



BOARD OF SUPERVISORS AGENDA ITEM REPORT

Requested Board Meeting Date: April 7, 2020

Title: Floodplain Management Plan Resolution

Introduction/Background:

The Regional Flood Control District (District) created a Floodplain Management Plan (Plan) for unincorporated Pima County for floodplain management and flood control capital improvements as directed by Resolution 2018-FC6. In order for this Plan to be appropriately acknowledged by the Federal Emergency Management Agency (FEMA), the Plan must be approved by the Board of Supervisors (BOS), sitting as the Flood Control District Board of Directors (Board), following a public process. Today's Resolution is to approve the Plan as recommended by the stakeholder Planning Committee.

Discussion:

The District currently participates in FEMA's Community Rating System (CRS) and is considered a Class 5 community. This ranks the County as among the best in the nation and results in Pima County residents' ability to receive up to a 25% flood insurance premium discount. The creation of this Plan has allowed the County and the District to engage the public in a discussion about flood hazards and the appropriate structural and non-structural strategies to mitigate these hazards. The goal of this process was to create a comprehensive plan, by watershed, that will direct both floodplain management and capital improvement priorities. This Plan does not supplant the annual Capital Improvement Program (CIP) budget process, it provides a road map for CIP planning purposes. This Plan also does not contain any new regulations, it provides direction on new policies to consider, which will follow their own process.

Conclusion:

In addition to furthering the District's goal of providing comprehensive floodplain management services for the maximum benefit to County residents, the Plan and the process to create it helped inform the public about flood hazards as well providing an opportunity for discussion regarding the District's strategy for addressing these hazards. Successful completion of this process and adoption of this resolution will provide an opportunity for the County to further improve its CRS ranking, potentially elevating the community to one of the top 15 in the country. Although not guaranteed until approved by FEMA, the Plan has been written to meet the prerequisite criteria for a Class 4 community. Improving the CRS ranking will increase the flood insurance premium discounts that residents enjoy.

Recommendation:

The District recommends that the Board adopt this resolution approving the Plan.

Fiscal Impact:

There is no impact to the General Fund, and this process will be administered by existing District staff. Successful adoption of this Plan will reduce flood insurance premiums for those Pima County residents that are required to, or desire to, obtain flood insurance.

Board of Supervisor District:

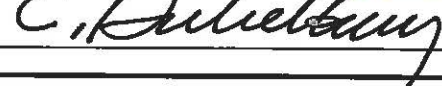
- 1 2 3 4 5 All

Department: Regional Flood Control District Telephone: 724-4600

Contact: Greg Saxe, CRS Coordinator Telephone: 724-4633

Department Director Signature/Date: 

Deputy County Administrator Signature/Date:  3/17/2020

County Administrator Signature/Date:  3/17/2020

DATE: March 16, 2020

TO: C. H. Huckelberry
County Administrator

FROM: 
Suzanne Shields, P.E.
Director

SUBJECT: Floodplain Management Plan Adoption

The Regional Flood Control District (District) has developed a Floodplain Management Plan for unincorporated Pima County that meets or exceeds the National Flood Insurance Program (NFIP) standards (see attached Executive Summary). Adoption of this plan by the Board of Directors will allow the District to meet prerequisites for Pima County to obtain a Class 4 designation under the NFIP's Community Rating System.

Currently, Pima County is a Class 5 community, meaning that residents and property owners can enjoy up to a 25% reduction in their flood insurance policy premiums. The current combination of the District's efforts for higher regulatory standards, outreach activities, floodprone land acquisition, drainage infrastructure construction and maintenance, results in a score that would produce a better rating and increase the flood insurance discount available, but the County cannot improve beyond a Class 5 without an adopted Floodplain Management Plan.

The NFIP guidelines for the creation of a Class 4 compliant Floodplain Management Plan emphasizes the need for a public process and focus on procedures. The procedural steps, as outlined in the attached Executive Summary, creates a roadmap to guide a community through a number of steps to evaluate the community's flood hazards, assess exposure to damage, and consider alternatives to address these issues. The alternatives are activities or actions that the County can take to improve how the floodplains are managed and how risk and flood damage potential can be mitigated.

With respect to the organization of the Floodplain Management Plan, the District has chosen to build on the statutorily required and previously published Comprehensive Program Report, which is prepared every five years, and presents a summary of the programs and activities the District has implemented during the five-year period. Since the Floodplain Management Plan serves to look forward five years, by building on the Comprehensive Program Report, the future iterations of the Floodplain Management Plan will report on what was accomplished over the previous five years and identify activities to move forward over the next five years.

The planning process was based on watersheds, which allowed the Planning Committee and the public to consider different activities for different watersheds, while also allowing some activities to occur on a countywide basis. The result is an Action Plan, which will provide direction to the District over the next five years for various programs, including the Regulatory Program, Program for Public Information, Capital Improvement Program, and Interdepartmental and Interjurisdictional coordination. It does not supplant the normal Capital Improvement Program planning process, including basin studies, consultation with neighboring communities via the Flood Control District Advisory Committee or budget, nor does it contain code revisions, which must be considered independently.

Please let me know if you any questions

SS/tj

Attachment

c: Carmine DeBonis, Deputy County Administrator – Public Works
Eric Shepp, P.E., Deputy Director – Regional Flood Control District
Andy Dinauer, P.E., Deputy Director – Regional Flood Control District

RESOLUTION NO. 2020-FC_

A RESOLUTION OF THE PIMA COUNTY FLOOD CONTROL DISTRICT BOARD OF DIRECTORS APPROVING A FLOODPLAIN MANAGEMENT PLAN AS PART OF THE NATIONAL FLOOD INSURANCE PROGRAM'S COMMUNITY RATING SYSTEM

The Board of Directors of the Pima County Flood Control District finds:

1. Pima County has experienced severe flood disaster events causing significant damage to public and private property, including homes and businesses, resulting in a need for insurance coverage for those who may be exposed to flood risks.
2. Relief from the economic hardships of flood damage is available in the form of federally subsidized flood insurance as authorized by the National Flood Insurance Act of 1968 and its subsequent amendments.
3. The National Flood Insurance Program (NFIP) is a federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding.
4. The Pima County Regional Flood Control District (District) participates in the NFIP's Community Rating System (CRS) which provides a framework necessary for a community's actions and efforts in meeting the three goals of: (1) reduction of flood losses; (2) facilitation of accurate insurance ratings; and (3) promotion of awareness of flood insurance.
5. As part of the CRS, communities are encouraged to exceed minimum standards and in doing so qualify for a reduction in flood insurance premiums for policy holders. Based on the District's floodplain management efforts, residents in unincorporated Pima County currently enjoy a premium discount of up to 25%.
6. The Floodplain Management Plan (FMP) was a committee driven planning process that included stakeholder involvement, hazard assessment, and identification of mitigation activities important to flood safety and the protection the natural beneficial functions of floodplains.
7. The District desires to further exceed the minimum NFIP standards through the implementation of the FMP.

8. A component of the FMP incorporates the previously approved Program for Public Information, Repetitive Loss Area Analysis, Flood Insurance Coverage Assessment and a Coverage Improvement Plan that requires promoting of the purchase of or an increase in coverage of flood insurance.

