Floodplain Management Plan 2020 Update
Meeting No. 3 – Set Goals

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Mark Fountain, PE, CFM – Black & Veatch

November 14, 2019
Safety Moment – Safe Travel Planning

• Label your luggage. Do not use your home address or business title.

• Be aware of airport security procedures or changes.

• Check the Apps! Verify before you leave home - changes to the flight schedule.

• Wear comfortable, practical and appropriate footwear and clothing — sandals, t-shirts and shorts won’t keep you warm if you have to exit the plane in the cold. Backup gear if luggage is delayed...
Agenda

• Introduction
• Flood Thread Definition
• Summary of Flood Hazards
• Discussion of Hazards/Problems by Watershed
• - Break
• Discussion of Potential 2020 FMP Goals
• Next Steps
Introduction

• Around the Room
  • FMP Committee Alternates
  • Other Participants / Guests

• Presentation – Maricopa County Emergency Management

• Overview of FMP Meeting #2
Maricopa County Department of Emergency Management (MCDEM)

Roles and Responsibilities

JESUS A. HARO – EMERGENCY SERVICES PLANNER
FLOODPLAIN MANAGEMENT PLAN 2020 – MEETING #3
NOVEMBER 14, 2019

Mitigation, Preparedness, Response and Recovery
MCDEM Vision

Emergency Management seeks to create safer, resilient communities in Maricopa County with the capacity to respond to, cope with, and recover from hazards and disasters.

*Mitigation, Preparedness, Response and Recovery*
Essential Functions of MCDEM

Provide on-going planning to prevent and prepare for large-scale emergencies in Maricopa County.

Conduct training, drills and exercises for natural, man-made, and technological threats and hazards.

Develop and maintain Emergency Operations Plans (EOPs) and Emergency Response Plans (ERPs) for Maricopa County and its cities, towns and fire districts.

Develop and maintain the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), a preventative plan to reduce the risk to people and property.

Maintain and test communications and warning systems to ensure rapid and accurate notifications.

Coordinate response and recovery activities during and after emergencies.

*Mitigation, Preparedness, Response and Recovery*
MCDEM Responsibilities

- Notify various agencies per instructions in the EAPs
- Provide evacuation maps
- Update & maintain notification list
- Help coordinate flood exercises
- Prepare after action reports

*Mitigation, Preparedness, Response and Recovery*
Potential Emergency Conditions

1. Reservoir pool inundation
2. Discharge from the principal outlet
3. Discharge from emergency spillway
4. Potential or actual failure of FRS embankment

Mitigation, Preparedness, Response and Recovery
Communications Flowchart

MCDEM EOC

Emergency Notifications via Everbridge

Activate EOC

Flood Control District of Maricopa County

Protective Action Decisions & Recommendations

Monitor the Situation and Coordinate Support

All Clear

*Mitigation, Preparedness, Response and Recovery*
Emergency Operations Center - EOC

Location

5630 East McDowell, Phoenix, AZ. 85008 – Papago Park Military Reservation

- Emergencies, Exercises, Emergency Notifications (Everbridge, WEA, EAS)
- Incident Command System (ICS)
Everbridge Notifications
<table>
<thead>
<tr>
<th>Incident</th>
<th>Event Type</th>
<th>Date/Time</th>
<th>Username</th>
<th>Position</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Drill 12.01.2015</td>
<td>Flooding</td>
<td>12/1/2015 10:49:26</td>
<td>MCDOT</td>
<td>MCDOT EOC Ope Chief Old</td>
<td>THIS IS A DRILL, Kellis is closed between Hwy 60 and America St, A detour is in place at Cottonwood Lane and Kellis, directing traffic northward to America Street</td>
</tr>
<tr>
<td>Flood Drill 12.01.2015</td>
<td>Flooding</td>
<td>12/1/2015 10:31:17</td>
<td>MCDOT</td>
<td>MCDOT EOC Planning Chief OLD</td>
<td>THIS IS A DRILL, Contacted SW Gas and El Paso Gas, they state that at this time there is no impact to Gas Lines due to flooding</td>
</tr>
<tr>
<td>Flood Drill 12.01.2015</td>
<td>Flooding</td>
<td>12/1/2015 10:05:47</td>
<td>DIRECTOR</td>
<td>MCDOT Director OLD</td>
<td>THIS IS A DRILL, EVACUATION AREA RECOMMENDED TO WICKENBURG INCLUDED CENTER STREET SOUTH TO PALO VERDE DRIVE Drive east to Hassayampa River.</td>
</tr>
<tr>
<td>Flood Drill 12.01.2015</td>
<td>Flooding</td>
<td>12/1/2015 10:05:47</td>
<td>Operations Chief</td>
<td>MCDOT EOC Ops Chief Old</td>
<td><em><strong>THIS IS A DRILL</strong></em>, Notified the following of Sunset FRS at 90% Capacity, BNSF, MCSO, Red Cross, Wickenburg</td>
</tr>
<tr>
<td>Flood Drill 12.01.2015</td>
<td>Flooding</td>
<td>12/1/2015 10:05:47</td>
<td>Operations Chief</td>
<td>MCDOT EOC Ops Chief Old</td>
<td>Evacuations downstream may be necessary, Recommend BNSF halt all rail traffic IVC of Sunset FRS at Wickenburg</td>
</tr>
</tbody>
</table>
Sheltering

Local

- All incidents and emergencies start and end at the local level

MCDEM

- Incident coordination, messaging and resource management

Red Cross, AZVOAD, Maricopa County COAD

- Establish congregate care as requested

*Mitigation, Preparedness, Response and Recovery*
Questions?

