

May  
2016



## Floodplain Management Plan

Project No. ST83140071

Contract No. AS00139754

**Prepared for:**  
City of Phoenix



3200 E. Camelback Road, Suite 350

Phoenix, AZ 85018

602.522.7700

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EXPIRES 9-30-2017



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# 2015 Floodplain Management Plan for City of Phoenix

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# Terminology

Throughout this guide, the following terms are used.

**BE** is the base flood elevation. The base flood is defined as having a 1-percent chance of being equaled or exceeded in any given year. (It is also known as the 100-year flood.) The BE has been adopted by the National Flood Insurance Program as the basis for mapping, insurance rating, and regulating new construction.

**CRS** is the abbreviation for Community Rating System, a voluntary program for National Flood Insurance Program-participating communities. The goals of the CRS are to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance.

**Community** means any city, village, town, county, or other local government with authority to enact floodplain management measures.

**DFE** is the acronym for design flood elevation, the specified level to which a structure will be protected from floods when it is built or retrofitted.

**FEMA** is the Federal Emergency Management Agency, the Emergency Preparedness and Response Directorate within the U.S. Department of Homeland Security.

**FIRM** is the acronym for Flood Insurance Rate Map, an official map approved by the Federal Emergency Management Agency and adopted by the community that delineates the Special Flood Hazard Area subject to the community's floodplain management regulations and the insurance risk premium zones.

**Floodplain** is used in a general sense to mean the area most prone to flooding, mapped or not. The floodplain for a localized flood problem may not be mapped as Special Flood Hazard Area on the Flood Insurance Rate Map.

**Floodway** means the stream channel and that portion of the adjacent floodplain that must remain open to permit passage of the base flood. The floodway is delineated on the Flood Insurance Rate Map or an accompanying Floodway Map and is subject to special development restrictions.

**Localized flooding** refers to smaller scale flooding that can occur anywhere in a community. This can include flooding in Zone X as depicted on the Flood Insurance Rate Map. The term is also used to refer to shallow flooding that occurs in low-lying areas after a heavy rain, ponding, and localized stormwater and drainage problems anywhere in the community. In this guide, "local flooding" and "localized flooding" are used interchangeably.

**NFIP** is the acronym for National Flood Insurance Program.

**Repetitive Loss Property** refers to an NFIP-insured property where two or more claim payments of more than \$1,000 have been paid within a 10-year rolling period since 1978. Nationally it is estimated that 20 to 25 percent of repetitive loss properties are rated as being in Zone X.

**SFHA** is the Special Flood Hazard Area. Zone X is outside of the SFHA.

**Watershed** means an area of any size that drains into a lake, stream, or other body of water; also known as retention detention basins.



## Terminology (continued)

**Zone A** is defined as the Special Flood Hazard Area shown on a community's Flood Insurance Rate Map. Zone A is the area subject to inundation during a 100-year flood, which is the flood elevation that has a 1-percent chance of being equaled or exceeded each year. There are several categories of Zones A, including Zone AO (ponding sheet flow; average flood depths are shown); Zones AH (ponding flooding; base flood elevations are shown); numbered Zones A and AE (base flood elevations are shown); and unnumbered Zones A (no base flood elevations are provided because detailed hydraulic analyses were not performed).

# Executive Summary

The City of Phoenix (City) has undertaken the process of reviewing and preparing an updated Floodplain Management Plan (FMP) in support of providing awareness for actions associated to the flooding hazards within the jurisdictional boundaries initially adopted in 1992. This has been done while maintaining an objective outlook toward the coordination with partner cities and agencies for the collaborated efforts of flooding management as waters traverse the boundaries without regards to ownerships. This 1992 FMP update summarizes the previous completed plan elements, provides a review of progress achieved to date, and sets for a plan for future actions based upon the guidance provided by Federal Emergency Management Agency (FEMA) within the National Flood Insurance Program (NFIP) and the Community Rating System (CRS) Coordinator’s Manual per Flood Insurance Administration (FIA) FIA-15/2012. This plan was prepared with input from staff from City of Phoenix, Flood Control District of Maricopa County (FCDMC), Maricopa Association of Governments (MAG), NFIP Insurance Specialists, and CRS Specialists, and the consulting community.

The objective of this FMP is to provide an overall summary of the flooding issues observed within the City and holistically describe the active programs, plans, policies, and capabilities. Additionally this plan is intended to further address the Repetitive Loss Areas (RLA) listed under the NFIP and seek opportunities to receive additional CRS credits for existing and future services conducted annually by the City.

The City is listed under NFIP Number 040051 and is currently rated as a Class 6 within the CRS Classification as a result of the 2012 5-year cycle review. As a benefit, City residents within an existing FEMA Special Flood Hazard Area (SFHA) are able to receive a premium reduction of 20%, and for residents identified as outside the SFHA a premium reduction of 10% is available.

The following quick view table illustrates the scoring as a comparison to the 2013 Coordinator Manual for point allowances per activity based on the results of the City’s recent annual verification visit. The columns for Maximum Possible, Maximum Points Earned, and Average Points Earned are reference directly from the tabular reporting provided by NFIP CRS Table 110-2, while the columns City of Phoenix and Percentage of Points Received are prepared with respect to results of the City data only.

A critical element identified includes the development of a Floodplain Management Plan (FMP) Planning Committee, which serves the roles of both a planning committee and update committee for floodplain management activities. Additional elements highly recommended for action are enhanced reporting for areas of natural floodplain function and flood damage reductions, public information activities, and increased documentation of coordination with other agencies, claims documentation, post disaster mitigation policies, and development of recommendations for a habitat conservation plan.

## 2015 City of Phoenix Credits for CRS Activities

Community: City of Phoenix, Arizona

NFIP Number: 040051

ACTIVITY ID	MAXIMUM POSSIBLE (1)	MAXIMUM POINTS EARNED (2)	AVERAGE POINTS EARNED (3)	CITY OF PHOENIX (4)	PERCENTAGE OF POINTS RECEIVED (5)
<b>300 - Public Information Activities</b>					
C310	116	116	45	70	60%
C320	90	70	50	140	156%
C330	350	175	72	16	5%
C340	80	57	19	5	6%
C350	125	98	39	20	16%
C360	110	65	49	64	58%
C370 (6)	110	0	0	0	0%
<b>400 - Mapping and Regulations</b>					
C410	802	585	64	85	11%
C420	2020	1548	463	345	17%
C430	2042	784	213	314	15%
C440	222	171	87	118	53%
C450	755	540	107	201	27%
<b>500 -Flood Damage Reduction Activities</b>					
C510	622	273	167	107	17%
C520	2250	1701	165	100	4%
C530	1600	632	45	0	0%
C540	570	449	212	300	53%
<b>600 -Warning and Response</b>					
C610	395	353	129	95	24%
C620	235	0	0	0	0%
C630	160	0	0	69	43%
<b>Total</b>	<b>12,654</b>	<b>7,617</b>	<b>1,926</b>	<b>2,049</b>	<b>16%</b>

### Credit Notes and Reference Details:

- (1) The maximum possible points are based on the 2013 Coordinator's Manual.
- (2) The maximum points earned are converted to the 2013 Coordinator's Manual from the highest credits attained by a community as of May 2013. Growth adjustments and new credits for 2013 are not included.
- (3) The average points earned are converted to the 2013 Coordinator's Manual, based on communities' credits as of May 2013. Growth adjustments and new credits for 2013 are not included.
- (4) Comparison to Verification Visit April 2, 2012
- (5) Computation of results from Verification Visit April 2, 2012 with maximum points possible
- (6) New activity related to Flood Insurance Promotion activity in 2013



# 01 Introduction

# 1. Introduction

## 1.1 Purpose and Scope

The City of Phoenix (City) recognizes the strategic value of being proactive for residents at risk of flooding and seeks to prepare an update to the Floodplain Management Plan (FMP), previously issued in December 1992. This updated FMP assesses the flood hazards within the jurisdictional boundaries of the City, while maintaining an objective outlook toward the coordination with partner cities and agencies for the collaborated efforts of flooding management as waters traverse the boundaries without regards to ownership. This plan update summarizes the previous completed plan elements, provides a review of progress achieved to date, and sets for a plan for future actions. This plan was prepared with input from staff from 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 (CRS) Specialists.

The objective of this FMP is to provide an overall summary of the flooding issues observed within the City and holistically describe the active programs, policies, and capabilities. This plan is also intended to further address the Repetitive Loss Areas (RLA) listed under the NFIP. The City's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which was updated in 2015 and prepared in accordance with the Disaster Mitigation Act of 2000 (DMA 2000) and adopted by the City in 2009, contains a more detailed and comprehensive list of hazards identified and a risk assessment of flooding.

The intent of the FMP within the NFIP CRS is to construct the framework for a living document, intended for active review and evaluation on an annual basis for monitor progress achieved toward established goals. With the development of and participation by the FMP Planning Committee, the City would be best served in obtaining additional CRS credits and valuable committee input. At the time of this update, a committee has not been established, under the direction of the project manager. This document will require revision as relevant changes are presented in the form of City Policies, standards, State and Federal Regulations, Presidential Executive Orders, and advancements within Risk Mapping technology are presented.

Proactively looking forward, the City seeks the opportunity to improve their CRS score, is actively investigating such opportunities under the enhancement of the FMP and RLA, and the development both the Advisory Committee and a Natural Floodplain Functions Plan (NFFP) as defined by the NFIP CRS. These goals will provide for the continued improvement and development of a prioritized and tangible FMP that the City can utilize with the partner agencies, members of the public and the City Commission.

## 1.2 The FMP and Community Rating System

While this document strives to bring to current the FMP for the City, the goals and objectives defined here-in should be further reviewed for acceptability by the forthcoming FMP Planning Committee. This FMP utilizes numerous sources of materials and has been developed as part of a phased approach to preparing the final FMP. While every effort to include all pertinent information was made, it is possible that documentation of efforts has not been collected or reflected and therefore is recommended for inclusion within future updates to the FMP.

The City has prepared this FMP update in accordance with the guidelines set forth under the NFIP CRS Coordinators Manual, Federal Insurance Administration (FIA)-15/2013 which provides advancements from earlier coordination guidance. The CRS is administered by the Federal Emergency Management Agency (FEMA), which implements the program to both recognize and encourage communities to actively seek opportunities to manage their floodplains, reduce risks of damages, and be good stewards of the built environment while considering the beneficial functions that natural floodplains provide. The program provides monetary incentives through reduced insurance premiums for communities who conduct floodplain management activities that exceed minimum NFIP standards.

The goals of NFIP are to provide flood insurance to property owners, to encourage flood loss reduction activities by communities, and to save taxpayers' money. As part of the NFIP, CRS recognizes, encourages, and rewards – by the use of flood insurance premium discounts – communities and state activities that go beyond the minimum requirements of the NFIP. The framework of goals established by the NFIP can be summarized by the following three goals:

1. Reduce and avoid flood damage to insurable property
2. Strengthen and support the insurance aspects of the NFIP
3. Foster comprehensive approach to floodplain management

The CRS utilizes a credit system that correlates the efforts put forth by program participants to the discounts offered on insurance premiums. The qualifying community total points, CRS classes, and flood insurance premium discounts are show below in **Figure 1**, as an excerpt from the NFIP CRS Coordinators Manual:

**Figure 1 - CRS Classes, Credit Points, and Premium Discounts**

CRS Class	Credit Points (cT)	Premium Reduction	
		In SFHA	Outside SFHA
1	4,500+	45%	10%
2	4,000-4,499	40%	10%
3	3,500-3,999	35%	10%
4	3,000-3,499	30%	10%
5	2,500-2,999	25%	10%
6	2,000-2,499	20%	10%
7	1,500-1,999	15%	5%
8	1,000-1,499	10%	5%
9	500-999	5%	5%
10	0-499	0	0%

SFHA: Zones A, AE, A1-A30, V, V1-V30, AO, and AH  
 Outside the SFHA: Zones X, B, C, A99, AR, and D

Preferred Risk Policies are not eligible for CRS premium discounts because they already have premiums lower than other policies. Preferred Risk Policies are available only in Zones B, C, and X for properties that are shown to have a minimal risk of flood damage.

Some minus-rated policies may not be eligible for CRS premium discounts.

Premium discounts are subject to change.



As of October 2015, FEMA reported that Nearly 13.8 million policy holders in 1,368 communities participate in CRS by implementing local mitigation, floodplain management, and outreach activities that exceed the minimum NFIP requirements.

Although CRS communities represent only 5 percent of the over 22,000 communities participating in the NFIP more than 68 percent of all flood insurance policies are written in CRS communities. The City of Phoenix, listed under Community ID number 040051# participates in CRS with 5,042 policies in place as of the development of this FMP update.

Nationwide only 1,296 communities participate in CRS with a continued growth average of 35 new communities joining the program yearly, with 80 communities actively achieving CRS Class improvements. Currently the City is recognized as a Class 6 community, having received this honorable class in 2002 during the modification process. The City’s responsibilities are ongoing to continue receiving credits in order to maintain its certification, identify new opportunities, and ensure new criteria under the program are being incorporated.

The following progression of increased CRS ratings demonstrates the City’s continued dedication to proactive measures through individual and partnership activities for flood risks:

**Figure 2 - CRS Class History**

CRS Class history for the City of Phoenix	
1991	Entered the CRS at a Class 8
1993	Modification to a CRS Class 7
1996	CRS Class 7
2002	Modified to a CRS Class 6
2007	CRS Class 6
2012	CRS Class 6
2015	CRS Annual Recertification for Class 6

The City has completed the annual recertification cycle in October 2015 and maintains a CRS rating of Class 6. The next 5-year cycle review is scheduled for 2017, in which the City is actively seeking to improve its class rating through the implementation of improved documentation efforts for the FMP (Section 510), entering into the RLA (Section 512.b) , and NFIP (Section 512.c) activities.

## 1.3 Organization of the Floodplain Management Plan

The CRS planning system took a careful look at assignment of a systematic process of recommended activities that can be accredited. While the CRS does not specify what activities a plan must recommend; rather, it recognizes that a plan has been prepared according to the 10-Step standard planning process:

- Step 1.** Organize
- Step 2.** Involve the public
- Step 3.** Coordinate
- Step 4.** Assess the hazard
- Step 5.** Assess the problem
- Step 6.** Set goals
- Step 7.** Review possible activities
- Step 8.** Draft an action plan
- Step 9.** Adopt the plan
- Step 10.** Implement, evaluate, revise.



Through the use of this planning strategy communities have the potential to be awarded up to a maximum of 382 points for community-wide floodplain management planning that follows the process.

The development of this FMP update was conducted with limited stakeholder involvement, which is identified as a crucial component throughout all stages of the plan. The overall plan development was managed by the City of Phoenix Street Transportation Department, Floodplain Management Section. The City has extensive experience in planning and providing documentation for management activities in support of CRS.

Future versions of the FMP are highly encouraged to consider the early adoption of and participation with a fully active FMP Planning Committee to establish and guide the development of planning. For additional definition of desired committee membership for Activity 330 (Outreach Project) and Activity 510 (Floodplain Management Planning) refer to the enclosed CRS Handout – Credit for Planning Committees in **Appendix G**, which contains the NFIP CRS excerpts.

The process of preparing this FMP began in July 2015 with a scoping meeting between key City staff members and an engineering consultant. Additional meetings were held in person at the FCDMC with staff from within the Planning Branch, and several conference calls and email coordination's were conducted with staff in several agency departments such as: GIS Management, Hydrology and Hydraulics Branch, and Mitigation Planning.



## 02 City Profile

# 2. City Profile

## 2.1 Demographics

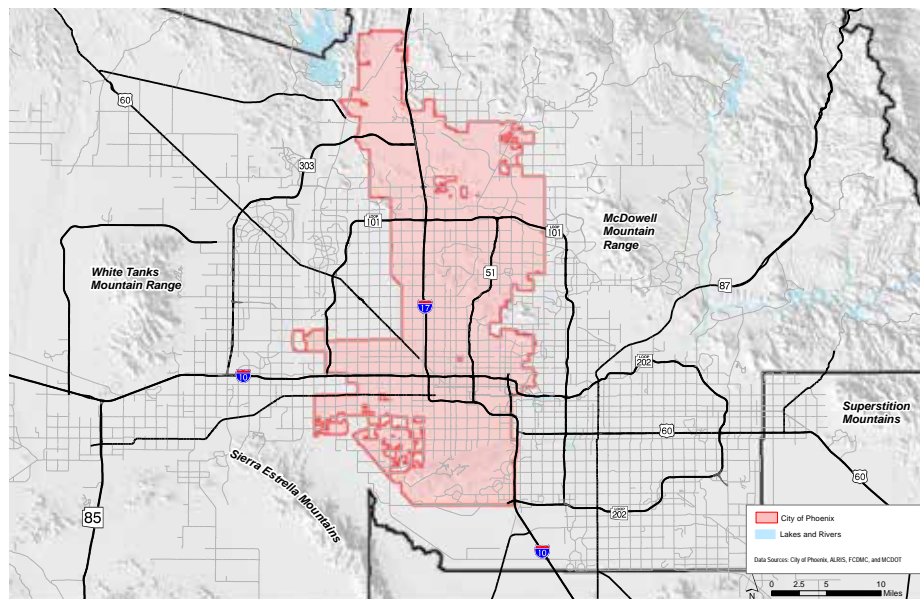
The City of Phoenix is located within Maricopa County and serves as the anchor for the Phoenix metropolitan area commonly referred to as the “Valley of the Sun”. The City is the 13th largest metro area by population in the United States and is one of the largest cities in the United States by land area.

According to the United States Census Bureau, the City reflects a population of 1,537,058 individuals within a geographic land area of approximately 518 square miles, resulting in nearly 2,798 persons per square-mile per 2014 reporting. This results in Phoenix being one of the most populous state capitals in the United States, as well as the sixth most populous city nationwide.

The population growth rate of the Phoenix metro area has been approximated as 4% per year over the last 40 years. While that growth rate slowed tremendously during the Great Recession, officially recognized as December 2007 through 2009, it has begun to rebound and industry is on the rise.

## 2.2 Geography Figure 3 - Phoenix Geography

Despite the mountains within and around the City, the overall topography of the land is flat allowing the City’s main streets to run on a precise grid with wide, open-space roadways. Scattered low mountains surround the valley, comprised of McDowell Mountains, White Tank Mountains, Superstition Mountains, and Sierra Estrella Mountains.



- **McDowell Mountain Range** - this ecoregion is located approximately 20 miles northeast of downtown Phoenix. The range is composed of Miocene deposits placed nearly five million years ago. The highest peak in the McDowell’s is known as East End, at an elevation of 4,057 ft. Vegetation in this range includes largely high altitude grasses, Palo Verde trees, and Saguars.
- **White Tank Mountain Range** - this ecoregion is located in central Arizona and lies along the western periphery of the Phoenix Metro area. The mountain is home to the White Tank Mountain Regional Park and boasts the Barry Goldwater Peak with an elevation of 4,083 ft with numerous ridges and canyons. During season heavy rainfall, accumulated water rushes rapidly through the steep canyons, over time scouring out a number of depressions or “tanks” in the white granite of the mountain.

- **Superstition Mountains** - this ecoregion is located east of the Phoenix Metro area, and is federally designated as the Superstition Wilderness Area. The Superstitions have a desert climate with a handful of perennial sources of water. The highest point is identified as 5,059 ft. Vegetation in this region includes numerous species of flowering plants, cacti, and trees.
- **Sierra Estrella Mountains** - this ecoregion is located southwest of Phoenix Metro, much of which falls upon the Gila River Indian Reservation with 14,400 acres protected as the Sierra Estrella Wilderness. The highest peak is known as Hayes Peak with an elevation of 4,512 ft. Vegetation includes saguaro, cholla, ocotillo, palo verde, and elephant bush. Small protected sites on top of the mountain have shrub-live oak and even juniper.

The City of Phoenix was settled in 1867 as an agricultural community near the confluence of the Salt and Gila Rivers, formally becoming incorporated as a City in 1881. The City is located in the northeastern reaches of the Sonoran Desert and observes a subtropical desert climate. Despite its natural climatic challenges, the City thrives due to expansive canal systems that historically have supported farming communities for decades. The Salt River traverses westward through the City and the riverbed is often dry or contains little water due to large upstream dams and irrigation diversions.

## 2.3 Flora and Fauna

Due to its location in the Sonoran Desert, nearly all of the native desert fauna are occasionally found within Phoenix boundaries, but mostly in the suburbs and the remaining desert areas around the City. Mammal species that are found around the Phoenix area include coyote, javelina, bobcat, occasionally jaguar, mountain lion, desert cottontail rabbit, jackrabbit, antelope ground squirrel, mule deer, and a few species of bats that roost in and around the City. There are many species of native birds, including Gambel's quail, Gila woodpecker, mourning dove, white-winged dove, the roadrunner, and the cactus wren (the state bird); and many species of raptors, including falcons, hawks, owls, vultures, such as the turkey vulture and black vulture, and eagles, including the golden and the bald eagle. The suburbs and surrounding areas of Phoenix are also home to a plethora of native reptile species, including the Western diamondback rattlesnake, Sonoran sidewinder, several other types of rattlesnakes, Sonoran coral snake, dozens of species of non-venomous snakes, including the Sonoran gopher snake, and the California king snake, the gila monster, desert spiny lizard, several types of whiptail lizards, the chuckwalla, desert horned lizard, Western banded gecko, Sonora mud turtle, and the desert tortoise. Native amphibian species include the Couch's spadefoot toad, Chiricahua leopard frog, and the Sonoran desert toad. Phoenix and the surrounding areas are also home to a wide variety of native invertebrates, including the Arizona bark scorpion, giant desert hairy scorpion, Arizona blond tarantula, Sonoran Desert centipede, tarantula hawk wasp, camel spider, and tailless whip scorpion.

The Arizona Upland subdivision of the Sonoran Desert (of which Phoenix is a part) has the most structurally diverse flora in the United States. It includes one of the most famous species of succulents, the giant saguaro cactus. Other native species are the organ pipe, ocotillo, barrel, prickly pear and cholla cacti, palo verde trees, various types of palm trees, agaves, foothill and blue palo verde, ironwood, mesquite and the creosote bush.

The Greater Phoenix region is home to the only thriving feral population of rosy-faced lovebirds in the U.S. This bird is a popular birdcage pet, native to southwestern Africa. Feral birds were first observed living outdoors in 1987, probably escaped or released pets, and by 2010 the Greater Phoenix population had grown to about 950 birds. These lovebirds prefer older neighborhoods where they nest under untrimmed dead palm tree fronds.

## 2.4 Transportation

The City utilizes multiple facets of ground transportation which include Metro Light Rail, bus, public transit, bicycle, GRID bike share program, roads and freeways. Valley Metro Regional Public Transportation Authority (Valley Metro) is the unified public brand of the regional transportation system in and around Phoenix, providing public transportation throughout the metropolitan area through the use of trains, buses, and a ride-share program. MAG currently has a Bicycle Advisory Committee working to improve upon the conditions for bicyclists on both city streets and pathways for commuting.

The predominant method of transportation in the City is roads and freeways. City traffic depends on both the supporting connections from the freeways, which fall under the authority of the Arizona Department of Transportation (ADOT). Phoenix ranks first in the nation in the quality of its urban freeways, and the state as a whole ranks first in the nation in the quality of its bridges.

The street system in the City is predominantly laid out utilizing a Jeffersonian Grid, unless interrupted by obstructions, and reflects the use of one-square-mile alignments for both the north-south and east-west transportation alignments. With major arterials being spaced one mile apart, the smaller city blocks are divided approximately every 1/8 mile.

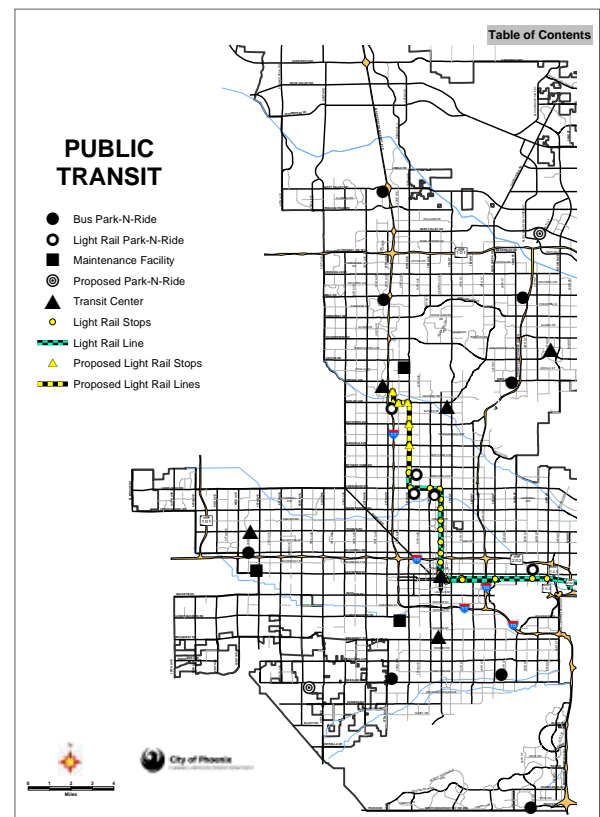
Access to, from, and within the City can be achieved the by use of the freeway and state highways in Phoenix. The following list of transportation corridors reflects the options currently available to users:

Refer to **Appendix A** for additional maps depicting the City and the several freeways and highways which enable quick and easy travel between its neighboring cities, the State of Arizona, and the United States.

## 2.5 Climate

The City of Phoenix has long, very hot summers and short, mild winters. The climate is arid, with plenty of sunshine and clear skies. Various sources cite the City with average high temperatures in summer as the hottest of any major city in the United States and the City has more days when the temperature exceeds 100 degrees than any other city in the United States. Phoenix has on average (1981-2010) 107 days annually with a high of at least 100 °F (38 °C) as reported by National Oceanic and Atmospheric Administration (NOAA), including most days from late May through early October. Highs top 110 °F (43 °C) an average of 18 days during the year. Every day from June 10 through August 24, 1993, the temperature in Phoenix reached 100 °F or more, the longest continuous number of days (76) in the City's history. Officially, the number of days with a high of at least 100 °F has historically ranged from 48 in 1913 to 143 in 1989.

Figure 4 - Phoenix Public Transit





The City averages over 330 days of sunshine, or over 90%, per year, and receives scant rainfall, the average annual total at Phoenix Sky Harbor International Airport being 7 inches (180 mm). Precipitation is sparse during most of the year, but the monsoon brings an influx of moisture. Historically, the monsoon officially starts when the average dew point was 55 °F for three days in a row; on average this event occurs around July 7. However, in 2008 the National Weather Service decreed that from that point forward, June 15 would be the official first day of the monsoon, and it would end on September 30. The monsoon raises humidity levels and can cause heavy localized precipitation, occasional flooding, large hail, strong winds, the rare tornado, and dust storms which can rise to the level of a “haboob” in some years.

July is the wettest month of the year (1.05 inches [27 mm]), while June is the driest (.02 inches [0.51 mm]). On September 8, 2014, the City recorded its single highest rainfall total by the National Weather Service with a total of 3.30 inches. The total rainfall on this day measured more than Phoenix’s annual rainfall average and broke a 75-year-old previous record of 2.91 inches, set back on September 4, 1939. This storm was created from the remnants of Hurricane Norbert that had moved up from the Gulf of California and turned the City’s major interstates and low-lying roadways into flood plains, stranding hundreds of motorists.

Climatic data for the City of Phoenix at the Phoenix Sky Harbor International Airport is illustrated in **Figure 5** below, prepared by the National Weather Service Forecast Office (NWSFO) of the NOAA and Weather.com:

**Figure 5 – Climate Data for Sky Harbor, City of Phoenix**

Climate data for Phoenix Int'l, Arizona (1961–2010 normals, extremes 1895–present) <sup>(1)</sup>													[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °F (°C)	88 (31)	92 (33)	100 (38)	105 (41)	114 (46)	122 (50)	121 (49)	117 (47)	116 (47)	107 (42)	96 (36)	87 (31)	122 (50)
Average high °F (°C)	67.2 (19.6)	70.7 (21.5)	76.9 (24.9)	85.2 (29.6)	94.8 (34.9)	103.9 (39.9)	106.1 (41.2)	104.4 (40.2)	99.8 (37.7)	88.5 (31.4)	75.5 (24.2)	66.0 (18.9)	86.8 (30.3)
Daily mean °F (°C)	58.4 (13.6)	59.7 (15.4)	65.2 (18.4)	72.7 (22.6)	82.1 (27.8)	90.8 (32.7)	94.9 (34.9)	93.6 (34.2)	88.4 (31.3)	76.7 (24.8)	64.1 (17.8)	55.4 (13)	75.0 (23.9)
Average low °F (°C)	45.6 (7.6)	48.7 (9.3)	53.5 (11.9)	60.2 (15.7)	69.4 (20.8)	77.7 (25.4)	83.5 (28.6)	82.7 (28.2)	76.9 (24.9)	64.8 (18.2)	52.7 (11.5)	44.8 (7.1)	63.4 (17.4)
Record low °F (°C)	16 (-9)	24 (-4)	25 (-4)	35 (2)	39 (4)	49 (9)	63 (17)	58 (14)	47 (8)	34 (1)	27 (-3)	22 (-8)	16 (-9)
Average precipitation inches (mm)	0.91 (23.1)	0.92 (23.4)	0.99 (25.1)	0.28 (7.1)	0.11 (2.8)	0.02 (0.5)	1.05 (26.7)	1.00 (25.4)	0.64 (16.3)	0.58 (14.7)	0.65 (16.5)	0.88 (22.4)	8.03 (204)
Average precipitation days (≥ 0.01 in)	4.1	4.4	3.9	1.7	1.0	0.5	4.2	5.0	2.8	2.5	2.6	3.9	36.6
Average relative humidity (%)	50.9	44.4	39.3	27.8	21.9	19.4	31.6	36.2	35.6	36.9	43.8	51.8	36.6
Mean monthly sunshine hours	256.0	257.2	318.4	353.6	401.0	407.8	378.5	360.8	328.6	308.9	256.0	244.8	3,871.6
Percent possible sunshine	81	84	86	90	93	95	86	87	89	88	82	79	87

Source: NOAA (relative humidity and sun 1961–1990)<sup>(2)</sup> (3) (4), Weather.com<sup>(5)</sup>

## 2.6 Precipitation

While the City of Phoenix is located with an arid environment and is typically referred to as the desert southwest, summer monsoons bring increased humidity and chances of thunderstorms. Annually the City receives rainfall in which floodplain, street drainage, and local infrastructure are required to collect and convey these discharges through the metropolitan valley. The subregions of Middle Gila, Agua Fria, and Lower Salt ultimately collect and contribute to the hydrologic routing of annual, seasonal, and tropically influenced stormwater events.

Based upon NOAA Atlas 14, Volume 1, Version 5 Point Precipitation Data retrieved October 2015 for Phoenix Arizona (Lat. 33.4547, Long -112.1056, Elev. 1074 ft) **Table 1** on the following page provides the Point Precipitation Frequency Estimates are provided with 90% confidence intervals for the City.

**Table 1 – NOAA 14 Precipitation Estimates for City of Phoenix**

POINT PRECIPITATION FREQUENCY ESTIMATES FOR 100-YEAR EVENTS	
2-hour	2.24"
6-hour	2.64"
24-hour	3.44

Reviewing this readily available information provides insight into the anticipated rainfall which may occur during a particular average recurrence interval (year). Utilizing this data in conjunction with the City’s current design standards, policies, and technical guidance provides for an understanding of the stormwater infrastructure design requirements, current system capacities, and the resulting opportunities for improvements identified through various sources of City driven and City Partner projects with the FCDMC.

## 2.7 Watersheds

The State of Arizona is predominantly defined as being located in Region 15 (Lower Colorado Region) per the United States Geological Survey (USGS) Hydrologic Map Unit (HUC), based on data from the USGS Water-Supply Paper 2294. The City of Phoenix is located within three of the eight digit HUC-8 hydrologic subregions named Middle Gila, Agua Fria, and Lower Salt. The Agua Fria subregion generally drains from a northern to southern direction, with an outfall to the Agua Fria River. The Lower Salt subregion generally drains from an eastern to western direction, with portions of the subregion flowing from north to south, ultimately reaching an outfall of the Salt River. The Middle Gila subregion general flows from southeastern to northwestern direction contributing to the Gila River and continues to the confluence of the Salt River and then the Agua Fria River, with a continuation of flow in a south-westerly direction.

- **Middle Gila** - Is located upon and adjacent to the southern boundary of the City. Approximately 1.3% of the subregion is located within the City.
- **Agua Fria** - Is located upon the north and northwestern boundary of the City. Approximately 9.5% of the subregion is located within the City.
- **Lower Salt** - Is located upon and adjacent to the eastern boundary of the City. Approximately 20.7% of the subregion is located within the City.

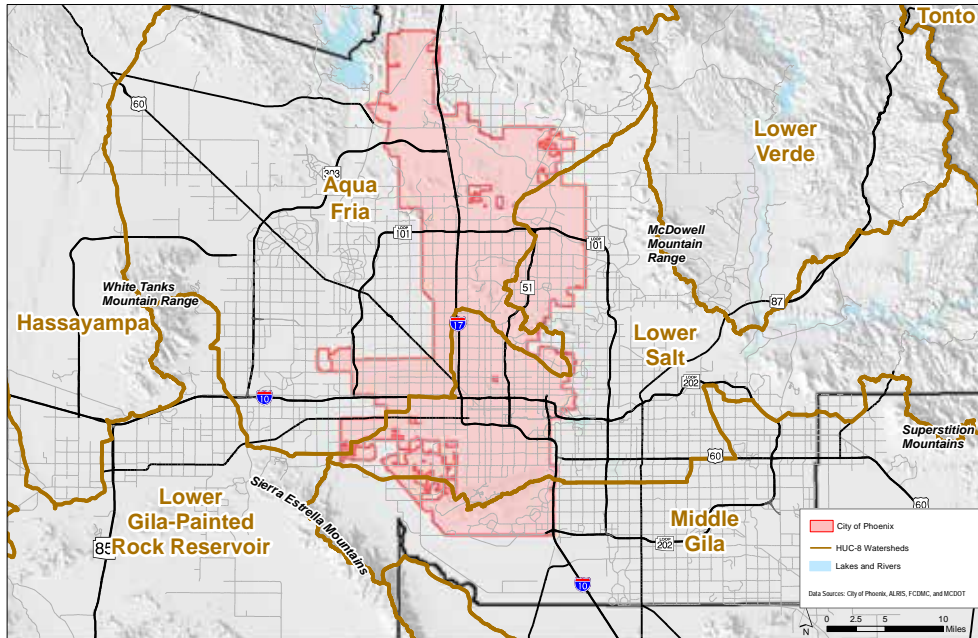
**Figure 6** on the following page depicts the location of each HUC-8 subregion with respect the City of Phoenix jurisdictional boundaries and the river courses.

### FEMA FIS River course Descriptions:

The Agua Fria River, a tributary to the Gila River, rises in the Prescott National Forest and flows southerly for approximately 130 miles to its confluence with the Gila River. It drains an area of approximately 2,340 square miles. The river is usually dry because flows are regulated by the Carl Pleasant Dam and Lake Pleasant reservoir, approximately 18 miles north of El Mirage, in north-central Maricopa County (U.S. Department of the Army, 1968).

The Gila River, which is the largest tributary to the lower Colorado River, flows southwesterly through the southern half of the county. The river basin includes the southern half of Arizona and part of southwestern New Mexico and contributes a drainage area of approximately 49,500 square miles at the Gillespie Dam, which is approximately 31 miles downstream from Goodyear.

**Figure 6 - HUC-8 Watersheds for City of Phoenix**



The Salt River originates at Roosevelt Lake in Gila County. The river flows westerly through east-central Maricopa County to its confluence with the Gila River. The Salt River has a wide, irregular, sandy streambed with several meandering channels throughout the study area. The river drains an area of 13,700 square miles at its mouth. The Salt River is regulated by four dams: Roosevelt, Horse Mesa, Mormon Flat, and Stewart Mountain. The total capacity of the four reservoirs is 1.755 million acre-feet.

Water from this system is used for irrigation of the Salt River Valley and for the generation of power (U.S. Department of the Interior, 1973). Granite Reef Dam, located on the Salt River 3.4 miles below its confluence with the Verde River, diverts water from the river to Arizona and Southern Canals. This water is for municipal use and irrigation.



## 03 Planning Process

# 3. Planning Process

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. The City is actively engaged in further defining the areas at risk by participating in several technical investigations such as Area Drainage Master Studies (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. The City is currently identified as a Category C community, an NFIP CRS designation based upon the number of listed RL properties. At this time the City has 21 RL properties within its jurisdiction.

In 2015, the MJHMP was updated by JE Fuller under contract with Maricopa County Department of Environmental Resources (MCDEM). A supplemental document was prepared for each jurisdiction. Current CRS guidelines provide direction for the involvement of the public, other agencies, and stakeholders in the cooperative development of the Mitigation and Floodplain Management Plans. This FMP has been developed (in part) according to the CRS guidelines as follows the NFIP Section 510, ten step process.

- |                                   |  |
|-----------------------------------|--|
| <b>Step 1.</b> Organize           | <b>Step 6.</b> Set goals                     |
| <b>Step 2.</b> Involve the public | <b>Step 7.</b> Review possible activities    |
| <b>Step 3.</b> Coordinate         | <b>Step 8.</b> Draft an action plan          |
| <b>Step 4.</b> Assess the hazard  | <b>Step 9.</b> Adopt the plan                |
| <b>Step 5.</b> Assess the problem | <b>Step 10.</b> Implement, evaluate, revise. |

The City of Phoenix is actively developing the FMP Planning Committee for future review and actions associated with this document.

The following sections review the efforts undertaken to involve the regional agencies, the public, and stakeholders in the development of the FMP.

## 3.1 Organize (Step 1)

### Step 1a - Committee with Public Works (4 Points Max)

The MJHMP was developed utilizing eighteen (18) representatives from various departments, divisions, or branches within the City. During this update, limited participants outside of the City were selected for input, however future revisions are highly encouraged to utilize stakeholder participants as detailed within the CRS Coordinators Manual. An outside consultant was utilized to support the development of the report, at this time the level of interaction for the MJHMP is unclear.

### Step 1b – Community Planning Committee (9 Points Max)

### Step 1c – Action Recognized by Governing Body (2 Points Max)

- Steps 1B-1C not included at this time. Recommended for future incorporation into the FMP.

## 3.2 Involve the Public (Step 2)

### Step 2a – Public Involvement with Committee (60 Points Max)

### Step 2b – Initial Information Meetings (15 Points Max)

### Step 2c – Follow-up Information Meetings (15 Points Max)

### Step 2d – Additional Public Information Activities (5 Points Max)

- Steps 2A-2D not included at this time. Recommended for future incorporation into the FMP.

## 3.3 Coordinate (Step 3)

### Step 3a – Planning Review of Existing Information (5 Points Max)

### Step 3b– Coordination outside of Community’s Governmental Structure (30 Points Max)

- Steps 3A-3B not included at this time. Recommended for future incorporation into the FMP.

Adoption of the MJHMP was accomplished by the City in 2015, in accordance with the authority and powers granted by those in jurisdiction by the City, or the State of Arizona. As future revisions to the MJHMP are prepared they should be included in this section.

## 3.4 Assess the Hazard (Step 4)

### Step 4a – Assessment of Flood Hazard in Plan (15 Points Max)

In participation with the Flood Control District of Maricopa County, updated FEMA FIRM products were issued by FEMA on November 14, 2015, which includes coverage for the City. The City is currently listed as a Category C repetitive loss community, therefore Step 4 is mandatory and shall cover all RL areas. As part of the 1992 FMP, the City has identified and mapped areas, which include (some/all) of the RL properties and have included other sources of flood as identified in other studies. Some studies provide flooding statements, draft flooding maps, or other sources considered to be the best available information for areas not located within a FEMA SFHA. The following figures are provided as indicators of currently available information which include SFHA, RL properties, points, linear indications, and transportation infrastructure.

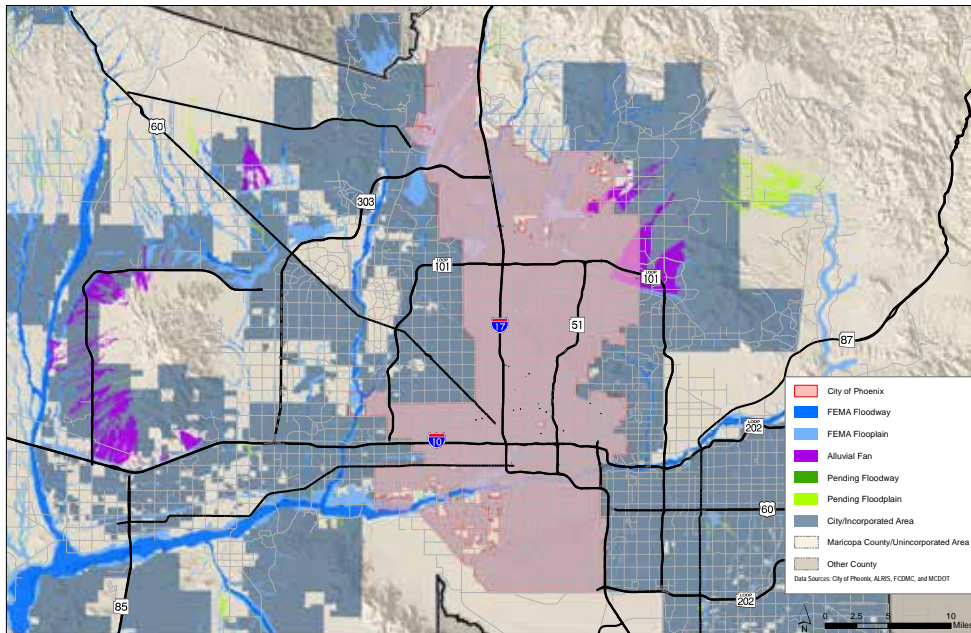
#### **STEP 4A(1) – MAP OF FLOOD HAZARD AREAS (5 POINTS MAX)**

**Figure 7**, on the next page, shows the FEMA SFHA’s with respect to the currently effective FIRM panels. Refer to **Appendix A** for a full size copy of this map.

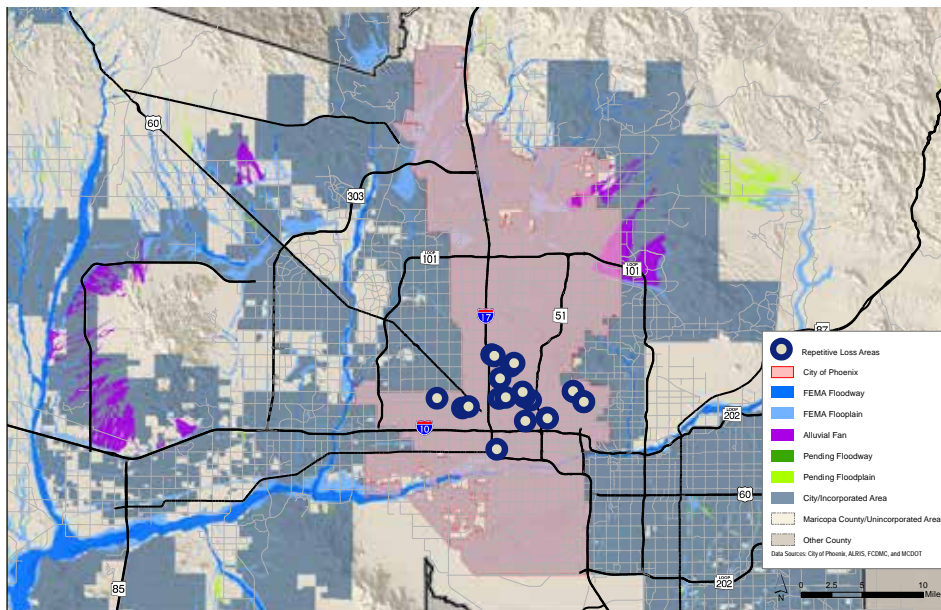
**Figure 8**, on the next page, shows the locations of the RL properties with respect to the City of Phoenix jurisdictional boundary, FEMA SFHA’s, and Maricopa County Boundary based on best available data from October 2015. As a result of coordination with the City of Phoenix Street Transportation Department, several Capital Improvement Projects (CIP) and Flood Mitigation Measures (FMM) have been identified with respect to infrastructure needs. Refer to **Appendix A** for a full size copy of this graphic.



**Figure 7 - FEMA SFHA & City of Phoenix**



**Figure 8 - Repetitive Loss Properties**



**STEP 4A (2) - DESCRIPTION OF KNOWN FLOOD HAZARDS (5 POINTS MAX)**

**STEP 4A (2.1) - PREVIOUSLY COMPLETED FLOOD MITIGATION ACTIVITIES**

Since the development of the previously prepared FMP for the City in 1992, all previously identified future projects have since been completed and are actively in place providing varied levels of protection for residents, critical infrastructure, and promote enhanced public safety. The City has been proactive with participation in studies, planning, design and construction related activities that require updates to the SFHA.



**Legend:**

Area Drainage Master Study (ADMS)  
 Area Drainage Master Plan (ADMP)  
 Floodplain Delineation Study (FDS)  
 Arizona Canal Diversion Channel (ACDC)

**Studies & Projects within or impacting the City of Phoenix:**

- 7th Street Storm Drain
- 9th Street Storm Drain
- 10th Street Wash FDS
- 10th Street Wash Detention Basins 1 and 2 & 10th Street Improvements between Alice Avenue to ACDC
- 15th Avenue between Union Hills Drive & Bell Road
- 23rd Avenue & Roeser Road Storm Drain & Detention Basin
- 24th Avenue & Camelback Road Basin
- 26th Avenue & Verde Lane (Repetitive Loss Property)
- 39th Avenue (west) between Rue De Lamour Avenue & Sharon Lane
- 42nd Street & South of Camelback Road
- 43rd Avenue & South of Southern
- 43rd Avenue & Southern Avenue Detention Basin & 43rd Avenue Storm Drain
- 48th Street Drain
- Adobe Dam & Desert Hills ADMP
- Adobe Dam Improvements
- Agua Fria River FDS
- Agua Fria Watercourse Master Plan
- Ahwatukee Foothills ADMS
- Apache Wash Flood Insurance Study
- Arizona Canal Diversion Channel & ACDC Improvements
- Baseline Road Storm Drain
- Baseline Area Master Plan
- Baseline Road between 7th Street & 16th Street
- Bethany Home Outfall Channel
- Beardsley Final Drainage Report
- Beardsley Road Drainage System (7th Avenue to 23rd Avenue)
- Buchanan Wash Area Drainage Master Study
- Camelback Ranch Levee North FDS
- Camelback Ranch Levee
- Camelback Road Storm Drain between 59th Avenue to 75th Avenue
- Cave Buttes Dam & Cave Buttes Dikes 1, 2 and 3
- Cave Buttes Modifications
- Cave Creek (Cave Buttes Dam to Greenway Road) FDS
- Cave Creek ADMP
- Cave Creek - Phoenix Metro ADMS & ADMP
- Cave Creek below Carefree Highway FDS

- Cave Creek Channelization between Cave Buttes Dam to ACDC
- City of Phoenix Dam #7 Rehabilitation
- Deadman’s Wash FDS
- Desert Ridge Master Plan & Watercourse Master Drainage Report (State Lands)
- Dreamy Draw Dam
- Dreamy Draw Wash West to ACDC FDS
- Durango ADMP
- Durango Regional Conveyance Channel & 75th Avenue Storm Drain
- East Fork Cave Creek Wash Detention Basins
- Echo Canyon Wash FDS
- Flynn Lane Wash FDS
- Glendale & Peoria ADMS & ADMP
- Greenway Parkway Channel (9th Street to Cave Creek Rd)
- Hohokam ADMS & ADMP
- Indian School Road Drainage Improvement (107th Ave to Agua Fria River)
- Indian Bend Wash – Paradise Valley to Scottsdale Road & McCormick Parkway
- Lafayette Interceptor Drain and Outlet
- Laveen Area Conveyance Channel ADMS & ADMP
- Laveen Area Conveyance Channel
- Little Deer Valley ADMS
- Maryvale ADMS
- Maryvale Stadium West Inlet Channel
- Moon Valley FDS
- New River West Tributaries FDS
- Northeast Phoenix Master Drainage Plan (ACOE)
- Numerous Local Drainage Projects
- Numerous Local Drainage Sites
- Old Cross Cut Canal Improvements
- Paradise Ridge Master Drainage Report (State Lands)
- Paradise Valley Detention Basin #4
- Peripheral Planning Areas C and D
- Phoenix Downtown Drainage System (Phase 1)
- Phoenix General for Community Needs, Goals and Plans
- Pinnacle Peak West ADMS
- Rio Salado Low Flow Channel (19th Avenue to I-10)
- Salt River FDS
- Salt River Levees
- Salt River Rio Salado FDS
- Scatter Wash & ACDC FDS
- Scatter Wash Channel & Basin
- Scottsdale, Tempe and Phoenix (STP) Watershed Study
- Skunk Creek – ACDC to Adobe Dam FDS

- Skunk Creek – Central Arizona Project to New River Mountain FDS
- Skunk Creek Channel & Levee
- Skunk Creek Master Plan
- Skunk Creek Watercourse Master Plan
- Sky Harbor Airport Drainage Master Plan
- Sonoran Wash FDS
- Southeast Phoenix Regional Drainage System
- Southeast Regional Drainage System
- Sweat Canyon Wash FDS
- Tatum Wash Detention Basin
- Tolleson Area Study (South Pacific Railroad & Roosevelt Canal)
- Tres Rios FDS
- Upper Cave Creek Master Watercourse
- Upper Cave Creek & Apache Wash Watercourse Master Plan
- Upper East Fork Cave Creek ADMS
- Upper New River ADMP
- Wash 6 FDS
- White Tanks & Agua Fria ADMS & ADMP

**STEP 4A (2.2) – ONGOING FLOOD MITIGATION ACTIVITIES**

The City is actively participating in planning studies underway by the FCDMC for Fiscal Year 2015/2106, which include the following listed projects:

- 27th Avenue & South Mountain Avenue Detention Basin
- 35th Avenue Storm Drain from Baseline Road to Dobbins Road
- Ahwatukee Foothills ADMP
- Pinnacle Peak West ADMP
- Salt River Rio Salado Pathway FDS
- Middle Indian Bend Wash ADMS
- Tempe ADMP
- Upper East Fork Cave Creek ADMS

The **Figure 9** on the following page depicts the locations of ongoing flood mitigation efforts for planning and design with respect to the City and the cooperative participation for multi-jurisdictional benefits from the joined study efforts. Refer to **Appendix F** for a full-size copy of this map, as prepared by FCDMC.

**STEP 4A (2.3) – FUTURE MITIGATION ACTIVITIES**

As a result of previously completed studies, plans, records from prior flooding events, project partnerships, and infrastructure assessments the City has prepared a City Wide Master Drainage Planning – Capital Improvement Plan. This plan is constructed utilizing four (4) areas and three (3) core components to assess current and future needs. The areas are defined by geographic location and referred to as North, East, South, and West respectively. **Figure 10**, on the next page, depicts the aforementioned areas.



The second component of future needs is Master Planning/CIP, which reflects the needs of larger studies for the mitigation benefits of areas at a larger scale, which typically reflect higher dollar funding allocations. This Master Planning/CIP has an estimated need of \$566M.

The third component of the future needs is trunk line for Storm Drain Projects. As the City's infrastructure ages, reaches or exceeds capacity, and receives additional demand, the need for improvements continues to grow. The trunk line for Storm Drain Projects has an estimated need of \$702M.

Needs under the City of Phoenix Improvement Plan, reflected by area are presented within the following **Tables 2** through **Table 4** for illustration of location and types of needs identified with the respective areas.

**Table 2 - North | Future Mitigation Activities**

Skunk Creek Levee at Central Arizona Project (at I-17)
Palisene-Paradise Ridge Drainage Project (State Route 101 and Scottsdale Road)
Skunk Creek Channel at Pinnacle Peak Road (35th Ave and Pinnacle Peak Road)
Palo Verde Golf Course Storage Basin (15th Avenue and Rose Lane)
Local Drainage Projects (various locations)

**Table 3 - East | Future Mitigation Activities**

Lafayette Blvd Storm Drain Arcadia Drive to 44th Street)
40th Street Storm Drain (40th Street and Camelback Road)
Arcadia Drive Storm Drain (48th Street and Camelback Road)
Camelback Road Storm Drain (West, Arcadia to 40th Street)
Central Avenue Storm Drain (Bethany Home Road to Arizona Canal)
Thomas Road Storm Drain (Old Cross Cut Canal to 60th Street)
Camelback Road Storm Drain (East, Arcadia Drive to 56th Street)
Local Drainage Projects (various locations)

**Table 4 - South | Future Mitigation Activities**

Durango Regional Conveyance Channel - Phase II (83rd to 107th Ave., along Elwood Street)
27th Avenue/South Mountain Avenue Detention Basin
27th Avenue/Dobbins Road Detention Basin
South Phoenix/Laveen Drainage Improvement Project (19th Ave and Dobbins Road)
Basin 5/Circle K Park (12th Street and South Mountain Avenue)
14th/15th Street Storm Drain (14th Street and Dobbins Road)
Basin 1/Ardmore Road Storm Drain (16th Street and Ardmore Road)
South Mountain Avenue/17th Way Storm Drain
Jefferson Street Storm Drain (at I-17)
43rd Avenue and Dobbins Road Detention Basin
44th Avenue and Carver Road Detention Basin
51st Avenue Storm Drain (Baseline to Elliot Road)

**Table 4 – South | Future Mitigation Activities**  
 continued

51st Avenue and Elliot Road Basin
67th Avenue Channel (Southern Avenue to South Mountain Avenue)
Dobbins Road Storm Drain (43rd Avenue to 51st Avenue)
7th Avenue Storm Drain (Baseline Road to South Mountain Avenue)
27th Avenue Storm Drain (Baseline Road to South Mountain Avenue)
Basin 11 and Outfall Storm Drain (20th Street and Baseline Road)
20th Street/Euclid Avenue Storm Drain
19th Street/South Mountain Avenue Storm Drain
Basin 10/Head Scout Pueblo Boy's Scout Club (20th Street and Dobbins Road)
43rd Avenue Storm Drain Outfall Project (at Broadway Road)
Pecos Basin Outfall Project (48th Street and Pecos Road)
Downtown Storm Drains (various locations, north of railroad)
Van Buren Street Storm Drain (I-10 to 40th Street)
Reservation Channel (Dobbins Road to Laveen Area Conveyance Channel)
Carver Hills Storm Drain (Estrella Drive and 45th Avenue)
Western Canal Channel (43rd Avenue to 51st Avenue)
47th Avenue Channel System (Buckeye Road to Salt River)
Sunland Avenue Channel (99th Avenue to 115th Avenue)
Salt River Channelization at 67th Avenue (67th Avenue and Salt River)
Downtown Storm Drains (various locations, south of railroad)
Durango Curve Detention Basin and Collection System (19th Ave and Buckeye Road)
Local Drainage Projects (various locations)

**Table 5 – West | Future Mitigation Activities**

Encanto Golf Course Storage Basin (7th to 19th Avenue)
15th Avenue Storm Drain (Palo Verde Golf Course to Butler Drive)
21st Avenue Storm Drain (Encanto Golf Course to Northern Avenue)
15th Avenue Storm Drain (Encanto Golf Course to Grand Canal)
3rd Avenue Storm Drain (Encanto Golf Course to Bethany Home Road)
Thomas Road Storm Drain (Encanto Golf Course to 24th Avenue)
McDowell Road Storm Drain (Arizona Dept. of Transportation Tunnel to 15th Avenue)
Local Drainage Projects (various locations)

**STEP 4A (3) – PAST FLOODING EVENTS (5 POINTS MAX)**

The City has been part of several disaster declarations due to past flooding. Most recently a Presidential Disaster was declared on November 5, 2014 with respect to the storm events which occurred between September 7th and 9th, of 2014 in the State of Arizona. However, several undeclared flooding events have been reported in the City. The following severe storm dates are flood events which have impacted the City:

- August 1921
- August 1943
- August 1963
- November - December 1965
- June 1972
- February - March 1978
- February 1980
- July 1981
- September 1984
- August 1990
- July 1992
- August 2014
- September 2014
- August 2016

The President can declare a major disaster for any natural event, including hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought, or, regardless of cause, fire, flood, or explosion, that the President determines has caused damage of such severity that is beyond the combined capabilities of state and local governments to respond. A major disaster declaration provides a wide range of federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work. Previously prepared major disaster declarations for the State of Arizona were issued on the following dates as reflected by the FEMA disaster database, <http://www.fema.gov/disasters/grid/state-tribal-government/76> as shown on the following page.



**FEMA Recognized Major Disaster Declarations**

Declaration Number	Date of Declaration	Incident Description	Declaration Number	Date of Declaration	Incident Description
217	4/30/1966	Flooding	1304	10/15/1999	Severe Storms, High Winds and Flooding
294	9/22/1970	Heavy Rains, Flash Floods	1347	10/27/2000	Severe Storms And Flooding
343	7/3/1972	Severe Storms And Flooding	1422	6/25/2002	Wildfires
360	10/25/1972	Heavy Rains, Flooding	1477	7/14/2003	Wildfire
540	11/4/1977	Severe Storms And Flooding	1581	2/17/2005	Severe Storms and Flooding
551	3/4/1978	Severe Storms And Flooding	1586	4/14/2005	Severe Storms and Flooding
570	12/21/1978	Severe Storms And Flooding	1660	9/7/2006	Severe Storms and Flooding
614	2/19/1980	Severe Storms And Flooding	1888	3/18/2010	Severe Winter Storms and Flooding
686	7/1/1983	Flooding	1940	10/4/2010	Severe Storms and Flooding
691	10/5/1983	Severe Storms And Flooding	1950	12/21/2010	Severe Storms and Flooding
730	1/15/1985	Heavy Rain, High Winds	4203	11/5/2014	Severe Storms and Flooding
884	12/6/1990	Flooding, Severe Storm			
977	1/19/1993	Severe Storms, Tornadoes, Flooding			

Refer to **Appendix E** for more information about these historic flooding events as excerpts from the previously provided FMP (1992).

Per the effective FEMA FIS, heavy precipitation in the mountains north and east of the City caused five floods in the Phoenix area from March 1978 to February 1980. The floods occurred in March 1978, December 1978, January 1979, March 1979, and February 1980 (approximately a 2-percent-annual-chance flood event) when the flows in the Salt, Verde, and Agua Fria Rivers exceeded the storage capacity of the reservoirs on the rivers. These floods made almost all river crossings on the Salt River impassable for weeks and cut Maricopa County practically in half. Because of major traffic delays, businesses suffered major income losses. The nuisance of traffic jams also affected the lives of residents in the Phoenix metropolitan area. There were major physical damages to roads and bridges that crossed the Salt and Agua Fria Rivers. The Sky Harbor International Airport runways were flooded, causing partial closure of operations. The other flood damages were to agricultural fields on the flat floodplain, to the sand-and-gravel-mining operations in the riverbed, and to commercial establishments in the river floodplains. Emergency assistance costs for local fire, police, and public services increased significantly. The overall flood damage estimate for March 1978 was approximately \$33.2 million; for December 1978, \$51.8 million; and for February 1980, \$63.6 million.



**FEMA Figures 1, 2, 3, and 4** depict flooding along the Salt River during December 1965. **Figure 9** shows flooding on the Agua Fria River near the City of Goodyear during the December 1965 flood.

**Figure 11 - FEMA FIS FIGURE 1** FEMA - Figure 1. Looking downstream on the Salt River During the December 1965 flood (Sky Harbor International Airport runways are in the center.)

**Figure 12 – FEMA FIS FIGURE 2**



FEMA - Figure 2. Salt River flooding in December 1965 (The 40th Street bridge railing is visible at lower right; flow is from right to left.)

**Figure 13 – FEMA FIS FIGURE 3**



FEMA - Figure 3. The Salt River Bridges in the City of Tempe, looking upstream (The flooded area in the upper center is now developed into athletic fields and parking lots for Arizona State University. Photograph was taken on December 31, 1965.)



**Figure 14 - FEMA FIS FIGURE 4**



FEMA - Figure 4. The Salt River in the City of Tempe looking southwest (The flow is left to right. The buildings in the upper center of the photo are the Arizona State University. Scottsdale Road crosses the photo from the upper left to the lower right. Photograph was taken on December 31, 1965.)

**Figure 15 - FEMA FIS FIGURE 5**



FEMA - Figure 5. Agua Fria River Flooding at U.S. Highway 80 and Southern Pacific Railroad Bridge near the City of Goodyear on December 22, 1965 (Direction of flow is right to left.)

FEMA FIS listed “other large floods” include April 1905, February 1920, March 1938, August 1951, December 1965, December 1967, September 1970, and June 1972.

**Figure 16 – Skunk Creek Overflow Floods Interstate 17, August 19, 2014**



Source Note: The overrun Skunk Creek floods I-10, Tuesday, Aug. 19, 2014, in northwestern Phoenix. (Matt York/AP) <[http://www.mercurynews.com/nation-world/ci\\_26371286/phoenix-floods-dramatic-rescues-during-absolutely-devastating-storms](http://www.mercurynews.com/nation-world/ci_26371286/phoenix-floods-dramatic-rescues-during-absolutely-devastating-storms)>

**Figure 17 – Phoenix Storm Impacts Commuters, August 19, 2014**



Police officers had to help stranded passengers through a flooded roadway near I-17 and Greenway Tuesday, Aug. 19. <http://www.abc15.com/news/region-phoenix-metro/central-phoenix/srp-tuesday-morning-storms-knock-power-out-to-2000-customers>

**Figure 18 - Phoenix Residential Flooding, September 8, 2014**



Phoenix residential neighborhoods experience massive flooding on trash collection day, services continued, Sep 8, 2014 <http://www.foxnews.com/us/2014/08/20/arizona-flooding-forces-dramatic-rescues-in-phoenix-area/>

// The remnants of Hurricane Norbert pushed into the desert Southwest and swamped Arizona Monday, breaking the previous record for rainfall in a single event.

**Figure 19 - Flooding in Phoenix Wreaks Havoc on Residents, Sept 8, 2014**



Floods in Phoenix, Arizona, 08 September 2014. Photo: *Devon Christopher Adams* <http://floodlist.com/america/usa/2-dead-flash-floods-arizona-nevada>



**Step 4b - Assessment of Less-Frequent Flood Hazards in Plan** (10 Points Max)

**STEP 4B (1A) - INVENTORY OF LEVEES**

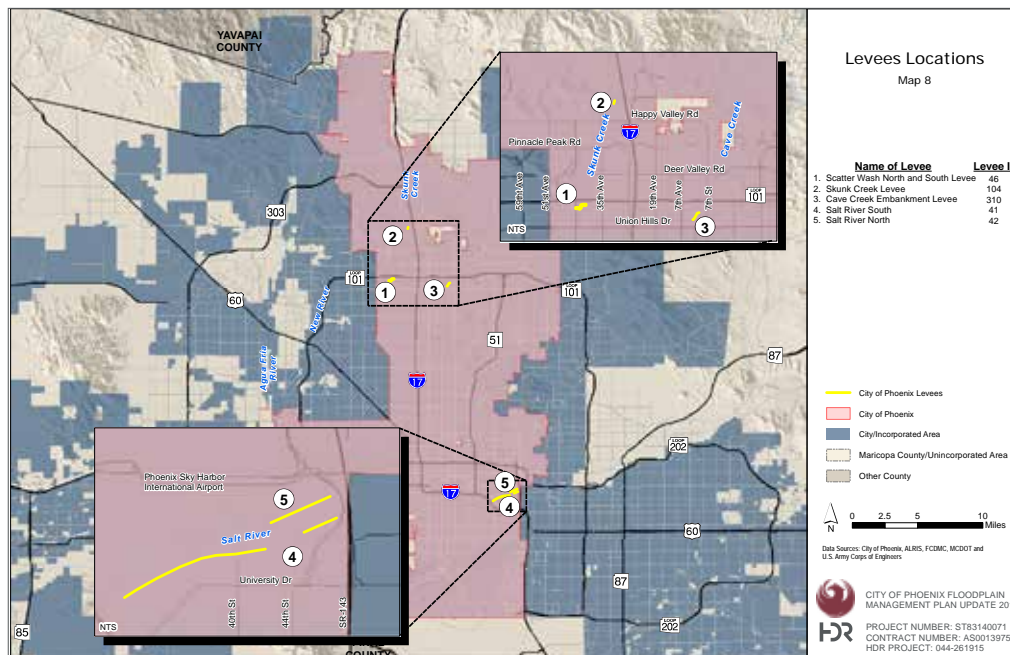
The City has reviewed records for levees within its ownership to prepare an inventory of levees that would result in flooding of developed areas if they failed or become overtopped during a flood. The City's levees reside on the embankments of Cave Creek Wash, Salt River, Scatter Wash, and Skunk Creek located adjacent to critical infrastructure, transportation hubs, and residential neighborhoods. The following **Table 6**, reflects the City's four (4) certified levee's within their inventory and the date of the most recent Levee Certification reporting.

