	Project Name	Special Priority	PEC Avg. Score	District Cost	Est. Total Cost	PEC Recommendation
1.	East Highway Bank Protection	Other (1)	64	\$ 625,000	\$ 1,750,000	Deferred for further analysis and reevaluation



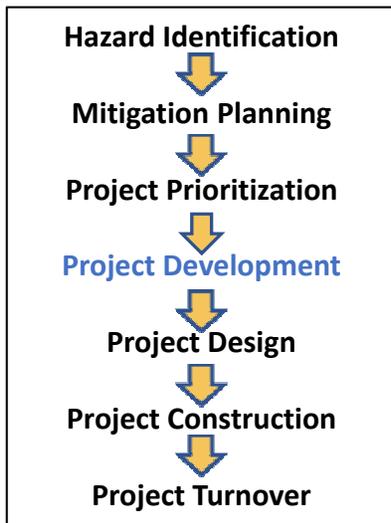
Project Prioritization:

CIP/Policy Branch



Develop/Transition:

Planning, Project Management & CIP/Policy



Focused study (Design Concept Report/Pre-Design) conducted to reaffirm the hazard, elaborate on mitigation methods, identify partnerships

- *Planning & Project Management Branches*

Timeline and budget developed with partnering agencies

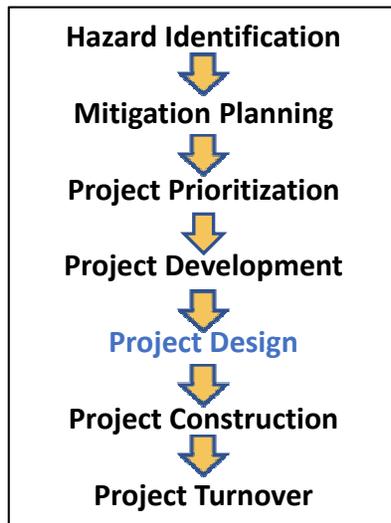
- *Planning, Project Management & CIP/Policy Branches*

Authorizing documents and cost share agreement advanced

- *Planning, Project Management & CIP/Policy Branches*

Project Design:

Project Management Branch



Design and Plans & Specifications developed

Context-sensitive characteristics incorporated

- *Landscape Architecture & Water Conservation Branch*

Utility relocations coordinated

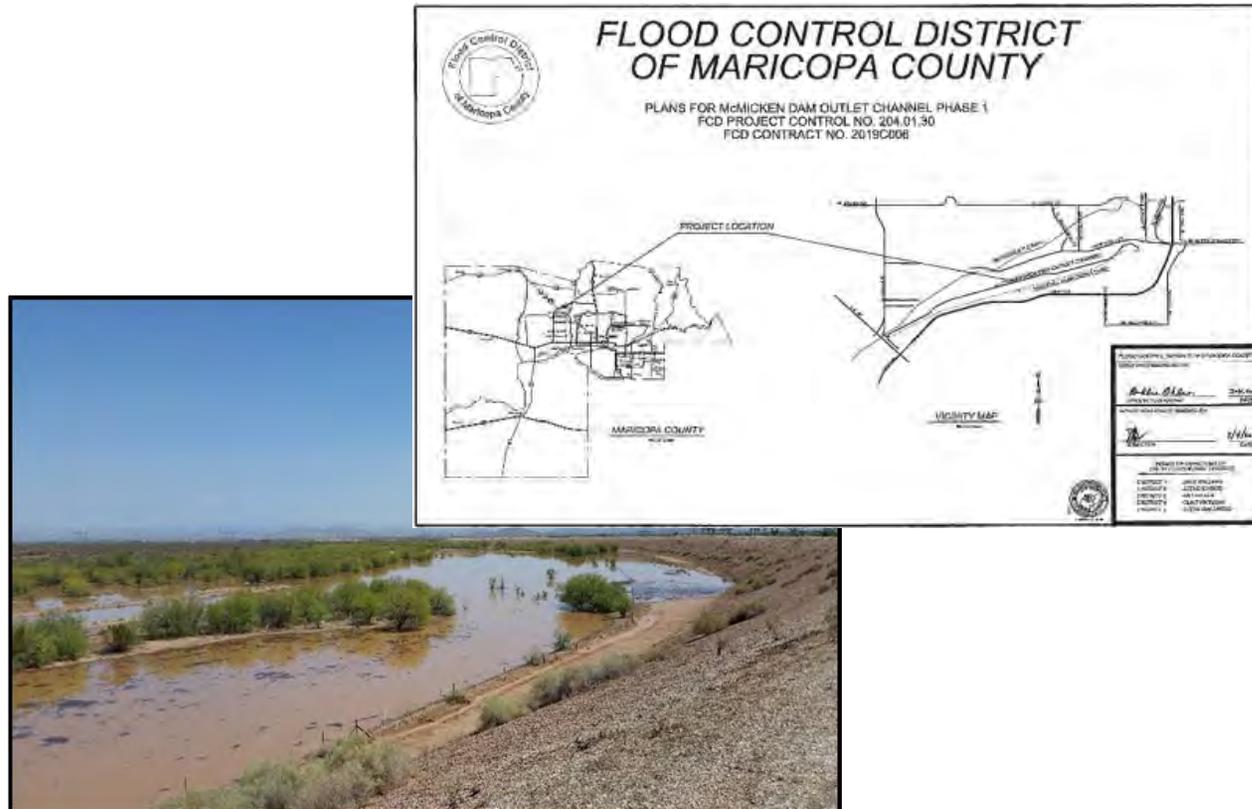
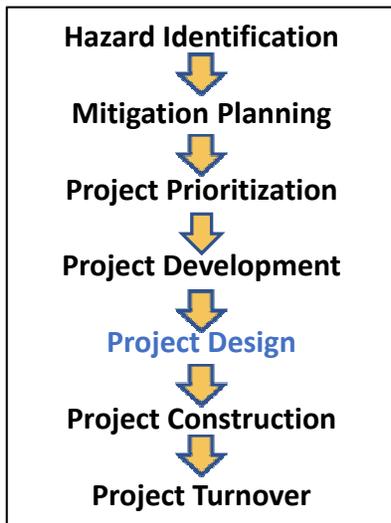
- *Project Management Branch*

Rights-of-way acquired

- *Real Estate Division*

Project Design:

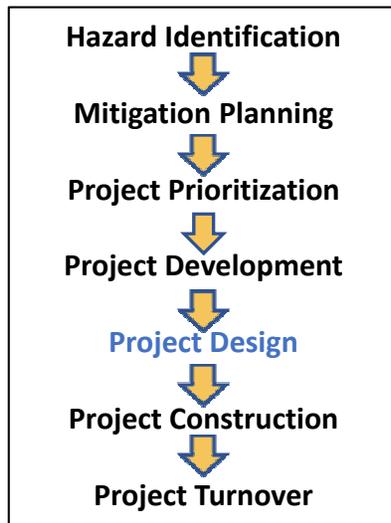
Project Management Branch



McMicken Dam Outlet Channel
Design Cost: \$582 thousand
Phase 1 Construction Cost: \$4.7 million

Project Design:

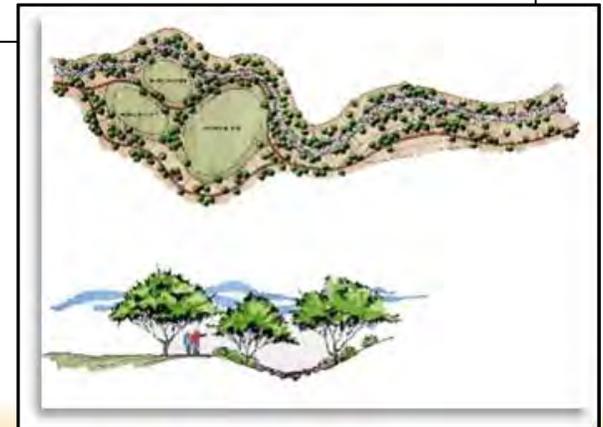
Landscape Architecture & Water Conservation Branch (LAWC)



LAWC is responsible for the inclusion of landscape architecture and water conservation elements into District planning, design, and construction projects.

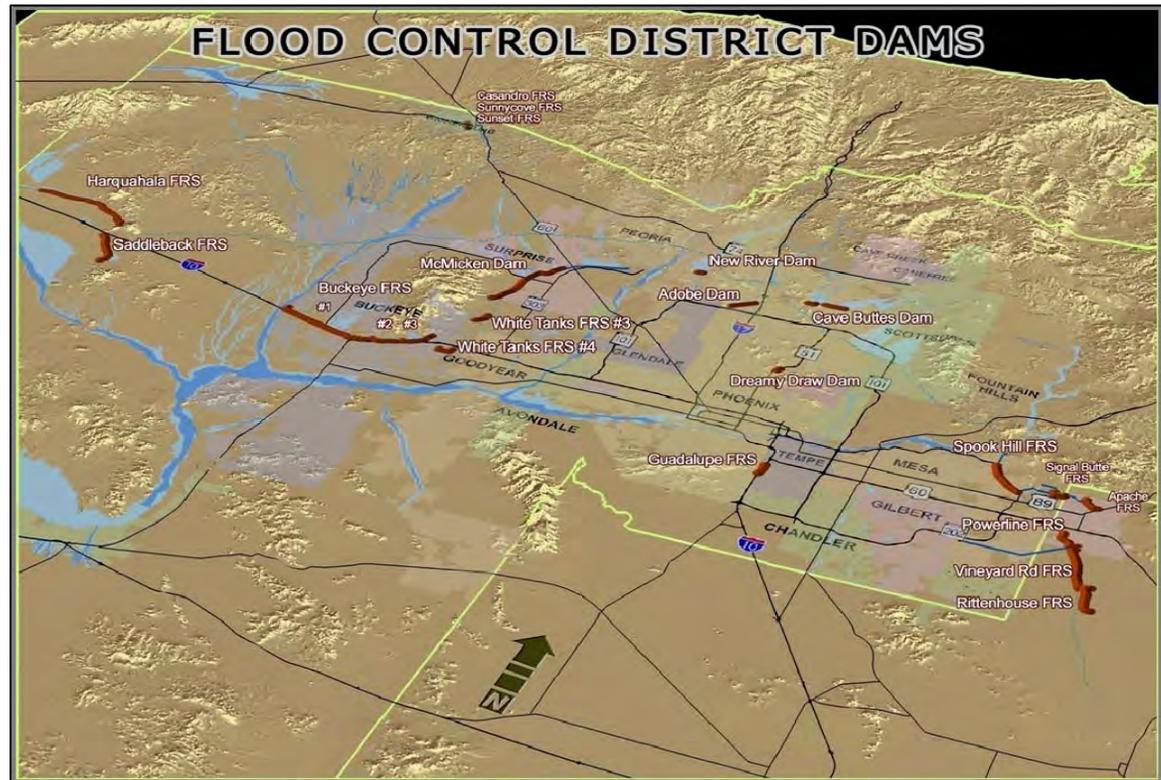
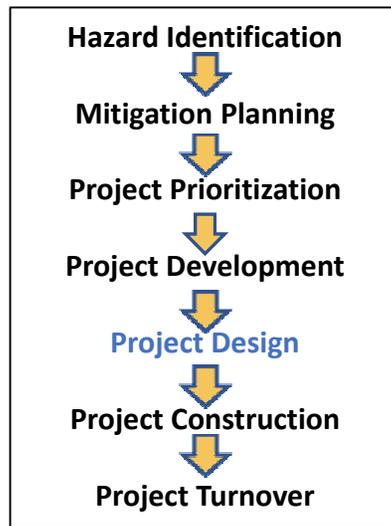
Includes:

- Landscape restoration/construction mitigation/erosion control
- Native tree and hydroseeding
- Alternative stormwater management and recharge
- Structural aesthetics



Project Design:

Dam Safety Program



Dam Safety ensures that the 22 flood control dams and other structures remain safe and continue to protect the public in the way they were intended. They do this by:

