




## City of Phoenix

**To:** City Manager  
City Council Offices

**Date:** October 3, 2023

**From:** Eric Froberg   
City Engineer

**Subject:** PROGRESS REPORT ON IMPLEMENTATION OF CREDITED PLAN (CRS ACTIVITY 510)

**Date this Report was Prepared: September 26, 2023**

Name of Community: City of Phoenix

Name of Plan: City of Phoenix Floodplain Management Plan

Date of Adoption of Plan: June 22, 2016

*5-Year CRS Expiration Date:* 2028

**1. How can a copy of the original plan or area analysis report be obtained:**

The City's Floodplain Management Plan can be downloaded by the public through the City's website:

<https://www.phoenix.gov/streetssite/Documents/Secure%20City%20of%20Phoenix%20FINAL%20FMP%20AUGUST%202016%20WebVersion%20%281%29.pdf>

**2. Describe how this evaluation report was prepared and how it was submitted to the governing body, released to the media, and made available to the public:**

The City of Phoenix went through an extensive process of reviewing and preparing an updated Floodplain Management Plan in support of providing awareness for actions associated with the flood hazards within the jurisdictional boundaries initially adopted in 1992. This was done while maintaining an objective outlook toward the coordination with partner cities and local and state agencies for the collaborated efforts of flooding management as waters traverse the boundaries of the Phoenix Metropolitan region without regard to ownership. This plan was prepared with input from staff from the City of Phoenix, Flood Control District of Maricopa County (FCDMC), Maricopa Association of Governments (MAG), National Flood Insurance Program (NFIP) Insurance Specialists, and Community Rating System Specialists, engineering consultants, and the general public.

The report was introduced to the Transportation & Infrastructure Subcommittee for recommendation to the full City Council for adoption on June 14, 2016. Based on the recommendation of the Subcommittee, the recommendation has proceeded with the Formal City Council Action on June 22, 2016, for the full Adoption of the plan. The plan then was posted on the City’s Floodplain Management website and made public: <https://www.phoenix.gov/streetsite/Documents/Secure%20City%20of%20Phoenix%20FINAL%20FMP%20AUGUST%202016%20WebVersion%20%281%29.pdf>

**3. Provide a description of the implementation of each recommendation or action item in the action plan or area analysis report, including a statement on how the project was implemented or not implemented during the previous year:**

Based on the City’s 2016 Floodplain Management Plan, it prepared an initial action plan with goals and recommendations. The following is the matrix of the action plan:

	Action Item	Goal 1: Reduce risks that threaten life and property	Goal 2: Protect critical infrastructure	Goal 3: Promote Hazard Mitigation	Goal 4: Increase Public Awareness of Hazards	Chapter - Recommendation	Deadline
<b>Administrative Actions</b>							
1.0	Plan Adoption	X	X	X	X	Section 3.9	Oct-16
2.0	Monitoring and Reporting	X	X	X	X	Section 3.10	October - annually
3.0	Community Rating System	X	X	X	X	Section 1.2 & 3.10	CRS Recertification Visit
<b>Program Action Items</b>							
4.0	Dam Improvements	X	X	X		Section 3.4 (1b)	Continuous Activity
5.0	Levee Improvements	X	X	X		Section 3.4 (1a)	Continuous Activity
6.0	Drainage system maintenance	X	X			Section 3.4 (4a)	Continuous Activity
7.0	Drainage system improvements	X	X	X		Section 3.4 (4a)	Oct-16
8.0	Property protection funding	X	X	X		Section 3.4 (4a)	Oct-16
9.0	Regulatory review	X	X	X		Section 3.5e & 3.7	CRS Recertification Visit
10.0	NFIP administration	X	X			Section 3.7a	After CAC
11.0	Certified Floodplain Managers	X	X	X	X	Section 3.7a	Oct-16
12.0	Flood response plan	X	X	X	X	Section 3	Continuous Activity
<b>Public Information Action Items</b>							
13.0	Newspaper notifications	X		X	X	Section 3.7 (g)	Continuous Activity
14.0	City Notes articles	X		X	X	Section 3.7 (g)	Continuous Activity
15.0	City Website	X		X	X	Section 3.7 (g)	Oct-16
16.0	Technical References	X	X	X	X	Section 3.7 (b)	CRS Recertification Visit
17.0	Public information projects	X		X	X	Section 3.7 (c & g)	Continuous Activity
18.0	Public information messages	X		X	X	Section 3.7 (g)	Continuous Activity

This table relates 18 action items to the 4 goals of this plan. This table further shows the relationship between action items and the recommendations within Step 8. The reviews need to be completed in advance of the next CRS verification visit, which is currently scheduled for the third quarter of 2017.