**Table 6 - Levee Inventory for City of Phoenix**

STRUCTURE NAME	LOCATION	LEVEE ID	LEVEE CERTIFICATION REPORT DATE
Cave Creek Levee	North of Union Hills, between 7th Avenue and 7th Street	ID 310	Jun-13
Salt River Levee North	North Bank of Salt River, west of 44th Street	ID 42	Feb-11
Salt River Levee South	South Bank of Salt River, between Interstate 10 and 44th Street	ID 41	Feb-11
Scatter Wash Levee	Located at 43rd Avenue, approximately 0.3 miles south of Beardsley Road and extends approximately 0.5 miles east along Scatter Wash	ID 46	Jun-11
Skunk Creek Levee	Approximately 2,200 ft downstream of where Skunk Creek crosses Interstate 17, south of Jomax Road alignment	ID 107	Mar-14

Refer to **Figure 20** for an area map depicting the location of the City's current levee inventory. Refer to **Appendix A** for a full size copy of this graphic.

**Figure 20 - Levee Inventory for City of Phoenix**



**STEP 4B (1B) - INVENTORY OF DAMS**

The City of Phoenix Street Transportation Department annually inspects and maintains 16 dams. Four of the dams are recognized as jurisdictional (ADWR ID 7-47, 7-51, 7-35, and 7-36), four are recognized as non-jurisdictional, and the remaining eight are located within the City of Phoenix Zoo and commonly referred to as Papago Park dams. Criteria utilized for jurisdictional consideration are: An impoundment of 50-acre feet of water or if the dam height for storage capacity is at least 25-feet. Inspections for jurisdictional dams are required and conducted in conjunction with the Arizona Department of Water Resources (ADWR) in accordance with Arizona State law and FEMA regulations.

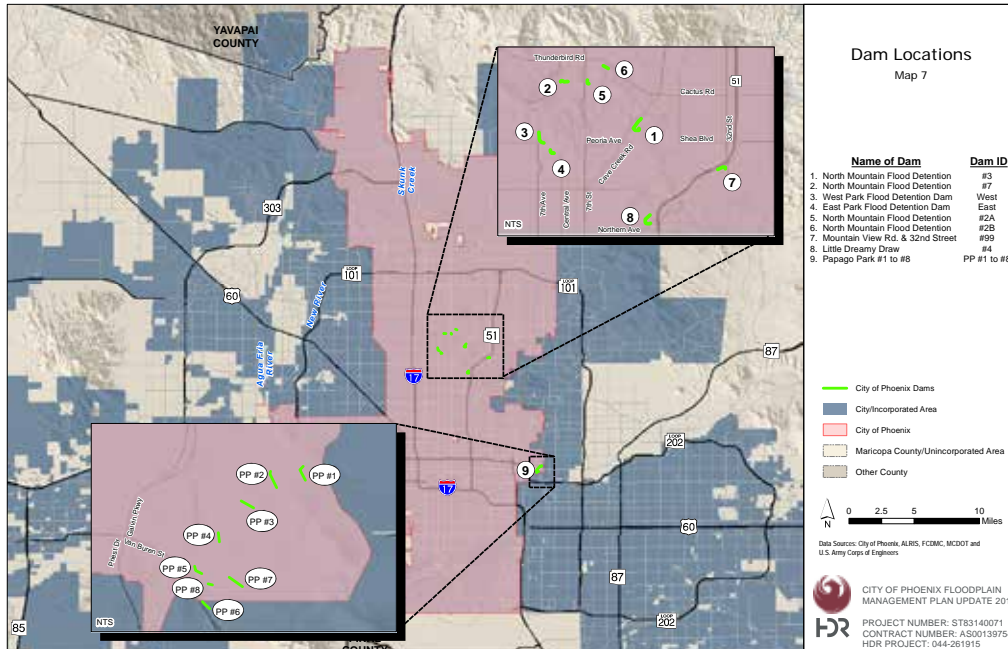
Dams within the City of Phoenix provide value added flood protection to hundreds of homes, properties, and infrastructure. The dams are investigated annually within the City’s Dam Safety program to define the areas of impact should a dam fail or become overtopped during a flood. The following **Table 7** reflects the City’s dam inventory review and the date of the corresponding Emergency Action Plan (EAP) Report with Notification Chart Updates.

**Table 7 - Dam Inventory for City of Phoenix**

STRUCTURE NAME	LOCATION	DAM ID	ADWR ID	EAP REPORT DATE	NOTIFICATION CHART UPDATE
*North Mountain Flood Detention Dam #3	Cave Creek Road	Dam#3	7-47	Feb-05	Jun-09
*North Mountain Flood Detention Dam #7	Central Avenue south of Thunderbird Road	Dam#7	7-51	Jun-06	Jun-09
*West Park Flood Detention Dam	7th Avenue north of Peoria Avenue	West	7-35	May-05	Jun-09
*East Park Flood Detention Dam	7th Avenue east of Mountain View Park	East	7-36	Jun-06	Jun-09
North Mountain Flood Detention Dam #2A	7th Street south of Thunderbird Rd	Dam#2A	N/A	Jun-09	Jun-09
North Mountain Flood Detention Dam #2B	Thunderbird Rd east of 7th Street	Dam#2B	N/A	Jun-09	Jun-09
Mountain View Rd & 32nd Street	South of SR51	Dam#99	N/A	Jun-09	Jun-08
Little Dreamy Draw	Northwest of Northern Ave and SR51	Dam #4	N/A	Jun-08	Jun-08
Papago Park #1	Papago Park outside of Zoo	PP#1	N/A	-	-
Papago Park #2	Papago Park outside of Zoo	PP#2	N/A	-	-
Papago Park #3	Papago Park at entrance to Zoo	PP#3	N/A	-	-
Papago Park #4	Inside Zoo	PP#4	N/A	-	-
Papago Park #5	Inside Zoo	PP#5	N/A	-	-
Papago Park #6	Inside Zoo	PP#6	N/A	-	-
Papago Park #7	Inside Zoo	PP#7	N/A	-	-
Papago Park #8	Inside Zoo	PP#8	N/A	-	-
Note: * The dams with an asterisk are identified as jurisdictional					

Refer to **Figure 21** for an area map depicting the location of the City’s current dam inventory. Refer to **Appendix A** for a full size copy of this graphic.

**Figure 21 - Dam Inventory for City of Phoenix**



**STEP 4B (1C) - IDENTIFY FLOOD RELATED HAZARDS**

In 2014 the City participated in a study as a response to residential requests to mitigate flooding which occurs at 47th Avenue and Waltann Lane. The City contracted with a consultant to conduct a hydraulic investigation to identify the source of the problem, develop alternatives, and provide recommendations for future mitigation. This study area is not located with a FEMA effective SFHA and little information was known about the source or extent of flooding challenges before this effort. As a result, the City is now aware of additional flooding hazards from infrastructure sources and seeks to provide mitigation through partnership projects with the City of Phoenix Parks Department.

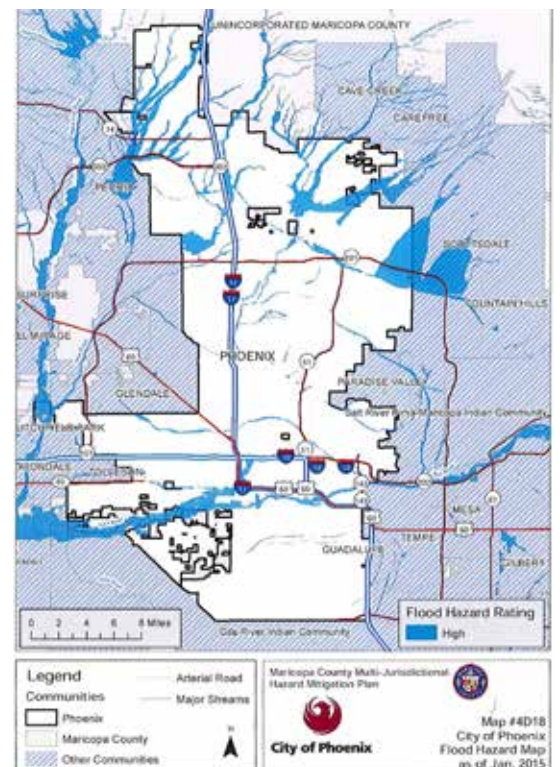
**STEP 4B (2) - MAP THE AREA(S) AFFECTED**

**Figure 22** depicts locations of the approximate areas affected by flooding with respect to the City jurisdiction, topographic features, transportation features, and existing flood infrastructure. Refer to **Appendix A** for a full size copy of this graphic.

**STEP 4B (3) - SUMMARIZE THE ACTION IN LAY TERMS**

The City of Phoenix Street Transportation Department annually participates in the review of flooding risks for storm drains, levees, dams, and other critical infrastructure. The City is actively working in partnership with local flood control districts,

**Figure 22 - High Hazard Flood Areas**



state agencies, and emergency management staff to ensure risk is clearly communicated and flood-prone properties are advised of actions that can be taken to promote their safety.

**Step 4c- Assessment of Likely Flooding (5 Points Max)**

During the development of the 2015 MJHMP, mapping products were prepared to depict areas subject to likely flooding as a result high hazard events. Refer to **Appendix E** for copies of these map excerpts that depict areas of initial concern for likely flooding hazards.

This section includes pertinent information from the hazards identified by the City of Phoenix, Partner Agencies, Partner Jurisdictions, and the general public for flooding related problems. This section includes references from the current effective MJHMP, which reflects an examination of the important facilities and probable impacts from a future disaster.

The following list reflects the list of natural hazards identified by the MJHMP for the City.

During the development of the MJHMP , these hazards were reviewed with respect to the previously prepared Hazard Mitigation Plan. Under this effort an initial screening, which used a systematic process that considered relevance, historical significance, experience, and catastrophic potential, was used. As a result, details related to the City were isolated and selected for inclusion in the 2015 MJHMP. Profiles were developed for each hazard as a result of research and mapping, analysis, and other studies. Reference materials from the state reflected the use of Calculated Priority Risk Index (CPRI) for estimating. Hazard profile maps for Dam Inundation (Emergency Spillway and Dam Failure), Fissure, Flood/Flash Flooding, Levee Failure, Subsidence, and Wildfire were developed. Maps prepared under the 2015 MJHMP update are provided as excerpts and included within **Appendix E** of this plan.

A vulnerability analysis was performed to assess and evaluate the City’s population and critical facility exposure to risk to the identified hazards. The risks were tabulated in terms of exposure loss estimates and human population exposure. Critical facilities were individually identified and supplemental residential facility data was obtained from FEMA’s Hazards United States (HAZUS) program. As a result of the analysis the following summarizes the vulnerability for each of the top hazards.

**Table 8 - Hazard Exposure Estimates per MJHMP**

Hazard	Exposure Estimates <sup>a</sup>		
	Critical Facilities	Residential	Population <sup>b</sup>
Dam Failure (High Hazard)	\$0	\$0	0
Drought	(None estimated)		1,506,439
Extreme Heat	(None estimated)		1,506,439
Fissure (High Hazard)	\$0	\$48.7 million	198
Flooding (High Hazard)	\$116.2 million	\$3.3 billion	36,625
Levee Failure (High Hazard)	\$14.8 million	\$308.3 million	4,024
Severe Wind	(None estimated)		1,506,439
Subsidence	\$532. million	\$18.3 billion	291,862
Wildfire (High Hazard)	\$23.2 million	\$2.8 billion	16,409
<sup>a</sup> - These numbers represent estimates of exposure that may result assuming all delineated hazard areas are impacted at the same time. Actual event losses may not impact the entire area during a single event.			
<sup>b</sup> - These numbers represent the total human population potentially exposed to the hazard.			



With respect to the development of the FMP, special interest is given to Flooding (High Hazard) and Levee Failure (High Hazard) for their exposure estimates upon the critical facilities, residential facilities, and the exposed human population.

**Development Trends - Future**

The population growth trend is for a 33% increase in the next 15 years (2015 - 2030) and a 50% increase in the next 25 years (2015 - 2040). Refer to **Appendix A** for a full size copy of the projected population concentration map for 2030.

**Phoenix 2030:**

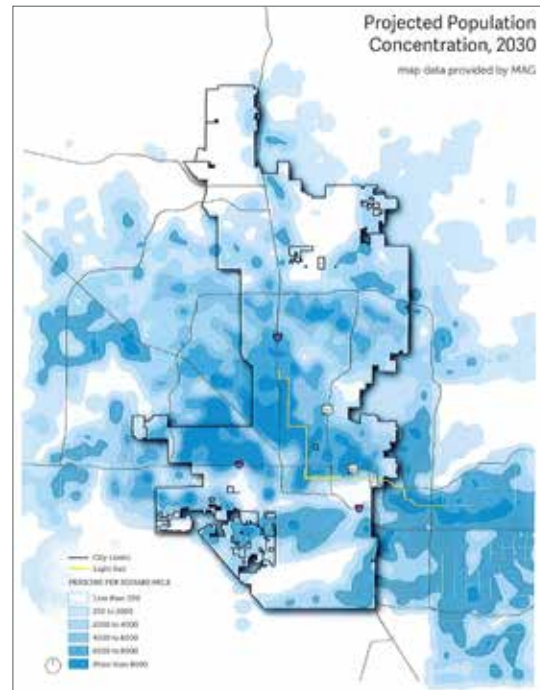
- Population: 1, 953,806 people
- Housing Units: 735,100
- Jobs: 1,071,200

**Source:** Maricopa Association of Governments (MAG) *Socioeconomic Projections of Population, Housing, Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), May 2013*

There are three primary goals from the City’s General Plan with associated ways to achieve them:

1. Increase the size of the Phoenix Sonoran Preserve by 20% in 10 years. (Open Space Element):
  - **Land Use:** Promote land uses that preserve Phoenix’s natural open space
  - **Design:** Preserve the interface between private development and parks, preserves and natural areas (edge treatment)
  - **Design:** Propose new design standards that address drainage, use of native plants, edge treatment and access - both visual and physical - for private and public development adjacent to public preserves, parks, washes and open spaces.
  - **Policy Documents and Maps:** Sonoran Preserve Master Plan & Edge Treatment Design Guidelines
  - **Codes:** Preserve lands above the 10% slope with Sonoran Preserve Master Plan
2. Increase the miles of protected waterways in the City of Phoenix Sonoran Preserve System:
  - **Land Use:** Preserve natural washes coming from the preserves and promote access and views of the preserves by the public
  - **Design:** Establish design and management standards for natural major washes and connected open spaces that will allow preservation of the natural ecological and hydrological systems of major washes while allowing for appropriate public use.
  - **Design:** Propose new design standards that address drainage, use of native plants, edge treatment and access - both visual and physical - for private and public development adjacent to public preserves, parks, washes and open spaces.
  - **Policy Documents and Maps:** Sonoran Preserve Master Plan, Surface Water System Map, Storm Water Policies and Standards Manual
  - **Codes:** Require developments adjacent to canal banks, major washes, rivers and drainage corridors to utilize current standards and guidelines

**Figure 23 – Projected Phoenix Population, 2030**





- **Operations:** Implement design guidelines adopted by the City Council that preserve natural washes by encouraging nonstructural flood control and include wide, natural wash corridors that are substantially undisturbed and that allow for the growth of natural vegetation for controlling erosion and sustaining ecological systems.
- 3. Increase in the number of acres of downtown open space:
  - **Policy Documents:** Downtown Urban Form Project
  - **Operations:** Establish a “no net loss” policy for public park land in downtown
  - **Operations:** Develop a land acquisition program to acquire land for open space.

**Step 4d – Description of Magnitude, Severity, History, and Probability of Future Hazards (5 Points Max)**

- See also contents of **Step 4c** provided above

## 3.5 Assess the Problem (Step 5)

### Step 3.5 (a) – Summary of City’s Vulnerability to Hazard and Impact to Community (2 Points Max)

The 2013 Arizona State Plan defines assets as:

*Any natural or human-caused feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.*

Following the criteria set forth by the Critical Infrastructure Assurance Office (CIAO), the State of Arizona has adopted eight general categories<sup>2</sup> that define critical facilities and infrastructure:

1. **Communications Infrastructure:** Telephone, cell phone, data services, radio towers, and internet communications, which have become essential to continuity of business, industry, government, and military operations.
2. **Electrical Power Systems:** Generation stations and transmission and distribution networks that create and supply electricity to end-users.
3. **Gas and Oil Facilities:** Production and holding facilities for natural gas, crude and refined petroleum, and petroleum-derived fuels, as well as the refining and processing facilities for these fuels.
4. **Banking and Finance Institutions:** Banks, financial service companies, payment systems, investment companies, and securities/commodities exchanges.
5. **Transportation Networks:** Highways, railroads, ports and inland waterways, pipelines, and airports and airways that facilitate the efficient movement of goods and people.
6. **Water Supply Systems:** Sources of water; reservoirs and holding facilities; aqueducts and other transport systems; filtration, cleaning, and treatment systems; pipelines; cooling systems; and other delivery mechanisms that provide for domestic and industrial applications, including systems for dealing with water runoff, wastewater, and firefighting.
7. **Government Services:** Capabilities at the federal, state, and local levels of government required to meet the needs for essential services to the public.
8. **Emergency Services:** Medical, police, fire, and rescue systems.

Other assets such as public libraries, schools, businesses, museums, parks, recreational facilities, historic buildings or sites, churches, residential and/or commercial subdivisions, apartment complexes, and so

forth, are typically not classified as critical facilities and infrastructure unless they serve a secondary function to the community during a disaster emergency (e.g., emergency housing or evacuation centers).

Refer to the 2013 State of Arizona Hazard Mitigation Plan for association to City vulnerability and impacts.

(**Reference note - 2**, Instituted via Executive Order 13010, which was signed by President Clinton in 1996. )

### **Step 3.5 (b) - Description of Hazard Impacts (25 Points Max)**

While the general majority of the City has been developed within planning jurisdictions, portions of the City were constructed prior to floodplain management practices and/or were part of land acquisitions of County or State properties. As a result, the City reflects pockets of mixed design criteria a result of the development growth and expansion over time. Rapid growth in recent years has been under the direction of planning jurisdictions and design guidance from both the City and County, providing mitigation measures for additional impacts to residents. The development of new properties or substantial re-development of existing properties is subject to review procedures and minimum criteria as set forth by the City. Any new development must demonstrate adequate planning and compliance with design standards before receiving approval for development. The need for continued updates to area drainage planning and floodplain delineations for identifying flooding hazards and reassessing the prioritization of mitigation measures is an ongoing effort.

#### **Step 3.5 (b.1) - Life Safety (5 Points Max)**

With respect to flooding safety tips issued by the National Weather Service on October 2015, the following recommendations are incorporated for adoption within with the City FMP in support of future public outreach and messaging:

##### **Before a Flood:**

- **Create a communications plan:** It is important to be able to communicate with your family and friends in the event of a disaster. Whether it is having a specific person identified to contact for status updates or a safe location to meet up with family members, having a plan in place will give you peace of mind if disaster strikes.
- **Assemble an emergency kit:** It is good practice to have enough food, water and medicine on hand at all times to last you at least 3 days in the case of an emergency. Water service may be interrupted or unsafe to drink and food requiring little cooking and no refrigeration may be needed if electric power is interrupted. You should also have batteries, blankets, flashlights, first aid kit, rubber boots, rubber gloves, and a NOAA Weather Radio or other battery operated radio easily available.
- **Know your risk:** Is your home, business or school in a floodplain? Learn more here from Maricopa County Flood Control District regarding floodplain risks: <http://www.fcd.maricopa.gov/flooding/floodplain.aspx>
- And utilize the online Floodplain Web viewer here to find out if your property is located in a floodplain: <http://gis.fcd.maricopa.gov/apps/floodplainviewer/>
- Where is water likely to collect on the roadways you most often travel? What is the fastest way to get to higher ground? Knowing the answers to these questions ahead of time can save your life.
- **Sign up for notifications:** The Advanced Hydrologic Prediction Service provides RSS feeds for observed forecast and alert river conditions to help keep the public informed about local water conditions.

- **Prepare your home:** If you have access to sandbags or other materials, use them to protect your home from flood waters if you have sufficient time to do so. Filling sandbags can take more time than you think. Make sure your electric circuit breakers, or fuses, are clearly marked for each area of your home. Make sure your sump pump is working and consider having a backup.
- **Prepare your family and pets:** You may be evacuated, so pack in advance. Don't wait until the last moment to gather the essentials for yourself, your family and/or your pets.
- **Charge your essential electronics:** Make sure your cell phone and portable radios are all charged in case you lose power or need to evacuate. Also make sure you have back-up batteries on hand.
- **Leave:** If it is likely your home will flood, don't wait to be ordered to leave; evacuate yourself! Make alternative plans for a place to stay. If you have pets, take them with you or make arrangements to board them at a facility well away from the flooding danger.

#### **During a Flood:**

- **Stay informed:** Monitor local radio and television (including NOAA Weather Radio), internet and social media for information and updates.
- **Get to higher ground:** Get out of areas subject to flooding and get to higher ground immediately.
- **Obey evacuation orders:** If told to evacuate, do so immediately. Be sure to lock your home as you leave. If you have time, disconnect utilities and appliances.
- **Practice electrical safety:** Don't go into a basement, or any room, if water covers the electrical outlets or if cords are submerged. If you see sparks or hear buzzing, crackling, snapping or popping noises, get out. Stay out of water that may be electrified.
- **Avoid flood waters:** Do not walk through flood waters. It only takes six inches of moving water to knock you off your feet. If you are trapped by moving water, move to the highest possible point and call 911 for help. Do not drive into flooded roadways or around a barricade; **Turn Around, Don't Drown!** Water may be deeper than it appears and can hide many hazards (i.e. sharp objects, washed out road surfaces, electrical wires, chemicals, etc.). A vehicle caught in swiftly moving water can be swept away in a matter of seconds. Twelve inches of water can float a car or small SUV and 18 inches of water can carry away large vehicles.

#### **After a Flood:**

- **Stay informed:** Stay tuned to your local news for updated information on road conditions. Ensure water is safe to drink, cook or clean with after a flood. Oftentimes a boil water order is put in place following a flood. Check with utility companies to find out when electricity or gas services may be restored. Carbon monoxide poisoning is one of the leading causes of death after storms when areas are dealing with power outages. Never use a portable generator inside your home or garage. Review generator safety.
- **Avoid flood waters:** Standing water hides many dangers including toxins and chemicals. There may be debris under the water and the road surface may have been compromised. If it is likely your home will flood, don't wait to be ordered to leave; evacuate yourself! Make alternative plans for a place to stay. If you have pets, take them with you or make arrangements to board them at a facility well away from the flooding danger.

- **Avoid disaster areas:** Do not visit disaster areas! Your presence may hamper rescue and other emergency operations.
- **Heed road closed and cautionary signs:** Road closure and other cautionary signs are put in place for your safety. Pay attention to them.
- **Wait for the “all clear”:** Do not enter a flood damaged home or building until you’re given the all clear by authorities. If you choose to enter a flood damaged building, be extremely careful. Water can compromise the structural integrity and its foundation. Make sure the electrical system has been turned off, otherwise contact the power company or a qualified electrician. Contact your insurance agent as soon as possible to discuss the damage done to your property. If you have a home generator, be sure to follow proper safety procedures for use.
- **Contact your family and loved ones:** Let your family and close friends know that you’re okay so they can help spread the word. Register with or search the American Red Cross’s Safe and Well listings.

**Step 3.5 (b.2) – Public Health (5 Points Max)**

The City has reviewed the Arizona Department of Health Services Flooding Response Plan, prepared by the Division of Public Health Services, issued in January 2007, and recognizes it as valuable component for sample news release templates and the public communication of health risks as a result of flooding.

Utilizing readily available information, the City recommends the incorporation of templates for the following actions:

- Flood Safety During and After a Flood
- Precautions When Returning to Your Home
- After the Flood: Cleanup of Flood Water

Copies of these materials have been provided as excerpts within **Appendix F**.

Source Reference: <http://www.azdhs.gov/phs/emergency-preparedness/response-plans.htm>

**Step 3.5 (b.3) – Critical Facilities and Infrastructure (5 Points Max)**

The City is responsible for a wide variety of facilities, operations, maintenance, and components of infrastructure to support both the built and natural environment. In support of the FMP, the City’s portfolio of Capital Improvement Plan (CIP) 2015-2020 features has been reviewed to utilize existing map products for depiction of the following Critical Facilities and Infrastructure elements:

- |                  |                        |
|------------------|------------------------|
| ▪ Fire station   | ▪ Streets and drainage |
| ▪ Police         | ▪ Waste water          |
| ▪ Public transit | ▪ Water                |
| ▪ Solid waste    |                        |

The City conducts annual review of these elements and plans for remediation or replacement of aging facilities, improvement to current standards for emergency services, and emergency response planning for public safety and welfare.

Refer to **Appendix A** for map excerpts from the City CIP package for critical infrastructure components.

**Step 3.5 (b.4) – Community Economy & Major Employers (5 Points Max)**

During floods (especially flash floods), roads, bridges, farms, houses, and automobiles are destroyed. People become homeless. Additionally, the government deploys firemen, police, and other emergency apparatuses to help the affected. All of these come at a heavy cost to people and the government. It usually takes years for affected communities to be re-built and business to come back to normalcy.

As cited in the 2013 State of Arizona Hazard Mitigation Plan Risk Assessment, the following economic concerns is identified, and is included as directly applicable within the FMP:

*Recovery and rebuilding costs, a decline in tourism, food shortages, lack of infrastructure, and the effects on local economies are a few of the contributing factors to economic hardship for the State of Arizona due to flooding. The extent of the hardship will depend on the severity of the event and specific areas affected.*

### **Step 3.5 (b.5) – Number and Type of Affected Buildings (5 Points Max)**

The City is comprised of mixed-use development within a sprawling metropolitan area that includes building types such as, but not limited to, single family residential, multi-family residential, apartments, condominiums, elderly care facilities, places of worship, commercial properties, industrial properties, transportation facilities, and critical care facilities.

*Impacts based on HAZUS data are currently being prepared for the City of Phoenix under a separate consulting contract at this time and are recommended for inclusion within this section at a later date. Update to provide list of buildings, levels of impact, and projected costs with respect to flooding event(s).*

### **Step 3.5 (c) – Review of Historical Damages (5 Points Max)**

Review of areas identified with previous flooding damages – Zones/Areas.

As of October 2015, the City currently has 21 Repetitive Loss (RL) properties as identified by the FEMA Region 9 office. Properties that file multiple damage claims within their insurance policy are identified as Repetitive Loss Properties (RLP) per FEMA based on dollar value awarded for recovery assistance.

Refer to **Appendix A** for a map of the City of Phoenix Streets Transportation Department 2015 Repetitive Loss Sites and associated community outreach sites for 2015.

Refer to **Appendix G** for copies of the FEMA NFIP Repetitive Loss Update Worksheets (AW-501) for the properties discussed in section 3.5 (c).

### **Step 3.5 (d) – Areas of Natural Floodplain Functions (5 Points Max)**

The City proactively seeks the opportunity to maintain open space in the form of natural washes and landscaping to support the infiltration of groundwater, natural habitat, and fauna. While the majority of the City has become developed over time, an effort for preservation continues within both undeveloped areas adjacent to washes of the developed portions, and the outlying portions of the City, which are highly susceptible to future development. Refer to **Appendix A** for a copy of the 2015 Drainage Easements Map which reflects areas of open space open by the City, providing benefits to the floodplain functionality.

- Areas providing natural function – wetlands, riparian areas, sensitive areas, habitat for rare or endangered species
- Areas of unique natural features, natural areas, and other environmental and aesthetic attributes
- Areas which serve to protect and preserve natural floodplain functions

### **Step 3.5 (e) – Development & Re-Development Trends (7 Points Max)**

The City is currently undergoing a mixed approach to development with an infill of smaller developments in areas of previous observed as vacant lots, with a resurgence of development for planned residential communities, and re-development of both commercial and residential structures.

With the state economics offering general stability and enabling growth, several out dated commercial and industrial facilities are being removed and the properties redeveloped to new single and mixed use allocations. New developments will be subject to existing design criteria and guidance, while re-development may not be required to meet the current standards through the request of a Technical Appeal. It is up to the City of Phoenix Planning and Development Department in conjunction with the Street Transportation Department to coordinate the needs an approval of technical appeals carefully to prevent negative impacts from being created. It is highly encouraged to have all future development and re-development designed to the same level of design standards for improved protection against flood hazards.

### **Step 3.5 (f) - Future Flooding Conditions (8 Points Max)**

The City and FCDMC are working collaboratively to evaluate future flood management improvements, responsiveness, and efforts for enhanced public safety. Future improvements have the potential to mitigate risks currently recognized by the public. Early recommendations include the following activities:

- Install High Water Elevation Markers at key locations for identification of risks,
- Develop and interactive online GIS Flood-Prone areas map, searchable by property address or parcel to identify evacuate route planning,
- Develop map documents which show areas of historically challenged infrastructure that should be avoided by the public during a flooding event.
- Prepare and improved flooding records database with GIS record development
- Development of inundation limits for dams and levees in GIS with respect to public outreach and awareness of existing risks.

## **3.6 Set Goals (Step 6)**

**(2 points max)** During the update for the City of Phoenix MJHMP (2015), the multi-jurisdictional planning team (MJPT) reviewed and discussed the 2009 MJHMP plan and goals, comparing them to the 2013 Arizona State Plan. The result of the team discussions yielded the establishment of one overarching goal and four clear objectives as follows:

**Goal:** Reduce or eliminate the risk to people and property from natural hazards

- **Objective 1:** Reduce or eliminate risks that threaten life and property in the incorporated, unincorporated, and tribal jurisdictions within Maricopa County.
- **Objective 2:** Reduce risk to critical facilities and infrastructure from natural hazards.
- **Objective 3:** Promote hazard mitigation throughout the incorporated, unincorporated, and tribal jurisdictions within Maricopa County.
- **Objective 4:** Increase public awareness of hazards and risks that threaten the incorporated, unincorporated, and tribal jurisdictions within Maricopa County.

A critical element identified includes the development of a Floodplain Management Plan (FMP) Planning Committee, which serves the roles of both a planning committee and update committee for floodplain management activities. Additional elements highly recommended for action are enhanced reporting for areas of natural floodplain function and flood damage reductions, public information activities, and increased documentation of coordination with other agencies, claims documentation, post disaster mitigation policies, and development of recommendations for a habitat conservation plan.

These goals are adopted for inclusion within the FMP, and shall be carried forward with respect to the future mitigation efforts for planning, design, public awareness, and protection of the public.

## 3.7 Review Possible Activities (Step 7)

**(35 Points Max)** An important part of understanding the City’s potential activities to reduce the severity of problems identified herein is to review the currently jurisdictional resources to identify, compare, evaluate, and recommend enhancements for the capacity for local resources to mitigate the effect of flooding. A capability assessment is formulated utilizing the following key components:

- **Legal and Regulatory Review** - a review of the legal and regulatory capabilities, including code, ordinances, plans, manuals, guidelines, and technical reporting, which identifies, assesses, and recommends potential mitigation activities.
- **Technical Staff/Personnel** - this component will identify and describe the resource pool of administrative and technical capacity of the City’s staff and personnel resources.
- **Fiscal Capability** - this component summarizes the City’s fiscal capability to provide the financial resources required to implement the mitigation strategy.
- **National Flood Insurance Program (NFIP)** - this component provides resources for regulatory measures which enable the City officials to determine where and how growth occurs with respect to known flood hazards. Participation in the NFIP, as promoted by FEMA, is nationally recognized as a key first step to implementing and sustaining effective flood hazard mitigations, and is considered an indicator of the City’s success through CRS Class improvements.

### Step 3.7 (a) – Jurisdictional Capabilities (5 Points Max)

Jurisdictional capabilities were assessed as part of the City’s 2015 MJHMP and included the following table which summarizes the legal and regulatory mitigation capability for the City. Information provided on the next page as **Table 9** includes the method of regulatory tool for mitigation, a general reference name or description, and the responsible department or agency within the City.

Through the use of the current ordinances, codes, design guidelines and manuals the City is well poised to continue reducing future flooding losses with continued education and enforcement of drainage design criteria and site planning for reductions of new and existing hazards.

The City continues to review new development site plans. The site plan review ensures that projects follow the requirements according to the established floodplain ordinance. The City informs the development planner about stipulations that must be met before the new developments can be constructed in a floodplain area.



**Table 9 – Legal and Regulatory Capabilities for City of Phoenix**

Regulatory Tools for Hazard Mitigation	Description	Responsible Department/Agency
CODES	<ul style="list-style-type: none"> <li>▪ 2010 ASME</li> <li>▪ 2011 National Electrical Code</li> <li>▪ 2012 International Building Code Administrative Provisions</li> <li>▪ 2012 International Building Code</li> <li>▪ 2012 International Energy Conservation Code</li> <li>▪ 2012 International Existing Building Code</li> <li>▪ 2012 International Fire Code</li> <li>▪ 2012 International Fuel Gas Code</li> <li>▪ 2012 International Green Construction Code</li> <li>▪ 2012 International Mechanical Code</li> <li>▪ 2012 International Residential Code</li> <li>▪ 2012 International and Uniform Plumbing Codes</li> <li>▪ 2012 International Fire Code</li> <li>▪ 2011 National Electrical Code/NFPA-70</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning Development</li> <li>▪ Fire</li> </ul>
ORDINANCES	<ul style="list-style-type: none"> <li>▪ Phoenix Code of Ordinances</li> </ul>	<ul style="list-style-type: none"> <li>▪ Law</li> </ul>
PLANS, MANUALS, and/or GUIDELINES	<ul style="list-style-type: none"> <li>▪ 2015 Phoenix General Plan (Scheduled for completion Spring 2015)</li> <li>▪ 2009 City of Phoenix Major Emergency Response and Recover Plan</li> <li>▪ 2015 Maricopa County Regional Multi-Hazard Mitigation Plan (currently being updated)</li> <li>▪ 2013 Water Services Department Design Standards Manual for Water and Wastewater Systems</li> <li>▪ 2013 Street Transportation department Storm Water Policies and Standards (3rd Edition)</li> <li>▪ 2014 Aviation Department Multi-Sector General Permit Stormwater Pollution Prevention Plan</li> <li>▪ Aviation Department Rules and Regulations</li> <li>▪ Metro Phoenix Area Drainage Master Plan</li> <li>▪ Hohokam Area Drainage Master Plan</li> <li>▪ Water Services Facility Stormwater Management Plans</li> <li>▪ Water Services Facility Stormwater Pollution Prevention Plans</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planning Development</li> <li>▪ Emergency Management</li> <li>▪ Water Services</li> <li>▪ Street Transportation</li> <li>▪ Aviation</li> </ul>
STUDIES	<ul style="list-style-type: none"> <li>▪ 2015 City of Phoenix Threat and Hazard Identification and Risk Assessment</li> <li>▪ FEMA DFIRM Maps</li> <li>▪ Dam Safety Studies and Emergency Action Plans</li> <li>▪ 7R/25L Runway Safety Area Environmental Assessment - Conditional Letter of Map Revision</li> <li>▪ Flood Insurance Studies (FIS)</li> <li>▪ Levee Studies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Street Transportation</li> <li>▪ Aviation</li> </ul>

Technical staffing capabilities were assessed as part of the City’s 2015 MJHMP and included the following table which summarizes technical staff and personnel capabilities for the City. Information provided following in **Table 10** includes the Staff or Personnel Resources and Department or Agency Association with the corresponding positions within the City.



**Table 10 – Technical Staff and Personnel Capabilities for City of Phoenix**

✓	Staff/Personnel Resources	Department/Agency - Position
✓	Planner(s) or engineer(s) with knowledge of land development and land management practices	<b>Planning Development Dept.</b> - Principal Planner, Planner III, Village Planner & Planner II, Civil Engineers, Principal Engineering Technicians <b>Water Services</b> - Deputy Directors, Project Engineers, Civil Engineers, Project Coordinators, Principal Engineering Technicians, Principal Planners
✓	Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	<b>Street Transportation Dept.</b> - Civil Engineers <b>Water Services</b> - Deputy Directors, Civil Engineers, Project Coordinators, Principal Engineering Technicians <b>Planning Development Dept.</b> - Structural Engineers, Civil Engineers, Electrical Engineers, Mechanical Engineers <b>Inspectors and Plan Reviewers</b> - General Residential, Electrical, Plumbing/Mechanical, Structural, Elevator, Civil, Fire and Backflow
✓	Planner(s) or engineer(s) with an understanding of natural and/or human-caused hazards	<b>Planning Development Dept.</b> - Principal Planner, Planner III, Village Planner & Planner II, Civil Engineers, Principal Engineering Techs, Structural Engineers <b>Water Services</b> - Deputy Directors, Civil Engineers, Principal Engineering Technician, Hydrologist
✓	Floodplain Manager	<b>Street Transportation Dept.</b> - Civil Engineer III
✓	Surveyors	<b>Street Transportation Dept.</b> - Survey Teams
✓	Staff with education or expertise to assess the community’s vulnerability to hazards	<b>Water Services</b> - Environmental Programs Coordinator, Civil Engineers, Water Quality Inspectors
✓	Personnel skilled in GIS and/or HAZUS	<b>Information Technology Services</b> - Info Tech Analyst/Programmers and Info Tech Specialists <b>Fire Dept.</b> - Fire Protection Engineer <b>Planning Development Dept.</b> - Senior GIS Technician <b>Police Dept.</b> - Senior User
✓	Scientists familiar with the hazards of the community	<b>Aviation Dept.</b> - Environmental Quality Specialist <b>City Manager’s/Office of Environmental Programs</b> - Environmental Quality Specialists <b>Personnel Dept.</b> - Industrial Hygienists <b>Water Services</b> - Chemists, Environmental Quality Specialist, Laboratory Technician, Environmental Programs Coordinator <b>City Manager’s Office</b> - Chief Sustainability Officer
✓	Emergency manager	<b>City Manager’s Office</b> - Emergency Management Coordinator
✓	Grant writer (s)	<b>Aviation Dept.</b> - Planner II <b>Fire Dept.</b> - Volunteer Coordinator and Fire Captains <b>Planning Development Dept.</b> - Principal Planner, Planner III, Village Planner & Planner II <b>Police Dept.</b> - Police Research Analysts <b>Public Transit Dept.</b>
✓	Others	

Participation in the NFIP is a key element of the City’s floodplain management and mitigation strategy. As a participant in the NFIP, the City benefits from having Flood Insurance Rate Maps (FIRM) that map identified flood hazard areas and can be used to assess flood hazard risk, regulate construction practices, and set flood insurance rates. FIRMs are also an important source of information to educate residents, government officials, and the private sector regarding the likelihood of flooding in their community and areas of elevated risk. The following **Table 11** summarizes the City’s NFIP status and statistics as a participant in this Plan from NFIP policy statistics reporting as of 8/31/2015.

**Table 11 – NFIP Status for City of Phoenix**

Community Name	Community ID	CRS Class	NFIP Entry Date	Current Effective FIRM date	Number of Policies In-force	Insurance In-force whole \$	Written Premium In-force \$
City of Phoenix	40051	6	Oct-92	11/4/2015	5,042	1,228,660,800	3,567,211

Source: [http://bsa.nfipstat.fema.gov/reports/1011.htm#AZT\(8/31/2015\);](http://bsa.nfipstat.fema.gov/reports/1011.htm#AZT(8/31/2015);) NFIP Community Status Report.

### Step 3.7 (b) – Regulatory Standards for Future Conditions (5 Points Max)

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

When natural washes are to be retained as open drainage ways, 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). Flood proofed freeboard shall be required to prevent seepage out of the wash corridor. Drainage that leaves the development will be redistributed in a manner similar to existing conditions.

The City requires that all new residential structures constructed within the alluvial fan AO zone, have the lowest floor 1 foot above the base flood elevation or 2 feet above the highest adjacent natural grade to the property. A registered professional engineer shall certify the lowest floor to be a minimum 24 inches above the highest adjacent natural grade elevation of the residential lot and/or the structural foot print. 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 continues to require engineered fill below all buildings constructed in the City.

The City has adopted the 2012 International Code Council Codes, 2011 Electric Code /NFPA-70, 2012 International Fire Code, and 2012 Uniform Plumbing Code. The City Ordinance G-5809 signed on May 15, 2013 adopted the 2012 building codes.

The City requires that the cumulative total of all substantial improvements are not to exceed 40% of the value of the existing structure (a higher standard).

While the current standards reflect industry standards and regulations, and do not cite a requirement additional design criteria to provide an enhanced level of flooding mitigation, there are opportunities available. An example could come in the form of increasing the requirements for all site construction (new and re-development) to detain additional storm volume runoff onsite. Considering revisions, through adoption, to the current regulations is recommended for further investigation and future consideration toward value added flood mitigation efforts.

### **Step 3.7 (c) – Property Protection Activities (5 Points Max)**

The City advises FCDMC toward the purchase of flood prone properties, preferably those in areas of undeveloped nature, to support the conveyance of floodwaters within both developing and developed and communities. The City provides supporting data toward the acquisition of flood prone properties benefiting the natural environment and functions of the floodplain, which could otherwise be lost due to development activities.

The City continues to acquire land in the special flood hazard areas as open spaces when funding is available. Refer to **Appendix E** for a table of acquired properties with the Assessors Parcel Number (APN) numbers, addresses, acquired year, flood hazard data, and remarks. The City maintains open spaces for acquired lots.

In some limited instances, properties are purchased with flood prone structures. A copy of the acquired lot's demolition permit and current pictures are obtained for record. Refer to **Appendix E** for photographic examples of an example.

### **Step 3.7 (d) – Protection of Natural Floodplain Functions (5 Points Max)**

The City proactively seeks to maintain open spaces for flood conveyance in the natural form for cumulative benefits obtained for benefits toward groundwater, flora and fauna, natural habitat, and wildlife. The City continues to preserve floodplain areas as open space in Peripheral Planning Areas and other undeveloped areas. A table which reflects the amount of open space currently managed by the City is provided in **Appendix E**. The City proactively increases open space (in acres) within the floodplain by 1.7% annually. It is the City's plan to continue acquiring open space in support of natural floodplain functions, which aid in conveyance and reductions in risk.

### **Step 3.7 (e) – Emergency Services Activities (5 Points Max)**

The City maintains and routinely tests a flood threat recognition system. This year, 2015, the City tested the warning dissemination equipment and procedures to ensure proper operation and communications were met.

The City conducted at least one exercise of the flood response plan this year. The City prepared and distributed an outreach letter regarding our flood threat recognition and warning system with flood and safety measures. Refer to **Appendix E** for copies of the letter distributed for system awareness.

It is the City's plan to continue annual inspections of the system, seek opportunities to provide more timely communication, equipment, and resource trained manpower for emergency services.

### **Step 3.7 (f) – Structural Projects (5 Points Max)**

The City continues to design and construct projects that protect structures from flood damage by structural flood control projects (storm drain, retention and detention basins). These projects provide benefits for existing developments through mitigation of existing flooding challenges and prevention by design of structural features in newly developing areas. It is the City's plan to continue seeking opportunities to lead and partner on structural projects that benefit both individual lots and the great metropolitan area. A list of structural flood control projects is provided in **Appendix E**.

### **Step 3.7 (g) - Public Information Activities (5 Points Max)**

The City maintains a web page to educate the community regarding basic floodplain terms, including and illustrations showing the encroachment of a 100- year floodplain and provides links to sites like NFIP, FCDMC, and FEMA documents. The City provides an outreach letter on the web page informing residents about floodplains, flood insurance policies, flood warning system, what to avoid in a storm event, what is not permitted in drainage areas, letter of map changes, substantial improvements, and a flood insurance discount for participating in the CRS program.

The City 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. City staff utilizes the email/blog informing Realtors about the availability of flood zone determinations and elevation certificates on Phoenix Board of Realtors website. The City of Phoenix Floodplain Management Section continues to make use of an on-hold telephone messaging, which is played for the public.

The City publishes Public Notices in local newspapers to notify property owners about area studies and the potential impacts on the surrounding special flood hazard areas. The City notifies affected property owners that they are no longer in a floodplain area when a Letter of Map Amendment or a Letter of Map Revision is received from FEMA, in which any property or structure is removed from the floodplain.

It is the City’s plan to continue the ongoing public information activities and further enhance the outreach through initiatives such as a High Water Mark dedication for increased public awareness and education, providing additional website enhancements for resource planning, and preparing maps of commonly flooded areas that residents should avoid during storm events.

Future activities may include the City’s development of a flood awareness educational program to provide targeted information for students at various levels of early education, therefore reaching a wider audience of participation and providing opportunities to raise awareness of how flooding can impact them individually, their families, and even their community.

## **3.8 Draft Action Plan (Step 8)**

### **Step 3.8 (a) - Categories and Action Items (45 Points Max)**

The City has prepared an initial draft action plan with respect to the first phase of this updated for the FMP. Utilizing the previous established MJHMP, selection of the appropriate activities has been conducted with respect to City resources, hazards, and repetitive loss properties. While the City strives to develop a blended, yet balanced program, through multiple activities in floodplain management, the focus remains preventative in nature so conditions do not worsen with from construction or environmental changes. The following **Table 12**, reflects the range of actions, goals, their corresponding recommendations, and their respective deadlines.

**Table 12 Actions, Goals, and Recommendations for City FMP**

	Action Item	<i>Goal 1: Reduce risks that threaten life and property</i>	<i>Goal 2: Protect critical infrastructure</i>	<i>Goal 3: Promote Hazard Mitigation</i>	<i>Goal 4: Increase Public Awareness of Hazards</i>	<i>Chapter - Recommendation</i>	<i>Deadline</i>
<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.

### **Step 3.8 (b) - Post Disaster Policies and Procedures (10 Points Max)**

The City of Phoenix has Post Disaster Policies, Procedures and Action Items related to natural hazards. The City of Phoenix is currently updating their Emergency Operations Plan. Additional documents related to hazard activities are called the Metro Emergency Response Plan, Continuity of Operations plan (COOP) or Continuity of Government plan (COG), and the Emergency Action Plan for many of the City owned dams. Unfortunately, these documents are not available to the public and therefore have not been included within this FMP.

### **Step 3.8 (c) - Action Items - Other Natural Hazards (5 Points Max)**

The City of Phoenix has Post Disaster Policies, Procedures and Action Items related to natural hazards. The City of Phoenix is currently updating their Emergency Operations Plan. Additional documents related to hazard activities are called the Metro Emergency Response Plan, Continuity of Operations plan (COOP) or Continuity of Government plan (COG), and the Emergency Action Plan for many of the City owned dams. Unfortunately, these documents are not available to the public and therefore have not been included within this FMP.

### **3.9 Adopt the Plan (Step 9)**

**(3 Points Max)** The City plans to recognize the development of the updated FMP and will officially recommend the document for adoption body the City governing body and elected officials. The City will record the resolution and vote by the governing body, paired with the meeting agenda and meeting minutes of council meeting.

### **3.10 Implement, Evaluate, and Revise (Step 10)**

**(26 Points Max)**

#### **Step 3.10 (a) - Annual Evaluation Report (2 Points Max)**

In accordance with the NFIP CRS Coordinators Manual, Section 512, Step 10, the FMP needs to undergo the following activities annually for monitoring, evaluating, and communicating progress:

- Monitoring implementation of plan goals
- Reviewing progress
- Recommending revision to plan in annual evaluation report
- Submit report to governing body
- Release report to media
- Make report available to the public

The City will continue to proactively monitor this plan and be responsible for identifying and implementing necessary changes. The City will communicate actions taken to the incoming FMP Planning Committee and develop recommendations for annual future plan revisions. Annual reports are due the ISO reviewer annually by October 1.

#### **Step 3.10 (b) - Frequency of Committee Meetings (24 Points Max)**

In accordance with the NFIP CRS Coordinators Manual, the forthcoming FMP Planning Committee is recommended to conduct the annual evaluation report, striving to maintain the same members, however if the replacement of a member is required, they shall be replaced with a similar membership. Points for this sub step are awarded based on how frequently the committee meets with representation, quorum, and criteria of Step 2a. The following points are awarded per CRS with respect to committee meeting frequencies:

- 6 Points, if the committee meets once per year
- 12 Points, if the committee meets twice per year
- 24 Points, if the committee meets at least four times per year (quarterly)

The City will strive to meet at a minimum of twice per year, with a goal of meeting quarterly to review the plan status. In addition to the annual reports, the City will prepare for the CRS Recertification in 2017.



## 04 References and Resources



# 4. References and Resources

Arizona Department of Water Resources

<http://www.azwater.gov/azdwr/default.aspx>

City of Phoenix Codes, Ordinances & Standards

<https://www.phoenix.gov/pdd/devcode>

City of Phoenix Streets - Floodplain Management

<https://www.phoenix.gov/streets/floodplain-management>

City of Phoenix Street Transportation Department & Stormwater GIS

<https://www.phoenix.gov/streets>

Department of Emergency and Military Affairs

<http://www.dem.azdema.gov/>

Federal Emergency Management Agency Coordinated Needs Management Strategy

<http://www.fema.gov/library/viewRecord.do?id=4628>

Federal Emergency Management Agency Grant Programs

<http://www.fema.gov/grants>

Federal Emergency Management Agency Hazard Mitigation Grant Program

<http://www.fema.gov/hazard-mitigation-grant-program>

Federal Emergency Management Agency Multi-Hazard Mitigation Program

<http://www.fema.gov/multi-hazard-mitigation-planning>

Federal Emergency Management Agency National Flood Insurance Program

<http://www.fema.gov/national-flood-insurance-program>

<http://bsa.nfipstat.fema.gov/reports/1011.htm#AZT>

Federal Emergency Management Agency Risk Mapping, Assessment, and Planning

<http://www.fema.gov/risk-mapping-assessment-planning>

Flood Control District of Maricopa County

<http://fcd.maricopa.gov/>

Maricopa Association of Governments

<https://www.azmag.gov/>

NRCS Geospatial Data Gateway (GDG)

<https://gdg.sc.egov.usda.gov/>

United States Code of Federal Regulation - Title 44

<http://www.gpo.gov/fdsys/pkg/CFR-2002-title44-vol1/content-detail.html>

# Acronyms and Terms

ACRONYM/TERM	DESCRIPTION
2009 Plan	Flood Control District of Maricopa County Comprehensive Floodplain Management Plan and Program Report
2015 Report	Flood Control District of Maricopa County Comprehensive Report & Program 2015
ACDC	Arizona Canal Diversion Channel
ADEM	Arizona Division of Emergency Management
ADEMA	Arizona Department of Emergency and Military Affairs
ADEQ	Arizona Department of Environmental Quality
ADMP	Area Drainage Master Plan
ADMS	Area Drainage Master Study
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AEP	Annual Exceedance Percentage
APN	Assessors Parcel Number
ARI	Annual Recurrence Interval
ASLD	Arizona State Land Department
ATV	All-terrain vehicle
AZDHS	Arizona Department of Health Services
BFE	Base Flood Elevation
BLM	Bureau of Land Management
BMP	Best Management Practices
CAP	Central Arizona Project
CIP	Capital Improvement Program
CIPPP	Capital Improvement Program Prioritization Procedure
City	City of Phoenix
CRS	Community Rating System
DFE	Design Flood Elevation
District	Flood Control District of Maricopa County
DMA2000	Disaster Mitigation Act of 2000
EAP	Emergency Action Plan
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FCAB	Flood Control Advisory Board
FCDMC	Flood Control District of Maricopa County
FDS	Floodplain Delineation Study
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map



ACRONYM/TERM	DESCRIPTION
FMP	Floodplain Management Plan
FMS	Floodplain Management & Services
FPAP	Flood Prone Properties Assistance Program
FPS	Feet per second
FRP	Flood Response Plan
FRS	Flood Retarding Structure
HAZUS	Hazards United States
HOA	Home Owners Association
HUC	Hydrologic Unit Code
IBC	International Building Code
MAG	Maricopa Association of Governments
MCDEM	Maricopa County Department of Emergency Management
MCDES	Maricopa County Department of Environmental Services
MCDOT	Maricopa County Department of Transportation
MCPDD	Maricopa County Planning & Development Department
MCPRD	Maricopa County Parks and Recreation Department
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
NOAA	National Oceanic and Atmospheric Administration
NFIP	National Flood Insurance Program
NRCS	Natural Resources Conservation Service
NWS	National Weather Service
O&M	Operation and Maintenance
PIO	Public Information Officer
Plan	Comprehensive Report & Program 2015
PPM	Planning and Project Management
RL	Repetitive Loss
RLA	Repetitive Loss Area
RLP	Repetitive Loss Property
SFHA	Special Flood Hazard Area
SPAP	Small Projects Assistance Program
USACE	U.S. Army Corps of Engineers
USBR	United States Bureau of Reclamation
USFS	U.S. Forest Service
USFWS	U.S. Fish & Wildlife Service
Zone A	An area with an approximate delineation of a Floodplain. Floodway boundaries and Base Flood Elevations have not been determined.
Zone AE	An area with a detailed delineation of a Floodplain and in which Base Flood Elevations have been determined.



ACRONYM/TERM	DESCRIPTION
Zone AH	An area with Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations have been determined.
Zone AO	An area with Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average flood depths have been determined. For areas of Alluvial Fan flooding, velocities may have also been determined.
Zone D	Areas in which flood hazards are undetermined, but possible.
Zone X	Areas determined to be outside the 1% annual chance floodplain but within the 0.2% annual chance floodplain.

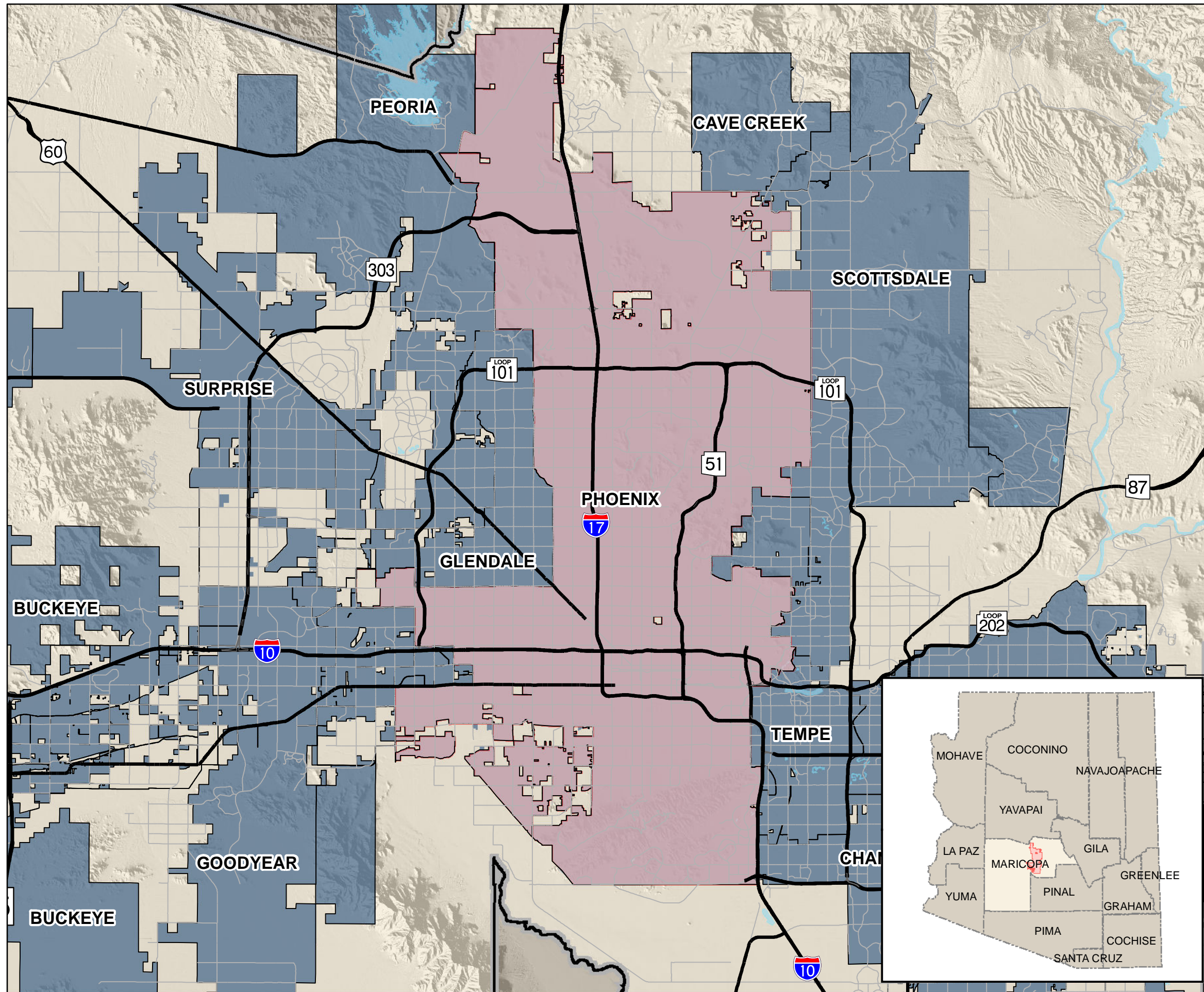


## Appendix A - Maps




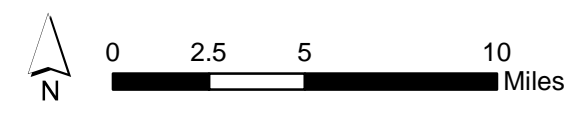
# Location Map

Map 1




- City of Phoenix
- Maricopa County/Unincorporated Area
- Other County
- Lakes and Rivers

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT



CITY OF PHOENIX FLOODPLAIN  
MANAGEMENT PLAN UPDATE 2015



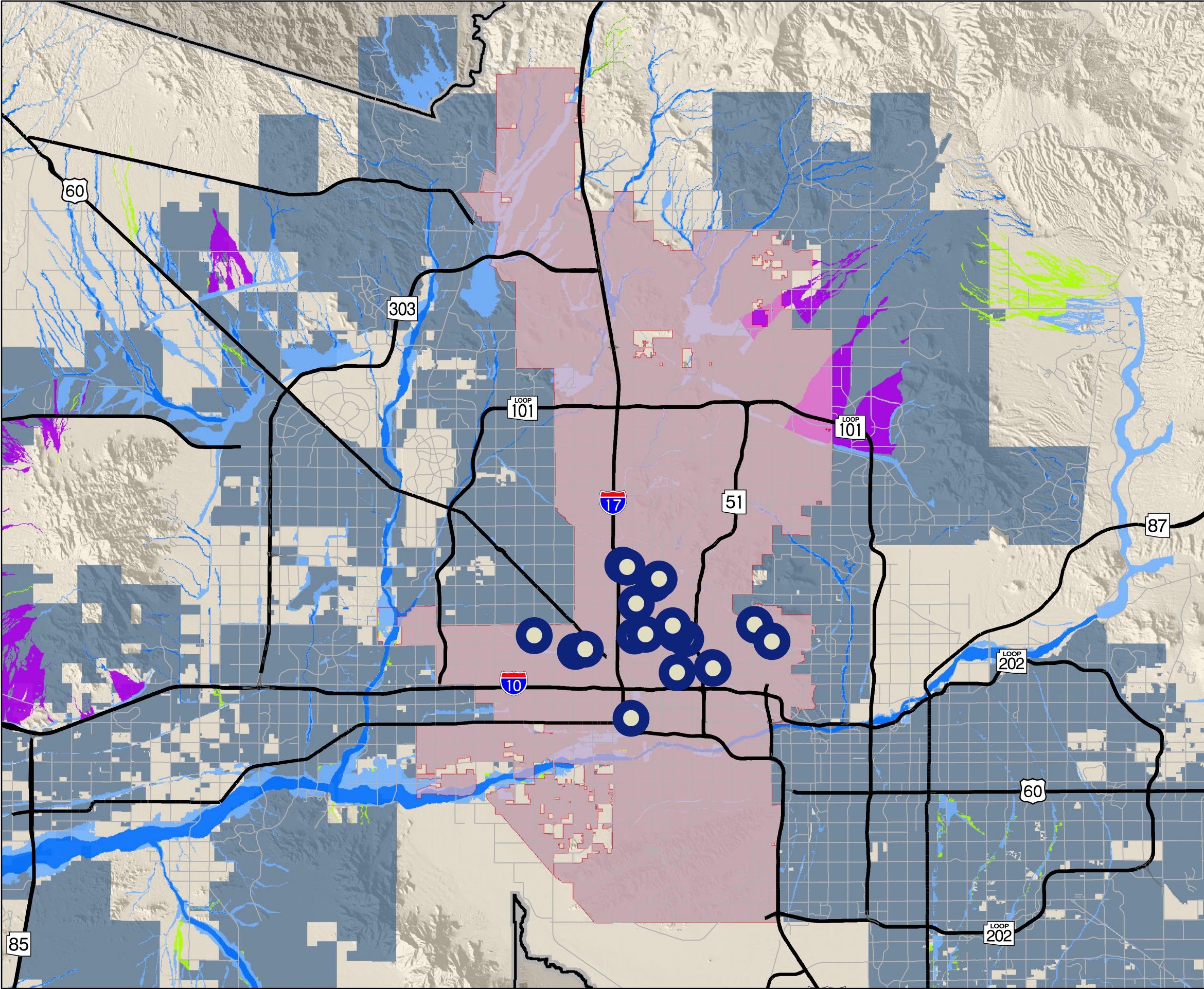
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CONTRACT NUMBER: AS00139754  
HDR PROJECT: 044-261915

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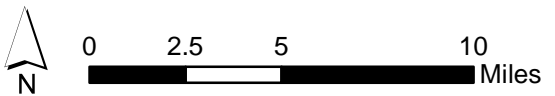
# Regulatory Floodplains, Alluvial Fans and Repetitive Loss Areas



Map 2



- Repetitive Loss Areas
- City of Phoenix
- FEMA Floodway
- FEMA Floodplain
- Alluvial Fan
- Pending Floodway
- Pending Floodplain
- City/Incorporated Area
- Maricopa County/Unincorporated Area
- Other County