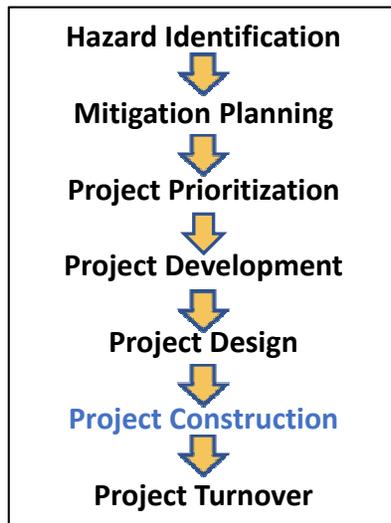
- Staying ahead of issues to assure no imminent threats to public safety
- Reducing dam safety risk through dam rehabilitation and modifications

Present design/construction activities:

- McMicken Dam Rehabilitation – design
- Buckeye FRS #1 Rehabilitation – design
- Powerline/Vineyard Rehabilitation – design
- Cave Buttes – construction start - November

Project Construction:

Construction Management Branch



Construction Management and Inspection

Partnering process emphasized

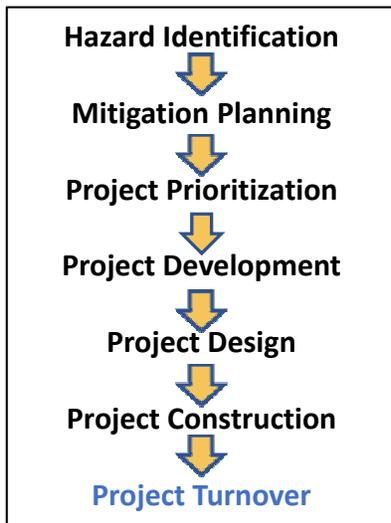
Public Information distributed

Ongoing engineering through post-design process

Additional efficiencies sought through construction management practices such as “VE”

Project Turnover:

Project Management & Construction Management Branches



Before
Construction



After
Construction
& Storm
Event

115th Avenue and Union Hills Drive Drainage Improvements

Construction Cost: \$8,138,732

Change Order Percentage: 6%





Operations and Maintenance Division



Charles Klenner

Division Manager

Greg Browne

O&M Branch Manager

Erik Arntz

Inspection Supervisor

Vehicle and Equipment Replacements



O&M Equipment Budget \$1,900,000 Total
22 Purchases including

- Crew Trucks
- 5000 Gallon Water Trucks
 - Trailers
- Brush Dump
- Backhoe
- Motor Grader

CONSTRUCTION AND OPERATIONS ACTIVITIES

A. List of Major Items of Equipment - At the end of FY 75-76, the Construction and Operations Division had the following major items of equipment on hand:

1. Two 1974 Chevrolet 4 wheel drive pickup trucks
2. One 1976 Chevrolet 4 wheel drive pickup truck
3. One 1975 Chevrolet 2½ ton dump truck
4. Gasoline powered concrete mixer - one sack capacity
5. 400 gallon portable steel water tank
6. Gasoline powered centrifugal water pump
7. Gasoline powered 14" chain saw

Facilities Maintenance for 1402 (Administration Building)

- Budget for Facilities improvement to 1402 (Administration Building) A/C for FY19 & FY20 is: \$1.9 million
 - Budget for Facilities upgrades to Break Rooms, Rest Rooms is \$400,000.00, and Tread replacement for all stairwells
- 

Major Maintenance Employee and Public Safety

Pipe Rail (Fall Protection)



Major Structure Maintenance

- Property/Easement acquisitions maintenance
\$100,000
- Structure repair due to storm damage
\$1,020,000
- Structure Maintenance repairs:
\$2,770,000
- Public/worker safety modifications
\$604,000
- Flood Operations improvement:
\$25,000



New River Channel Maintenance



Reems Rd Channel after Maintenance Cycle



Questions?



Floodplain Permitting Division FY20 Program Highlights



Catherine Regester, P.E., CFM
Floodplain Permitting Division Manager



Floodplain Permits

The FCD provides floodplain management for 14 communities:

- City of Buckeye
 - Town of Carefree
 - Town of Cave Creek
 - City of Chandler
 - City of El Mirage
 - Town of Gila Bend
 - Town of Guadalupe
 - City of Litchfield Park
 - City of Mesa
 - Town of Queen Creek
 - City of Surprise
 - City of Tolleson
 - Town of Wickenburg
 - Town of Youngtown
- 



Floodplain Permits

On-Line Services FY20:

- Applications
 - Submittals
 - Status Checks
 - Permits
- 

Customer Assistance

Requests for floodplain and general information

	FY18	FY19	FY20 (as of 10/1/19)
Floodplain info	2,081	1,914	414
General info	433	696	153
Total	<u>2,514</u>	<u>2,610</u>	<u>567</u>



Code Enforcement

Inspections

	FY18	FY19	FY20 (as of 10/1/19)
Inspection	383	442	106

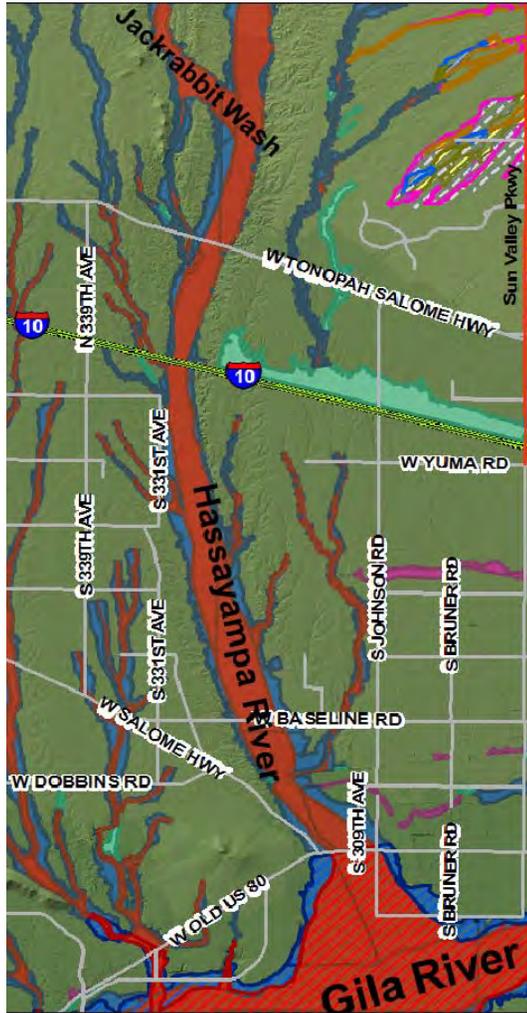




Floodplain Delineation Studies FY20

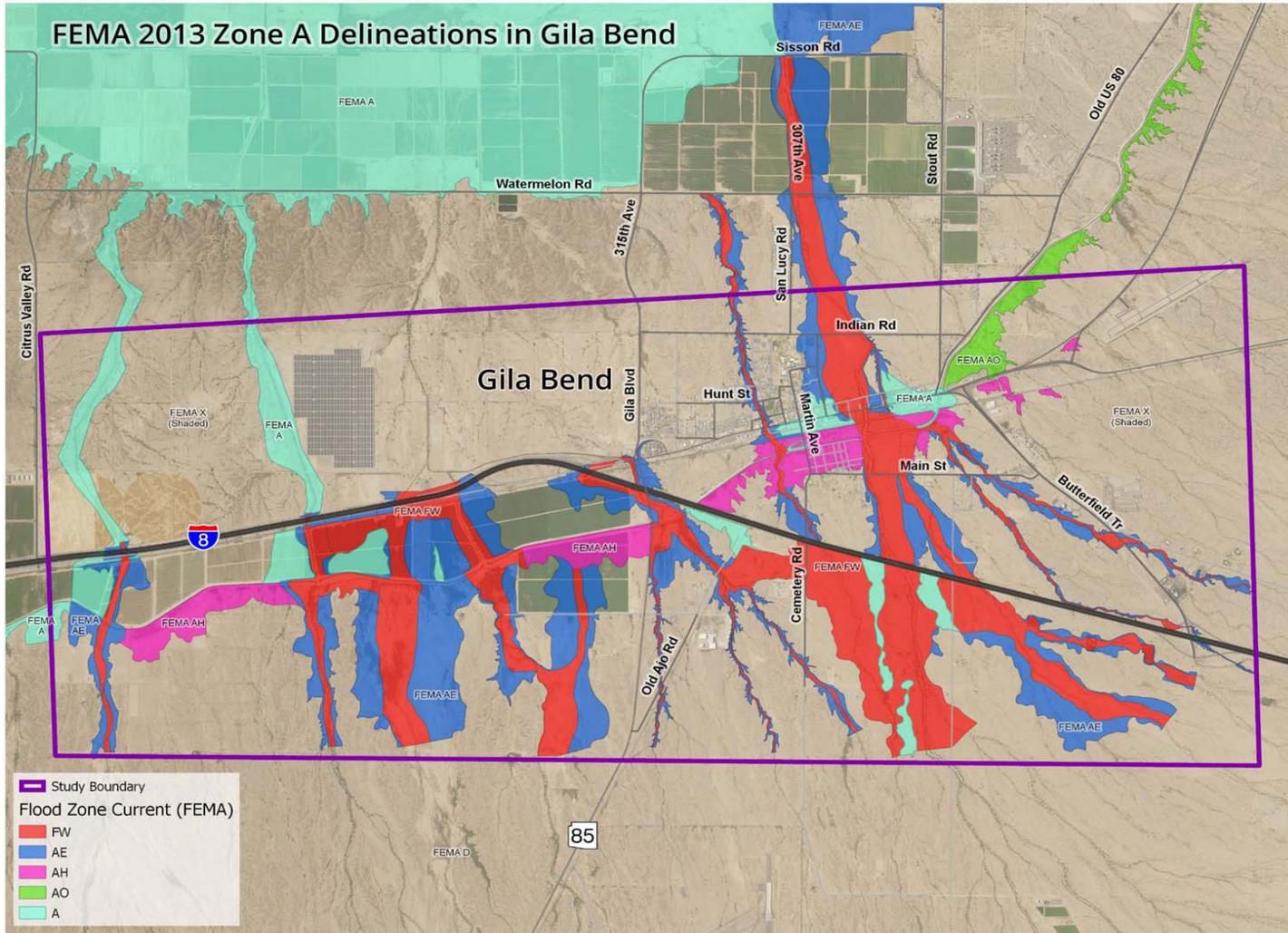
Four studies are underway or planned:

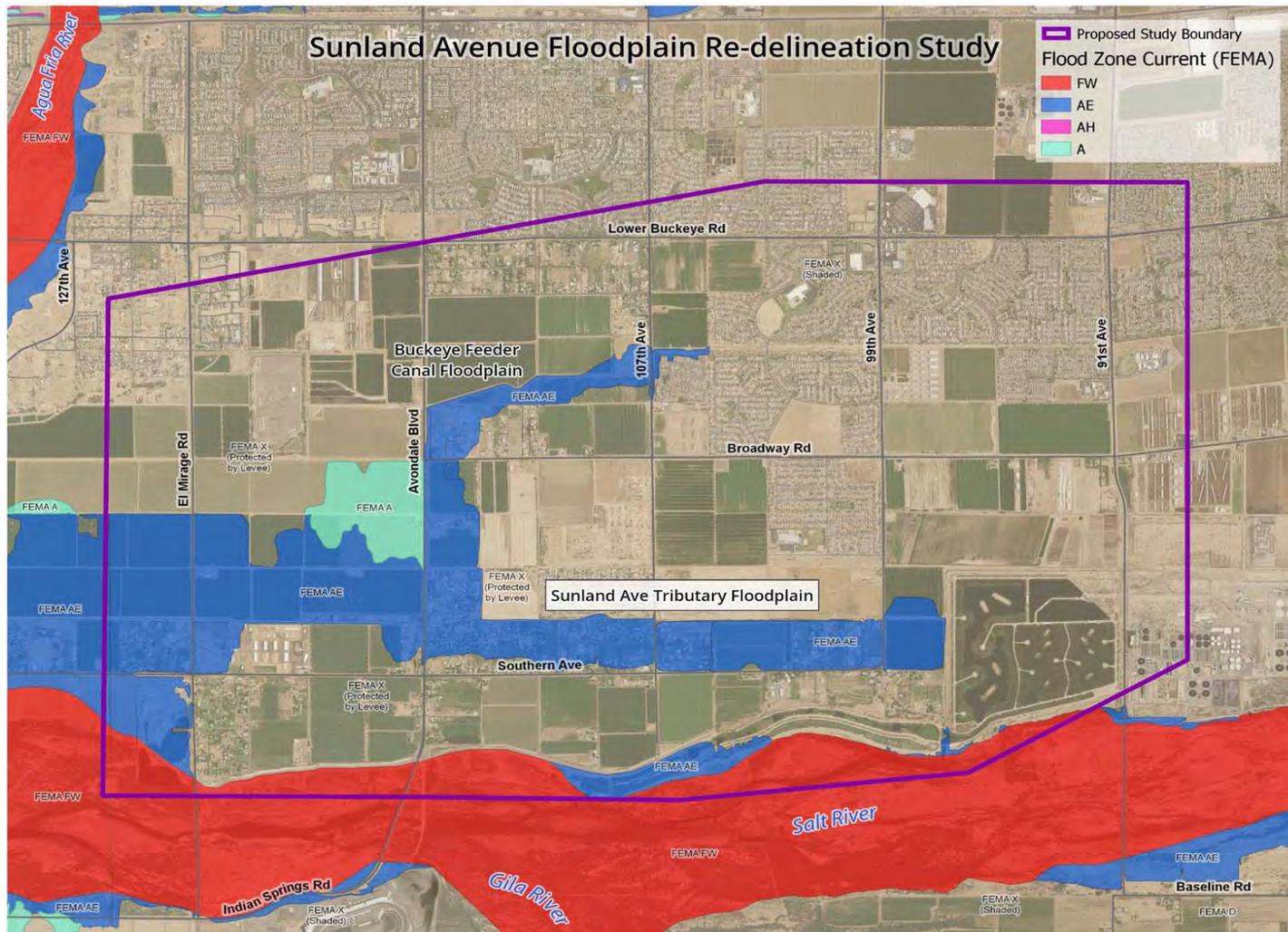
- Hassayampa River
 - FEMA 2013 Zone A Delineations in Gila Bend
 - Sunland Avenue Floodplain Re-delineation Study
 - Floodplain Delineation Study in Mesa to Remove Zone D
- 

