Floodplain Management Plan 2020 Update
Meeting No. 5 – Draft Action Plan

Michael Fulton – Director, *FCDMC*

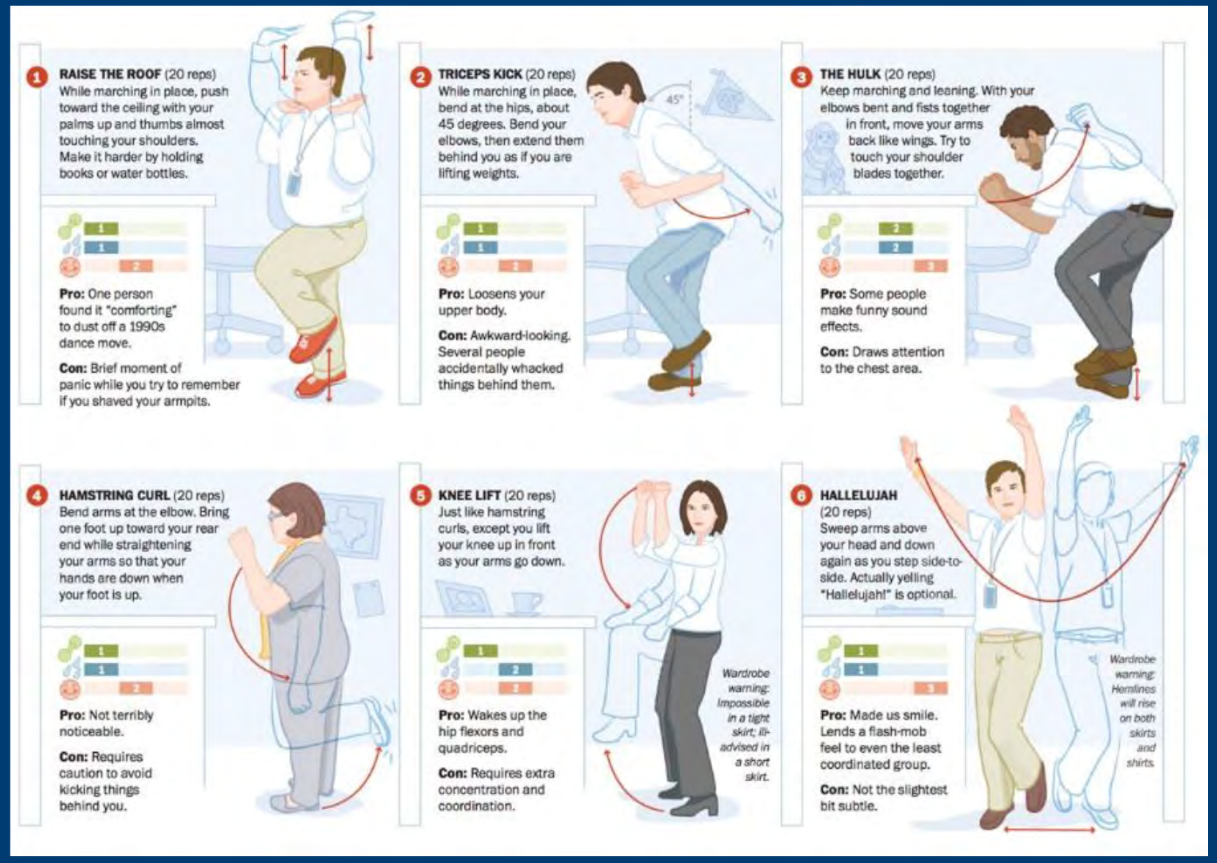
Tim Murphy, PE, CFM– Project Management Branch Manager, FCDMC

Mark Fountain, PE, CFM – *Black & Veatch*

January 16, 2020

Safety Moment – Stretching at the Workstation

- It is recommended that you take a micro break (stand up and/or stretch) for each hour spent at a workstation.
- Vary the work tasks. Break up keyboarding tasks work by doing other job duties or tasks that involve moving around or changing body position. Try to stand up and move around.
- Look away from the screen occasionally and focus your eyes on an object far away.
- Take regular rest breaks to ease muscle aches, eyestrain and stress.
- Relax your muscles, stretch, and change position



Agenda

- Introduction
- Review of Online FMP Survey Results
- Review of FMP Mtg #1 - #4
- - Break
- Action Items by Category
- Prioritize Recommended Action Items
- Implementation Responsibility
- Next Steps

Introduction

- Opening Comments
  - Kelli Sertich & Sharon McGuire Retired December 2019
  - Michael Fulton & Tim Murphy joining FMP Update
- Around the Room
  - FMP Committee Alternates
  - Other Participants / Guests
- Presentations
  - Kevin LaVallee – GIS Supervisor Flood Control/MCDOT

- Customer
- Innovation
- Security
- Leadership

GIS at Flood Control

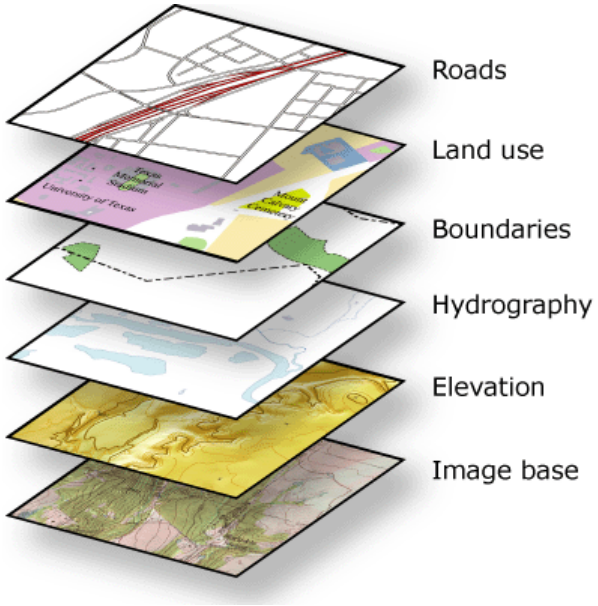
by Kevin LaVallee / GIS Supervisor – Services Branch