9. Pima Prospers Flood Control and Drainage Element Goal 2 Implementation Measure D is "Create and adopt a Watershed Management Plan which identifies the watersheds impacting Pima County, their drainage characteristics, regulatory and infrastructure needs."

10. The Board adopted Resolution No. 2018-FC6 that approved the initiation of the process to develop this Floodplain Management Plan.

NOW, THEREFORE, BE IT RESOLVED, that the District's Board of Directors hereby:

1. Approves the Floodplain Management Plan recommended by the Planning Committee; and
2. Directs the District to engage the Planning Committee consisting of staff and stakeholders per NFIP guidelines during implementation;
3. Authorizes District staff to do all things necessary to implement the Plan.

Passed and adopted, this ____ day of _____, 2020.

Chairman, Board of Directors

ATTEST:

Clerk of the Board

APPROVED AS TO FORM:



Kell Olson, Deputy County Attorney

FLOODPLAIN MANAGEMENT PLAN

EXECUTIVE SUMMARY

On October 2, 2018, the Board of Supervisors (Board), sitting as the Board of Directors for the Flood Control District (District), adopted Resolution No. 2018-FC6, which authorized the District to develop a Floodplain Management Plan for unincorporated Pima County. The Resolution further authorized the District to engage the public in the process, including the formation of a Planning Committee that would help develop the Floodplain Management Plan. The goal of this Resolution was to create a Floodplain Management Plan that meets or exceeds the National Flood Insurance Program (NFIP) standards and that can be considered as a sufficient prerequisite for Pima County to obtain a Class 4 designation under the NFIPs Community Rating System.

Currently, Pima County is a Class 5 community, meaning that residents and property owners can enjoy up to a 25% reduction of their flood insurance policy premiums. The current combination of the District's efforts for higher regulatory standards, outreach activities, floodprone land acquisition for open space, and drainage infrastructure construction and maintenance results in a score that would produce a better rating and increase the flood insurance discount available, but the County cannot improve beyond a Class 5 without a Floodplain Management Plan.

The NFIP guidelines for the creation of a Class 4 compliant Floodplain Management Plan emphasizes the need for a public process and focus on procedures. The procedural steps, as outlined below, create a roadmap to guide a community through a number of steps to evaluate the community's flood hazards, assess exposure to damage, and consider alternatives to address these issues. The alternatives are activities or actions that the County can take to improve how the floodplains are managed and how risk and flood damage potential can be mitigated.

With respect to the organization of the Floodplain Management Plan, the District has chosen to build on the statutorily-required and previously published Comprehensive Program Report. The District prepares this report every five years, and the report presents a summary of the programs and activities the District has implemented. The Floodplain Management Plan serves to look forward five years, and by building on the Comprehensive Program Report, the District anticipates that future iterations of the Floodplain Management Plan will meet this reporting requirement by looking back at what was accomplished over the previous five years while also considering how to move forward over the next five years.

Due to the size of Pima County, the District opted to divide the County geographically based on its largest watersheds and follow the NFIP procedural steps for each of those watersheds. This allowed the Planning Committee and the public to consider different activities for different watersheds, while also allowing some activities to occur on a County-wide basis. The result is an Action Plan, which will provide direction to the District over the next five years for various programs, including the Regulatory Program, Program for Public Information, Capital Improvement Program, and Interdepartmental and Interjurisdictional coordination. It does not supplant the normal Capital Improvement Program planning process, including basin studies, consultation with neighboring communities via the Flood Control District Advisory Committee or budget. Nor does it contain code revisions which must be considered independently.

The following is a description of the NFIP procedural steps with an explanation of the benefits of each step in the process to the formation of the Floodplain Management Plan. Where appropriate, excerpts

are included to visualize the substance of the discussion at that step. The final product is the Floodplain Management Plan, which can be found at www.pima.gov/fmp. The District is seeking the Board's approval of this document and the Action Plan (attached), which is the list of activities to implement the Floodplain Management Plan .

NFIP Floodplain Management Plan Process

Step 1 – Organize to Prepare the Floodplain Management Plan

This step was completed on October 2, 2018 with Board adoption of Resolution 2018 FC6. This resolution established the goals of the Floodplain Management Plan and authorized the creation of the Planning Committee.

Step 2 – Involve the Public

The Planning Committee was comprised of a broad spectrum of the public, including representatives from neighborhood associations, builders and developers, trade associations, insurance providers, environmental organizations, as well as the University of Arizona and the San Xavier District of the Tohono O'odham Nation. Other County departments were also represented on the committee, including County Administration, Development Services and Office of Emergency Management. The Planning Committee provided significant input and direction throughout Steps 4 through 8. The Planning Committee represented the following groups, specifically:

- Catalina Foothills Association
- Coalition for Sonoran Desert Protection
- Community Water Coalition
- Country Financial
- Farmers Investment Company
- Metropolitan Pima Alliance
- Natural Resources Parks and Recreation Pima Association of Governments
- Pima County Administrator's Office
- Pima County Department of Transportation
- Pima County Development Services Department
- Pima County Office of Emergency Management
- San Xavier District of the Tohono O'odham Nation
- Southern Arizona Homebuilders Association
- Tucson Association of Realtors
- Tucson Audubon Society
- Tucson Mountain Association
- University of Arizona Planning Program
- University of Arizona Water Resources Research Center
- Watershed Management Group

Although public involvement is only identified in Step 2, the District wanted to ensure to maintain consistent public outreach throughout the process. As the Floodplain Management Plan was being created, staff participated in the following additional public meetings to inform the members and solicit input and comments:

- American Public Works Association Southern Arizona Chapter

- Arizona Planning Association Annual Conference
- Catalina Foothills Neighborhood Association
- City of South Tucson
- City of Tucson
- Community Water Coalition Policy Roundtable at Ward 3
- Flood Control District Advisory Committee
- Flowing Wells Neighborhood Association
- Metropolitan Pima Alliance Board
- Oracle Foothills Neighborhood Association
- Oro Valley Stormwater Commission
- Pima Association of Governments Environmental Planning Advisory Committee
- Pima County GIS Fair
- Pima County Multi-Jurisdictional Hazard Mitigation Stakeholder Workshop
- Pima County Public Library
- Planning and Zoning Commission
- Santa Cruz River Meet Yourself
- Sustainable Action Plan for County Operations Open House
- Southern Arizona Homebuilders Association Technical Committee
- Town of Marana
- Town of Sahuarita
- Tucson Estates Property Owners Association
- Utility Contractors Coordinating Committee
- Winchester Ranch Homeowners Association

Finally, after completion of the Draft Floodplain Management Plan and Draft Action Plan, the District held two additional general public meetings. These occurred on February 26 as an informational item at the Pima County Planning and Zoning Commission Meeting, and on March 3 as an Open House at the Downtown Library. Over 400 survey respondents were invited to the open house via the email addresses provided as an expression of interest, in addition to advertisements.