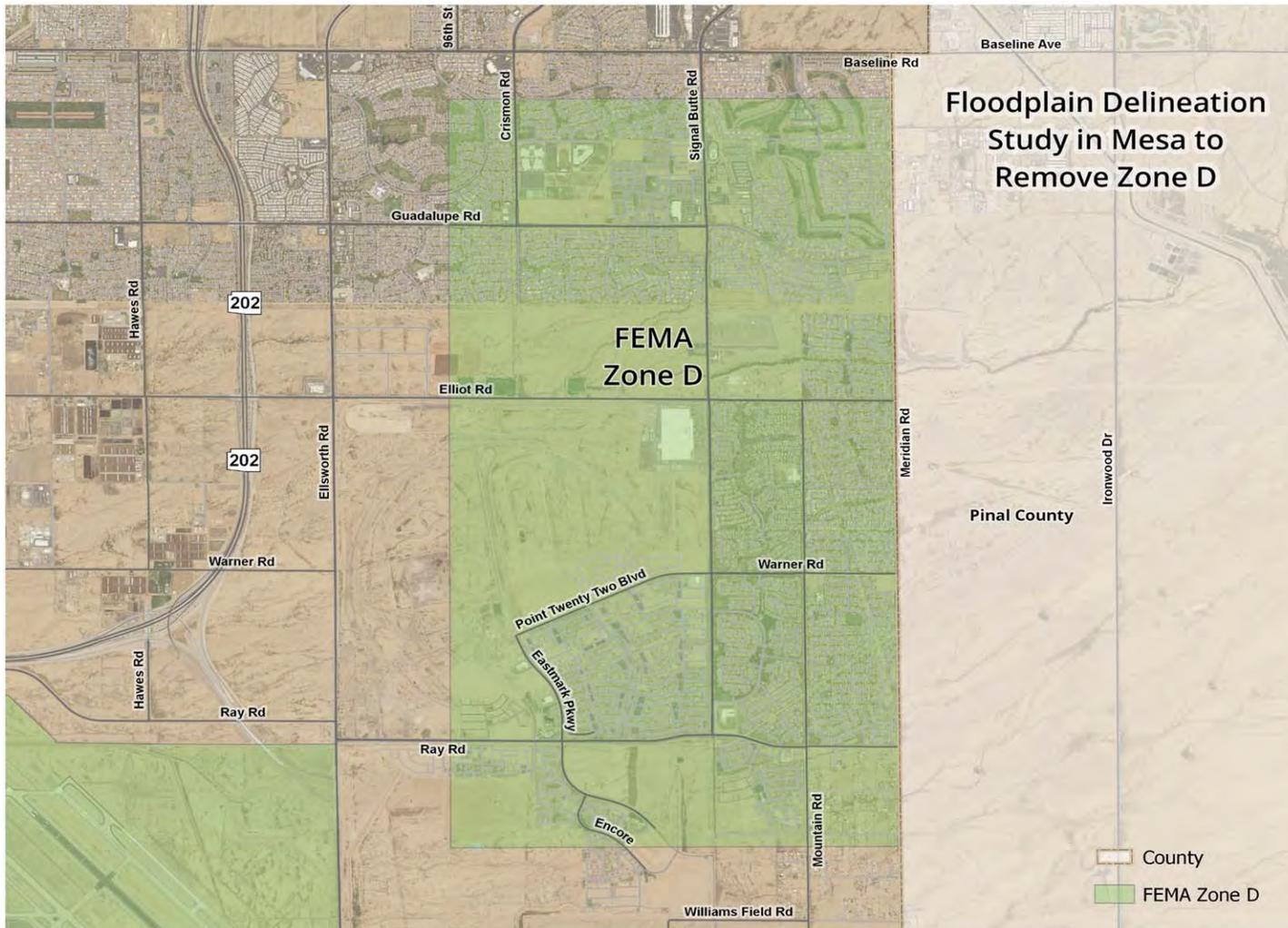


Hassayampa River

FEMA 2013 Zone A Delineations in Gila Bend









Questions?





Engineering Division Program Highlights



Scott Vogel, P.E.
Chief Engineer and General Manager
Engineering Division Manager

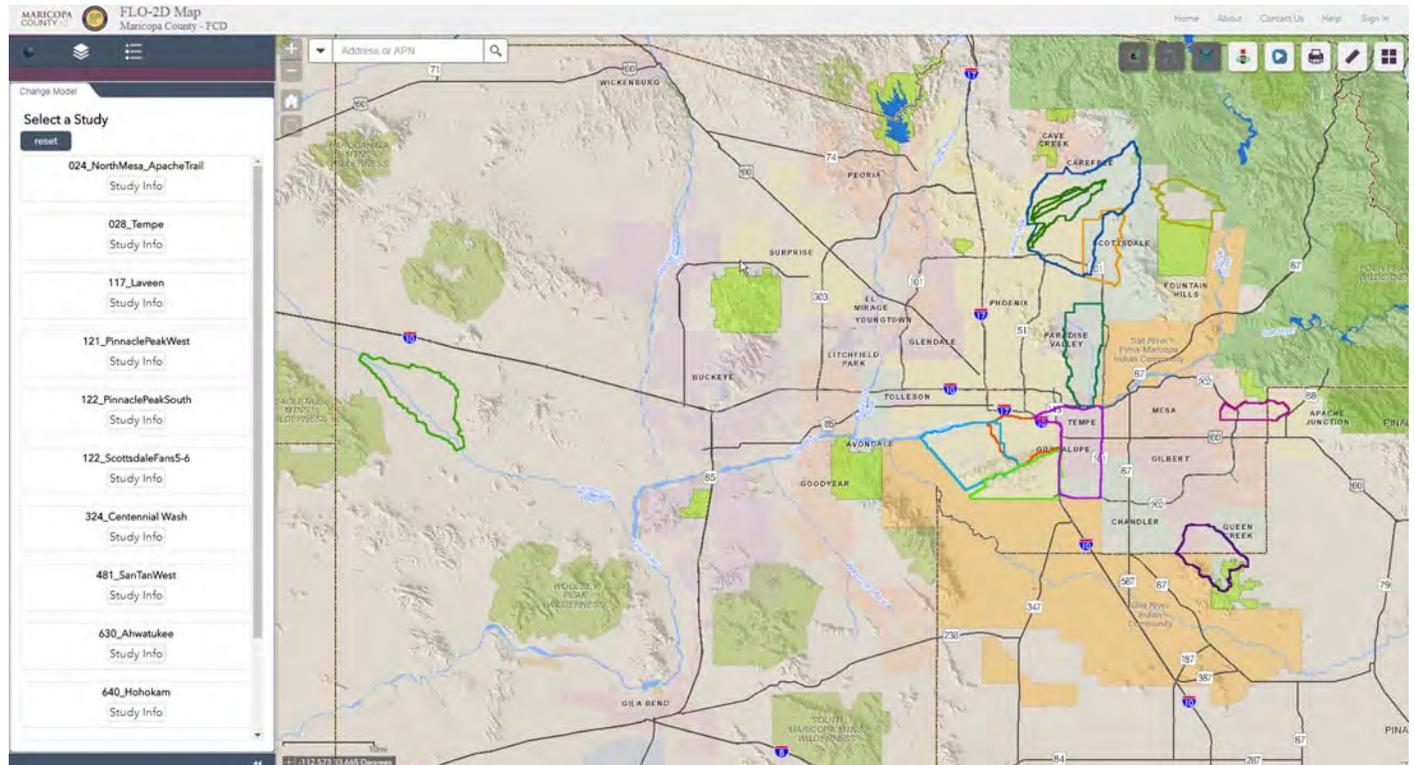


Engineering Division

- Modeling and Software Development and Training
 - Levee Safety Program
 - Right-of-Way Use Permitting
 - Mapping and Survey
 - In-House Design and Review
 - **Emergency Action Plans for Dams/Levees**
 - **Flood Warning Program**
- 

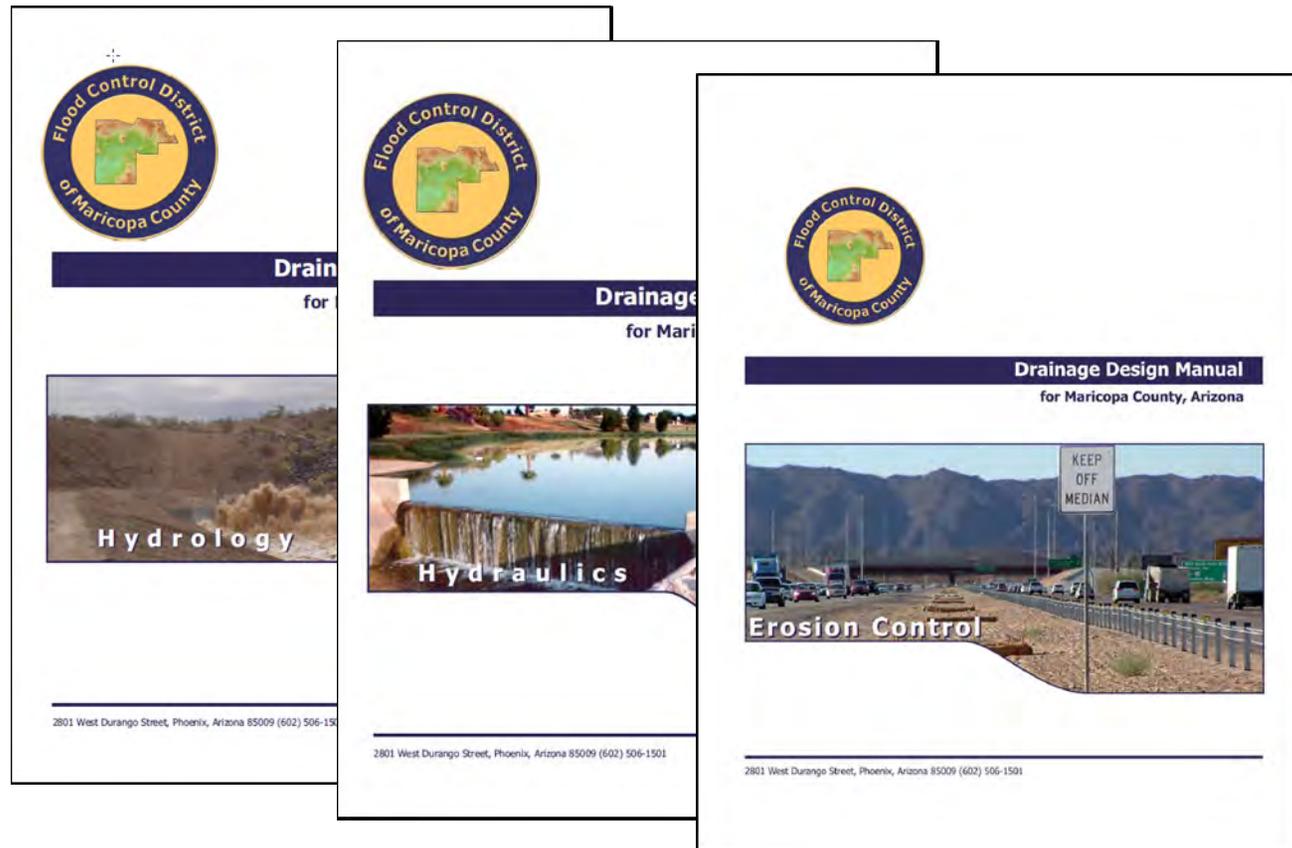
FLO-2D Web Access Tool

- 11 new studies added to the tool
- Video tutorials are ready to be loaded to the site