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Mitigation, Preparedness, Response and Recovery
Overview of FMP Meeting 2

• Flood Control Financial Status
• Communications and Public Outreach
• Flood Hazard Identification
• Impacts of Hazards During Storms
• Hazards and Problems by Watershed
• Next Steps
Flood Threat Definition

- Review Group Input
- Group Discussion of Definition
- Develop Consensus of Definition
Group Reporting of Flood Threat Definitions

1. Need to be aware of areas that flood. If you know the area floods, know how much water causes the flooding. Watch the gages to know when to take action for locations with known problems.

2. Interruption of transportation and emergency service during storm events

3. Public safety – which encompasses hospitals, emergency services, water treatment facilities, airports

4. Risk to life, structures, and economic development.

5. Risk from mapped and unmapped areas on structures, life, and infrastructure. Land use conversion without consideration of impacts. Mainly in areas that were historically agriculture.
Flood Threat Definitions

- **Group 1 – Agua Fria River Watershed**
  - Wildcat developments – not defined flood protection at all. “I don’t like that wash I am going to build something there to move it”
Flood Threat Definitions

• **Group 2 – Cave Creek/Salt River and Verde River Watersheds**
  - When remediation is needed after a flood event. Flowing water may be inconvenience, but damages to home is a bigger concern
  - New River - New development diverting water to where it previously did not go
  - Public Information Concern – landscaping done to alter the flow of water and the people do not realize they need permits for this
  - Emphasis on Rain Harvesting – zoning issue. Rain harvesting could help attenuate the flow
  - Adoption of GI/LID techniques throughout County
Flood Threat Definitions

**Group 3 – Gila River/Queen Creek Watershed (Part 1)**

- Flood warning, flooded washes – stay out of the washes
- Water in the street is not a flood threat, it is acceptable to a certain level
- Flood threat is a public safety issue
- Floods are not always floodplain related
- Flooding of a home
- Property damage
- Identifying the threat before you build there. Development opportunities
- Evaluate Zone X - New homeowners do not know they are within a potential flood threat because there have never been homes there
Flood Threat Definitions

• **Group 3 – Gila River/Queen Creek Watershed (Part 2)**
  - When you purchase properties, identify and communicate in writing the flood threat to people. (washes, dams, levees, etc.)
  - Unregulated lot splitting
  - Need data – getting more gages in the right places.
  - Incorrect design and elevations of homes based on markers that had subsided in the area
  - Maintenance issues – a lot of time the maintenance is not done, and this is a real flood threat. Infrastructure cannot perform to its optimum potential
Flood Threat Definitions

• **Group 3 – Gila River/Queen Creek Watershed (Part 3)**
  • Data in the last 60 to 80 years the design standards have changed because more information has become available
  • Utilize the data we not have to determine improvements to the design standards
  • FCDMC should lead the charge for design standard changes
Flood Threat Definitions

- **Group 4 – Centennial Wash and Hassayampa River Watersheds**
  - Best Management Practices for flood measures
Flood Threat Definitions

• **Group 5 – Lower Gila River and Waterman Wash Watersheds**
  • Risk to property, life, and infrastructure due to rising floodwaters
  • Having some interface with planning and zoning so there are no hard edges between where events can occur and where people are living
  • Sheet flooding that is not understood
  • Elevated home could create island effect because roadways are not elevated
  • FCDMC should consider similar Approach undertaken by Pima County for ordinances and development concerns
Flood Threat Definition

- Review Group Input
- Group Discussion of Definition
- Develop Consensus of Definition
Flood Threat Definition

- Review Group Input
- Group Discussion of Definition
- Develop Consensus of Definition
Summary of Flood Hazards by Watershed

• Group 1 – **Agua Fria River Watershed**

• **Key Hazards**
  * Alluvial Fans
  * Wildcat Development
  * CAP Canal (U/S Ponding)
  * Inactive Mine (New River)
  * Tailwater
  * Local / Urban Flooding
  * Unmaintained Drainage Facilities
Summary of Flood Hazards by Watershed

- **Group 2 – Cave Creek/Salt River and Verde River Watersheds**

- **Key Hazards (Verde)**
  - Repetitive losses on roadways
  - Head-cutting of roadways and banks
  - Single-lot development (hardscapes/un-natural)

- **Key Hazards (Verde)**
  - Street flooding
  - Building below street grade
  - Outdated infrastructure feeding canals
  - Multiple jurisdictions
  - No areas of impoundment
  - Hardscaped surfaces prevent infiltration
  - Action – Build more storm sewers
Summary of Flood Hazards by Watershed