Step 3 – Coordinate

In addition to public input, the NFIP guidance emphasizes internal coordination within the community's government in order to leverage additional benefits of the Floodplain Management Plan. As such, the District met frequently with the following departments:

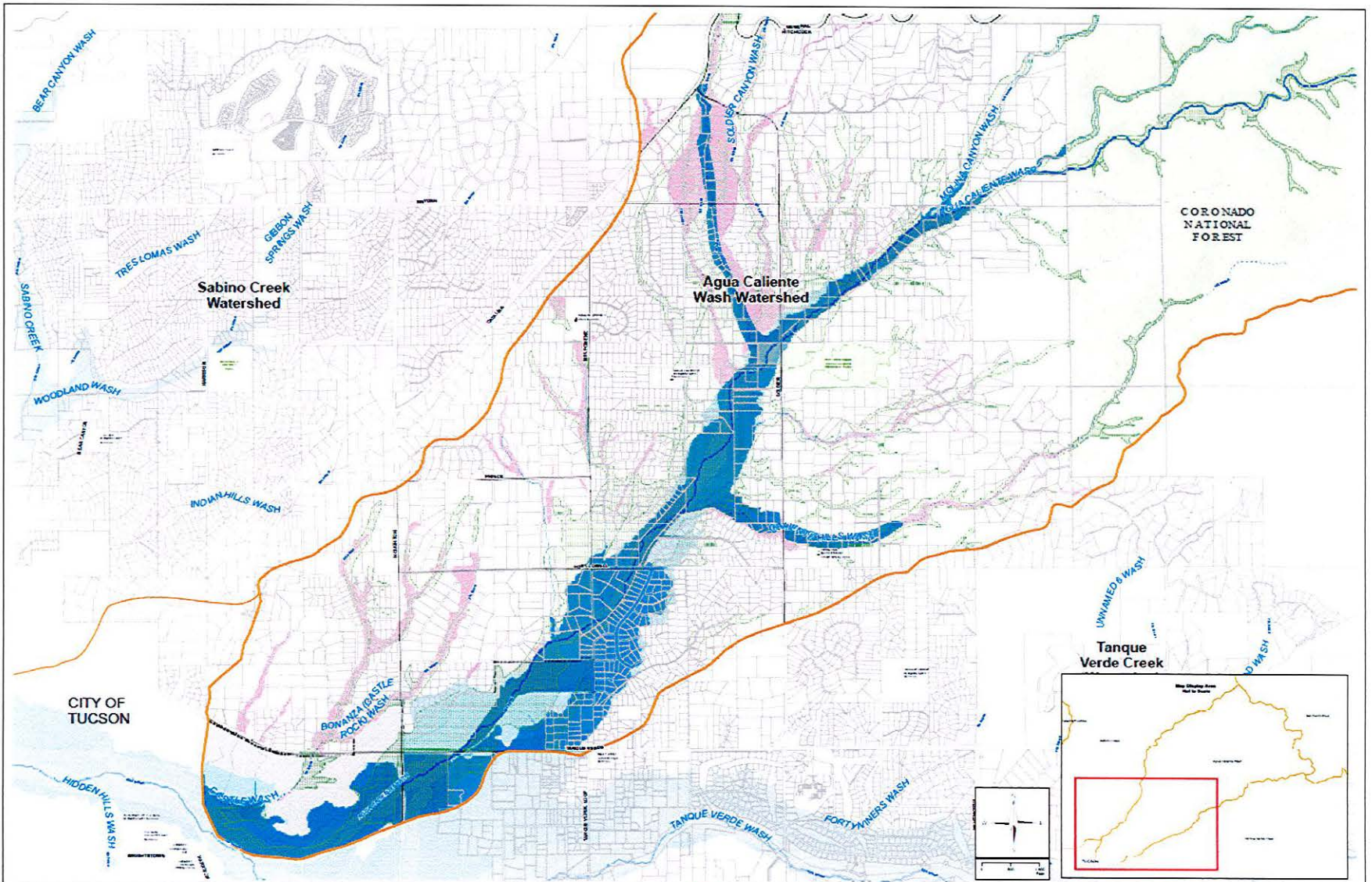
- Communications: In order to identify better ways to inform the public of this process, as well as to assist in future floodplain awareness outreach activities.
- Development Services: In order to promote awareness of the flood hazards and risks associated with new and existing development and ensure that any actions proposed by the Floodplain Management Plan related to development are compatible with Building Safety and Zoning requirements.
- Office of Emergency Management: In order to identify and address gaps with internal and external processes to communicate flood warning, flood risk messages to the public, critical facilities, and other agencies, as well as to coordinate flood response actions.

- Natural Resources, Parks and Recreation: In order identify, coordinate, and prioritize land management activities in order to maintain the natural and beneficial functions of floodplains and associated uplands.
- Department of Transportation: In order to coordinate the response to the public safety risk associated with flooded road conditions , to develop solutions to reduce the frequency of swift water rescues and to coordinate identification of safe travel routes during times of flooding.
- County Administration: In order to ensure the issues identified in the Floodplain Management Plan , and the proposed activities in the Action Plan continue to meet overall County objectives.

Step 4 – Assess the Hazard

Assessing the hazard is the first substantive step in the Floodplain Management Plan process and entails reviewing the floodplain mapping coverage County-wide. This provided a great opportunity to evaluate gaps in the District’s flood hazard data, areas that have flood hazard information that is out-of-date or imprecise, and to consider additional hazards such as debris flows, alluvial fans, and canyon washes. The review of this information was completed on a watershed basis and resulted in the identification of flood hazard information needs which can be found in the watershed chapters of the Floodplain Management Plan. These needs will be used to create a work plan for the District’s Watershed Studies Division over the next five years.

An example of the flood hazards maps is a map of the Agua Caliente Watershed below, which identifies the currently available flood hazard information. The map includes floodplain delineations, wash lines with erosion hazard setback requirements, and regulated riparian habitat, which are indicative of the presence of regulatory floodplains. Maps like these are used to determine where additional information is needed, and to discuss the age and accuracy of the existing mapping.



Agua Caliente Wash Watershed

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> Unincorporated Pima County Parcels Floodway FEMA Special Flood Hazard Areas FEMA Shaded X Zone Local Studies Floodplain | <ul style="list-style-type: none"> Riparian Habitat Incorporated Areas Federal Land Railroad | <ul style="list-style-type: none"> Erosion Hazard Setback 10' Setback 25' Setback 50' Setback 75' Setback 100' Setback |
|--|--|--|