Based on the plan the following are the current outcomes of each Action Plan Item:

- 1.0 Plan Adoption – City Council Adopted the plan on June 22, 2016
- 2.0 Monitoring and Reporting – October – Annually completed
- 3.0 Community Rating System – CRS Recertification Visit annually completed.
- 4.0 Dam Improvements – Continuous Activity
- 5.0 Levee Improvements – Continuous Activity
- 6.0 Drainage System Maintenance – Continuous Activity
- 7.0 Drainage System Improvements – The City’s Street Transportation Department provides funding of approximately \$2M per year to perform local drainage studies and seek flood hazard mitigation projects in partnership with the Flood Control District of Maricopa County. The city performs approximately one to two projects per year addressing local drainage hazards ranging between \$500,000 to over \$1M per project which also includes cost participation from the Flood Control District of Maricopa County.
- 8.0 Property Protection Funding - The City’s Street Transportation Department provides funding of approximately \$2M per year to perform local drainage studies and seek flood hazard mitigation projects in partnership with the Flood Control District of Maricopa County. The city performs approximately two to three projects per year addressing local drainage hazards ranging between \$500,000 to over \$1M per project.
- 9.0 Regulatory Review – CRS Recertification Visit annually completed.  
NFIP Administration – This has not been completed per the Action Plan. We’re in the process of determining how to accomplish this item.
- 10.0 Certified Floodplain Managers – Kristina Jensen has been a Certified Floodplain Manager (CFM) since May 2, 2007, and works in the Floodplain Management Section.
- 11.0 Flood Response Plan – Continuous Activity
- 12.0 Newspaper notifications – Continuous Activity
- 13.0 City Notes articles – Continuous Activity
- 14.0 City Website – Updated in September 2023
- 15.0 Technical References – Annual CRS Recertification. Also, the Arizona Department of Water Resources conducted a Community Assistance Visit in April 2018 was completed in June of 2023
- 16.0 Public information projects – Continuous Activity. Based on Federal Emergency Management’s (FEMA) recent determination of the city’s CRS increase from a Rating of 6 to 5, staff provided to the City’s Water, Wastewater, Sustainability, and Infrastructure Subcommittee a presentation on FEMA’s review of the City’s Cycle Community Rating System Review and determination on October 3, 2018. The presentation was televised through the City’s Channel 11 to the public. In addition, a new fact sheet was also posted on the City’s Floodplain Management website of this new determination.  
[https://www.phoenix.gov/streetssite/Documents/COP\\_Rating\\_System\\_Fact\\_Sheet\\_20181018\\_final2.pdf](https://www.phoenix.gov/streetssite/Documents/COP_Rating_System_Fact_Sheet_20181018_final2.pdf) on October 3, 2018, and a City press release was sent out with the link to this fact sheet.
- 17.0 Public information messages – Continuous Activity

#### **4. Discuss why any objectives were not reached or why implementation is behind schedule:**

Action Item 9.0 NFIP Administration requires the formation of the City's Floodplain Management Community Action Committee (CAC) which has not been formally created. Internal city discussions have been slow to formulate the creation of the CAC board and determine who from the public will be appointed. Challenges and limitations related to city funding and personnel have hindered the creation of such a committee due to the overall administrative procedures to conduct formal public board or commission meetings. Coupled with limited capital infrastructure funding has delayed the formation of this committee. The city does not have a dedicated funding source for capital infrastructure and in the past, has relied on citywide general obligation bonds which the city has not approved since the year 2006. Currently, the projects that are in the capital improvement program are related to growing areas of the city where alternative funding sources such as impact fees have been generated in the past and have enabled the city to proceed with very limited projects in cooperation with the Flood Control District of Maricopa County.