1/16/20

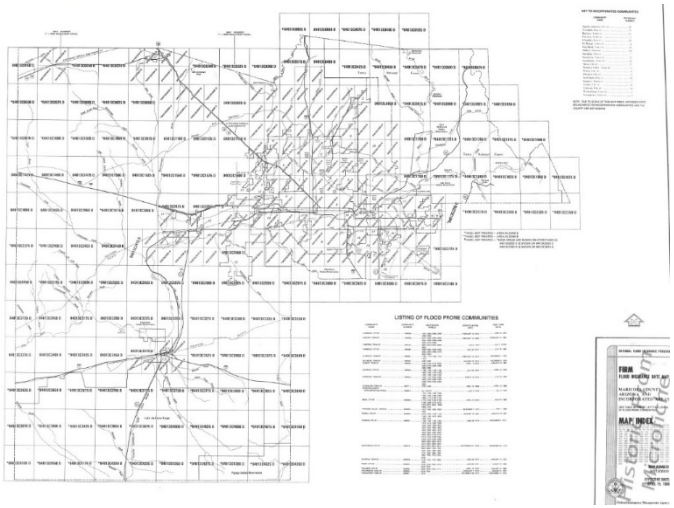
OFFICE OF
ENTERPRISE
TECHNOLOGY

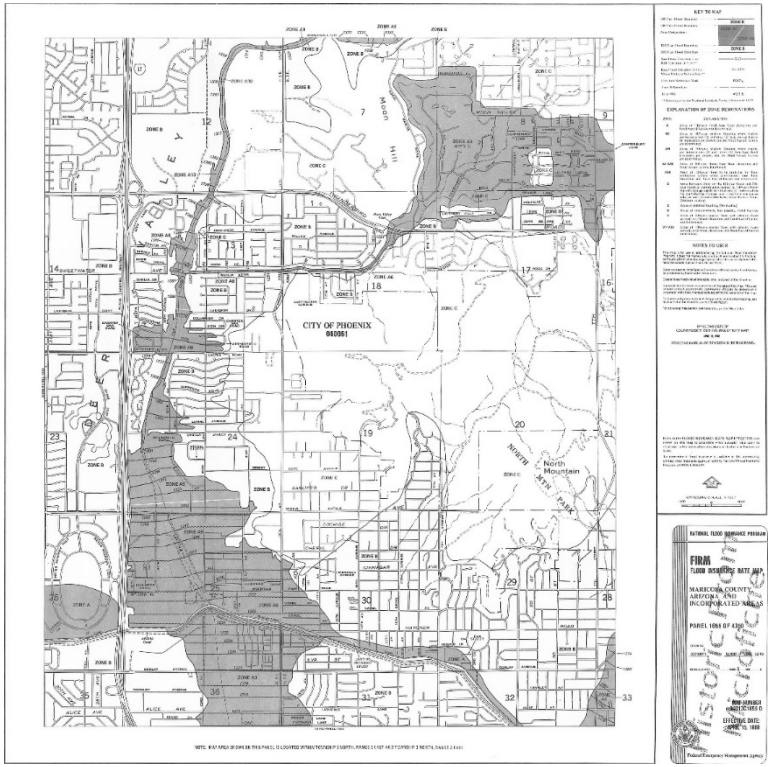
What is GIS?

- Geographic Information Systems
  - Simplest answer, Cartography – map making
  - All components or elements seen on a map are stored separately in a database with Geographic location.
  - Every element can have as much information stored with it as needed.
  - Once data is been created there are endless possibilities to how it can be displayed and analyzed.
  - Example: There are over 1.6 million parcels in Maricopa County, but I want to know how many intersect the delineated floodplains.
  - Answer: 57,759 Note: This is all types, residential, commercial and vacant.

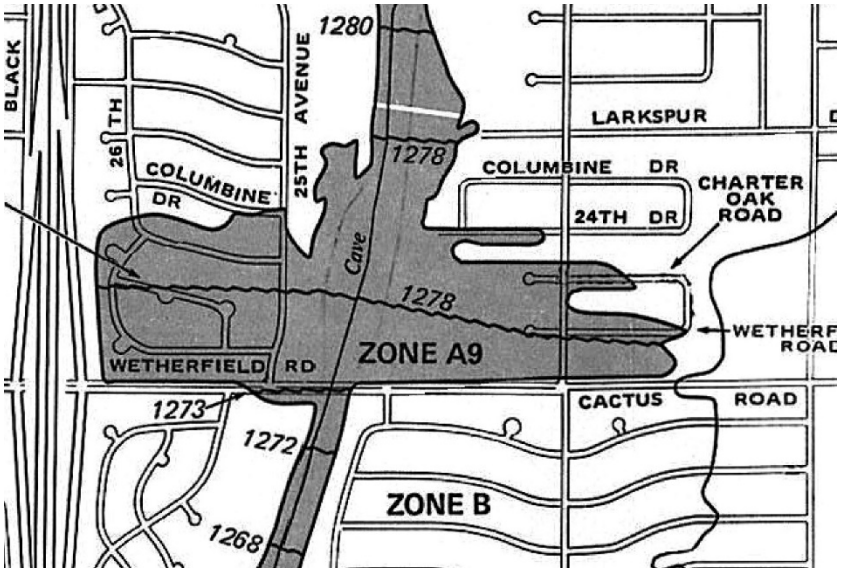


FIRM panels at the beginning.