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT



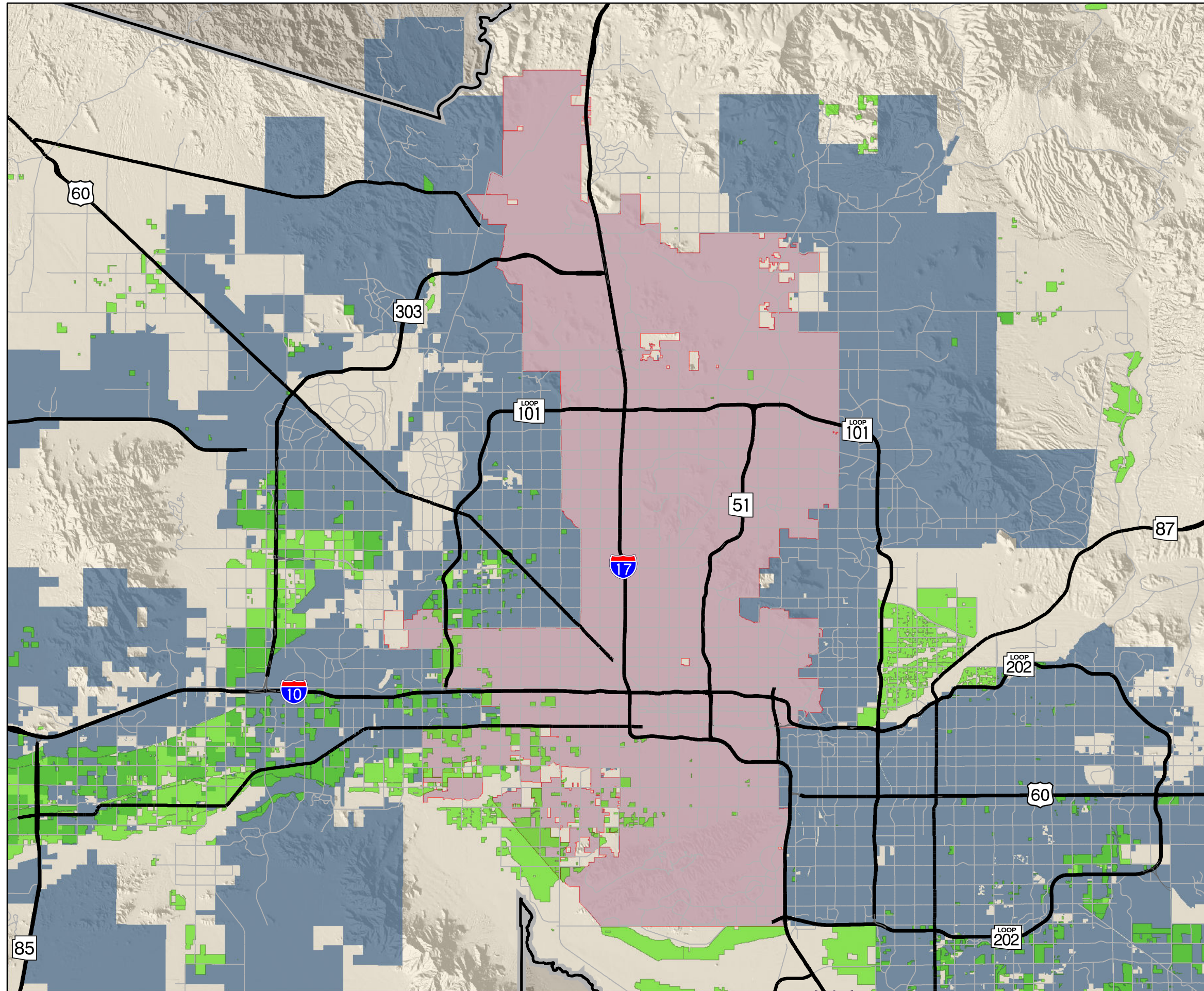

**CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015**  

**PROJECT NUMBER: ST83140071**  
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**HDR PROJECT: 044-261915**

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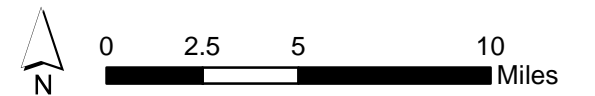
# Agricultural Land

## Map 3



- Agriculture Land Use
- City of Phoenix
- City/Incorporated Area
- Maricopa County/Unincorporated Area
- Other County

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT



CITY OF PHOENIX FLOODPLAIN  
MANAGEMENT PLAN UPDATE 2015



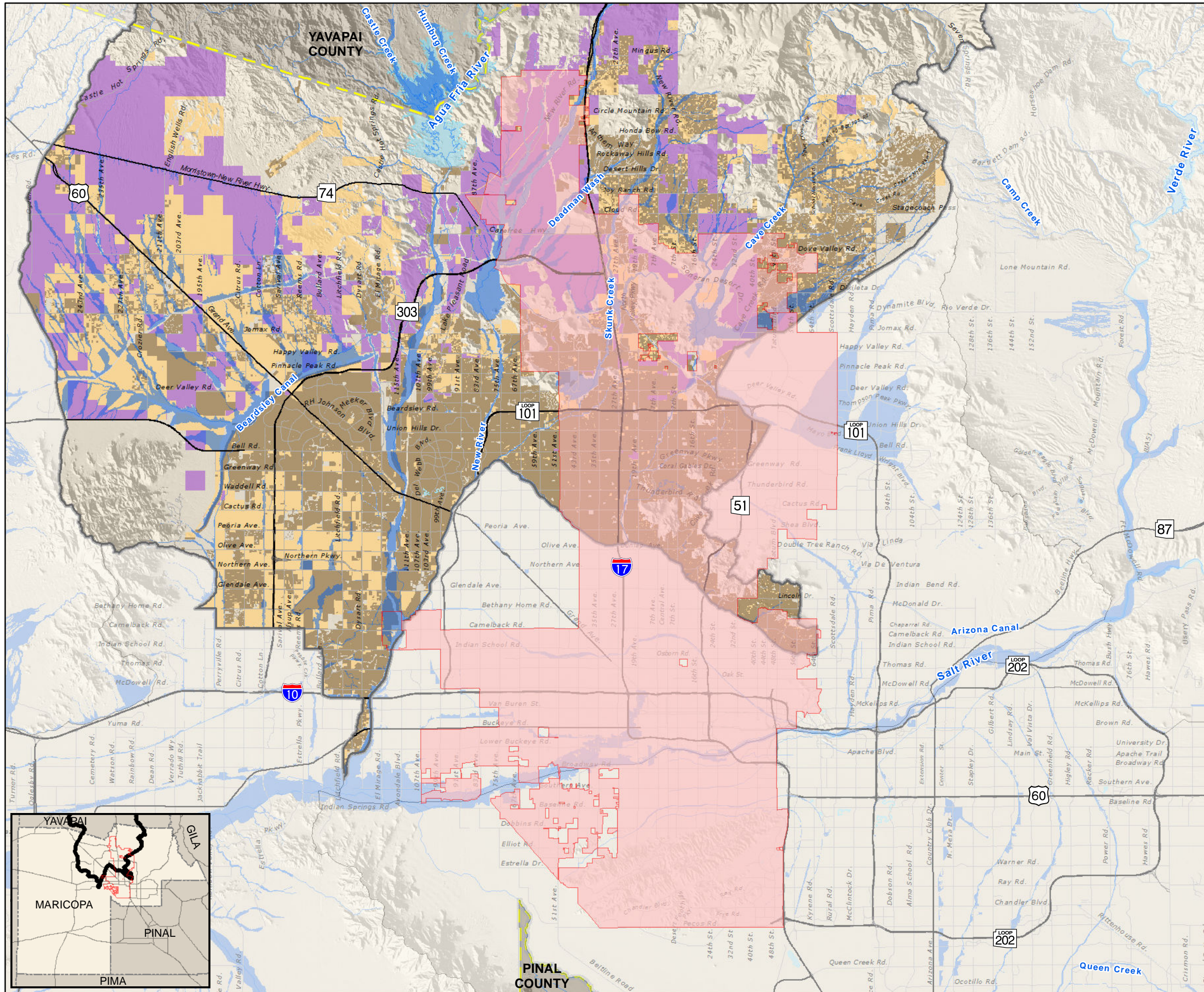
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HDR PROJECT: 044-261915

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# Agua Fria Watershed

Map 4



## Agua Fria Watershed

- 2329 sq. miles
- City of Phoenix
- FEMA 100-Yr Floodplain
- Maricopa County/Unincorporated Area
- Other County

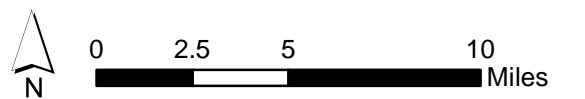
## Associated within City of Phoenix

- Developable Private Land**  
 10 sq. miles
- Developable State Trust Land**  
 51 sq. miles
- Existing Development (2014)**  
 92 sq. miles

## Overall Agua Fria Watershed

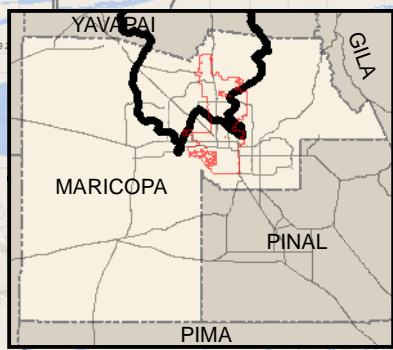
- Developable Private Land**  
 187 sq. miles
- Developable State Trust Land**  
 230 sq. miles
- Existing Development (2014)**  
 328 sq. miles

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT



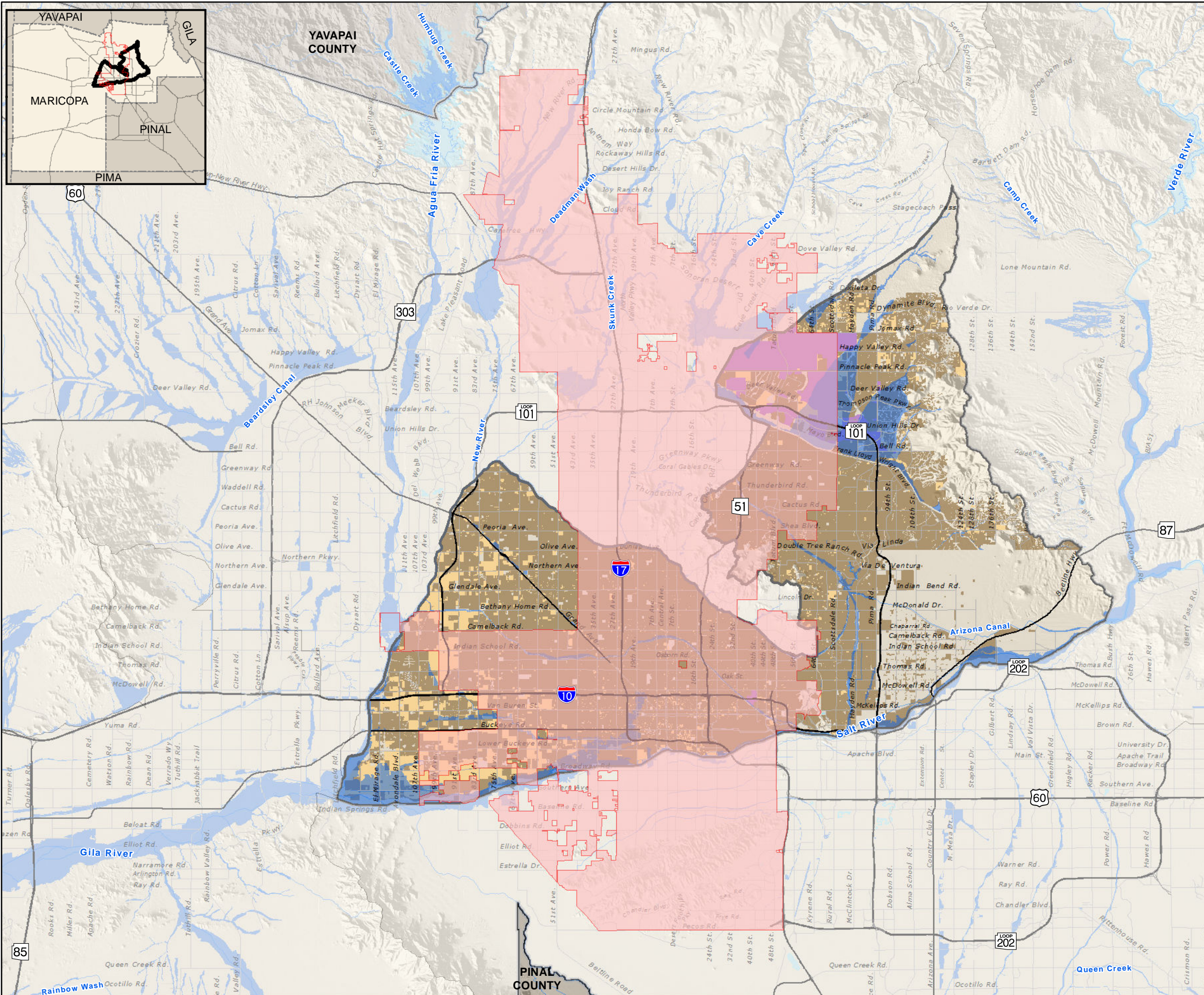
CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015

PROJECT NUMBER: ST83140071  
CONTRACT NUMBER: AS00139754  
HDR PROJECT: 044-261915



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# Cave Creek/Salt Watershed

## Map 5

- Cave Creek/Salt Watershed**
- 506 sq. miles
  - City of Phoenix
  - FEMA 100-Yr Floodplain
  - Maricopa County/Unincorporated Area
  - Other County

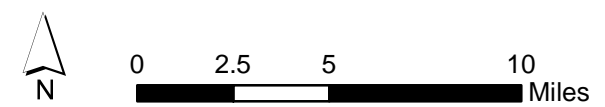
### Associated within City of Phoenix

- Developable Private Land**
- 16 sq. miles
- Developable State Trust Land**
- 16 sq. miles
- Existing Development (2014)**
- 159 sq. miles

### Overall Cave Creek/Salt Watershed

- Developable Private Land**
- 42 sq. miles
- Developable State Trust Land**
- 18 sq. miles
- Existing Development (2014)**
- 317 sq. miles

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT

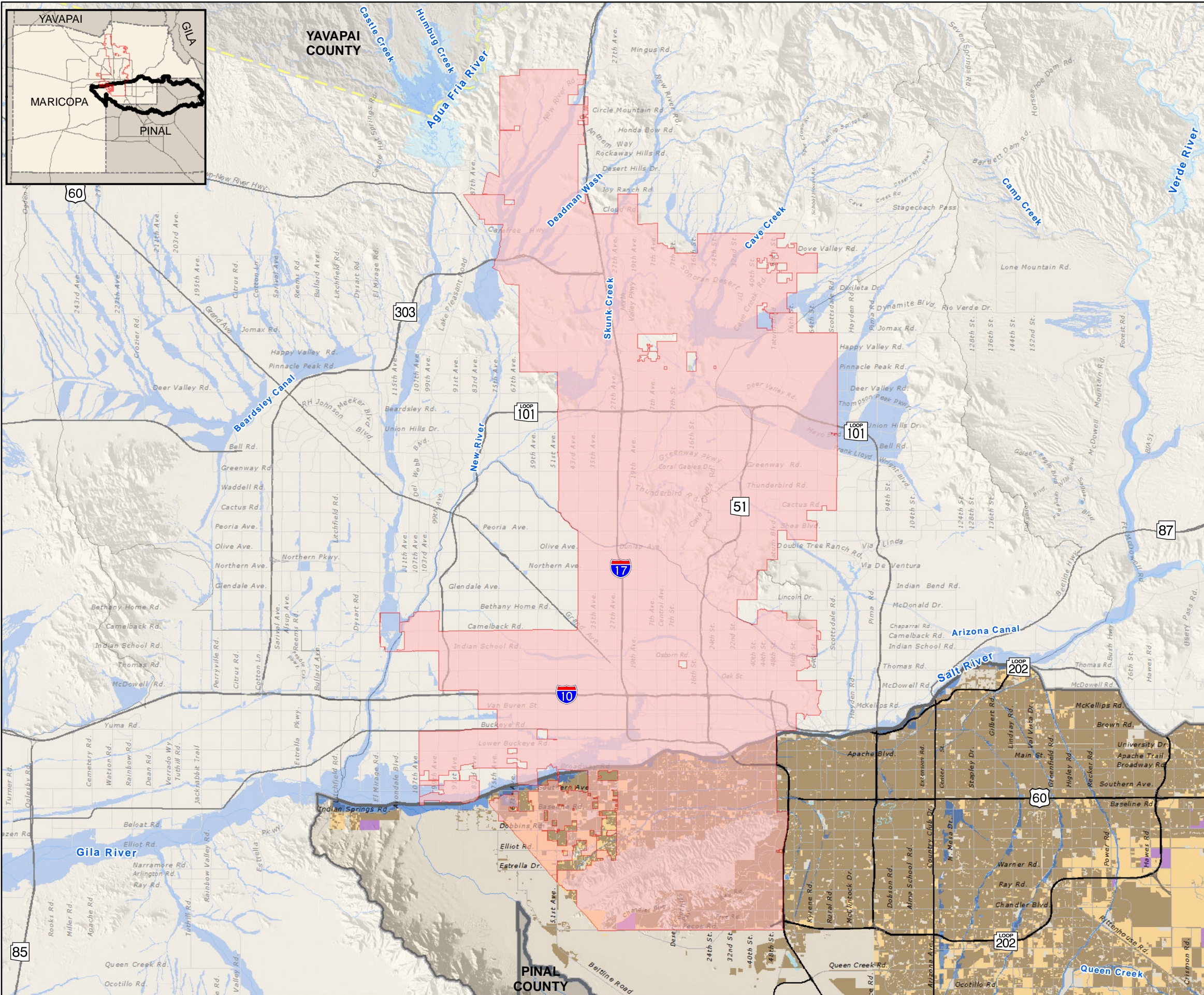


CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015

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HDR PROJECT: 044-261915

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# Gila/Queen Creek Watershed

## Map 6

### Gila/Queen Creek Watershed

- 1307 sq. miles
- City of Phoenix
- FEMA 100-Yr Floodplain
- Maricopa County/Unincorporated Area
- Other County

### Associated within City of Phoenix

- Developable Private Land**  
 79 sq. miles
- Developable State Trust Land**  
 3.8 sq. miles
- Existing Development (2014)**  
 335 sq. miles

### Overall Gila/Queen Creek Watershed

- Developable Private Land**  
 13 sq. miles
- Developable State Trust Land**  
 1 sq. mile
- Existing Development (2014)**  
 49 sq. miles

Data Sources: City of Phoenix, ALRIS, FCDMC, and MCDOT



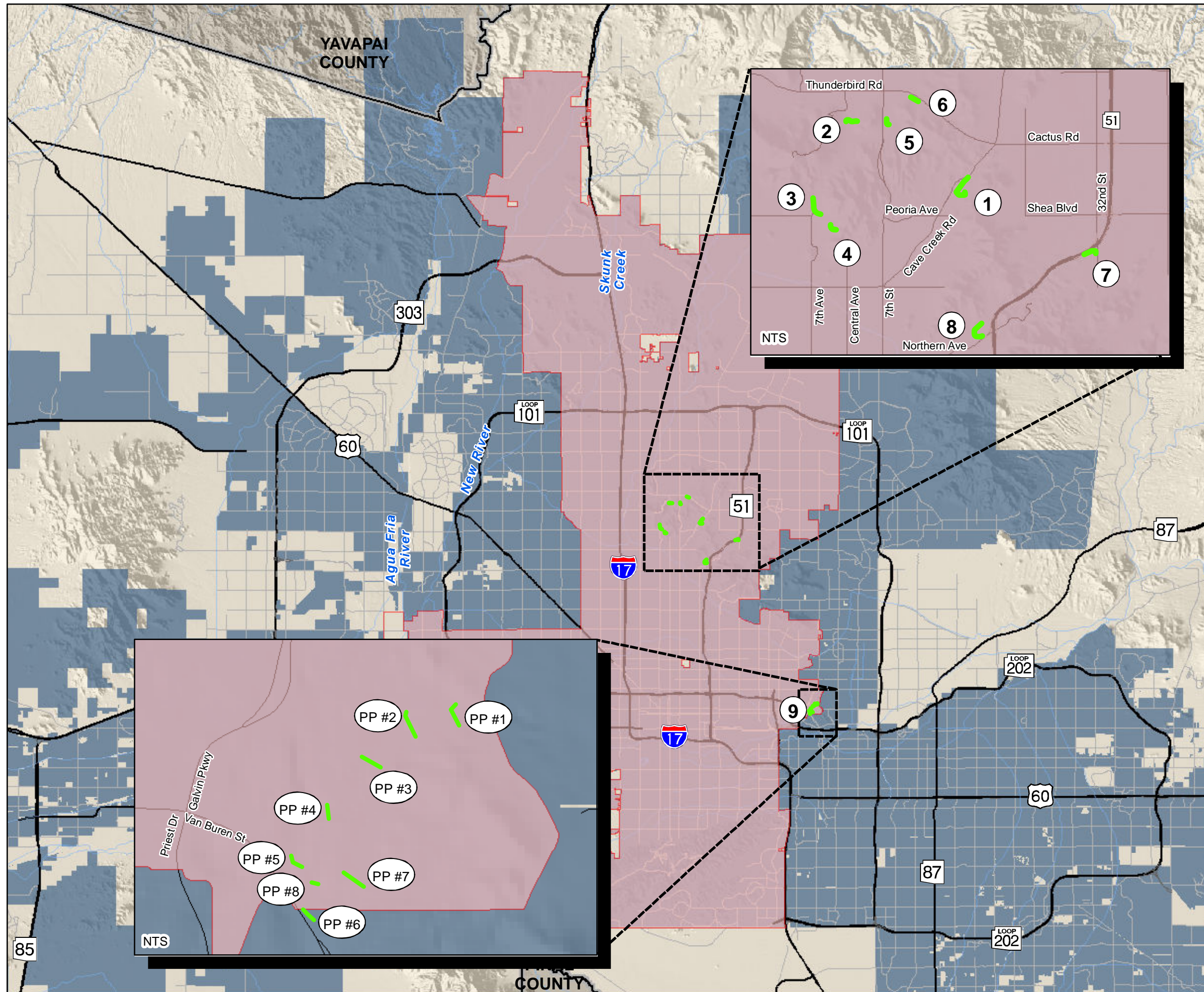
CITY OF PHOENIX FLOODPLAIN  
MANAGEMENT PLAN UPDATE 2015



PROJECT NUMBER: ST83140071  
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HDR PROJECT: 044-261915

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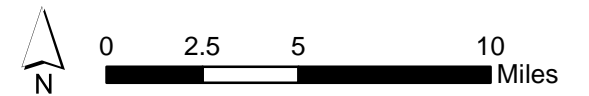


# Dam Locations

Map 7

Name of Dam	Dam ID
1. North Mountain Flood Detention	#3
2. North Mountain Flood Detention	#7
3. West Park Flood Detention Dam	West
4. East Park Flood Detention Dam	East
5. North Mountain Flood Detention	#2A
6. North Mountain Flood Detention	#2B
7. Mountain View Rd. & 32nd Street	#99
8. Little Dreamy Draw	#4
9. Papago Park #1 to #8	PP #1 to #8

- City of Phoenix Dams
- City/Incorporated Area
- City of Phoenix
- Maricopa County/Unincorporated Area
- Other County



Data Sources: City of Phoenix, ALRIS, FCDMC, MCDOT and U.S. Army Corps of Engineers

**CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015**

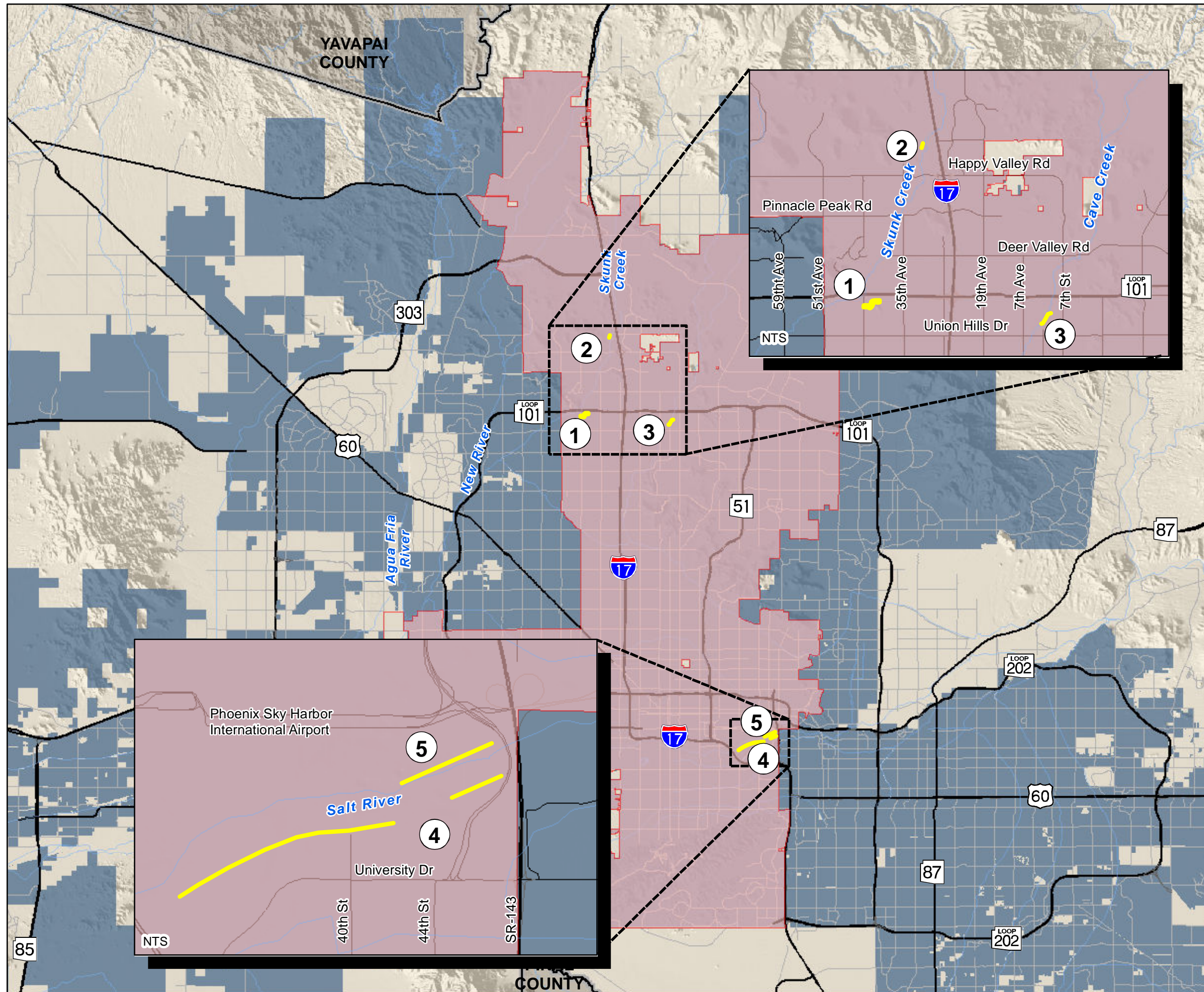
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






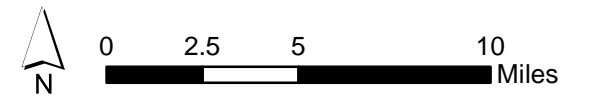
# Levees Locations

Map 8




Name of Levee	Levee ID
1. Scatter Wash North and South Levee	46
2. Skunk Creek Levee	104
3. Cave Creek Embankment Levee	310
4. Salt River South	41
5. Salt River North	42


-  City of Phoenix Levees
-  City of Phoenix
-  City/Incorporated Area
-  Maricopa County/Unincorporated Area
-  Other County



Data Sources: City of Phoenix, ALRIS, FCDMC, MCDOT and U.S. Army Corps of Engineers



CITY OF PHOENIX FLOODPLAIN  
MANAGEMENT PLAN UPDATE 2015



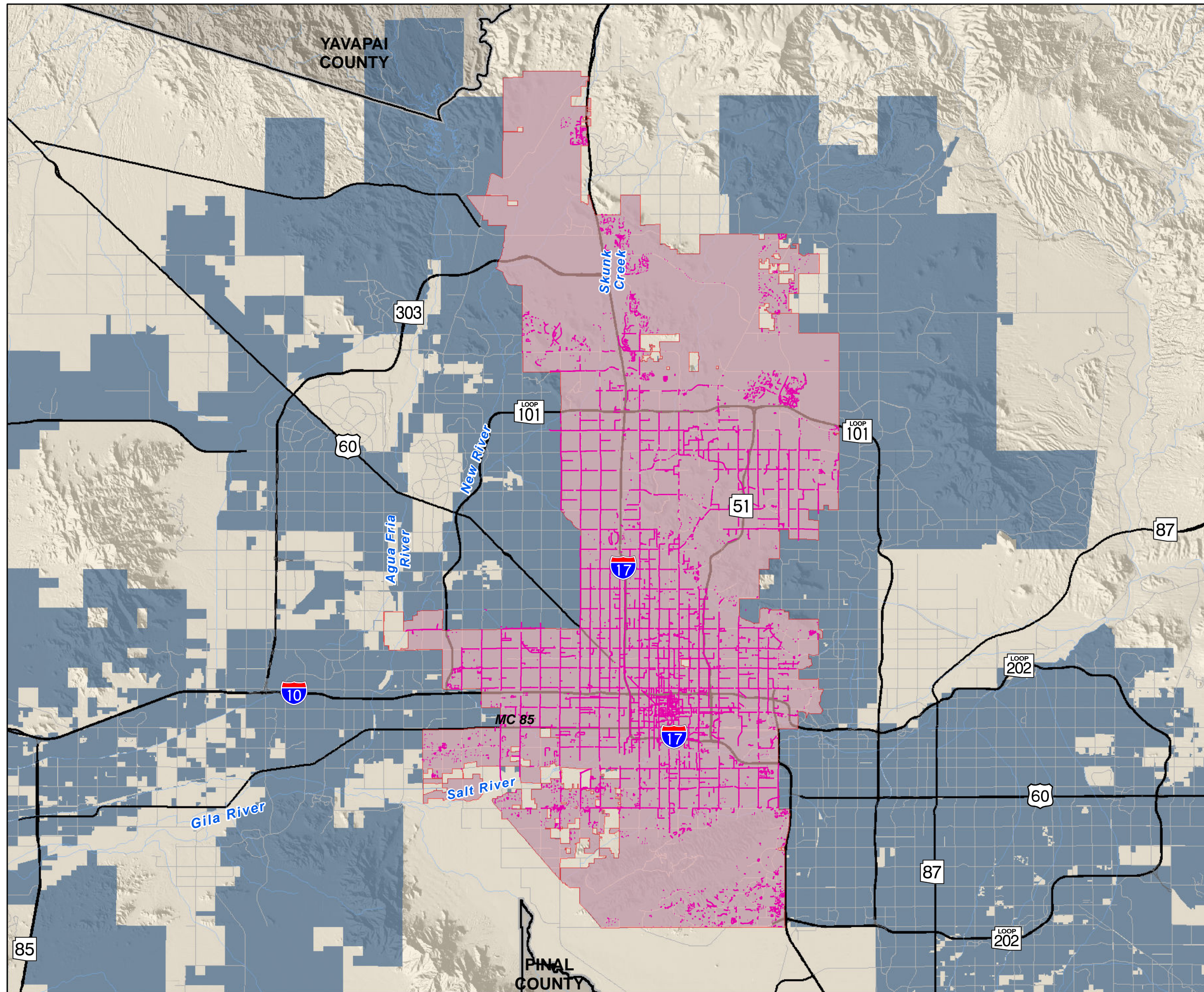
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HDR PROJECT: 044-261915

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# 2015 STORM DRAIN INFRASTRUCTURE


Map 9




- Existing City of Phoenix Storm Drain Infrastructure
- City of Phoenix
- City/Incorporated Area
- Maricopa County/Unincorporated Area
- Other County



Data Sources: City of Phoenix, ALRIS, FCDMC, MCDOT + XX

 CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015

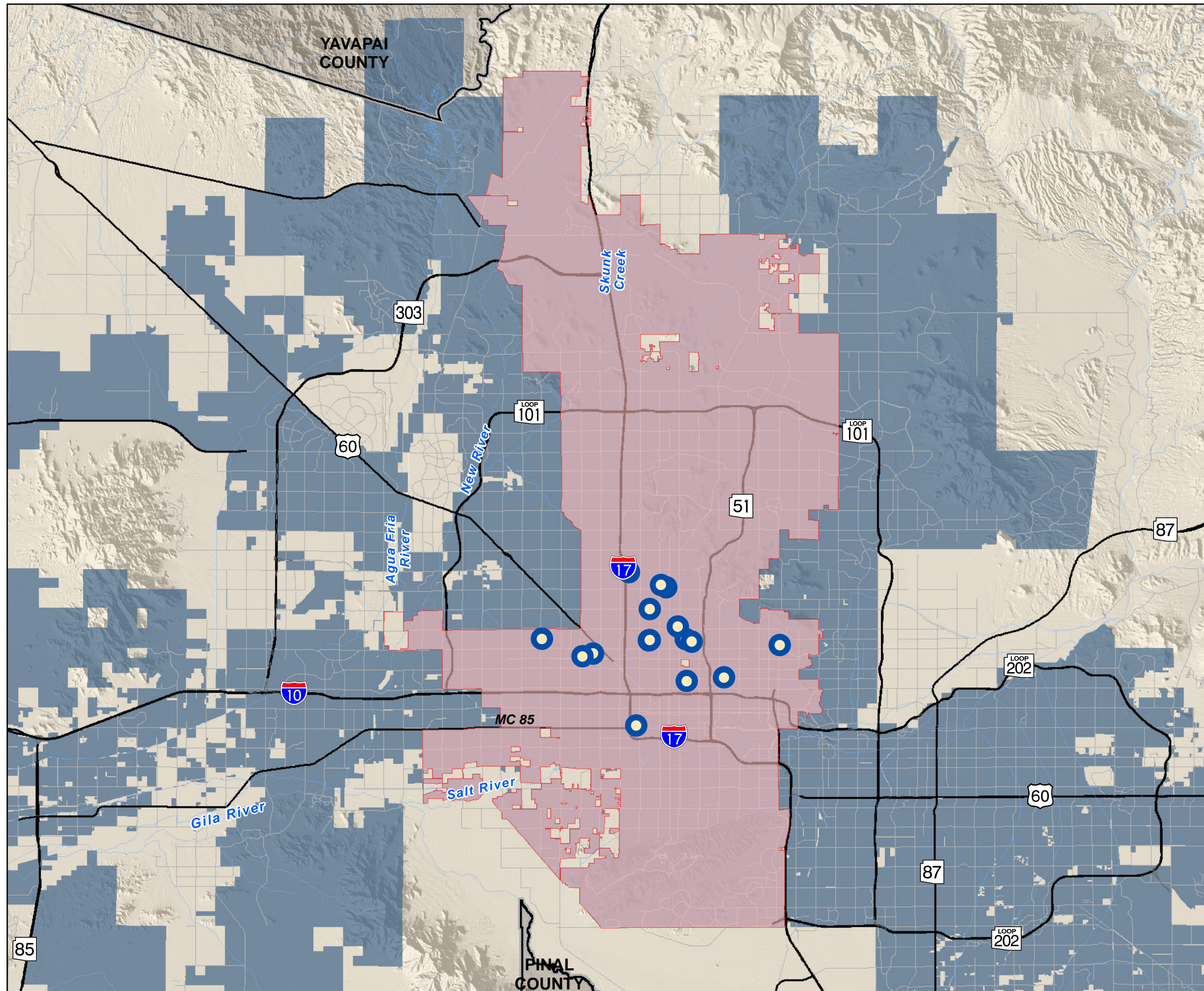
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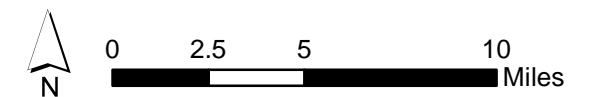


# REPETITIVE LOSS OUTREACH SITES

Map 10



- Repetitive Loss Outreach Sites 2015
- City of Phoenix
- City/Incorporated Area
- Maricopa County/Unincorporated Area
- Other County



Data Sources: City of Phoenix, ALRIS, FCDMC, MCDOT + XX



CITY OF PHOENIX FLOODPLAIN  
MANAGEMENT PLAN UPDATE 2015



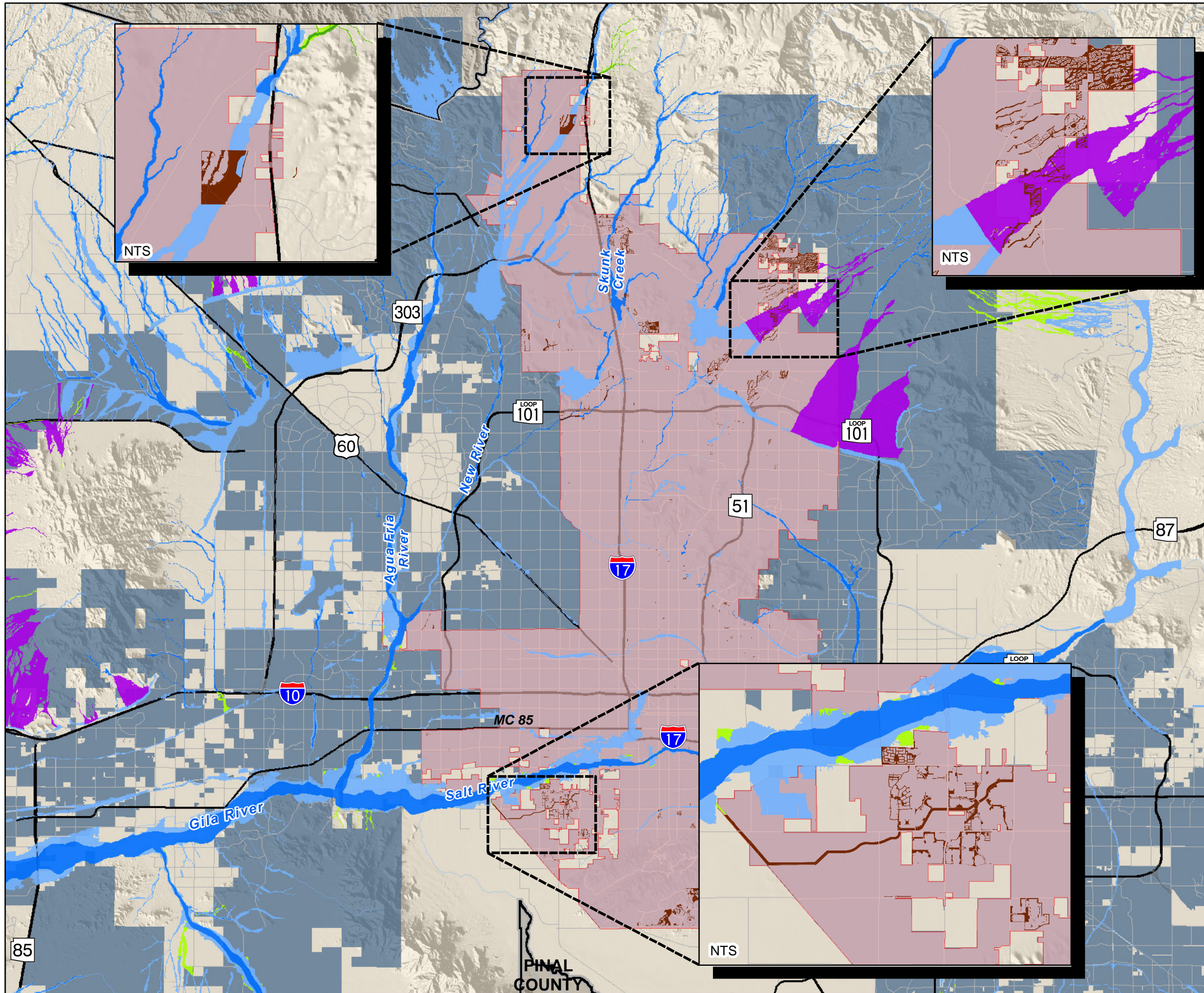
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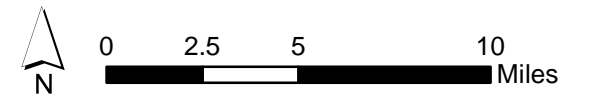


# 2015 DRAINAGE EASEMENTS

Map 11



- Open Floodplain Preservation
- City of Phoenix
- City/Incorporated Area
- Maricopa County/Unincorporated Area
- Other County
- FEMA Floodway
- FEMA Floodplain
- Alluvial Fan
- Pending Floodway
- Pending Floodplain
- AAFF; AFHH; AFUFD; AFW; AFZA; AEFW



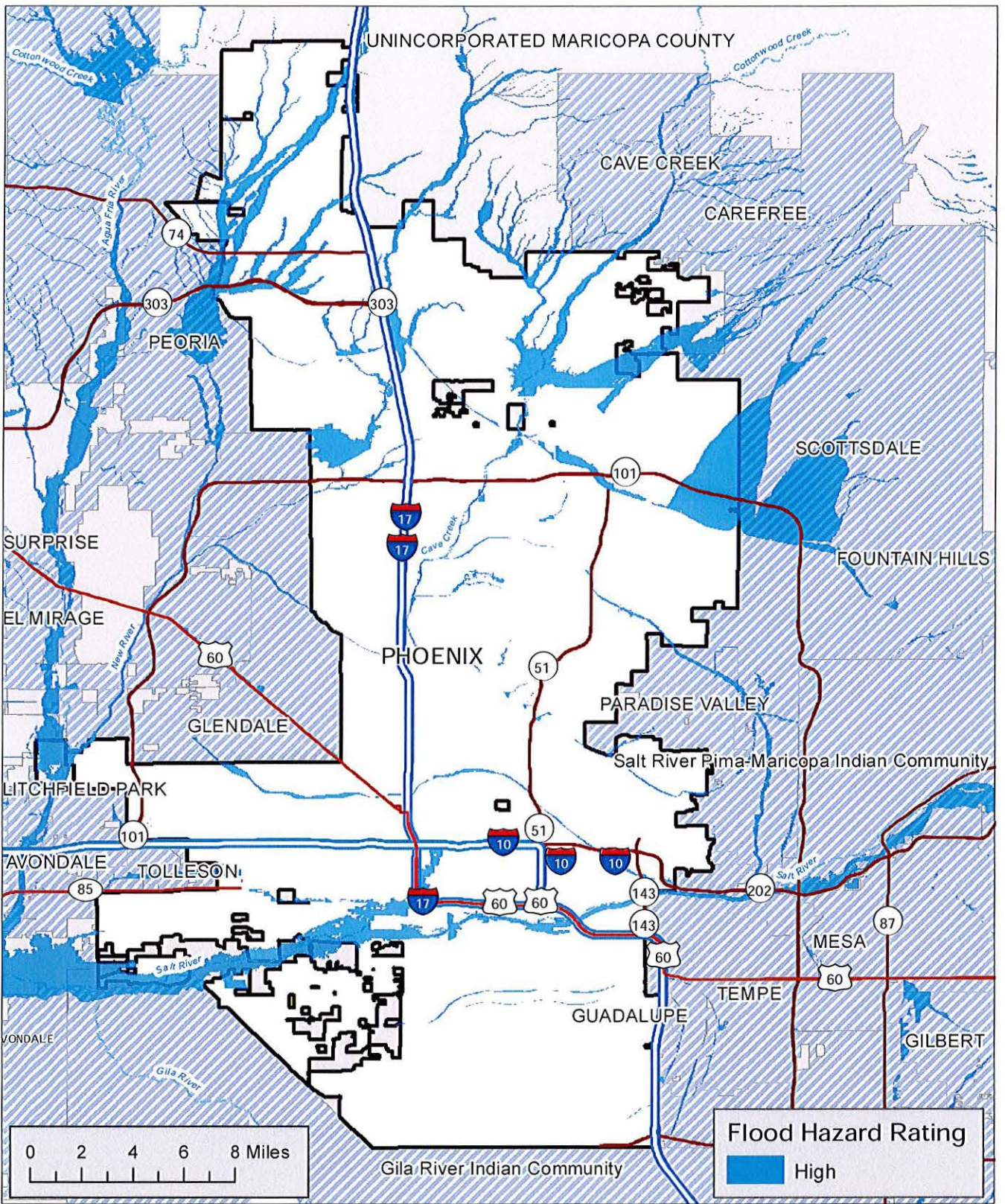
Data Sources: City of Phoenix, ALRIS, FCDMC, MCDOT + XX

**CITY OF PHOENIX FLOODPLAIN MANAGEMENT PLAN UPDATE 2015**

**HDR** PROJECT NUMBER: ST83140071  
CONTRACT NUMBER: AS00139754  
HDR PROJECT: 044-261915

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**Legend**


- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

N  
▲

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan



**City of Phoenix**





Map #4D18  
City of Phoenix  
Flood Hazard Map  
as of Jan. 2015

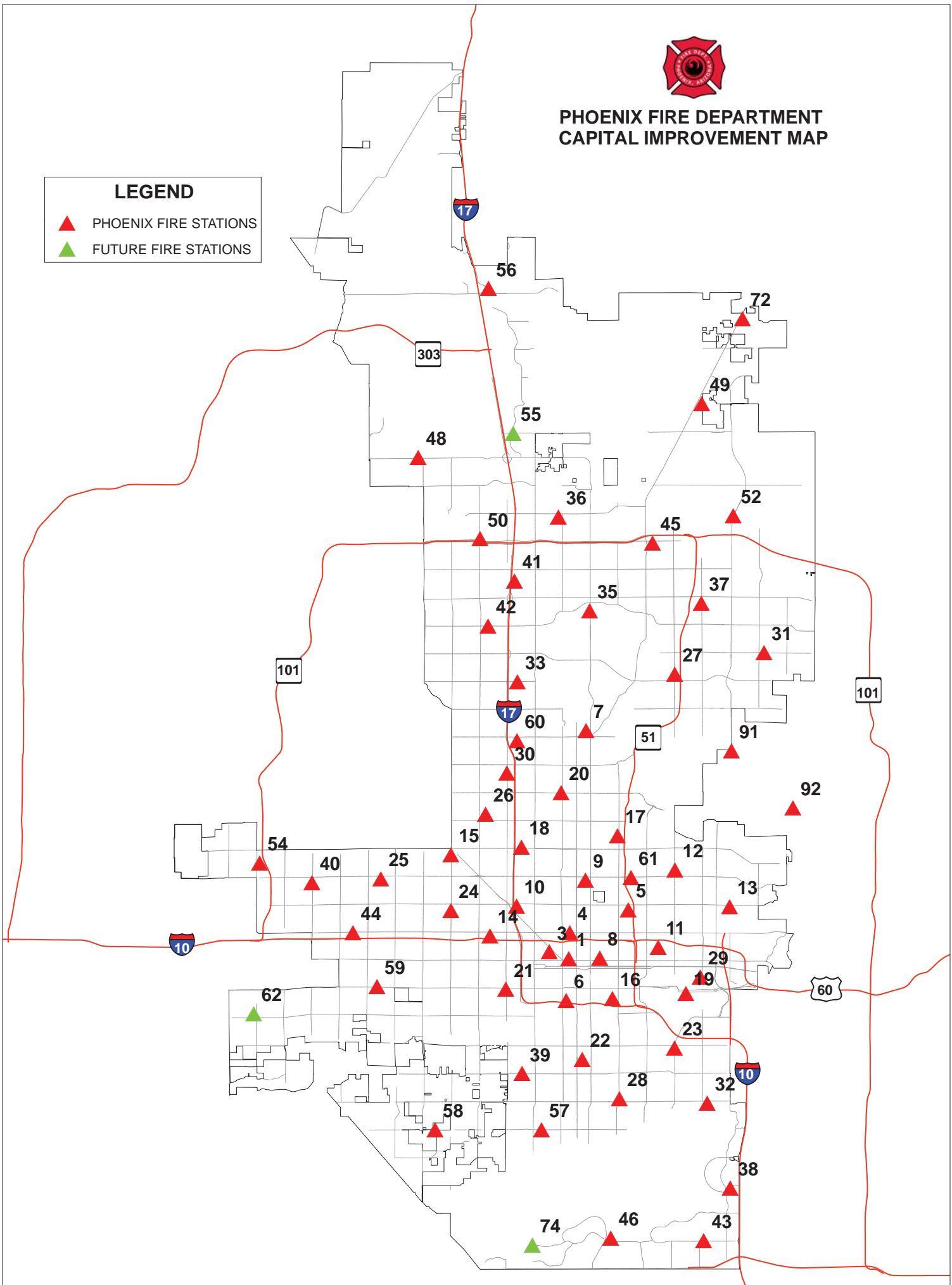




# PHOENIX FIRE DEPARTMENT CAPITAL IMPROVEMENT MAP

## LEGEND

-  PHOENIX FIRE STATIONS
-  FUTURE FIRE STATIONS



# HOUSING

## HOUSING

### AFFORDABLE HOUSING

-  Ambassador West
-  Camelback Properties
-  Cypress Manor
-  Deck Park Vista
-  Desert Meadows
-  Foothills on the Preserve
-  La Cascada I
-  La Cascada II
-  Paradise Greens
-  Red Mountain Springs
-  Sand Dollar
-  Yale Court
-  Windrose Village
-  Paradise Village
-  Sahuaro West
-  Foothills Court
-  Reflections on Portland
-  Park Lee
-  The Summit
-  Pine Crest




### SENIOR HOUSING

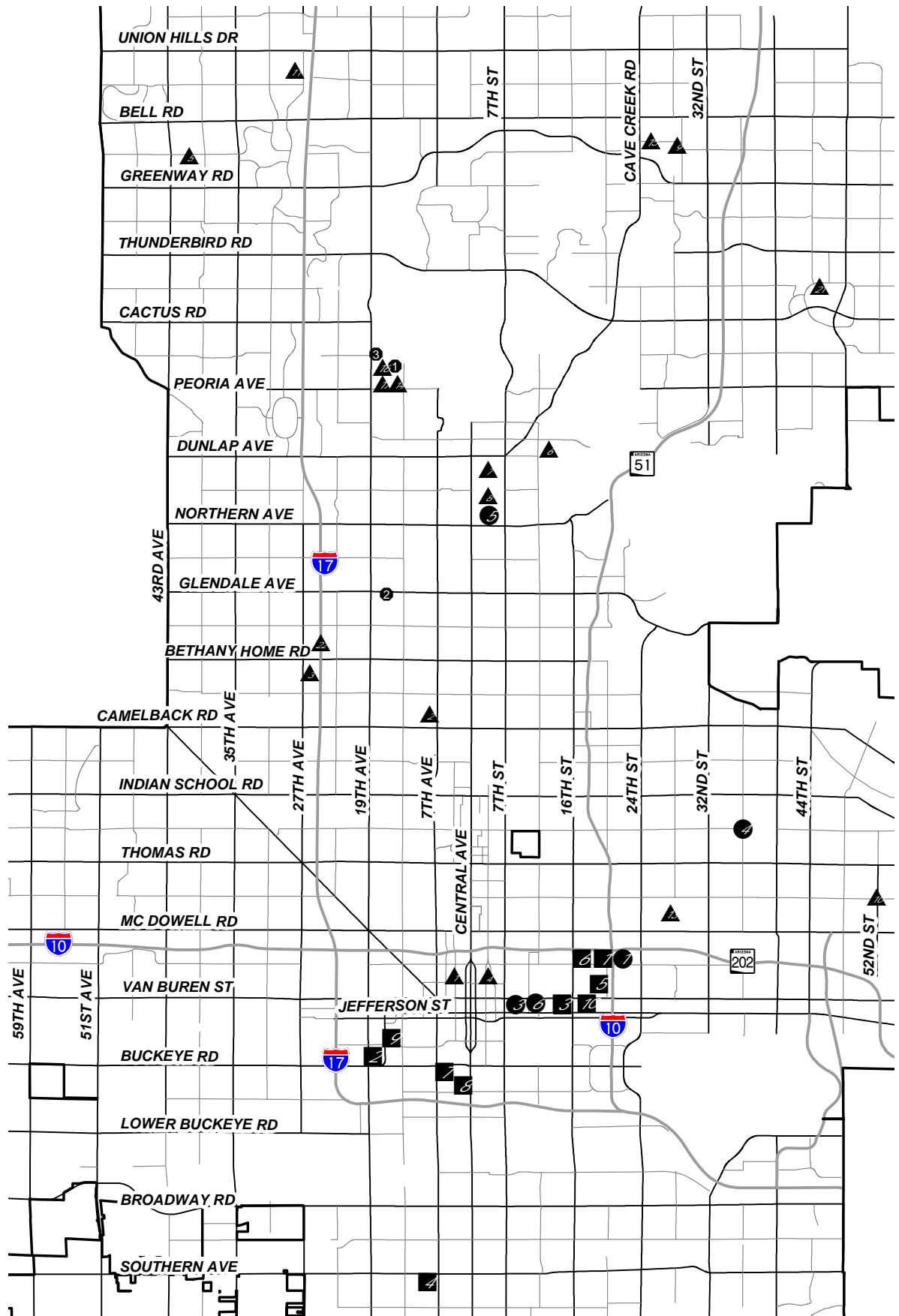
-  Fillmore Gardens
-  Maryvale Parkway Terrace
-  McCarty on Monroe
-  Pine Towers
-  Sunnyslope Manor
-  Washington Manor

### CONVENTIONAL HOUSING

-  A.L. Krohn Homes
-  The Symphony
-  A.L. Krohn Homes
-  Foothills Village
-  Frank Luke Homes
-  Aeroterra
-  Marcos de Niza
-  Marcos de Niza Addn
-  Henson Village
-  Sidney P. Osborn Homes

### PRIDE

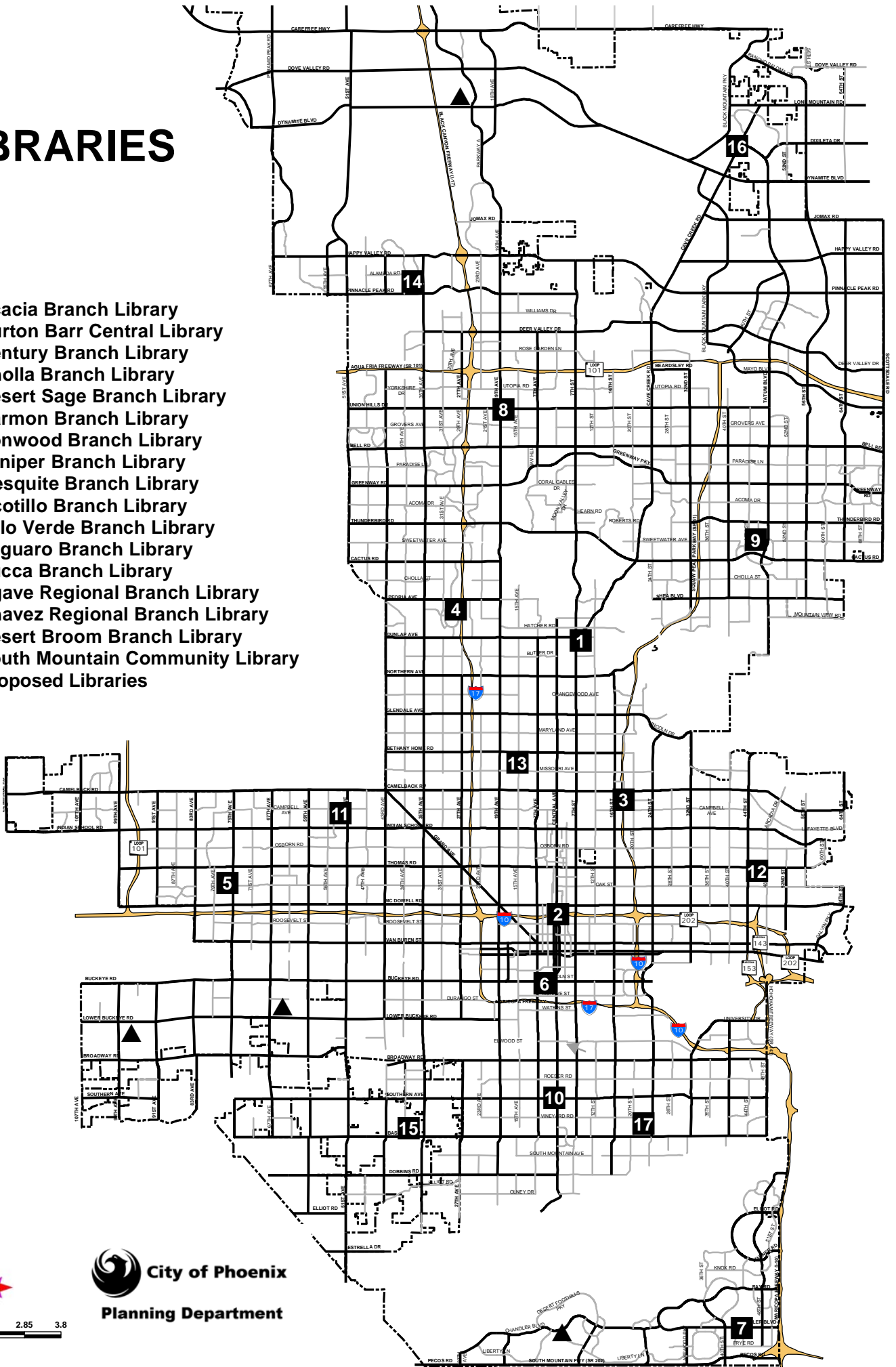
-  Ladera del Norte
-  Sante Fe Springs
-  Whispering Willows





# LIBRARIES

- 1** Acacia Branch Library
- 2** Burton Barr Central Library
- 3** Century Branch Library
- 4** Cholla Branch Library
- 5** Desert Sage Branch Library
- 6** Harmon Branch Library
- 7** Ironwood Branch Library
- 8** Juniper Branch Library
- 9** Mesquite Branch Library
- 10** Ocotillo Branch Library
- 11** Palo Verde Branch Library
- 12** Saguaro Branch Library
- 13** Yucca Branch Library
- 14** Agave Regional Branch Library
- 15** Chavez Regional Branch Library
- 16** Desert Broom Branch Library
- 17** South Mountain Community Library
- ▲** Proposed Libraries



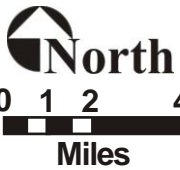
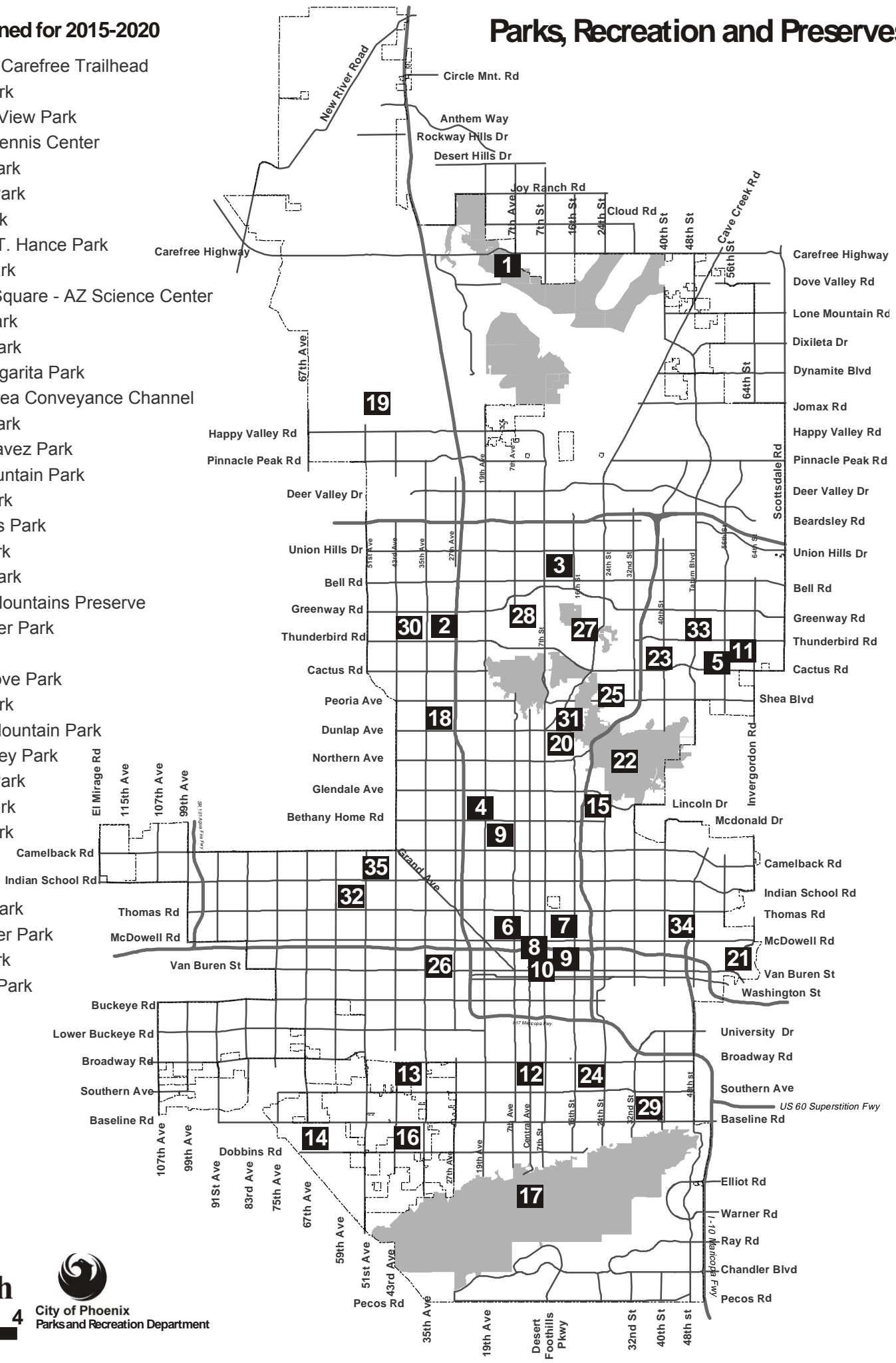
0 0.95 1.9 2.85 3.8  
Miles



# Projects Planned for 2015-2020

# Parks, Recreation and Preserves

- 1** 7th Ave & Carefree Trailhead
- 2** Acacia Park
- 3** Mountain View Park
- 4** Phoenix Tennis Center
- 5** Sonrisa Park
- 6** Encanto Park
- 7** Colter Park
- 8** Margaret T. Hance Park
- 9** Solano Park
- 10** Heritage Square - AZ Science Center
- 11** Sereno Park
- 12** Hayden Park
- 13** Playa Margarita Park
- 14** Laveen Area Conveyance Channel
- 15** Sumida Park
- 16** Cesar Chavez Park
- 17** South Mountain Park
- 18** Cortez Park
- 19** Deem Hills Park
- 20** Palma Park
- 21** Papago Park
- 22** Phoenix Mountains Preserve
- 23** Roadrunner Park
- 24** Aya Park
- 25** Christy Cove Park
- 26** Falcon Park
- 27** Lookout Mountain Park
- 28** Moon Valley Park
- 29** Esteban Park
- 30** Acoma Park
- 31** Norton Park
- 32** Marivue Park
- 33** Sweetwater Park
- 34** Pierce Park
- 35** Maryvale Park