This calendar year has been very different with the opportunities of new funding sources for projects. Section No. 5, provides a detailed description of what has transpired this calendar year with capital projects moving forward due to recent Federal Emergency Management Agency (FEMA) awards through the State's Department of Emergency & Military Affairs (DEMA). Also, due to new developing areas of the city that have specific impact fees associated with the area, we were able to start on a design project for the south Phoenix/Laveen Area. All these projects are leveraging funding from local, state, and federal agencies.

#### **5. What are the recommendations for new projects or revised recommendations?**

In the past, the city in partnership with local, state, and federal agencies has been successful in obtaining Federal Emergency Management Agency (FEMA) through the Arizona Department of Emergency & Military Affairs (DEMA) obtain two grants for the following flood control projects.

- Palm Ln. and 30<sup>th</sup> St. Storm Drain (Storm Drain) –\$2.2M for Construction
  - Status – The final Design being completed in early 2020, and construction in early 2023. This project will provide flooding relief for residential homes along Palm Lane from 28<sup>th</sup> St. to 32<sup>nd</sup> St.
- Mandan St. Drainage Improvement - \$1.7M for construction
  - Status – the final Design being completed in late 2020, and construction in early 2023. This project will provide flood protection for residential homes from the South Mountain Park Preserve along the west side of Mandan St.

Other projects that have been partnered with the Flood Control District of Maricopa County (FCDMC) are in project development or construction are the following:

- 23<sup>rd</sup> Ave/22<sup>nd</sup> Ave Three Basins Project - \$1.5M for the right of way and construction. The project will provide flood protection to the residential homes in the vicinity of 23rd Ave and Olney Ave.
  - Status – The construction is being completed by October 2019. Three basins were accelerated for final design and substantial construction before this year's 2019 Monsoon season.
- 27<sup>th</sup> Ave & Olney Ave Storm Drain - \$16.5M for the right of way and construction. This project provides a large storm drain along Olney Ave and 27th Ave north to outfall to an existing large city basin. The project will provide flood protection to residential homes in the Laveen Area north of Olney Ave and along 27th Ave.
  - Status – The project is under construction and anticipated to be completed by the summer of 2024.
- Rawhide Wash Project (City of Scottsdale) - \$32M for construction of the flood control project entirely in the City of Scottsdale. The project will provide a floodplain area reduction of the existing Rawhide Wash Floodplain within both the Cities of Phoenix and Scottsdale. The project is divided into two phases.
  - Status – The final Design for both phases will be completed in the summer of 2023 and construction is slated to start in 2020. The construction of Phase I will be completed by the end of 2023 and the construction of Phase II is underway and anticipated to be completed by the end of 2024.
- 19<sup>th</sup> Ave & Dobbins Rd Storm Drain - \$30M for the right of way and construction. This project provides a large storm drain along Dobbins Rd, 19<sup>th</sup> Ave, and South Mountain Ave to outfall to an existing large city basin. The project will provide flood protection to residential homes in the Laveen Area south of Dobbins Rd and east of 19<sup>th</sup> Ave.
  - Status – The project is in the final stage of the design and construction is anticipated to be completed by early of 2025.
- Paradise Ridge Drainage Improvements Project - \$40M for the right of way and construction. The project will provide a floodplain area reduction of the existing Rawhide Wash Floodplain in the City of Phoenix.
  - Status – The final design is underway and will be completed by the summer of 2024. The construction is anticipated to be completed by the end of 2025.

We are coordinating study efforts with the FCDMC which is leading the following projects:

- Cudia City Area Drainage Master Study

- Lower Indian Bend Wash Area Drainage Master Study/Plan
  - Metro Phoenix Area Drainage Master Plan Update
  - East Shea Corridor Area Drainage Master Study/Plan
  - Adobe Dam/Desert Hills/Apache Wash Area Drainage Master Plan
- These studies will assist the City and FCDMC in identifying flood hazards and potential future mitigation projects to reduce the flooding hazards.

The City's Local Drainage Program has had the funding greatly reduced in the last two years and it appears that current funding levels for Fiscal Year 2022/2023 are low as well as the next couple of years.

We do have an effort to evaluate 10 drainage flooding areas to see the feasibility based on flood control benefits and utility conflicts. However limited funding will be reviewed based on the outcome of the feasibility location studies.