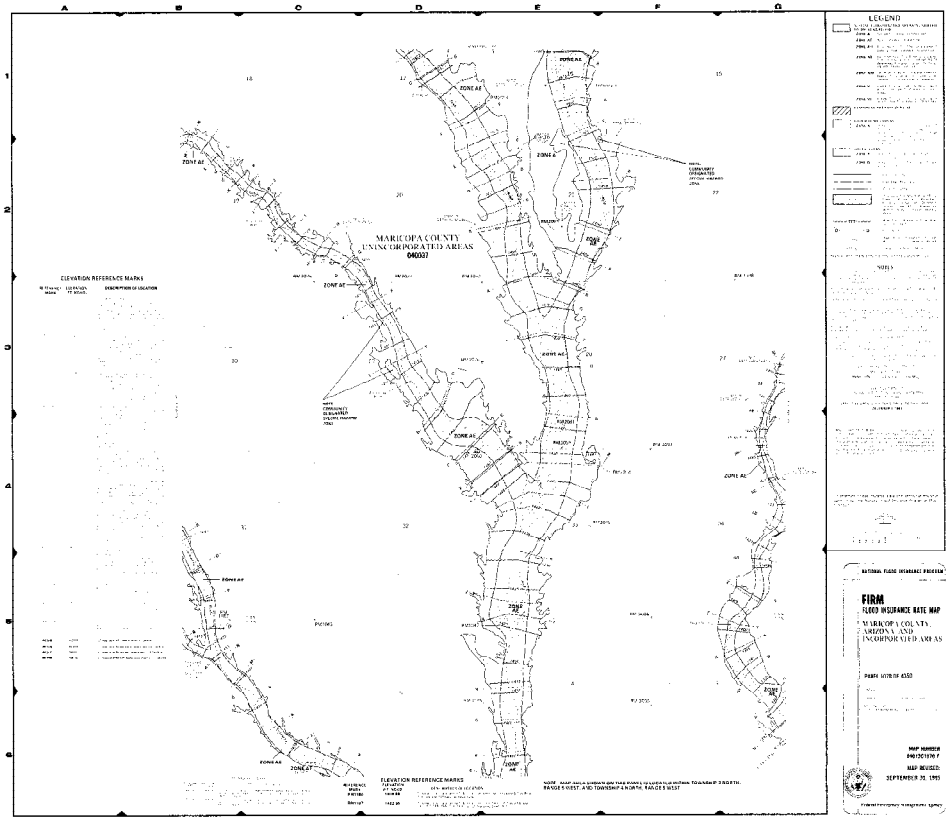


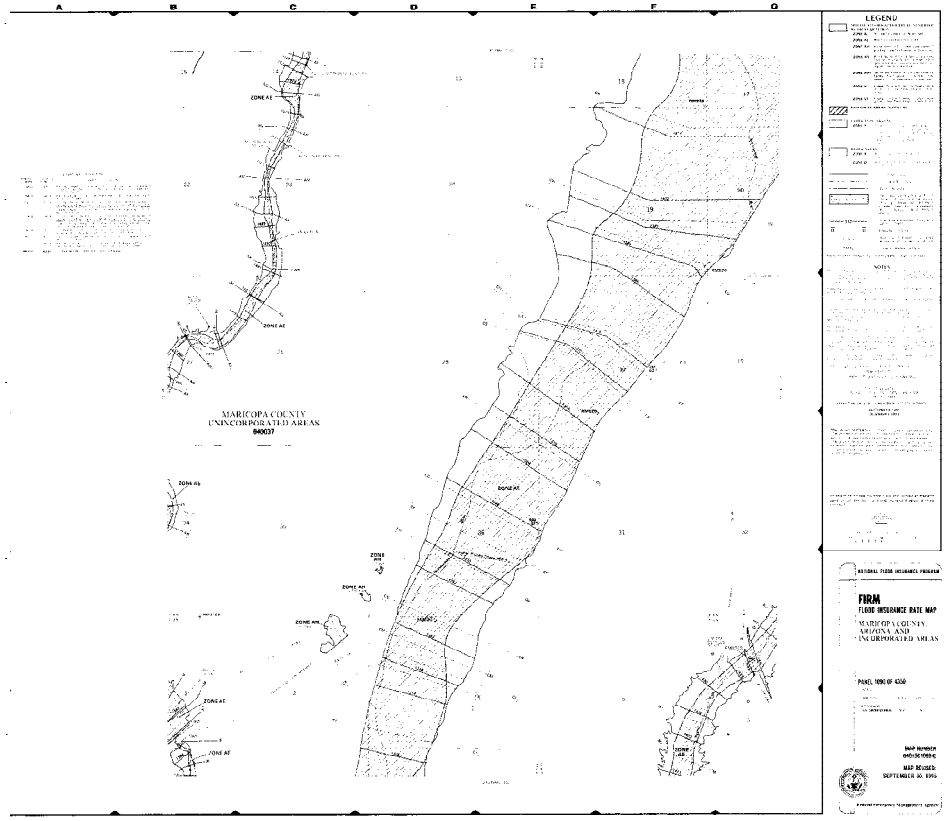


Early issues



As time goes by.

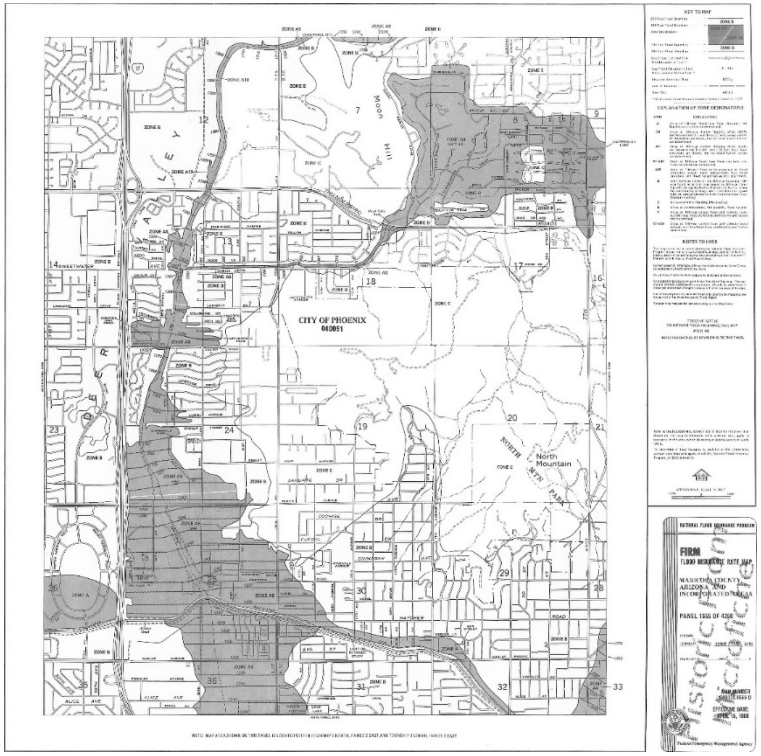


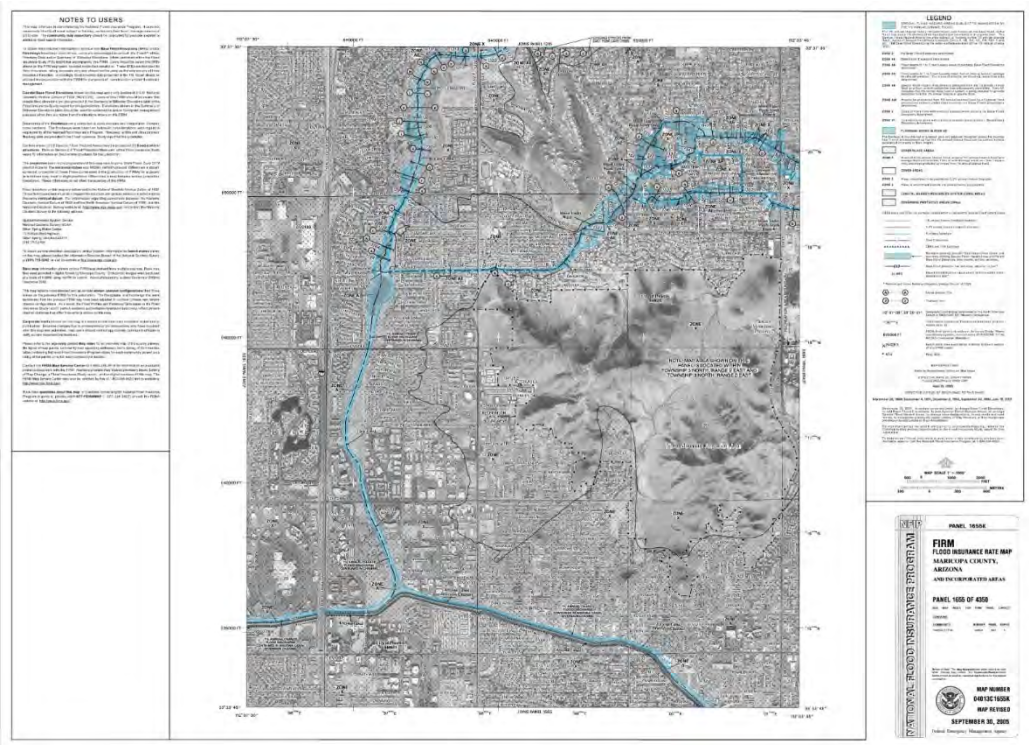


What if?

- Early 2000s
- Noticing many areas that have errors and the only way to correct them is with a LOMR(letter of map revision).
- Flood Control approaches FEMA asking if we could create the desired new DFIRMs in house using our GIS department.
- Taking for granted that we had most of the studies used for the delineations and had being acquiring orthorectified aerials since 2001.
- 2 years later and a lot of work later….