# POLICE PROTECTION

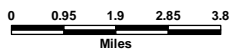
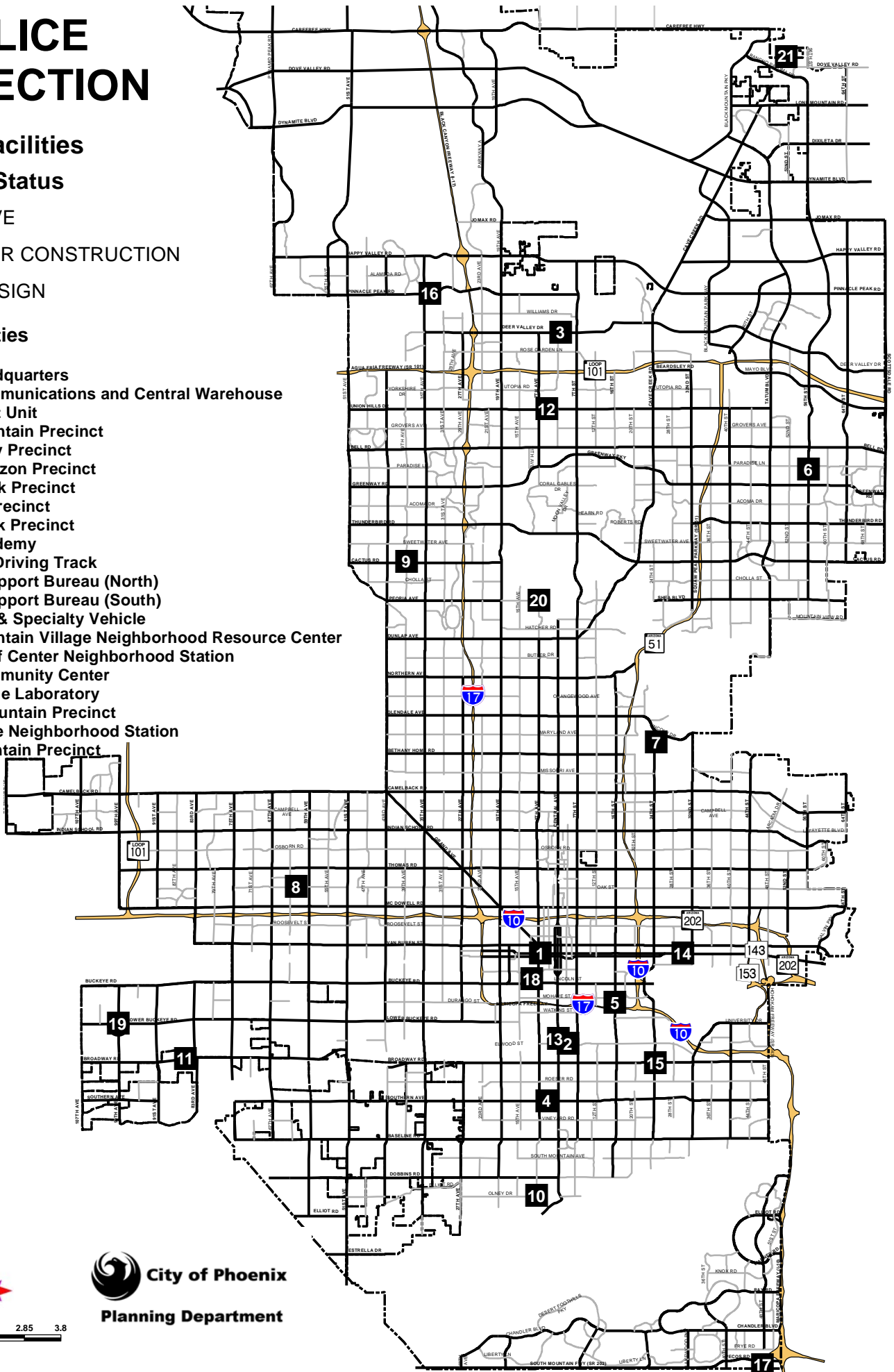
## Police Facilities

### Station Status

- ACTIVE
- UNDER CONSTRUCTION
- ▲ IN DESIGN

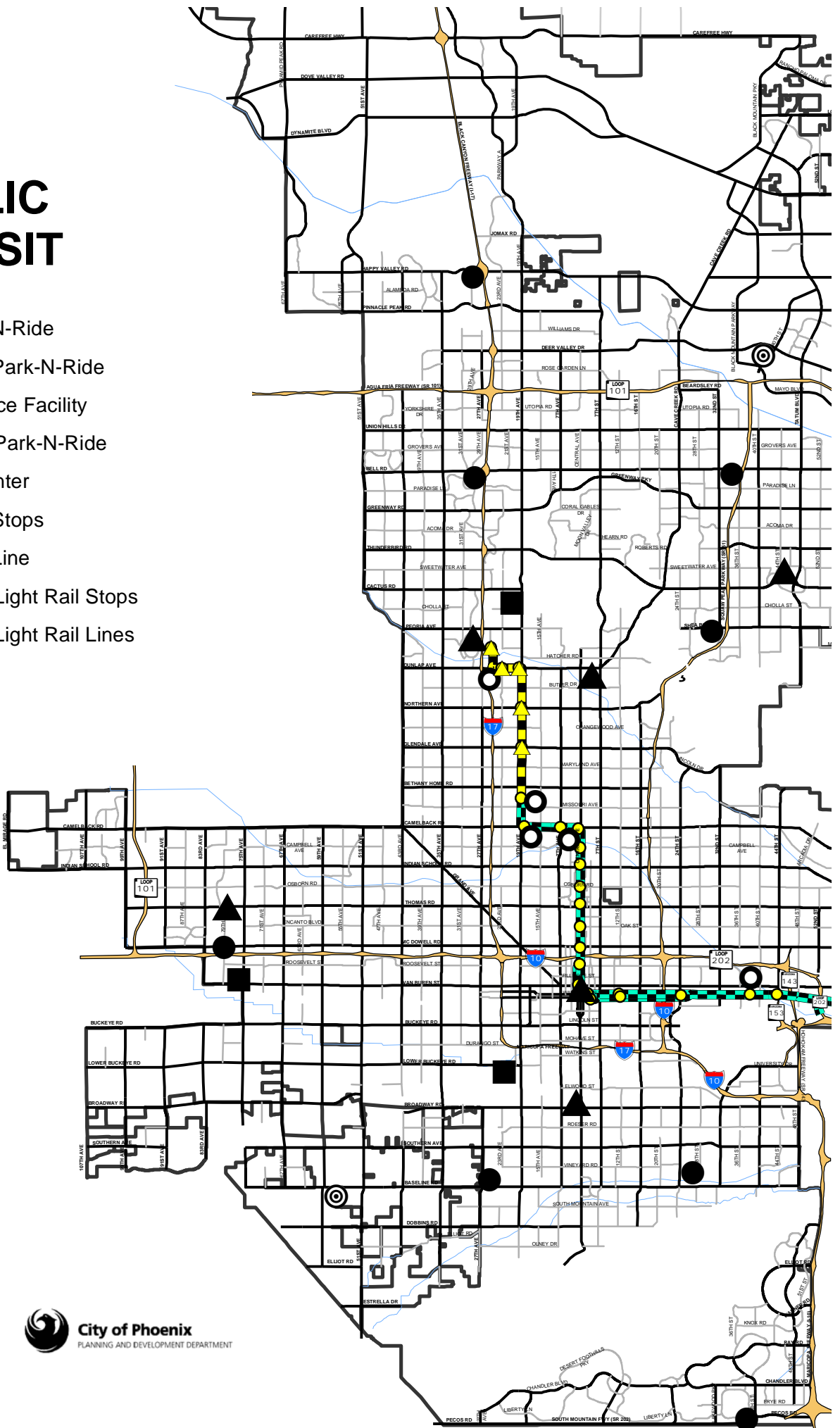
### Active Facilities

- 1 Police Headquarters
- 2 Police Communications and Central Warehouse
- 3 Air Support Unit
- 4 South Mountain Precinct
- 5 Central City Precinct
- 6 Desert Horizon Precinct
- 7 Squaw Peak Precinct
- 8 Maryvale Precinct
- 9 Cactus Park Precinct
- 10 Police Academy
- 11 Defensive Driving Track
- 12 Tactical Support Bureau (North)
- 13 Tactical Support Bureau (South)
- 14 MDT Shop & Specialty Vehicle
- 15 South Mountain Village Neighborhood Resource Center
- 16 Golet Beuf Center Neighborhood Station
- 17 Pecos Community Center
- 18 Police Crime Laboratory
- 19 Estrella Mountain Precinct
- 20 Sunnyslope Neighborhood Station
- 21 Black Mountain Precinct



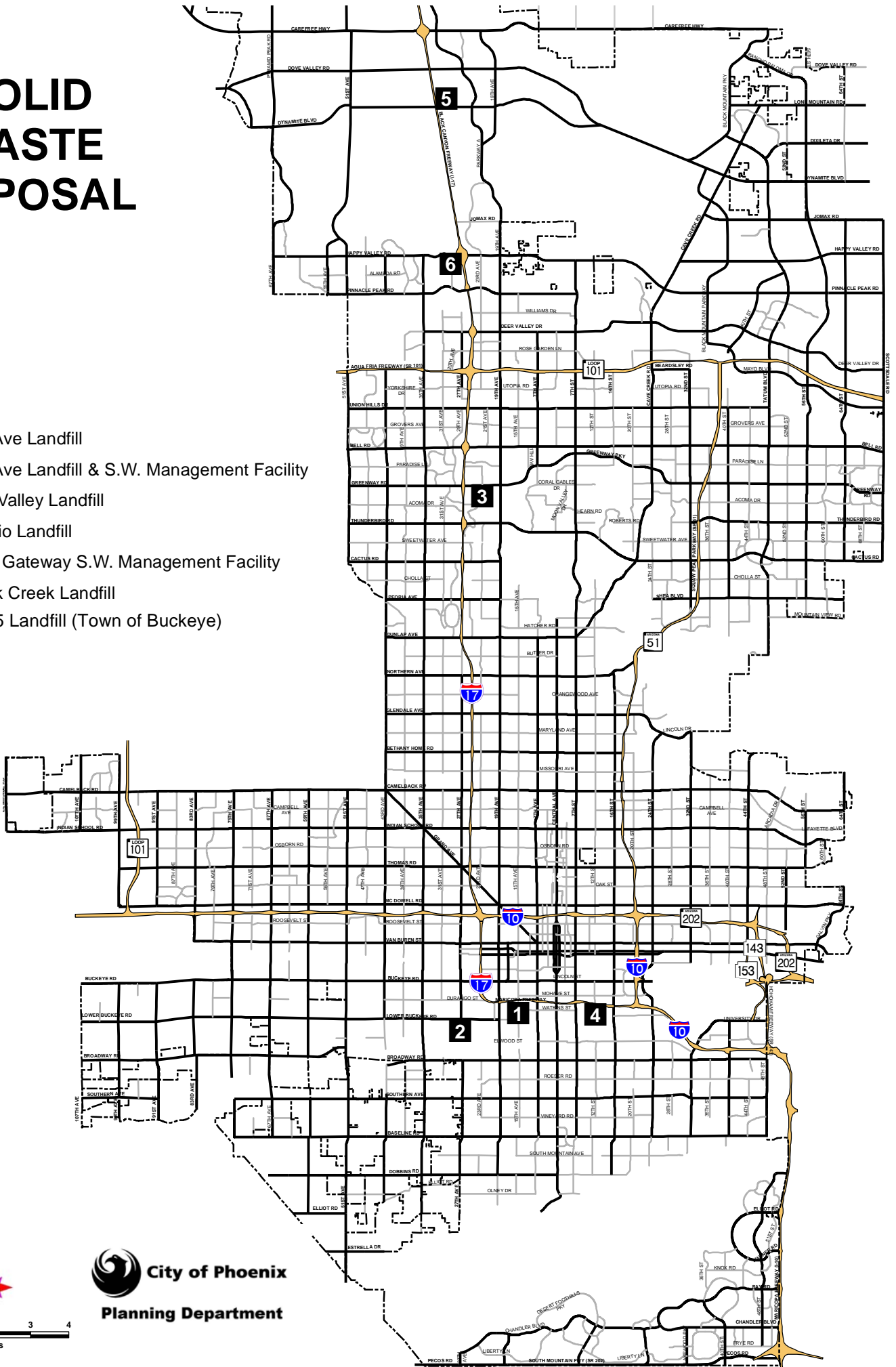
# PUBLIC TRANSIT

- Bus Park-N-Ride
- Light Rail Park-N-Ride
- Maintenance Facility
- ◎ Proposed Park-N-Ride
- ▲ Transit Center
- Light Rail Stops
- ▬ Light Rail Line
- ▲ Proposed Light Rail Stops
- ▬ Proposed Light Rail Lines



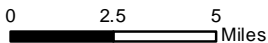
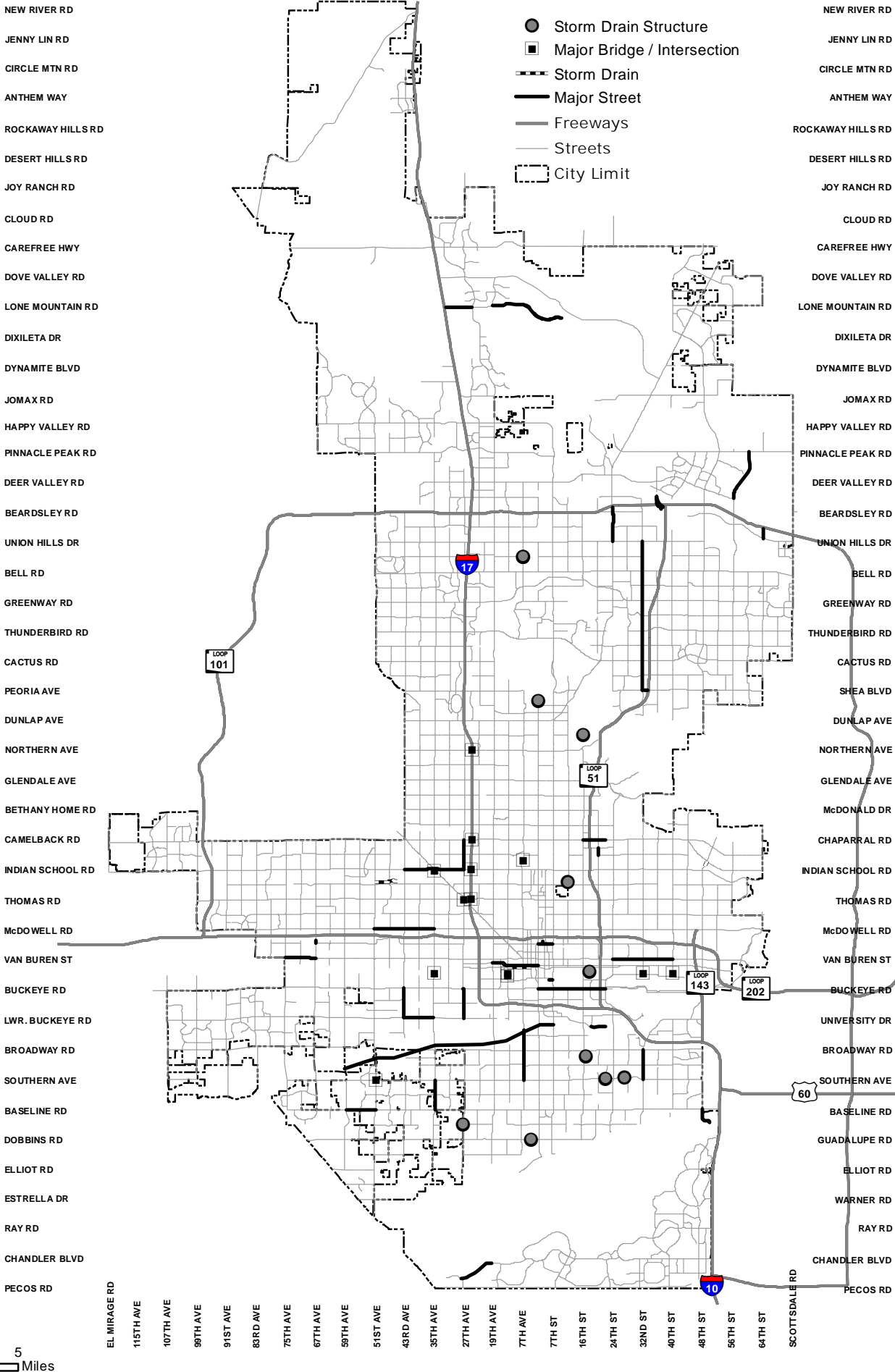
# SOLID WASTE DISPOSAL

- 1** 19th Ave Landfill
- 2** 27th Ave Landfill & S.W. Management Facility
- 3** Deer Valley Landfill
- 4** Del Rio Landfill
- 5** North Gateway S.W. Management Facility
- 6** Skunk Creek Landfill  
SR 85 Landfill (Town of Buckeye)





# Street Transportation and Drainage Fiscal Years 2016- 2020

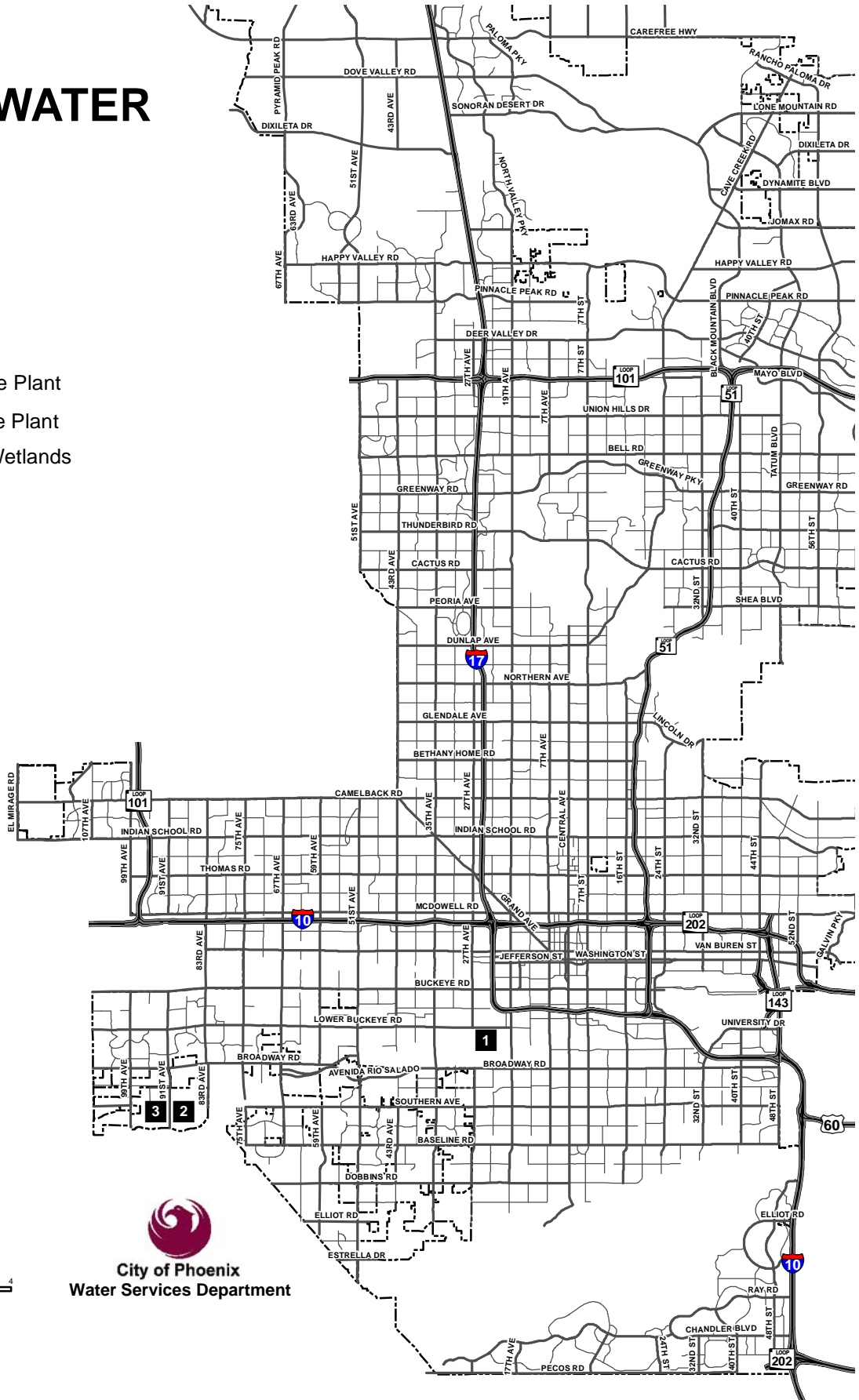


Note: Only projects with construction dollars budgeted during Fiscal Years 2016 - 2020 are shown.



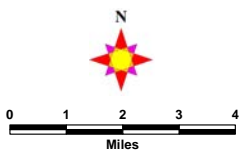
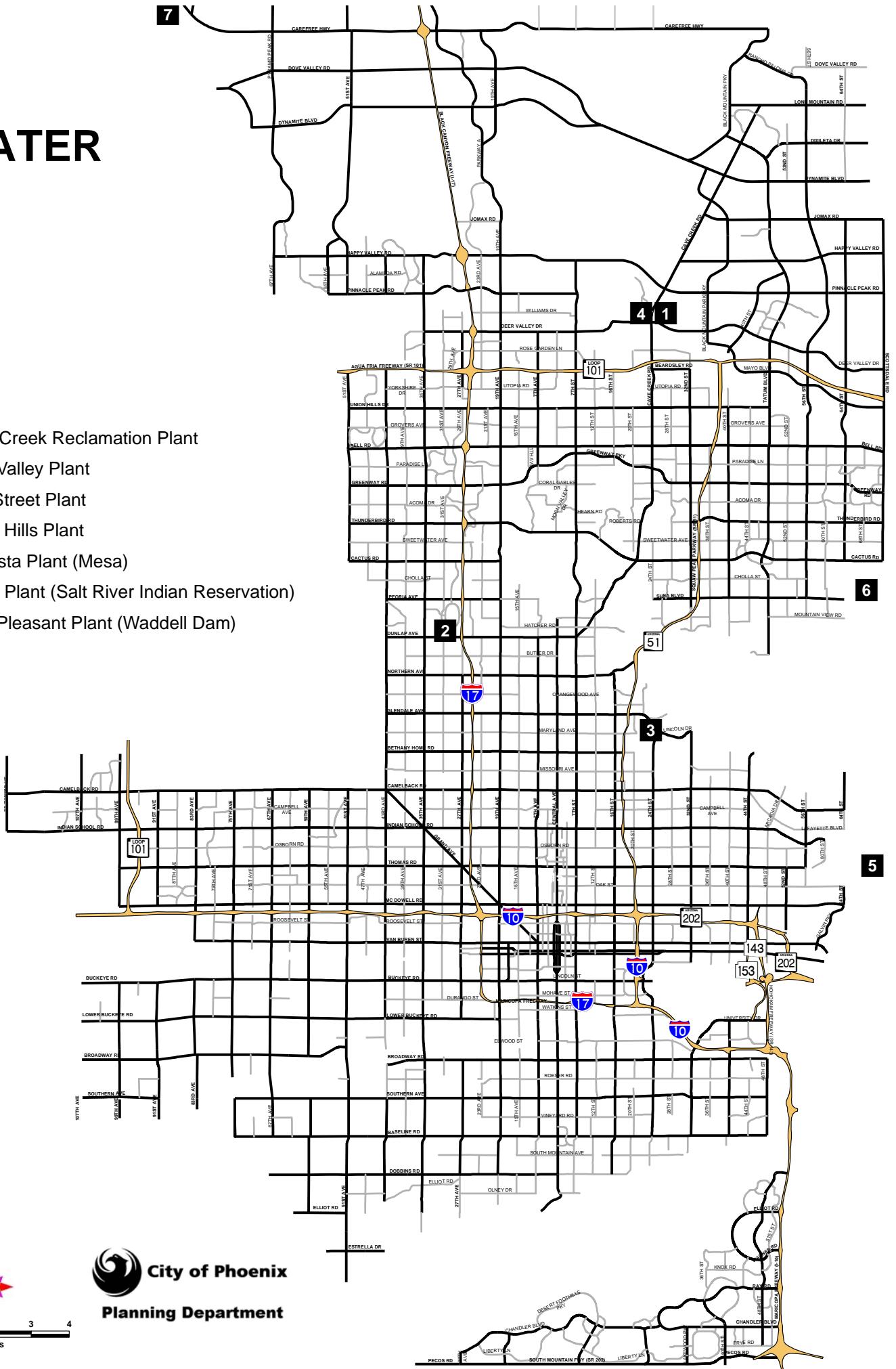
# WASTEWATER

- 1** 23rd Avenue Plant
- 2** 91st Avenue Plant
- 3** Tres Rios Wetlands



# WATER

- 1** Cave Creek Reclamation Plant
- 2** Deer Valley Plant
- 3** 24th Street Plant
- 4** Union Hills Plant
- 5** Val Vista Plant (Mesa)
- 6** Verde Plant (Salt River Indian Reservation)
- 7** Lake Pleasant Plant (Waddell Dam)

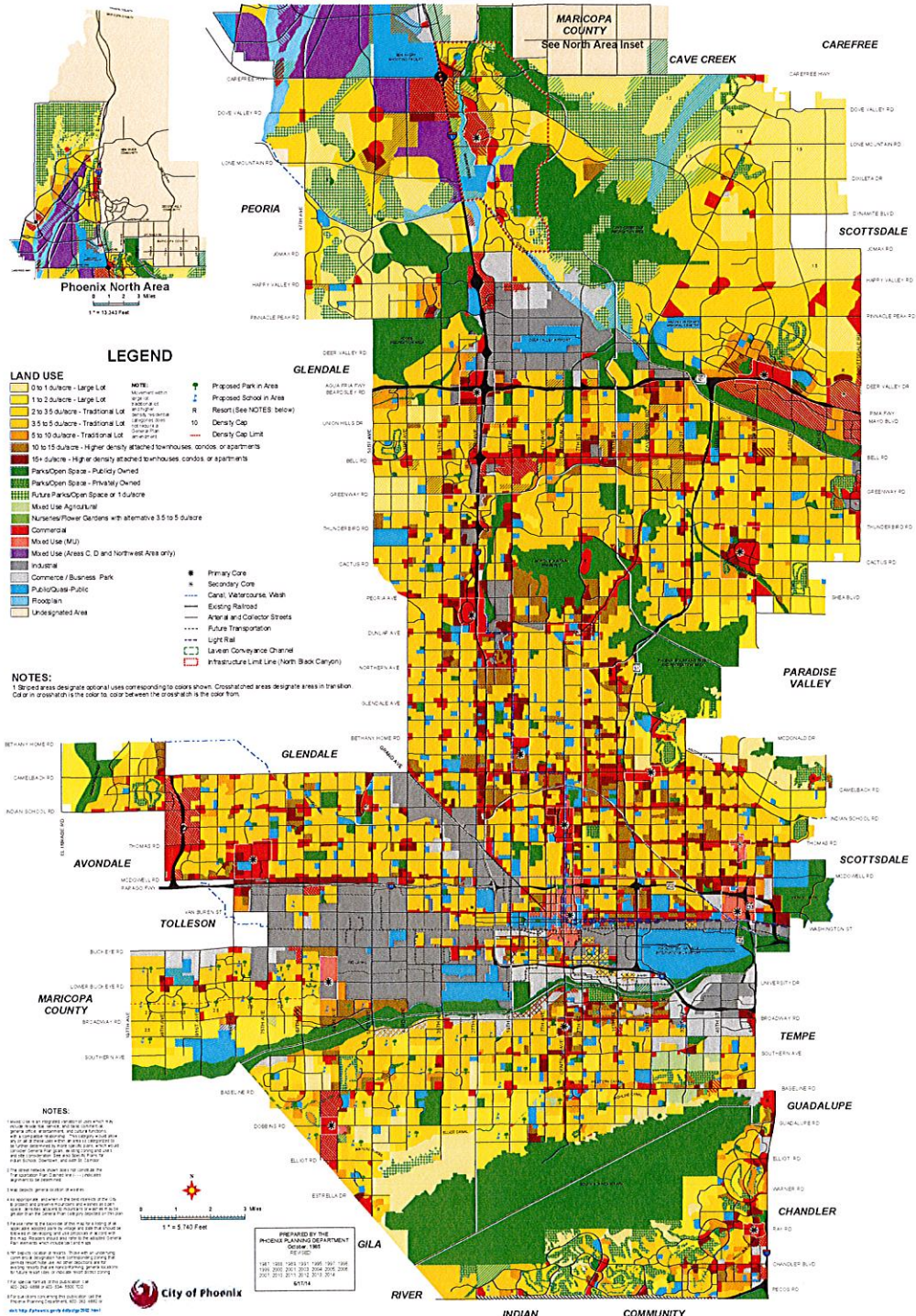




# APPENDIX A

## Land Use Map

### CITY OF PHOENIX GENERAL PLAN A Vision for the Future



For the most up to date version of this map, please visit: <https://www.phoenix.gov/pdd/pz/pzmaps>





# Phoenix **2030**

**POPULATION** **1,953,806**  
PEOPLE

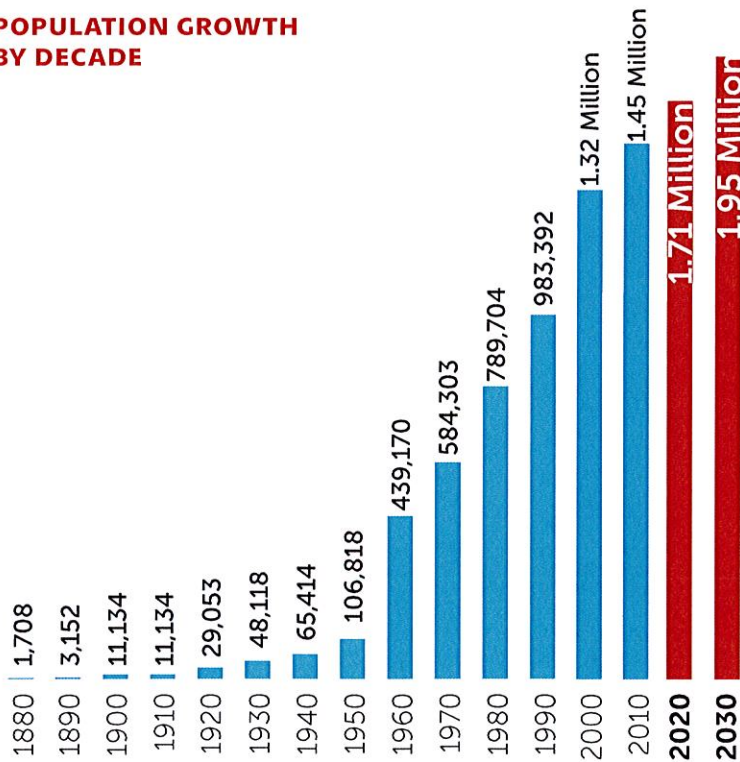
## HOUSING UNITS

**735,100**

## TOTAL EMPLOYMENT

**1,071,200**  
JOBS

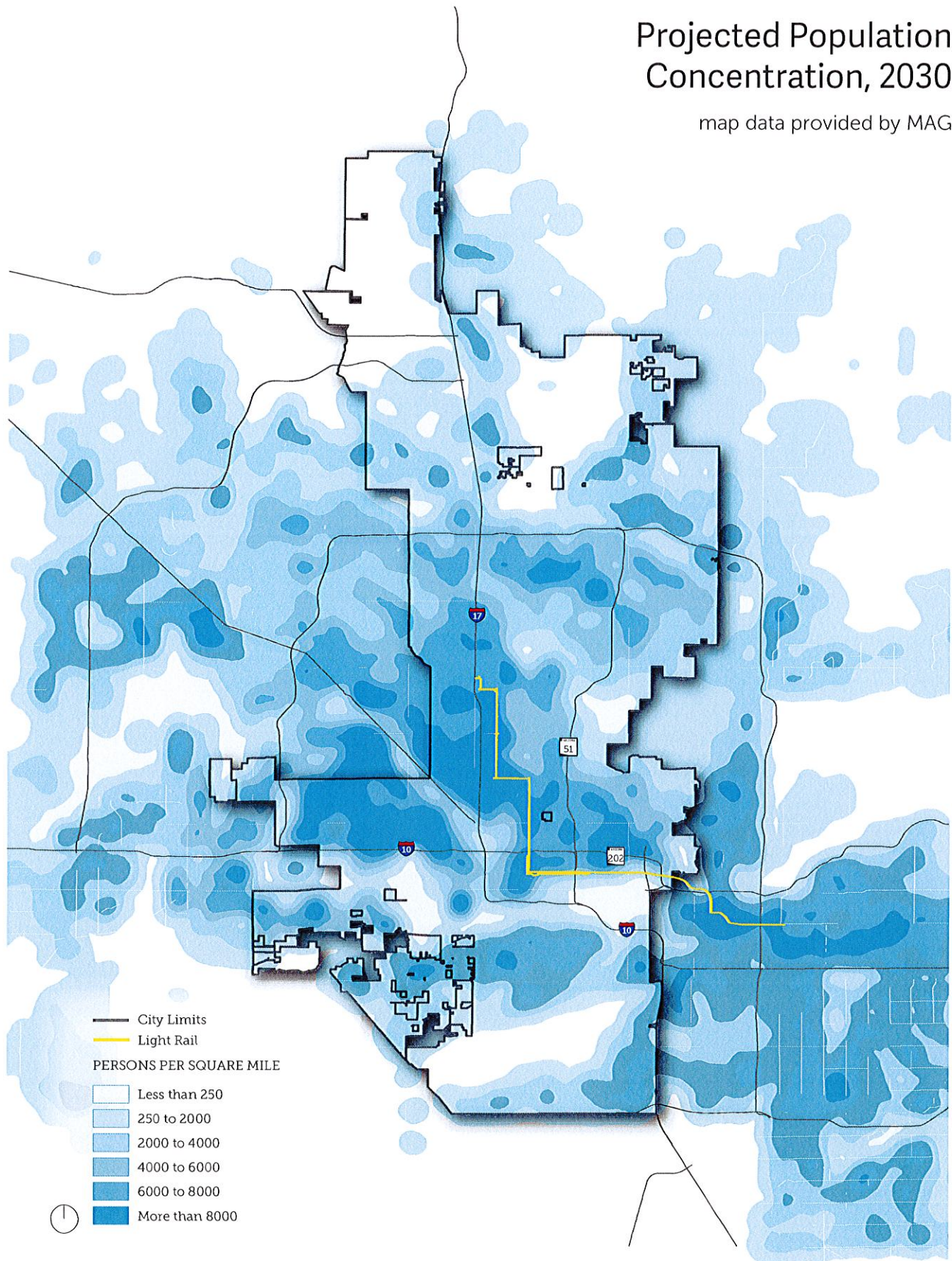
## POPULATION GROWTH BY DECADE



\*Data provided by Maricopa Association of Governments (MAG)

# Projected Population Concentration, 2030

map data provided by MAG



**Maricopa Association of Governments**  
**Total Resident Population by Municipal Planning Area, Maricopa County**  
**July 1, 2010 and Projections July 1, 2020 to July 1, 2040**

Municipal Planning Area	Total Resident Population			
	2010	2020	2030	2040
Apache Junction	300	300	300	300
Avondale	77,900	96,600	121,500	155,300
Buckeye	62,800	103,600	183,800	313,500
Carefree	3,400	3,800	4,200	4,400
Cave Creek	4,900	5,800	7,400	8,900
Chandler	244,600	283,100	307,500	316,500
County Areas	94,600	104,100	119,900	145,200
El Mirage	31,900	34,600	41,000	48,400
Fort McDowell	1,000	1,000	1,100	1,100
Fountain Hills	22,400	25,900	31,000	31,200
Gila Bend	2,500	2,800	6,200	17,000
Gila River	3,000	3,100	3,300	3,400
Gilbert	212,400	259,100	293,100	322,300
Glendale	252,800	291,500	343,500	357,500
Goodyear	68,000	115,300	167,600	241,400
Guadalupe	5,500	6,000	6,500	6,800
Litchfield Park	10,500	12,000	13,800	13,800
Mesa	482,500	543,400	620,300	656,900
Paradise Valley	12,800	13,000	14,100	14,500
Peoria	162,500	214,400	276,200	342,600
Phoenix	1,501,300	1,711,600	1,953,800	2,198,000
Queen Creek	32,200	50,100	67,800	73,400
Salt River	6,300	6,400	7,000	7,600
Scottsdale	217,400	252,300	283,000	296,300
Surprise	127,600	159,200	241,900	336,900
Tempe	162,100	183,900	211,700	217,600
Tollson	6,600	7,000	8,200	8,900
Wickenburg	8,000	10,700	16,200	27,700
Youngtown	6,100	6,600	7,400	7,600
<b>County Total</b>	<b>3,823,900</b>	<b>4,507,200</b>	<b>5,359,300</b>	<b>6,175,000</b>

Notes: Numbers rounded to the nearest 100.

These projections include only the Maricopa County portions for Apache Junction, Peoria, Queen Creek, Wickenburg, and the Gila River Indian Community.

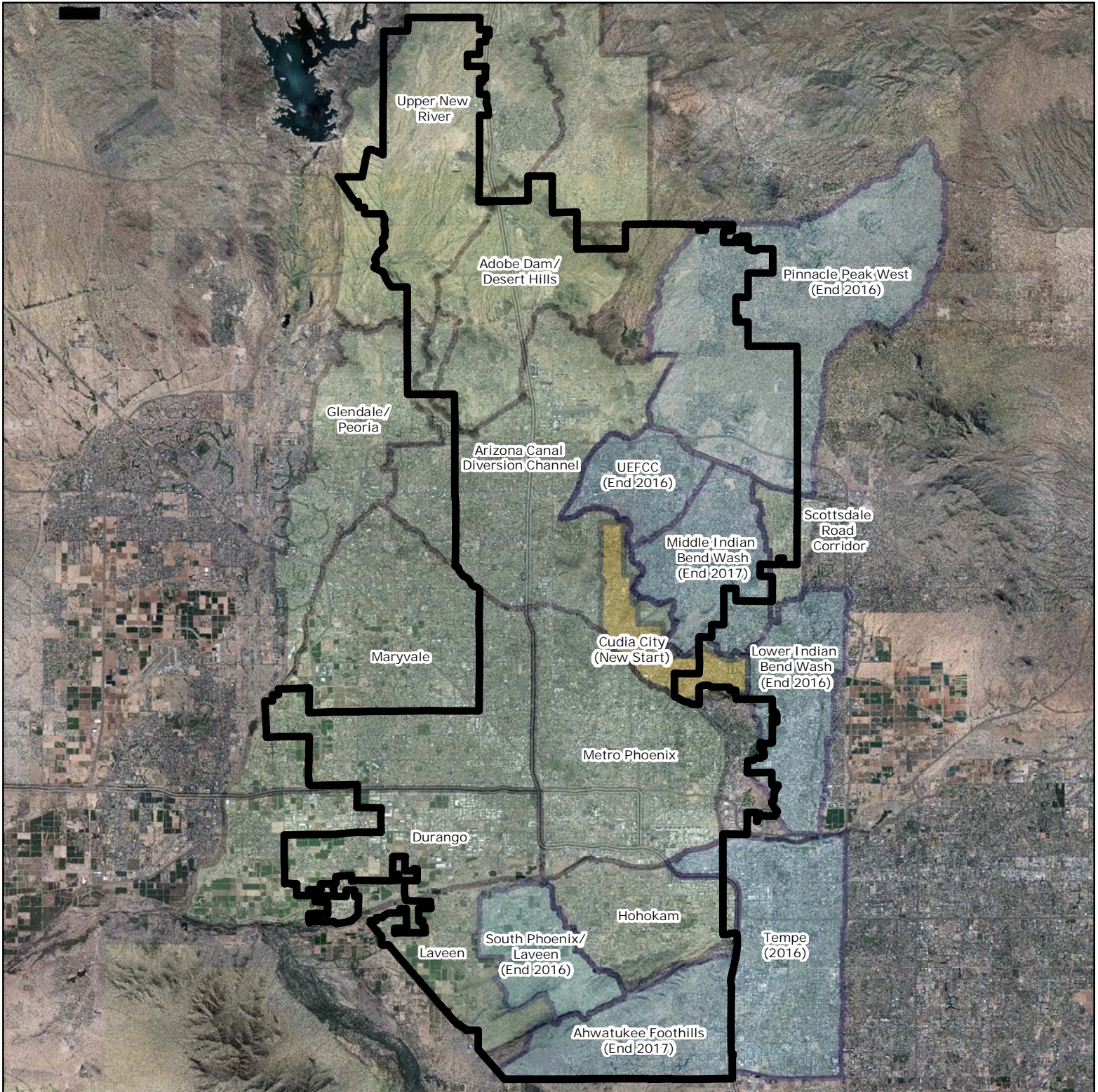
Source: Maricopa Association of Governments (MAG) Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ), May 2013

For explanation of variables and complete notation on this series, please refer to the Notes and Caveats in Appendix A.









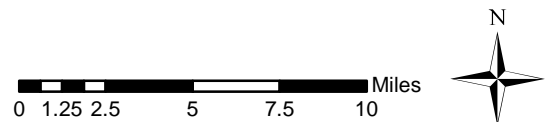
# FCD Studies in Phoenix



Document Path: C:\Users\Bolens\Documents\ArcGIS\Phoenix\_projects\_boundaries\FCD\_Projects\_Phoenix.mxd

Flood Control District of Maricopa County, GIS Division, 5/19/2016

	City of Phoenix Boundary		Completed ADMS/P
	New Start ADMS/P		Ongoing ADMS/P





## **NOTES AND CAVEATS FOR 2013 PROJECTIONS**

1. The projections by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ) were prepared to be consistent with the April 1, 2010 Census and have been prepared for July 1<sup>st</sup> of the base year 2010 and projected for July 1<sup>st</sup> of 2020, 2030, and 2040.
2. The 2010 housing and population base was developed by aggregating Census 2010 data to Traffic Analysis Zones. Census place mismatches were corrected in this process and are reflected in the Base 2010 MPA and RAZ numbers.
3. The population projections are for resident population only and do not include nonresident seasonal or transient population.
4. The projections are required to use the latest Census as the base. The 2010 Census data were released in July 2011. Subsequent to the release, the Arizona Department of Administration, Office of Employment and Population Statistics, prepared a new set of Maricopa County projections consistent with the 2010 Decennial Census. These County projections were recommended for approval by the MAG Population Technical Advisory Committee (POPTAC) in October 2012 and the Management Committee in November 2012. The projections were approved by the Regional Council in December 2012.
5. The MAG socioeconomic projections by MPA and RAZ were recommended for approval by the MAG POPTAC on May 28, 2013 and by the MAG Management Committee on June 12, 2013. The projections were approved by MAG Regional Council on June 19, 2013.
6. The projections include the Maricopa County portion of Apache Junction, Gila River Indian Community, Peoria, Queen Creek and Wickenburg only.
7. The projections were based upon the latest version of each member agency's land use plan. These plans are subject to change.
8. The databases and assumptions upon which the projections are based have been reviewed by MAG member agencies, revised by MAG staff based on input received and approved by members of the MAG POPTAC.
9. The projections are based upon previous review and local insight by members of the MAG POPTAC.
10. The "other" employment category includes work-at-home, construction employment, and non-site based employment. Because construction and non-site based employment follows development, employment projections may show declines in future years.
11. The projections should be used with caution. They are subject to change as a result of fluctuation in economic and development conditions, local development policies and updated data.



**Appendix B**  
CRS 510 Planning Checklist



# 510 FLOODPLAIN MANAGEMENT PLANNING CHECKLIST

Community: \_\_\_\_\_  
*Enter name of plan here*

## 511.a Floodplain Management Planning (FMP)

**Credit Points:** *Enter the section or page number of the plan where each credited item can be found.*

CRS Step	Section/Page	Item Score	Step Total
1. Organize to prepare the plan. (max:15)			
a. Involvement of Office Responsible for Community Planning (4)	_____	_____	
b. Planning committee of department staff (9)	_____	_____	
c. Process formally created by the community's governing board (2)	_____	_____	0
2. Involve the public. (max: 120)			
a. Planning process conducted through a planning committee (60)	_____	_____	
b. Public meetings held at the beginning of the planning process (15)	_____	_____	
c. Public meeting held on draft plan (15)	_____	_____	
d. Other public information activities to encourage input (Up to 30)	_____	_____	0
3. Coordinate with other agencies. (max: 35)			
a. Review of existing studies and plans [REQUIRED] (5)	_____	_____	
b. Coordinating with communities and other agencies ( Up to 30)	_____	_____	0
4. Assess the hazard. (max: 35)			
a. Plan includes an assessment of the flood hazard [REQUIRED] with:			
(1) A map of known flood hazards (5)	_____	_____	
(2) A description of known flood hazard (5)	_____	_____	
(3) A discussion of past floods (5)	_____	_____	
b. Plan includes assessment of less frequent floods (10)	_____	_____	
c. Plan includes assessment of areas likely to flood (5)	_____	_____	
d. The plan describes other natural hazards [REQUIRED FOR DMA] (5)	_____	_____	0
5. Assess the problem. (max: 52)			
a. Summary of each hazard identified in the hazard assessment and their community impact [REQUIRED] (2)	_____	_____	
b. Description of the impact of the hazards on: (max: 25)			
(1) Life, safety, health, procedures for warning and evacuation (5)	_____	_____	

- (2) Public health including health hazards to floodwaters/mold (5)
  - (3) Critical facilities and infrastructure (5)
  - (4) The community's economy and tax base (5)
  - (5) Number and type of affected buildings (5)
  - c. Review of all damaged buildings/flood insurance claims (5)
  - d. Areas that provide natural floodplain functions (5)
  - e. Development/redevelopment/Population Trends (7)
  - f. Impact of future flooding conditions outlined in Step 4, item c (5)
6. Set goals. [REQUIRED] (2)
7. Review possible activities. (max: 35)
- a. Preventive activities (5)
  - b. Floodplain Management Regulatory/current & future conditions (5)
  - c. Property protection activities (5)
  - d. Natural resource protection activities (5)
  - e. Emergency services activities (5)
  - f. Structural projects (5)
  - g. Public information activities (5)
8. Draft an action plan. (max: 60)
- a. Actions must be prioritized [REQUIRED]
    - (1) Recommendations for activities from two of the six categories (10)
    - (2) Recommendations for activities from three of the six categories (20)
    - (3) Recommendations for activities from four of the six categories (30)
    - (4) Recommendations for activities from five of the six categories (45)
  - b. Post-disaster mitigation policies and procedures (10)
  - c. Action items for mitigation of other hazards (5)
9. Adopt the plan. (2)
10. Implement, evaluate and revise. (max: 26)
- a. Procedures to monitor and recommend revisions [REQUIRED] (2)
  - b. Same planning committee or successor committee that qualifies under Section 511.a.2 (a) does the evaluation (24)

		0
		0
		0
		0
		0
		0
		0
<b>Maximum Credit for 510 FMP = 382</b>		<b>Plan Total: 0</b>



**Appendix C**  
Floodplain Management Plan  
Committee Records






## *Appendix C*

This Appendix serves as a place holder for inclusion of future Floodplain Management Plan Committee Records. No data for this section is available at this time.



**Appendix D**  
Public and Stakeholder Involvement




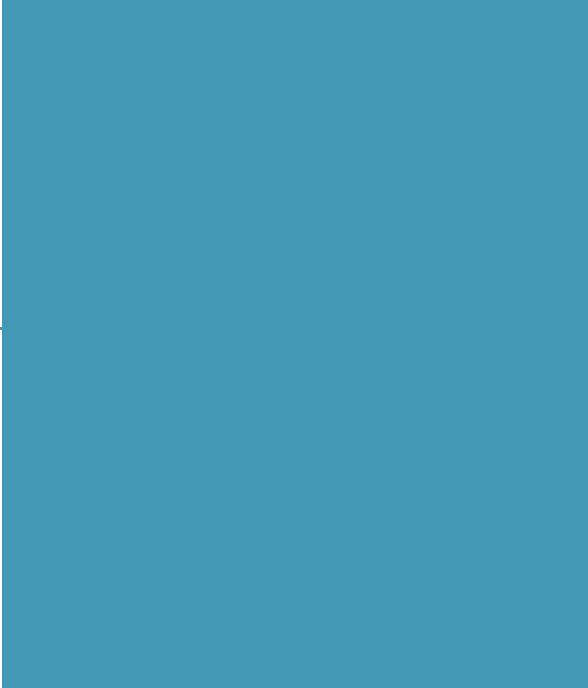
# Draft Floodplain Management Plan Public Meetings Summary

---

City of Phoenix

Draft Floodplain Management Plan  
Public Meetings

*Phoenix, Arizona*  
May 27, 2016







# Table of Contents

Executive Summary .....	ii
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Public Meeting 2 April 06, 2016.....	5
Public Meeting 3 April 07, 2016.....	10
Public Meeting 4 April 12, 2016.....	14

## Appendices

- Appendix A Presentation with Key Messages
- Appendix B Boards/Posters
- Appendix C Fact Sheets (English and Spanish)
- Appendix D Public Comment Forms
- Appendix E Talking Points
- Appendix F Outreach Timeline
- Appendix G Press Release
- Appendix H Website
- Appendix I Twitter
- Appendix J Advertising
- Appendix K Media Articles

# Executive Summary

Twenty-five members of the public attended the City of Phoenix (COP) Draft Floodplain Management Plan public meetings held between Tuesday, April 5, 2016 and Tuesday, April 12, 2016, from 6:00 pm to 7:30 pm at four individual locations throughout Phoenix, Arizona. Each public meeting included a sign-in area, a formal presentation held at 6:30 pm, multiple posters, an opportunity for staff-lead round table discussion, and opportunities for attendees to review and comment on the draft plan. English and Spanish fact sheets about the plan update, monsoon season informational cards from the COP and the 2014 Flood Facts from the Flood Control District of Maricopa County (FCDMC) were also available at the sign-in area. Twenty-four members of the public signed in at the meetings.

In total, five comment forms were submitted and a number of issues and themes were discussed among open house attendees and the COP and HDR project team members who staffed the meetings. Meeting advertisement included English and Spanish print media, social media, a press release and COP websites and stakeholder emails. The COP included meeting plan update information and public meeting details on their “on-hold” phone recording. The COP encouraged community council offices to notify their respective neighborhoods and constituents about the meetings and opportunity to comment. Advertising began in late January 2016 and continued through the final meeting date.

Comments were collected through various methods including forms, online emails, and communications between the FCDMC, the Arizona Department of Water Resources, COP staff, planning committees, residents, and other stakeholders. This summary encapsulates efforts specifically associated to the public meetings hosted by COP.



# Public Meeting 1 April 05, 2016

## Memo

Project: City of Phoenix Floodplain Management Plan Update

---

Subject: Public Involvement Meeting

---

Date: Tuesday, April 05, 2016 6:30 p.m. to 7:30 p.m.

---

Location: Goelet A.C. Beuf Community Center  
3435 W. Pinnacle Peak Rd.  
Phoenix, AZ 85027

---

Attendees: Hasan Mushtaq, City of Phoenix  
Jenny Grote, City of Phoenix  
Monica Hernandez, City of Phoenix  
Mark Fountain, HDR  
Matt Hann, HDR

- Two sets of project posters were set up for the meeting. One was set up at the front of the room and the other at the back of the room.
- A TV display was set up to show a looping presentation to show an overview of the project and the next steps to be taken.
- A sign-in sheet, fact sheets, and three hard copies of the draft report were available near the door for record of attendance and public review.
- The City and consultant employees waited in the room for the hour slot and had one citizen come in and took a fact sheet.



# Sign-in Sheet



# Sign-in Sheet

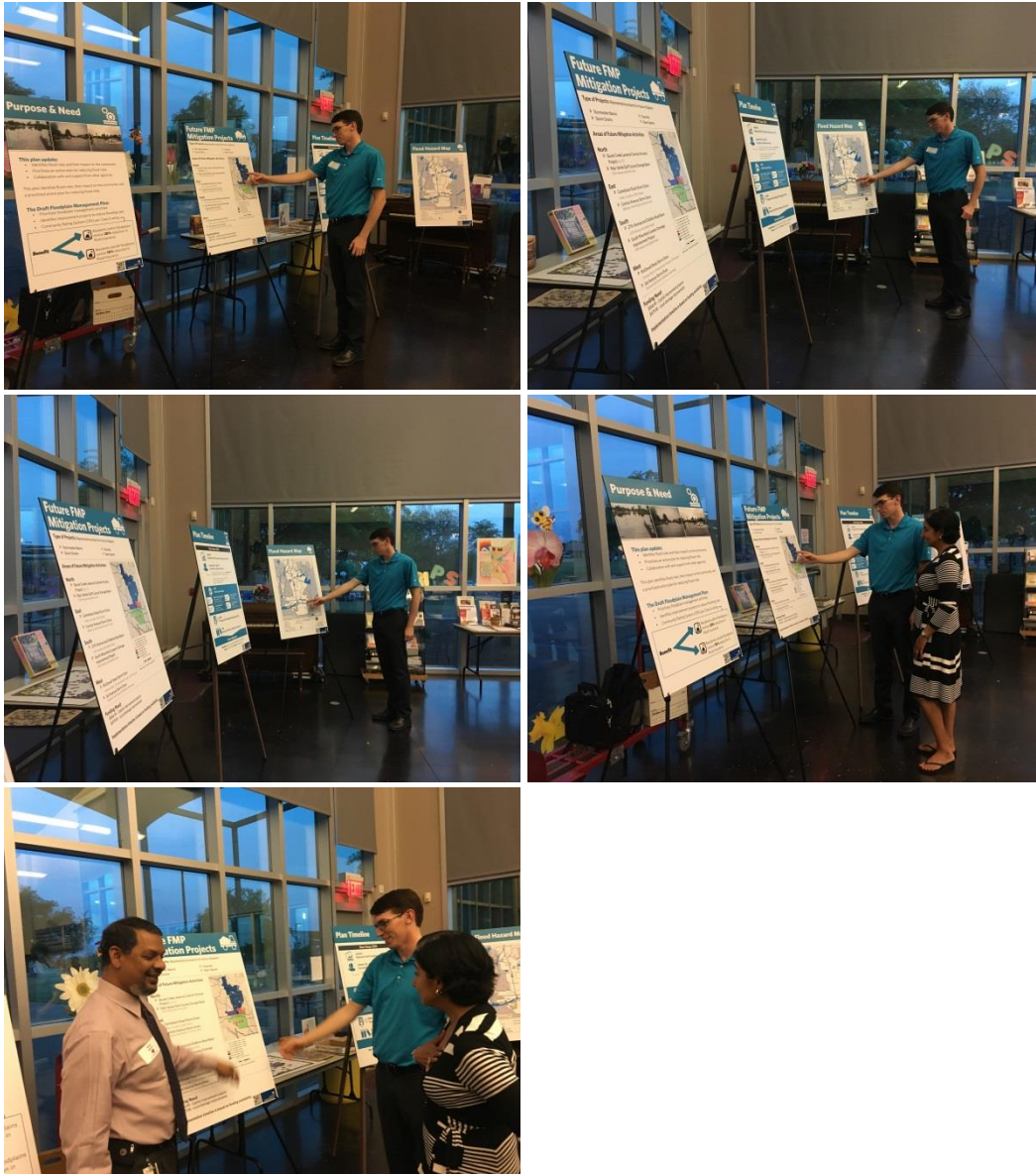
## Floodplain Management Plan Public Meeting

Goelet A.C. Beuf Community Center  
3435 W. Pinnacle Peak Rd.  
Multi-Purpose Room

Meeting Date: April 5<sup>th</sup>, 2016

FIRST / LAST NAME		EMAIL OR PHONE NUMBER
Hasan Muhtag	COP	602-262-7026
Monica Hernandez	COP	—
Eileen Yazzie	COP	—
Mrex Fountain	HR	602-522-7700
MATT HANN	HR	"
JENNY GROTE	COP	—

## Photos



Golet A.C. Beuf Community Center, April 5, 2016

## Plan Timeline

**Next Steps 2016**

**January**  
Released Draft Floodplain Management Plan

**January 28 - April 28**  
Comment and Review Period

Please submit your questions and comments by **April 28, 2016** to:  
Hanan Muhtas, P.E., Ph.D., CFM, Floodplain Manager  
City of Phoenix Street Transportation Department  
200 W. Washington Street, 5th Floor  
Phoenix, Arizona 85003-1611

**April**  
Public Open Houses

<b>Tuesday April 5</b>	Golet A.C. Beuf Community Center Multipurpose Room - North 450 W. Terrace Road	<b>Wednesday April 6</b>	Peoria Community Center Multipurpose Room 10001 S. 5th Street
<b>Thursday April 7</b>	Northern Senior Public Library Pulitzer Auditorium 100 North Central Avenue	<b>Tuesday April 12</b>	Phoenix Fire Department Station #17 700 W. Dobson Road

**May**  
Prepare Final Floodplain Management Plan

**June**  
Present Final Plan to Phoenix City Council

**Formal Adoption**

Web Address: phoenix.gov/streets/floodplain-management  
Phone: (602) 262-4960 | Email: FMP@phoenix.gov

## Future FMP Mitigation Projects

**Type of Projects:** Representative projects for future mitigation

- » Stormwater Basins
- » Storm Drains
- » Channels
- » Open Spaces

**Areas of Future Mitigation Activities:**

**North**

- » Skunk Creek Levee at Central Arizona Project (in 17)
- » Palo Verde Golf Course Storage Basin (15th Avenue and Ross Lane)

**East**

- » Camelback Road Storm Drain (10th Avenue to 40th Street)
- » Central Avenue Storm Drain (Bethany Home Road to Arizona Canal)

**South**

- » 27th Avenue and Dobbin Road Basin (27th Avenue and Dobbin Road)
- » South Mountain/Laveen Drainage Improvement Project (19th Avenue and Dobbin Road)

**West**

- » McDowell Road Storm Drain (Arizona Dept. of Transportation Tunnel to 15th Avenue)
- » 3rd Avenue Storm Drain (Greenway Golf Course to Bethany Home Road)

**Funding Need:**

- \$566 M - Capital improvement projects
- \$479 M - Local drainage improvements

Implementation timeline is based on funding availability.

## Purpose & Need

**This plan update:**

- Identifies flood risks and their impact on the community
- Prioritizes an action plan for reducing flood risks
- Collaboration with and support from other agencies

This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

**The Draft Floodplain Management Plan:**

- Prioritizes floodplain management activities
- Identifies improvement projects to reduce flooding risks
- Community Rating System (CRS) per Class 6 rating

**Benefit**

- Residents within floodplains receive **20%** reduction in flood insurance
- Residents outside floodplains receive **10%** reduction in flood insurance

Golet A.C. Beuf Community Center, April 5, 2016



# Public Meeting 2 April 06, 2016

## Memo

Project: City of Phoenix Floodplain Management Plan

Subject: Public Meeting

Date: Wednesday, April 06, 2016

Location: Pecos Community Center, 17010 S. 48<sup>th</sup> Street, Phoenix – Multipurpose Room

Attendees: Quentin Thornton  
Craig Doyle  
Cheryl Haselhorst  
Linda Bredo  
Larry Hanson  
Carolyn Valdez

Staff:  
Kristina Jensen  
Jenny Grote  
Hassan Mushtaq  
Monica Hernandez  
Mark Fountain (HDR)

Other:  
Mark Frago (FCDMC)

The open house meeting began at 6 p.m. At 6:30, Mark Fountain welcomed attendees, introduced staff, and introduced the meeting intent around a round table with attendees. Poster boards were setup in two locations within the room, the power point was set to looking on the laptop and TV, and the project handouts were readily available by the sign in sheet.

During and after the open discussion, attendees asked questions, summarized with answers below:

Q: What is a special Flood Hazard Area? And what are the impacts

A: Attendees were provided a brief overview and referred to floodsmart.gov for more information.

1) [https://www.floodsmart.gov/floodsmart/pages/faqs/faqs\\_flood.jsp](https://www.floodsmart.gov/floodsmart/pages/faqs/faqs_flood.jsp)

2) [https://www.floodsmart.gov/floodsmart/pages/flood\\_facts.jsp](https://www.floodsmart.gov/floodsmart/pages/flood_facts.jsp)

Q: What, if anything, will be done to the Lakes in Ahwatukee?

A: The Lakes and or any projects associated to the Lakes within Ahwatukee is outside of the Scope of Work for this project, however the City is involved and can provide additional information.

Q: Will you be doing any flood control projects in my area?

A: Referred attendees to the lists of CIP projects identified with the FMP Draft Report.

Q: Can I see the list of projects in our area.

A: Referred attendees to the lists of CIP projects identified with the FMP Draft Report. Extended conversation was had with attendees to discuss the process of how projects are identified, selected, studied, and recommended for action within the City of Phoenix.

Q: What are the risks living within a special flood hazard area?

A: In the past 5 years, all 50 states have experienced floods or flash floods. Everyone lives in a flood zone. (For more information, visit our Flood Zones FAQs.) Homeowners' insurance does not



cover flood damage. If you live in a Special Flood Hazard Area (SFHA) or high-risk area and have a Federally backed mortgage, your mortgage lender requires you to have flood insurance. (To find your flood risk, fill out the Flood Risk Profile.) Just a few inches of water from a flood can cause tens of thousands of dollars in damage.

Q: Will you be designing infrastructure for a 100-year event? If not, why?

A: Infrastructure throughout the City is designed based on several factors which directly relate to the current City Storm Water Policies and Standards.

The meeting concluded at approximately 8:05 p.m.

## Sign-In Sheet



# Sign-in Sheet

## Floodplain Management Plan Public Meeting

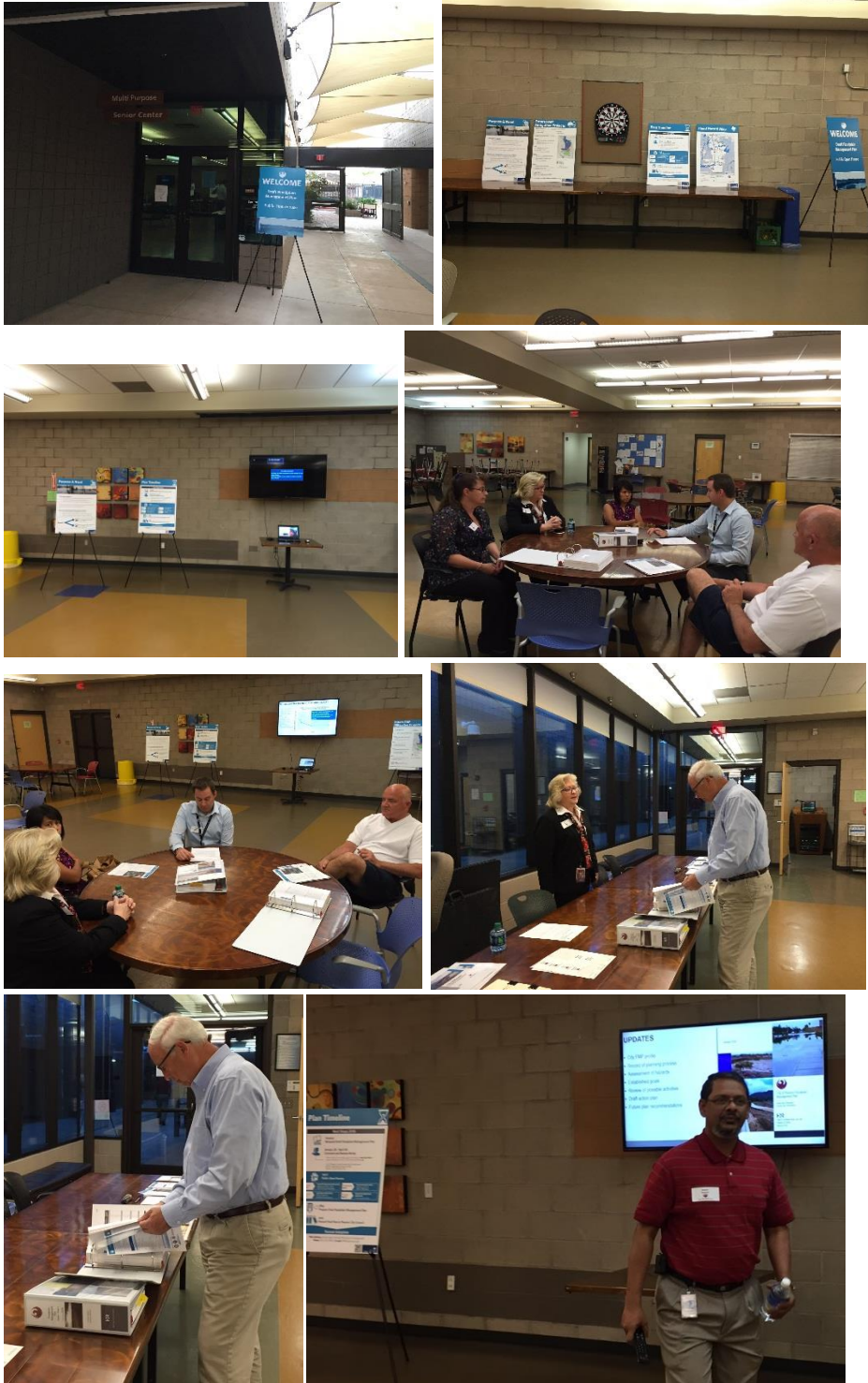
Pecos Community Center  
17010 S. 48<sup>th</sup> St.  
Multi-purpose Room

Meeting Date: April 6<sup>th</sup>, 2016

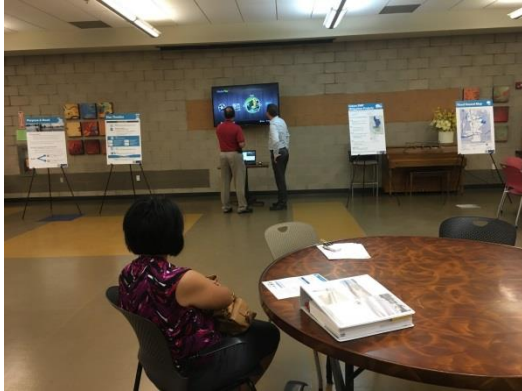
FIRST / LAST NAME	EMAIL OR PHONE NUMBER
Ghontin Thornton	gxthornton@gmail.com
Craig Doyle	
Mark Frago	<del>markfrago@fcomc.com</del> mfrago25@gmail.com
Cheryl Haselhorst	
Jenny Grote	jenny.grote@phoenix.gov
Lynda Bredd	lbredd@yahoo.com
Larry Hanson	lhanson2@msn.com
CAROLYN C VALDEZ	Carolyn C Valdez
John Mark Shea	602-6-0144
Hasan Mushtaq	COP
Mada Fountain	HDR
Kristina Jensen	COP 602-261-8417



## Photos



Pecos Community Center, April 6, 2016



**Pecos Community Center, April 6, 2016**

# Public Meeting 3 April 07, 2016

## Memo

Project: City of Phoenix Floodplain Management Plan

Subject: Public Meeting

Date: Thursday, April 07, 2016

Location: Burton Barr Public Library, 1221 N. Central Avenue, Phoenix – Pulliam Auditorium

Attendees: Lou Snow  
Christina Luksil  
Lauren Cercove  
Alberto Minero  
Danny Williams

Staff:  
Jenny Grote  
Monica Hernandez  
Hassan Mushtaq  
Ray Dovalina  
Mark Fountain (HDR)

The open house meeting began at 6 p.m. At 6:30, Mark Fountain welcomed attendees from stage, introduced staff, and introduced the meeting intent with the project power point on standby. Poster boards were setup in two locations, one within the hallway just outside of the Pulliam Auditorium and the second just inside the meeting room on the left hand side. Mark discussed the ongoing efforts by the City of Phoenix and their participation in the NFIP and CRS and initiated the looping PowerPoint. Project handouts were readily available by the sign in sheet.