• **Group 3 – Gila River/Queen Creek Watersheds**

• **Key Hazards**
  • Public safety
    • Hospitals / Emergency Services / Critical Facilities
  • Flash flooding and transportation
Summary of Flood Hazards by Watershed

• Group 4 – **Centennial Wash and Hassayampa River Watersheds**

• **Key Hazards**
  • Limited infrastructure
  • At-grade crossings contribute to transportation flooding
  • Large areas of development
  • Management of alluvial fans (Hassayampa)
Summary of Flood Hazards by Watershed

• **Group 5 – Lower Gila River and Waterman Wash Watersheds**

• **Key Hazards**
  • Gila Bend – areas of risk not within SFHA
  • Major flood events on Gila River
  • Split flow in Hassayampa and Centennial Tributaries
  • At-grade crossings
  • Single-lot developments
  • Suburban-urban interface
  • Tamarisk
  • Wildlife areas
Summary of Flood Hazards by Watershed

- **Additional Hazards – Not identified elsewhere**
  - Urban Redevelopment and Densification
  - Subsidence and Fissures
  - Block Walls / Property Fences
  - Fill in Washes (Vegetative / Earthen)
  - Flood Warning Signage
  - Depth Gauges
Discussions of Hazards by Watershed

- Additional Committee Input for Flood Hazards
- Thoughts after Meeting No.2
- What was missed?
Break – 10 Minutes
Flood Control District Strategic Plan
FY2017-FY2022

**Mission**
The Flood Control District of Maricopa County reduces risk from flooding so that property damage and loss of life is minimized, economic development is supported in a safe and responsible manner, storm water is recognized as a resource for the long-term benefit of the community and environment.

**Vision**
The Flood Control District of Maricopa County is a community partner working with citizens and stakeholders to reduce the risk from flooding. The District accomplishes this through exceptional customer service, technical expertise, fiscally responsible actions and multi-use projects.

**Values**
- Public Interest First
- Open and Honest
- Accountable
- Measure Results
- Relentless Improvement
- Communicate and Collaborate
- All Employees Realize Their Full Potential
Discussion of 2020 FMP Goals

**Goals** are general statements concerning an aspect of the agency’s desired ultimate physical, social and/or economic environment. Goals set the tone for development decisions in terms of the citizens' desired quality of life.

**Objectives** (Action Items) express the kinds of action that are necessary to achieve the stated goals without assigning responsibility to any specific action.
Review of 2015 FMP Goals:

1. *Continue/Expand Public Outreach*
   Public education of flood hazards is essential to protecting lives and property. The District’s existing program is very beneficial and should be expanded and directed to specific audiences of residents, managers of local, state, and federal agencies, and elected officials.

2. *Improve Quality of Life*
   Implementing sound floodplain management practices will improve public safety and property protection and will help residents receive the full benefits of living in Maricopa County. Economic benefits of lower flood risk include reduced residential and commercial flood losses and reduced disruption of transportation and commerce due to flooding.
Discussion of 2020 FMP Goals

Review of 2015 FMP Goals:

3. **Strengthen Role as Regional Leader**
   The District provides floodplain regulation and management for the unincorporated portions of Maricopa County and for 14 of the 24 municipalities. The District also provides technical training and expertise, educational materials, design manuals, and flood warning services. The District’s continued leadership role should further integrate with other regional planning efforts, and the District should actively seek public and private partnerships to maximize the value of infrastructure and support long-term sustainability.

4. **Develop Lists of Resources**
   Severe flooding during the 2014 monsoon season created challenges in meeting the public’s requests for flood-fighting resources and post-flood site visits. The District could improve its response to public information requests by developing pre-programmed web pages and field-ready response kits.
Discussion of 2020 FMP Goals

Review of 2015 FMP Goals:

5. Enforce/Enhance Regulatory Standards

The District is committed to enforcing floodplain regulations and identifying flood hazards. This commitment could be enhanced to incorporate emerging flood control technologies, improve technical analysis tools, and support alternate solutions such as floodproofing or acquisition of flood prone properties.
Discussion of 2020 FMP Goals

Review of 2015 FMP Goals:

6. Protect Natural Resources

Floodplains serve to capture and convey runoff through and away from the county during storms. Storm drainage is one of many important benefits provided by floodplains; other values to the community include:

• Aggregate resources needed for local development
• Cultural resources
• Recreational opportunities
• Visual aesthetics
• Water conservation opportunities
• Wildlife habitat and migration corridors
Discussion of 2020 FMP Goals

Group Breakout – Define 2020 Goals

General Goals:

Watershed Specific:
Next Steps

• FMP Committee Reflection & Action Items
• FMP Committee Meeting #4 – Review Activities
  • Thursday - December 5, 2019
• FMP Committee Meeting #5 – Draft Action Plan
  • Thursday – January 16, 2020
• Public Meeting No.2
  • Thursday – February 13, 2020

• Your participation is requested to ensure FMP success