### **Summary of Community Rating System Activities for the past 12 months:**

The City of Phoenix continues to work with the FCDMC to collaborate on projects that would reduce localized flooding and Repetitive Loss areas. The City of Phoenix also collaborates with FCDMC on large Capital Improvement projects (CIP) to remove or reduce existing floodplain areas and mitigate localized flooding.

As a result of the large amount of local flooding that occurred in 1990, a Local Drainage Improvement Program was formed. Due to a limited amount of funds, these projects have been prioritized according to the severity of flooding. Drainage improvements are designed and constructed where repetitive and severe flooding occurs as funds become available. The City Council apprehensions about homes and businesses flooding.

### ***310 ELEVATION CERTIFICATES***

The City of Phoenix continues to require that all new structures constructed in a floodplain have an elevation certificate prepared. The Floodplain Management office requires electronic copies to be kept on file.

During this past year Kristina Jensen, CFM from the Floodplain Management group attended the Arizona Floodplain Management Association (AFMA) conference in Flagstaff Arizona. Nazar Nabaty and Ryan Bentz attended the Managing Floodplain Development through the NFIP - E0273 workshop in preparation for CFM certification, with which both graduated.

### ***320 MAP INFORMATION SERVICE***

The City of Phoenix continues to provide map determinations to banks, insurance agents, realtors, lenders, mortgage companies, appraisers, and anyone else who needs flood zone determinations for any property within the corporate limits of the City of Phoenix. Staff continues to keep a daily phone log regarding floodplain determinations and elevation certificate requests. Staff updates the Floodplain Management web page which includes request forms for floodplain determinations and/or elevation certificates.

The City of Phoenix continues to make use of the Arizona Realtors publications to inform lenders, insurance agents, and real estate offices about the availability of flood zone information and elevation certificates and email/blog informing realtors about the availability of floodplain determinations and elevation certificates on Phoenix Board of Realtors website.

The City of Phoenix continues to keep our FIRM panels and FIS updated and maintains copies of old FIRM panels & FIS.

### *330 OUTREACH PROJECTS*

The City of Phoenix provides a web page to educate the community on basic floodplain terms, including an illustration showing the encroachment of a 100-year floodplain and update links to sites like NFIP, Flood Control District of Maricopa County, and FEMA documents. We also provide a Citywide Floodplain Property Outreach Letter on our web page informing residents about floodplains, flood insurance policies, flood warning systems, what to avoid in a storm event, what is not permitted in drainage areas, letter of map changes, substantial improvements, and flood insurance discount for participating the CRS program.

Every year the City of Phoenix provides to the community a Monsoon Preparedness notification which was initially conducted before the Summer of 2019 to prepare the public for the monsoon weather and provide safety information and ways to provide flood protection. The City of Phoenix continues to use the Monsoon Central webpage that provides safety information like Flood Prevention and Flood Smart Home & Business Checklists, the importance of regularly maintaining storm systems and natural washes, and how-to videos on flood barriers.

The City of Phoenix continues to use the Arizona Realtors publications to inform lenders, insurance agents, and real estate offices about the availability of floodplain information and elevation certificates. Staff also utilizes email to inform realtors about the FEMA elevation certificate workshop.

### *340 HAZARD DISCLOSURE*

The City of Phoenix discloses whether or not a property is located in a special flood hazard area during planning, zoning, pre-application, preliminary, grading and drainage,

new and/or substantial improvements building permits. Arizona Regional Multiple Listing Service, Inc. also discloses whether or not a property is located in a floodplain. The City of Phoenix Planning & Development Department also provides a checklist for buildings in a special flood hazard area.

### *350 FLOOD PROTECTION INFORMATION*

When new FIRM and FIS are received, an electronic set is distributed to the Burton Barr Central Public Library for easier distribution to other Phoenix libraries. We also supply hard copies of current Flood Protection materials published by FEMA. Also, we direct private developers and citizens to review the Flood Control District of Maricopa County website for updates on studies and other important information concerning flooding.

### *360 FLOOD PROTECTION ASSISTANCE*

The City of Phoenix Floodplain Management Staff contact information is available under the Seamless Service Directory.