During and after the open discussion, attendees asked questions of both the presenter and the City staff, summarized with answers below:

Q: What areas are considered high risk flooding areas?

A: Land areas that are at high risk for flooding are called Special Flood Hazard Areas (SFHAs), or floodplains. These areas are indicated on Flood Insurance Rate Maps (FIRMs). In high-risk areas, there is at least a 1 in 4 chance of flooding during a 30-year mortgage.

AE, A, AH or AO Zone. These properties have a 1 percent chance of flooding in any year – and a 26 percent chance of flooding over the life of a 30-year mortgage.

In a high-risk area, your home is more likely to be damaged by flood than by fire.

Q: Why are homeowners required to pay for flood insurance?

A: Homeowners' insurance does not cover flood damage. If you live in a Special Flood Hazard Area (SFHA) or high-risk area and have a federally backed mortgage, your mortgage lender requires you to have flood insurance. (To find your flood risk, fill out the Flood Risk Profile.)

Q: Why is the 100 year event used to calculate risk for flood insurance?

A: Communities use maps called the Flood Insurance Rate Maps (FIRM), depicting the 100 year floodplains, to regulate development in areas that are subject to high flood risk. Banks and Insurance providers use 100 year floodplains in the FIRMs to determine whether a homeowner is required to purchase flood insurance.

Q: Will you be doing any flood control projects in my area?





A: Referred attendees to the lists of CIP projects identified with the FMP Draft Report.

Q: Can I see the list of projects in my area?

A: Referred attendees to the lists of CIP projects identified with the FMP Draft Report.

// Individual property specific questions were asked by attendees and addressed by Hasan with respect to both ongoing and previously completed City projects.

The meeting concluded at approximately 7:55 p.m.

# Sign-In Sheet



# Sign-in Sheet

## Floodplain Management Plan Public Meeting

Burton Barr Public Library  
 1221 N. Central Ave.  
 Pulliam Auditorium

Meeting Date: April 7<sup>th</sup>, 2016

FIRST / LAST NAME	EMAIL OR PHONE NUMBER
KOY SNOW/SNOW CONSULTING	SNOWCONSULTS@aol.com ← D1
Christine Lukoil	602-380-9405
Lauren Cercone	laurencercone@yahoo.com
Jenny Grote	jenny.grote@phoenix.gov
Monica Hernandez	
→ ALBERTO MINERA	602 379 0818 alme@madisoncafe.gov
Danny Williams	
Haran Muchtaq COP	—
<del>Mark</del> Mark Fountain HDR	—
Ray Dovalina COP	—

77th  
 Ave  
 Dobbin's  
 project

## Photos



**Burton Barr Public Library, April 7, 2016**





# Public Meeting 4 April 12, 2016

## Memo

Project: City of Phoenix Floodplain Management Plan

Subject: Public Meeting

Date: Tuesday, April 12, 2016

Location: Phoenix Fire Dept. Station 57, 1708 West Dobbins Road

Attendees: Ray Acuña  
Birsen Yuzak  
Ertian Yuzak  
Brian Mosley  
Jon Kimoto  
Nicki Green  
Christian Hernandez  
Don Carroll

Staff:  
Kristina Jensen  
Eileen Yazzie  
Ray Dovalina  
Hassan Mushtaq  
Tony \_\_\_\_\_  
Terry Gruver (HDR)

Other:  
Vice Mayor Kate Gallego  
Cole \_\_\_\_ (Dist. 8 Council office)

The open house meeting began at 6 p.m. At 6:40, Ray Dovalina welcomed attendees, introduced staff, and introduced Vice Mayor Gallego. Vice Mayor Gallego also welcomed attendees and provided remarks on the importance of the study and flood management. Dovalina then gave a PowerPoint presentation on the Floodplain Management Plan. During and after the presentation, attendees asked questions, summarized with answers below:

Q: [Maricopa County] Flood Control District conducts stakeholder meetings, is this process similar and will you tie into FCD's process?

A: Those are open public meetings and Phoenix staff attends, participates, and provides input at those meetings.

Q: What do you need in terms of responses from the community with regard to this Plan?

A: The City is asking for comments on the recommendations and recommended projects. Although it's a large document, the first 45 pages of the document contain the relevant information. The remainder of the document contains the appendices, mainly maps.

Q: What is the procedure for adding a suggested project to the list of recommendations?

A: Complete a comment form or tell us and we will record the suggestion.

Q: Are there any hazardous/floodplain areas in Laveen that can be fixed through the Loop 202 South Mountain Freeway project?

A: Only the canal banks are identified as floodplain areas, but the City is part of the Loop 202 project and monitors, among other things, any potential impacts to flood control. Additionally, the Loop 202 design team is responsible to manage any impacts and is required to maintain or improve current conditions (i.e., they must not make any flood control situation worse).

Q: There is more building happening all the time [within the study area]; how does that impact the FMP and/or flood control situations?



A: Development plans are reviewed by City staff to ensure that flood control design standards are followed.

The meeting concluded at approximately 7:40 p.m.

# Sign-in Sheet



# Sign-in Sheet

## Floodplain Management Plan Public Meeting

Phoenix Fire Department Station #57 Meeting Date: April 12<sup>th</sup>, 2016  
1708 W. Dobbins Rd.

FIRST / LAST NAME	EMAIL OR PHONE NUMBER
Ray Acuna	raymond.a.acuna@gmail.com
<del>Brian Yuzak</del> Erhan Yuzak	elmer2008@yahoo.com eyuzak@gmail.com
Brian Moore	Bwmoore@jchs.com
Jon Kimoto Olaveen	602 237 0138
Nick Green	708 955 8388
Christopher Hernandez	323 202 2304
Don Carroll	ILuvPhx@gmail.com/602-518-154
Kristina Jensen cop	602-261-8417
Eileen Yazzie cop	eileen.yazzie@phoenix.gov
Hasan Mushtaq cop	602-262-4026
Ray Doralina cop	ray.doralina@phoenix.gov
Terry Gruver	602-522-4340
Anthony Humphrey cop	-
Kate Gallego, Vice Mayor District 8	



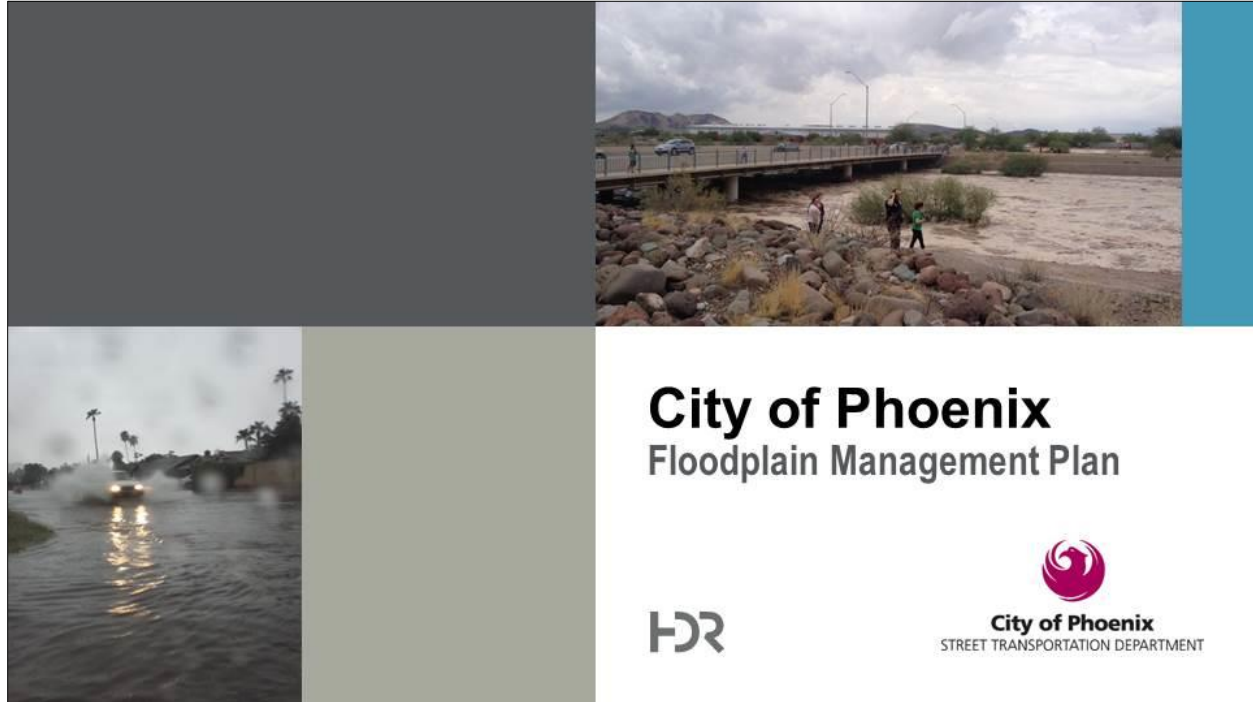
## Photos





Phoenix Fire Dept. Station 57, April 12, 2016

# Appendix A Presentation with Key Messages

## Presentation



**City of Phoenix**  
Floodplain Management Plan



### PURPOSE AND NEED

- Meets the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) guidelines under FIA-15/2013
- Replaces the 1992 City of Phoenix Floodplain Management Plan (FMP)
- Reflects the city's floodplain management efforts which contribute to the class rating per the Flood Insurance Administration (FIA)



**Strengthens the support and opportunity for resident cost savings on flood insurance premiums**

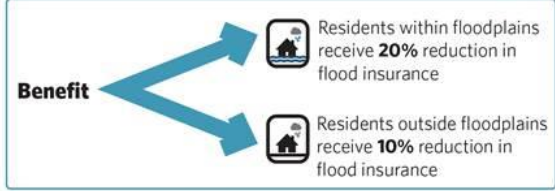
# FLOODPLAIN MANAGEMENT PLAN AND HISTORY

- 1991 - CRS Class 8
- 1993 - CRS Class 7
- 2001 - CRS Class 6
- May 1, 2013  
4,589 policies  
\$626,488 discount
- November 30, 2015  
4,977 policies  
\$675,011 discount  
CRS Class 6 maintained



## BENEFITS

- Prioritizes floodplain management activities
- Identifies improvement projects to reduce flooding risks
- Creates successful partnerships with local, county, and government agencies
- Affects flood insurance rates



**Educates the public and increases local awareness of flooding risks**

*Under the National Flood Insurance Program's Community Rating System (CRS) Phoenix currently holds a Class 6 rating. Lower CRS Ratings = Lower Flood Insurance Premium Rates*



## REASON FOR UPDATE

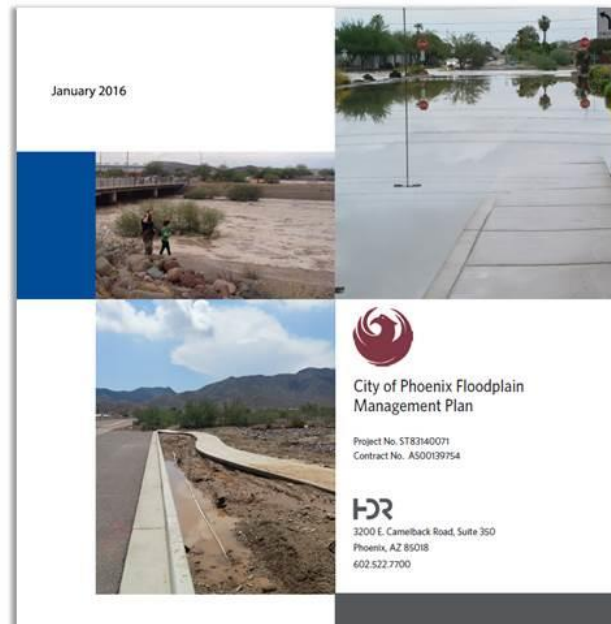
- Fosters collaboration with and support from other agencies
- Complies with the FEMA NFIP guidelines
- Helps maintain the CRS Class 6 designation received in 2001



Provides greater awareness regarding the actions associated with flooding hazards within the city's boundaries

## UPDATES

- City FMP profile
- Record of planning process
- Assessment of hazards
- Established goals
- Review of possible activities
- Draft action plan
- Future plan recommendations



## NEXT STEPS

Next Steps: 2016
January: Released Draft Floodplain Management Plan
January 28 – April 28: Comment and Review Period
April: Public Meetings
May: Prepare Final Floodplain Management Plan
June: Present Final Plan to Phoenix City Council
<b>June Formal Adoption</b>



## FUTURE ACTIVITIES

- Mitigation projects
  - Stormwater Basins, Storm Drains, Channels, Open Spaces
- Developing a Community Planning Committee
- Creating enhanced reporting for flood-prone areas
- Scheduling public information activities
- Developing post-disaster event mitigation policies



## PUBLIC PARTICIPATION

- Review the Draft Floodplain Management Plan
- Attend a public meeting in April 2016
- Provide comments on the plan

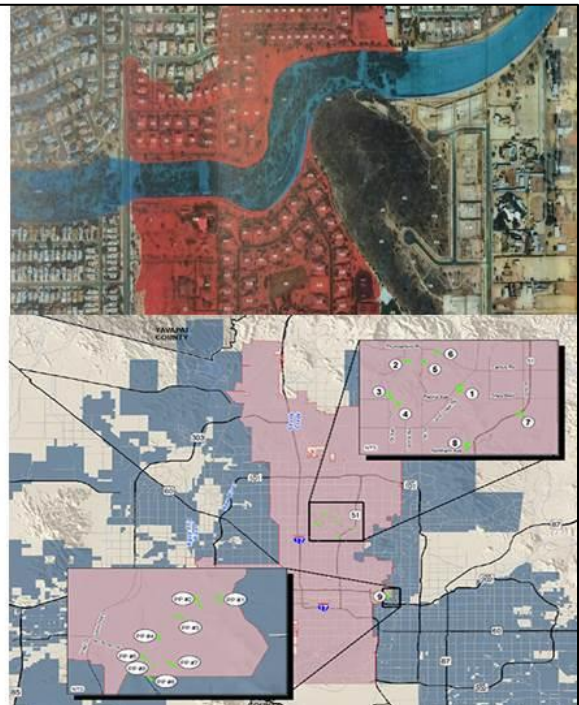
[phoenix.gov/FMP](http://phoenix.gov/FMP)



## QUESTIONS

Submit questions and comments  
by **April 28, 2016** to:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix, Street Transportation Department  
200 W. Washington Street, 5th Floor  
Phoenix, Arizona 85003-1611  
Phone: 602.262.4960  
Email: [FMP@phoenix.gov](mailto:FMP@phoenix.gov)





## Key Messages for Verbal Presentation

1. Welcome
  - a. Thank people for attending
  - b. Describe meeting format – this is an open house
  - c. Staff is here to take your questions and comments - point out staff members (no need to mention names) and indicate staff members are wearing name tags
  
2. Purpose For Meeting
  - a. We're here tonight to discuss the city's floodplain management plan - we're in the process of updating this document and we want your input.
  - b. About the plan – the plan entails a comprehensive strategy of programs and projects to help reduce the adverse impacts of flood hazards on the community. Mention examples of programs/projects.
  - c. Touch on CRS - Under the National Flood Insurance Program's Community Rating System (CRS) Phoenix currently holds a Class 6 rating.  
Lower CRS Ratings = Lower Flood Insurance Premium Rates for Residents
  
3. Next Steps
  - a. Highlight target milestones
  
4. Close With a Call to Action
  - a. Public comment period closes April 28
  - b. Please submit your comments/questions
  - c. Comments will be addressed and summarized as part of the final plan that will be presented for approval to the City Council later this summer.

## Appendix B Boards/Posters



# Purpose & Need



## This plan update:

- Identifies flood risks and their impact on the community
- Prioritizes an action plan for reducing flood risks
- Collaboration with and support from other agencies

This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

## The Draft Floodplain Management Plan:

- Prioritizes floodplain management activities
- Identifies improvement projects to reduce flooding risks
- Community Rating System (CRS) per Class 6 rating

### Benefit



Residents within floodplains receive **20%** reduction in flood insurance



Residents outside floodplains receive **10%** reduction in flood insurance





# Plan Timeline



## Next Steps 2016



**January**  
Released Draft Floodplain Management Plan



**January 28 - April 28**  
Comment and Review Period

Please submit your questions and comments by **April 28, 2016** to:  
Hasan Mushtaq, P.E., Ph.D., CFM, Floodplain Manager

City of Phoenix Street Transportation Department  
200 W. Washington Street, 5th Floor  
Phoenix, Arizona 85003-1611



**April**  
Public Open Houses

Tuesday  
**April 5**

**Goelet A.C. Beuf Community Center**  
Multipurpose Room - North  
3435 W. Pinnacle Peak Road

Wednesday  
**April 6**

**Pecos Community Center**  
Multipurpose Room  
17010 S. 48th Street

Thursday  
**April 7**

**Burton Barr Public Library**  
Pulliam Auditorium  
1221 North Central Avenue

Tuesday  
**April 12**

**Phoenix Fire Department  
Station #57**  
1708 W. Dobbins Road



**May**  
Prepare Final Floodplain Management Plan



**June**  
Present Final Plan to Phoenix City Council

## Formal Adoption

**Web Address:** [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management)

**Phone:** 602.262.4960 | **E-mail:** [FMP@phoenix.gov](mailto:FMP@phoenix.gov)



# Future FMP Mitigation Projects



**Type of Projects:** Representative projects for future mitigation

- » Stormwater Basins
- » Storm Drains
- » Channels
- » Open Spaces

**Areas of Future Mitigation Activities:**

**North**

- » Skunk Creek Levee at Central Arizona Project *(at I-17)*
- » Palo Verde Golf Course Storage Basin *(15th Avenue and Rose Lane)*

**East**

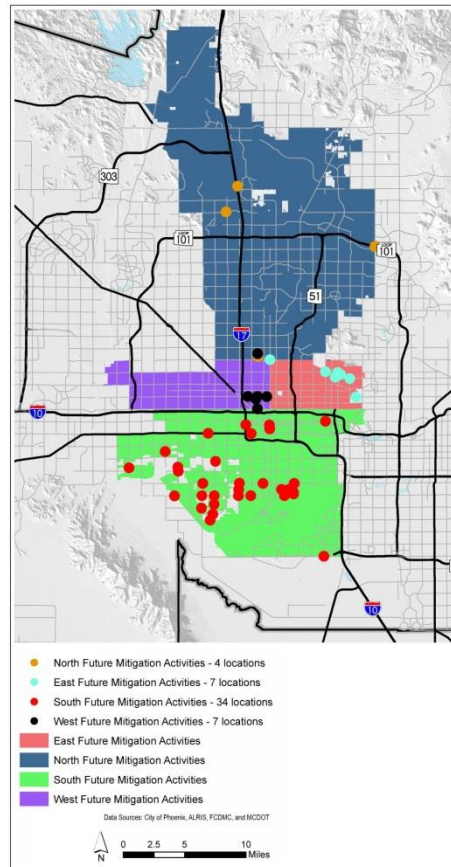
- » Camelback Road Storm Drain *(West, Arcadia to 40th Street)*
- » Central Avenue Storm Drain *(Bethany Home Road to Arizona Canal)*

**South**

- » 27th Avenue and Dobbins Road Basin *(27th Avenue and Dobbins Road)*
- » South Mountain/Laveen Drainage Improvement Project *(19th Avenue and Dobbins Road)*

**West**

- » McDowell Road Storm Drain *(Arizona Dept. of Transportation Tunnel to 15th Avenue)*
- » 3rd Avenue Storm Drain *(Encanto Golf Course to Bethany Home Road)*

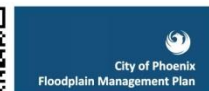


Refer to Figure 7 - Table 2 from the Draft FMP

**Funding Need:**

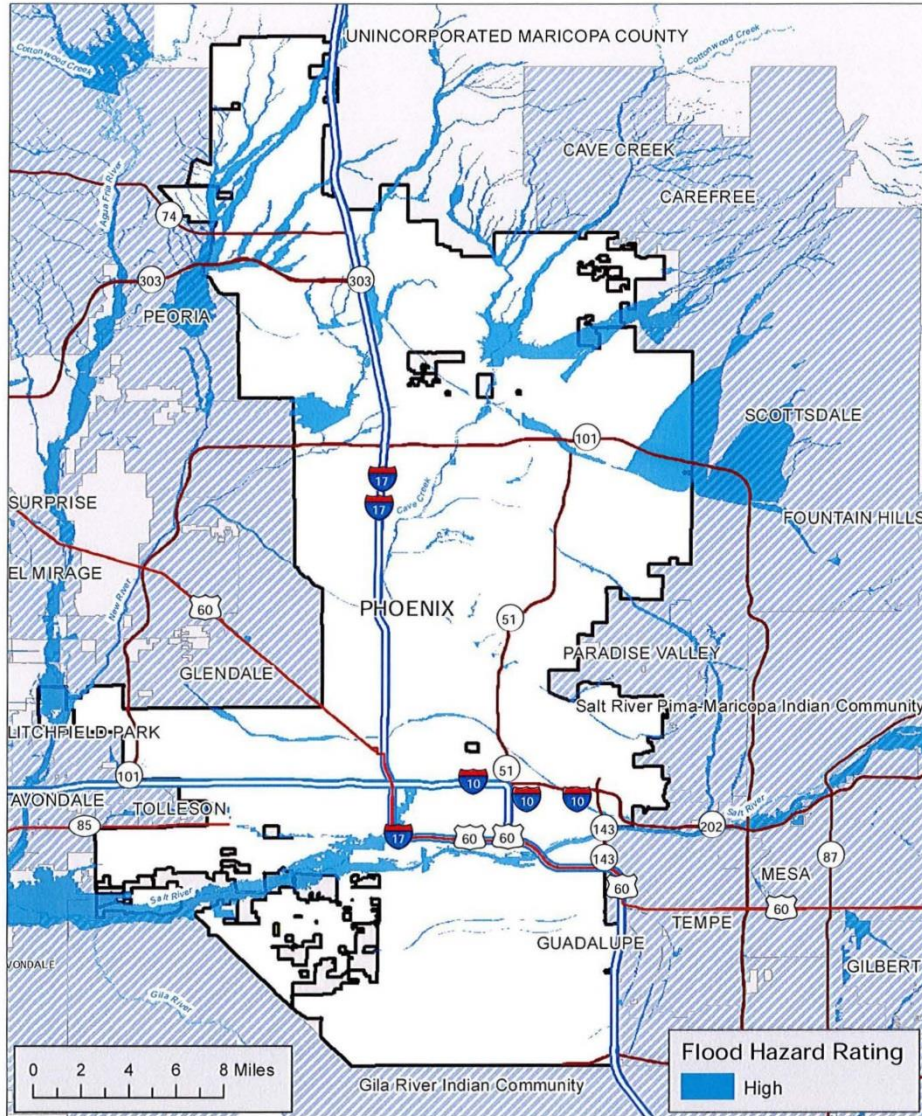
- \$566 M - Capital improvement projects
- \$479 M - Local drainage improvements

**Implementation timeline is based on funding availability.**





# Flood Hazard Map



**Legend**

- Arterial Road
- Major Streams
- Phoenix
- Maricopa County
- Other Communities

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #4D18  
City of Phoenix  
Flood Hazard Map  
as of Jan. 2015





# Appendix C Fact Sheets (English and Spanish)

## English

### City of Phoenix Floodplain Management Plan

## FACT SHEET

**What is a Floodplain Management Plan?**  
 The Floodplain Management Plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks. The National Flood Insurance Program requires the city to review this plan annually.

**What are the benefits of this plan?**

- Prioritizes flood management activities
- Identifies improvement projects to reduce flooding risks
- Educates the public and increases local awareness of flooding risks
- Creates successful partnerships with local, county and government agencies
- Strengthens the opportunity for resident cost savings on flood insurance premiums
  - Residents currently benefit from a 20 percent reduction in insurance premiums for properties located *within* a FEMA- designated Special Flood Hazard Area.
  - Residents currently benefit from a 10 percent reduction in insurance premiums for properties located *outside* of a FEMA- designated Special Flood Hazard Area.

**PLAN PURPOSE & NEED**

- Meets the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) guidelines under FIA-15/2013
- Replaces the 1992 city of Phoenix Floodplain Management Plan
- Reflects the city's floodplain management efforts which contribute to the class rating per the Flood Insurance Administration (FIA)
- Strengthens the support and opportunity for resident cost savings on flood insurance premiums

**Phoenix Community Rating System (CRS) History within FEMA Special Flood Hazard Area**

Year	Community Rating System Class	Premium Reduction
1991	8	10%
1993	7	15%
2001	6	20%
2015	6	20%

Since 1991, the city has reduced its CRS Class by implementing Floodplain Management activities, resulting in increased insurance premium savings for residents.

**Policies and Discounts**

In 1991 the city received the CRS designation of Class 8. In 1993 the city obtained a class improvement, becoming a designation of Class 7, followed by further improvement to Class 6 in 2001. Per FEMA reporting in May 1, 2013, the city had 4,589 policies in force which results in an annual CRS policy discount of \$626,488. As of November 30, 2015, the city maintains a Class 6 designation with 4,977 policies in force, resulting in an annual CRS policy discount of \$675,011.

January 2016



# City of Phoenix Floodplain Management Plan FACT SHEET

## Why is a Floodplain Management Plan needed?

The city of Phoenix has updated its Floodplain Management Plan to provide greater awareness regarding the actions associated with flooding hazards within the city's boundaries. This updated plan has been created in collaboration with and support from other agencies.

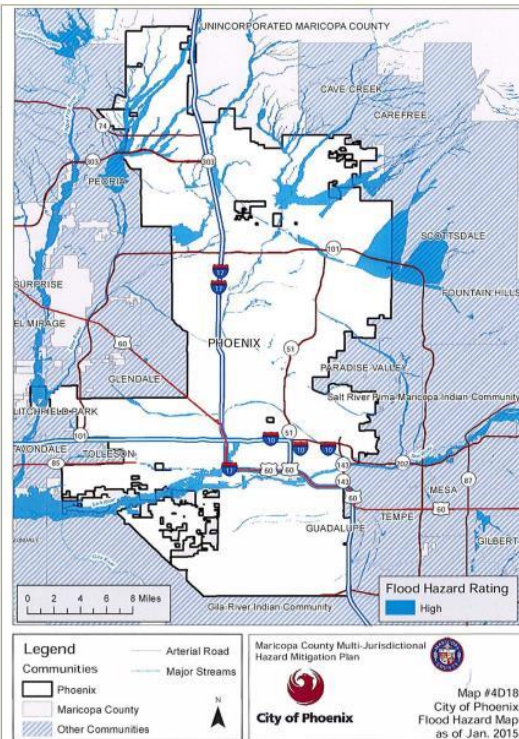
The Floodplain Management Plan also:

- Complies with the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) guidelines.
- Helps maintain the Community Rating System (CRS) Class 6 designation that the city received in 2001.

### Next Steps: 2016

<b>January:</b>	Release Draft Floodplain Management Plan
<b>January 28 - April 28:</b>	Public Comment and Review Period
<b>April 5:</b>	Public Meeting, 6:00 p.m. - 7:30 p.m. Presentation at 6:30 p.m. Golet A.C. Beuf Community Center Multipurpose North 3435 West Pinnacle Peak Road
<b>April 6:</b>	Public Meeting, 6:00 p.m. - 7:30 p.m. Presentation at 6:30 p.m. Pecos Community Center Multipurpose Room 17010 South 48th Street
<b>April 7:</b>	Public Meeting, 6:00 p.m. - 7:30 p.m. Presentation at 6:30 p.m. Burton Barr Public Library Pulliam Auditorium 1221 North Central Avenue
<b>April 12:</b>	Public Meeting, 6:00 p.m. - 7:30 p.m. Presentation at 6:30 p.m. Phoenix Fire Department Station #57 1708 West Dobbins Road
<b>May:</b>	Prepare Final Floodplain Management Plan
<b>June:</b>	Present Final Plan to Phoenix City Council

### June: Formal Adoption



Approximate areas affected by flooding with respect to city jurisdiction and existing flood control infrastructure

## Future activities supporting the Floodplain Management Plan include:

- Developing a Community Planning Committee
- Creating enhanced reporting for flood-prone areas
- Scheduling public information activities
- Developing post-disaster event mitigation policies

## How can the public participate?

- Review the Draft Floodplain Management Plan [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management)
- Attend a public meeting in April 2016
- Submit questions and comments by April 28, 2016 to:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix  
Street Transportation Department  
200 W. Washington Street, 5th Floor  
Phoenix, Arizona 85003-1611  
Phone: 602.262.4960  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

January 2016

## Agency support provided by:





## Spanish



# Plan de Administración de Llanuras Aluviales de la Municipalidad de Phoenix HOJA DE DATOS

### Qué es un Plan de Administración de Llanuras Aluviales

El Plan de Administración de Llanuras Aluviales es una estrategia integral de programas, proyectos, y medidas con el fin de aminorar el impacto adverso del riesgo de inundaciones para la comunidad. Este plan identifica los riesgos, su impacto a la comunidad, y un plan de acción con prioridades indicadas para reducir los riesgos de inundación. El Programa Nacional de Seguros contra Pérdidas por Inundaciones requiere que la municipalidad revise este plan anualmente.

### Qué beneficios ofrece este plan

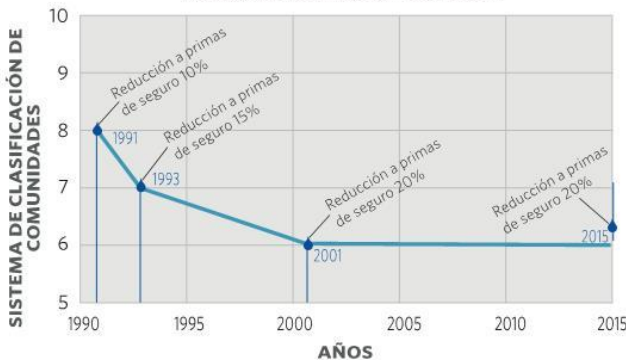
- Prioriza las actividades de administración de inundaciones.
- Identifica proyectos de mejora para reducir los riesgos de inundación.
- Educa al público y da a conocer los riesgos de inundación a la comunidad local.
- Crea afiliaciones provechosas con agencias locales, del condado, y gubernamentales.
- Afianza la oportunidad de ahorro para los residentes por concepto de primas de seguro de inundaciones.
  - Los residentes actualmente gozan el beneficio de una reducción de un 20 por ciento en sus primas de seguro para propiedades ubicadas *dentro* de una zona designada por FEMA como Zona Especial de Riesgo de Inundación.
  - Los residentes actualmente gozan el beneficio de una reducción de un 10 por ciento en sus primas de seguro para propiedades ubicadas *fuera* de una zona designada por FEMA como Zona Especial de Riesgo de Inundación.



### NECESIDAD Y PROPÓSITO DEL PLAN

- Cumple con las normas establecidas en FIA-15/2013 del Programa Nacional de Seguros contra Inundaciones (NFIP) de la Agencia Federal para la Administración de Emergencias (FEMA).
- Reemplaza el Plan de Administración de Llanuras Aluviales de la Municipalidad de Phoenix de 1992.
- Refleja los esfuerzos de administración de llanuras aluviales de la municipalidad, los cuales contribuyen a su clasificación acorde a la Administración de Seguros de Inundaciones (FIA).
- Afianza el apoyo y la oportunidad de ahorro para los residentes por concepto de primas de seguro de inundaciones.

### Historial de Phoenix del Sistema de Clasificación de Comunidades (CRS) dentro de la Zona Especial de Riesgo de Inundación de FEMA.



Desde 1991, la municipalidad ha reducido su clasificación CRS con la implementación de actividades de Manejo de Llanuras Aluviales, logrando mayores ahorros en los seguros de sus residentes.

### Pólizas y descuentos

En 1991, la municipalidad recibió la designación de Clase 8 del CRS. En 1993, la municipalidad obtuvo una mejor clasificación, al recibir la designación de Clase 7, seguido por aún otra mejora a la Clase 6 en el 2011. Según los informes de FEMA, para Mayo 1, 2013, la municipalidad contaba 4,589 pólizas vigentes, lo cual resulta en un descuento anual de pólizas del CRS de \$626,488. *A partir del 30 de noviembre, 2015, la municipalidad mantiene la designación de Clase 6, con 4,977 pólizas en vigencia, lo cual resulta en un ahorro de pólizas CRS de \$675,011.*

Enero 2016





# Plan de Administración de Llanuras Aluviales de la Municipalidad de Phoenix

## HOJA DE DATOS

### Porqué se requiere un Plan de Administración de Llanuras Aluviales

La municipalidad de Phoenix ha actualizado su Plan de Administración de Llanuras Aluviales para dar a conocer mejor las acciones relacionadas con los peligros de inundación dentro de los linderos de la municipalidad. Este plan se ha actualizado con la colaboración y el apoyo de otras agencias.

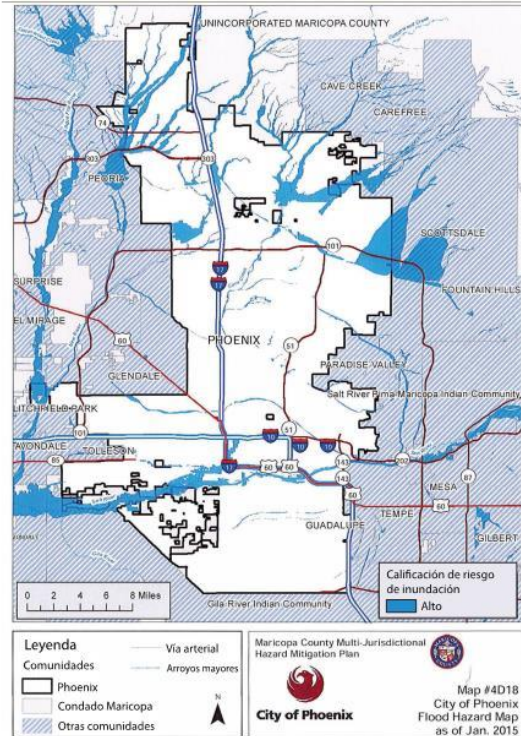
El Plan de Administración de Llanuras Aluviales asimismo logra lo siguiente:

- Cumple con las directrices del Programa Nacional de Seguros contra Inundaciones de la Agencia Federal para el Administración de Emergencias (FEMA).
- Ayuda a conservar la designación de Clase 6 del Sistema de Clasificación de Comunidades (CRS) que recibió la municipalidad en el 2001.

### Pasos siguientes: 2016

<b>Enero:</b>	Divulgar el Proyecto del Plan de Administración de Llanuras Aluviales
<b>Enero 28 a abril 28:</b>	Período para revisión y comentarios del público
<b>Abril 5:</b>	Reunión pública, 6:00 p.m. a 7:30 p.m. Presentación a las 6:30 p.m. Goelet A.C. Beuf Community Center Multipurpose North 3435 West Pinnacle Peak Road
<b>Abril 6:</b>	Reunión pública, 6:00 p.m. a 7:30 p.m. Presentación a las 6:30 p.m. Pecos Community Center Multipurpose Room 17010 South 48th Street
<b>Abril 7:</b>	Reunión pública, 6:00 p.m. a 7:30 p.m. Presentación a las 6:30 p.m. Burton Barr Public Library Pulliam Auditorium 1221 North Central Avenue
<b>Abril 12:</b>	Reunión pública, 6:00 p.m. a 7:30 p.m. Presentación a las 6:30 p.m. Phoenix Fire Department Station #57 1708 West Dobbins Road
<b>Mayo:</b>	Elaborar el Plan de Administración de Llanuras Aluviales Final
<b>Junio:</b>	Presentar el Plan Final al Concejo Municipal de Phoenix
<b>Junio: Adopción formal</b>	

### Patrocinio de las siguientes agencias:



Áreas aproximadas afectadas por inundación con respecto a jurisdicción municipal e infraestructura existente de control de inundaciones.

### Futuras actividades que apoyan el Plan de Administración de Llanuras Aluviales:

- Formación de un Comité Comunitario de Planificación.
- Creación de mejores informes para las zonas propensas a inundación.
- Programación de actividades de información al público.
- Elaboración de normas para la mitigación de eventos post-desastres.

### Cómo puede participar el público

- Revisar el Proyecto del Plan de Administración de Llanuras Aluviales [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management)
- Asistir a una reunión pública en abril, 2016
- Remitir preguntas y comentarios a más tardar el 28 de abril, 2016 a:

Hasan Mushtaq, P.E., Ph.D., CFM  
 Floodplain Manager  
 City of Phoenix  
 Street Transportation Department  
 200 W. Washington Street, 5th Floor  
 Phoenix, Arizona 85003-1611  
 Phone: 602.262.4960  
 Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

Enero 2016



# Appendix D Public Comment Forms



City of Phoenix  
STREET TRANSPORTATION DEPARTMENT

## Floodplain Management Plan

Phoenix.gov/streets/FMP  
FMP@phoenix.gov

### Public Comment Form

- The public comment period for the FMP is scheduled to close Monday, April 28, 2016 – please submit your comments on or prior to this date.
- Please return your comment form to an FMP project team member or mail it to City of Phoenix Street Transportation Department, Floodplain Manager. 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611.

First / Last Name Lynda Bredo

Address / City / State 4618 E. Walatowa

Phone Number / Email Address lbredo@yahoo.com

**Comment(s):**

Would like to know more info  
 about flooding if The Lakes in Ahwatukee  
 is developed and housing is present there.  
 Thank you for having these meetings for  
 the public to see and ask questions.



# Floodplain Management Plan

Phoenix.gov/streets/FMP  
FMP@phoenix.gov

## Public Comment Form

- The public comment period for the FMP is scheduled to close Monday, April 28, 2016 – please submit your comments on or prior to this date.
- Please return your comment form to an FMP project team member or mail it to City of Phoenix Street Transportation Department, Floodplain Manager, 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611.

First / Last Name CAROLYN C VALDEZ

Address / City / State 12253 S 24TH ST

Phone Number / Email Address # 301-219-4591  
carolyn.c.valdeza@gmail.com

Comment(s):

PLEASE ADDRESS RISK MITIGATION AND THE PROBABILITY (FOR ~~AN~~ EXAMPLE THE FREQUENCY) OF "MAJOR" FLOODING EVENTS

Risk Management





## Floodplain Management Plan

Phoenix.gov/streets/FMP  
FMP@phoenix.gov

**Public Comment Form**

- The public comment period for the FMP is scheduled to close Monday, April 28, 2016 – please submit your comments on or prior to this date.
- Please return your comment form to an FMP project team member or mail it to City of Phoenix Street Transportation Department, Floodplain Manager. 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611.

First / Last Name Louis SNOW

Address / City / State 3224 W BROWN ST.

Phone Number / Email Address 602-7997010 / snowconsult@cox.net

Comment(s): CONSIDER ON REVIEW COMMITTEE

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# Floodplain Management Plan

Phoenix.gov/streets/FMP

FMP@phoenix.gov

## Public Comment Form

- The public comment period for the FMP is scheduled to close Monday, April 28, 2016 – please submit your comments on or prior to this date.
- Please return your comment form to an FMP project team member or mail it to City of Phoenix Street Transportation Department, Floodplain Manager, 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611.

First / Last Name Birsen Yuzak  
 Address / City / State 12440 S. Shasta Ct, Phoenix  
 Phone Number / Email Address e1mor2008@yahoo.com

Comment(s):  
 I wanted to know what kind of plans City has to prevent flooding in Ahwatukee around 48th Street & Warner and Lakeside Blvd.  
 Does City consider increasing green spaces, plants that could help in reducing floods. We see more and more condos built without any green space or plants/trees around (especially deep rooted trees)



# Floodplain Management Plan

Phoenix.gov/streets/FMP  
FMP@phoenix.gov

## Public Comment Form

- The public comment period for the FMP is scheduled to close Monday, April 28, 2016 – please submit your comments on or prior to this date.
- Please return your comment form to an FMP project team member or mail it to City of Phoenix Street Transportation Department, Floodplain Manager, 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611.

First / Last Name Jon Kimoto  
 Address / City / State 3216 W. Ansell Rd Laveen AZ 85339  
 Phone Number / Email Address 602 237 3138

Comment(s): PROBLEM:  
Flooding across south 35<sup>th</sup> Ave  
approximately 1/4 mile north of Carver Rd  
Source of flood water is drainage / washes  
on the southeast side of CARVER MTN  
as it drain to southeast across the  
JOHN WILLIAMS RANCH property. With 3/4"  
rainfall over 1-hour period, there was ± 3'0"  
high water flow across 35<sup>th</sup> Ave, impeding  
passenger vehicular movement both north  
& south. A storm drain / culvert would  
solve the flooding problem.



# Appendix E Talking Points

## City Releases Floodplain Management Plan – Talking Points (Response Guide)

### What is a Floodplain Management Plan?

- The Floodplain Management Plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community.
- This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.
- The National Flood Insurance Program (NFIP) requires the city to review this plan annually.

### Why is an updated Floodplain Management Plan needed?

- Increased awareness regarding the actions associated with flooding hazards within the city
- Complies with Federal Emergency Management Agency (FEMA) and NFIP guidelines for updated status reporting
- Helps maintain the Community Rating System (CRS) Class 6 designation
- Identifies proactive efforts for enhanced floodplain management activities

### How does this impact a property owner in Phoenix?

- Flood insurance rates **will not** increase as a result of this project
- Maintains the city's CRS Class 6 designation
- Provides an updated record of flooding areas to help identify future projects
- Currently, the CRS rating allows property owners to receive a 20 percent premium reduction in flood insurance rates for properties located **within** a Special Flood Hazard Area
- For properties located **outside** of a FEMA- designated Special Flood Hazard Area, residents currently benefit from a 10 percent reduction in insurance premiums

### What agencies have been involved in the Floodplain Management Plan update?

- The city of Phoenix has actively collaborated with Flood Control District of Maricopa County, Arizona Department of Transportation, Maricopa Association of Governments, and Federal Emergency Management Agency
- These agencies have provided data related to population, transportation infrastructure, flooding infrastructure, historical flooding information, current and past projects, and CRS history.

### How can the public be involved?

- The public is encouraged to review the draft plan and attend a public meeting the city is hosting on the following dates:

April 5, 2016

Public Meeting, 6:00 p.m. – 7:30 p.m.

Presentation at 6:30 p.m.

Goelet A.C. Beuf Community Center

Multipurpose North

3435 West Pinnacle Peak Road

April 6, 2016

Public Meeting, 6:00 p.m. – 7:30 p.m.

Presentation at 6:30 p.m.

Pecos Community Center

Multipurpose Room

17010 South 48th Street

April 7, 2016

Public Meeting, 6:00 p.m. – 7:30 p.m.

Presentation at 6:30 p.m.

Burton Barr Library in the Pulliam Auditorium

1221 North Central Avenue

April 12, 2016

Public Meeting, 6:00 p.m. – 7:30 p.m.

Presentation at 6:30 p.m.

Phoenix Fire Department Station #57

1708 West Dobbins Road

- The public is encouraged to submit questions and comments in writing by 5:00 p.m., April 28, 2016

### **When is the Public Comment Review Period?**

- Scheduled from January 28, 2016 through April 28, 2016

### **Why is it important for the public to be involved?**

- By reviewing the plan and providing comments, the public can demonstrate their overall support and reinforce the need for flood protection.
- Public support and participation also will help secure future flood mitigation funding

### **What are the next steps in this process?**

- April 5, 2016: Conduct first Public Meeting
- April 6, 2016: Conduct second Public Meeting

- April 7, 2016: Conduct third Public Meeting
- May 2016: Prepare Final Floodplain Management Plan
- June 2016: Present Final Floodplain Management Plan to Phoenix City Council for formal adoption

### After this plan is adopted, what actions can be taken?

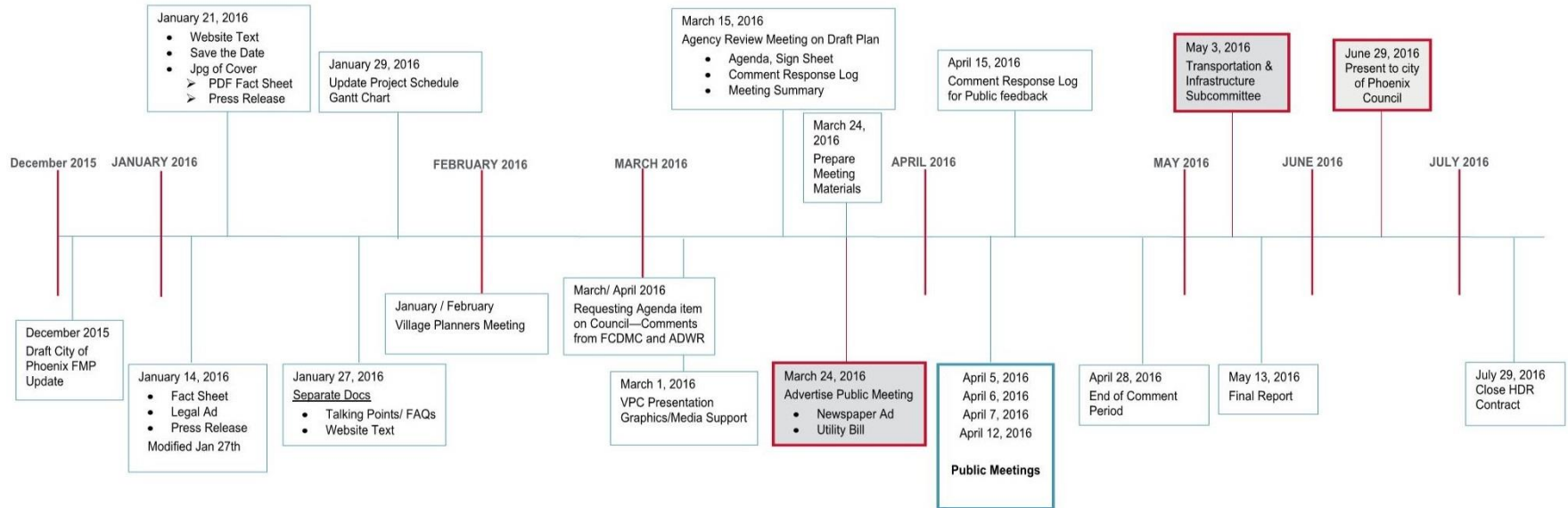
- City to organize the Community Planning Committee
- City to create an enhanced reporting and mapping process to document flood-prone areas and previous events
- Schedule future public information activities
- Collaboratively develop post-disaster event mitigation policies (e.g., establish processes for residents to follow immediately after a storm event)

### What is the purpose of the Community Planning Committee?

- Conduct annual reviews of the Floodplain Management Plan
- Identify if the plan is still valid or if modifications are required based on achieving actionable items or reprioritizing projects
- Develop recommendations for augmenting the plan and providing feedback to city of Phoenix Street Transportation Department
- The composition of this committee is anticipated to include representation from a cross section of industry professionals and community stakeholders outside of the local government
  - The city's Floodplain Management office and Public Information office must be represented
  - Staff members with expertise in floodplain management activities are required
  - Stakeholders include the following:
    - Floodplain residents, representatives of neighborhood or homeowner associations
    - Emergency/disaster responders, e.g., Red Cross, Salvation Army
    - Utility companies
    - Chamber of commerce/building organization
    - Builders/contractors trade association
    - Developers/real estate organization
    - Environmental organizations, "Friends of the River," etc.
    - Real estate agents, insurance agents, lenders
    - Major employers

Government agencies other than the community, e.g., school district, levee or flood control district, regional planning agency or National Weather Service.





## Appendix G Press Release

- Press release distribution to citywide media list and stakeholders signed up to receive press releases from the city of Phoenix.
- Distribution also included the Phoenix Neighborhood Services Department's neighborhood organization database.
- Online posting:
  - Jan. 27, 2016 - Phoenix Invites Public To Comment On Plan Aimed At Reducing The Adverse Impacts Of Flood Hazards On The Community  
<https://www.phoenix.gov/news/streets/1162>
  - March 27, 2016 - City of Phoenix Releases Floodplain Management Plan for Public Comment  
<https://www.phoenix.gov/news/streets/1246>

## Press Release Draft

**City of Phoenix  
Street Transportation Department  
Draft Floodplain Management Plan  
Press Release Text**

**Media Contact: Monica Hernandez, (602) 350-8853**

### **City of Phoenix Releases Floodplain Management Plan for Public Comment**

The city of Phoenix has prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

Floodplain management plans are utilized in support of the Federal Emergency Management Agency (FEMA) for participation within the National Flood Insurance Program (NFIP). The NFIP requires the city to review this plan annually.

The city of Phoenix is currently recognized as a Class 6 Community within the NFIP Community Rating System. This rating allows property owners to receive a 20 percent premium reduction in flood insurance rates for properties located within a Special Flood Hazard Area. For properties located outside of a FEMA- designated Special Flood Hazard Area, residents currently benefit from a 10 percent reduction in insurance premiums.

The city's 2016 draft floodplain management plan is available online at [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management).

The public comment and review period is scheduled from Jan. 28 through April 28. The public is encouraged to review the draft plan and attend the public meeting the city is hosting at Burton Barr Library in the Pulliam Auditorium, 1221 N. Central Ave., on April 7, 2016, between 6 p.m. to 7:30 p.m. A brief presentation will be provided around 6:30 p.m. City of Phoenix residents are encouraged to submit questions and comments in writing by 5 p.m., April 28, 2016, to:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix Street Transportation Department  
200 W. Washington St., 5<sup>th</sup> Floor, Phoenix, AZ 85003-1611  
Phone: 602-262-4026  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

###



## Press Release Text

### **CITY OF PHOENIX RELEASES FLOODPLAIN MANAGEMENT PLAN FOR PUBLIC COMMENT**

The city of Phoenix has prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

Floodplain management plans are utilized in support of the Federal Emergency Management Agency for participation within the National Flood Insurance Program. The NFIP requires the city to review this plan annually.

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The city's 2016 draft floodplain management plan is available online at [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management). **The public comment and review period for the plan takes place Jan. 28, 2016, through April 28, 2016.** Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix Street Transportation Department  
200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611  
Phone: 602-262-4026  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

In addition, the city will host four public meetings to share details about the plan and solicit comments from the public. The same information will be presented at each meeting. The meetings will be held from 6 p.m. to 7:30 p.m. During each meeting a brief presentation will be provided at around 6:30 p.m. The meetings are scheduled as follows:

Tuesday, April 5  
Goelet A.C. Beuf Community Center - Multipurpose North  
3435 W. Pinnacle Peak Rd.

Wednesday, April 6  
Pecos Community Center - Multipurpose Room  
17010 S. 48th St.

Thursday, April 7  
Burton Barr Public Library - Pulliam Auditorium  
1221 N. Central Ave.



Tuesday, April 12  
Phoenix Fire Department Station #57  
1708 W. Dobbins Road

To request reasonable accommodations or information in an alternate format please contact the City of Phoenix Floodplain Management Division at 602-262-4960 or email [floodpln@phoenix.gov](mailto:floodpln@phoenix.gov).

###

**Monica Hernandez**

City of Phoenix - Public Information Officer  
602-350-8853  
[monica.hernandez@phoenix.gov](mailto:monica.hernandez@phoenix.gov)

## Press Release Email

**HASAN MUSHTAQ**

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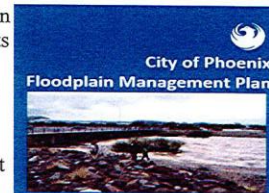
**Contact:** Monica Hernandez 602-350-8853 Jan. 28, 2016

### **CITY OF PHOENIX RELEASES FLOODPLAIN MANAGEMENT PLAN FOR PUBLIC COMMENT**

The city of Phoenix has prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

Floodplain management plans are utilized in support of the Federal Emergency Management Agency for participation within the National Flood Insurance Program. The NFIP requires the city to review this plan annually.

The city of Phoenix is currently recognized as a Class 6 Community within the NFIP Community Rating System. This rating allows property owners to receive a 20 percent premium reduction in flood insurance rates for properties located within a





Special Flood Hazard Area. For properties located outside of a FEMA- designated Special Flood Hazard Area, residents currently benefit from a 10 percent reduction in insurance premiums.

The city's draft floodplain management plan is available online at [phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management). **The public comment and review period for the plan takes place Jan. 28, 2016, through April 28, 2016.** Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix Street Transportation Department  
200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

In addition, the city will host four public meetings to share details about the plan and solicit comments from the public. The meetings will be held from 6 p.m. to 7:30 p.m. During each meeting a brief presentation will be provided at around 6:30 p.m. and the same information will be presented at each meeting. The meetings are scheduled as follows:

Tuesday, April 5  
Goelet A.C. Beuf Community Center - Multipurpose North, 3435 W. Pinnacle Peak Rd.

Wednesday, April 6  
Pecos Community Center - Multipurpose Room, 17010 S. 48th St.

Thursday, April 7  
Burton Barr Public Library - Pulliam Auditorium, 1221 N. Central Ave.

Tuesday, April 12  
Phoenix Fire Department Station #57, 1708 W. Dobbins Road

To request reasonable accommodations or information in an alternate format, please contact the City of Phoenix Floodplain Management Section at 602-262-4960 or email [floodpln@phoenix.gov](mailto:floodpln@phoenix.gov) 48-hours in advance of the meeting.

- 30 -

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(It may be necessary to cut and paste the above URL if the line is broken, or send a blank e-mail to [leave-1278327-2933999.9e496570f1f2cc3000e46c0ce3cd9e63@lists.phoenix.gov](mailto:leave-1278327-2933999.9e496570f1f2cc3000e46c0ce3cd9e63@lists.phoenix.gov))

To unsubscribe by postal mail, send your request to City of Phoenix, Communications Office, 200 W. Washington St., 12th Fl., Phoenix, AZ 85003 or call 602-262-7177.

# Appendix H Website

## Floodplain Website Text

### City Releases Floodplain Management Plan for Review

The city of Phoenix has prepared and released for public comment an update of its Floodplain Management Plan. The Floodplain Management Plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

The Floodplain Management Plan is available on the city of Phoenix Floodplain Management Website at the following location:

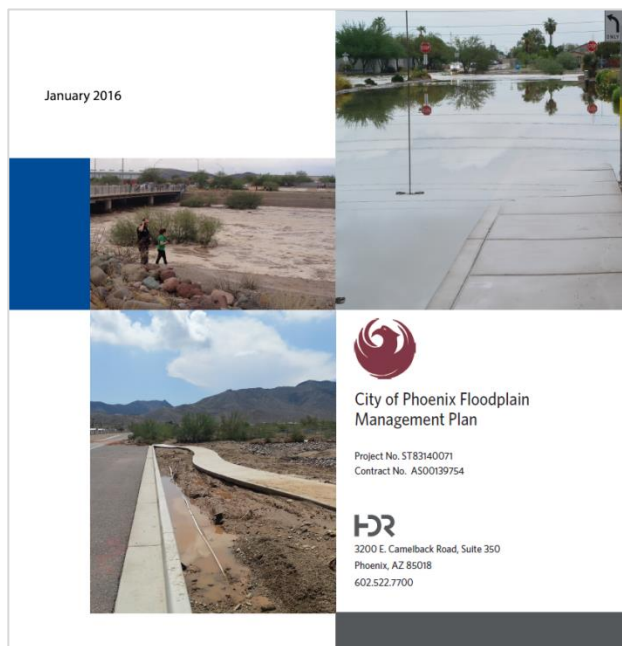
[phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management) as a digital document. For more information about this project, refer to the [FACT SHEET](#) and [PRESS RELEASE](#). These products can be viewed with Adobe Reader, available for free online at <https://get.adobe.com/reader/>

**The public comment and review period is scheduled from January 28, 2016 through April 28, 2016.**

The public is encouraged to review the draft Plan and attend a public meeting the city is hosting at any of the following locations:

April 5, 2016  
Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Goelet A.C. Beuf Community Center  
Multipurpose North  
3435 West Pinnacle Peak Road

April 6, 2016  
Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.



#### Next Steps: 2016

**January:** Release Draft Floodplain Management Plan

**January 28 - April 28:** Public Comment and Review Period

**April 5:** Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Goelet A.C. Beuf Community Center  
Multipurpose North  
3435 West Pinnacle Peak Road

**April 6:** Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Pecos Community Center  
Multipurpose Room  
17010 South 48th Street

**April 7:** Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Burton Barr Public Library  
Pulliam Auditorium  
1221 North Central Avenue

**April 12:** Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Phoenix Fire Department Station #57  
1708 West Dobbins Road

**May:** Prepare Final Floodplain Management Plan

**June:** Present Final Plan to Phoenix City Council

**June: Formal Adoption**





Pecos Community Center  
Multipurpose Room  
17010 South 48th Street

April 7, 2016  
Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Burton Barr Library in the Pulliam Auditorium  
1221 North Central Avenue

April 12, 2016  
Public Meeting, 6:00 p.m. – 7:30 p.m.  
Presentation at 6:30 p.m.  
Phoenix Fire Department Station #57  
1708 West Dobbins Road

A brief presentation will be provided around 6:30 p.m. City staff will remain available for further discussions until 7:30 p.m. The city of Phoenix residents are encouraged to submit questions and comments in writing by 5:00 p.m., April 28, 2016, to the following individual:

Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix  
Street Transportation Department  
200 W. Washington Street, 5<sup>th</sup> Floor  
Phoenix, Arizona 85003-1611  
Phone: 602.262.4026  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

# Floodplain Website - Floodplain Management Plan Website link

The screenshot shows a web browser window displaying the City of Phoenix website. The address bar shows the URL: <https://www.phoenix.gov/streets/floodplain-management>. The page features the City of Phoenix logo and navigation menu at the top. Below the navigation, there is a search bar and a menu with options: Report It, Map It, Pay It, Request City Service, and Find Public Records. The breadcrumb trail reads: City of Phoenix > Street Transportation > Floodplain Management.

## Floodplain Management

The city of Phoenix participates in the National Flood Insurance Program (NFIP) through the Department of Homeland Security's Federal Emergency Management Agency (FEMA). As a participant of the NFIP, the City has adopted a Floodplain Management Ordinance, which includes mapping and rating of the Special Flood Hazard Areas within the City. The City of Phoenix Floodplain Management provides updated floodplain information and establishes development requirements for projects within the Special Flood Hazard Areas (SFHA). These requirements keep properties from flooding and erosion hazards to a minimum as well as protecting the natural resources within flood prone areas.

**City of Phoenix Floodplain Management, 602-262-4960**

Elevation Certificates are available on file for properties within Special Flood Hazard Areas (SFHA) at the City of Phoenix Floodplain Management office at 200 W. Washington Street, 5th Floor, Phoenix Arizona 85003-1611.

The following information provides various links to floodplain related topics commonly associated with development in a floodplain within the city of Phoenix. Further information can be found by clicking on the links listed below.

- [Floodplain Determination](#)
- [Floodplain Clearance Form](#)
- [FEMA/NFIP Elevation Certificate](#)
- [Flood Insurance Rate Maps \(FIRM\) Effective October 16, 2013](#)
- [Cave Creek Wash "Seven Apartments" \(FEMA Case # 15-09-0681P\)](#)
- [Sonoran Wash "Collins Creek" \(FEMA Case # 15-09-0733P\)](#)
- [Scatter Wash Floodplain Delineation \(FEMA Case # 14-09-2027P\)](#)

The address bar at the bottom of the browser shows: <https://www.phoenix.gov/streetsite/Pages/FloodPlainManagement.aspx>

# Floodplain Management Plan website (75%) - Link to provide comments

The screenshot shows a web browser window displaying the City of Phoenix website. The address bar shows the URL: <https://www.phoenix.gov/streetsite/Pages/FloodPlainManagement.aspx>. The page features a dark blue header with the City of Phoenix logo and a search bar. Below the header is a navigation menu with options: Report It, Map It, Pay It, Request City Service, and Find Public Records. The main content area is titled "City of Phoenix > Street Transportation > FMP".

## Floodplain Management Plan

The city of Phoenix has prepared and released for public comment an update of its floodplain management plan.

A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks. Floodplain management plans are utilized in support of the Federal Emergency Management Agency for participation within the National Flood Insurance Program. The NFIP requires the city to review this plan annually.

See the FMP Fact Sheet for additional information about the benefits, purpose and need, and future activities supporting the Floodplain Management Plan.

[FMP Fact Sheet \(English\)](#)  
[FMP Fact Sheet \(Spanish\)](#)

View or download the draft FMP [here](#).

### Opportunities for Public Input

- The draft FMP will be available for public comment and review **Thursday, Jan. 28, 2016, through Thursday, April 28, 2016**.
- Questions and comments may be submitted in writing by **5 p.m., April 28, 2016**, to:
 

Hasan Mushtaq, P.E., Ph.D., CFM - Floodplain Manager  
 City of Phoenix Street Transportation Department, 200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611  
 Email: [FMP@phoenix.gov](mailto:FMP@phoenix.gov)
- The following public meetings will be held to share details about the draft FMP and solicit comments from the public. The same information will be presented at each meeting.
 

**Tuesday, April 5**  
 6 p.m. - 7:30 p.m. (Presentation at 6:30 p.m.)  
 Goeliet A.C. Beuf Community Center - Multipurpose North, 3435 W. Pinnacle Peak Rd.

**Wednesday, April 6**  
 6 p.m. - 7:30 p.m. (Presentation at 6:30 p.m.)  
 Pecos Community Center - Multipurpose Room, 17010 S. 49th St.

**Thursday, April 7**  
 6 p.m. - 7:30 p.m. (Presentation at 6:30 p.m.)  
 Burton Barr Public Library - Pulliam Auditorium, 1221 N. Central Ave.