2005 DFIRMs for Maricopa County





Arcmap

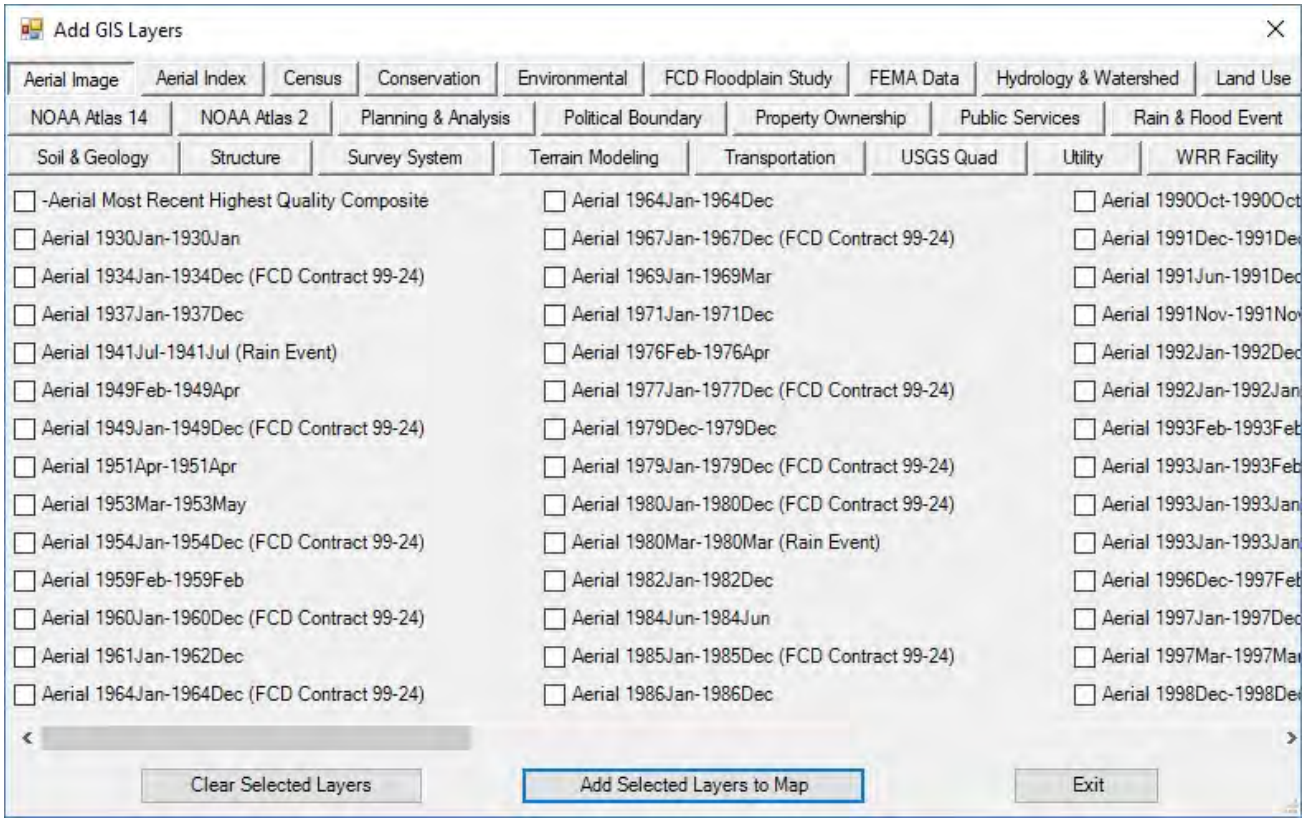
MapTemplate_FMS.mxd - ArcMap
File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help
Table Of Contents
Shared Features
W CACTUS RD
FEMA X
FEMA X (Shaded)
FEMA X (Unshaded)
17

Regulatory initial inquiry

Final build

503-50-036D
W Quail Run Rd
FEMA X (Shaded)
503-50-046A
503-50-045E
FEMA FW
FEMA AE
503-50-045M
503-50-045L
503-50-045G
FEMA X (Shaded)
503-50-045R
503-50-045Q
503-50-045P
503-50-045N
503-50-046C

Flood Control GIS database



Floodplain Viewer

Historical Aerials Application

Web Applications

- GIS main page
  - https://www.maricopa.gov/3942/GIS-Mapping-Applications
- Flood Control Specific
  - https://gis.maricopa.gov/FCD/FloodplainViewer/
- Historical Aerials
  - https://gis.maricopa.gov/GIO/HistoricalAerial/index.html

The End

- Contact information:
  - Kevin.LaVallee@Maricopa.gov
  - 602-506-2954

Questions?

Review of Online FMP Survey Results

Overview of Feedback:

- **59 Surveys Completed**
- Collected from 10/24/19 – 12/6/2019*

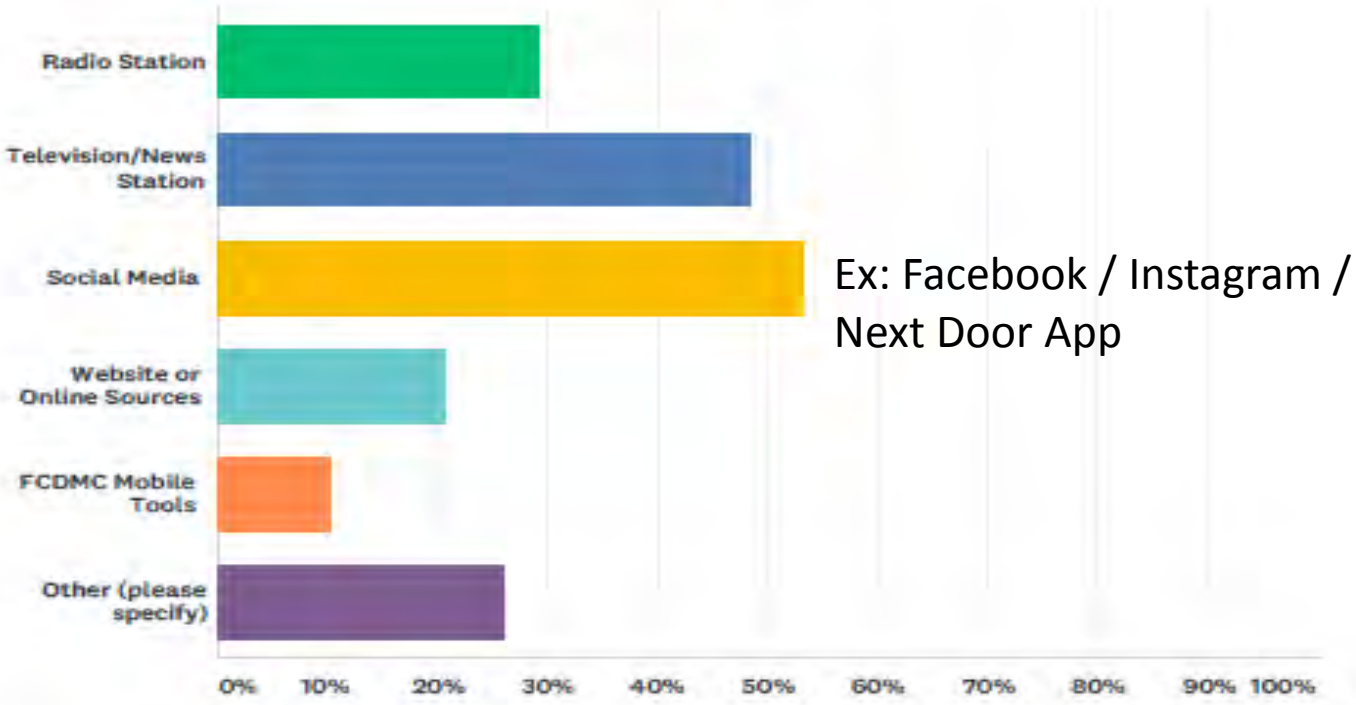
Flooding Hazards / Drainage Problems Theme:

- Impassible Roads & Street Closures
- Overwhelming Drainage
- Adverse Development Impacts

Floodplain Management Plan 2020 Update - Maricopa County

Q2 How do you receive information about flooding? Check all that apply

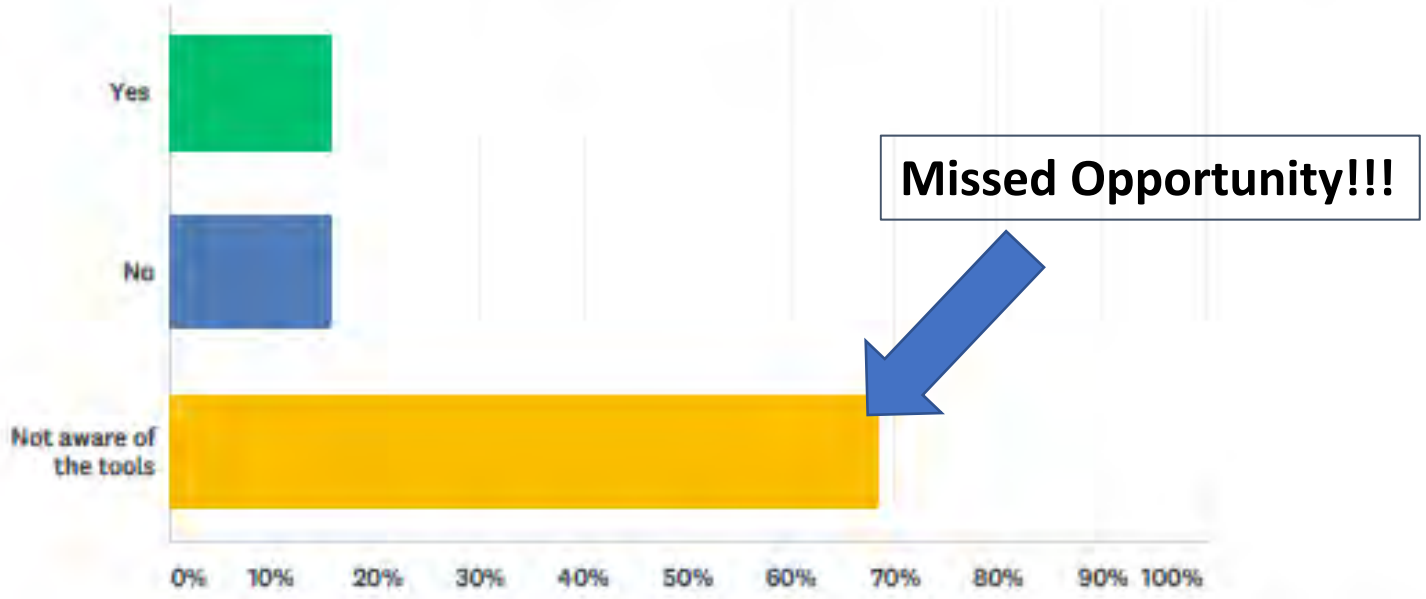
Answered: 58 Skipped: 1



ANSWER CHOICES	RESPONSES	
Radio Station	29.31%	17
Television/News Station	48.28%	28
Social Media	53.45%	31
Website or Online Sources	20.69%	12
FCDMC Mobile Tools	10.34%	6
Other (please specify)	25.86%	15
Total Respondents: 58		

Q3 Have you used the District's Mobile Tools (Alert.fcd.maricopa.gov) to track storms/flooding?

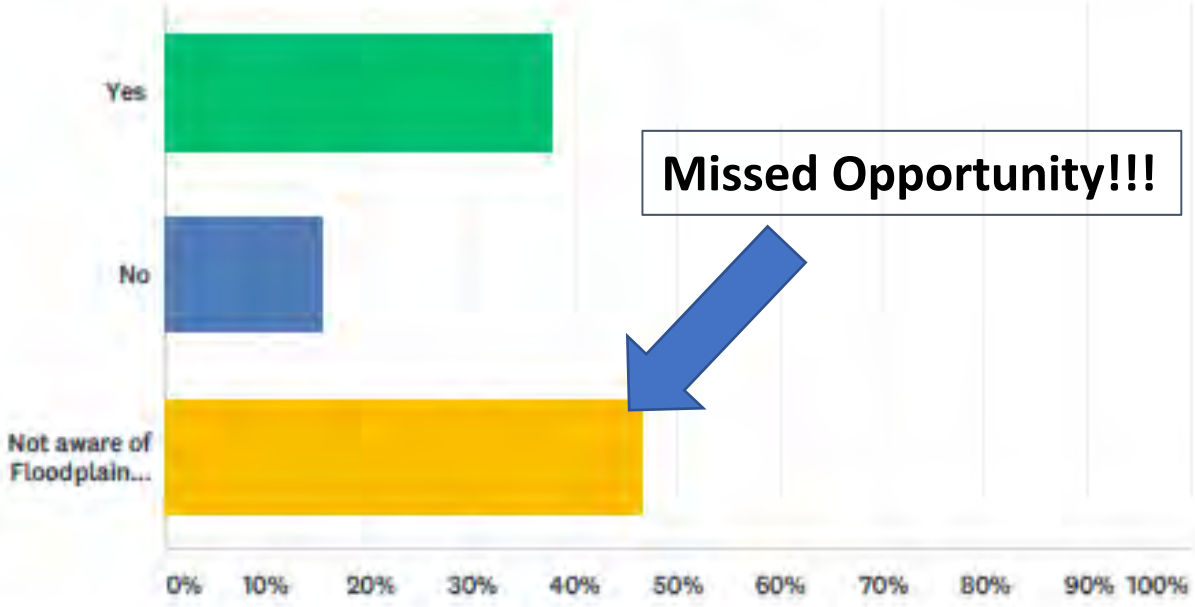
Answered: 57 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	15.79%	9
No	15.79%	9
Not aware of the tools	68.42%	39
TOTAL		57

Q4 Have you used the Floodplain Viewer on the District's website to check if your home is in a FEMA designated floodplain?