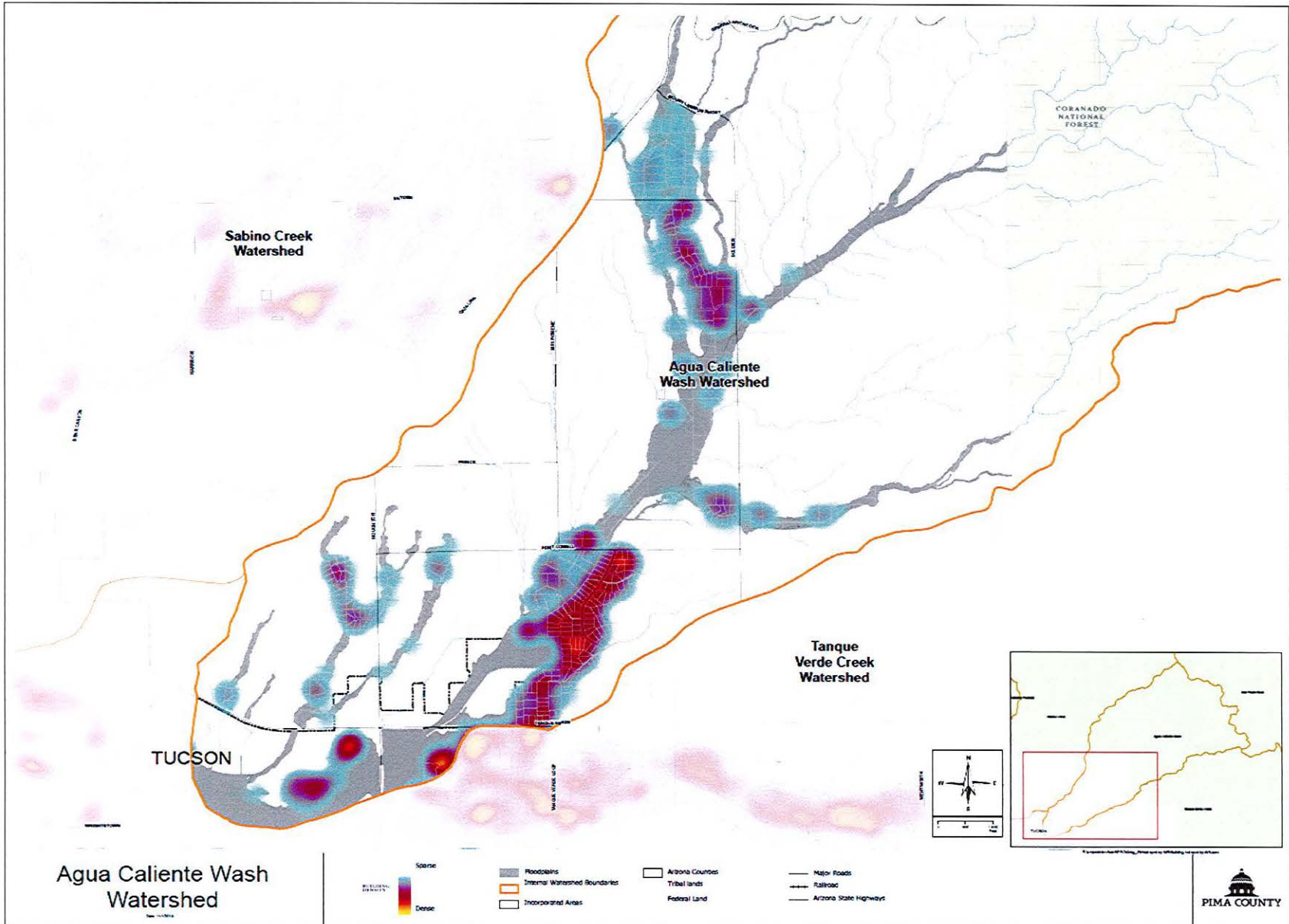
Step 5 – Assess the Problem

This extremely important step entails the identification of areas where development and the community are exposed to the known flood hazards. The process for identification of the problem areas was rigorous and included significant involvement of the Planning Committee members reviewing the problems on a watershed by watershed basis, outreach to various community stakeholders, including homeowners associations, neighborhood groups, and various relevant environmental and trade associations.

In addition, the District provided information on the adequacy of insurance coverage, estimates of potential loss due to flood hazards, and exposure of any critical facilities. Much of this information was previously prepared in the District's Program for Public Information and the County's Hazard Mitigation Plan, but required updates. As part of the update, the Program for Public Information will be made part of the Floodplain Management Plan to facilitate both programs administratively, as well as to make sure that they remain substantively relevant to each other.

The District developed maps, by watershed, of existing structures exposed to the known flood hazards. The resulting "heat maps" show the density of structures exposed to flood hazards and assist in showing that within certain floodplains there are areas of little exposure and areas with considerable exposure. This information will be used by the District's Floodplain Management and Design Engineering divisions to establish work plans to mitigate these problems using either structural improvements through the Capital Improvement Program and/or non-structural improvements through compliance enforcement of the Floodplain Management Floodplain Management Ordinance and acquisition of floodprone property. Assessing population exposure will also assist coordination with the Pima County Department of Transportation where transportation issues increase exposure risks and with the Office of Emergency Management for planning during times of emergency.

An example of the risk exposure maps, a map for the Agua Caliente Watershed is shown below which identifies the exposure of structures to the known flood hazards. A comprehensive list of problems identified by the Planning Committee and stakeholders can be found in Appendix C of the Floodplain Management Plan.



Step 6 – Set Goals

The Federal Emergency Management Agency (FEMA) guidance for this step indicates that the goals set need to be sufficient to address all of the problems that were identified. The comprehensive nature of the problems identified in the previous steps resulted in the need for the Planning Committee to debate the language of the goals extensively. The deliberative exercise proved to be fruitful. To start the discussion, the District provided the Planning Committee with the District's existing mission and goals, which can be found in the Floodplain Management Floodplain Management Ordinance. The goals of the Floodplain Management Ordinance were generally satisfactory; however, there were a number of issues that the Planning Committee decided needed their own goals. These issues are associated with planning for future watershed conditions, including considering climate change, and increasing the District's role in providing interjurisdictional floodplain management services. The two new goals were added to the six relevant goals from the Floodplain Management Ordinance and identified with an asterisk below.

The goals of the Floodplain Management Plan are:

1. Identify, protect, and preserve watercourses and the natural floodplain function and riparian habitat associated with them, and restore and enhance them where they have been degraded;
 2. Protect, preserve and enhance water resources;
 3. Ensure that those who occupy areas within regulatory floodplain and erosion hazard areas are aware of the consequences of their actions within those areas;
 4. Reduce the need for rescue and relief efforts;
 5. Ensure the most effective expenditures of public money for flood control projects;
 6. Prevent flood and erosion damages including ensuring the operability of critical facilities during flood events;
 7. *Ensure flexibility for adaptive floodplain management for changing climate circumstances; and
 8. *Increase regional cooperation and offer inter-jurisdictional floodplain management services.
- *new goals*

The Planning Committee needed to ensure that these goals address all problems previously identified. The spreadsheet that considers this requirement is in Appendix F of the Floodplain Management Plan.

Step 7 – Review Possible Activities

During this step, the Planning Committee discussed activities, both current and future, to implement the goals that were developed previously. These activities are those that can prevent or reduce the severity of the problems identified previously, and include all aspects of the District's organization as well as activities from other County departments. This was a systematic review of a wide range of activities to ensure all possible measures were explored. These activities were then organized to fit into activity areas using the terminology preferred by FEMA, with activities identified as those that are currently performed and proposed new activities. The FEMA Activity Areas are:

A) **Preventive activities** keep flood problems from getting worse. The use and development of floodprone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices.

- Floodplain mapping and data
- Open space preservation
- Floodplain regulations
- Erosion setbacks
- Planning and zoning
- Stormwater management
- Drainage system maintenance
- Building codes

B) **Property protection activities** are usually undertaken by property owners on a building-by building or parcel basis.

- Relocation
- Acquisition
- Building elevation
- Retrofitting
- Sewer backup protection
- Insurance

C) **Natural resource protection activities** preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies, primarily parks, recreation, or conservation agencies or organizations.

- Wetlands protection
- Erosion and sediment control
- Natural area preservation
- Natural area restoration
- Water quality improvement
- Coastal barrier protection
- Environmental corridors
- Natural functions protection

D) **Emergency services measures** are taken during an emergency to minimize its impact. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of major or critical facilities.