The City of Phoenix continues to make site visits upon request to advise owners of appropriate flood protection measures. Local drainage prioritization is based on a ranking form for each drainage location evaluated by Street Maintenance drainage foremen. The City of Phoenix also encourages residents with flooding inside their homes to utilize the manual called "Repairing Your Flooded Home". The City of Phoenix Floodplain Management manages local drainage studies to determine the best way to protect the structures from flooding, as funding becomes available.

### *420 OPEN SPACE PRESERVATION*

The City of Phoenix continues to preserve floodplain areas as open space in Peripheral Planning Areas and other undeveloped areas.

### *430 HIGHER REGULATORY STANDARDS*

The City of Phoenix continues to require the finish floor of new structures to be set one foot above the Base Flood Elevation (BFE). The City of Phoenix also continues to require that non-residential structures be elevated and/or floodproofed to an elevation of one foot above the Base Flood Elevation (BFE). City of Phoenix Ordinance G-5707 effective on June 29, 2012, adopted the revised City of Phoenix Zoning and City Codes including Chapter 32-B Floodplains.

Based on the Arizona Department of Water Resources (ADWR) Community Assessment Visit (CAV), recommended changes to the last adopted Floodplain Ordinance Chapter 32-B Floodplains under the City of Phoenix Zoning and City Codes.



The new Floodplain Ordinance was adopted by the City Council on July 3, 2019, City of Phoenix Ordinance G-6611.

When natural washes are to be retained as open drainageways, the channel, at a minimum, shall be sufficient to contain the offsite runoff expected for a flood having a 1% chance of being equaled or exceeded in any given year (i.e. 100-year storm). Floodproofed freeboard shall be required to prevent seepage out of the wash corridor. Drainage that leaves the development will be redistributed like existing conditions.

We require that all new residential structures constructed within the alluvial fan AO zone, have the lowest floor one (1) foot above the base flood elevation or two (2) feet above the highest adjacent natural grade to the property. A registered professional engineer shall certify the lowest floor to be a minimum of 24 inches above the highest adjacent natural grade elevation of the residential lot and/or the structural footprint. In addition, the engineer shall certify that the structure foundation will not be damaged as a result of the 100-year storm flows. The City of Phoenix continues to require foundations to be protected from flood damage through the use of the Grading and Drainage Ordinance. The City of Phoenix continues to require engineered fill below all buildings constructed in the city.

The City of Phoenix has adopted the new 2018 International Council Codes, The City of Phoenix Ordinance G-6463 was Adopted – Effective July 6, 2018 (Ordinance G-6463). The following are the codes that were included in the updated City Ordinance (G-6463):

The Phoenix Building Construction Code consists of the City of Phoenix Administrative Provisions, the following codes and standards, and the City of Phoenix Amendments thereto:

- 2018 International Building Code (IBC)
- 2018 International Existing Building Code (IEBC)
- 2018 International Residential Code (IRC)
- 2018 International Mechanical Code (IMC)
- 2018 International Plumbing Code (IPC)
- 2018 International Energy Conservation Code (IECC)
- 2018 International Fuel Gas Code (IFGC)
- 2012 International Green Construction Code (IGCC) (Optional)
- 2016 American Society of Mechanical Engineers (ASME) A17.1 Safety Code for Elevators and Escalators
- 2015 American Society of Mechanical Engineers (ASME) A17.3 Section 2.27.8 Switch Keys
- 2015 American Society of Mechanical Engineers (ASME) A17.3 Safety Code for Elevators and Escalators
- 2014 American Society of Mechanical Engineers (ASME) A18.1 Platform Lifts and Stairway Chairlifts

2010 American Society of Mechanical Engineers (ASME) A17.6 Elevator  
Suspension, Compensation and Governor Systems  
2007 American Society of Mechanical Engineers (ASME) A17.7 Performance  
Code for Elevators and Escalators  
2018 Uniform Plumbing Code (UPC)  
2017 National Electrical Code (NEC)  
2018 International Swimming Pool and Spa Code (ISPSC)  
2018 Phoenix Fire Code

The City of Phoenix requires that the cumulative total of up to five years of all substantial improvements are not to exceed 50% of the value of the existing structure unless an appraisal based on the replacement cost of the structure minus the depreciation is provided.