Answered: 58 Skipped: 1

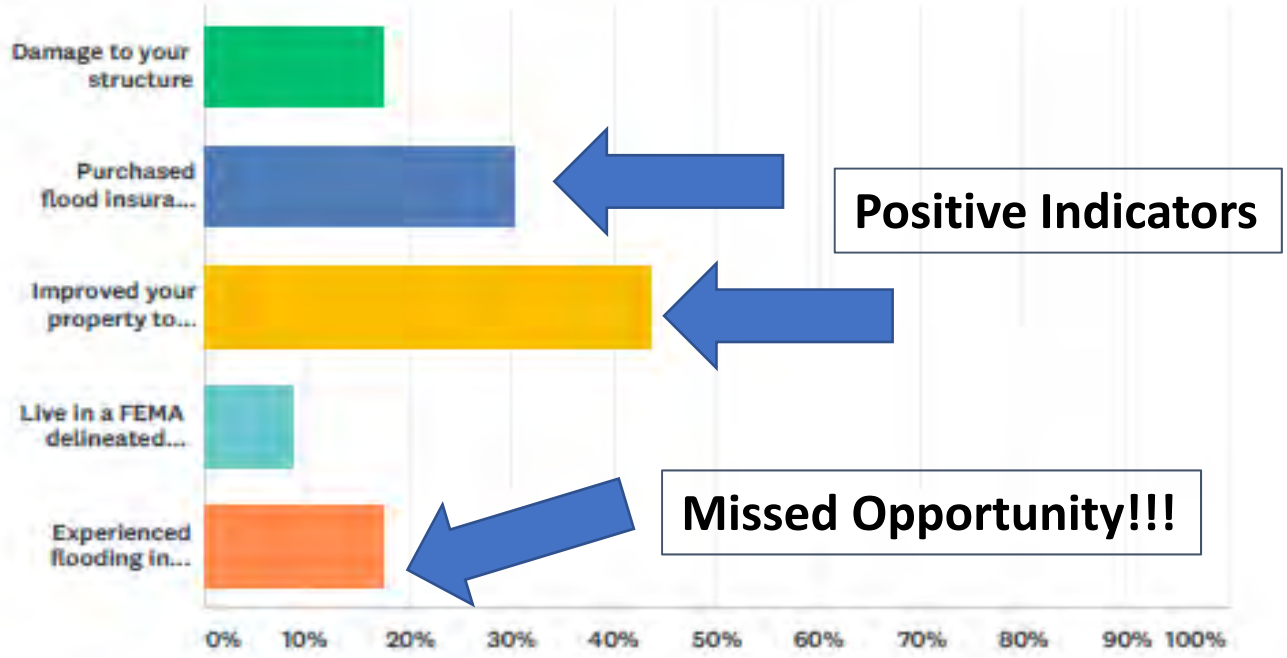


ANSWER CHOICES	RESPONSES	
Yes	37.93%	22
No	15.52%	9
Not aware of Floodplain Viewer	46.55%	27
TOTAL		58

Floodplain Management Plan 2020 Update - Maricopa County

Q5 Check all that apply

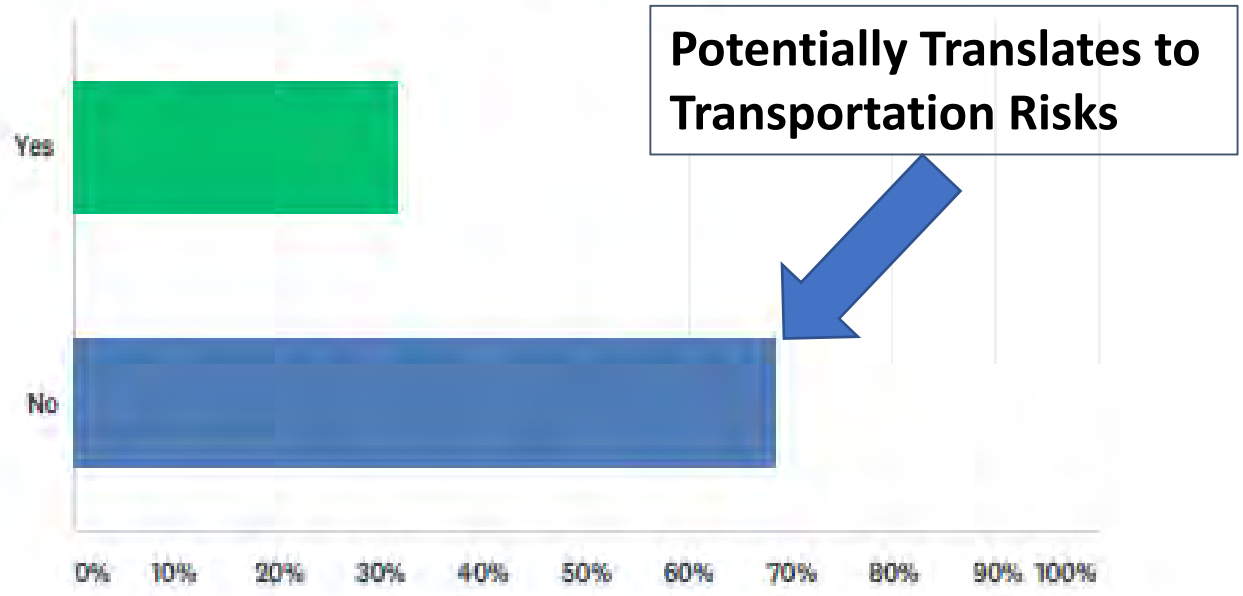
Answered: 23 Skipped: 36



ANSWER CHOICES	RESPONSES	
Damage to your structure	17.39%	4
Purchased flood insurance for structures	30.43%	7
Improved your property to prevent flooding	43.48%	10
Live in a FEMA delineated floodplain	8.70%	2
Experienced flooding in your home (photos can be uploaded to Report-a-Flood)	17.39%	4
Total Respondents: 23		

Q6 Have you ever been stranded trying to leave or return from home due to flooding?

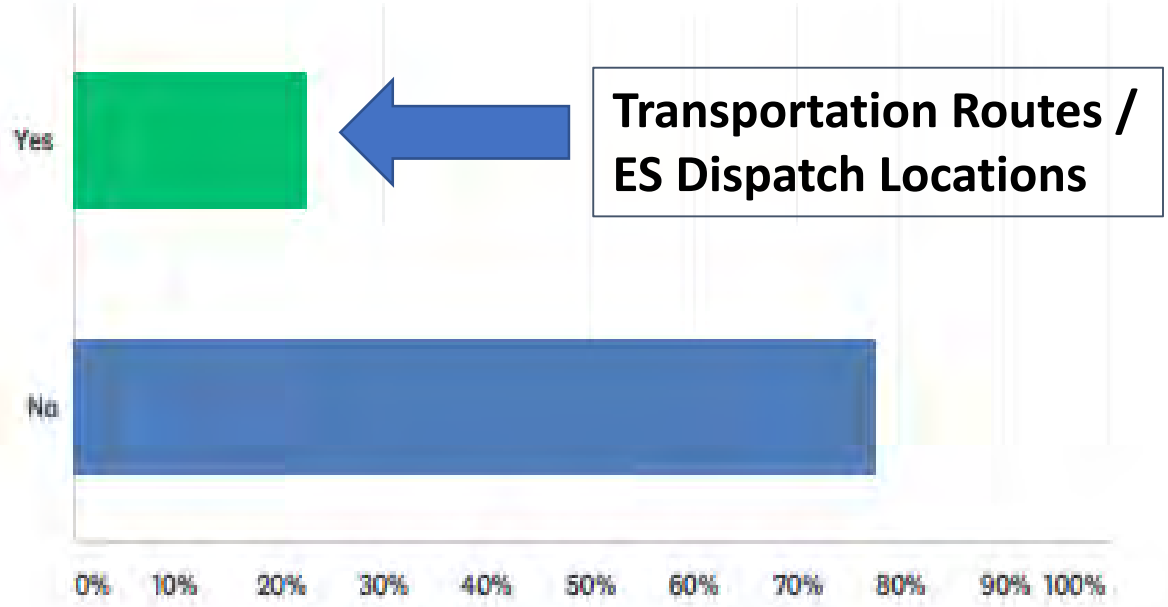
Answered: 57 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	31.58%	18
No	68.42%	39
TOTAL		57

Q7 Have emergency services in your area been delayed due to flooding?