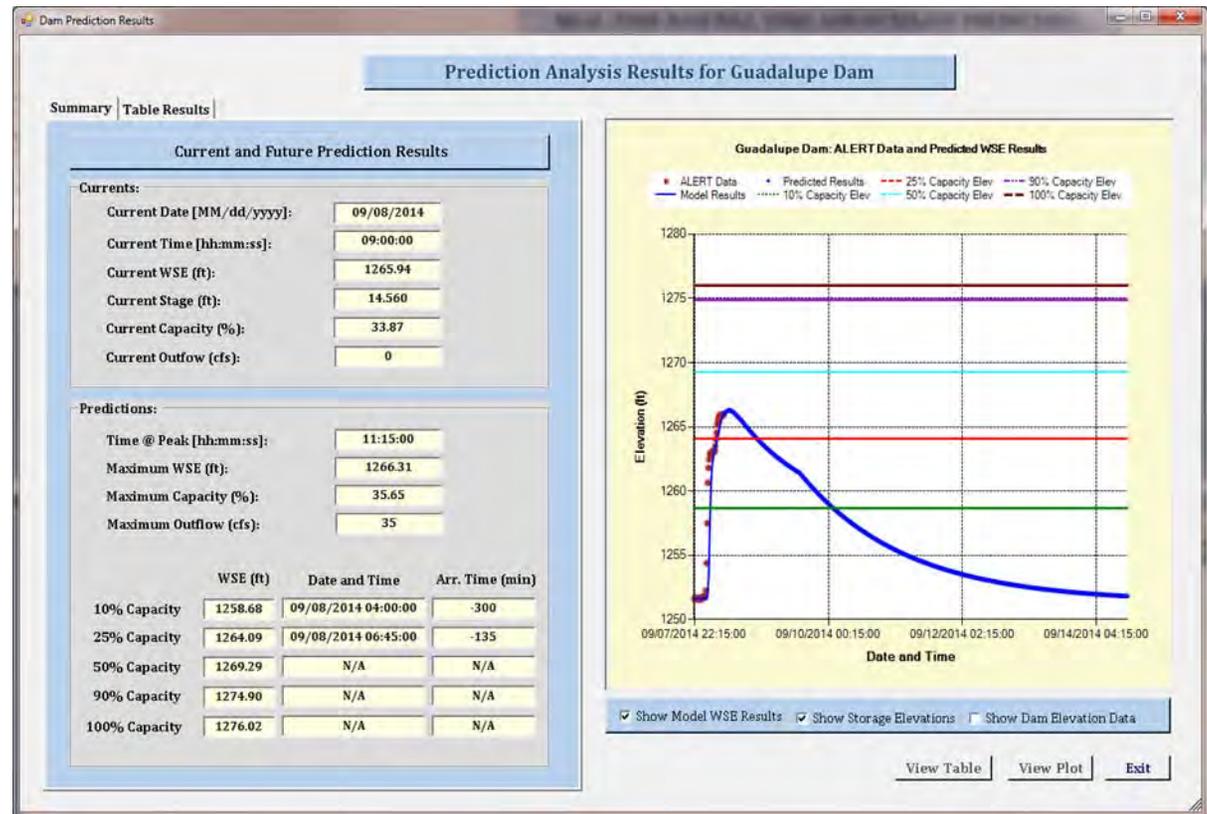
Drainage Design Manual

- Updates are complete
- Final version is on the FCDMC website



Dam Fill-Time and Outflow Forecasting Tool

- Predict the time to dam fill/peak
- During a storm, based on real-time feedback



Levee Safety Program

- 24 District Levees
- 35 miles in total length
- Protects:
 - 20,900 acres
 - 20,700 buildings
 - 54,000 residents
 - 170 critical infrastructure facilities
- Requires FEMA Accreditation
- US Army Corps of Engineers Rehabilitation and Inspection Program

Flood Control District of Maricopa County

Levee Safety Program



Engineering Division
Civil Structures Branch
2801 West Durango Street
Phoenix AZ 85009
602 506 1501

July 1, 2018

Right-of-Way Use Permitting

- Resolution to work in FCD right-of-way updated
- 62 permits issued in 2018
- US Army Corps of Engineers 408 Permission

**OnBase ePlan Review:
Users Guide for ROW Permits**

August 31, 2016
Updated September 5, 2017

NEW PERMIT APPLICATION
To create a new application, sign into the Plan Review portal site. Click the Review Type drop down in the Start New Permit section.

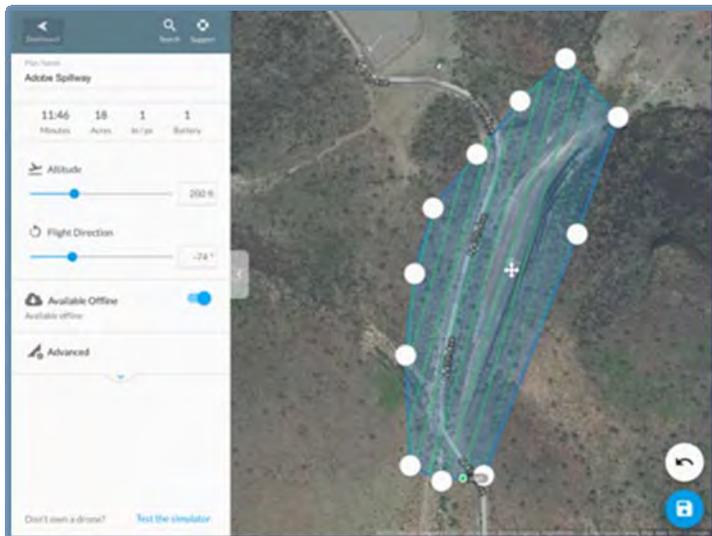
1. Select "Permit Application".
2. Click the "Add Permit" button.
3. Enter the new permit information into the new permit form. All required fields are indicated with a red asterisk (*).
4. Throughout the different stages of the permit, different information on the additional tables must be completed but are not required at this time.
5. Click the "Add" button when finished.

Right of Way Use Permits Online 1

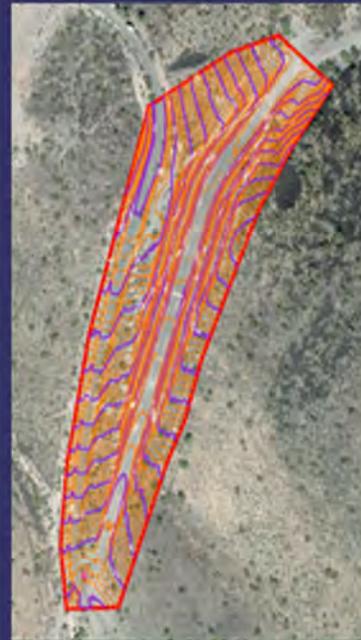
Flood Control District of Maricopa County Right of Way Use Permits Online 5

Mapping and Survey

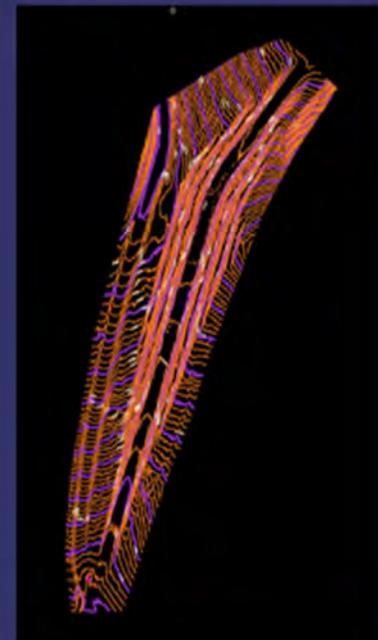
- Light Detection and Ranging (LiDAR)
- Drone Mapping and Imagery



Drone derived 2ft contours



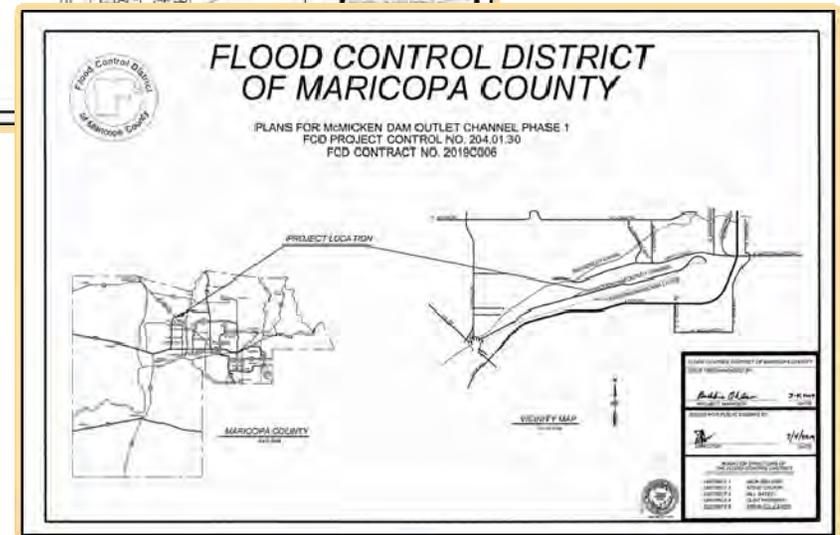
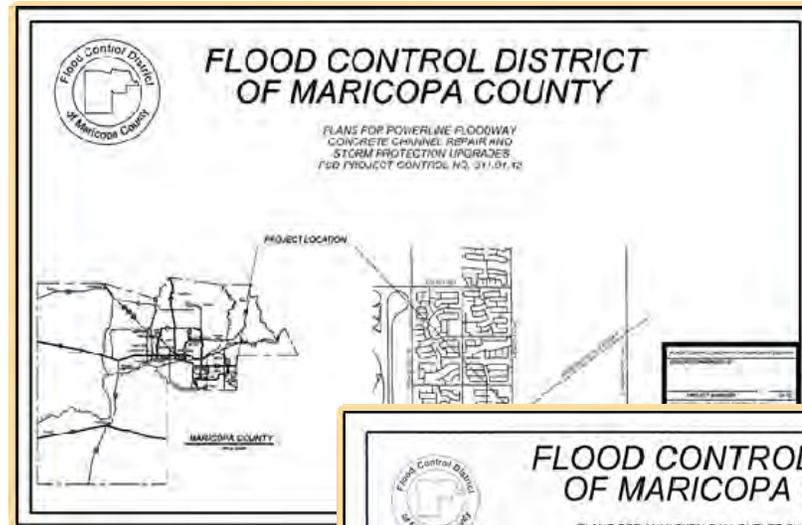
2ft Contours with orthophoto



2ft Contours

In-House Design and Review

- McMicken Dam Outfall Channel
- Various Operations and Maintenance Repairs
- All Technical Review for District



Emergency Action Plans

A formal document that identifies potential emergency conditions at a structure, such as a dam or levee, and specifies action to be followed to minimize loss of life and property damage.