- Hazard threat recognition
- Hazard warning
- Hazard response operations
- Critical facilities protection
- Health and safety maintenance
- Post-disaster mitigation actions

E) **Structural project activities** keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.

- Reservoirs
- Levees/floodwalls
- Diversions
- Channel modifications
- Storm drain improvements

F) **Public information activities** advise property owners, potential property owners, and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.

- Map information
- Outreach projects
- Real estate disclosure
- Library
- Technical assistance
- Environmental education

Step 8 - Draft an Action Plan

In order to create a Floodplain Management Plan that meets the prerequisite for a Class 4 community, at least 50% of all available points must be awarded. That requires that the Planning Committee consider all activities and address who is responsible for implementing the activity, when this activity will occur and how will the activity be funded. Similar to the previous steps, the Planning Committee then evaluated the activities on a watershed-by-watershed basis. Some activities were considered applicable County-wide, while other activities were relevant or more relevant in individual watersheds. In addition, when watershed specific projects could be identified they were included on the list.

The guidance does not require that any specific activity ultimately be adopted, just that they are considered and prioritized. Questions of responsibility, timing and funding were answered for the activities. Responsible parties, primarily the District, were identified, generalized timelines were assigned related to feasibility, and an estimate of potential cost range to implement the activity was determined.

This list of activities with priorities, costs, and timelines is considered in the Flood Control District's Floodplain Management Action Plan. This is essentially the distilled substance of the Floodplain Management Plan process and represents a forward-looking vision for the prioritization of the District's programs and projects for the next five years. It will become what is used at the end of that five year period to look back and evaluate accomplishments and satisfy the requirements of the Comprehensive Program Report.

It is important to note that funding for these activities will likely come from the Flood Control tax levy. While some of the activities may be considered new, they may have been known or considered by the District already. Plan credit is available for activities the District currently performs to reduce flood risk and exposure. The purpose of the Action Plan is to consolidate the District's various priorities in order to develop a reasonable and measurable way to ensure progress is made.

The Action Plan is the basic document that will provide direction to the District, and is provide information developed and discussed during this Planning Committee process. The Action Plan is attached.

Step 9 – Adopt the Plan

The FEMA guidance requires that the Floodplain Management Plan be adopted by the District's governing board, the Board of Directors of the Flood Control District. This full Floodplain Management Plan is on the District's website at www.pima.gov/fmp. This document represents a compilation of the numerous Planning Committee meetings, and is organized by the procedural steps described above with appendices, which break these same issues down by watershed.

This memorandum and the excerpted Action Plan have been provided as a summary of the procedural steps and detailed discussion that have occurred over the past 18 months. The District requests the Boards formal adoption of the Floodplain Management Plan and associated Action Plan.

Step 10 – Implement, Evaluate, and Revise

In order to retain credit under the Community Rating System, the Floodplain Management Plan must be annually reviewed and updated by the Planning Committee. In order to be more efficient, the District will combine the committee that reviews our Program for Public Information with the Floodplain Management Planning Committee, since both require annual review and update. Reporting of this action would occur through the District's annual reports.

The Floodplain Management Plan requires additional public process and Board adoption every five years. Again, for the purpose of efficiency, this five-year process will also result in the publication of the statutorily required Comprehensive Program Report. This allows the public process to look back on the past five years of accomplishments, while also looking forward to the next five years of planning.

Action Items, Goals and Recommendations

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline	
			1	2	3	4	5	6	7	8							
1.1 Implement Existing Preventive Activities																	
1.1.a	Participate in the National Flood Insurance Program Community Rating System	Countywide activity**	X	X	X	X	X	X	X	X	X	8, AC	High	\$	District Budget	RFCD	2020
1.1.b	Enforce Pima County Code including Floodplain Management Ordinance, Comprehensive Plan, Zoning and other standards and policies	Countywide activity	X	X	X	X	X	X				8, AC		\$			
1.1.c	Operate, inspect and maintain Flood Control lands and facilities	Countywide activity	X	X			X	X				8, AC		\$\$\$			
		Bellbrook channel repairs (CF)					X	X				8, AC		\$\$			
		Mesquite Ranch Wash sediment removal (Pantano)					X	X				8, AC		\$\$			
		Mitigate Los Reales erosion (SCRM)					X	X				8, AC		\$\$			
		Mitigate Sonoran Ranch erosion (Brawley)					X	X				8, AC		\$\$			
		Monitor and maintain bank protection (SCRL)					X	X				8, AC		\$\$			
		Monitor and remove vegetation (SCRM)					X	X				8, AC		\$\$			
		Palo Verde Rd channel grading (Pantano)					X	X				8, AC		\$\$			
		Repair Continental Ranch bank protection erosion (SCRL)					X	X				8, AC		\$\$\$			
		Repair Iberia sediment and sink holes (BW)					X	X				8, AC		\$\$			
		Repair Michael Perry Park bank protection (Pantano)					X	X				8, AC		\$\$			
		Repair SCR Old West Branch Bank protection erosion at Silverlake (SCRM)					X	X				8, AC		\$\$			
		Minor sediment control activities					X	X	X			8, AC		\$			
		Create Drainage System maintenance plans including vegetation, sediment, and debris (SCRL, SCRM, Rillito, Pantano, CDO)										8, AC					
		Create open space management plans and consider location specific vegetation maintenance practices (AV, CC, CDO, SCRM, SCR, SCRL, SPR, TVC)	X	X						X		8, AC		\$			
		Install controlled access (countywide)	X	X		X						8, AC	\$				
1.1.d	Develop and maintain staff expertise	Countywide activity								X		8, AC	\$				
1.1.e	Update spatial information periodically	Countywide activity	X		X					X		8, AC	\$\$				
1.1.f	Participate in interagency reviews including State, Federal and Local projects	Countywide & regional activity	X					X		X		8, AC	\$				
1.1.g	Participate in regional watershed planning activities to promote uniform standards	Countywide activity								X		8, AC	\$				
		Create Intergovernmental Agreements with other jurisdictions (countywide)								X		8, AC	\$				
		Coordinate with the City of Tucson for the Santa Cruz River Heritage groundwater recharge project and One Water efforts (SCRM)		X						X		8, AC	\$				