**Tuesday, April 12**  
 6 p.m. - 7:30 p.m. (Presentation at 6:30 p.m.)  
 Phoenix Fire Department Station #57, 1706 W. Dobbins Road

### Floodplain Management Plan Adoption Timeline

- January** - Release draft FMP
- January 28 thru April 28** - Public Comment & Review Period

#### FLOODPLAIN MANAGEMENT PLAN PURPOSE & NEED

- Meets the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) guidelines under FIA-15/2013
- Replaces the 1992 city of Phoenix Floodplain Management Plan
- Reflects the city's floodplain management efforts which contribute to the class rating per the Flood Insurance Administration (FIA)
- Strengthens the support and opportunity for resident cost savings on flood insurance premiums





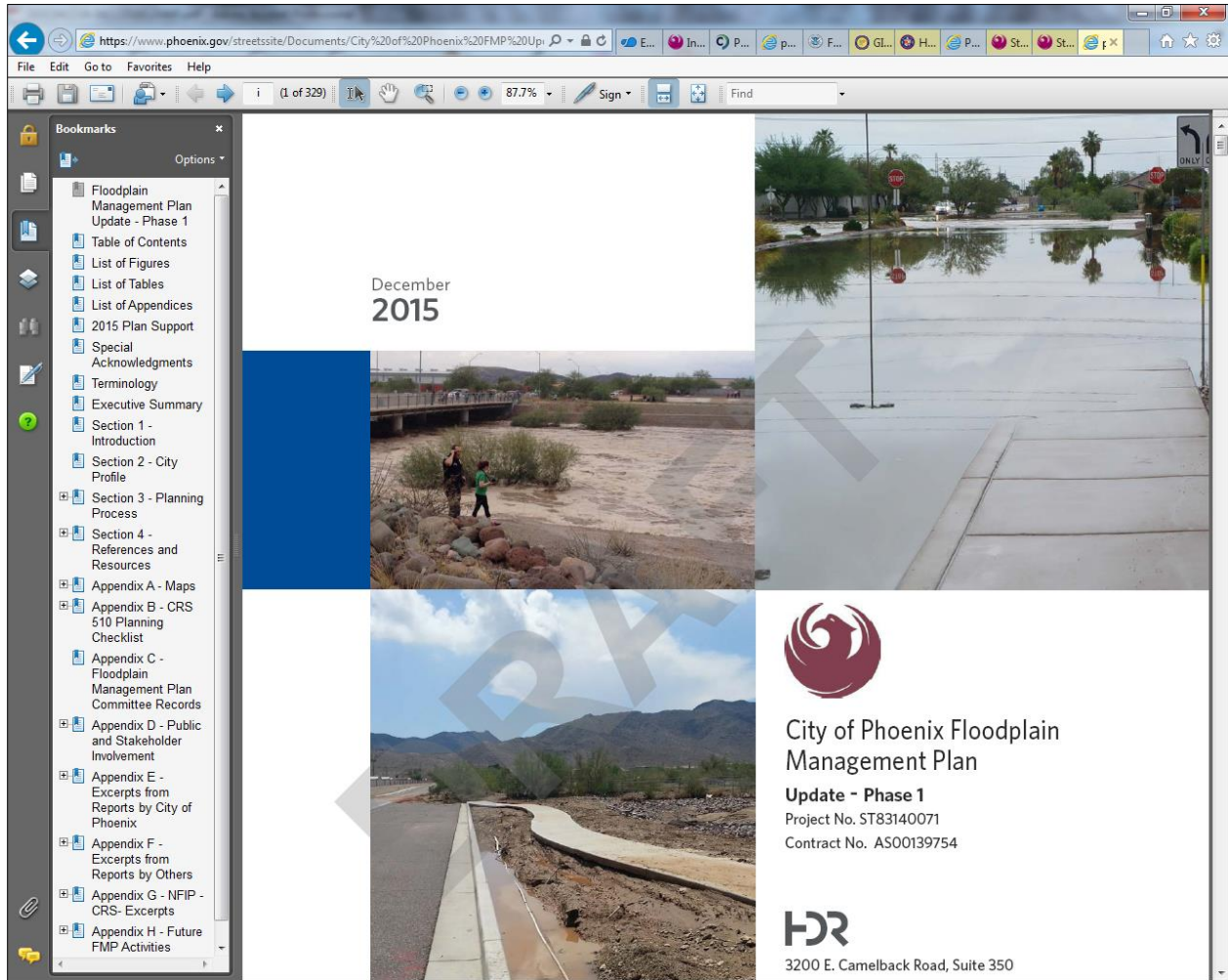


# Floodplain Management Plan Website (50%)

The screenshot shows a web browser window displaying the City of Phoenix website. The address bar shows the URL: https://www.phoenix.gov/streetsite/Pages/FloodPlainManagement.aspx. The page content includes:

- Navigation:** Report it, Map it, Play it, Request City Service, Find Public Records.
- City of Phoenix > Street Transportation > PMP**
- Floodplain Management Plan** (with social media icons for Facebook, Twitter, YouTube, Google+, and LinkedIn).
- Introduction:** The city of Phoenix has prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. The plan identifies flood risks, their impacts on the community, and a prioritized action plan for reducing flood risks. Floodplain management plans are utilized in support of the Federal Emergency Management Agency for participation within the National Flood Insurance Program. The NFIP requires the city to review this plan annually.
- See the PMP Fact Sheet** for additional information about the benefits, purpose and need, and future activities supporting the Floodplain Management Plan.
- Links:** PMP Fact Sheet (English), PMP Fact Sheet (Spanish), View or download the draft PMP here.
- Opportunities for Public Input**
  - The draft PMP will be available for public comment and review: Thursday, Jan. 28, 2016, through Thursday, April 28, 2016.
  - Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to: Heven Huelskamp, P.E., Ph.D., CPE, Floodplain Manager, City of Phoenix Street Transportation Department, 220 W. Washington St., 8th Floor, Phoenix, AZ 85003-4814. Email: [hh@phoenix.gov](mailto:hh@phoenix.gov)
  - The following public meetings will be held to share details about the draft PMP and solicit comments from the public. The same information will be presented at each meeting.
    - Tuesday, April 27**
      - 8 p.m. - 7:30 p.m. (Presentation at 8:30 p.m.)
      - Queen V.C. Best Community Center - Multipurpose North, 3438 W. Pinalia Peak Rd.
    - Wednesday, April 28**
      - 8 a.m. - 7:30 a.m. (Presentation at 8:30 a.m.)
      - Paseo Community Center - Multipurpose Room, 4750 S. 48th St.
    - Thursday, April 29**
      - 8 p.m. - 7:30 p.m. (Presentation at 8:30 p.m.)
      - Burton Best Public Library - Fullman Auditorium, 4221 N. Central Ave.
    - Thursday, April 29**
      - 8 p.m. - 7:30 p.m. (Presentation at 8:30 p.m.)
      - Phoenix Fire Department Station 287, 4702 W. Dobbin Road
- Floodplain Management Plan Adoption Timeline**
  - January - Release draft PMP
  - January 28 thru April 28 - Public Comments & Review Period
  - April - Public Hearings
  - May - Prepare Final PMP
  - June - Present Final PMP to Phoenix City Council for Formal Adoption
- FLOODPLAIN MANAGEMENT PLAN PURPOSE & NEED**
  - Meets the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) guidelines under 154-15/2013
  - Replaces the 1992 City of Phoenix Floodplain Management Plan
  - Reaffirms the city's floodplain management efforts which contribute to the state rating per the Flood Insurance Administration (FIA)
  - Strengthens the support and opportunity for resident cost savings on flood insurance premiums
- City of Phoenix Floodplain Management Plan** (with logo)
- Footer:**
  - Office of Planning, Design & Policy
  - Public Programs
  - Accessibility, Security and Privacy Statements
  - Feedback and Contact Us
  - University and Donations
  - Copyright © 2014 City of Phoenix. All Rights Reserved.

# Floodplain Management Plan draft available on website



# Appendix I Twitter

## Tweets

**PHX Street Trans.**  
@PHXStreetTrans

Follow

Pls review & comment on the draft plan we developed to reduce the adverse impacts of flood hazards in #PHX [ow.ly/1013Az](http://ow.ly/1013Az)

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**1**

4:00 PM - 28 Mar 2016

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**PHX Street Trans.**  
@PHXStreetTrans

Follow

Pls join us on April 5, 6, 7 or 12 to learn about & comment on the updated floodplain management plan [ow.ly/10hYdx](http://ow.ly/10hYdx)

---

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**PHX Street Trans.**  
@PHXStreetTrans

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REMINDER - The public comment period for the updated floodplain management plan closes on 4/28 [ow.ly/10hYFn](http://ow.ly/10hYFn)

---

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 **PHX Street Trans.** @PHXStreetTrans · Apr 6  
We want your input on the floodplain management plan - join us in [#Ahwatukee](#) tonite 6-7:30pm [ow.ly/10npdl](#)



  2  1 

 **PHX Street Trans.** @PHXStreetTrans [Follow](#)

REMINDER - The public comment period for the updated floodplain management plan for [#PHX](#) closes tomorrow (4/28) [ow.ly/4naU78](#)

3:48 PM - 27 Apr 2016

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# Appendix J Advertising

## Newspaper Legal Advertisement

Affidavit of Publication January 29, 2016

AFFIDAVIT OF PUBLICATION

### THE ARIZONA REPUBLIC

STATE OF ARIZONA }  
COUNTY OF MARICOPA } SS.

Angelina Aguilar, being first duly sworn, upon oath deposes and says: That she is a legal advertising representative of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published in Phoenix, Arizona, by Phoenix Newspapers Inc., which also publishes The Arizona Republic, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates as indicated.

The Arizona Republic

January 29, 2016

Sworn to before me this  
29<sup>TH</sup> day of  
January A.D. 2016

BRIAN BILLINGS  
Notary Public - Arizona  
Maricopa County  
My Commission Expires  
July 25, 2018

  
Notary Public

**Floodplain Management Plan**  
The city of Phoenix has prepared an update of its Floodplain Management Plan. Such plans are utilized in support of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for participation within the National Flood Insurance Program (NFIP). The city of Phoenix is currently recognized as a Class B Community, within the Community Rating System (CRS), and receives a 20% premium reduction in flood insurance rates for properties located within a Special Flood Hazard Area. The Draft Floodplain Management Plan is now available on the city of Phoenix Floodplain Management Website at the following location: phoenix.gov/streets/floodplain-management as a digital document. This product can be viewed with Adobe Reader, available for free online at <https://get.adobe.com/reader/>. The public comment and review period is scheduled from January 28, 2016 through April 29, 2016. The city will host four public meetings on the following dates:

April 5, 2016  
Public Meeting, 6:30 p.m. - 7:30 p.m.  
Presentation at 6:30 p.m.  
Goelet A.C. Roul Community Center  
Multipurpose North  
3435 West Pinnacle Peak Road

April 6, 2016  
Public Meeting, 6:00 p.m. - 7:30 p.m.  
Presentation at 6:30 p.m.  
Pecos Community Center  
Multipurpose Room  
17019 South 48th Street

April 7, 2016  
Public Meeting, 6:00 p.m. - 7:30 p.m.  
Presentation at 6:30 p.m.  
Burton Barr Library in the Pulliam Auditorium  
1221 North Central Avenue

April 12, 2016  
Public Meeting, 6:00 p.m. - 7:30 p.m.  
Presentation at 6:30 p.m.  
Phoenix Fire Department Station #57  
1708 W. Dobbins Road

City staff will remain available for further discussions until 7:30 PM. The city of Phoenix residents are encouraged to submit questions and comments in writing by 5:00 PM, April 28, 2016, to the following individual:  
Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix  
Street Transportation Department  
200 W. Washington Street, 5th Floor  
Phoenix, Arizona 85003-1611  
Phone: 602.262.4026  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)  
Pub: January 29, 2016

## City of Phoenix Legal Ad Text

### Floodplain Management Plan

The city of Phoenix has prepared an update of its Floodplain Management Plan. Such plans are utilized in support of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for participation within the National Flood Insurance Program (NFIP). The city of Phoenix is currently recognized as a Class 6 Community, within the Community Rating System (CRS), and receives a 20% premium reduction in flood insurance rates for properties located within a Special Flood Hazard Area. The Draft Floodplain Management Plan is now available on the city of Phoenix Floodplain Management Website at the following location:

[phoenix.gov/streets/floodplain-management](http://phoenix.gov/streets/floodplain-management) as a digital document. This product can be viewed with Adobe Reader, available for free online at <https://get.adobe.com/reader/>.

The public comment and review period is scheduled from January 28, 2016 through April 28, 2016. The city will host four public meetings on the following dates:

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Hasan Mushtaq, P.E., Ph.D., CFM  
Floodplain Manager  
City of Phoenix  
Street Transportation Department  
200 W. Washington Street, 5<sup>th</sup> Floor  
Phoenix, Arizona 85003-1611  
Phone: 602.262.4026  
Email: [hasan.mushtaq@phoenix.gov](mailto:hasan.mushtaq@phoenix.gov)

## Newspaper Ads

Advertisement in the Arizona Republic on March 24, 2016

COLOR

### Public Meeting Notice

City of Phoenix  
Draft Floodplain Management Plan

Project No.  
ST83140071

You're invited to attend a Public Meeting!

**The Floodplain Management Plan** is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks. The city of Phoenix has updated their 1992 plan to provide greater awareness regarding the actions associated with flooding hazards within the city's boundaries.

**You're Invited!**  
The City of Phoenix invites you to attend, learn about and comment on the Draft Floodplain Management Plan at multiple public meetings. These meetings will provide an informal opportunity to learn more about the draft plan. At the meetings, technical staff will be available to answer questions and copies of the draft plan will be available to review. The same information will be presented at each meeting.

Each public meeting will be held from 6 pm to 7:30 pm and include a presentation at 6:30 pm

**Dates**

**Meeting Locations**

Tuesday <b>April 5</b>	<b>Goelet A.C. Beuf Community Center</b> - Multipurpose North 3435 W. Pinnacle Peak Road
Wednesday <b>April 6</b>	<b>Pecos Community Center</b> - Multipurpose Room 17010 S. 48th Street
Thursday <b>April 7</b>	<b>Burton Barr Public Library</b> - Pulliam Auditorium 3435 W. Pinnacle Peak Road
Tuesday <b>April 12</b>	<b>Phoenix Fire Department Station #57</b> 1708 W. Dobbins Road

City of Phoenix  
STREET TRANSPORTATION DEPARTMENT

City of Phoenix  
Floodplain Management Plan

Questions and **comments may also be submitted in writing by 5 pm, April 28, 2016.** For additional information, including the draft document for review and instructions on how to comment, please visit the City of Phoenix Floodplain Management website listed below.

Contact












**E-mail:** [FMP@phoenix.gov](mailto:FMP@phoenix.gov)  
**Phone:** 602-262-4960

[phoenix.gov/streets/FMP](http://phoenix.gov/streets/FMP)

hdrinc.com

3200 E Camelback Rd # 350, Phoenix, AZ 85018 | (602) 522-7700

BLACK AND WHITE

 <h2 style="text-align: center;">Public Meeting Notice</h2> <p style="text-align: center;">City of Phoenix</p> <h3 style="text-align: center;">Draft Floodplain Management Plan</h3> <p>Project No. ST83140071</p>		
<h3>You're invited to attend a Public Meeting!</h3>		
<p><b>The Floodplain Management Plan</b> is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks. The city of Phoenix has updated their 1992 plan to provide greater awareness regarding the actions associated with flooding hazards within the city's boundaries.</p>		
<p><b>You're Invited!</b></p> <p>The City of Phoenix invites you to attend, learn about and comment on the Draft Floodplain Management Plan at multiple public meetings. These meetings will provide an informal opportunity to learn more about the draft plan. At the meetings, technical staff will be available to answer questions and copies of the draft plan will be available to review. The same information will be presented at each meeting.</p>		
<p><b>Each public meeting will be held from 6 pm to 7:30 pm and include a presentation at 6:30 pm</b></p>		
 <b>Dates</b>	 <b>Meeting Locations</b>	
<p><b>Tuesday April 5</b>      <b>Goelet A.C. Beuf Community Center - Multipurpose North</b> 3435 W. Pinnacle Peak Road</p>		
<p><b>Wednesday April 6</b>      <b>Pecos Community Center - Multipurpose Room</b> 17010 S. 48th Street</p>		
<p><b>Thursday April 7</b>      <b>Burton Barr Public Library - Pulliam Auditorium</b> 3435 W. Pinnacle Peak Road</p>		
<p><b>Tuesday April 12</b>      <b>Phoenix Fire Department Station #57</b> 1708 W. Dobbins Road</p>		
 <p><b>City of Phoenix</b> STREET TRANSPORTATION DEPARTMENT</p> 	<p>Questions and <b>comments may also be submitted in writing by 5 pm, April 28, 2016.</b> For additional information, including the draft document for review and instructions on how to comment, please visit the City of Phoenix Floodplain Management website listed below.</p> <p><b>Contact</b>  <b>E-mail:</b> <a href="mailto:FMP@phoenix.gov">FMP@phoenix.gov</a>  <b>Phone:</b> 602-262-4960</p>	  
<p><a href="http://phoenix.gov/streets/FMP">phoenix.gov/streets/FMP</a></p>		



# Phoenix @ Your Service Notice (Water Bill Newsletter) April 2016

April 2016

# Phoenix @ YOUR SERVICE

Highest S&P Credit Rating of 6 Largest U.S. Cities **AA+** STABLE OUTLOOK

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 @cityofphoenixaz 
 /cityofphoenixaz 
 PHX TV

## Housing Vouchers Return after 11 Years



The city of Phoenix Housing Department will accept applications for the Section 8/Housing Choice Voucher (HCV) program beginning Monday, May 23 through Friday, May 27, OR until 10,000 applications are received.

The city's HCV program is funded by the U.S. Department of Housing and Urban Development and is available for low-income individuals and families to provide safe and decent affordable housing. Program participants pay at least 30 percent of their adjusted gross monthly income toward their rent to a private landlord of their choice and the program will pay the remaining balance. Once 10,000 applications have been received and the waiting list closes, the Housing Department will select families from the waiting list in accordance with HUD requirements and local preferences.

Residents need to complete their applications ONLINE ONLY at phoenix.gov/housing. Public facilities such as libraries may provide computer access at no cost. For more information, call 602-534-1974.

## Celebrating Earth Day Every Day!

Since 1970, Earth Day has been globally recognized as a way to motivate progressive environmental initiatives. This year, Earth Day is celebrated on April 22, but every day is the perfect opportunity for residents to show their commitment to waste diversion through sustainable practices.



Reducing our consumption is the easiest way to be sustainable:

- Don't leave water running when not in use
- Buy food in bulk to encourage manufacturers to reduce the amount of packaging used
- Carpool or use public transit whenever possible

Reusing materials and items you already have decreases waste:

- Kids' hand-me-downs will save money
- Use your own reusable water bottle or coffee mug
- Take reusable shopping bags to the grocery store

Recycling reduces the amount of waste sent to landfills:

- Quickly rinse out food cans before placing in your blue recycling container
- Junk mail and magazines can go in your blue recycling container
- Plastic film and bags should be recycled at you nearest grocery store and NOT in your blue recycling container

Reconsider the items you use daily:

- Use energy-efficient and long-lasting LED bulbs in the home
- Buy recycled paper for your home and office
- Buy locally grown produce and foods for your family

These simple ways of reducing, reusing, recycling and reconsidering brings Phoenix closer to a 40 percent waste diversion rate and help all of us reimagine a more sustainable Phoenix.

To learn more about the Reimagine Phoenix initiative, please visit phoenix.gov/ReimaginePhoenix.

## More Than Just Books at the Library

Today, libraries are helping to transform their communities with innovative programs and unique spaces. Burton Barr Central Library's **hive @ central**, a discovery and networking space for business entrepreneurs, is hosting the 2nd annual **hive Business Expo**. This is your opportunity to network with other small business entrepreneurs, learn more about **hive's Business Road Map** program, meet previous **hive @ central** success stories visit informational booths and learn about other free library resources. Keynote speaker will be Monica Villalobos, Vice President of the Hispanic Chamber of Commerce.

### Details:

- Saturday, May 14
- 10 a.m. – 1 p.m.
- Burton Barr Central Library, 1221 N. Central Ave.
- For more information, visit phoenixpubliclibrary.org or call 602-262-4636

## Cool In Your Zip Is Back!



What's old is very new again as the days of highlighting the great, unique and often unknown stories within the city of Phoenix are back. PHXTV/know99 Television has launched its second season of **Cool In Your Zip (CIYZ)**. The show takes viewers to different zip codes within the city limits. Viewers can submit ideas for stories by emailing coolinyourzip@phoenix.gov. New episodes air Fridays at 7 p.m. on Cox Cable channels 11 & 99 and Century Link channels 8005 & 8006. You can also see all the stories on youtube.com/cityofphoenixaz.

## Tour De Sunnyslope

The city of Phoenix's Neighborhood Services Department will join Phoenix Police and Councilman Bill Gates for the **Tour de Sunnyslope** on April 23rd. The community event begins with an open house and tours of the Sunnyslope Neighborhood Police Substation at 750 W. Peoria Ave., from 3:30 p.m. – 4:30 p.m. Following the tours, the Phoenix Police Desert Horizon Bike Squad will lead a slow-paced, family friendly 10 mile bike ride from the precinct. The ride will conclude with a social gathering at the North Mountain Brewery at 522 E. Dunlap.





## Recycling is Easy!

The average American household throws away 13,000 separate pieces of paper each year. Most are packaging and junk mail. Additionally, Americans use 2.5 million plastic bottles every hour and most of those materials are thrown away, too! Public Works reminds residents that paper, carton, cardboard and plastic bottles are some of the easiest materials to recycle. To learn more about how to recycle right, visit [phoenix.gov/publicworks/residential-recycling](http://phoenix.gov/publicworks/residential-recycling).



## Looking For Good Connectors

Would you like to be a part of the exciting downtown Phoenix scene? If so, consider becoming a City Hall Connector!



City Hall Connectors are volunteers that provide excellent customer service while guiding people through Phoenix City Hall. We're seeking energetic, positive, customer-service oriented volunteers to welcome and assist guests at the main information desk on the first floor of Phoenix City Hall.

Service hours are available Monday-Friday from 8 a.m. - 2 p.m. You can choose a three or six-hour shift commitment. For more information, visit [volunteer.phoenix.gov](http://volunteer.phoenix.gov) and enter the keyword: City Hall.

## Your Input Wanted on Floodplain Management Plan

The city of Phoenix has prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks. To learn more about the plan, visit [phoenix.gov/streets/FMP](http://phoenix.gov/streets/FMP).

Several public meetings are scheduled to learn more about the plan and ask questions. Details can be found at [Phoenix.gov/streets/FMP](http://Phoenix.gov/streets/FMP). Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to:

- Hasan Mushtaq, P.E., Ph.D., CFM  
City of Phoenix Street Transportation Department  
200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611
- Email: [FMP@phoenix.gov](mailto:FMP@phoenix.gov)
- Phone: 602-262-4960

## Monthly Watering Tips for April

April in Phoenix brings beautiful weather that your plants thrive off of. Continue to water deeply and infrequently:

- Water desert-adapted trees and shrubs every 7-21 days.
- Your Bermuda grass lawn will thrive with light watering every seven days.
- Your winter rye only needs water every four days.

Think of watering as a stand-in for Mother Nature. If she decides to bring April showers (at least 1/2"), skip your next watering session. For more information, visit [www.phoenix.gov/wrc](http://www.phoenix.gov/wrc).



## AutoPay Your City Services Bill



Did you know the city offers AutoPay? The payment program allows you to pay your monthly City Services Bill through an automatic monthly deduction from your checking or savings account. It saves you a postage stamp and having to remember to send in your payment each month. And as long as you have funds in your checking or savings account, your payment will never be late. Download and complete the AutoPay form at [www.phoenix.gov/waterservices/customerservices/](http://www.phoenix.gov/waterservices/customerservices/). After it is filled out, signed and dated, email it to [water.customer.service@phoenix.gov](mailto:water.customer.service@phoenix.gov). E-signatures will not be accepted.

## Worried About a Water Leak?

Knowing where your water meter is located can help you prevent leaks and track your water usage.



Water meters are usually located near the curb at the front of your home. Some water meters can also be found in the rear or sides of the home near the property line. Water meters are housed in a concrete box with either a metal or composite lid which may be marked "water." You can remove the lid by using a tool such as a large screwdriver. If the small blue dial on your water meter moves when water is not being used inside or outside your house, you could have a small leak. Check out the free Smart Home Water Guide for more information: [www.smarthomewaterguide.org](http://www.smarthomewaterguide.org).

**Phoenix@YOUR SERVICE**  
PHOENIX CITY COUNCIL

Mayor Greg Stanton .....602-262-7111  
*mayor.stanton@phoenix.gov*

Kate Gallego, Vice Mayor, District 8 .....602-262-7493  
*council.district.8@phoenix.gov*

Thelda Williams, District 1 .....602-262-7444  
*council.district.1@phoenix.gov*

Jim Waring, District 2 .....602-262-7445  
*council.district.2@phoenix.gov*

Bill Gates, District 3 .....602-262-7441  
*council.district.3@phoenix.gov*

Laura Pastor, District 4 .....602-262-7447  
*council.district.4@phoenix.gov*

Daniel Valenzuela, District 5 .....602-262-7446  
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Sal DiCiccio, District 6 .....602-262-7491  
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Michael Nowakowski, District 7 .....602-262-7492  
*council.district.7@phoenix.gov*

Published by the city of Phoenix  
Communications Office  
200 W. Washington St.,  
Phoenix, AZ 85003  
602-262-7176 • 7-1-1 Friendly City of Phoenix




# Nextdoor Reminder April 12, 2016

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## City of Phoenix


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**Activity**

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**REMINDER: PUBLIC MEETING ON THE FLOODPLAIN MANAGEMENT PLAN TONIGHT**

City of Phoenix from City of Phoenix

The city of Phoenix will be hosting a public meeting this evening in the South Mountain community area to present information on the Floodplain Management Plan. The plan entails an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community.

Members of the public are encouraged to attend this meeting to learn about the plan and submit comments. Comments received will be addressed and summarized as part of the final plan that will be presented for approval to the City Council later this summer.

Tuesday, April 12  
6 – 7:30 p.m.  
Phoenix Fire Department Station #57, 1708 W. Dobbins Rd.

Details: <https://www.phoenix.gov/news/streets/124...>

Shared with 98 neighborhoods in City of Phoenix in General

12 Apr

THANK | 8

REPLY



## Appendix K Media Articles

### La Voz Prensa Hispana March 23,206

#### PHOENIX INVITES PUBLIC TO COMMENT ON THE UPDATED FLOODPLAIN MANAGEMENT PLAN

Early this year, the City of Phoenix Street Transportation Department prepared and released for public comment an update of the city's floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

The city of Phoenix would like to receive your input on the plan and is hosting four information open houses to share details about the benefits, purpose and need, and future activities supporting the plan. The same information will be presented at each meeting. During each meeting a brief presentation will be provided at approximately 6:30 p.m. The meetings are scheduled as follows:

Tuesday, April 5  
6 p.m. – 7:30 p.m.  
Goelet A.C. Beuf Community Center - Multipurpose North, 3435 W. Pinnacle Peak Rd.

Wednesday, April 6  
6 p.m. – 7:30 p.m.  
Pecos Community Center - Multipurpose Room, 17010 S. 48th St.

Thursday, April 7  
6 p.m. – 7:30 p.m.  
Burton Barr Public Library - Pulliam Auditorium, 1221 N. Central Ave.

Tuesday, April 12  
6 p.m. – 7:30 p.m.  
Phoenix Fire Department Station #57, 1708 W. Dobbins Road

We encourage you to review the plan, attend one of the upcoming open houses and submit comments. Comments received will be addressed and summarized as part of the final plan that will be presented for final approval to the City Council latter this summer.



#### Plan de Administración de Llanuras Aluviales de la Municipalidad de Phoenix



#### NECESIDAD Y PROPÓSITO DEL PLAN

- Cumple con las normas establecidas en FIA-15/2013 del Programa Nacional de Seguros contra Inundaciones (NFIP) de la Agencia Federal para la Administración de Emergencias (FEMA).
- Reemplaza el Plan de Administración de Llanuras Aluviales de la Municipalidad de Phoenix de 1992.
- Refleja los esfuerzos de administración de llanuras aluviales de la municipalidad, los cuales contribuyen a su clasificación acorde a la Administración de Seguros de Inundaciones (FIA).
- Afianza el apoyo y la oportunidad de ahorro para los residentes por concepto de primas de seguro de inundaciones.



The city's draft floodplain management plan and Spanish language fact sheet are available online at [phoenix.gov/streets/FMP](http://phoenix.gov/streets/FMP).

The public comment period is scheduled to close Thursday, April 28. Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to:

City of Phoenix Street Transportation Department  
c/o Hasan Mushtaq, P.E., Ph.D., CFM - Floodplain Manager  
200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611  
Phone: 602-262-4026  
Email: [FMP@phoenix.gov](mailto:FMP@phoenix.gov)

## City News Article March 28, 2016



City of Phoenix

### ***Phoenix Invites Public To Comment On Plan Aimed At Reducing The Adverse Impacts Of Flood Hazards On The Community***

March 28, 2016

Early this year, the city of Phoenix prepared and released for public comment an update of its floodplain management plan. A floodplain management plan is an overall strategy of programs, projects and measures aimed at reducing the adverse impacts of flood hazards on the community. This plan identifies flood risks, their impact on the community, and a prioritized action plan for reducing flood risks.

The city of Phoenix continues to seek comments on the plan and will be hosting four open houses to share details about the benefits, purpose and need, and future activities supporting the plan. The same information will be presented at each meeting. During each meeting a brief presentation will be provided at approximately 6:30 p.m. The meetings are scheduled as follows:

Tuesday, April 5

6 – 7:30 p.m.

Goelet A.C. Beuf Community Center - Multipurpose North, 3435 W. Pinnacle Peak Rd.

Wednesday, April 6

6 – 7:30 p.m.

Pecos Community Center - Multipurpose Room, 17010 S. 48th St.

Thursday, April 7

6 – 7:30 p.m.

Burton Barr Public Library - Pulliam Auditorium, 1221 N. Central Ave.

Tuesday, April 12

6 – 7:30 p.m.

Phoenix Fire Department Station #57, 1708 W. Dobbins Rd.

**Members of the public are encouraged to review the plan, attend one of the upcoming open houses and submit comments.** Comments received will be addressed and summarized as part of the final plan that will be presented for approval to the City Council later this summer.

The city's draft floodplain management plan is available online at [phoenix.gov/streets/FMP](http://phoenix.gov/streets/FMP).

The public comment period is scheduled to close Thursday, April 28. Questions and comments may be submitted in writing by 5 p.m., April 28, 2016, to:





City of Phoenix Street Transportation Department

c/o Hasan Mushtaq, P.E., Ph.D., CFM - Floodplain Manager

200 W. Washington St., 5th Floor, Phoenix, AZ 85003-1611

Email: [FMP@phoenix.gov](mailto:FMP@phoenix.gov)

To request reasonable accommodations or information in an alternate format please contact the City of Phoenix Floodplain Management Section at 602-262-4960 or email [floodpln@phoenix.gov](mailto:floodpln@phoenix.gov).

General Contact:

Hassan Mushtaq

Phone Number:

602-262-4960

## Prensa Hispana Newspaper Article March 31, 2016

**6B** PRENSA HISPANA Jueves 31 de marzo de 2016  
 ¿Dudas o comentarios? Contáctenos Teléfono: (602) 256-2443 Fax: (602) 256-2644 E-mail: prensanews@prensahispanaaz.com www.prensahispanaaz.com

# KO al pandillerismo

**GABRIEL RAMOS**

Después de crecer en un área donde las pandillas imponían la ley y escapar a través de la disciplina del boxeo, Pete "The Punisher" Chávez tuvo una prometedora carrera amateur, sin embargo vio truncado su camino al profesionalismo.

Pete creció en el área de Avenida 35 y Van Buren, donde las pandillas, la delincuencia y las drogas son el pan de cada día, y pudo simplemente haber ignorado el problema, pero decidió hacer algo al respecto para dejarle a sus hijos un mejor entorno.

"Hace poco más de 10 años iniciamos con un gimnasio de box, con la intención de sacar de ese ambiente a los niños y jóvenes del área y al tiempo, cuando empezamos hacer la diferencia, los pandilleros fueron a destrozarlo y me amenazaron", recuerda Chávez.

Hasta ese momento, "Punisher" peleaba sólo su batalla, pero tras esos sucesos, intervino el Departamento de Policía de Phoenix a través de la Unidad Antipandillas, para asegurar que tanto el maestro como los alumnos tuvieran un entorno seguro y pudieran seguir trabajando.

Igualmente los agentes encontraron un lugar a donde realizar constantes visitas para practicar con los alumnos y ofrecerles consejos para mantenerse a salvo en las calles y alejados de los problemas, esa alianza se mantiene hasta el momento.

La desinteresada labor de Chávez lo llevó a seguir encontrando importantes aliados y finalmente en e 2007, logró convertir su proyecto en la Fundación de Boxeo Chávez (Chávez Boxing Foundation) organización sin fines de lucro que recibe subvención gubernamental para seguir realizando su noble labor.

Han sido cientos de jóvenes, en su mayoría hispanos, los que han salido de las garras de la delincuencia gracias a que encontraron un lugar positivo donde encausar su tiempo, energía, y hasta su coraje, la frase de la fundación es: Dando a la juventud la oportunidad de triunfar en el ring y la vida.

El pasado fin de semana la Fundación de Boxeo Chávez inauguró sus nuevas instalaciones ubicadas en la esquina de las calles 24 y Oak, un nuevo sitio después de muchos años en el área de la Van Buren.

A la inauguración del nuevo gimnasio acudieron los aliados de la Unidad Antipandillas del Departamento de Policía de Phoenix, el teniente John White y los agentes Jeff Cianfroe, Doug Michaud y Christopher Eyrich, quienes sostuvieron amena charla con alrededor de 30 alumnos.

Pete Chávez fue ganador de los guantes de oro y otros tantos títulos estatales, pero al convertirse en padre soltero eligió la familia por encima de su carrera profesional; por medio de la fundación ha logrado incluso establecer becas para apoyar a jóvenes a mantenerse en la escuela. "Hemos hecho la diferencia en la vida de muchos niños y también niñas; incluso hemos tenido el honor de acompañar como padrino a muchos en sus ceremonias de graduación, hemos comprobado que el box puede salvar vidas", finalizó Chávez.

**Municipalidad**  
**Alejandro Montiel** Portavoz de la Municipalidad de Ptx.

## Plan para reducir los riesgos ocasionados por inundaciones

A principios de este año el Departamento de Calles y Transporte de la municipalidad de Phoenix preparó y dio a conocer para opinión comunitaria la actualización de un plan para reducir los riesgos ocasionados por inundaciones. Este plan es una estrategia completa de programas, proyectos y medidas dirigidos a reducir los impactos adversos de los peligros de inundación en la comunidad. Este plan identifica los riesgos de inundación, su impacto en la comunidad y un plan de acción para reducir los riesgos.

La municipalidad de Phoenix pide la opinión de la comunidad sobre el plan y realizará cuatro reuniones comunitarias para compartir los detalles sobre los beneficios, el propósito y las necesidades, y actividades futuras para apoyar el plan. La misma información será presentada en cada una de las reuniones. Durante cada reunión se proveerá una presentación corta alrededor de las 6:30 p.m. El horario de las reuniones es el siguiente:

Martes 5 de abril 6 p.m. - 7:30 p.m.  
 Miércoles 6 de abril 6 p.m. - 7:30 p.m.  
 Pecos Community Center - Multipurpose Room, 17010 S. 48th St.  
 Jueves 7 de abril 6 p.m. - 7:30 p.m.  
 Burton Barr Public Library - Pulliam Auditorium, 1221 N. Central Ave.  
 Martes 12 de abril 6 p.m. - 7:30 p.m.  
 Phoenix Fire Department Station #57, 1708 W. Dobbins Road

Le recomendamos a los residentes revisar el plan, asistir a una de las reuniones comunitarias y someter sus comentarios. Los comentarios recibidos serán analizados, resumidos e incluidos como parte del plan final que será presentado para aprobación del Concejo Municipal durante este verano.

El plan preliminar de la municipalidad para reducir los riesgos ocasionados por inundaciones y la hoja informativa en español están disponibles en línea en phoenix.gov/streets/FMP.



# Phoenix Business Journal April 13, 2016

## Link to Article

### Fountain, Mark

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**To:** Fountain, Mark  
**Subject:** Afternoon Edition: See the 10 worst jobs in US; Venture deals up in AZ; Top Valley HR

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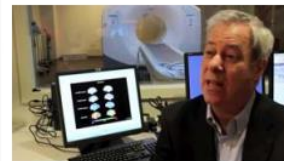
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## Article

4/15/2016

Phoenix floodplain plan saves property owners 20 percent on insurance premiums - Phoenix Business Journal



FOR THE EXCLUSIVE USE OF MARK.FOUNTAIN@HDRINC.COM

From the Phoenix Business Journal:

<http://www.bizjournals.com/phoenix/news/2016/04/13/phoenix-floodplain-plan-saves-property-owners-20.html>

## Phoenix floodplain plan saves property owners 20 percent on insurance premiums

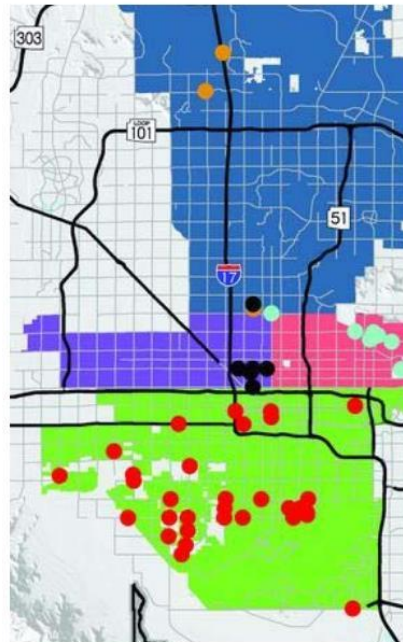
Apr 13, 2016, 9:01pm MST

Some of the team at the city of Phoenix is working on keeping property owners dry and saving them money.

The city's Street Transportation and Floodplain Management Department is completing efforts to update the city's 1992 floodplain management plan.

"We've completed nearly all of the projects, and it's time to identify new projects," said Hasan Mushtaq, Phoenix floodplain manager. "The flood insurance regulations have changed since then, and it was time for a new plan to meet current standards."

Staying ahead of the game, which is a planned 2017 audit by the National Flood Insurance Program, Phoenix wants to see the new plan and list of flood control projects updated before the city council breaks for the



CITY OF PHOENIX

Phoenix proposed floodplain management map

<http://www.bizjournals.com/phoenix/news/2016/04/13/phoenix-floodplain-plan-saves-property-owners-20.html?s=print>

1/6

4/15/2016

Phoenix floodplain plan saves property owners 20 percent on insurance premiums - Phoenix Business Journal

summer in June.

**HDR Engineering** is assisting on the plan update, and Mark Fountain, the lead consultant, said the new plan identifies a long list of projects the city wants to build to protect areas from flooding.

Phoenix has been working hard to better manage flooding, a peril that increases as raw land continues to be replaced with pavement and development. The efforts over the past 24 years have paid off for Phoenix property owners required to buy flood insurance.

“Our flood insurance program has a rating of six,” said Mushtaq. “This translates into a 20 percent discount off the cost of the premium.”

Premiums vary based on the extent of coverage, but Fountain said he’s heard Phoenix homeowners pay between \$300 to \$900 per year.

The new plan brings the city into compliance with new rules and regulations.

“Phoenix was struggling with the old guidelines,” Mushtaq said. “The new plan will make it a lot easier to comply.”

Flood projects vary across the four quadrants into which Phoenix was divided. A typical project might include a retention basin for holding floodwaters after major storms. The rest of the year, those basins serve as a neighborhood park.

“There’s a good example of this type of project at 43rd and Southern avenues,” said Fountain. “The retention basin is dug into the ground, then the area is developed as a park for dry weather use.”

Other projects include developing levees. One is proposed on Skunk Creek at the Central Arizona Project canal near Interstate 17. An similar example is the levee at Reach 11 on the north side of the CAP canal east and west of Tatum Boulevard.

Fountain and Mushtaq said the plan identifies projects with an estimated \$1 billion price tag over the next 20 to 25 years, \$566 million of which is for capital improvement projects and another \$479 million for local drainage

<http://www.bizjournals.com/phoenix/news/2016/04/13/phoenix-floodplain-plan-saves-property-owners-20.html?s=print>

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improvements. More than 50 projects have been identified.

The city is looking for public comments on the proposed plan through the end of April at the Floodplain Management Plan website.

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Phoenix proposal floodplain management plan

# Future FMP Mitigation Projects



**Type of Projects:** Representative projects for future mitigation

- » Stormwater Basins
- » Storm Drains
- » Channels
- » Open Spaces

**Areas of Future Mitigation Activities:**

**North**

- » Skunk Creek Levee at Central Arizona Project (at I-17)
- » Palo Verde Golf Course Storage Basin (15th Avenue and Rose Lane)

**East**

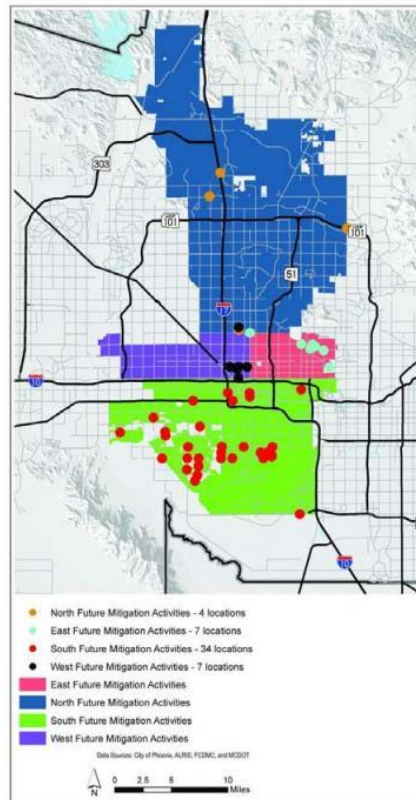
- » Camelback Road Storm Drain (West, Arcadia to 40th Street)
- » Central Avenue Storm Drain (Bethany Home Road to Arizona Canal)

**South**

- » 27th Avenue and Dobbins Road Basin (27th Avenue and Dobbins Road)
- » South Mountain/Laveen Drainage Improvement Project (19th Avenue and Dobbins Road)

**West**

- » McDowell Road Storm Drain (Arizona Dept. of Transportation Tunnel to 15th Avenue)
- » 3rd Avenue Storm Drain (Encanto Golf Course to Bethany Home Road)



Refer to Figure 7 - Table 2 from the Draft FMP

**Funding Need:**

**\$566 M - Capital improvement projects**

<http://www.bizjournals.com/phoenix/news/2016/04/13/phoenix-floodplain-plan-saves-property-owners-20.html?s=print>

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## \$479 M - Local drainage improvements

**Implementation timeline is based on funding availability.**



**Eric Jay Toll**

Reporter

*Phoenix Business Journal*



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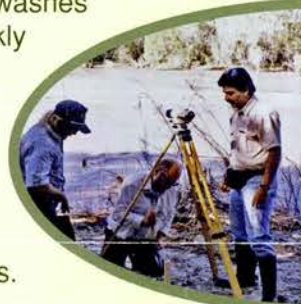




2014

# FLOOD FACTS

CRS Activity 330



The Flood Control District of Maricopa County (District) has been responsible for overseeing the development and implementation of comprehensive flood hazard control measures in Maricopa County since 1959. The District was formed by the Arizona State Legislature in response to significant flooding events that plagued Maricopa County during its early history.

The area's Sonoran Desert environment is conducive to flooding due to unique soil and topography characteristics, winter/summer rainy seasons and numerous natural riverbeds, washes and channels. During a rainstorm, these normally dry waterways can quickly become raging rivers causing widespread overland flooding when unchecked.

Initially the District focused on building dams (flood retarding structures), basins and channels to prevent flooding. However unprecedented population growth and development in the county since the 1990s shifted the District's emphasis to inform citizens about flood hazards, identify specific hazard areas and control development that directly impacts waterways.

The County Board of Supervisors serve as the District's Board of Directors. They in turn have appointed the Flood Control Advisory Board (made up of county citizens) to review and make recommendations to the Board of Directors regarding District projects. Ongoing projects and long-term planning efforts by the District guarantee residents of Maricopa County the benefits of a natural environment and protection from the effects of flooding.

## INDEX

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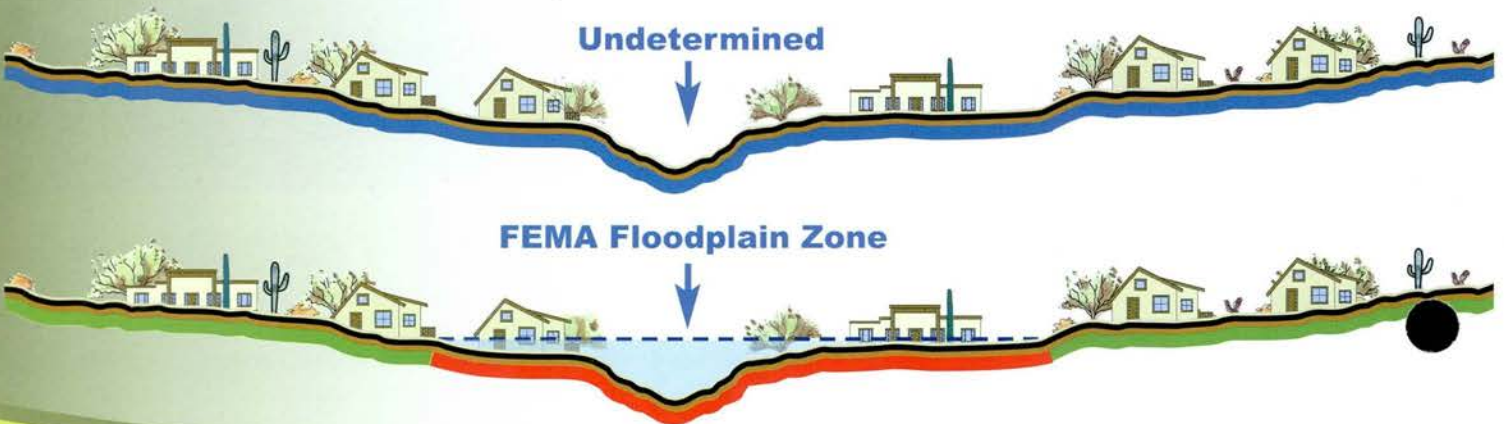
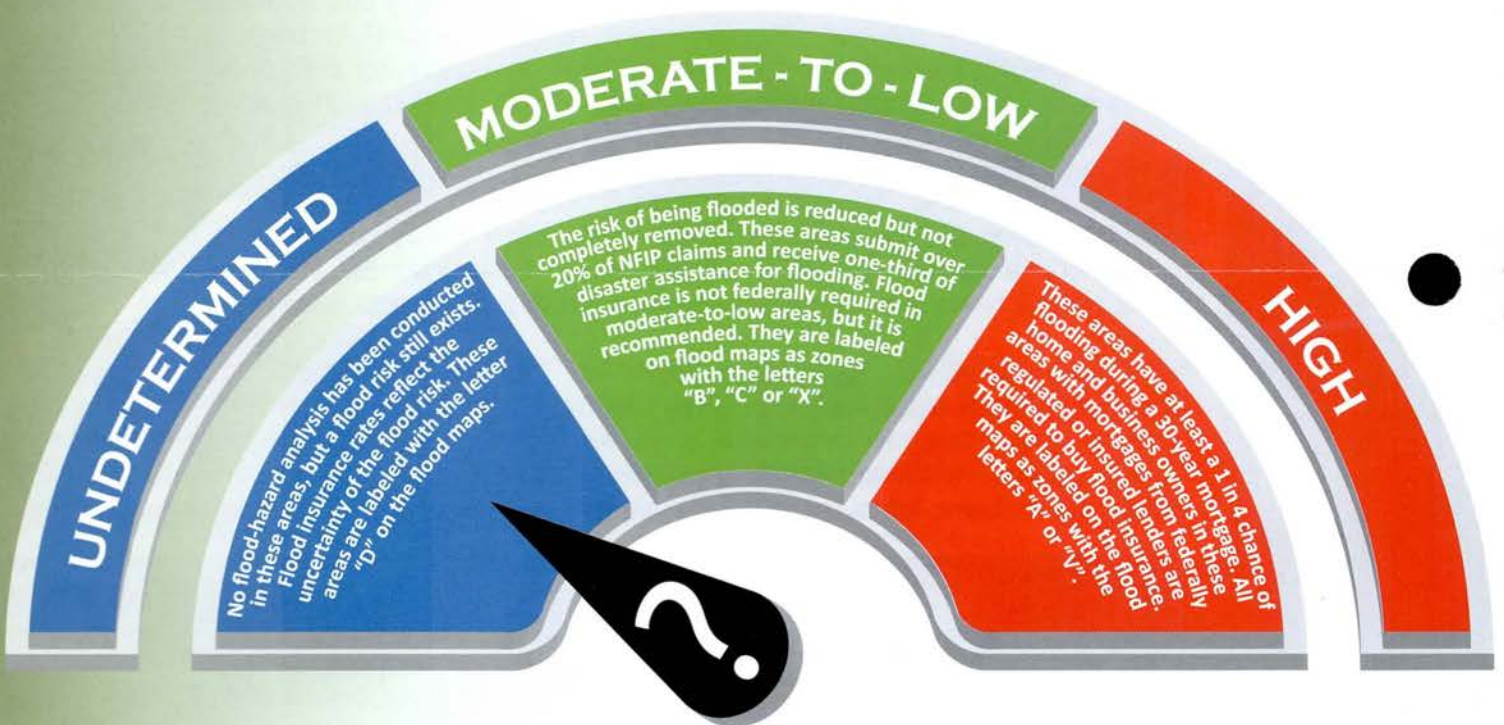


# Flood Hazard and Risk

Floods are the most common hazards in the United States. Just because you have not experienced a flood in the past doesn't mean you won't in the future. Flood risk is not just based on history; it is also based on a number of factors: rainfall, river-flow and tidal-surge data, topography, flood-control measures and changes due to building and development. The question to ask yourself is "Am I prepared"?

## This is How your Risk is Determined

To identify a community's flood risk, the Federal Emergency Management Agency (FEMA) conducts a Flood Insurance Study. The study includes statistical data for river flow, storm tides, hydrologic/hydraulic analyses and rainfall and topographic surveys. FEMA uses this data to create the flood hazard maps or Flood Insurance Rate Maps (FIRMs) that outline the community's different flood risk areas and show the locations of high-risk, moderate-to-low risk and undetermined-risk areas. Here are the definitions for each type:





**The FIRM is the basis for floodplain management, flood hazard mitigation and insurance ratings**

The FIRM is the official map on which FEMA has delineated both the 1% chance a year of flooding (the 100-year floodplain) and the National Flood Insurance Program (NFIP) risk premium, which help determine the cost of flood insurance. The lower the degree of risk, the lower the flood insurance premium.

**LEGEND**

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevations determined.

**ZONE AE** Base Flood Elevations determined.

**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

**ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

**ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.



**Floodplain**



**Base Flood**

**Special Flood Hazard Areas (SFHA) & Zones**

**Magnitude of Flood Risk**

**Use the floodplain map above to learn flood terms to help understand flood risk**

- Floodplain - land area adjoining a water course or drainage way that is subject to inundation by a base flood.
- Base Flood - a flood that has a 1% annual chance to be equaled or exceeded in any year.
- Special Flood Hazard Area (SFHA) - land area that is designated by zones and covered by the base flood. This area is where the community's floodplain regulations are enforced and mandatory flood insurance is required.
- Zones - letter designations that indicate the different types of flood risk in specific areas.



# Flood Insurance

In July of 2012 the Biggert-Waters Flood Insurance Reform Act (BW-12) was passed reauthorizing the NFIP and included increases in rates. However, when the new insurance rates were announced they were much higher. A new bill, Homeowner Flood Insurance Affordability Act (HFIAA), was approved on March 21, 2014.

The law repeals and modifies many of the BW-12 changes and replaces them with a more moderated program for increasing insurance premiums. For current information regarding HFIAA and flood insurance changes go to [www.fema.gov/flood-insurance-reform](http://www.fema.gov/flood-insurance-reform). Additional information can be found on FEMA's FloodSmart website at [www.floodsmart.gov](http://www.floodsmart.gov).



Wickenburg, August 2014 Storm

This past August Maricopa County residents were inundated by monsoon rain around the valley. Large amounts of rain in a short period of time overwhelmed areas and caused flood damage to roads, residences and property. Storm runoff closed parts of Interstate 17, stranded motorists, residents and swept away livestock and pets.

Many of these areas were in moderate-to-low risk areas that do not require flood insurance. The 2013 Flood Control District survey found 70% of residents do not believe their own residence is in danger of flooding. However, as the storms this year have shown us, most people underestimate the damage a flood can cause and need to take protective action to lessen the financial consequences if not insured.

## DID YOU KNOW - Floods are the #1 most common natural disaster in the United States.

- Everyone lives in a flood zone. 52% of residents in the Flood Control District's 2013 survey do not know if they live in the 100-year floodplain. For more information, go to [www.fcd.maricopa.gov/GIS/maps.aspx](http://www.fcd.maricopa.gov/GIS/maps.aspx).
- Most homeowners insurance does not cover flood damage. Make sure to get "content" coverage, which is a separate policy from flood insurance, to be financially protected. There is a 30-day wait period before a "flood insurance" policy becomes effective.

You are eligible to purchase flood insurance as long as your community participates in the National Flood Insurance Program. Maricopa County has been an NFIP partner since 1991. Federal disaster assistance is usually a loan that must be paid back with interest. For a \$50,000 loan at 4% interest, your monthly payment would be around \$240 a month (\$2,880 a year) for 30 years.



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Find out about our Preferred Risk Policy for homes in moderate-to-low risk areas.

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### WHAT COULD FLOODING COST ME?

This interactive tool shows the cost of a flood to your home, inch-by-inch.

[LEARN MORE](#)

- The FEMA website FloodSmart, [www.floodsmart.gov](http://www.floodsmart.gov), is an excellent source for information on locating an agent, flood risks, coverages and resources. You may also go our website at [www.fcd.maricopa.gov](http://www.fcd.maricopa.gov) for information and links to FEMA sites.



Anyone can be financially vulnerable to floods. In fact, people in the moderate-to-low flood areas file nearly 25% of all flood insurance claims and receive one-third of Federal Disaster Assistance for flooding (a loan that must be paid back). Flood insurance is available to homeowners, renters, condo owners/renters and commercial owners/renters. Costs vary depending on how much insurance is purchased, what it covers and the property's flood risk.



## Substantial Improvement and Damage

These terms refer to existing structures. If an existing building is damaged by fire, flood, earthquake, wind, rain and/or natural or human-induced hazard the building must meet the requirements for new construction and must be brought up to current floodplain standards. Refer to the Floodplain Regulations for Maricopa County at [www.fcd.maricopa.gov](http://www.fcd.maricopa.gov).

### Substantial Improvement

It means the cost to rebuild/improve a structure in the floodplain, whether damaged or not, equals more than 50% OF MARKET VALUE PRIOR TO WORK START.

### Substantial Damage

It means the cost of post-damage repair equals more than 50% PREDAMAGE MARKET VALUE.

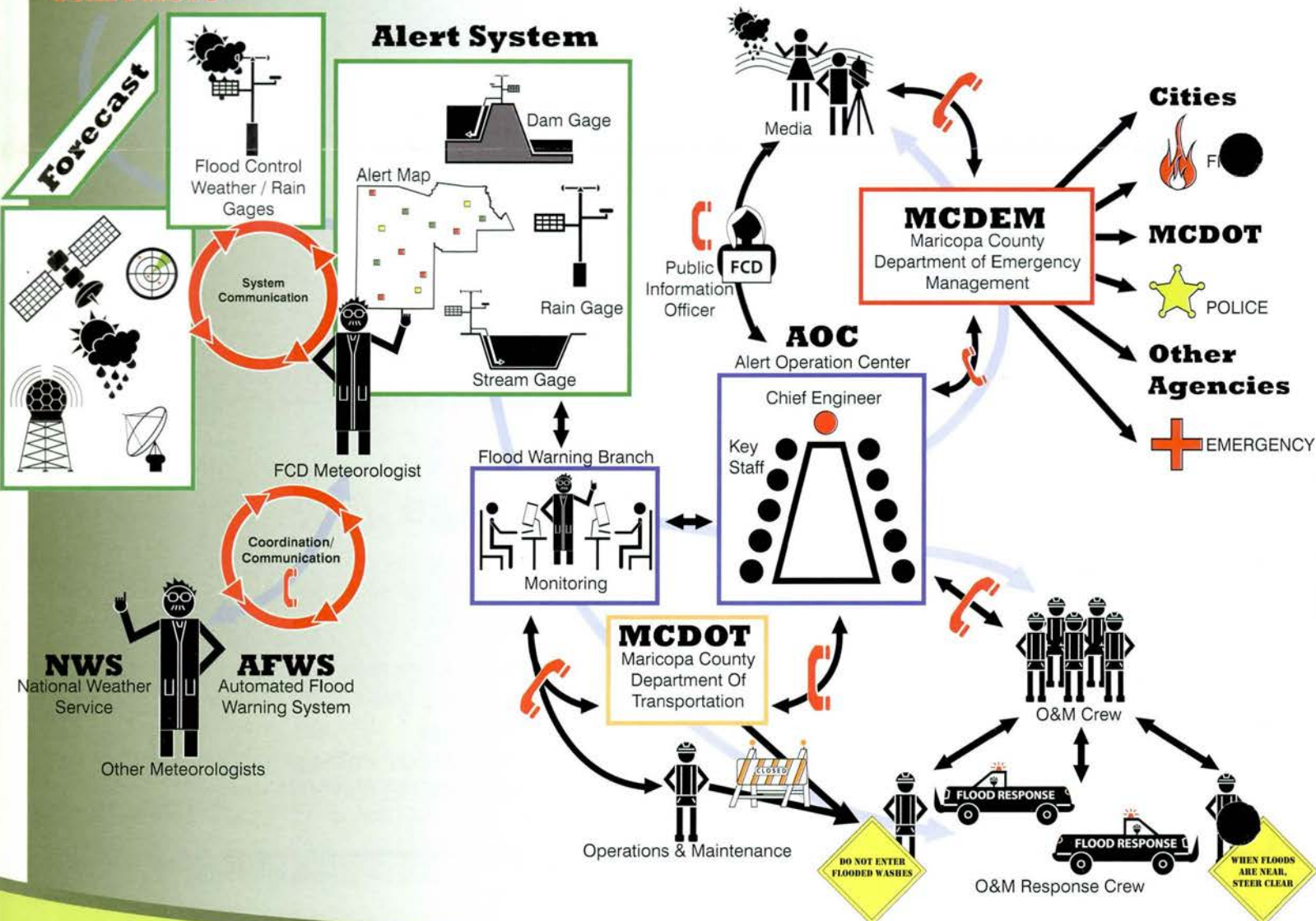


# District Flood Warning

The Flood Control District operates a 24-hour rain, stream and weather gage network which provides "real-time" information to the County and many other agencies about rainfall, floods and weather conditions in Maricopa County. This Automated Local Evaluation in Real Time system is represented as the acronym ALERT.

Heavy rainfall can generate stream flows which significantly impact Maricopa County and flood control structures such as dams, channels and levees. Different combinations of temperature, humidity, dew point, barometric pressure, solar radiation and wind speed/direction are measured by the gages and transmitted to the District every 15 or 30 minutes. Each gage is programmed with an alarm setting that notifies the District, other county departments, and the National Weather Service. Currently the District has 313 automatic rain gages, 175 automatic stream gages and 36 automatic weather stations throughout Maricopa and neighboring adjacent counties. For further information on rainfall, weather or ALERT system go to [www.fcd.maricopa.gov/Rainfall/rainfall.aspx](http://www.fcd.maricopa.gov/Rainfall/rainfall.aspx). A simplified communication process of the District's Flood Warning is shown below:

**\*Start Here\***





# Permitting and Building Responsibility

The Maricopa County Planning & Development Department is responsible for processing applications for land use approvals and permits, building permits and Floodplain Use Permits for unincorporated Maricopa County. If your property is in or near a floodplain, a Floodplain Use permit is required if you make changes to land within the 1% chance a year of flood hazard area. A Floodplain Use permit will have to be obtained before you build, grade or install any type of wall or fencing. The Planning & Development Department's One-Stop-Shop is located at 501 N. 44th Street, Suite 200, Phoenix, Arizona 85008; phone (602) 506-3301 or go to [www.maricopa.gov/planning](http://www.maricopa.gov/planning).

Cities and towns in incorporated Maricopa County process their own permits for development within the city/town limits. Depending on where your property is located, you will follow one of the three permitting scenarios below:

**If your property is located in unincorporated Maricopa County, visit the Planning & Development Department's One-Stop-Shop (OSS):** To start the permitting process. The OSS is a central location for the public. All OSS partner agencies that issue permits are routed a copy of the permit application for review, saving the applicant time by not having to visit each agency separately. The OSS partner agencies include: Building, Zoning, Drainage, MCDOT, Flood Control District and Environmental Services. Application packet information is found on the Planning & Development Department website at [www.maricopa.gov/planning](http://www.maricopa.gov/planning) or call (602) 506-3301.

**1. If your property is located in the following communities that handle their own floodplain management:**

Avondale, Fountain Hills, Gilbert, Glendale, Goodyear, Paradise Valley, Peoria, Phoenix, Scottsdale and Tempe.

The permit is processed by the respective community and a permit from the Flood Control District for development is not required.

**2. If your property is located in the following communities in which the Flood Control District handles the floodplain management:**

Buckeye, Carefree, Cave Creek, Chandler, El Mirage, Gila Bend, Guadalupe, Litchfield Park, Mesa, Queen Creek, Surprise, Tolleson, Wickenburg and Youngtown, visit the appropriate city or town location to start the permitting process. If your property is in or near a floodplain in these communities you will need to obtain a Floodplain Use Permit from the Flood Control District. The community will give you information for this process.


**The Flood Control District directly issues Permits for the following development in a floodplain:**

**3. Right-of-Way permit:** Issued for the use of, or access through, property owned and maintained by the District.

**4. Sand and Gravel or Other Materials permit:** Is issued when the operation can prove they will not obstruct the natural flow of the watercourse, will not cause damage to adjacent structures or properties and will preserve the natural and beneficial function of the watercourse.