Answered: 53 Skipped: 6



ANSWER CHOICES	RESPONSES	
Yes	22.64%	12
No	77.36%	41
TOTAL		53

Q8 Is there anything else you would like us to know to help shape the Floodplain Management Plan?

Answered: 16 Skipped: 43

#	RESPONSES	DATE
1	Get North Valley Parkway a damn bridge already!!	12/2/2019 3:45 PM
2	No	12/2/2019 12:48 PM
3	There are so many new communities north of Norterra. We need the roads and infrastructure to support that and having a big flood plane right in our path is not only a hassle but a danger to the residents	12/2/2019 12:47 PM
4	fix north valley parkway north of dixilleta! by city of phoenix waste transfer plant Horrible for us 85085 residents	12/2/2019 5:00 AM
5	Although I haven't been stranded by flooding, one time I had to drive approximately 40 additional miles to get around flooding on McDowell Mountain Road between Fountain Hills and Rio Verde, north of the park entrance.	11/4/2019 11:57 PM
6	there needs to be more funding for small improvement projects and also policy about cleaning of storm drains during monsoon season.	11/2/2019 9:50 PM
7	With all the large developments going in it seems the way the washes run is being altered. Individual home owners have no influence compared to big developers with deep pockets.	11/2/2019 4:27 AM
8	When we moved in to our house in 2010, it was not in the flood plain. Then the flood plain changed & we are forced to buy insurance, which doubled our premium. Our house was built in 1999 & has never flooded.	10/31/2019 11:58 PM
9	Can any thing be done to improve problem?	10/31/2019 9:01 PM
10	FEMA requires me to pay for flood insurance in the event of a 100 year flood. A total rip-off. My yard couldn't flood as it is on a pretty steep plain.	10/31/2019 7:23 PM
11	Not at this time.	10/31/2019 1:49 AM
12	With new home developers in the Laveen area please make them and buyers aware of potential flooding areas	10/31/2019 1:01 AM
13	please remove washes draining onto roadways. thank you.	10/30/2019 9:46 PM
14	When the floodplain map is suddenly updated to include a property that was not previously on the floodplain map 1) the property owner would appreciate notice and 2)the property owner would like some assistance in securing an elevation map...	10/25/2019 8:39 PM
15	Coordinate with the City of Phoenix PRIOR to new development being built. Huge gap between FCD and COP Planning.	10/24/2019 10:19 PM
16	development seems to change the character of flooding events so it is hard to avoid minor damage.	10/24/2019 9:10 PM

Break – 10 Minutes

Review of FMP Committee Meetings

Meeting 1

- Review of Featured District Programs
  - Hazard Identification Studies and Plans, Programs/Projects – Don Rerick
  - Operations and Maintenance – Charlie Klenner
  - Permitting and Delineations – Kathy Regester
  - Engineering Division Program Highlights – Scott Vogel
  - ALERT and Flood Response Plans – Steve Waters
- Review of Hazard in 2015 Plan
  - 21 total identified hazards within four categories – structural, regulatory, natural, and human-caused
- Status of 2015 Plan Goals & Action Plan

Review of FMP Committee Meetings

Meeting 2 – Identify Hazards

- Review of Featured District Programs
  - District Budget – Karen Scott
  - Communications and Public Outreach – Lisa Blyler
- Group breakout to define "flood threat" and identify flood hazards
  - Each group provided information as to what they feel a "flood threat" is.
  - Flood hazards were identified as part of the group breakout for each FMP watershed.
  - District Project Managers came in to answer particular questions about the watersheds being evaluated for flood hazards.
  - Flood hazards included, but not limited to: alluvial fans, wildcat development, unmaintained drainage facilities, transportation corridors (loss of crossings/washout), invasive species of vegetation, amongst other group inputs.

Review of FMP Committee Meetings

Meeting 3 – Set Goals

- Review of Maricopa County Department of Emergency Management (MCDEM)
  - Jesus Haro provided background into (MCDEM)
- Review of definitions provided for "flood threat"
  - Group discussion on the different definitions from each group. The FMP team took the comments to provide a concise definition in FMP Meeting #4.
- Finalized the Flood Hazards identified by each group
  - Allowed groups to revisit the list they previously provided to include new flood hazards not thought of previously or remove ones they did not agree with anymore.
- Brainstorm FMP 2020 Goals
  - Review of the 6 main goals within the 2015 FMP
  - Group breakout to provide new goals for the 2020 FMP Update

Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- Maricopa County Parks and Recreation Department
  - Ken Vonderscher provided a review of how the Parks and Recreation Department interacts with the District
- Central Arizona Conservation Alliance (CAZCA)
  - Dr. Aireona Raschke provided information about multi-use potential for floodplains and tools that CAZCA has for future land use planning

Flood Threat Definition – FMP 2020

Potential risk to life, property, environment, economy, structures, or infrastructure anticipated from a flood event which causes interruptions to a normal operating condition or way of life.

Review of FMP Committee Meetings

Meeting 4

- 2020 FMP Final Goals
  - REVISED Goal 1: The District will work with transportation agencies and the communities to address public concerns on transportation routes that result in interruptions to normal operating conditions, delays of emergency services, negatively impact the economy, or pose safety risks due to flooding.
  - REVISED Goal 2: The District shall work in partnership with stakeholders to evaluate its various programs, fiscal opportunities, and funding processes to assure funds continue to be invested back into the communities.

Review of FMP Committee Meetings

Meeting 4

- 2020 FMP Final Goals
  - REVISED Goal 3: The District shall work with stakeholders and local organizations on consistent county-wide technical and educational materials for flood preparedness with materials available in physical locations as well as electronically.
  - REVISED Goal 4: The District shall continue pursuing nature-based solutions for flood mitigation, working with stakeholders, to identify and acquire open space in conjunction with flood control projects.
  - REVISED Goal 5 – The District shall continue to perform duties as the regional leader in floodplain management. District shall provide and communicate information, guidelines, and regulations to agencies and communities throughout Maricopa County and to adjacent Counties.

Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- **Goal 1** – The District will work with transportation agencies and the communities to address public concerns on transportation routes that result in interruptions to normal operating conditions, delays of emergency services, negatively impact the economy, or pose safety risks due to flooding.
  - Identify and categorize locations of risks and concern
  - Develop a matrix of prioritization
  - Design and funding options
  - Establish triggers or warnings for areas to avoid
  - Additional cost sharing partnerships
  - Partnership with emergency services
  - Coordination with transportation agencies for crossing risks

Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- **Goal 2** – The District shall work in partnership with stakeholders to evaluate its various programs, fiscal opportunities, and funding processes to assure funds continue to be invested back into the communities.
  - Regular review cycle for funding status and community evaluation
  - FCDMC to communicate availability of Federal funding
  - Funding based communication to the community
  - Develop definition of process

Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- **Goal 3** – The District shall work with stakeholders and local organizations on consistent county-wide technical and educational materials for flood preparedness with materials available in physical locations as well as electronically.
  - Identifying additional physical locations for documents
  - Combine technical resource materials with emergency service information
  - Utilities and points of contact for emergency response
  - Outreach to HOA's for flood preparedness and wash management
  - Characterization of acceptable vegetation within wash corridors
  - How to maintain drainage infrastructure after it is built
  - Illustrative literature and "how to" maintenance videos
  - Home and garden show booth to present and educate
  - Support check dams and water retention for recharge
  - Distribution of Green Infrastructure and Low Impact Development literature
  - Communicate / educate on adverse impacts of walls
  - Citizen rain gage program

Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- **Goal 4** – The District shall continue pursuing nature based solutions for flood mitigation, working with stakeholders, to identify and acquire open space in conjunction with flood control projects.
  - Coordination and cooperation with Communities and Stakeholders
  - Prioritization for areas poised for risk
  - Prioritize locations where floodplain delineations and re-delineations are needed
  - Additional identification of flood risks
  - Best practice for locations where recharge locations are best suited
  - Connectivity of open space

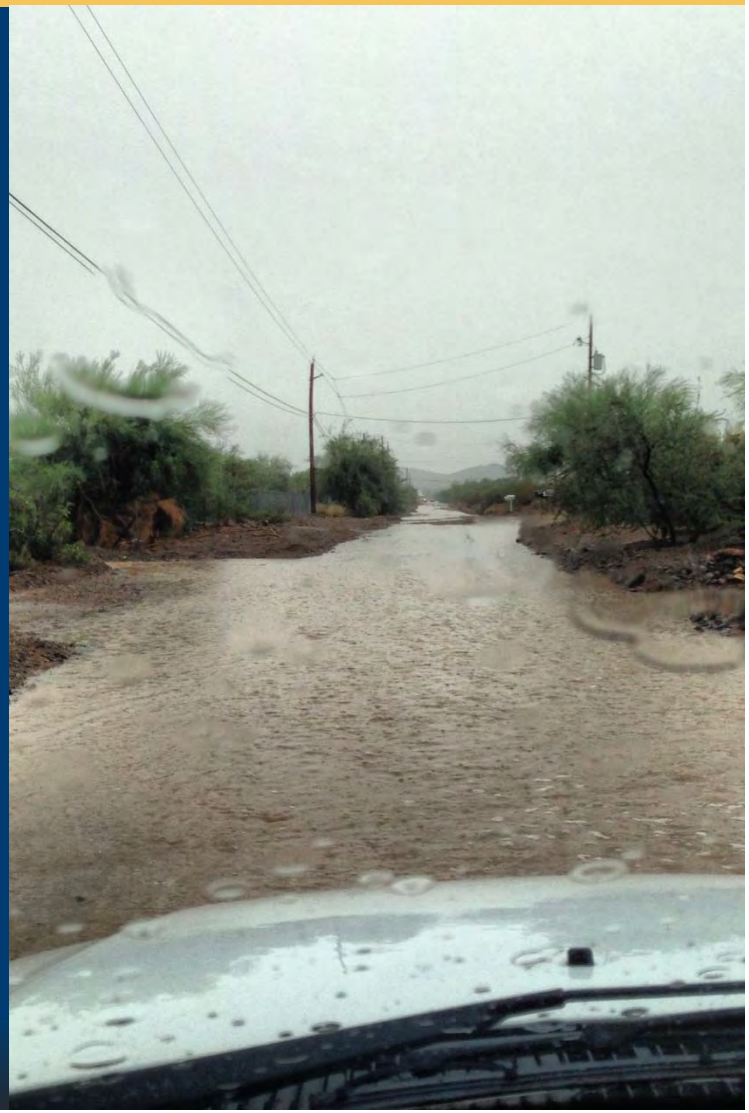
Review of FMP Committee Meetings

Meeting 4 – Review Possible Activities

- **Goal 5** – The District shall continue to perform duties as the regional leader in floodplain management. District shall provide and communicate information, guidelines, and regulations to agencies and communities throughout Maricopa County and to adjacent Counties
  - Annual meeting and communication of changes in regulations and policies
  - Review current information and guidelines available
  - Define a review cycle for literature
  - Identify regulatory authority
  - Incorporate agency best practices
  - Permitting enforcement and regulation
  - Changes of Section 404 and protection of open space

Recommend Action Items by Category

- Preventative
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information



Prioritize Recommended Action Items /

Identify Implementation Responsibility

		2020 FMP Goals					Action Item Categories						Responsible Parties								
		Public concerns for transportation	Partnerships for community investments	County-wide technical and education materials	Open space preservation / flood mitigation	Continue role as regional leader	Preventative	Property Protection	Natural Resource Protection	Emergency Services	Structural Projects	Public Information	FCDMC PPM Division	FCDMC - Engineering Division	FCDMC Operations & Maintenance Division	FCDMC - FMS Division	FCDMC - Executive Division (Ombudsman)	FCDMC - Public Information and Outreach Division	Maricopa County Planning & Development	Maricopa County Department of Transportation	Partner Cities / Agencies
		1	2	3	4	5															
ID	Action																				
1	Identify and categorize locations of risks and concern																				
2	Develop a matrix of prioritization																				
3	Design and funding options																				
4	Establish triggers or warnings for areas to avoid																				
5	Additional cost sharing partnerships																				
6	Partnership with emergency services																				
7	Coordination with transportation agencies for crossing risks																				
8	Regular review cycle for funding status and community evaluation																				
9	FCDMC to communicate availability of Federal funding																				
10	Funding based communication to the community																				
11	Develop definition of process and evaluation																				
12	IGAs for fiscal partners																				
13	Identifying additional physical locations for documents																				
14	Combine technical resource materials with emergency service information																				
15	Utilities and points of contact for emergency response																				
16	Outreach to HOA's for flood preparedness and wash management																				
17	Characterization of acceptable vegetation within wash corridors																				
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21	Support check dams and water retention for recharge																				
22	Distribution of Green Infrastructure and Low Impact Development literature																				
23	Communicate / educate on adverse impacts of walls																				
24	Citizen rain gage program																				
25	Coordination and cooperation with Communities and Stakeholders																				
26	Prioritization for areas poised for risk																				
27	Prioritize locations where floodplain delineations and re-delineations are needed																				
28	Additional identification of flood risks																				
29	Best practice for locations where recharge locations are best suited																				
30	Connectivity of open space																				
31	Annual meeting and communication of changes in regulations and policies																				
32	Review current information and guidelines available																				
33	Define a review cycle for literature																				
34	Identify regulatory authority																				
35	Incorporate agency best practices																				

Next Steps

- Draft Floodplain Management Plan Update
  - Mid February 2020
- Committee and Public Review of Draft FMP
- Public Meeting No.2
  - Thursday – February 13, 2020
- Update Completion Process
  - FCAB – March/April 2020
  - Board of Directors / Supervisors – June 2020