Flood Control District
of Maricopa County

Emergency Action Plan for

The Buckeye Structures

Buckeye Flood Retarding Structure Nos. 1, 2, & 3
and Buckeye Floodway No. 2

October 17, 2018



Critical Infrastructure Information – For Official Use Only
Not for Public Distribution

This information is confidential and exempt from public disclosure under Arizona Revised Statute § 41-1803 and Title 39, Chapter 1. Any further distribution of this information requires prior written approval from the Flood Control District of Maricopa County Custodian of Records.

Prior Revision History
Original: Aug 2003
Revised: Jun 2007

Revised by: LTM Engineering, Inc.

FCDMC Dams



FCDMC Levees



Why do we have EAPs?

- AZ Administrative Code
 - Each owner of a high or significant hazard potential dam shall prepare, maintain, and exercise a written emergency action plan...
- Federal Emergency Management Agency
 - EAP required for floodplain benefit to be reflected on a Flood Insurance Rate Map
- National Flood Insurance Program Community Rating System Program
 - Activity 630 (Dams) The community must have a description of the dam failure threat and a dam failure inundation map or an evacuation area map.
- US Army Corps of Engineers
 - An emergency operation plan, currently in place within the Flood Control District of Maricopa County, shall be provided to the Emergency Management Branch, Corps of Engineers.

Why do we have EAPs?



Wickenburg 2015

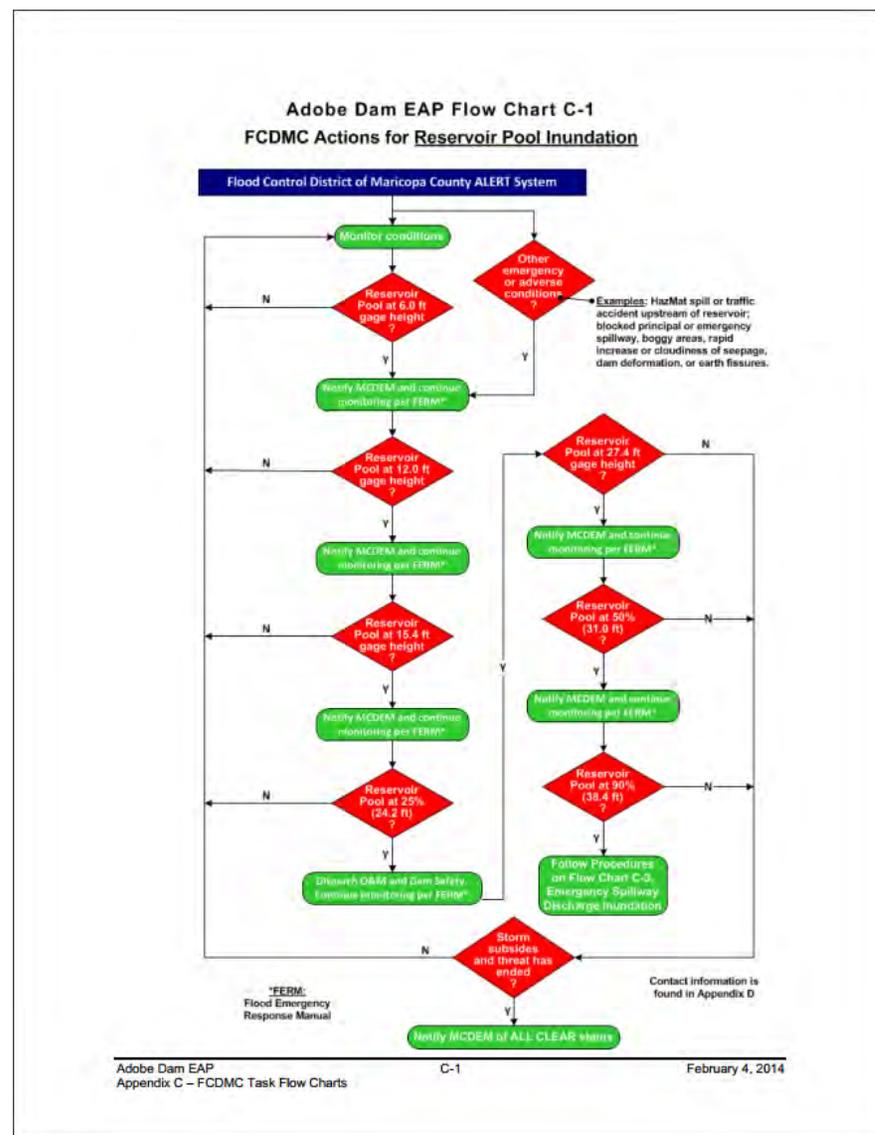
EAP Content

- Identifies potential emergency conditions
- List roles & responsibilities of:
 - Flood Control District of Maricopa County
 - Maricopa County Department of Emergency Management
 - Affected agencies such as cities, ADOT, utilities, etc.
- Lists who should be notified & when
- Provides inundation maps



EAP Content

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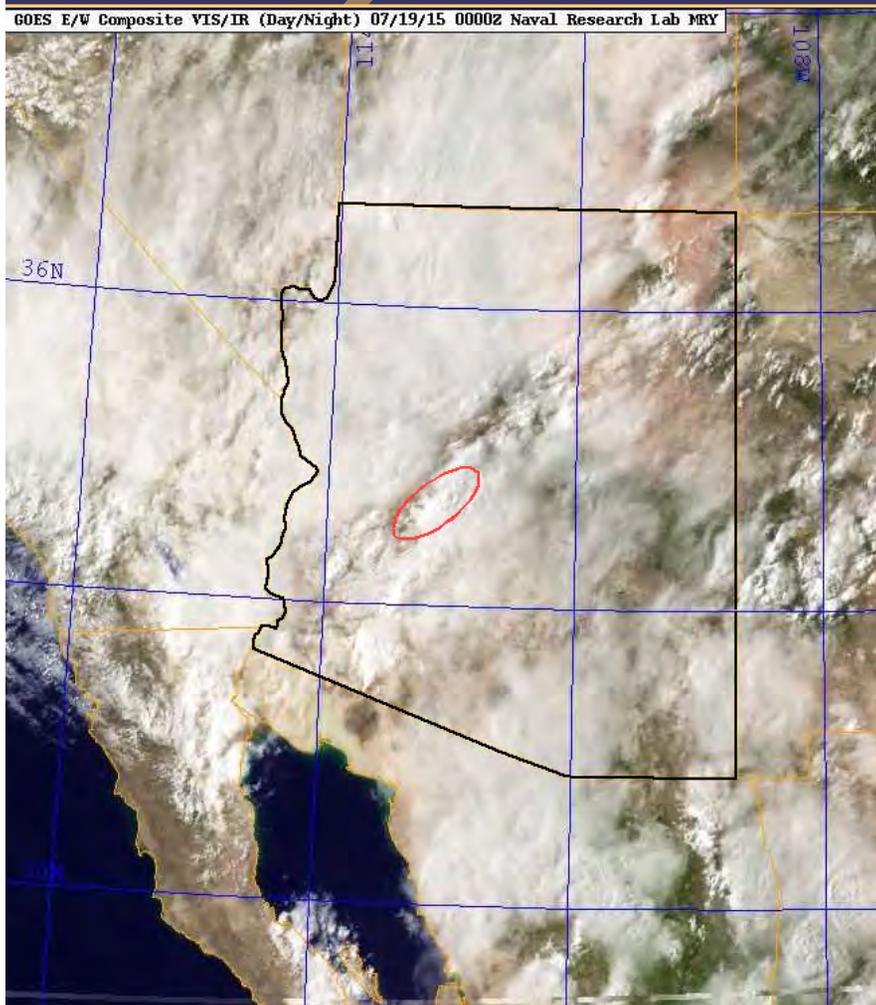


QUESTIONS?



FCDMC Flood Warning Program

GOES E/W Composite VIS/IR (Day/Night) 07/19/15 0000Z Naval Research Lab MRY

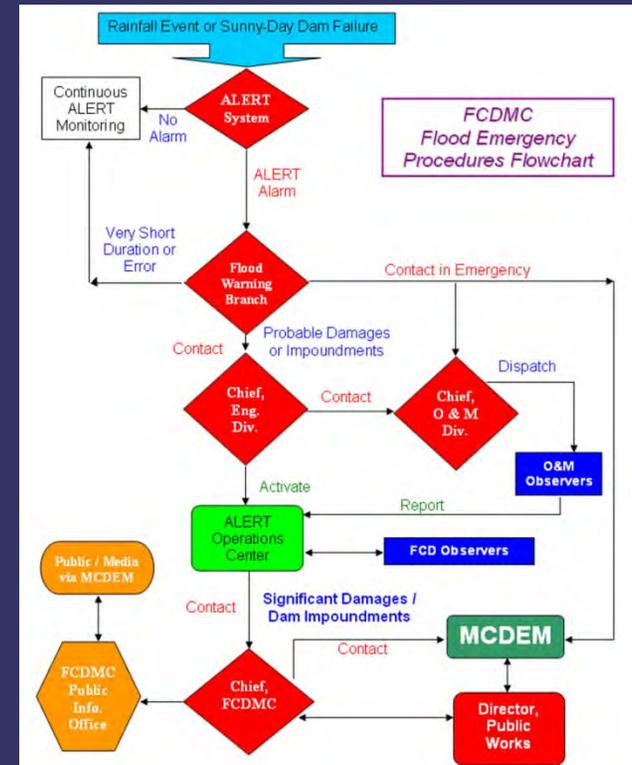


Steve Waters
Hydrometeorologist
Flood Warning Program Manager



Elements of a Flood Warning Program

- Planning
 - Research, Data Collection
 - Flood Response
- Detection
 - Where is the flood and how big is it?
- Communication
 - How do people receive the information?
- Action
 - How do people respond when they receive the information?
- Maintenance of Equipment & Plans
- Exercises



Our Responsibilities

- To Our Own Structures
 - Dams, Channels & Basins
- To MC Dept. of Emergency Management
 - Provide Information and Guidance, Equipment and Manpower
- To County Departments & Agencies (State & Local)
 - MCDOT, MCSO, Environmental Services, Cities, ADOT
- *Things We Don't Do (but some think we do)...*
 - *Warn the Public Directly*
 - *Close Roads or Bridges*
 - *Initiate or Oversee Evacuations*
 - *Deliver or Place Sandbags*



Partners

- County Transportation & Emergency Management
- Vendors & Consultants
- National Weather Service
 - Phoenix WFO
 - Colorado Basin RFC
 - NSSL
- US Geological Survey
- Arizona Dept. of Water Resources
- Various Land Agencies (BLM, USFS, State Land Dept., Tribes)