- ### Dams in Maricopa County
- 1 - Adobe Dam
  - 2 - Apache Junction FRS
  - 3 - Apache Junction FRS
  - 4 - Buckeye FRS #1
  - 5 - Buckeye FRS #2
  - 6 - Buckeye FRS #3
  - 7 - Buckeye FRS #4
  - 8 - Casandro Wash Dam
  - 9 - Cave Buttes Dam
  - 10 - Dreamy Draw Dam
  - 11 - Granite Reef Dam
  - 12 - Horse Mesa Dam
  - 13 - Horsehoe Dam
  - 14 - Magma Dam
  - 15 - Mormon Flat Dam
  - 16 - New Waddell Dam
  - 17 - Painted Rock Dam
  - 18 - Roosevelt Dam
  - 19 - Ritzenhouse FRS
  - 20 - Saddleback FRS
  - 21 - Signal Butte FRS
  - 22 - Spook Hill FRS
  - 23 - Sunnyrove Dam
  - 24 - Sunset Dam
  - 25 - Vineyard FRS
  - 26 - White Tanks FRS #3
  - 27 - White Tanks FRS #4
  - 28 - Bartlett Dam
  - 29 - Gillespie Dam
  - 30 - Guadalupe FRS North #1
  - 31 - Guadalupe FRS North #2
  - 32 - Harquahala FRS
  - 33 - McWicken Dam
  - 34 - New River Dam
  - 35 - Powerline FRS
  - 36 - Ritterhouse FRS
  - 37 - Seward Mountain Dam
  - 38 - Whittow Dam
  - 39 - Fountain Hills Dams
  - 40 - City of Phoenix Dams



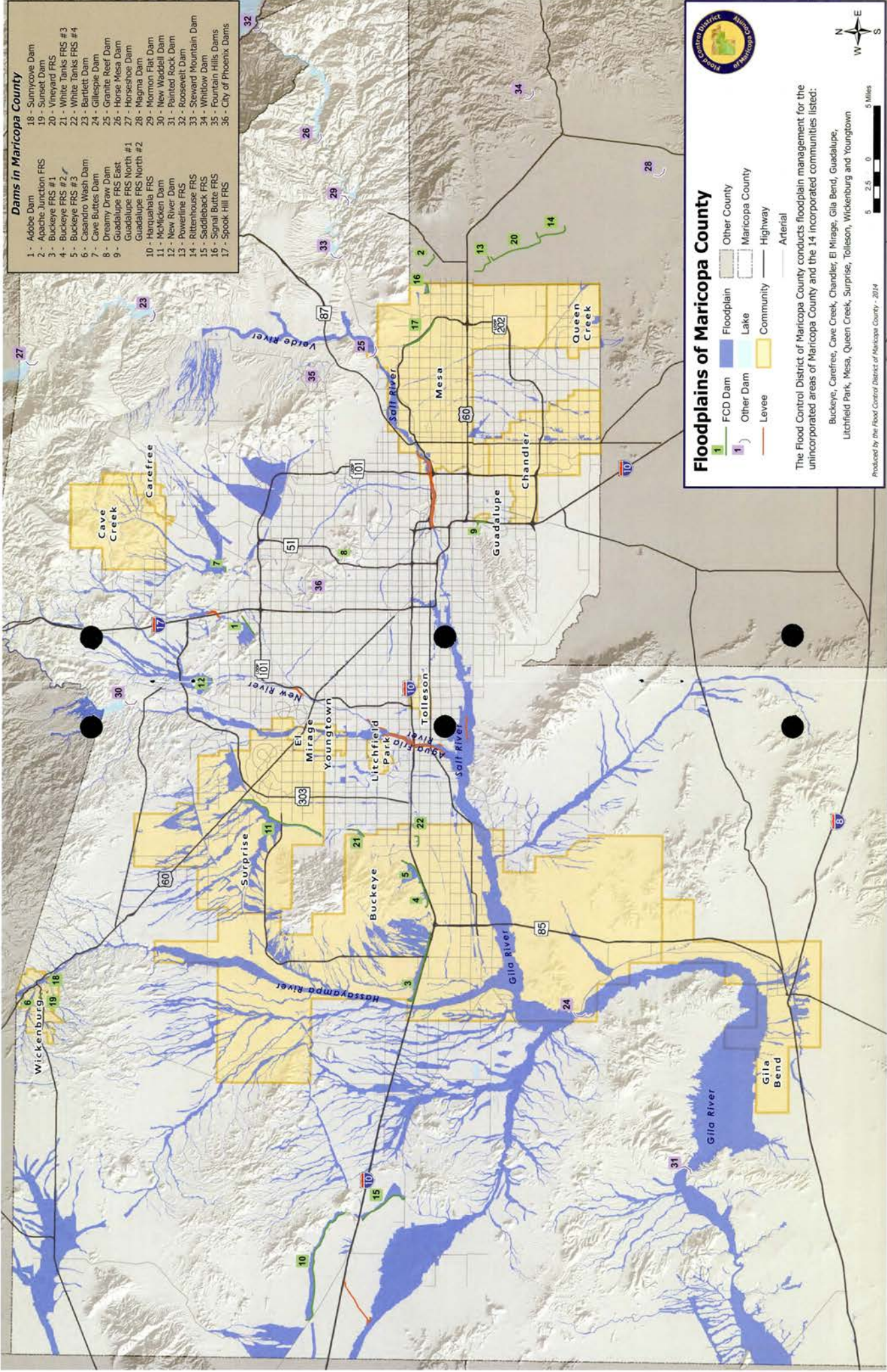


### Floodplains of Maricopa County

- FCD Dam
- Floodplain
- Other County
- Lake
- Maricopa County
- Levee
- Community
- Highway
- Arterial

The Flood Control District of Maricopa County conducts floodplain management for the unincorporated areas of Maricopa County and the 14 incorporated communities listed:  
 Buckeye, Carefree, Cave Creek, Chandler, El Mirage, Gila Bend, Guadalupe, Litchfield Park, Mesa, Queen Creek, Surprise, Tolleson, Wickenburg and Youngtown

Produced by the Flood Control District of Maricopa County - 2014



# Flood Safety

## Protect your property and yourself from hazards

Both drainage and flood control are important in protecting your property and yourself from flooding hazards and risks. Maricopa County Drainage Regulations are administered by the Maricopa County Planning & Development Department. It is important that drainage systems are maintained. Dumping trash/debris in ditches, gutters, storm drains, local channels, private easements and washes is prohibited. For more information regarding the Maricopa County Drainage Regulations go to [www.maricopa.gov/planning/Resources/Regulations](http://www.maricopa.gov/planning/Resources/Regulations) or call the Planning and Development department at (602) 506-3301.

### FLASH FLOOD WATCH

The National Weather Service will issue a flash flood watch when flash flooding is possible within a designated area.

### FLASH FLOOD WARNING

The National Weather Service will issue a flash flood warning if flash flooding has been reported or is imminent. YOU MAY HAVE ONLY SECONDS.

The Floodplain Regulations for Maricopa County (adopted in 1976) define the rules for usage, development restrictions and permitting requirements necessary to protect the environmental and flood control qualities of floodplains.



July 2007 Storm

## Driving Safety

- Do not walk through moving water. Six inches of moving water can make you fall and two feet or less will cause your vehicle to float.
- Do not attempt to drive through a flooded road. Be especially cautious at night when flood dangers are harder to recognize.
- Do not drive around barricades; they are there for your protection.
- Stick to designated evacuation routes.

## Property Protection

- Avoid building in a floodplain unless you elevate and reinforce your home.
- Elevate the HVAC, water heater and electric panel if susceptible to flooding.
- Construct natural barriers/berms and grade correctly.
- Build with flood damage resistant materials.
- Clear obstructions such as debris from construction and conveyance systems (pipes, ditches, culverts, washes) that carry runoff on or near your property.





## Before a Flood

- Purchase flood insurance (30 day wait period).
- Elevate your structures and utilities/meter.
- Build an emergency kit and make a family communication plan which include where to meet if separated.
- Remember your animals and their needs.
- Don't forget medicines and special needs required by family members.
- Sandbags are available at your local fire department.



New River, August 2014 Storm



Laveen, August 2014 Storm

## During a Flood

- Listen to local officials and monitor your local radio or television for information.
- Be aware that flash flooding can occur. If it does, move immediately to higher ground.
- Be aware of streams, drainage channels, canyons, washes and other areas known to flood suddenly.
- Do not drive into flooded areas. Turn Around Don't Drown! Two feet of rushing water can carry away most vehicles.
- Be prepared to evacuate your home.



Phoenix, August 2014 Storm

## After a Flood

- Avoid floodwaters; water may be contaminated by oil, gasoline or raw sewage. Water may also be electrically charged from underground or downed power lines.
- Be aware of areas where floodwaters have receded. Roads may have weakened.
- Return home only when authorities indicate it is safe.

Find more information on flooding, flood hazards, flood insurance and weather at the Federal Emergency Management Agency (FEMA) and National Weather Service (NOAA) websites:

[www.fema.gov](http://www.fema.gov)

[www.floodsmart.gov](http://www.floodsmart.gov)

[www.ready.gov/floods](http://www.ready.gov/floods)

[www.nws.noaa.gov/floodsafety](http://www.nws.noaa.gov/floodsafety)



## **Dams & Levees**

The District operates and maintains 22 dams in Maricopa County solely for flood control purposes. These dams only hold water during flood events. Most dams that impact Maricopa County have been designed for the 1% chance a year flood event or greater. Emergency Action Plans (EAPs) have been developed for most dams that impact Maricopa County. While there are many variations in the individual plans, in general all the plans call for the public to be primarily notified through local media and by direct means like a reverse 911 system. These notifications will include specific information about safety measures and possible evacuation routes.

Additional information about dams can be found in the publication published by the Association of State Dam Safety Officials entitled "Living With Dams: Know Your Risks" which can be found at [www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams\\_ASDSO2012.pdf](http://www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams_ASDSO2012.pdf).



**Adobe Dam, August 2014 Storm**

Most people are unaware that there are levees along some of the rivers and watercourses in Maricopa County. When properly built and maintained, levees can reduce flood risk but they don't eliminate it. For the last several years the District has been working with FEMA in order to have our levees continue to be accredited as providing protection during the 1% chance a year flood event. People who live or work behind levees should be aware of where levees are located and how to be prepared if flooding should occur. The United States Army Corps of Engineers (USACE) recommends that everyone in a leveed area have flood insurance.

During flood events you should pay attention to local radio and TV because, in the unlikely event there ever is a problem with a levee, notices will be provided to local media. Currently, the District has certified 8 of the 10 levees per our Provisionally Accredited Levee (PAL) agreements with FEMA and three (3) EAPs have been completed. The District is currently developing a Levee Safety Program that will include agency/community coordination, public notification and evacuation plans.

Several organizations cooperated in the development of a publication entitled "So You Live Behind a Levee". This publication has specific information on what to do if you live near a levee and is available from the American Society of Civil Engineers (ASCE) web site <http://content.asce.org/ASCELeveeGuide.html>. More information on dams and levees is available on the Flood Control District web site [www.fcd.maricopa.gov](http://www.fcd.maricopa.gov).



# Protect Natural Floodplain Functions

Maricopa County is situated within the northern reach of the Sonoran Desert, which is internationally recognized as one of the richest biotic eco-regions in the world. There are over 11,000 miles of rivers, streams, and washes that run through Maricopa County. In fact all major river systems in the lower 2/3 of the state converge and drain through Maricopa County. These rivers not only convey water but provide biological, social, and economic assets to our communities. Rivers are critical for flood conveyance capacity, erosion control, wildlife habitat, recreation potential and economic growth, quality of life and supporting of healthy, vibrant communities.



Desert Tortoise



Burrowing Owls



Melanerpes Uropygialis



Proghorn Deer



Gila River

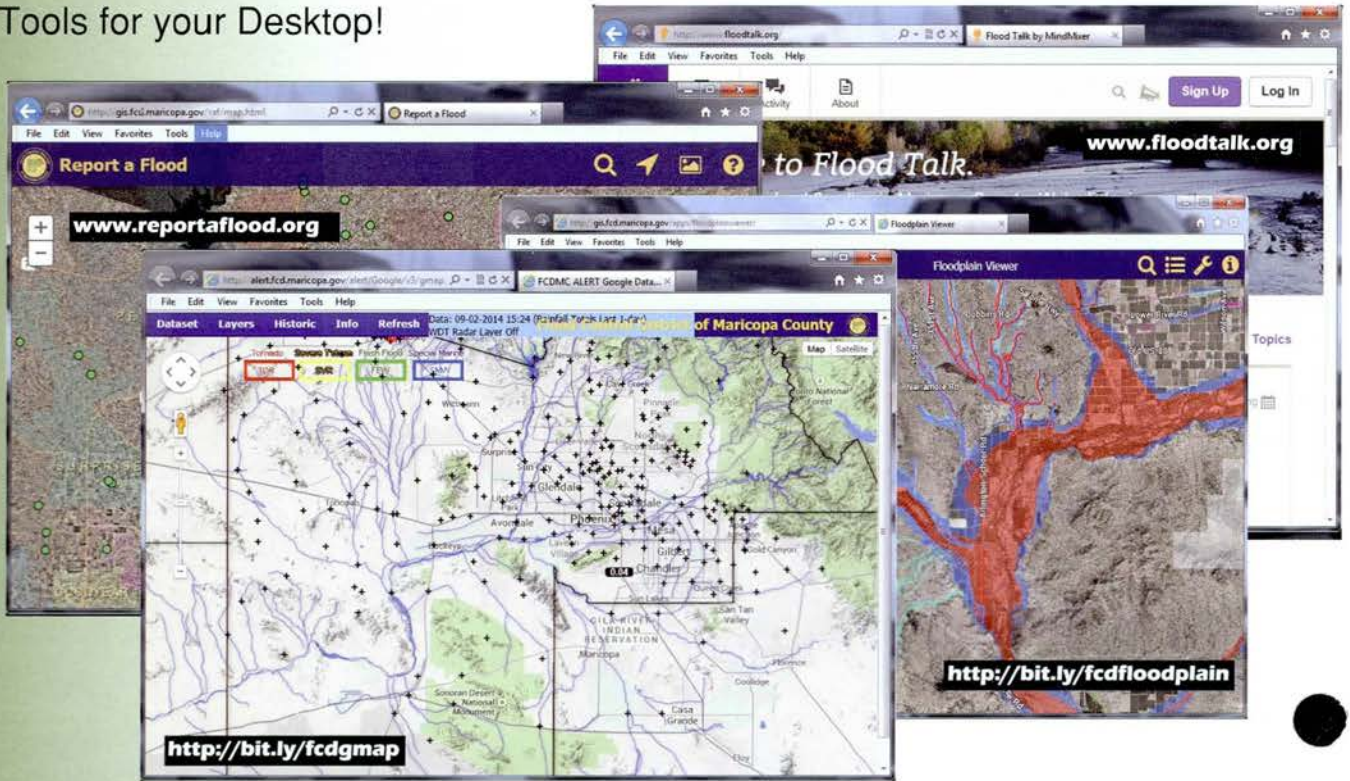
Floodplain vegetation helps to stabilize the river banks, provide habitat for plants, animals and aquatic wildlife, control erosion and sedimentation and improve water quality by filtering pollutants. Healthy riparian corridors often provide the highest concentrations of plant and animal communities in a watershed providing a stable source of biodiversity. The habitat depends on the variation in water conditions for spawning, seed dispersal, elimination of competing vegetation and nursery areas for their young.

By transforming stream and river floodplains from problem areas into value-added assets, the community can improve its quality of life. Parks, bike paths, open spaces, wildlife conservation areas and aesthetic features are important to citizens. Assets like these make our community more appealing to potential employers, investors, residents, property owners and tourists.



# Web Tools & Mobile Apps

Web Tools for your Desktop!



Mobile Apps!



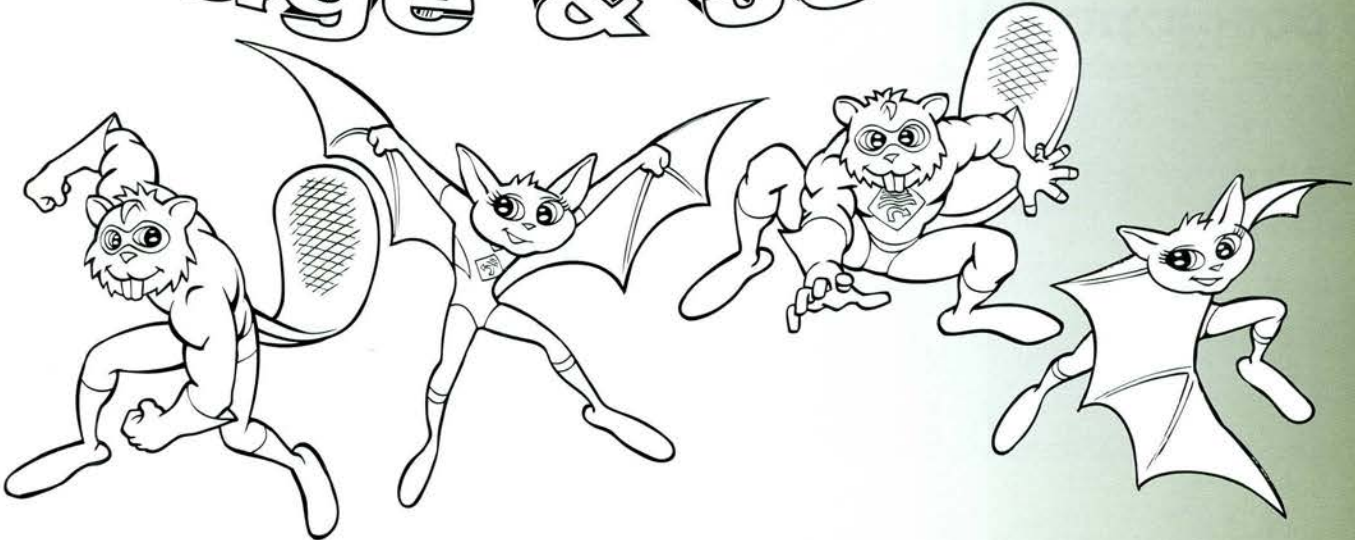


# Kids Zone!

Meet and Color the Flood Control District of Maricopa County  
**FLOOD SAFETY**  
**AMBASSADORS!**



● **With**



Want a copy of the free activity book? Contact the District's Public Information office at (602) 506-1501.

**Teachers!** - We are available for classroom presentations and all participants receive a free Flood Control District Rain Gage.





# Flood Control District of Maricopa County

2801 West Durango Street, Phoenix, Arizona 85009  
Phone: 602-506-1501, Fax: 602-506-4601  
www.fcd.maricopa.gov

## Interactive Locator Map



Click here to view an interactive map and zoom in on any area in the county to see structures, projects and studies.

- Map Instructions

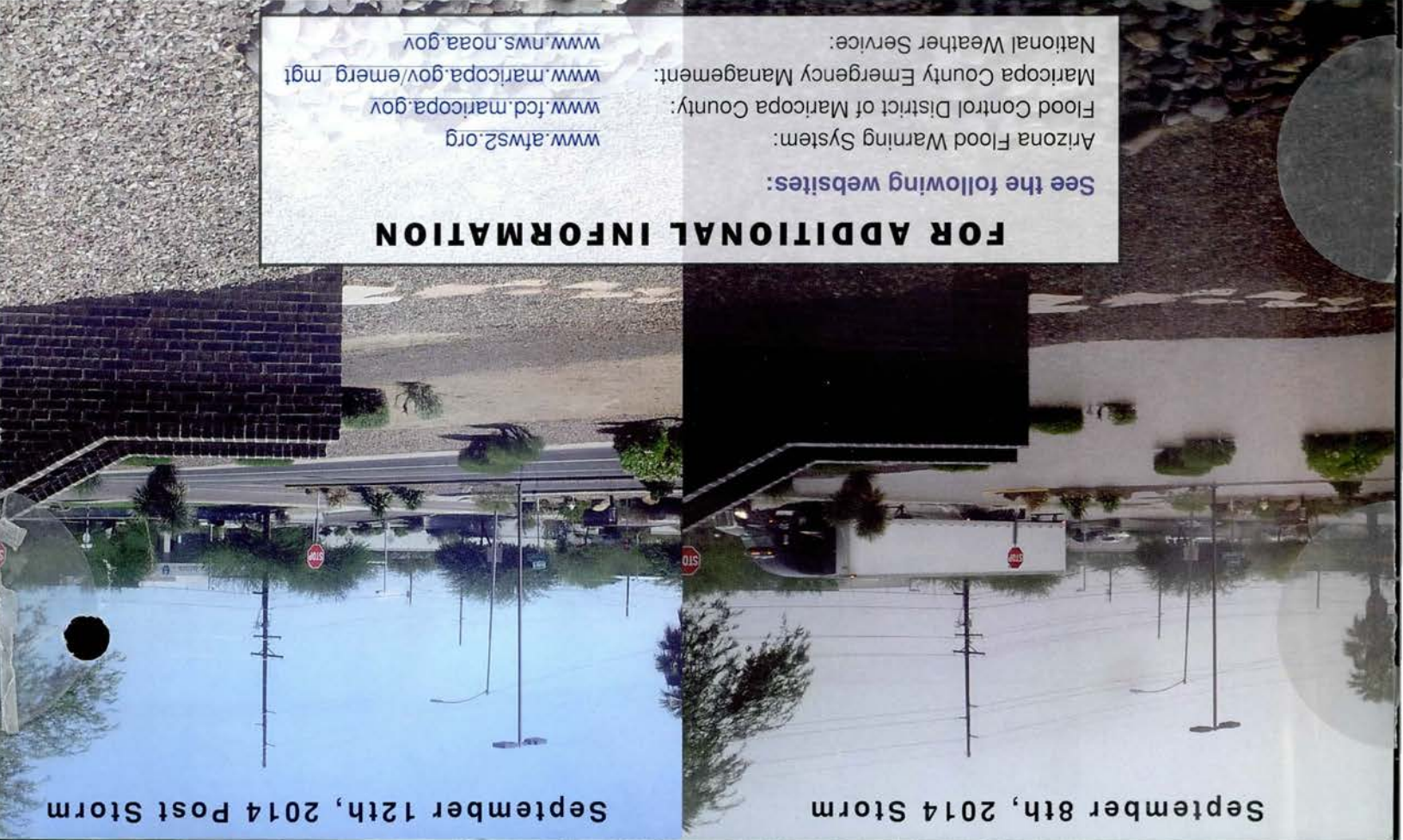
To access information on flood control projects, structures, and studies use the Flood Control District's "Interactive locator Map" by going to the "Projects & Structures" page on District website at:

[www.fcd.maricopa.gov/Projects/PPM/projStruct.aspx](http://www.fcd.maricopa.gov/Projects/PPM/projStruct.aspx)

If this brochure was mailed to you, chances are your property is in a flood hazard zone and you are required to carry flood insurance. This brochure is designed to provide you with general information to get you started in your flood protection measures.



For Flood Watch/Warnings and Flash Flood Watch/Warnings tune into local stations (TV or radio) or the local NOAA Weather Radio in the Phoenix area - KEC 94 at 162.550



## FOR ADDITIONAL INFORMATION

See the following websites:

- Arizona Flood Warning System: [www.atfws2.org](http://www.atfws2.org)
- Flood Control District of Maricopa County: [www.fcd.maricopa.gov](http://www.fcd.maricopa.gov)
- Maricopa County Emergency Management: [www.maricopa.gov/emerg\\_mgt](http://www.maricopa.gov/emerg_mgt)
- National Weather Service: [www.nws.noaa.gov](http://www.nws.noaa.gov)

September 12th, 2014 Post Storm

September 8th, 2014 Storm

# Meeting Minutes

Project: City of Phoenix Floodplain Management Plan (FMP)

Subject: FMP Kick-off Meeting

Date: Wednesday, May 20, 2015

Location: City of Phoenix Town Hall – 5<sup>th</sup> Floor

Attendees: Christine Jensen – City of Phoenix  
Hasan Mushtaq – City of Phoenix  
Silvia Stanford – City of Phoenix

Tim Thomure – HDR  
Mark Fountain – HDR

- City of Phoenix currently at 6
  - Number of points to 5...unknown
  - Myesha did the last book – 200 points
- Monday meeting
  - Stanley / Stantec → FCDMC
  - Entellus → City of Phoenix
  - 11+ attendees
  - News people present with face to face interviews
  - Not enough space
- A lot of pent up demand for services
- Desire for FMP update
  - Plan now – adopted in 1992 – used for CRS / NFIP
    - ADMS / DMPs completed
    - 2012 New CRS Manual – certain plan format
      - Strict rules – follow formatting of 4
    - Follow-up new format – more informative
    - Partner county plans – examples
    - Inherent goal to increase rating from this plan
      - 4-month process no resources / goal
    - 6 to 5 – policy gets 5% discount
      - Then bind to stay there – resources / \$
    - Hasan to report to FEMA every 3 months
      - City of Phoenix to share application and reporting forms
    - Possible section – grant programs





# Meeting Minutes

Project: City of Phoenix Floodplain Management Plan Update

Subject: FCDMC Coordination Meeting

Date: Thursday, August 20, 2015

Location: FCDMC – White Tanks Conference Room

Attendees: Hasan Mushtaq – City of Phoenix  
Kristina Jensen – City of Phoenix  
Mark Fountain – HDR  
Doug Williams – FCDMC  
Afshin Ahouraiyan – FCDMC  
Dan Pfeifer – HDR

- Kim Belt – Project Requests – Capital Improvements Projects (CIP) Manager
  - Projects in Library
    - Laveen Study
    - Ahwatukee – Study – TY Lin
    - STP
    - AC/DC ADMS – Early 90's
- Test Case – Gila Bend
  - Pilot Study – Greenway Wash
- Library Search
  - Some success / some are not
  - Old Projects – could benefit from updates
- Gila River Study
  - Richard Harris – Salt River
    - Cathy Register
    - Scatter Wash
    - Moon Valley
- Hasan
  - Time for a 2D model
    - Echo Canyon
  - Hasan working with Pedro
    - Small washes – need new mapping
  - Upcoming Cudia City – ADMS → Advertise December
    - Mapping done in October (SR51)
- AC/DC – 32<sup>nd</sup> Street
  - Berm – F.P. need LOMR 1986
- SPAP
  - 5 per city
  - Officially no limit
  - City matching issue
  - Patrick – moving up to Dam Safety
  - ??? SPAP challenger funding opp.



- 2 cent increase → \$5.8 million to CIP
  - Book on Dam Projects next 4 years
- FDMP available on page – available for review
  - Planning so silo'd – worst than before
  - Laurie Moller – email for review / comments – Public Open House
  - Review comments due September 2015 (10<sup>th</sup>)
- Deadline for CIP requests has passed. If reason to submit under cycle – OP budget vs. CIP. Some flexibility to work out of the normal cycle.
- FCDMC opp. Budget tight this year. Next year will be better.
- Funding Opportunities – City Departments
  - Parks Dept.
    - Basins – Another Dept.
  - Circle K Park
    - Partner money – Design vs. CIP – need IGA for design land owned by parks
- Parks Dept.
  - 6:1 slope option – possible renderings
  - Hasan to setup meeting
  - Parks / Planning / Public Works / Water Dept.
    - South Phoenix Laveen Drainage Improvements Project
- City Departments
  - Core – FEMA projects other funding sources
    - Big on grants these days
  - County Risk Management – Emergency Funds
    - Anything FCDMC operate and maintain their funds will fix it
  - City of Phoenix lack of documentation
    - Dump trucks of dirt from site
      - Requests denied by FEMA
      - Tonnage, where it went, funds paid
      - City of Phoenix not happy
- \$500K from Upper East Fork and Middle Indian Bend Wash
  - Last 2 years
  - Technical mitigation
- Go to council or not...?
  - Sub-committee review
  - Planning longer run
- Word file
  - Preferred for review
  - Grammar, spellcheck, orphans, widows
- Ongoing projects
  - PM FAQ sheets
- Gila River
  - Politically challenged



- PVSP
  - Park Dept. – Multiple projects benefit
  - Planning package
    - Go to cities → Parks – going to do it anyway
    - City needs drainage redone – hillside development
      - Fee during building hillside – infrastructure
      - In-lieu fees



## City of Phoenix



### *Storm Cleanup Assistance*

Public Works crews have been working to assist the Streets Transportation Department and Parks and Recreation Department crews to remove downed trees and other debris on public roads and sidewalks after the storms. PWD is providing large roll-off bins for city crews to dump uprooted trees and other storm debris, which will be hauled to the city's transfer stations.

Additionally, specialists are responding to residents' calls to assess damage in their neighborhoods and provide collection options.

### *UPDATED INFORMATION AS OF 10 a.m. TUESDAY, SEPT. 29*

Public Works staff has placed roll-off bins in strategic locations for residents to place tree branches and other storm debris. These bins are monitored by our specialists daily and will remain on location until clean-up efforts have been deemed completed. These roll-off bins are strictly for residential use and for storm-related damage. The following locations of roll-off bins are (a strike-through means that roll-off bins have already been taken away from the location):

-

- 235 E Southgate Ave.
- 3654 S. 9th St.
- 3121 W. Pima St.
- 1346 W. Mohave St.
- 2048 W. Tonto St.
- 3302 W. Moreland St.
- 3374 W. Latham St.



## Desert rain can create hazards

**A**lthough rain usually is a welcome sight in the Phoenix desert, it can create some dangerous hazards.

Dry stream beds, gullies, creeks, culverts, shallow streams, washes and even low-lying ground that appear harmless in dry weather can flood quickly, according to the Floodplain Management Section of the Street Transportation Department.

People are urged to exercise great care when walking or driving near potential flood areas.

In addition, residents whose homes are located in areas that are subject to flooding should consider purchasing flood insurance, which is available from the National Flood Insurance Program through local insurance agents. Regular homeowners' insurance policies do not cover flood losses.

To find out whether you are in a special flood hazard area, call 602-262-4960 or visit or write Phoenix City Hall, Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, AZ 85003.

## Learn how to volunteer

**I**f you are interested in learning how your skills and interests might be offered to local community organizations, check out Volunteering 101 workshops to be held at Paradise Valley Community Center, 17402 N. 40th St., on May 13 and 27.

The workshops, which will be from 3 to 4 p.m., will feature presentations from representatives of a number of groups that need volunteers.

They are part of a series of city-sponsored workshops being held at the center.

Others include an Introduction to Faux Finishes, a five-hour workshop of hands-on experience using different tools, paints and techniques that will be 10 a.m. to 3 p.m. May 17, and Lifelong Learning Seminars, which will be noon to 1 p.m. May 7.

Also, Coffee and Conversation, which will allow attendees to share ideas on caregiving, will be 7 to 8 p.m. May 6, and Grandma, Grandpa and Me, which will offer activities that grandparents can share with their grandchildren 10 a.m. to noon May 10.

Visit phoenix.gov/parks and select the classes and programs link. Registration also is available in person at any city community center or library. For more information, call 602-534-2011.

## City library is 'Yours to Explore'

**P**hoenix Public Library has introduced its first-ever official tagline: "Yours to Explore."

Chosen after surveying hundreds of library customers, the tagline reflects the library's many opportunities for exploration.

They include rare book collections; artist-made and fine press books; fun, educational and innovative programs and events for children, teens and adults; free Internet, wireless Internet and database access; and millions of books.

The new tagline appears on the library's Web site and will be used in various marketing programs, essay contests for children, teens and adults.

For more information, call 602-262-4636 or visit phoenixpubliclibrary.org.



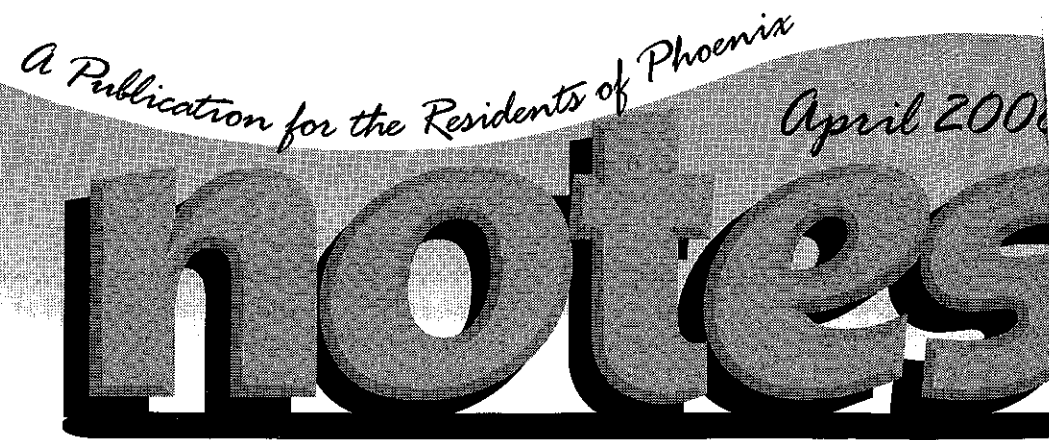
<b>Phoenix City Council</b>	
Mayor Phil Gordon	602-262-7111
Peggy Neely, Vice Mayor & District 2	602-262-7445
Thelda Williams, District 1	602-262-7444
Maria Baier, District 3	602-262-7441
Tom Simplot, District 4	602-262-7447
Claude Mattox, District 5	602-262-7446
Greg Stanton, District 6	602-262-7491
Michael Nowakowski, District 7	602-262-7492
Michael Johnson, District 8	602-262-7493
Garbage/Trash Service	602-262-7251
Landfill/Disposal Information	602-262-7251
Recycling	602-262-7251
Water/Wastewater	602-262-6251

Published by the city of Phoenix  
Public Information Office  
200 W. Washington St.  
Phoenix, AZ 85003  
602-262-7176  
phoenix.gov

For alternate format/reasonable accommodations, call 602-262-7176 or city TTY relay 602-534-5500.



City of Phoenix



## You can help fight dust pollution

**P**hoenix is turning up its fight against dust pollution.

Those tiny particles of dirt kicked up by vehicle traffic, construction work, unpaved lots and other sources can cause significant health problems.

To combat the problem, the city, county and state have adopted a number of regulations aimed at protecting the health of residents and visitors.

The following information can help you make sure your property or business meets those requirements:

- The Phoenix city code requires that parking areas be

paved and prohibits parking on any surface that is not stabilized. Alternatives may be allowed, but only with city approval. Vehicles, including ATVs, are prohibited from being operated on vacant lots and in washes and city parks. More information is available by calling the Neighborhood Preservation Office at 602-262-7844.

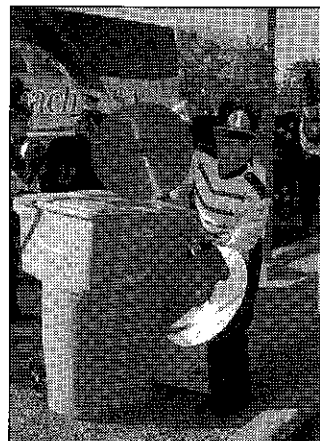
- Dust from construction sites must be controlled by watering, covering haul trucks, preventing tracking dirt onto streets and assigning a trained dust control manager to sites larger than one acre. For more information, call the

Maricopa County Air Quality Department at 602-372-2

- Commercial landscapers who use leaf blowers must complete a training course before Dec. 31. Online training will be available soon from the state Department of Environmental Quality at [azdeq.gov/environ/air/index.html](http://azdeq.gov/environ/air/index.html). Look for Quick Links. Also, people who use leaf blowers must not blow debris into the street. To report violations, call the Street Transportation Department at 602-256-3

- To learn of other ways to reduce air pollution, visit [runningoutofair.com](http://runningoutofair.com).

**New recycling opportunities** – Recycling barrels are coming to the Phoenix Mountain Preserves and to city-involved special events that are held throughout the year. With the help of a state Department of Environmental



Quality grant, the city purchased 75 containers made from recycled milk jugs and is installing them at park trailheads for hikers to use to dispose of their plastic water bottles. Displays featuring the life of a water bottle can be seen at the North Mountain Visitor Center and the South Mountain Environmental Education Center. The grant program also funded the purchase of other recycling containers and a truck to provide recycling collection at events such as the Bowl Parade and the Aloha Festival.





## City of Phoenix



[Return to News](#)

### *City of Phoenix Highlights Stormwater Infrastructure Projects on Storm Anniversary*

**Sep. 8, 2015**

The city of Phoenix marked the one-year anniversary of the massive 100-year storm that swept through the Valley on Sept. 8, 2014 by outlining the repairs made to city streets and other resources and highlighting the completed and planned improvements to the city's stormwater retention and flood control infrastructure.

As part of recovery efforts since last September's storm, the city:

- completed approximately \$7.5 million of work to restore and improve stormwater drainage along roadways in the South Mountain and Laveen areas, which bore the brunt of the unprecedented rainfall.
- coordinated with the state and federal agencies to make recovery assistance available for residents and businessowners.
- finalized plans to add to the \$66 million of stormwater control projects completed in this area in the past 20 years. Plans include work to improve drainage along rights of way, clear and improve stormwater corridors, and the pending groundbreaking for new stormwater management and retention projects.

As part of these efforts, the city completed an agreement with the Flood Control District of Maricopa County to speed up construction of the largest stormwater retention basin in the area, at 27<sup>th</sup> Avenue and South Mountain Avenue. At 36 acres, this basin will be twice as large as any of the three existing retention basins in this area.

"Our working relationship with the Flood Control District is a prime example of how the city continues to coordinate with key partners at all levels of government to find and use every possible resource to improve our stormwater infrastructure," said Councilwoman Kate Gallego, whose district was among the hardest hit by last summer's storms. "In the wake of last year's destructive rainfall, we're moving aggressively to improve our capacity today while we outline a long-term plan for enhanced stormwater infrastructure for the entire area."

**Photos and information about some planned and recently completed repair and restoration work are viewable online at: [phoenix.gov/streetssite/Pages/Streets-Media.aspx](http://phoenix.gov/streetssite/Pages/Streets-Media.aspx).**

The city of Phoenix and Flood Control District will share the \$4.5 million cost of the large 27<sup>th</sup> Avenue drainage basin project with Phoenix paying 30 percent and Maricopa County paying 70 percent. To accelerate the project, Phoenix agreed to front the Flood Control District's \$3.16 million share. The county will then reimburse the city for its share of the cost at the start of the 2016/17 fiscal year. This financing arrangement will allow basin construction to begin this fall, more than a year earlier than previously possible. Completion now is expected in mid- 2016.

As part of the \$7.5 million in work since last year's storm to restore and improve stormwater drainage along roadways in the South Mountain and Laveen areas, Street Transportation Department crews:

- redesigned and reconstructed 21st Place south of Euclid Avenue. The new design includes an indentation in the middle of the street to divert water away from the shoulders of the roadway.
- reconstructed Thomas Road at 91st Avenue to address the massive sink hole that developed shortly after the storm.
- built a new valley gutter in the middle of South Mountain Avenue between 19<sup>th</sup> and 27th avenues to help to reduce street flooding during storm events.
- re-graded portions of the west shoulder of 35th Avenue to channel storm runoff into the Aguila Golf Course.
- re-graded the east side of 15th Street, south of Dobbins, to allow water to flow and prevent further accumulation.
- inspected and cleaned out area culverts where flooding occurred and created a comprehensive database of more than 3,000 culverts citywide.
- removed sediment that accumulated on Tatum Boulevard from Pinnacle Peak to Dynamite Boulevard. To date crews have removed more than 700 tons of material from this area.

Listed below is a summary of pending stormwater management projects in the area:

- The following storm drains will be installed to divert water from roadways in areas that are now prone to flooding:
  - 3rd Avenue Storm Drain: Dobbins Road to South Mountain Avenue – completion scheduled for mid-2016.
  - 16<sup>th</sup> Place and Violet Drive Storm Drain – completion scheduled for mid-2016
- 27<sup>th</sup> Avenue and South Mountain Avenue Detention Basin – completion scheduled for mid-2016
  - The basin will provide holding capacity for excess stormwater to allow adjacent receiving channels time to drain and prevent overflows.
  - Significant first step toward implementation of a larger flood control system.
  - The basin will serve as the outfall for the proposed future storm drain system

Projects to begin in the fall of 2016, or sooner, to reduce street flooding during storm events:

- 35<sup>th</sup> Avenue Storm Drain between Dobbins Road and Baseline Road
- 1<sup>st</sup> Street Storm Drain between Lincoln Street and Buchanan Street

- Calle Redonda Drainage Improvement Project
- This project will include the construction of a storm drain along an alley between two residential properties on Calle Redonda. The storm drain will capture storm water from Calle Redonda and discharge into the Arizona Canal. The proposed project will mitigate flooding on 5253 and 5307 E. Calle Redonda and along Calle Redonda.

Projects proposed for the area, to be submitted for possible funding in fiscal year 2017.

1. Flood warning plan including Reverse 9-1-1
2. 23<sup>rd</sup> Avenue and Olney Avenue Detention Basin
3. 35<sup>th</sup> Avenue Storm Drain from Baseline Road to Dobbins Road
4. 51<sup>st</sup> Avenue Storm Drain to Dobbins Road to Olney Avenue
5. Dobbins Road Storm Drain from 35<sup>th</sup> Avenue to 43<sup>rd</sup> Avenue
6. Dobbins Road Storm Drain from 43<sup>rd</sup> Avenue to 51<sup>st</sup> Avenue
7. Tiling 2.5 miles of SRP Canal

The \$66 million of previously completed stormwater retention and control projects in the South Mountain area include:

- construction of two storm drains (27th Avenue/Southern Avenue and 43rd Avenue/Baseline Road)
- construction of four detention basins (23rd Avenue/Roeser Road, 43rd Avenue/Baseline Road, 43rd Avenue/Southern Avenue, 35th Avenue and Dobbins Road – Aguila Golf Course)
- completion of a six-mile long conveyance channel in the Laveen area between 43rd and 79th avenues.

The torrential rain from last summer's storms also damaged several areas in the city's South Mountain Park/Preserve. Crews worked 12 construction sites along a five-mile stretch of the mountain road to repair storm damage. Repairs addressed damage to the surface and understructure of the roadway as well as erosion along the shoulder. The work also included installation of new culverts and preventative drainage in areas where the 80-plus year old original structures had either failed or become insufficient to handle water runoff.

In addition to the city's flood recovery centers, city staff worked closely with officials from the state and the federal Small Business Administration's Office of Disaster Assistance to provide nearly \$3 million in low-interest recovery loans to residents and business owners.

In the two weeks after the storm, city of Phoenix employees helped residents fill more than 50,000 sand bags; served more than 300 families at the city's Recover Information Centers; assisted more than 700 residents at the city's Virtual Information Center; and helped share emergency preparedness tips and information with thousands of residents and businesses.

The city's Office of Emergency Management and Preparedness also led several disaster response planning exercises and solidified their network of volunteer organizations that can be employed during disasters to extend the city's overall response and assistance capacity.



Media Contact:

**David Urbinato and Monica Hernandez**

Phone Number:

**602-495-5405** ; **602-262-6180** 

[Return to News](#)

## Do You Know Your Clients...

*continued from page 3*

• It's also important to be listed in online real estate agent directories, as Actives are more likely to use those sites as well

• From a marketing perspective, repeated "impressions" in front of this constituency is critical as Actives are still contemplating what service providers to collaborate with

• You can also find Actives on local MLS sites, newspaper Web sites and large real estate search and portal sites.

### Implementing a Marketing Campaign for Prospects

• Future prospects are actively looking for information about the real estate market, tracking real estate activity, and trying to keep up to date

• Although they may not be in the market to purchase in the next six months, their online activity in the real estate space suggests that it is on their mind for the future

• Once this segment becomes more serious about home shopping and buying they will rely on a real estate agent to assist them, so investments that get you in front of their selection process are important

• For this group, awareness is the most important marketing objective, and marketing investments should be geared toward consistently putting your brand front-and-center

• Graphic media campaigns on newspaper and real estate sites that enable local targeting, search engine marketing in your local market, and listing your prole in the emerging category of online real agent directories should be considered in the marketing mix for this segment.

These are the terms and actions of a contemporary brokerage-marketing program, and are the directions that your consumer centric brokerage will be taking over the next few years.

[**Editor's Note:** In late July, the *Los Angeles Times* announced the cancellation of their printed real estate section. Jeremy Conaway is a keynote speaker, conference facilitator, and consultant to the Real Estate industry. He is President of RECON Intelligence Services, [jeremy.conaway@reconis.com](mailto:jeremy.conaway@reconis.com), [www.reconis.com](http://www.reconis.com), 231.938.7326.]

## GPEC Delivers Jobs...

*(continued from page 1)*

Solar manufacturing jobs often pay high-wages and lessen the reliance on housing, construction and population growth to fuel economic expansion.

"GPEC is aggressively committed to addressing the economic downturn, and our role in shaping the region's competitive landscape is more important than ever," said Barry Broome, GPEC president and CEO. "GPEC is dedicated to working closely with our communities and private-sector companies to advance a strong, sustainable economy."

[**Editor's Note:** GPEC is the regional economic development organization for Greater Phoenix. Working with its 18 member communities, Maricopa County and more than 140 private investors, GPEC attracts quality businesses to this dynamic region. Since 1989, GPEC has worked to achieve an economically sound and sustainable region.]

## PHOENIX REALTOR® MARKETING SESSIONS

**PHOENIX: Every Wednesday, 8 a.m.**

Hometown Buffet, 2730 W. Bell Road — West of I-17, North of Bell

- Eddy Parris, Chairman, Phone - (623) 486-5700
- Ray Evans, Program Chair, Phone - (602) 526-0244
- Amy Sanchez, Tour Director, Phone - (602) 316-8348

### COMMERCIAL MARKETING BREAKFAST:

**Third Fridays, 7:30 a.m.**

Phoenix Association of REALTORS® — Suite #108

- Eric Solheim, Chairman, Phone - (602) 299-1662

Get a comprehensive marketing session list at [www.PARonline.com](http://www.PARonline.com)

## UPCOMING MEETINGS & EVENTS

### Wednesday, October 15

#### **HAREP Luncheon**

Phoenix Mountain Preserve Reception Cntr. — 11:30 a.m.

### Thursday, October 16

**WCR Luncheon** — Moon Valley Country Club — 11:30 a.m.

### Friday, October 17

**Commercial Meeting** — PAR Suite #121 — 7:30 a.m.

### Wednesday, October 29

**PAR Installation** — Ritz Carlton

### Wednesday-Thursday, November 5-6

**WCR Staging Class** — Bison Homes

### Thursday-Sunday, November 6-10

**NAR Annual Convention & Expo** — Orlando

### Thursday, November 20

**WCR Luncheon** — "Celebrate the Season" (auction) — Moon Valley Country Club — 11:30 a.m.

### Friday, December 5 (tentative)

**PAR Membership Luncheon** — PAR Suite #108

## Special Flood Hazard Area Information Available from the City of Phoenix

The City of Phoenix can help REALTORS® and their clients identify whether a property is located in a Special Flood Hazard Area (SFHA). This free information should be of special value to those persons needing assistance interpreting Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA). This information is necessary in obtaining federally-required flood insurance for structures located within a SFHA. This service provides flood hazard zone designations, the map panel number community number and the effective date of the FIRM. We also check our records to see if we have an elevation certificate on file for the subject property. In addition, the City staff keeps abreast of new flood studies in progress or changes to floodplain boundaries resulting from flood control projects or Letters of Map Amendment, and Letters of Map Revision issued by FEMA.

The City of Phoenix, Floodplain Management Staff accepts written, fax, telephone and walk-in inquiries. Contact them at (602) 262-4960 between 8:00 a.m. - 5:00 p.m. or by writing or visiting their offices at the City Hall building, Street Transportation, Floodplain Management, 200 W. Washington, 5th Floor, Phoenix, AZ 85003.

# NOTES

## You can help fight dust pollution

**P**hoenix is turning up its fight against dust pollution.

Those tiny particles of dirt kicked up by vehicle traffic, construction work, unpaved lots and other sources can cause significant health problems.

To combat the problem, the city, county and state have adopted a number of regulations aimed at protecting the health of residents and visitors.

The following information can help you make sure your property or business meets those requirements:

- The Phoenix city code requires that parking areas be

paved and prohibits parking on any surface that is not stabilized. Alternatives may be allowed, but only with city approval. Vehicles, including ATVs, are prohibited from being operated on vacant lots and in washes and city parks. More information is available by calling the Neighborhood Preservation Office at 602-262-7844.

- Dust from construction sites must be controlled by watering, covering haul trucks, preventing tracking dirt onto streets and assigning a trained dust control manager to sites larger than one acre. For more information, call the

Maricopa County Air Quality Department at 602-372-2703.

- Commercial landscapers who use leaf blowers must complete a training course before Dec. 31. Online training will be available soon from the state Department of Environmental Quality at [azdeq.gov/environ/air/index.html](http://azdeq.gov/environ/air/index.html). Look for Quick Links. Also, people who use leaf blowers must not blow debris into the street. To report violations, call the Street Transportation Department at 602-256-3190.

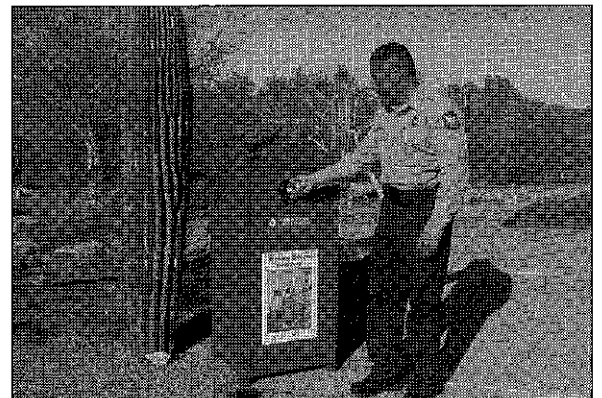
- To learn of other ways to reduce air pollution, visit [runningoutofair.com](http://runningoutofair.com).

**New recycling opportunities** – Recycling barrels are coming to the Phoenix Mountain Preserves and to city-involved special events that are held throughout the year. With the help of a state Department of Environmental



Quality grant, the city purchased 75 containers made from recycled milk jugs and is installing them at park trailheads for hikers to use to

dispose of their plastic water bottles. Displays featuring the life cycle of a water bottle can be seen at the North Mountain Visitor Center and the South Mountain Environmental Education Center. The same grant program also funded the purchase of other recycling containers and a truck to provide recycling collection at events such as the Fiesta Bowl Parade and the Aloha Festival.





## Desert rain can create hazards

**A**lthough rain usually is a welcome sight in the Phoenix desert, it can create some dangerous hazards.

Dry stream beds, gullies, creeks, culverts, shallow streams, washes and even low-lying ground that appear harmless in dry weather can flood quickly, according to the Floodplain Management Section of the Street Transportation Department.

People are urged to exercise great care when walking or driving near potential flood areas.

In addition, residents whose homes are located in areas that are subject to flooding should consider purchasing flood insurance, which is available from the National Flood Insurance Program through local insurance agents. Regular homeowners' insurance policies do not cover flood losses.

To find out whether you are in a special flood hazard area, call 602-262-4960 or visit or write Phoenix City Hall, Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, AZ 85003.

## Learn how to volunteer

**I**f you are interested in learning how your skills and interests might be offered to local community organizations, check out Volunteering 101 workshops to be held at Paradise Valley Community Center, 17402 N. 40th St., on May 13 and 27.

The workshops, which will be from 3 to 4 p.m., will feature presentations from representatives of a number of groups that need volunteers.

They are part of a series of city-sponsored workshops being held at the center.

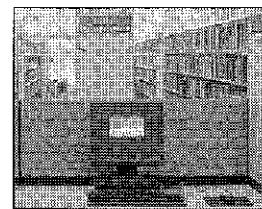
Others include an Introduction to Faux Finishes, a five-hour workshop of hands-on experience using different tools, paints and techniques that will be 10 a.m. to 3 p.m. May 17, and Lifelong Learning Seminars, which will be noon to 1 p.m. May 7.

Also, Coffee and Conversation, which will allow attendees to share ideas on caregiving, will be 7 to 8 p.m. May 6, and Grandma, Grandpa and Me, which will offer activities that grandparents can share with their grandchildren 10 a.m. to noon May 10.

Visit [phoenix.gov/parks](http://phoenix.gov/parks) and select the classes and programs link. Registration also is available in person at any city community center or library. For more information, call 602-534-2011.

## City library is 'Yours to Explore'

**P**hoenix Public Library has introduced its first-ever official tagline: "Yours to Explore."



Chosen after surveying hundreds of library customers, the tagline reflects the library's many opportunities for exploration.

They include rare book collections; artist-made and fine press books; fun, educational and innovative programs and events for children, teens and adults; free Internet, wireless Internet and database access; and millions of books.

The new tagline appears on the library's Web site and will be used in various marketing programs, essay contests for children, teens and adults.

For more information, call 602-262-4636 or visit [phoenixpubliclibrary.org](http://phoenixpubliclibrary.org).

## notes

### Phoenix City Council

Mayor Phil Gordon	602-262-7111
Peggy Neely, Vice Mayor & District 2	602-262-7445
Thelda Williams, District 1	602-262-7444
Maria Baier, District 3	602-262-7441
Tom Simplot, District 4	602-262-7447
Claude Mattox, District 5	602-262-7446
Greg Stanton, District 6	602-262-7491
Michael Nowakowski, District 7	602-262-7492
Michael Johnson, District 8	602-262-7493

Garbage/Trash Service	602-262-7251
Landfill/Disposal Information	602-262-7251
Recycling	602-262-7251
Water/Wastewater	602-262-6251

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[phoenix.gov](http://phoenix.gov)

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**City of Phoenix**

### RENTAL MARKET

Rental inventory continues to be high as well, with the market being unusually top-heavy with larger, higher-end properties.



At press time nearly three dozen neighborhood properties are for lease at between \$2000-\$5000 per month, ranging in square feet from 2,200 to 3,800. Average time on the market for all area rental homes is two months.

Some potential buyers are currently waiting out the real estate market "normalization" buy renting, wary of buying before prices have completely stabilized.

The Corcoran Group are known as the rental experts in the area. Call Mike Corcoran at 480-570-0404 for more information.



### A PENNY SAVED

Whether dealing with the heat of summer or the cold of winter, everyone likes to save money on their energy bills. One easy way is with a programmable thermostat, especially if your home is vacant most of the day.


Set it to turn on a half hour before you arrive home. The comfort is there as well as the savings. Also, check with A.P.S. for a free energy analysis to ensure that you are on the rate plan that best suits your usage habits. They can be reached at 602-371-7171.

# ADVERTISE YOUR BUSINESS HERE!



# WWW.CORCORANGROUPAZ.COM

*Chris Tina Jensen*  
262 6871 / 262-7322  
FAX



## FLOOD INSURANCE FACTS

- ⊙ Flood insurance is not covered by homeowners' policies.
- ⊙ You can buy flood insurance regardless of what your food risk is.
- ⊙ There is a low-cost policy for homes in low-to-moderate flood risk zones.
- ⊙ Content coverage is separate, so renters can also insure their belongings.
- ⊙ There is a 30-day waiting period before the coverage goes into effect.
- ⊙ Federal disaster assistance is only available if the president declares a disaster.

For more information on the National Flood Insurance Program, call 602-262-4960.

### THOUGHT TO PONDER

"You can make more friends in two months by getting interested in other people than you can in two years by trying to get other people interested in you."

- Dale Carnegie 1888-1955

## GRAND OPENING



Family Owned Since 1980

### FAMOUS RAY'S PIZZA

"If You Want a Slice of New York - go to Ray's"



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Phoenix, AZ

## 480-488-7823

### HOURS

Mon-Thurs:	10:30am - 10:50pm
Fri-Sat:	10:50am - 11:50pm
Sunday:	12:00 - 10:50pm



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## Save space for disabled

Don't let the busy holiday traffic tempt you into parking in a spot reserved for people with disabilities.

The Save Our Space campaign warns motorists that if they park in a spot reserved for the disabled – even if just for a minute – they could be taking the spot away from someone who really needs it.

And, if they get caught, it will cost \$140.

Police and volunteers patrol parking lots and issue tickets to violators. To report violations, obtain information or become a volunteer, call 602-534-SPACE (7722). Additional information also is available at [phoenix.gov/mcdi/dispark.html](http://phoenix.gov/mcdi/dispark.html)

---

## Happy Holidays Bus hits streets

The Happy Holidays Bus goes into service in Phoenix Nov. 22.

Following the theme “Playful Penguins,” the city bus is decorated inside and out with winter scenes, festive colors and penguin characters.

In addition, sparkling greeting cards signed by the mayor, City Council members and transit staff adorn the bus interior.

The bus will remain on the streets until Jan. 7.

For a detailed route schedule, visit [phoenix.gov/publictransit/holiday.html](http://phoenix.gov/publictransit/holiday.html) or call 602-253-5000.

---

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Motorized skateboards and other motorized play vehicles may make fun gifts for young people, but they are illegal on Phoenix streets and sidewalks.

With the holiday season coming up, parents and youngsters should note that the city has an ordinance banning the vehicles from all public areas. Merchants must post a notice as well as give the consumer written notice explaining the ban in Phoenix or face a stiff fine.

Since the ban was put into place nearly two years ago, police report that the number of calls from concerned residents about the skateboards has dropped by more than 90 percent.

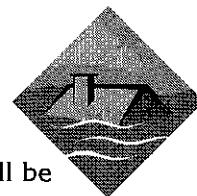
For more information about the regulations, call 602-495-0964.

---

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The winter rains are headed this way.

Here's some of the flood terminology you'll be hearing from radio and television announcers when they report storm conditions:



- Flood Watch - A flood is possible.
- Flood Warning - A flood is occurring or will occur soon.
- Flash Flood - A sudden, violent flood.
- 100-Year Flood - There is a 1 percent possibility that an area will be flooded in any one year. It is possible to have a 100-year flood more than once in the same year.

To find out if your property is in a Special Flood Hazard Area, call 602-262-4960 or contact Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, AZ, 85003.

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## notes

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**City of Phoenix**

♻️ Printed on recycled paper



# NOTES

## Advocacy office helps with permit process

**P**eople developing small businesses in the city have a new advocate on their side – the Office of Customer Advocacy.

The office recently was created by the Development Services Department to help customers new to the permit process with their business ventures, be it remodeling vacant space in a strip mall, renovating a historic structure or developing an existing commercial building.

“Our mission is to produce quality development through quality service,” notes Lionel



*Erin Andres (left) and Denée McKinley, who helped launch the Office of Customer Advocacy, review a customer's development plans.*

D. Lyons, Development Services director. “This new office was created to strengthen our commitment to this mission.”

Its team of an administrator and three project managers provides research assistance, reviews

processes and procedures, establishes timelines and connects customers with the appropriate technical expert for specific code and ordinance issues.

In addition, it provides an extra level of customer service for businesses of all sizes.

Customers interested in using the new service should begin the process at the Development Center located on the second floor of City Hall, 200 W. Washington St. For more information, call 602-262-7811 or 602-534-5500\city TTY relay.

## Flood insurance facts

**I**f you're having difficulty deciding whether you should have flood insurance, here are some facts that might help you make your decision:

- Flood damage is not covered by homeowner's policies.
- You can buy flood insurance no matter what your flood risk is.
- There is a low-cost policy for homes in low-to-moderate flood risk areas.
- Flood insurance is easy to get from your insurance company and agent.
- Content coverage is separate, so renters also can insure their belongings.
- Up to a total of \$1 million of flood insurance coverage is available for non-residential buildings and contents.
- There is a 30-day waiting period before the coverage goes into effect.
- Federal disaster assistance is only available if the president declares a disaster.

For more information about the National Flood Insurance Program, contact the Street Transportation Department, Floodplain Management Section, fifth floor, Phoenix City Hall, 200 W. Washington St., Phoenix, AZ 85003 or call 602-262-4960.

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## Household waste collections set

Phoenix residents can dispose of household hazardous waste and other items at BOPA collections 8 a.m. to 2 p.m. March 10 – 12 at Ahwatukee Recreation Center, 5001 E. Cheyenne Drive, and April 14 – 16 at North Phoenix Baptist Church, Bethany Home Road and Central Avenue.

In addition to batteries, oil, paint and antifreeze, the event will accept five road tires per resident, computers and household appliances, including refrigerators, stoves, evaporative coolers, air conditioners, washers, dryers and water heaters. Commercial loads will not be accepted.

The city also will pick up household appliances and computers at your home for a fee. Call for a collection appointment. For information, call 602-262-7251, send e-mail to [pwserve@phoenix.gov](mailto:pwserve@phoenix.gov) or visit [phoenix.gov/publicworks](http://phoenix.gov/publicworks).

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## Plan makes Phoenix roads safer

The city is working to make your drives around town safer and smoother.

The Street Transportation Department's new Right-of-Way Management Program helps make sure road construction barriers are only up when and where they are needed and placed as safely as possible on roadways and sidewalks.

The plan requires traffic control companies to obtain training; gives the city authority to remove and impound traffic control devices; imposes fines from \$250 up to \$1,500 for violations; and establishes fees for taking parking meters out of service.

Residents concerned about closures can call 602-262-6000 for information and companies that want to learn about the program and mandatory training can call 602-534-5369. Information also is available by visiting [phoenix.gov/STREETS](http://phoenix.gov/STREETS) and clicking on "Right-of-Way Management Program for Phoenix, Arizona."

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## Flood insurance benefits homeowners

Wondering if you should have flood insurance on your home?

Here are some reasons why a flood insurance policy might benefit you:

- Flood insurance compensates you for all covered flood losses.
- You can depend on being reimbursed for flood damages even if the area is not declared a federal disaster area.
- You don't have to repay a loan, as you might have to with many federal disaster relief packages. Your covered losses are paid in full.
- Your insurance agent can help you handle your claim quickly, so that you won't have to put your life on hold if your property is damaged by a flood.

To find out if your property is in a Special Flood Hazard Area, contact the Street Transportation Department, Flood Plain Management, fifth floor, 200 W. Washington St., Phoenix, Arizona 85003. For more information, call 602-262-4960.

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## Women's Day luncheon Feb. 28

Nationally known author and commentator Dr. Julianne Malveaux will be the International Women's Day luncheon keynote speaker at noon Feb. 28, at the Phoenix Civic Plaza Ballroom, Third and Jefferson streets.

"Celebrating Women of Vision and Courage" is the theme of the luncheon hosted by the city, Phoenix Women's Commission and the International Women's Day Steering Committee.

Malveaux's observations on issues such as race, culture, gender and their economic impacts are helping shape public view.

Tickets, \$50 for general admission and \$35 for students and senior citizens, are available at the Phoenix Civic Plaza box office at 602-262-7272. Corporate tables also are available.

Proceeds provide educational scholarships to women in need. For more information, call the 602-261-8242 or visit [phoenix.gov/PHXWOMEN/luncheon.html](http://phoenix.gov/PHXWOMEN/luncheon.html).



*Dr. Julianne Malveaux*

# notes

A Publication for the Residents of Phoenix

November 2006

## Don't panic when you call '911'

"911." Just about everybody has the emergency telephone down to memory. Some, though, aren't sure what to do when they have to call it.

Phoenix police recommend that you stay as calm as possible, speak clearly, answer all questions and stay on the line until told to hang up.

Following those simple instructions could make the difference in how long it takes for police, fire or medical responders to reach you.

When the operator answers, be prepared to provide the nature and location of the emergency and the telephone number you are calling from.

If you are using a landline, the operator already will know where you are calling from. However, you still will be asked for the location of the emergency so that the operator can verify the correct location.

The increasing use of cell phones has created some problems for operators

because some wireless phones do not provide the location of a call. If you are using a cell phone, be sure to know your exact location – street address, highway

name, intersection, mile marker or even landmarks.

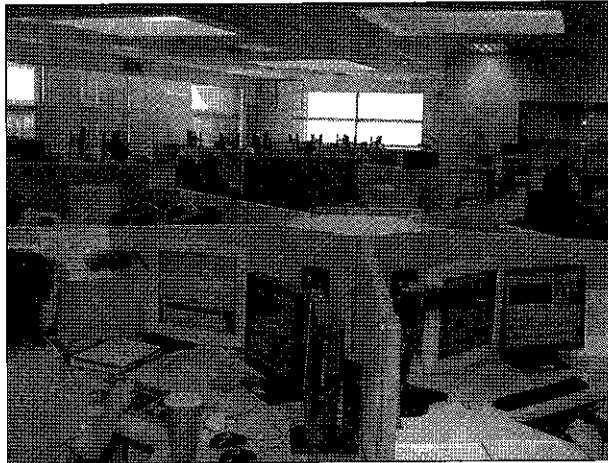
Don't panic if the operator appears to be wasting time by questioning you. Emergency responders are being dispatched – usually within the first 30 seconds – while the operator is speaking with you.

If operators are busy when you call you will receive a

message so be sure to remain on the line. The message repeats in Spanish and TDD tones, which sound similar to a fax machine.

To help non-English speakers, about 15 percent of the Communications Bureau's 200 operators speak foreign languages. If someone is not immediately available, the bureau provides a translation service and the operator will attempt to get the caller to stay on the line until the service can identify the language and reach a translator.

And remember, "911" is only for emergencies. If you have a non-emergency, such as minor traffic problems, theft reports or loud parties, call Crime Stop at 602-262-6151. Both numbers are answered 24 hours a day, seven days a week.



*911 operators are on duty 24 hours a day, seven days a week.*

### INSIDE

- Holiday fun
- Adopt a family
- Section 8 landlords
- Shop Phoenix



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## Save space for disabled

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And, if they get caught, it will cost \$140.

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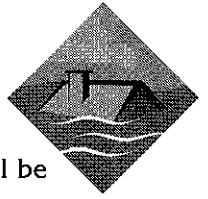
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Claude Mattox, District 5	602-262-7446
Greg Stanton, District 6	602-262-7491
Michael Johnson, District 8	602-262-7493

Garbage/Trash Service	602-262-7251
Landfill/Disposal Information	602-262-7251
Recycling	602-262-7251
Water/Wastewater	602-262-6251

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**City of Phoenix**

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# notes

A Publication for the Citizens of Phoenix

February 2003

## You can help prevent car theft

The police are putting the "heat" on car thieves and you can help.

Phoenix Police urge you to take part in the HEAT or Help Eliminate Auto Theft program by making your vehicle difficult to steal.

They recommend that you:

- Lock your doors and roll up your windows when you park.
- Park in a well-lit and well-traveled area.
- Take your keys with you.
- Hide valuables in the trunk if you must leave them in your car.
- Store your title in a secure place, not inside the car.
- Memorize your license plate number and have it immediately accessible.