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline
			1	2	3	4	5	6	7	8						
1.2	New Preventive Activities															
1.2.a	Identify diversions, alluvial fans, debris flows, local floodways and other geomorphic hazard areas	Countywide activity	X	X	X					X	4, 5, App. C	L	\$	District Budget	RFCD	2020
		Identify areas of shallow groundwater (ACW, Sabino, TVC)	X	X							4, 5, App. C	L	\$			2025
		Assess unstable geomorphology (Pantano)							X		4, 5, App. C	L	\$			2020
		Establish alluvial fan flow corridors (TF)			X					X	4, 5, App. C	M	\$\$			2022
		Expand riparian habitat maps to excluded watercourses (TM)	X	X							4, 5, App. C	L	\$			2025
		Identify debris flows (ACW, CF, Sabino)							X		4, 5, App. C	L	\$			2020
		Identify agriculture diversions (SCRU, SCRM, SCRL, Ajo, AV, LMW)						X			5	M	\$			2020
		Identify and map canyon wash floodways (CDO, SCRM, TM, CF)			X	X				X	4, 5, App. C	M	\$\$			2020
		Identify and monitor erosion on tributaries to the Santa Cruz River (LMW, SCRM, SCRU, TM)						X		X	4, 5, App. C	H	\$			2020
		Monitor sand and gravel operations (Pantano, SCRM, SCRL)					X				5	M	\$			2020
		Remap the Carmack Wash in the distributary flow area (CDO)			X						4, 5, App. C	M	\$			2020
		Work to address issue of sediment placement during road maintenance activities (AV, Brawley, BW, LMW, TF)				X		X		X	5	L	\$			2020
1.2.b	Improve floodplain hazard mapping (e.g. New delineations, revise out of date mapping)	Countywide activity	X		X						4, 5, App. C	L	\$			2020
		Complete RiskMap & SFHA (SCRU)			X						4, 5, App. C	H	\$			2023
		Conduct a detailed floodplain analysis of Pima County Fair Grounds (LMW)			X						4, 5, App. C	H	\$			2021
		Conduct detailed mapping of approximate FEMA Special Flood Hazard Areas (Brawley, Altar, BW, TF, TM, SCRM)			X						4, 5, App. C	M	\$\$			2023
		Conduct floodplain modeling for City of South Tucson (SCRM)			X					X	4, 5, App. C	H	\$			2021
		Develop floodplain maps for Rincon Foothills Unnamed Wash #s 8, 9 and 10 (TVC)			X						4, 5, App. C	L	\$			2025
		Provide detailed mapping for the area between the Herman's Road and Valencia Road (BW)			X						4, 5, App. C	M	\$			2021
		Remap floodplains to confluence with the Tanque Verde Creek (Rillito)			X						4, 5, App. C	M	\$			2025
		Remap Twenty-Seven Wash floodplain/floodway (CDO)			X						4, 5, App. C	M	\$	2023		
		Remap floodplains for Alamo Wash in the City of Tucson (Rillito)			X					X	4, 5, App. C	M	\$	2021		
		Remap floodplains for Bronx Wash in the City of Tucson (SCRM)			X					X	4, 5, App. C	M	\$	2022		
		Remap floodplains for Christmas Wash in the City of Tucson (Rillito)			X					X	4, 5, App. C	M	\$	2020		
		Remap floodplains for Navajo/Wilson Washes in the City of Tucson (SCRM)			X					X	4, 5, App. C	M	\$	2022		
		Remap floodplains for Silvercroft Wash in the City of Tucson (SCRM)			X					X	4, 5, App. C	M	\$	2024		
		Remap floodplains for the Roller Coaster Wash (ACW)			X						4, 5, App. C	M	\$	2021		
		Remap floodplains for the Wyoming and Dakota Washes (SCRM, TM)			X						4, 5, App. C	M	\$	2021		
		Update Black Wash Administrative Floodway (BW)			X						4, 5, App. C	H	\$	2024		
		Update floodplain maps for Sopori Wash (SW)			X						4, 5, App. C	M	\$	2022		
		Identification of flood risks at Sopori and SCR Confluence (SCRU, Sopori)			X					X	4, 5, App. C	H	\$	2022		

1.2.c	Refine local approximate sheet flood maps and identify flow corridors	Countywide activity	X			X	X	X	X			4	L	\$\$	Annual Budget	RFCD	2020		
		Conduct detailed mapping for remaining local approximate sheetflow floodplains (ACW, BW, Brawley, TF)	X		X							8, AC	M	\$\$					2021
		Conduct detailed mapping for Sierrita Mountain Road area (Brawley)	X		X		X					8, AC	M	\$					2020
		Remap Pistol Hill sheet flow floodplains (Pantano)	X		X		X					8, AC	M	\$					2020
1.2.d	Update the Critical Basin map	Countywide activity					X	X		X		8, AC	L	\$					2025
		Identify undersized infrastructure (Urban Sub-Watersheds, Rillito, CF, CDO)				X	X		X			8, AC	H	\$					2025
		Identify existing development at risk from flooding (Urban Sub-Watersheds, Rillito, CF, CDO)			X	X						8, AC	H	\$					2022
1.2.e	Participate in monitoring groundwater change with other responsible parties	Countywide activity		X					X			8, AC	L	\$					2020
		Conduct groundwater depth & quality monitoring (CC, AVG, SS, Sopori)		X					X			8, AC	L	\$					2020
		Operate Marana High Plains groundwater recharge project (SCRL)		X					X	X		8, AC	H	\$\$					2020
1.2.f	Develop plan to provide controlled access to District lands	Countywide activity	X	X		X						8, AC	L	\$					2020
1.2.g	Develop standards for site layout of large scale development in sheet flood areas	Countywide activity			X				X			8, AC	L	\$					2021
1.2.h	Develop methods to identify future climate scenarios and upper watershed conditions (e.g. rain on snow, post catastrophic fire, debris flows)	Countywide activity							X			5	L	\$					2022
1.2.i	Develop criteria for site design and infrastructure at major watercourse confluence areas	Countywide activity (SCRM, TM, CF, TF)	X			X	X		X			8, AC	L	\$					2022
1.2.j	Develop criteria to minimize encroachments in regulatory floodplains, erosion hazard areas and riparian habitat during entitlement and permitting processes	Countywide activity	X	X	X	X	X	X	X			8, AC	L	\$			2021		

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline		
			1	2	3	4	5	6	7	8								
2.1 Implement Existing Property Protection Actions																		
2.1.a	Provide outreach and assistance on mitigation strategies to the community including obtaining flood insurance	Countywide activity			X		X					8, AC	High	\$	District Budget & private funds	RFCD, developers, & outreach partners	2020	
2.1.b	Implement Floodprone Land Acquisition Program	Countywide activity	X	X			X				8, AC	2020						
2.1.c	Identify and address maintenance needs of private infrastructure during the entitlement and permitting processes	Countywide activity			X		X				8, AC	2020						
2.2 New Property Protection Activities																		
2.2.a	Develop standards to address climate change concerns (e.g. Increase design flood elevation and channel freeboard requirements, consider fully vegetated and compound channels in design)	Countywide activity								X		8, AC	H	\$	District Budget	RFCD, FEMA, & UA	2022	
2.2.b	Identify areas of flooding problems related to existing development and identify property protection funding or technical assistance	Countywide activity			X	X	X					8, AC	H	\$		ADEMA	2024	
		Provide assistance to property owners related to bank reclamation (ACW, Sabino, TVC, TM)				X		X				8, AC	L	\$		RFCD & neighborhood stakeholders		2021
		Conduct drainage infrastructure mapping for City of South Tucson					X			X		8, AC	H	\$				2020
		Construct drainage improvements in the El Vado Watershed in the City of Tucson (SCRM)					X	X		X		8, AC	M	\$\$				2022
		Construct drainage improvements in the Ruthrauff/Gardner Lane area (SCRM)					X	X				8, AC	M	\$\$				2024
		Construct El Rio Golf Course drainage improvements (SCRM)					X	X				8, AC	M	\$\$				2020
		Evaluate cumulative impacts of lot-splits and identify mitigation (BW, TM)			X							8, AC	L	\$				2024
		Work with responsible parties to address flooded roads (CDO, LMW, Pantano, Rillito, Sabino, TVC, TF, TM)						X	X	X		8, AC	M	\$\$				2020
2.2.c	Conduct voluntary floodprone land acquisition program outreach to areas impacted by flooding	Countywide activity as needed	X	X			X					5.1.1	L	\$		RFCD		2021
		Acquire property rights for effective management (Pantano)	X	X			X					8, AC	M	\$\$				2020
		Target floodways and flow corridor areas (BW, Brawley, SCRM, SPR)	X	X	X	X	X					8, AC	H	\$				2021
2.2.d	Promote use of Green Infrastructure/Low Impact Development techniques during redevelopment	Countywide activity	X	X						X		8, AC	L	\$			2020	
2.2.e	Expand outreach to Homeowners and Neighborhood Associations about the need for and approaches to maintaining private infrastructure	Countywide activity			X		X					8, AC	L	\$	RFCD & HOAs	2020		