FCDMC ALERT SYSTEM



171.875 MHz

169.500 MHz



Radio Repeaters - 11

ALERT Room



MCDEM

NWS, PHX, AFWS



Remote PCs



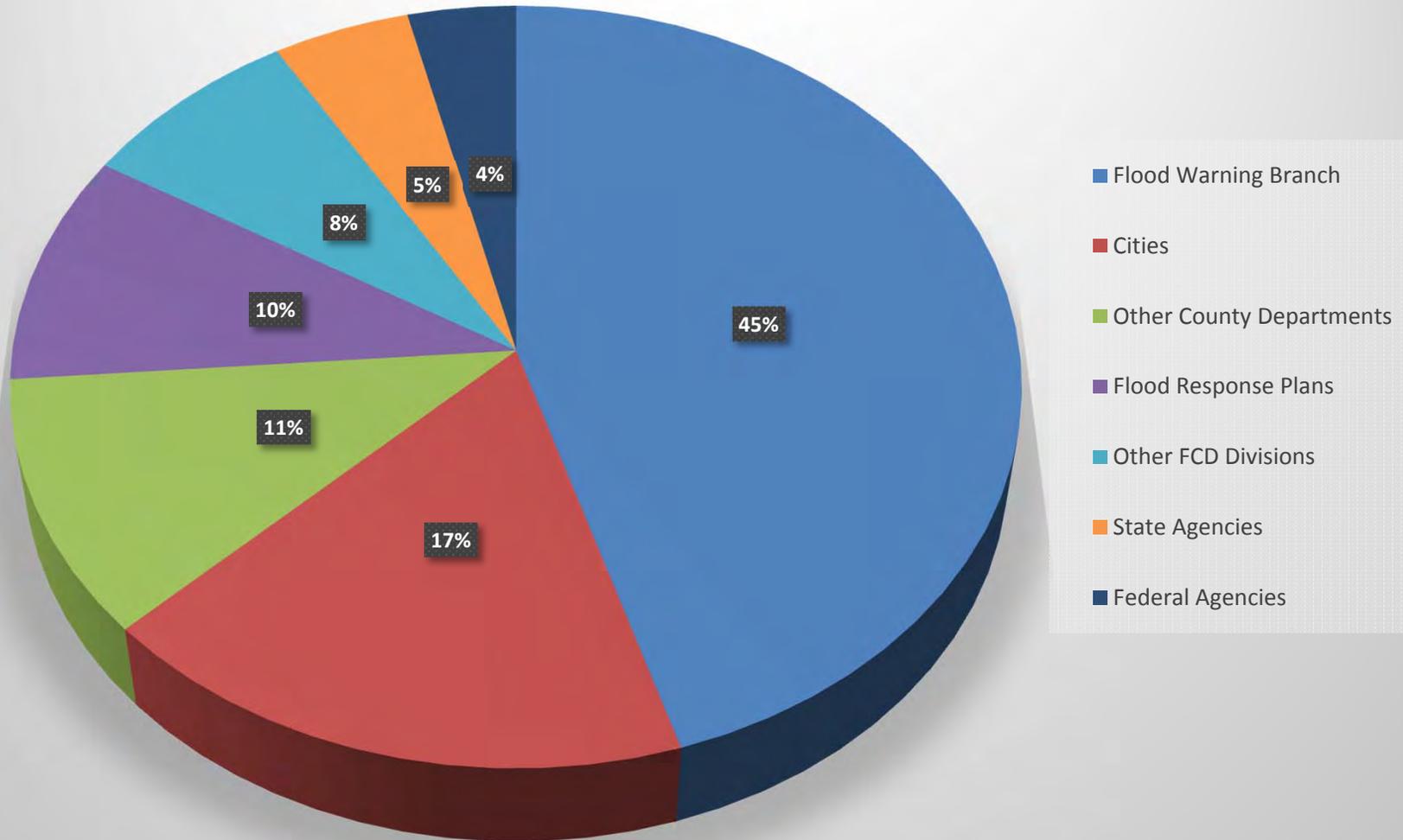
Mobile Devices



Internet Server

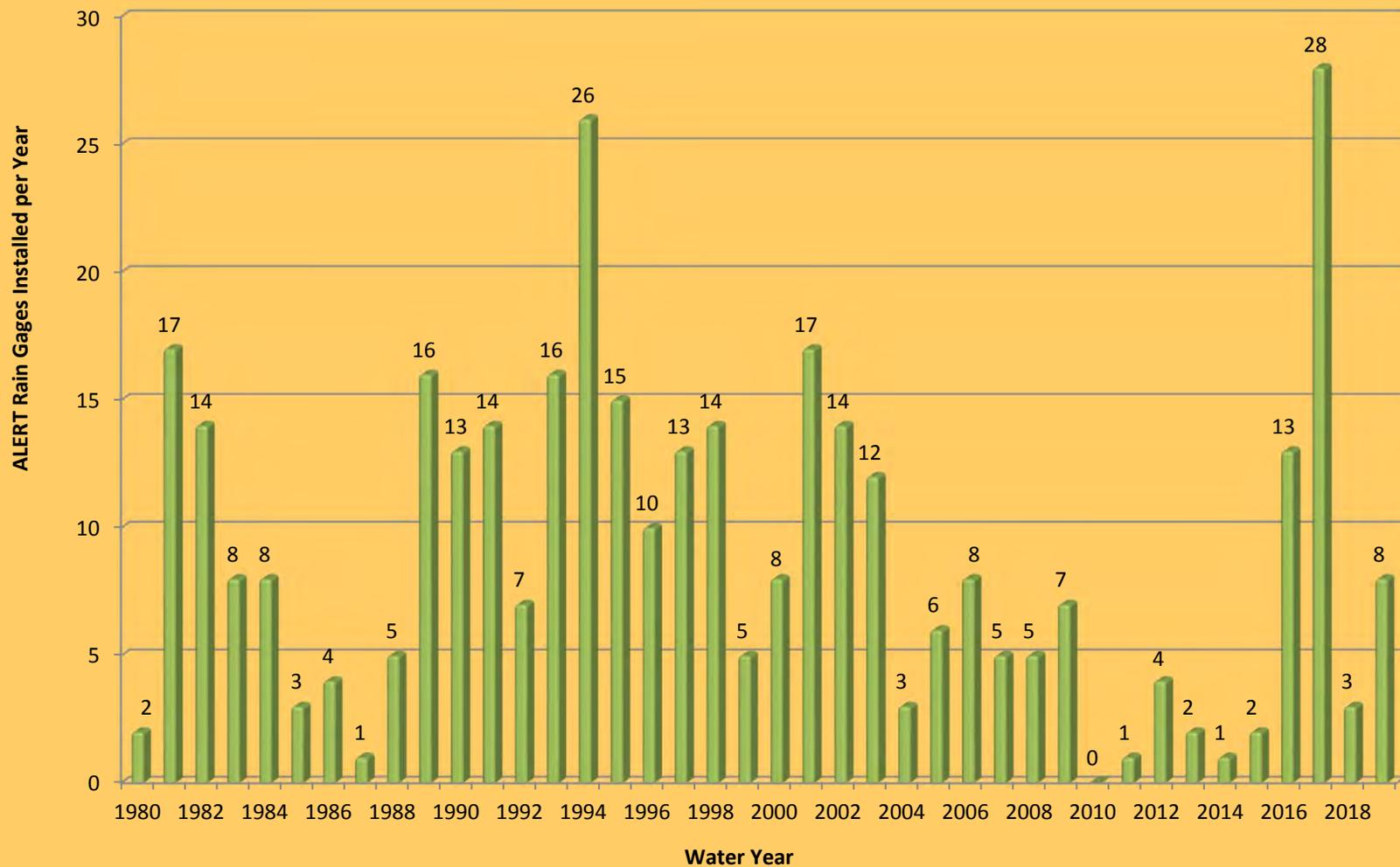


FCDMC ALERT Stations - Who Requests Their Installation?





Incremental ALERT Rain Gage Installations



Flood Detection

Meteorology



Hydrology



MSP Outlooks and Messages Are Provided To More Than 1,400 Clients, including...

- Maricopa County Departments including FCDMC, Transportation, Emergency Management and Sheriff
- City Emergency Management and Public Works
- Police and Fire Departments
- Recreation Areas such as Parks and Lakes
- Federal Agencies – USGS, Forest Service, BLM, NWS
- State Agencies – Emergency Management, ADWR



METEOROLOGICAL SERVICES PROGRAM
WEATHER OUTLOOK

8/16/2018 @ 11:55 AM MST by Waters, S.

Could be a Big Day in the Southwest...

LOTS of moisture throughout the atmosphere today, but lifting energy is strongest in the southwest County. Storms should form there rather early in the afternoon, and if any outflows can make it up to the Valley then we could see evening storms. Regardless, storms will have the potential to be big rain makers, and any passing storms could also generate high wind gusts as they pass, so we'll have a close eye on the situation. Moisture and cloud cover will again keep temperatures below normal – 94 degrees for the northern zones and upper 90s for greater Phoenix. Overnight lows will range from the upper 70s north to the lower 80s for the lower deserts. ... [Read the full forecast >>](#)

Precipitation Forecast by Zone

Forecast Zone	2pm - Noon tomorrow (Percent of Rain (%))	Prime Time for heaviest (hour)	Maximum Prime Time Rainfall (inches)	Flood Potential	Storms Currently Observed (X)
Gila Bend	50	1pm-4pm	1.50	High	
Palo Verde	40	1pm-4pm	1.25	Elevated	
Rainbow Valley	40	1pm-4pm	1.25	Elevated	
West Valley	30	2pm-5pm	1.00	Elevated	
Northwest Valley	30	2pm-5pm	1.00	Moderate	
Upper Centennial	20	3pm-7pm	0.75	Moderate	
Wickenburg	20	3pm-7pm	0.75	Moderate	
New River/Cave Cr.	20	3pm-7pm	1.00	Elevated	
Phoenix North	20	3pm-7pm	0.75	Elevated	
Phoenix South	20	2pm-5pm	0.75	Elevated	
Scottsdale North	20	3pm-7pm	0.75	Elevated	
Scottsdale South	20	2pm-5pm	0.75	Elevated	
East Valley	20	3pm-7pm	0.75	Elevated	
Gila River	20	2pm-5pm	0.75	Moderate	
Southeast Valley	20	2pm-5pm	0.75	Moderate	
Lower Salt R. Lakes	20	3pm-7pm	1.00	Elevated	
Superstition	20	3pm-7pm	1.00	Elevated	

[Click to See the Full Forecast Table](#)



Today's Heat Risk Index:

Click the image to the left to see the latest 7-day Heat Risk forecast, courtesy of the National Weather Service.

Looking for custom products, maps, plans?



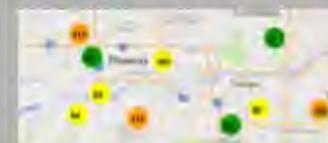
[Click to view our custom products](#)

Forecast Zone Locator



[Click to view the interactive map](#)

Interested in real-time Air Quality data?



[Click to view the Maricopa County Interactive Air Quality Map](#)

Sign up for Lake Alerts



[Click to Subscribe](#)





METEOROLOGICAL SERVICES PROGRAM MESSAGE STATEMENT

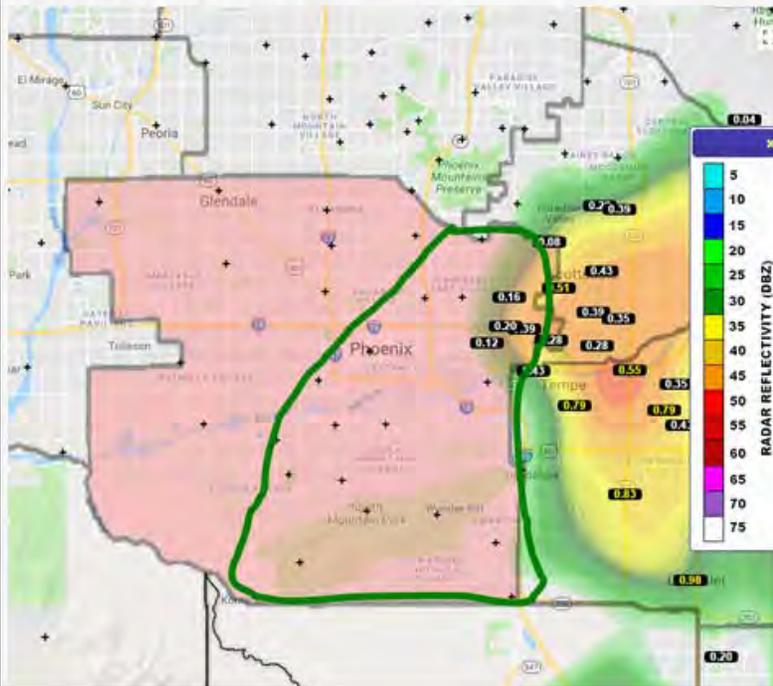
08/10/2018 @ 12:05 AM MST by Henz, D.
Phone: 602-506-8701 (Alert Room), 602-768-2000 (Cell)

MESSAGE 1 ALERT

Valid Time: Now-2am

COMMENTS:

A large cluster of strong t-storms are moving W/SW into portions of the Phoenix South Forecast Zone. Areas of greatest concern within the zone are highlighted in green in the map below including South Mountain Park, Laveen, Downtown Phoenix, and Ahwatukee. These storms have a history of dropping a quick 0.50"-0.75" as they move through the zone with possible localized greater totals around 1.25"-1.50" if any storms stall out. Strong winds gusts to 40mph, blowing dust, and frequent lightning strikes will also accompany these storms. Normally dry washes may begin to flow in parts of the zone (South Mtn. Communities) as well as water ponding in low lying areas and on area roadways (I-10 & US60 corridors). We will keep a close eye on local washes and roads for any excessive runoff and further updates will be issued if necessary. Message is valid until 2am MST.



Get real-time rainfall, streamflow, and weather information



Click to view the ALERT Interactive Data Display (AIDD) Map

Looking for custom products, maps, plans?



Click to view our custom products

Forecast Zone Locator



Click to view the interactive map

Experience Flooding?