#### *440 FLOOD DATA MAINTENANCE*

The City of Phoenix continues to make use of the Street Transportation Department's Geographic Information System (GIS) including Floodplain layers from shape files of the Flood Insurance Rate Maps (FIRM) dated October 16, 2013, including new effective dates 11/4/2015, 9/15/2020, 7/20/2021, and revised dates to certain panels for the City of Phoenix community. GIS also includes City limits, canals, light rail and railroad lines and stops, freeways, street names, addresses, subdivision names, assessor's parcel number, easements, block and lot numbers, township, range, section, quarter section, aerial layers, storm drain system [date installed, ownership, project number, dimensions of pipe (shape, pipe material, length, slope, and invert), fittings and drainage areas (like basins & channels)], ROW assets, maintenance projects, and current activities, design information (like benchmarks), various administrative areas (like council districts, street maintenance service areas, revocable permits, etc.), homeowner (name, address, phone number), KIVA- IMS link, Google Map link and Maricopa County Assessor's link.

The City of Phoenix continues to maintain a database of approximately 2,000 benchmarks (1600 are permanent) throughout the City. Most benchmarks have been recovered within the last 5 years. When any Public Land Survey System monuments are disturbed, they are required to be replaced, recorded with Maricopa County, and updated in the City of Phoenix database. In areas that are affected by subsidence, benchmark maintenance is mostly performed semi-annually. The controls for areas with known subsidence are located on bedrock monuments (stability A rating). The City also replaces benchmarks that are known to have been disturbed or covered up by street improvement projects. The City continues to provide elevation information for the benchmarks upon request. The benchmarks are on the National Geodetic Vertical Datum 1929 (NGVD29). Flood Insurance Rate Maps (FIRM) use the North American Vertical Datum of 1988 (NAVD88). The City utilizes the NOAA VERTCON to convert between the two vertical datums.

## *450 STORMWATER MANAGEMENT REGULATIONS*

The City of Phoenix Floodplain Ordinance regulates development and states that “stormwater” run-off from each site will be no greater than the run-off from the site before it was developed, and the use of the hydrographical time will not be changed.

The City of Phoenix continues to use the Flood Control District of Maricopa County’s Area Drainage Master Plans as specific planning documents.

In the alluvial fan AO zones, the lowest finished floor including attached garages shall be a minimum of 24 inches (two feet) above the highest adjacent natural grade. Attached garages may be designed at or above base flood elevation as long as the attached garage is designed with flood vents and is used solely for storage and parking for two cars (any utilities in the garage must be elevated or floodproofed).

The City of Phoenix manages 100% of the watersheds located in the Phoenix area.

Engineers and other staff from Storm Water Management group meet with private developers, engineers, and architects to explain how stormwater requirements impact new projects. Discussions of stormwater volumes are integrated with stormwater quality issues. Requirements for on-site retention and/or detention basins are critical for getting new plans approved by the Planning and Development Department.

The City of Phoenix screens each permit application to determine the size of the parcel. On-site retention of stormwater is required for all developments equal to or exceeding 0.5 acres in size as per the Subdivision Grading and Drainage Manual.

The City of Phoenix continues to use the 100-year storm as the design storm for all new development.

The City of Phoenix continues to provide 2-year storm drain system improvements to drain major streets, as funding becomes available.

The City of Phoenix continues to conduct public maintenance of drainageways, as funding becomes available.

When new building plans are submitted to the City of Phoenix, the Planning and Development Department’s Plan Review staff verifies that the lowest finished floor shown on the Building Plan matches what is shown on the approved Grading and Drainage Plan.

For parcels 5 acres and larger, the National Pollution Discharge Elimination System (NPDES) regulation requires that a Storm Water Pollution Prevention Plan (SWPPP) and a Notice of Intent (NOI) are to be submitted with the Grading and Drainage Plan. A

Grading and Drainage permit will not be issued until this is completed. The Civil and Site Inspectors check to make sure that the plan is implemented in the field.

The City continues to enforce the Storm Water Management provisions of zoning, subdivision, and building code for new development in the watershed. The City of Phoenix also continues to enforce the requirement that all new buildings be elevated above the street.

A copy of Chapter 32C Storm Water Quality Ordinance, Storm Water Policies and Standards title page is attached under Activity 450.