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline
			1	2	3	4	5	6	7	8						
3.1 Existing Natural Resource Protection Activities																
3.1.a	Enforce the Riparian Habitat Mitigation Standards during permitting and entitlement processes	Countywide activity	X	X			X		X		5		\$	District Budget	RFCD & DSD	2020
3.1.b	Use open space management plans for monitoring, maintaining and protecting the Drainage System and Preserves in collaboration with partners	Countywide activity	X	X			X		X	X	5		\$\$		NRPR	2020
		Monitor base flows (CC, SCRL, SCRM)									8, AC		\$		RFCD, PAG & citizen science partners	2020
3.1.c	Identify, acquire, preserve, restore and enhance the Drainage System and Preserves including riparian habitat and wildlife corridor areas	Countywide activity	X	X					X		4, 5, 7, App C	High	\$\$		PCRFC	2020
		Support work for the Altar Valley Watershed Management Grant (AV)	X	X					X	X			\$\$\$		Grants	NRPR
3.1.d	Invasive species management	Countywide activity	X	X		X			X	X	8, AC		\$\$	Annual budget, volunteer network & grants	NRPR & NWFD	2020
3.1.e	Coordinate with water owners and entities on ground water recharge and effluent uses	Countywide activity		X					X	X	8, AC		\$	District Budget	RFCD, COT, & WWRD	2020
3.2 New Natural Resource Protection Activities																
3.2.a	Spatially rectify riparian classification maps	Countywide activity	X	X							4, 5, 7, App C	L	\$		RFCD and developers	2020
3.2.b	Refine, expand and implement District natural resource management plans including the Multi-Species Conservation Plan	Countywide activity	X	X							5	L	\$\$		NRPR	2023
		Complete Cienega Corridor Management Plan (CC)	X	X					X		App C	M	\$\$		NRPR	2021
3.2.c	Establish best management practices for and identify utility operators in the Drainage System	Countywide activity	X	X			X	X		X	5	L	\$		RFCD, UCC, providers	2024

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline	
			1	2	3	4	5	6	7	8							
4.1 Implement Existing Emergency Services Activities																	
4.1.a	Operate the flood recognition and warning system	Countywide activity			X	X		X	X	X	8, AC		\$\$	Departmental Budgets	PCRFCD, USGS, & NWS	2020	
4.1.b	Coordinate with other Departments in development of Hazard Mitigation Plans, Emergency Operations Plan Flood Annexes, Flood Response Plans and Grant Applications	Countywide activity			X	X	X	X	X	4	High	\$	RFCD & OEM				
4.1.c	Coordinate with the Office of Emergency Management and sponsor annual events (e.g. exercises, drills and training)	Countywide activity				X			X	8, AC		\$					
4.1.d	Identify critical facilities exposed to or isolated by flooding and evaluate level of risk	Countywide activity				X		X	X	8, AC		\$					
4.2 New Emergency Services Activities																	
4.2.a	Develop a plan to enhance public safety where roads flood and/or create isolated areas (e.g. reporting, warning, signage, permanent closures, all-weather crossings, automated temporary closures)	Countywide activity				X		X	X	X	4	H	\$	Departmental Budgets	RFCD, DOT, & OEM	2022	
4.2.b	Adopt an All-Hazards Planning Strategy per the Approved Hazard Mitigation Plan (e.g. health, catastrophic fire, extreme weather)	Countywide activity				X		X	X	X	4	M	\$		RFCD	2020	
4.2.c	Expand and update the District's flood threat recognition and integrate it with warning system	Countywide activity				X		X	X	X	4	H	\$		RFCD, OEM & jurisdictions		2020
		Coordinate with other jurisdictions including the Tohono O'odham Nation on flood warning needs (RS, SC, SR, Tule, SCRUI)				X			X		4	L	\$				2025
4.2.d	Expand inundation mapping coverage for flood warning for use in flood warning system	Countywide activity				X		X	X	X	4	M	\$				2020
		Create inundation mapping for Black Wash and Gibson Arroyo (BW, Ajo)				X			X		4	H	\$				2023
4.2.e	Increase pre-event technical assistance to the Office of Emergency Management and first responders including identifying all weather emergency response access routes	Countywide activity				X		X	X	X	4	H	\$				2022
		Utilize new streamflow gages to warn emergency services of road closures on Silverbell Road (TM)				X			X		App C	L	\$\$				2023
4.2.f	Provide outreach and technical assistance to critical facility operators regarding development of flood response plans	Countywide activity as needed				X	X	X	X	X	4, 5.3.1	H	\$		2024		