Click to use the Report a Flood Tool

CONTACT US



PREFERENCES/ UNSUBSCRIBE



SUBSCRIBER HELP



METEOROLOGICAL SERVICES PROGRAM MESSAGE STATEMENT

08/09/2018 @ 11:45 PM MST by Henz, D.
Phone: 602-506-8701 (Alert Room), 602-768-2000 (Cell)

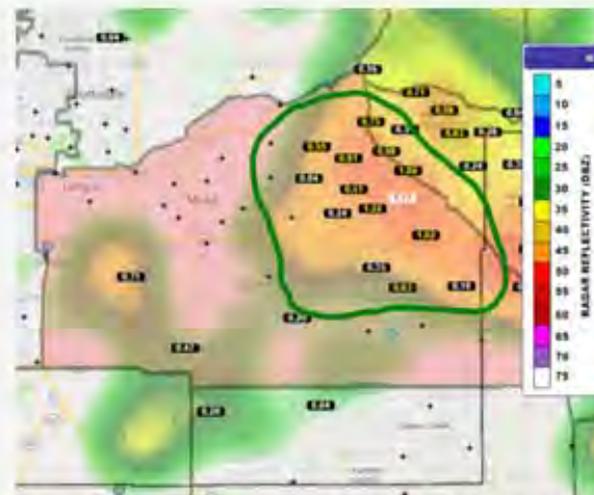
MESSAGE 3 FLASH FLOOD WARNING

Valid Time: Now-2am

COMMENTS:

Thunderstorms over the East Valley Forecast Zone continue to drop heavy rainfall across east Mesa and the Loop 101 corridor. Upwards of 1.00"-2.00" rain has fallen in the last 30-45min and will continue to fall over the next hour. The Message-1 will be upgraded to a Flash Flood Warning.

Areas of greatest concern include east Mesa, the Loop 202 corridor, far northern Gilbert. These areas within the zone(s) are highlighted in green in the map below. Flash Flooding is imminent or already occurring within area washes. Severe water ponding/street flooding is imminent or already occurring on area roadways and in low-lying areas. Message is valid until 2am MST.



AREAS OF GREATEST CONCERN WITHIN THE ZONE(S) ARE HIGHLIGHTED IN GREEN

Note: A Flash Flood Warning is issued when flooding conditions are imminent or occurring. This weather statement is not intended for public dissemination. Please expedite this information to affected emergency response organizations (police, fire, transportation, etc.) within your area. Also, please take appropriate actions to prepare for possible flooding. Further information will be provided as it becomes available.



Get real-time rainfall, streamflow, and weather information



Click to view the ALERT Interactive Data Display (AIDD) Map

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Click to view our custom products

Forecast Zone Locator



Click to view the interactive map

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PREFERENCES/ UNSUBSCRIBE

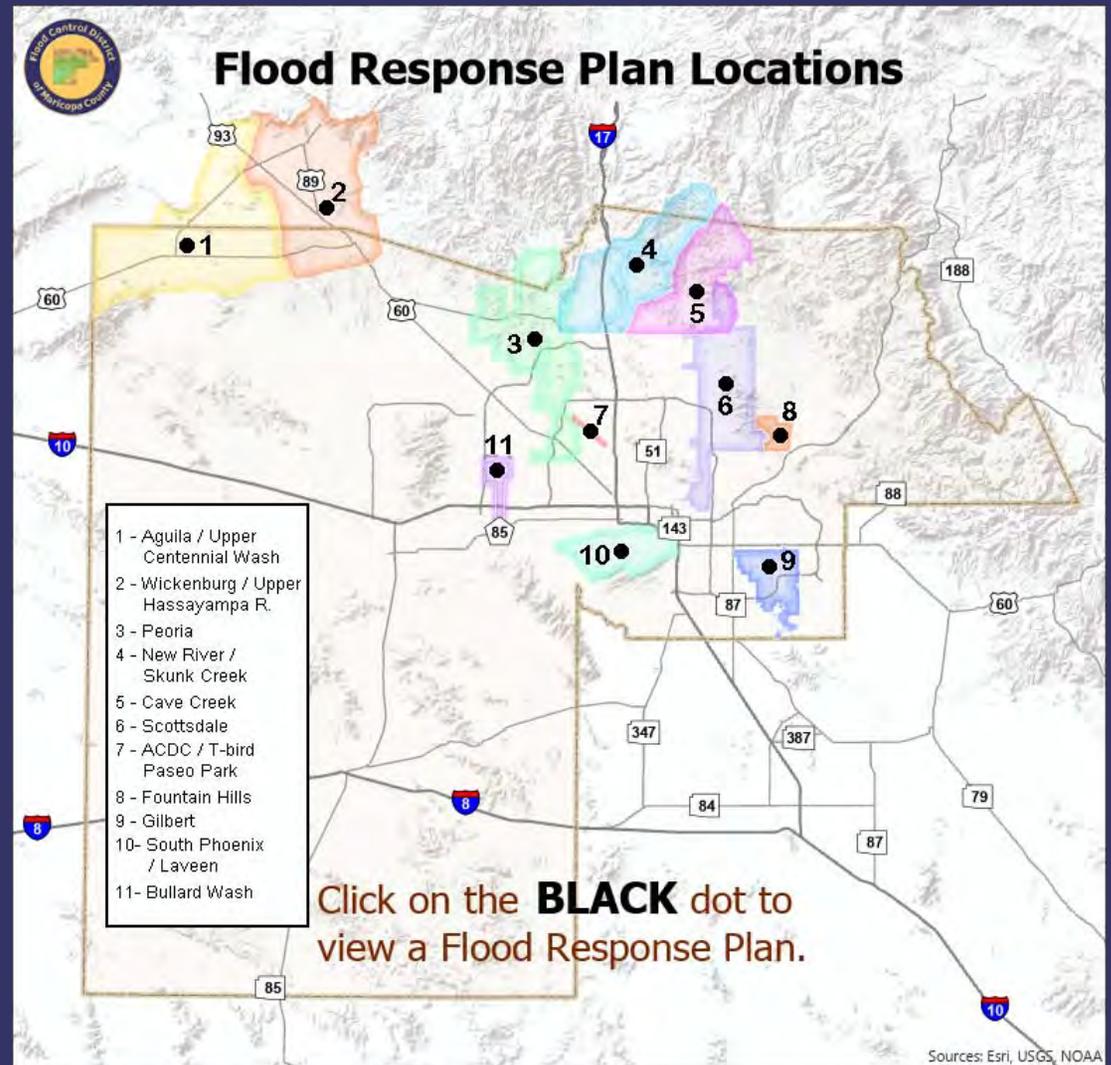


SUBSCRIBER HELP



Flood Response Plans

- Established for Local Jurisdictions or Watersheds
- Implemented & Operated by a Local Sponsor
- Rely heavily on support from FCDMC and the National Weather Service



Flood Response Plan Components

- 1 Flood detection/ prediction messages which will trigger the ALERT PROTOCOL
- 2 ACTIONS REQUIRED by the Town of Wickenburg emergency response agencies
- 3 Identified POTENTIAL TROUBLE AREAS in the flood vulnerable zones that require immediate attention
- 4 CRITICAL TIMES indicating effective lead times from the time of flood threat recognition to the time of flooding at identified locations in the flood vulnerable areas

WICKENBURG FLOOD RESPONSE PLAN

HASSAYAMPA RIVER RED ALERT (only)

RED ALERT PROTOCOL – URGENT ACTION REQUIRED!

- Flash Flood Warning (NWS) OR Message 3 (MSP)
- OR Streamgauge Alarm (#6308, #6228, #6223)
- Major Flooding Event Likely
- Evacuations Required

POTENTIAL TROUBLE AREAS

1. Box Canyon – Extreme Flood Potential
2. Racoon Road – Extreme Flood Potential
3. Evaluate Racoon Road Structures
4. Ramada Ranch Landing Slip, Irrigation
5. Significant Bandwidth at Sole of Wickenburg College Park
6. Evaluate Structures at Sole Wash Confluence on Weaver, Chouinard, and River Streets, including Community Center on River Street
7. Evaluate Structures at Powder House Wash Confluence on Jack Sinden and Conard/Johnson Roads
8. Monitor US 88 bridge and immediate areas of US88 road side slope at the intersection with Valencia Street
9. Wickenburg High School – Extreme Flood Potential
10. Evaluate Structures and Paved Area of Wickenburg High School
11. Monitor BNSF Railroad Embankment
12. Monitor Access Road to Wickenburg Treatment Plant
13. Monitor Access Road to Hassayampa River Preserve
14. Evaluate Hassayampa River Preserve
15. Evaluate Trailer Park Structures

ACTIONS REQUIRED

DISPATCHER:

1. Send pager alerts as needed.
2. Contact:
 - Rincon Road Structures ()
 - Ramada Ranch (884-3751)
 - Sole Wash Confluence Structures ()
 - Powder House Wash Structures, Town of Wickenburg, Giffinger Park Structures, US 88 Structures located west of the bridge, Wickenburg High School, Parkside and adjacent structures.
 - Rakus Gardens ()
 - Wickenburg Treatment Plant (884-0873)
3. Contact: Hassayampa River Preserve (Native Game warden on permanent backing 884-2772)
4. Establish contact with the MSP and/or FCDMC (884-8701), and TCF (911/11-3191).

POLICE:

1. Conduct evacuation of structures located in inundation areas, including Racoon Road Structures, Sole Wash Confluence Structures, Wickenburg Community Center, Powder House Wash Structures, Town of Wickenburg, Giffinger Park Structures, US 88 Structures located west of the bridge, Wickenburg High School, Parkside and adjacent structures.

PUBLIC WORKS:

1. Dispatch trucks with backhoes to Racoon Road, US 88 bridge, Access Road to Sole Wash Confluence, Access Road to Powder House Wash Confluence, Access Road to High School and Wickenburg Treatment Plant, and Access Road to Hassayampa River Preserve.
2. Contact Police and Road in inundation areas as required.
3. Monitor US 88 and BNSF Railroad bridges and embankments.

EMERGENCY SERVICES:

1. Classify/monitor FCDMC ALERT based display for back rate and for alerts
2. Monitor show contact with in-call MSP, FCDMC and TCF CD personnel
3. Coordinate evacuation activities between Police, Fire and Public Works Departments.

WATER CONSERVATION:

1. Evaluate visitors to the Hassayampa River Preserve.

CRITICAL TIMES

Location	Hydrologic Lead Time		Decision Time (hr)	Action Time (hr)	Lead Time (hr)
	Event to Trigger	Time (hr)			
1. SO Signal at Box Canyon	180	0	30	45-60	18-25
2. Confluence at Main Street	180	45	30	45-60	18-25
3. Highway 88	180	0	30	45-60	18-25
4. SO Signal at Wickenburg	180	135	30	45-60	18-25

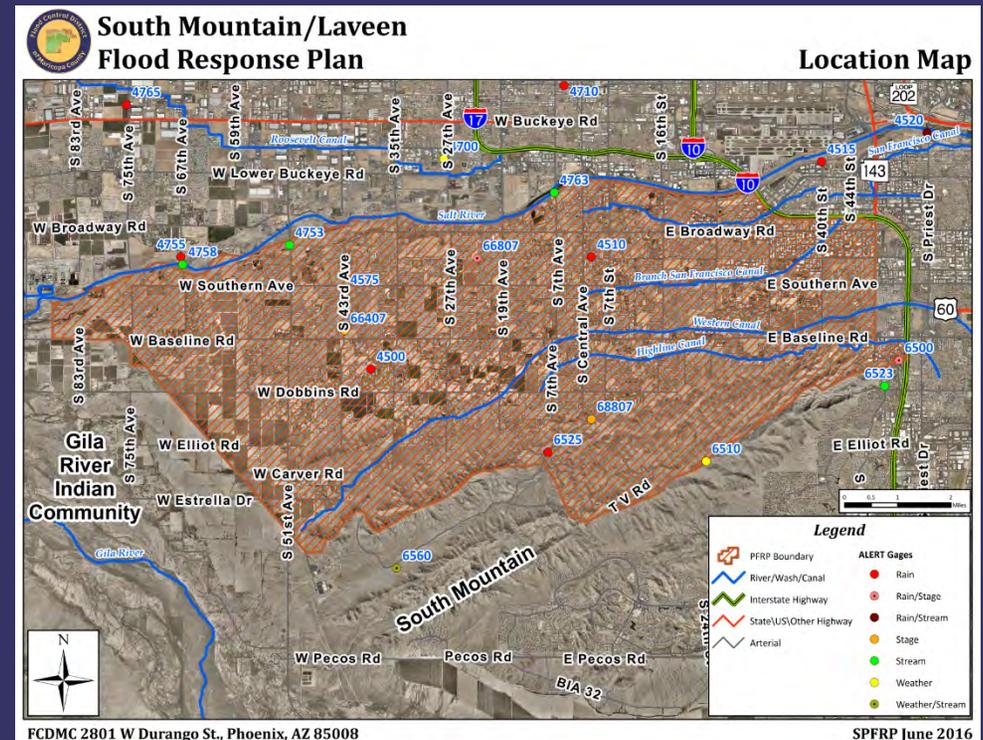
LEGEND:

- GREEN ALERT - Minimal Flooding
- ORANGE ALERT - Major Flooding Threat
- RED ALERT - 180 Year Floodplain
- Water Flow Direction
- Critical Area Location Point
- 180 Year Floodplain

Hassayampa Riv. PROTOCOLS

South Mountain / Laveen FRP

- Flood Response Plan
 - Flood Detection
 - Flood Threat Recognition
 - Floodplains / Structures
 - Roadway Hazards
 - Dissemination of Information
 - Emergency Response Actions
 - Post Flood Actions
- Flood Condition Maps
- Wall Maps
- Online Information Interface

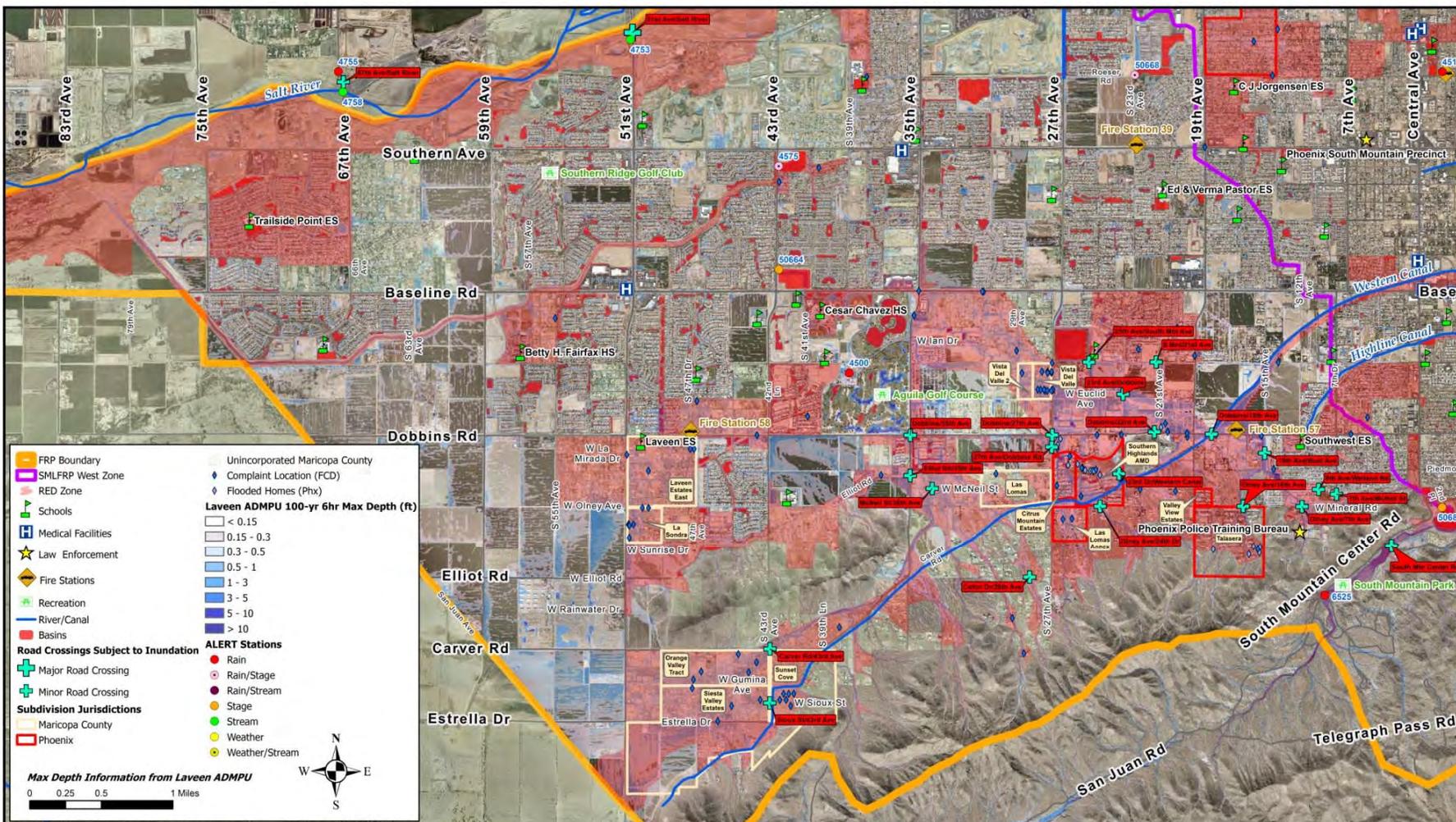


RED ALERT



South Mountain/Laveen Flood Response Plan West Zone

RED Flood Condition

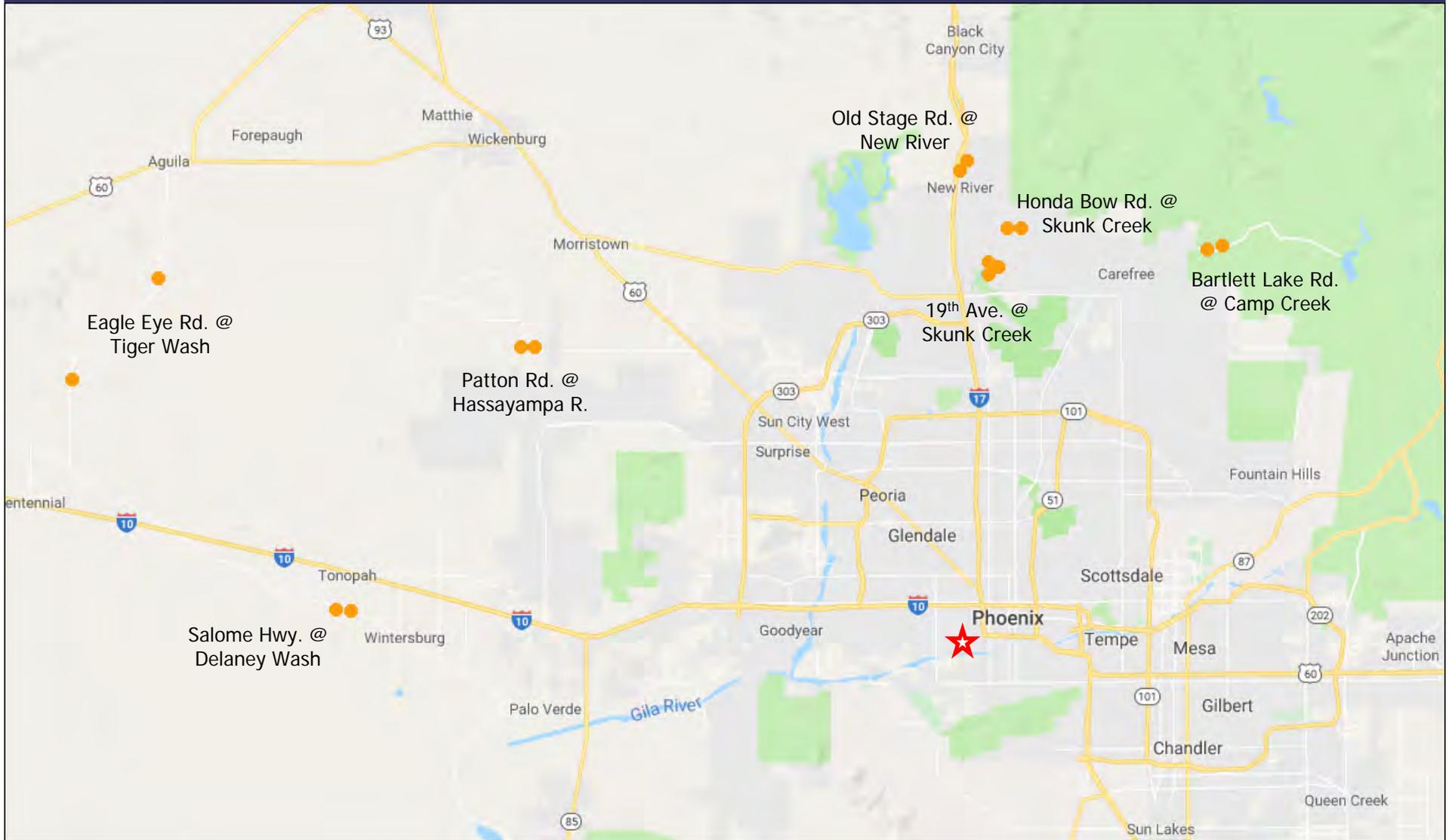


Flood Control District of Maricopa County September 2016

MCDOT / FCDMC Automated Flooded Roadway Warning Assemblies (*Flashing Signs*)



Flashing Sign Locations



As of Sep. 2019

How do they work?

- Lights can be activated by an ALERT sensor
 - Stream gage
 - Water-level status sensor
- Lights can also be turned on/off by ALERT Staff from the Base Station
- Station sends periodic “alive” data, sends an **intrusion alarm** if cabinet is opened
- Notification received by FCDMC, relayed to MCDOT via Email





Questions ?

www.fcd.maricopa.gov

2015 Identified Hazards

- 21 Identified Hazards
 - Placed into four different groups: Structural, Regulatory, Natural, and Human-caused
- Structural
 - Dams and Flood Retarding Structures
 - Overtopping of the CAP and other canals
 - Levees
 - At-grade crossings
 - Transportation corridors



2015 Identified Hazards

- Regulatory
 - Single lot development – no coordinated drainage system
 - Special Flood Hazard Areas
 - In-channel activities (e.g. recreation)
 - Repetitive losses



2015 Identified Hazards

- Natural Hazards
 - Flash flooding
 - High runoff potential of some soils
 - Split flows
 - Alluvial fans
 - Lateral migration and erosion of natural streams
 - Sediment-laden floodwaters
 - Drought



2015 Identified Hazards

- Human-Caused Hazards
 - Changed flow characteristics due to urbanization
 - Changed flow paths due to farming
 - Loss of habitat for both animals and vegetation
 - Subsidence and earth fissures
 - Wildfires (also a Natural Hazard)





Status of 2015 Plan Goals & Action Plan



Status of 2015 Plan Goals & Action Plan

1. Coordination and Accountability
2. Prevention Efforts
3. Property Protection
4. Natural Resource Protection
5. Groundwater Recharge
6. Emergency Services



Status of 2015 Plan Goals & Action Plan

7. Structural Projects
8. Public Information Activities
9. Resource Development
10. Quality of Life
11. Lessons Learned 2015
12. Change of Communications





2020 FMP Update Goals



2020 FMP Update Goals

1. Strengthen the role of Regional Leadership
2. Update and identify hazards in Maricopa County
3. Understand the problems associated with the hazards
4. Establish new goals and actionable timelines
5. Evaluate potential actions and challenges for new goals
6. Prepare a five-year action plan with progress tracking metrics
7. Adopt and Implement the plan
8. Frequent monitoring of progress toward goals



2020 Plan

- Identify hazards
- Understand problems caused by hazards
- Set goals
- Develop/evaluate potential actions
- Prepare five-year plan
- Implement the plan
- Monitor progress





Next Steps



Next Steps

- Committee Commitment
 - Attend all meetings
 - Provide input on FMP
 - Review Draft FMP



Next Steps

- Future Meetings
 - October 24, 2019
 - November 14, 2019
 - December 5, 2019
 - January 16, 2020



Next Steps

- Next Meeting
 - Thursday, October 24, 2019 (FCDX-OPS)
- Identifying hazards for 2020 Update
- Identify problems caused by hazards
- Conduct public and stakeholder involvement – specific audiences