### *510 FLOODPLAIN MANAGEMENT PLANNING*

The City annually experiences complications as a result of flooding. These complications are presented in a range of complexities from community flooding with multiple properties impacted to an isolated intersection flood from storm drain debris. Each year the City allocates time and resources to support the residents and provide prompt mitigation of the challenges identified with the resources available. The City is actively engaged in further defining the areas at risk by participating in several technical investigations such as Local Drainage Studies, Area Drainage Master Plans (ADMS), Area Drainage Master Plans (ADMP), Watercourse Master Plan (WCMP), Capital Improvement Projects (CIP), and Small Project Assistance Program (SPAP). The City is proactively seeking to identify and determine means of mitigation for areas of risk located both within and outside of the currently identified FEMA Special Flood Hazard Area (SFHA) delineations to reduce flooding impacts and the associated hazard level. The City continues to conduct ongoing efforts to identify opportunities to mitigate impacts for the Repetitive Loss Areas (RLA) and specifically to the Repetitive Loss (RL) properties which we've gone from 58 as of October 2018 to 51 as of August 2023, a decrease of seven (7) properties. The City is currently identified as a Category C Community, an NFIP Community Rating System designation based on the number of listed RL properties.

### *520 ACQUISITION AND RELOCATION*

The City of Phoenix continues to acquire land in the special flood hazard areas as open spaces when funding is available.

The City of Phoenix maintains open spaces for acquired lots.

### *540 DRAINAGE SYSTEM MAINTENANCE*

The City of Phoenix continues to provide maintenance to our drainage system and improve drainage system through our Capital Improvement Projects like 27<sup>th</sup> Avenue & South Mountain Avenue Retention Basin, Alert System Upgrade & Maintenance,

Phoenix Zoo Dam, Emergency Response Materials, Storm Drain Facilities, and storm drain projects. A copy of a typical inspection report and a maintenance log from each of our maintenance service centers are included. A list of flooding areas (choke points or flat areas) to be factored during a storm event is also included for each maintenance service center. A list of Capital Improvement Projects which includes maintenance and improvements of our drainage system.

The City of Phoenix continues to enforce stormwater dumping regulations. Storm Water Management also provides educational pamphlets for its Outreach program. Storm Water dumping regulations, Water Department standard operating procedure #6008, and a photo of a “No Dumping” sign are regularly used for the public.

### *610 FLOOD WARNING AND RESPONSE*

The City of Phoenix maintains and tests our flood threat recognition system. The City of Phoenix Office of Emergency Management provided Monsoon Preparedness Awareness annually since the Summer of 2019. We also tested our warning dissemination equipment and procedures this year. We conducted at least one exercise of our flood response plan this year.

### 630 DAMS

The City of Phoenix participates in a State-run dam safety program. The City of Phoenix also maintains a dam failure emergency action plan.

On August 16, 2023, in cooperation with multiple city departments and local agencies, conducted the City of Phoenix Dam Safety Tabletop Exercise (TTX).

#### Exercise Objectives:

- Discuss/validate the capacity to communicate with the emergency response community, operation centers, and the affected populations.
- To discuss/validate/coordinate evacuation plans for the affected areas.
- Discuss the effective use of notification systems to communicate significant hazards to affected personnel, and the public.
- Discuss the process for identifying all areas that need assistance.
- Discuss and test the ability to deliver information sufficient to inform decision-makers regarding immediate lifesaving and life-sustaining activities.
- Discuss/validate the Emergency Action Plan (EAP) to determine validation of existing procedures.

## Core Capabilities

**Planning:** Conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or community-based approaches to meet defined objectives.

**Public Information and Warning:** Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available.

**Operational Coordination:** Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

**Response Mission Area:** Response includes those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

**Long-Term Vulnerability Reduction:** Build and sustain resilient systems, communities, critical infrastructure, and key resource lifelines to reduce their vulnerability to natural, technological, and human-caused threats and hazards by lessening the likelihood, severity, and duration of the adverse consequences.

**On-Scene Security, Protection, and Law Enforcement:** Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel engaged in lifesaving and life-sustaining operations.

**Operational Communication:** Ensure the capacity for timely communications in support of security, situational awareness, and operations by any means available, among and between affected communities in the impact area and all response forces.

**Risk and Disaster Resilience Assessment:** Assess risk and disaster resilience so that decision-makers, responders, and community members can take informed action to reduce their entity's risk and increase their resilience.

**Situational Assessment:** Provide all decision-makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.