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline
			1	2	3	4	5	6	7	8						
5.1	Implement Existing Capital Program for Structural Projects															
5.1.a	Utilize property tax revenues to fund drainage improvements to protect existing development and seek additional funds when available	Countywide activity					X	X		X	8, AC		\$\$\$	District Budget	RFCD & jurisdictions	2020
		Address erosion advancing towards Soldier Trail (ACW)					X	X			8, AC	\$\$	2021			
		Construct bank protection for El Rio Preserve (SCRL)					X	X			8, AC	\$\$\$	2020			
		Construct bank protection on the north bank of Canada del Oro Wash between I-10 and Thornydale (CDO)					X	X			8, AC	\$\$\$	2021			
		Construct drainage improvements within Christmas Wash and other urban watersheds (SCRM, Rillito)					X	X			8, AC	\$\$\$	2020			
		Construct Highlands Wash drainage improvements (CDO)					X	X			8, AC	\$\$\$	2023			
		Construct Sells Wash bank protection (SR)					X	X			8, AC	\$\$	2025			
		Coordinate with the City of Tucson stakeholders on planned drainage improvements along Silverbell Road (SCRM, TM)					X	X			8, AC	\$\$	2020			
		Remove un-necessary diversions (BW, Brawley)					X	X			8, AC	\$\$	2025			
		Stabilize the Pantano Wash and tributaries(Pantano)					X	X			8, AC	\$\$\$	2025			
		Construct Wentworth Wash Channel (TVC)					X	X			8, AC	\$\$	2024			
		Mitigate erosion at Hacienda del Sol confluence (Rillito)					X	X			8, AC	\$\$	2020			
		Ruthrauff area drainage improvements (SCRM)					X	X			8, AC	\$\$\$	2025			
5.1.b	Complete new river and basin studies to identify needs and develop alternatives	Countywide activity	X	X	X		X	X	X	X	8, AC	\$\$	2020			
		Coordinate with the Town of Marana on implementation of their Marana Drainage Master Plan (SCRL)			X		X	X		X	8, AC	\$\$	2020			
		Create Basin Management Plans (BW, AV, SCRU)			X		X	X		X	8, AC	\$\$	2023			
		Develop Santa Cruz River Management Plan (SCRL, SCRM, SCRU)			X		X	X		X	8, AC	\$\$	2020			
5.1.c	Develop a 10-year plan for prioritizing the design and construction of capital projects	Countywide activity			X		X	X		X	8, AC	\$\$	2020			
5.1.d	Design flood control improvements using a multi-function approach including infiltration, water quality, recreation and habitat enhancement	Countywide activity					X	X		X	8, AC	\$\$	2020			
5.2	New Structural Project Activities															
5.2.a	Identify potential locations for Green Infrastructure/Low Impact Development projects	Countywide activity	X	X					X	X	8, AC	L	\$	District Budget	RFCD	2020
		Coordinate with the Altar Valley Conservation Alliance to implement watershed restoration (AV)	X	X						X	8, AC	H	\$			2020
		Loop and Trail Enhancements (CDO, Rillito, Pantano, SCRL, SCRM, SCRU)	X							X	8, AC	L	\$\$			2020
		Coordinate with City of Tucson on Proposition 407 projects (Rillito, Pantano, SCRM)	X							X	8, AC	H	\$			2020
5.2.b	Apply Green Infrastructure/Low Impact Development design principles in District projects	Countywide activity	X	X					X		8, AC	L	\$			2020
5.2.c	Prohibit the use of levees and floodwalls except as necessary to protect existing development	Countywide activity	X				X				8, AC	H	\$			2020
5.2.d	Consider Future Conditions including climate and land use changes in design	Countywide activity					X	X	X		8, AC	H	\$			2023
5.2.e	Develop and implement alternative construction techniques and site designs to protect from flood hazards by mimicking natural conditions (e.g. compound channels, distributed retention)	Countywide activity	X	X			X		X		8, AC	H	\$\$\$			2023
		Develop and implement an erosion mitigation plan using natural channel design techniques (AV, BW, Brawley, CC, LMW, Pantano, Sabino, SCRM, SCRL)	X	X					X		8, AC	M	\$\$			2020

Ref #	Actions	Watershed Specific Actions	FMP Goals								Chapter - Recommendation	Priority	Cost Range	Funding Source	Responsible Party	Deadline	
			1	2	3	4	5	6	7	8							
6.1 Implement Public Information Activities																	
6.1.a	Implement the Program for Public Information	Countywide activity as needed	X		X	X	X				X	8, AC		\$	District Budget	RFCD, jurisdictions & outreach partners	2020
6.1.b	Provide a system for the community to receive technical assistance or to address drainage concerns	Countywide activity as needed			X		X					4	\$				
6.1.c	Coordinate outreach with local municipalities to promote consistent messages among the regions jurisdictions	Countywide activity as needed									X	5	\$				
6.1.d	Provide a regional federal map repository	Countywide activity as needed									X	5	\$				
6.1.e	Provide map information services in unincorporated Pima County	Countywide activity as needed			X							8, AC	\$				
6.2 New Public Information Activities																	
6.2.a	Update outreach messages for new targets and audiences (e.g. critical facilities, private infrastructure, renters, riparian habitat and high stress index populations)	Countywide activity as needed	X	X	X	X	X	X			X	4, 5.3	L	\$\$	District Budget	RFCD, OEM, jurisdictions & outreach partners	2020
	Conduct targeted outreach about protection of vegetation and riparian habitat to prevent or reduce drainage runoff problems (TF)		X	X	X							8, AB	M	\$			2021
	Conduct targeted outreach about improvements to nonconforming use structures (ACW, TVC)				X							8, AB	H	\$			2021
	Conduct targeted outreach to property owners in the vicinity of the break-out of the Brawley Wash below 3 Points Bridge (Brawley)				X							8, AB	H	\$			2021
	Conduct targeted outreach to property owners within the floodway (BW)				X	X						8, AB	H	\$			2021
	Identify and conduct targeted outreach to areas which can get cut-off during flood events (ACW, SPR, LMW, AVG, TM)				X	X					X	8, AB	H	\$			2021
	Promote flood insurance with Increased Cost of Compliance coverage for homes in the vicinity south of Irvington Rd. and east of San Joaquin Ave (SCRM)				X		X					4, 7, App C	H	\$			2021
	Provide outreach on the availability of private road and drainage easement technical assistance (BW, Brawley, SCRM, TM)				X	X						4, 7, App C	M	\$			2022
	Provide outreach promoting assistance available to homeowners in the vicinity of Oriole Circle and Mayes Place (SCRM)				X	X						4, 7, App C	H	\$			2020
	Provide outreach promoting assistance available to homeowners in the vicinity of TRS131332 (SCRM)											4, 7, App C	M				2023
6.2.b	Create on-line crowd source reporting platform	Countywide activity			X	X					X	8, AB	L	\$			2021
6.2.c	Provide regional local map repository	Countywide activity			X						X	8, AB	L	\$			2023
6.2.d	Establish message partnerships with community based organizations serving access & functional needs populations	Countywide activity										4, 8	H	\$			2021

Key:

Cost \$\$\$ = Expensive (Over 1 million dedicated funding needed) \$\$ = 100k-1 million line item budget \$ = <100 k Operational budget

Priority H = Immediately Feasible M = Feasible in Short Term L = Long Term Feasibility

Goals

1. Identify, protect, and preserve watercourses and the natural floodplain function and riparian habitat associated with them, and restore and enhance them where they have been degraded.	4. Reduce the need for rescue and relief efforts.	7. Ensure flexibility for adaptive floodplain management for changing climate circumstances.
2. Protect, preserve and enhance water resources.	5. Ensure the most effective expenditures of public money for flood control projects.	8. Increase regional cooperation and offer inter-jurisdictional floodplain management services.
3. Ensure that those who occupy areas within regulatory floodplain and erosion hazard areas are aware of the consequences of their actions within those areas.	6. Prevent flood and erosion damages including ensuring the operability of critical facilities during flood events.	

Watershed Abbreviations for Detailed Sample Actions

URBAN

- ACW Agua Caliente Wash
- AC Arivaca Creek
- BgW Big Wash
- BW Black Wash
- Brawley Brawley
- CDO Canada del Oro
- CF Catalina Foothills
- CC Cienega Creek
- LMW Lee Moore Wash
- Pantano Pantano Wash
- Rillito Rillito Creek
- Rincon Rincon Creek
- SC Sabino Creek
- SCRL Santa Cruz River Lower
- SCRM Santa Cruz River Middle
- SCRU Santa Cruz River Upper
- TVC Tanque Verde Creek
- Ajo Tenmile/Gibson Arroyo
- TF Tortolita Fan
- TM Tucson Mountains

RURAL

- AV Altar Valley
- AVG Aguirre Valley/Green Wash
- RS Rio Sonoyta
- SC San Cristobal
- SPR San Pedro River
- SS San Simon Wash
- Sopori Sopori Wash
- Tule Tule Desert

** Countywide = Unincorporated Pima County