Police suggest, too, that you have your vehicle identification number etched on the windows of your car and consider using a steering wheel lock, an alarm, a vehicle tracking device or a kill switch.

You also can enroll your car in the Arizona Automobile Theft Authority's Watch Your Car program. The program provides stickers for your car that allow police to stop and investigate the vehicle if it is being driven between the hours of 1 a.m. and 5 a.m., the hours that most cars are stolen.

To enroll or for more information, call 1-888-668-4433 or visit [www.aata.state.az.us](http://www.aata.state.az.us) on the Internet.



### *Did You Know?*

- Arizona leads the nation in auto thefts per capita.
- An auto theft occurs every 23 seconds in the United States.
- Nearly half of all stolen vehicles are left unlocked.
- About 20 percent of stolen vehicles have the keys left inside the vehicle.
- Most stolen vehicles do not have an anti-theft device in use.
- Stolen vehicles are routinely used in the commission of other crimes.

## Teens can share writings at workshop

Young, aspiring poets and writers are invited to share their works with other teens during a coffeehouse March 14 at Desert Sage Branch Library, 7602 W. Encanto Blvd.

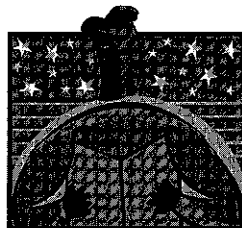
The free event, from 6 to 8:30 p.m., features music, food and a poetry slam hosted by Brent Heffron, a university student who has been competing in performance poetry for several years.

Teens also may receive writing tips at the event from Marv Kupfer, the library's professional

writer-in-residence and former Newsweek correspondent who will conduct free writing workshops for teens in March, April and May at the city's 13 library branches.

The coffeehouse and workshops are part of the library system's Write On! project, sponsored by The Arizona Republic's Season for Sharing. For more information, call Desert Sage Library at

602-534-5276 or visit [phoenixteencentral.org](http://phoenixteencentral.org) on the Internet.



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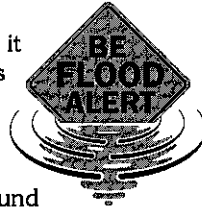
## Watch for flooding

Although rain often is a welcomed sight in the Valley, it sometimes causes dangerous flooding.

Even small streams, gullies, creeks, culverts, dry stream beds or low-lying ground that appear harmless in dry weather can flood, warn officials of the Street Transportation Department, Floodplain Management Section.

In addition to urging care around potential flood sites, they also suggest that homeowners protect their property by obtaining flood insurance. The insurance is available from the National Flood Insurance Program through local insurance agents.

To find out if you are in a Special Flood Hazard Area call 602-262-4960, or write or visit the Floodplain Management Section at Phoenix City Hall, fifth floor, 200 W. Washington St., Phoenix AZ 85003.



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## Folk festival expects 200 performers

Encanto Park will celebrate America's musical roots during the Annual Folk Traditions Festival, March 22 - 23 at the park's clubhouse, 2605 N. 15th Ave.

The festival, 10 a.m.- 6 p.m. both days, will showcase bluegrass, folk, blues, Celtic and country music, in addition to other genres.

About 200 performers from throughout the Southwest are expected for the free event, which also features storytellers, music workshops and jam sessions.

The festival is sponsored by the Parks and Recreation Department, in conjunction with the Arizona Pickers and Grinders Society, Arizona Songwriters Association, Fiddler's Dream Coffeehouse and the Southwest Acoustic Music Association.

For more information, call 602-261-8993.

---

## Deer Valley Park site of next BOPA

Phoenix residents can dispose of household hazardous waste and other items at BOPA collections 8 a.m. to 2 p.m. March 13-15 at Deer Valley Park, 19601 N. 19th Ave., and April 10-12 at Palmcroft Baptist Church, 15825 N. 35th Ave.

In addition to batteries, oil, paint and antifreeze, the event will accept five road tires per resident, computers and household appliances, including refrigerators, stoves, evaporative coolers, air conditioners, washers, dryers and water heaters.

Commercial loads will not be accepted. The city also will pick up household appliances and computers at your home for a \$10 fee. Call for a collection appointment. For information, call 602-262-7251, send e-mail to [pwsolve@phoenix.gov](mailto:pwsolve@phoenix.gov) or visit [phoenix.gov/GARBAGE](http://phoenix.gov/GARBAGE) on the Internet.



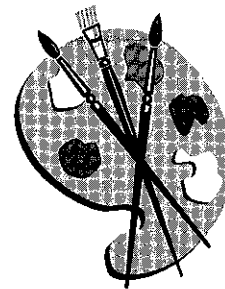
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## Municipal Court gets new name

Phoenix Municipal Court has a new name — Phoenix Municipal Court Valdemar A. Cordova Building.

The court was renamed in honor of Cordova, who served on the City Council from 1955 to 1959.

He also was a Maricopa County Superior Court judge and a U.S. District Court judge. His appointment to the federal bench by President Jimmy Carter in 1979 made him the first Mexican-American in Arizona to hold such a post and one of the first in the country.



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## Youth invited to enter International Artist Competition

If you are 13 to 18 years old, have an artistic flair and live in Phoenix or attend a Phoenix school, the Phoenix Sister Cities Commission International Young Artist Competition may be your gateway to a career in the arts.

This year's theme, "Reach for a Hand . . . Touch a Heart," must be interpreted in artwork of watercolors, oils, pastels, pen and ink, charcoal, mixed media or photography.

The deadline for submissions is 5 p.m. Friday, March 7.

Four local winners will receive cash prizes. All submissions will be displayed in Phoenix in March and April, and the overall winning entry will be submitted to the Sister Cities International competition in July.

For more information or an entry form, call 602-534-3751.



# notes

A Publication for the Citizens of Phoenix

August 2001

## ***Budget improves services across city***

More police officers and firefighters, new parks facilities, increased hours at senior centers and better after-school programs are among city improvements approved by the City Council for the 2001-02 fiscal year that began July 1.

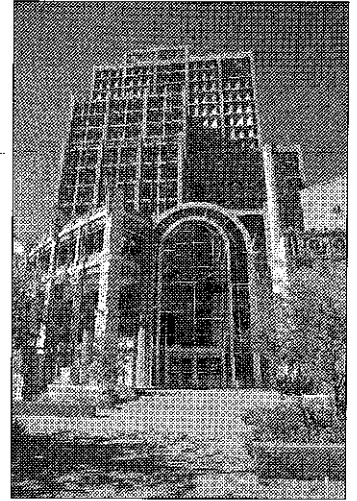
Others – many of which were recommended by citizens at a series of public meetings held in April – include the addition of new public transit routes, increased funding for new staff at Sky Harbor International Airport to help the Aviation Department comply with safety requirements and the addition of a full-time caseworker at the family advocacy center to help people in crisis situations.

Improvements for police services include hiring 28 officers to help maintain patrol times. Polygraph examiners will be added to reduce recruitment processing time and eight crime lab staff will help keep up with service requests for DNA evidence and reduce backlogs. Also, police dispatchers will be added to operate the new public safety radio system.

The budget also adds 24 firefighter positions in advance of the opening of a new fire station at 40th St. and Chandler Blvd. Hiring the firefighters before the station opens will provide time for training. Three new arson investigators also have been added.

After-school recreation sites will be increased by 33, bringing the total number of sites to 166. Also, six senior centers will be converted to full-time. Two park rangers will be added to provide security at flatland and neighborhood parks citywide, and library materials purchases will be increased.

Finally, increases for arts grants and sister cities programs are planned.



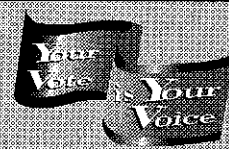
## **City surplus auction set for Sept. 15**

A variety of surplus materials ranging from furniture and appliances to building materials and cars will be auctioned at a city surplus auction on Saturday, Sept. 15.

Gates to the city Auction Yard, 2820 S. 22nd Ave., south of Lower Buckeye Road, will open at 6:30 a.m. and the sale will begin at 8 a.m. The cashier will remain open until 1:30 p.m. and the gates will close at 3 p.m.

Inspection of the items that will be auctioned is allowed at the yard from 9 a.m. to 3 p.m. Thursday, Sept. 13 and Friday, Sept. 14.

For more information, call 602-534-0828.



**Voters in City Council Districts 2, 4, 6 and 8:**  
**Be sure to cast your ballot in the Sept. 11 City Election.**  
**For information, call 602-261-VOTE (8683) or visit phoenix.gov on the Internet.**

## Flood insurance facts

If you're trying to decide whether you should have flood insurance, here are some facts that might help you make your decision.:



■ Flood damage is not covered by homeowner's policies.

■ You can buy flood insurance no matter what your flood risk is.

■ There is a low-cost policy for homes in low-to-moderate flood risk areas.

■ Flood insurance is easy to get from your insurance company or agent.

■ Content coverage is separate, so renters can insure their belongings too.

■ Up to a total of \$1 million of flood insurance coverage is available for non-residential buildings and contents.

■ There is a 30-day waiting period before the coverage goes into effect.

■ Federal disaster assistance is only available if the president declares a disaster.

For more information about the National Flood Insurance Program, contact the Street Transportation Department, Floodplain Management Section, fifth floor, Phoenix City Hall, 200 W. Washington St., Phoenix, AZ 85003 or call 602-262-4960.

## City offers landscaping and irrigation workshops

You can have colorful, lush landscaping, and still enjoy the beauty of living in the desert.

Learn how by attending one of the free landscaping and irrigation workshops offered by the Water Conservation Office.

The workshops will be:

Sept. 20, Wildflowers for Your Garden and Neighborhood, Burton Barr Central Library; Sept. 25, Seasonal Color Combinations for Your Landscape, South Mountain Youth Center; Sept. 29,

Xeriscape 101-The Basics, Ironwood Library; Oct. 11, Cacti/Succulents for Southwest Gardens, Desert Sage Library; Oct. 16, Landscape Watering and Timer Programming, Cholla Library; and Oct. 16, Care of Desert Plants, Burton Barr Central Library.

Also: Oct. 20, Xeriscape 101-The Basics, Desert Botanical Garden; Oct. 23, Seasonal Color Combinations for Your Landscape, Ironwood Library; Oct. 25 Wildflowers for Your Garden and Neighborhood, Paradise Valley Community Center; Oct. 30, Cacti/Succulents for Southwest Gardens, Juniper Library; Nov. 1, Care of Desert Plants, Paradise Valley Community Center; and Nov. 1, Maintenance and Repair of Yard Watering Systems, Palo Verde Library.

All programs will be 6:30 p.m. to 8:30 p.m. except the two Xeriscape 101 workshops. The Sept. 29 session will be 9:30 a.m. to 12:30 p.m. and the Oct. 20 meeting will be 9 a.m. to noon.

Reservations are required. To sign up, call 602-261-8367 or visit [office.water.conservation@phoenix.gov](mailto:office.water.conservation@phoenix.gov) on the Internet. Reservations will be confirmed by phone, e-mail, or regular mail.



## More BOPA collections planned

Phoenix residents can dispose of household hazardous wastes and other items at the next BOPA collection event, 8 a.m. to 2 p.m. Sept. 20 - 22 at Ahwatukee Recreational Center, 5001 E. Cheyenne Drive, and Oct. 11 - 13 at Hermoso Park, 2030 E. Southern Ave.

In addition to batteries, oil, paint and antifreeze, the event will accept five road tires per resident, computers and household appliances, including refrigerators, stoves, evaporative coolers, air conditioners, washers, dryers and water heaters.

The city also will pick up household appliances at your home for a \$10 fee. Call for a collection appointment.

Commercial loads will not be accepted.

For more information, call 602-262-7251, send e-mail to [pwwserve@phoenix.gov](mailto:pwwserve@phoenix.gov) or visit [phoenix.gov/GARBAGE](http://phoenix.gov/GARBAGE) on the Internet. To find other locations near you, call Earth's 911 at 1-800-CLEANUP (1-800-253-2687) or visit its Web site at [1800CLEANUP.org](http://1800CLEANUP.org) on the Internet.

### **Landfill summer hours**

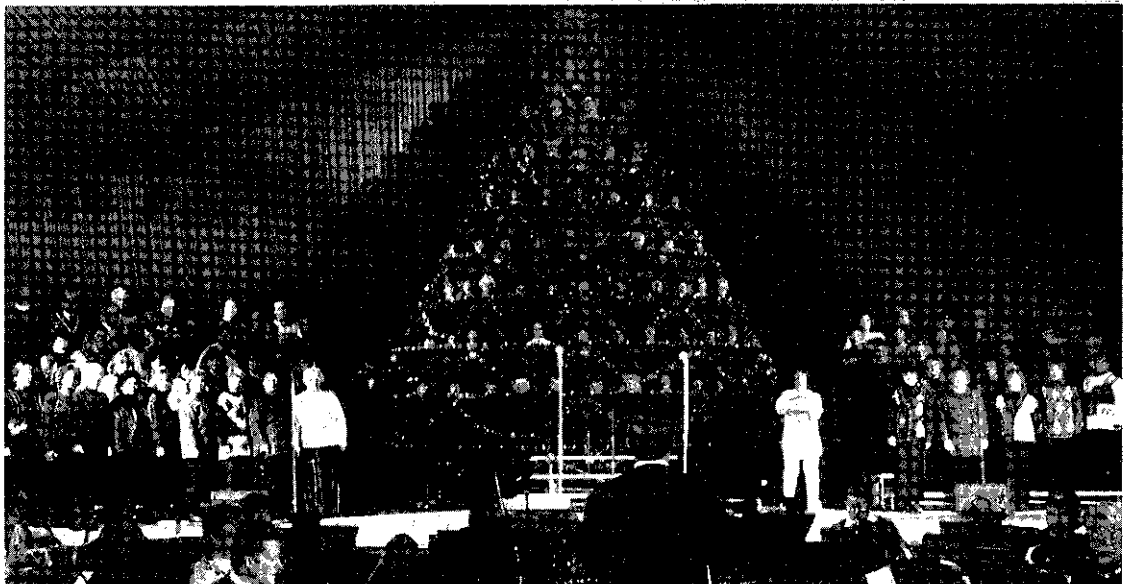
The weekend hours for the city's landfill and transfer station are 6 a.m. to 3 p.m. through Sept. 30. Weekday hours remain unchanged: 5:30 a.m. - 5 p.m. The transfer station is closed Sundays.

# notes

A Publication for the Citizens of Phoenix

November 1997

## Electric Light Parade leads holiday events



▲ A singing holiday tree will entertain at Electro Magic.

If you're looking for some special holiday treats this season, the Parks, Recreation and Library Department probably can fill your order.

The department's office of special events has put together another spectacular lineup of APS Fiesta of Light activities to help brighten the holidays for people of all ages. Among the highlights are the Electric Light Parade, Electro Magic, holiday concert, lunchtime music and holiday tree display.

As it has for the past 10 years, the Electric Light Parade again will be the festival's star attraction. It's set for 7 p.m. Saturday, Dec. 6.

About 100 floats, marching bands, group walkers and costumed individuals decked out in more than 1 million lights will brighten the parade route along Central Avenue from Missouri Avenue to Thomas Road. Some of the floats will be covered with as many as 50,000 lights.

The parade, which last year had an estimated audience of 600,000 – 300,000 curbside and 300,000 in front of their televisions – again will be broadcast live by KTVK 3TV.

Electro Magic, which drew about 75,000 people last year, will be 4 - 10 p.m. Saturday, Nov. 29, in front of Phoenix Symphony Hall, 225 E. Adams St.

Featured will be the mayor's lighting of the area, including Herberger Theater, Hyatt Regency Phoenix, Civic Plaza and the Symphony Hall terrace. The event will include holiday crafts, several stages of entertainment, food booths, a snowfield, a giant pinata, a laser show and Santa's Village.

Downtown visitors and workers will be able to enjoy holiday music at Patriots Square Park, Central Avenue and Washington Street, during weekday lunch hours from Nov. 24 to Dec. 19.

continued on page 2



## Watch where you drain your pool

This is the time of year when many pool owners empty their swimming pools.

Remember, there is a right and wrong way to get rid of the pool water, and the wrong way could result in a fine.

You should first try to use as much of the water as possible for your lawn and plants. The remainder then should be pumped into the sanitary sewer clean-out, which usually is located outside near the kitchen or bathroom.

If you are unable to find the sewer clean-out, water may be pumped into a city curbside gutter, but only if it flows directly into a storm drain without crossing an intersection or flowing onto the blacktop. Flooding streets with water is against the law and violators could be fined.

For free instructions on how to drain a swimming pool, call the city's Water Conservation Office at 256-3430.

## Desert rain can create hazards



Rain usually is a welcome sight in the Phoenix desert. But it can also create some dangerous hazards.

Dry stream beds, gullies, creeks, culverts, shallow streams, washes and even low-lying ground that appear harmless in dry weather can flood quickly, according to the Floodplain Management Section of the Street Transportation Department. People should exercise great care when walking or driving near potential flood areas.

In addition, people whose homes are located in areas that are subject of flooding should consider purchasing flood insurance, which is available from the National Flood Insurance Program through local insurance agents. Regular homeowners insurance policies do not cover flood losses.

To find out whether you are in a special flood hazard area call the Floodplain Management Section at 262-4960, or write or visit the office at 200 W. Washington St., Fifth Floor, Phoenix, AZ 85003.

## Remember - Shop Phoenix



Whether you're planning a big holiday shopping fling or waiting for those big sales after the holidays, please remember to do your buying in Phoenix.

Sales taxes on the merchandise you buy go into the city's general fund, which helps pay for police, fire and other services enjoyed by Phoenix citizens. When you shop in other cities, the taxes go to the general funds of those communities.

So shop Phoenix whenever you can.

# Phone Phoenix

262-6262  
La Línea en español es 534-6262

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## notes

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Vice Mayor & District 3  
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Dave Siebert, District 1  
Frances Emma Barwood, District 2  
Craig Tribken, District 4  
John Nelson, District 5  
Sal DiCiccio, District 6  
Doug Lingner, District 7  
Cody Williams, District 8

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**City of Phoenix**

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# notes

A Publication for the Citizens of Phoenix

August 2000

## Budget provides

### *service improvements*

Police, fire and ambulance services, recreation facilities, library offerings, neighborhood programs and environmental activities will be enhanced under the budget approved by the City Council for the 2000-2001 fiscal year.

The budget, which took effect July 1, includes \$15.4 million for general service improvements and \$2.6 million in Aviation and other funds for improved police and fire protection.

In addition to the new funding, the City Council last fiscal year allocated another \$7.6 million for the advance hiring of police recruits and the replacement of critical fire emergency equipment.

The spending plan was developed by the City Council and broadened by the suggestions of citizens who attended public hearings that were held throughout the community. It again is based on a property tax rate of \$1.82 per \$100 of assessed valuation, a rate that has remained the same for the past seven years.

Improvements planned for police services include 56 new positions for a domestic

violence investigation unit, an Internet crime investigation squad, school resource officers and the Ahwatukee substation. Police also will purchase 10 radar trailers and tracking boxes for neighborhood traffic and speed enforcement.

Fire and ambulance service improvements include additional fire-fighting equipment, the assignment of a ladder unit and full-time ambulance to Ahwatukee and an additional battalion at Sky Harbor.

The budget also allows for increasing the number of after-school recreation sites to 133 from 101, lighting for at least two sports fields, more parks personnel and additional staff for the teen and children's sections of the library system.

Funds also will be used to increase the sweeping of major streets to every two weeks from every three weeks, add

more neighborhood inspectors, develop a landlord and tenant education and slum prevention program, and establish an in-fill program that will include the purchase of vacant lots and dilapidated houses.

### **Overview of general fund service improvements**

Police/Criminal Justice	\$6.5 million
Fire/Ambulance Services	\$6.3 million
Parks/Librarites/Youth	\$3.6 million
Environmental	\$3.3 million
Future Capital Operating	\$2.6 million
Neighborhood and Community Services	\$2.2 million
Technology Services	\$1.0 million

## First-time homebuyer loans available

The Phoenix and Maricopa County Industrial Development authorities are offering as much as \$64 million to help first-time



homebuyers obtain federal loans or conventional financing to purchase a home anywhere in the county.

Qualified individuals or families would be able to obtain 30-year fixed loans at an interest rate of 7.15 percent or loans at 7.8 percent that include 4 percent down payment and closing cost assistance.

For more information, call 602-262-6602 or one of the following lenders:

American Financial Resources, Inc. . . . .	602-650-1010
Bank One N.A. (Mortgage) . . . . .	602-221-3874
CH Mortgage Co. . . . .	480-998-8535
Chase Manhattan Mortgage Corp. . . . .	602-956-6454
Countrywide Home Loans . . . . .	1-800-877-5626
Crossland Mortgage Co. . . . .	602-863-3772
First Horizon Home Loans . . . . .	602-957-0054
Irwin Mortgage . . . . .	480-345-0984
Marina Mortgage Co. . . . .	602-870-1102
National Bank of Arizona . . . . .	602-212-5423
National City Mortgage Co. . . . .	602-216-3705
Neighborhood Housing Services of Phoenix, Inc. . . . .	602-258-1659
Principal Residential Mortgage, Inc. . . . .	480-481-9958
Sterling Capital Mortgage . . . . .	480-897-6565
US Home Mortgage Corp. . . . .	480-820-7281
Wells Fargo Home Mortgage . . . . .	1-877-937-9357

## Rains bring out mosquitoes

Stagnant water left from monsoon rains and other sources can increase mosquito activity.

Here are some tips from the Maricopa County's Vector Control program on how to eliminate mosquito breeding.

⇒ Drain animal watering troughs, birdbaths, pet watering dishes, weekly.

⇒ Repair water leaks, sprinkler systems or coolers that cause water to pond.

⇒ Fill in low spots, control the irrigation in your yard or pastures, and drain standing water from buckets and other containers that collect water on your property.

⇒ Remove vegetation and floating debris in and around ponds and stagnant swimming pools to limit breeding potential.

⇒ Consider adding mosquito-eating fish called gambusias to ponds. They are available free by calling 602-506-0700.

For more information or to file a complaint of mosquitoes in your neighborhood, call 602-506-6616.

## Water bill explanation now in Spanish

A detailed explanation of the city water bill now is available in Spanish.

Each month, about 350,000 bills are printed in English and mailed to customers. On the back of each bill are explanations of the charges and the addresses of where the bill may be paid.

However, it is estimated that nearly 5,000 customers are not fluent in reading English. To help those customers understand their bills, the information contained on the back of the bill has been translated to Spanish and is available upon request.

To have a copy included with your monthly bill, call 602-262-6251. Spanish-speaking operators are available by pressing the number 2 on touch-tone telephones.

## notes

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<b>Phoenix City Council</b>	
Mayor Skip Rimsza	602-262-7111
Doug Lingner, Vice Mayor & District 7	602-262-7492
Dave Siebert, District 1	602-262-7444
Tom Milton, District 2	602-262-7445
Peggy Bilsten, District 3	602-262-7441
Phil Gordon, District 4	602-262-7447
Claude Mattox, District 5	602-262-7446
Greg Stanton, District 6	602-262-7491
Cody Williams, District 8	602-262-7493

Garbage/Trash Service	602-262-7251
Water/Wastewater	602-262-6251
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City of Phoenix

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# notes

A Publication for the Residents of Phoenix

November 2004

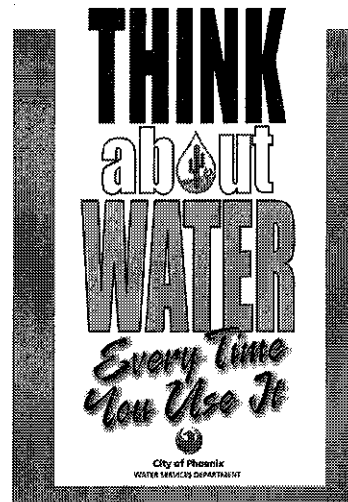
## Water saving measures affect everyone

Although Phoenix has adequate water supplies, the need to change from a water conservation lifestyle to more serious drought-related water-saving measures is here, and water restrictions may not be far off.

Long-range planning and proactive water management techniques have helped Phoenix weather drought for most of the past decade. Yet, it appears that Mother Nature is ready for a long fight as drought is expected to continue for several years.

So, what's next? Will Phoenix enact water restrictions, and, if so, how could they impact you? What should each of us be doing now?

Well, Phoenix continues to analyze its water supply and promote water-saving measures and will give you plenty of time to understand water restrictions before they are implemented. The restrictions could be in place within the next few years, and may include shutting off



decorative fountains, irrigating only on certain days, banning new grass areas, and increasing costs for excessive water use.

And, while Phoenix can't control how much snow and rain falls on the watershed areas north and east of the city, each of us can control our individual actions when it comes to conserving water. Phoenix government reduced

water usage by about 11 percent last year.

Join us in this effort by taking it upon yourself to "Think About Water...Every Time You Use It." Think about how you use water outdoors, as well as indoors. Drought response measures that each of us should be implementing now include planting turf only if needed, not over watering native plants, understanding how your irrigation system works and fixing leaky faucets and toilets.

To assist with understanding the drought and identifying ways to save water, the Water Services Department has created "Phoenix in Drought" on the city's Web page, phoenix.gov. Also, tune into PHX 11 to see "WATERways," which focuses on drought, water conservation and our many years of public awareness programs.

And, remember to take a second to "Think About Water...Because It's More Valuable Than Ever."

## Be sure to shop Phoenix

Planning a big holiday shopping spree? Waiting for the after-holiday sales?

Whatever the case, Phoenix is the place to do your buying.

Sales taxes on the merchandise you buy at businesses located in the city go into the city's general fund, which helps pay for city services, including parks, libraries, police and fire. When you shop in other cities, the taxes support the budgets of those communities.

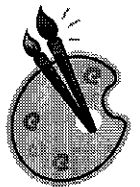
So, shop Phoenix whenever you can.

## Student art works on display

Here's your chance to see what high school artists from throughout the Valley have been up to lately.

Their works will be showcased Nov. 29 to Jan. 7 at the Shemer Art Center and Museum, 5005 E. Camelback Road. An opening reception is planned for 11 a.m. to 1 p.m. Saturday, Dec. 4.

For more information, call 602-262-4727.



## Indian Market Dec. 11-12

More than 400 Native-American artists will be demonstrating and selling their artwork at the 28th annual Pueblo Grande Indian Market 9:30 a.m. to 5 p.m. Dec. 11-12 at Steele Indian School Park, Third Street and Indian School Road.

Tickets are \$7 for adults. Children under 12 are free. For more information, call 602-495-0901 or visit [pgmarket.org](http://pgmarket.org). Present this article for \$1 off the admission for up to four guests.



## Flood language primer

The winter rains are headed this way. Here's a quick review of some of the flood terminology you'll be hearing radio and television announcers use when they report storm conditions:

- Flood Watch – A flood is possible.
- Flood Warning – A flood is occurring or will occur soon.
- Flash Flood – A sudden, violent flood.

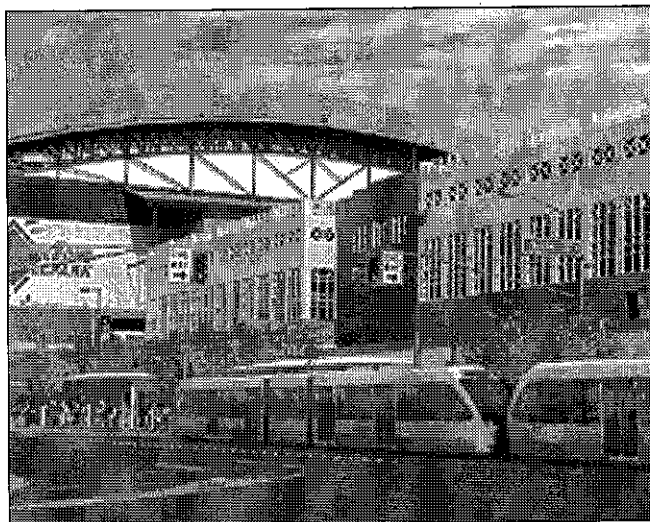
- 100-Year Flood – There is a 1 percent possibility that an area will be flooded in any one year. It is possible to have a 100-year flood more than once in the same year.

To find out if your property is in a Special Flood Hazard Area, call 602-262-4960 or contact Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, AZ, 85003.

## Light rail offers 24-hour hotline

Do you have a question about light rail? If so, Valley Metro Rail offers information about the project seven days a week, 24 hours a day.

Just call 602-534-1807 anytime and someone will be there to answer your questions.



## GOAL draws first graders to library

First graders are receiving a special introduction to the Phoenix Library through the 2004-2005 Grade One at the Library (GOAL) program.

Special packets that encourage teachers to have parents sign an application so that their child can receive a library card are being sent to the more than 1,000 first-grade classrooms in the city, reaching nearly 15,000 children.

After this year's distribution, more than 100,000 first graders will have received library cards since the program began seven years ago.

This year, each classroom also will receive a copy of "Look Who Lives in the Desert!," from Arizona Highways Books, which published the book written and illustrated by Valley resident Brooke Bessesen.

For more information, call 602-262-6625.

## City helps schools fund cultural diversity initiatives

The Phoenix Youth and Education and Human Relations commissions have awarded \$60,000 in grants to seven schools through the Youth Diversity Grants Initiative.

The grants are the product of a Youth Town Hall where delegates agreed that on-campus diversity programs can reduce violence, racism and intolerance and they recommended that the city establish a fund to help schools promote cultural diversity awareness.

Receiving grants for the 2004-05 school years were: Cesar E. Chavez Community School, Crittenton Youth Academy, Echo Mountain Intermediate School, Estrella Middle School, Mountain Pointe High School, Palo Verde Middle School and Vista Del Sur Middle School.

Applications will be accepted for the 2005-06 school year beginning in the spring of next year. For more information, call 602-495-0314/voice or 602-534-5500//TTY.

# notes

A Publication for the Residents of Phoenix

June 2003

## Early voting set for city election

It's the most popular way that Phoenix residents cast their ballots – voting by mail.

This month residents can sign up to vote early by mail for the Sept. 9 Mayor and Council Election.

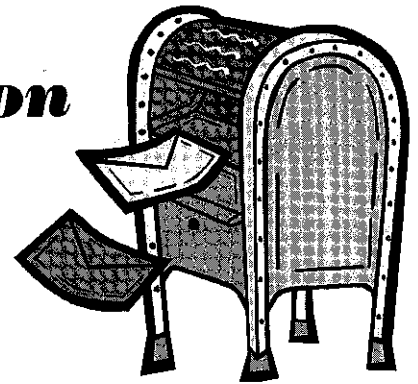
To vote early by mail, a written request by the voter is required for each election. Once a request is received and verified by the City Clerk Department, a ballot will be mailed to the voter in August.

Request forms to vote early by mail will be mailed to registered voters beginning June 11. The forms also will be available on the same date at phoenix.gov and at city public service counters and libraries. In addition, the forms can be obtained by calling the City Clerk Department Elections Division at 602-261-VOTE (8683).

Voters also may cast an early ballot in person at the City Clerk Department, Phoenix City Hall, 200 W. Washington St., 15th floor between 8 a.m. and 5 p.m. weekdays beginning Monday, Aug. 11, through Friday, Sept. 5.

In this citywide election, voters will choose a mayor, city council members in Districts 1, 3, 4, 5 and 7, and will vote on propositions. The elected mayor and city council members for the odd-numbered districts each will serve four-year terms. The elected council member for District 4 will serve the remainder of a four-year term that began in January 2002.

*(continued on page 2)*

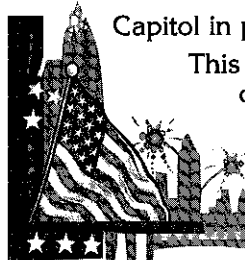


## Fab 4th moves to Steele Indian School Park

Fabulous Phoenix 4th, the city's celebration of America's Independence Day, will enjoy a new venue this year – Steele Indian School Park.

The 75-acre park at Third Street and Indian School Road will feature entertainment and a special area for kids.

The July 4 event, now in its 18th year, has been held on the grounds of the State



Capitol in past years.

This year's celebration, which will run from 4 to 10 p.m., will be capped off with a stunning fireworks display.

The Parks and Recreation Department is teaming up with Channel 12 and The Arizona Republic for this year's event.

Festival goers will be able to ride free shuttle buses to the event from two sites: North Phoenix Baptist Church at Bethany Home Road and Central Avenue; and Park Central Mall at Earll Drive and Central Avenue.

For further information about the event, parking and road restrictions, visit phoenix.gov or call 602-262-4627.

**Inside** ➔ Summer bulk trash schedule ➔ Recycling information



## Read your way to the ballpark

Want to score points with your kids this summer?

Take them to the nearest library to sign up for "Extra! Extra! Read Your Way to the Ballpark," the countywide summer reading program co-sponsored by The Arizona Republic and the Arizona Diamondbacks.

Youth from infants to teens can participate in the program, which includes a fun game with prizes, library appearances by Diamondbacks Organist

Bobby Freeman and – best of all – a certificate to see the Diamondbacks play at Bank One Ballpark. Game boards are available at all Phoenix libraries.

Teens also can participate in "Shut Up and Read," another reading program that suggests that summer reading is best enjoyed without TV, the telephone and other distractions. Teens can earn prizes and qualify for grand-prize drawings just by spending a few minutes each day with a book.



The free programs continue through July 31. Information is available at [phoenixpubliclibrary.org](http://phoenixpubliclibrary.org) or 602-262-4636.

## Navajo history subject of talk

Dr. Peter Iverson, a Regents' professor of history at Arizona State University, will discuss "Black Clouds will Rise: Continuity and Change in Navajo History" at the city of Phoenix Faces of Diversity Brown Bag lunch series from noon to 1 p.m. Friday, July 25, at Phoenix City Council Chambers, 200 W. Jefferson St.



## City hosts certification workshops

Minority, woman and small business owners in Maricopa County are invited to attend free monthly workshops and learn about the city's business certification programs.

The workshops provide in-depth information about the requirements, process and benefits of becoming certified with the city as a minority-, woman-owned or small business enterprise.

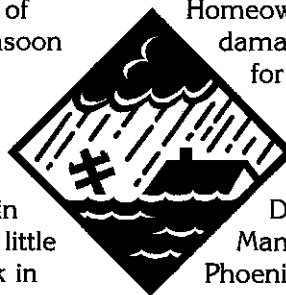
Call 602-262-6790 or 602-534-1557/TTY to reserve a space.

Upcoming workshops are: July 15, 6 - 8 p.m., Phoenix City Hall, 200 W. Washington St.; Aug. 12, 9:30 - 11:30 a.m., Phoenix City Hall, 200 W. Washington St.; and Sept. 16, 9:30 - 11:30 a.m., Burton Barr Central Library, 1221 N. Central Ave.

## Protect your home with flood insurance

Floods are the most common and widespread of all natural disasters. Most communities in the United States – Phoenix included – experience some kind of flooding after spring rains or monsoon storms.

Heavy rainfalls, which are common in the Valley, also can produce flash flooding in rivers, washes and other areas where rain water flows. They can occur with little or no warning and reach full peak in only a few minutes.



To protect your home from flood losses, you can purchase flood insurance through the National Flood Insurance Program.

Homeowner's policies do not cover flood damage. Contact your insurance agent for information on flood insurance.

To see if you are in a flood risk area, call 602-262-4960 or contact the Street Transportation Department, Floodplain Management Section, fifth floor, Phoenix City Hall, 200 W. Washington St., Phoenix, AZ 85003.

# notes

A Publication for the Citizens of Phoenix

October 2001

## ***Police Reserve Program*** *seeks volunteer* *officers*



If you have an interest in law enforcement, but don't want to switch careers, a volunteer position with the Phoenix Police Department might be your answer.

The department is seeking men and women to join its Police Reserve Program.

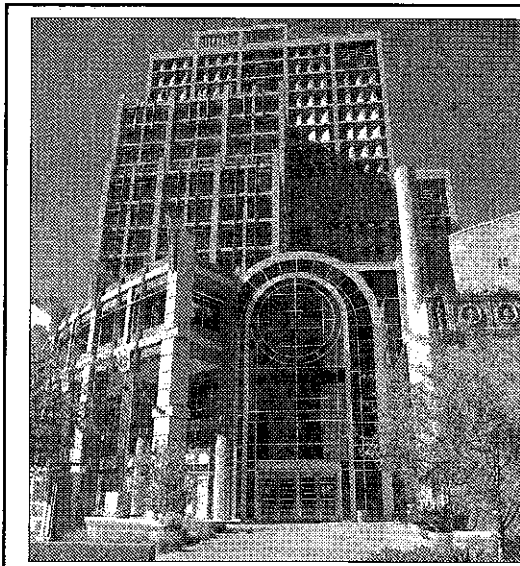
Reserve recruits receive police academy training at area community colleges, including a comprehensive curriculum of law enforcement instruction and physical conditioning that earns them 24 hours of college credits.

After graduation and certification as a peace officer, reserves work side-by-side with career officers, performing many of the same duties as the regulars.

They also have opportunities to work solo patrols and in many specialized details within the department. Although they are not paid for their volunteer on-duty work, reserves can earn compensation by working off-duty police jobs and receive other financial benefits.

To qualify, applicants must be at least 21 at the time of academy graduation, be in sound physical and mental health, have fewer than eight driving points, have no felony convictions and not have used hard drugs.

For information, call 602-534-9000 or visit [PhoenixPoliceReserve.org](http://PhoenixPoliceReserve.org) on the Internet.



### **Speakers bureau offers inside look at city, jobs**

Interested in learning about your city government and possible job opportunities with the city?

The Phoenix Employment Outreach Program, which is available to community organizations, schools and non-profit agencies, is made up of employee speakers who can talk about their areas of interest and career opportunities available at the city.

For more information, call Adele Arellano at 602-495-5704 or 602-261-8687 (TTY).

## Renaissance Faire Nov. 17 - 18

Step back in time Nov. 17 - 18 during the annual Devonshire Renaissance Faire at Los Olivos Park, 28th Street and Devonshire Road.

The event, 10 a.m. to 5 p.m. both days, will feature roving entertainers in medieval-style costumes, four stages of continuous entertainment and more than 30 food, craft and merchandise booths.



Admission is \$5 for individuals 16 and older, \$1 for youths 7-15, and free for children 6 and under. For more information, call 602-256-3130.

## Help available for domestic violence victims

Did you know that?

- There were 50 homicides linked to domestic violence in Arizona last year.
- Nearly one in every three adult women experiences at least one physical assault by a partner during adulthood.
- Domestic violence occurs regardless of age, race, ethnicity, mental or physical ability, socioeconomic status, sexual orientation or religious background.
- Assaultants may continue to have access to their victims and may monitor or destroy their mail, including communications from the court.
- Perpetrators try to both control and maintain an intimate relationship with their victims.
- Victims often are not willing to terminate their relationship despite the abuse.

If you or a friend need help with a domestic violence situation, call the police if danger is immediate. For information, referrals, and assistance, call the City of Phoenix Family Advocacy Center at 602-534-2121. If you need a safe place to stay, call 602-263-8900 for information on shelter beds availability throughout Arizona.

## Which is most likely to happen to you?

Most people carry insurance to cover themselves against auto theft and home burglary.

Many, though, don't have flood insurance on their homes.



This could be a big mistake, according to the Federal Insurance Administration. The agency says while people have a 1 percent chance of having their car stolen and a 2 percent chance of having their house burglarized, they have a 2.5 percent chance of sustaining flood damage if their house is below the area's base flood level.

You can protect your home with flood insurance. For information or to see if your house is in a federal designated flood zone, call 602-262-4960 or write or visit the Street Transportation Department, fifth floor, Floodplain Management, 200 W. Washington St., Phoenix AZ 85003-1611.

For an insurance quote, contact your agent.

## notes

Published by the City of Phoenix  
Public Information Office  
200 W. Washington St.  
Phoenix, Arizona 85003  
602-262-7176

<b>Phoenix City Council</b>	
Mayor Skip Rimsza	602-262-7111
Tom Milton, Vice Mayor & District 2	602-262-7445
Dave Siebert, District 1	602-262-7444
Peggy Bilsten, District 3	602-262-7441
Phil Gordon, District 4	602-262-7447
Claude Mattox, District 5	602-262-7446
Greg Stanton, District 6	602-262-7491
Doug Lingner, District 7	602-262-7492
Cody Williams, District 8	602-262-7493

Garbage/Trash Service	602-262-7251
Water/Wastewater	602-262-6251
Recycling	602-262-7251
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For alternative format/reasonable accommodations, call 602-262-7176 or TTY 602-534-5500.



City of Phoenix

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# notes

A Publication for the Citizens of Phoenix

August 1997

## Desert Sage Library opens



▲ A large, colorful cloud-like mobile suspended from the ceiling is one of the first things visitors will notice when they enter the new Desert Sage Library.

The Parks, Recreation and Library Department has opened its 13th public library.

Desert Sage Branch Library at 7602 W. Encanto Blvd. features sections for business and general reference materials, new books, videos, and newspapers and magazines, as well as a community meeting room and reading rooms for children and adults.

It also is equipped with computers that provide public access to the Internet.

The fifth largest branch library in the city with 13,400 square feet, Desert Sage is the first branch to be built in the city since 1991

when the Ironwood Branch Library at 4333 E. Chandler Blvd. opened. The public library system now includes the Central Library, which relocated to new quarters on Central Avenue in the downtown area in 1995, and a dozen branches located throughout the city.

Bond funds approved by voters in 1988 were used to build the Desert Sage branch, which cost about \$1.7 million.

A special feature of the Desert Sage branch is an aerial sculpture, "Cirrus Circus," which was inspired by the shapes of high-altitude crystal clouds and the colors of dawn and dusk upon them.

Designed by George Peters of Boulder, Colo., the sculpture consists of more than 40 kite-like forms suspended from the ceiling in the central reception area of the library. The forms are positioned so light from the building's large north windows illuminates the transparencies in the fabric.

The work was funded by the Phoenix Arts Commission.

Among the library's collection are reference materials designed to help students at nearby Estrella Mountain Middle School and Trevor G. Browne High School. The branch also plans to develop a collection of Spanish language materials for the area's large Hispanic population.

Desert Sage is open 9 a.m. to 9 p.m. Monday - Thursday and 9 a.m. to 6 p.m. Friday and Saturday. It also will be open 1 - 5 p.m. on Sunday beginning in September and continuing through May.

For information, call 534-5276.

## Summer rains require caution

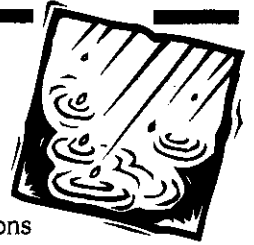
Excessive rainfall during the summer months often causes flooding in Arizona.

Motorists have lost their lives while trying to cross flooded washes, homes have been destroyed and family savings have been wiped out.

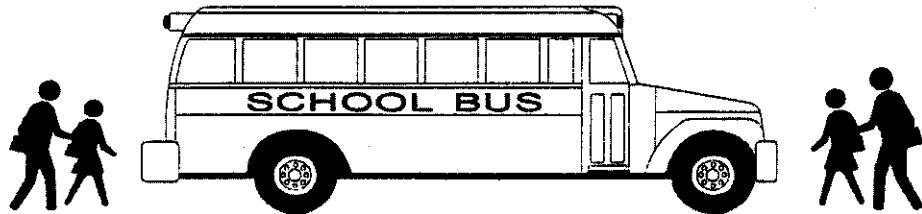
The Federal Emergency Management Agency and city officials suggest that motorists avoid driving where water is over the road. They warn that parts of the road may be washed out and flood waters can rise rapidly and sweep a car and its occupants away.

Additionally, residents are urged to keep the telephone number of the Fire Department handy so they can find out which stations have sand available for sand bags. Information about sand is available at 262-6297.

For information about special flood hazard areas in the city, contact the Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, 85003, or call 262-4960.



## SCHOOLS OPEN THIS MONTH



### USE CAUTION

### Youthbuild program seeks applicants

Youthbuild Phoenix, a construction training and academic program for young men and women who quit high school, is accepting applications for classes that begin in the fall.

About 60 young people between the ages of 18 and 21 will be accepted to participate in a six-week orientation starting in September.

Those who successfully complete the orientation, will receive \$500. Thirty-two students then will be selected to continue the 12-month program and earn \$120 a week while learning in a classroom and on construction sites. Pay raises are possible every six weeks and up to \$2,500 is available as an incentive for successfully completing the program.

More than 300 young people applied for the program last year.

The program is funded by the federal Department of Housing and Urban Development and involves the City of Phoenix Human Services Department, Arizona Call-A-Teen, Labor's Community Service Agency and Metro Tech Vocational Institute of Phoenix.

To learn more about the program, call Al Jernigan at 534-3687.

## notes

Published by the City of Phoenix  
Public Information Office  
200 W. Washington St.  
Phoenix, Arizona 85003  
262-7176

**Phoenix City Council**  
Mayor Skip Rimsza  
Vice Mayor & District 3  
Peggy A. Bilsten  
Dave Siebert, District 1  
Frances Emma Barwood, District 2  
Craig Tribken, District 4  
John Nelson, District 5  
Sal DiCiccio, District 6  
Doug Lingner, District 7  
Cody Williams, District 8

Garbage/Trash Service 262-7251  
Water/Wastewater 262-6251  
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**City of Phoenix**

Printed on recycled paper

# notes

A Publication for the Citizens of the City of Phoenix

June 1992

## **Flood Information Available**

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Heavy rain over the past several months has caused concern for many residents about flooding. For such residents, the Phoenix Street Transportation Department's floodplain section offers the services of a floodplain management engineer who is available to answer questions and address concerns.

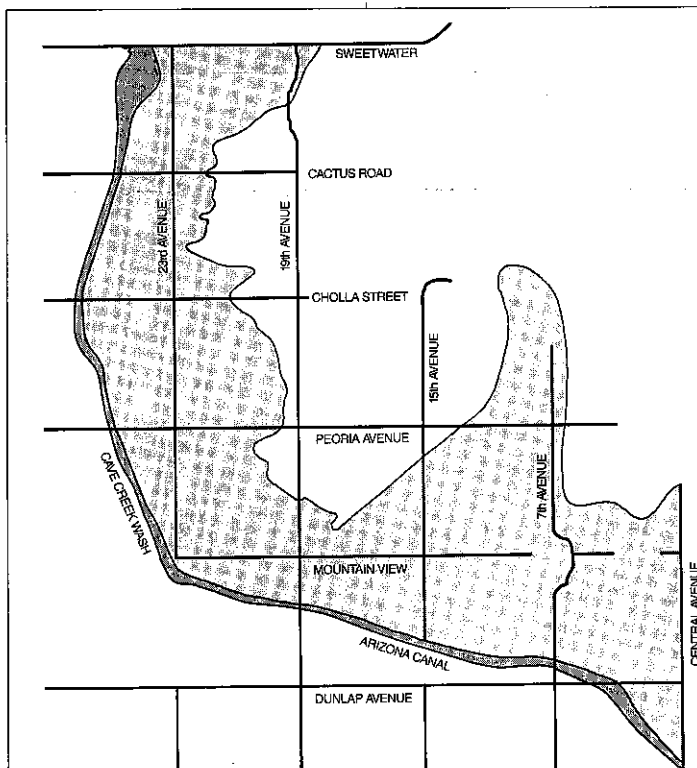
For more information, call 262-4960 or write to:  
Phoenix Street Transportation  
Department, Floodplain  
Management Engineer, 125  
E. Washington St., Third  
Floor, Phoenix, Ariz. 85004.



# notes

A Publication for the Citizens of the City of Phoenix

May 1992



## Flood insurance

Some Phoenix property owners may no longer need to carry flood insurance because of changes along the Cave Creek Wash and the Arizona Canal Diversion Channel.

If you live within the area of Central Avenue west to the Black Canyon Highway, and the Arizona Canal north to Sweetwater Avenue, the flood insurance requirement by your mortgage company may have been eliminated.

For more information, call Phoenix Floodplain Management at 262-4960.

# notes

A Publication for the Citizens of the City of Phoenix

December 1994

## **Protect your home investment from floods**

Although we live in a desert, flooding from winter storms can occur and surface runoff from heavy rains can overtax drainage systems.

Homeowners living in a flood zone are particularly vulnerable to flood damage, and repairing a home afterwards often can wipe out family savings. Homeowner policies do not cover flood damage, and federal disaster assistance applies only in limited cases.

The Federal Emergency Management Agency's National Flood Insurance Program reimburses thousands of policyholders every year for flood losses covered by the program.

To find out if you are living in a flood zone, write the Floodplain Management Office, Fifth Floor, Phoenix City Hall, 200 W. Washington St., Phoenix AZ 85003, or call the office at 262-4960.

Please see in the  
December Notes

Thank

Anna  
Weiss  
26797

**YOUR HOME MAY BE  
EXPOSED TO FLOOD  
RISK ... AND YOUR  
MOST IMPORTANT  
INVESTMENT COULD  
GO DOWN THE DRAIN**

■ They cause anguish and destruction—physical, emotional, and financial. Especially when victims realize the damage isn't covered by their homeowners insurance policy.

■ Federal disaster assistance? It isn't the answer either. In most cases, the only aid disaster victims may qualify for is a loan, and that must be repaid—with interest!

■ **Flood insurance through the National Flood Insurance Program reimburses you for flood damage to your property! With one annual premium, you can protect your most important investment—your home and your finances.**

■ Call your insurance agent or company today. Check into the low-cost Preferred Risk Policy and other flood insurance protection for homes and businesses.

■ Because no matter where you live—floods happen. Make it your policy to protect your family against devastating flood losses!

The City of Phoenix Floodplain Management can tell you if your property is in a floodzone or not. To find this out, call 262-4960 or write to St. Transporati Floodplain Mgmt, 200 W. Washington 5th Floor, Phoenix, AZ 85003-1611



# notes

A Publication for the Citizens of the City of Phoenix

August 1994

## **Flood insurance premiums drop**

Phoenix residents who live in a designated flood plain area will see a 15 percent reduction in their flood insurance premiums beginning Oct. 1.

Approximately 13,000 structures are located in federal flood hazard areas resulting in yearly premiums of about \$6 million. The Federal Emergency Management Agency recently rated Phoenix as a Class 7 community as a result of its participation in the National Flood Insurance Program Community Rating System. The Class 7 rating will reduce this yearly cost to residents in flood plains by approximately \$900,000.

According to FEMA, only 17 percent of the nation's communities have attained a Class 7 rating and it is rare for a community to have a rating lower than a Class 9. With a rating of 10, no reduction is given on flood insurance premiums.

The rating is based on community activities that reduce flood losses, assist with accurate insurance rating and promote the awareness of flood insurance. About 18,000 communities nationwide participate in the National Flood Insurance Program.

Since 1990, the NFIP Community Rating System has been used by FEMA to encourage cities to control construction in flood plain

areas and distribute accurate flood plain information. Phoenix's participation in the program began in 1991.

For more information, call 262-4026.

## **Sister Cities Commission wins international award**

The Phoenix Sister Cities Commission was selected to receive the Best Overall Program Award for its outstanding contribution to international understanding by Sister Cities International.

Phoenix Mayor Thelda Williams and other city officials will accept the award, the top award presented to a sister city, at the 1994 Sister Cities International annual conference in Louisville, Ky. The awards, now in their 32nd year, are sponsored by the Reader's Digest Association.

Some of Phoenix's award-winning programs include cultural weeks focusing on Phoenix's relationship with its sister cities in Japan, Ireland, France, Mexico, China and Taiwan; international youth exchanges; coordination of trade missions to Phoenix sister cities; and the city's efforts to foster international business exchanges and joint ventures.

The Sister Cities International links approximately 1,040 U.S. cities with more than 1,600 cities in 113 countries worldwide. To learn more about the Phoenix Sister Cities Commission, call 534-3751.

# notes

A Publication for the Citizens of the City of Phoenix

May 1994

## Preparation can help residents handle flooding

Excessive rainfall during spring storms and summer monsoons often causes flooding in Arizona. Surface runoff from heavy rains can overtax local drainage systems.

During the last few years, floods have occurred throughout the state, destroying homes, businesses and family savings. The Federal Emergency Management Agency's National Flood Insurance Program reimburses thousands of policyholders every year for flood losses covered by the program. Although drought is predicted this summer, it always helps to be prepared for flooding from spring storms and summer monsoons.

### Keep these tips in mind:

- When you see clouds on the horizon, listen for weather warnings on the radio or television. The U.S. Weather Service issues updated warnings that are quickly routed to most local radio and television stations.
- If your building or home is flooded, turn off the electricity, because currents can travel through the water. Also, turn off natural gas.
- Do not cross barricades. It often is hard to determine how deep water is, and rescue personnel often are endangered trying to reach stranded motorists.
- Call the Fire Department at 262-6297 for the nearest fire station with sandbags. Stack them away from the outside walls of houses to prevent floodwaters from entering.

The Floodplain Management office is on the fifth floor of Phoenix City Hall, 200 W. Washington St., Phoenix, AZ 85003. For more information, visit the office, or call 262-6290.



# City of Phoenix

PUBLIC INFORMATION OFFICE

## PRESS CLIPPINGS

NEWSPAPER: PU Independent

DATE: June 22-23, 94

REVIEWED BY: M. Colpas

FILE: \_\_\_\_\_

# Flood-plain dwellers to get break on insurance rates

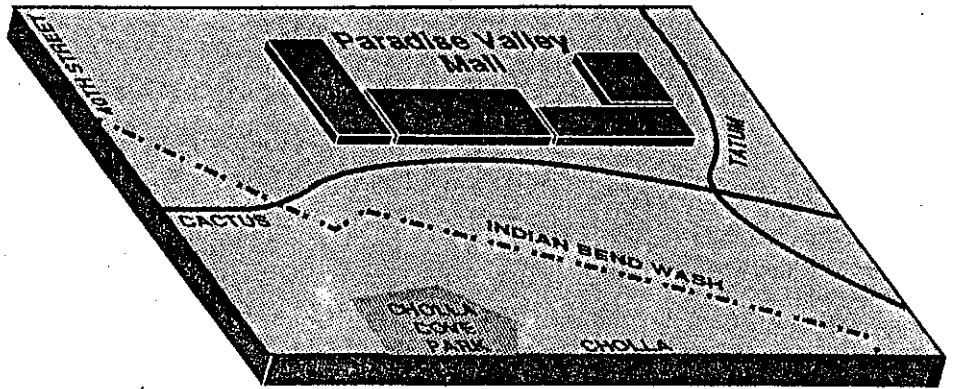
## Indian Bend homes to see 15% savings in insurance rates

By **BILL LANE**  
Staff Writer

Although the Indian Bend Wash is still as likely to be the site of flash flooding during summer storms, water-logged residents may find recovery easier as a result of efforts by the city of Phoenix to increase homeowners' awareness of flood insurance coverage.

Those efforts placed Phoenix in a group of cities in the United States that have earned high marks in a federal floodplain awareness program and flood control infrastructure.

As a result, homeowners in the Indian



Bend Wash will be saving 15 percent on flood insurance premiums starting October 15.

Total savings could approach \$1 million, officials said.

The Federal Emergency Management Agency sponsored the National Flood Insurance Program Community Rating System to reward cities for taking steps to control construction in floodplains and dis-

tribute accurate floodplain information.

According to Ray Acuña, Phoenix Flood Plain manager, only a handful of U.S. cities rate higher than Phoenix, with Class 6 status. Tulsa, Okla., Mr. Acuña said, is the only city in the country to qualify for class 5 ranking.

"Phoenix is probably one of the larger cities in the country to take advantage of the FEMA program," Mr. Acuña said.

The FEMA program is similar to the Insurance Service Office program that rewards fire prevention measures with lower fire insurance premiums, Mr. Acuña said.

"It's a carrot to get the community involved in (flood) prevention (and awareness)," he said.

"We're fortunate in Phoenix where we have more resources than other cities to





# City of Phoenix

PUBLIC INFORMATION OFFICE

## PRESS CLIPPINGS

NEWSPAPER: PV Independent  
DATE: 6/22-28/94  
REVIEWED BY: M Colpa  
FILE: \_\_\_\_\_

### **Flood** *Continued from page one*

implement public information projects to make enough points to get a 7 (rating)."

The latest rating is an increase over last year, when the city was awarded a rating of 8.

That resulted in a 10 percent reduction in premiums.

Mr. Acuña said Phoenix earned the improved rating despite the fact no capital improvement projects are slated to reduce the size of the floodplain.

But he added, "We'd like to put in street improvements, dams, channels and bridge facilities."

He said most of the infrastructure improvements in the Indian Bend Wash were put there by area developers.

One homeowner in the wash is happy with the few structural improvements the city has made.

Mrs. T.J. Nejman said her family hasn't suffered flooding in the 10 years they have lived along the wash.

But she said she believes they

are now above the official flood line.

While Mrs. Nejman did not know the precise cost of her family's flood insurance premiums, she said she is happy to know the cost will be coming down.

Another resident, Michael Goda, said he has flood insurance because the Veteran's Administration requires it.

But, he said, "We don't have flooding problems."

He pointed to installation of larger drain pipes to carry rain water away from homes.

Additionally, Mr. Goda said Venturoso Park, at the source of the Indian Bend Wash acts as a retention basin to limit the runoff in major storms.

According to Mr. Goda, the flood insurance premium reductions will amount to about \$45 per year.

But even that savings is not enough for him.

"We don't get any flooding here," he said.

# notes

A Publication for the Residents of Phoenix

November 2004

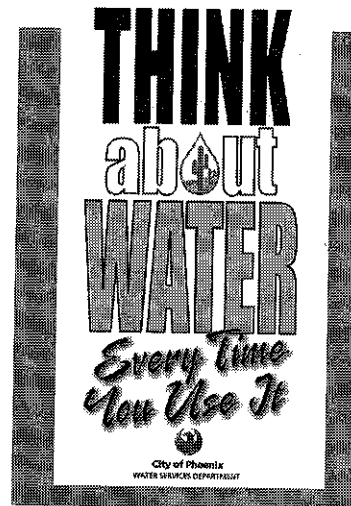
## Water saving measures affect everyone

Although Phoenix has adequate water supplies, the need to change from a water conservation lifestyle to more serious drought-related water-saving measures is here, and water restrictions may not be far off.

Long-range planning and proactive water management techniques have helped Phoenix weather drought for most of the past decade. Yet, it appears that Mother Nature is ready for a long fight as drought is expected to continue for several years.

So, what's next? Will Phoenix enact water restrictions, and, if so, how could they impact you? What should each of us be doing now?

Well, Phoenix continues to analyze its water supply and promote water-saving measures and will give you plenty of time to understand water restrictions before they are implemented. The restrictions could be in place within the next few years, and may include shutting off



decorative fountains, irrigating only on certain days, banning new grass areas, and increasing costs for excessive water use.

And, while Phoenix can't control how much snow and rain falls on the watershed areas north and east of the city, each of us can control our individual actions when it comes to conserving water. Phoenix government reduced

water usage by about 11 percent last year.

Join us in this effort by taking it upon yourself to "Think About Water...Every Time You Use It." Think about how you use water outdoors, as well as indoors. Drought response measures that each of us should be implementing now include planting turf only if needed, not over watering native plants, understanding how your irrigation system works and fixing leaky faucets and toilets.

To assist with understanding the drought and identifying ways to save water, the Water Services Department has created "Phoenix in Drought" on the city's Web page, phoenix.gov. Also, tune into PHX 11 to see "WATERways," which focuses on drought, water conservation and our many years of public awareness programs.

And, remember to take a second to "Think About Water...Because It's More Valuable Than Ever."

## Be sure to shop Phoenix

Planning a big holiday shopping spree? Waiting for the after-holiday sales?

Whatever the case, Phoenix is the place to do your buying.

Sales taxes on the merchandise you buy at businesses located in the city go into the city's general fund, which helps pay for city services, including parks, libraries, police and fire. When you shop in other cities, the taxes support the budgets of those communities.

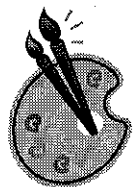
So, shop Phoenix whenever you can.

## Student art works on display

Here's your chance to see what high school artists from throughout the Valley have been up to lately.

Their works will be showcased Nov. 29 to Jan. 7 at the Shemer Art Center and Museum, 5005 E. Camelback Road. An opening reception is planned for 11 a.m. to 1 p.m. Saturday, Dec. 4.

For more information, call 602-262-4727.



## Indian Market Dec. 11-12

More than 400 Native-American artists will be demonstrating and selling their artwork at the 28th annual Pueblo Grande Indian Market 9:30 a.m. to 5 p.m. Dec. 11-12 at Steele Indian School Park, Third Street and Indian School Road.

Tickets are \$7 for adults. Children under 12 are free. For more information, call 602-495-0901 or visit [pgmarket.org](http://pgmarket.org). Present this article for \$1 off the admission for up to four guests.



## Flood language primer

The winter rains are headed this way. Here's a quick review of some of the flood terminology you'll be hearing radio and television announcers use when they report storm conditions:

- Flood Watch – A flood is possible.
- Flood Warning – A flood is occurring or will occur soon.
- Flash Flood – A sudden, violent flood.

- 100-Year Flood – There is a 1 percent possibility that an area will be flooded in any one year. It is possible to have a 100-year flood more than once in the same year.

To find out if your property is in a Special Flood Hazard Area, call 602-262-4960 or contact Street Transportation Department, Floodplain Management, fifth floor, 200 W. Washington St., Phoenix, AZ, 85003.

## Light rail offers 24-hour hotline

Do you have a question about light rail? If so, Valley Metro Rail offers information about the project seven days a week, 24 hours a day.

Just call 602-534-1807 anytime and someone will be there to answer your questions.



## GOAL draws first graders to library

First graders are receiving a special introduction to the Phoenix Library through the 2004-2005 Grade One at the Library (GOAL) program.

Special packets that encourage teachers to have parents sign an application so that their child can receive a library card are being sent to the more than 1,000 first-grade classrooms in the city, reaching nearly 15,000 children.

After this year's distribution, more than 100,000 first graders will have received library cards since the program began seven years ago.

This year, each classroom also will receive a copy of "Look Who Lives in the Desert!," from Arizona Highways Books, which published the book written and illustrated by Valley resident Brooke Bessen.

For more information, call 602-262-6625.

## City helps schools fund cultural diversity initiatives

The Phoenix Youth and Education and Human Relations commissions have awarded \$60,000 in grants to seven schools through the Youth Diversity Grants Initiative.

The grants are the product of a Youth Town Hall where delegates agreed that on-campus diversity programs can reduce violence, racism and intolerance and they recommended that the city establish a fund to help schools promote cultural diversity awareness.

Receiving grants for the 2004-05 school years were: Cesar E. Chavez Community School, Crittenton Youth Academy, Echo Mountain Intermediate School, Estrella Middle School, Mountain Pointe High School, Palo Verde Middle School and Vista Del Sur Middle School.

Applications will be accepted for the 2005-06 school year beginning in the spring of next year. For more information, call 602-495-0314/voice or 602-534-5500//TTY.



# notes

A Publication for the Citizens of the City of Phoenix

October 1995

## Help choose new Points of Pride

Do you have a favorite spot in Phoenix? If so, it's time to let others know about it.

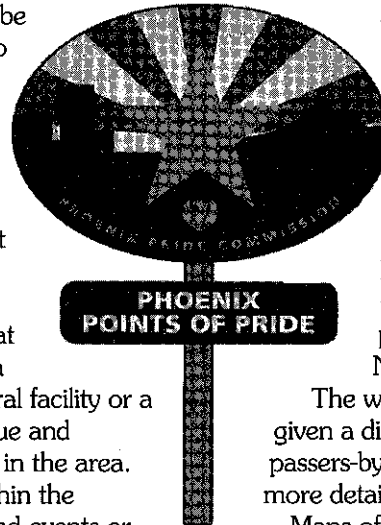
Beginning Oct. 16, you will be able to nominate your choice to become one of the city's Points of Pride.

The Phoenix Pride Commission is asking Valley residents to select a new attraction to be added to the list of 25 Points of Pride.

What is a point of pride? It could be just about anything that makes you proud. It could be a park, a mountain peak, a cultural facility or a historic residence. Each is unique and contributes to the quality of life in the area.

Suggested sites must be within the Phoenix city limits to qualify, and events or people are not eligible.

In addition to expanding the Points of Pride, Valley residents are being asked to select their favorite from the current list. The 25 sites were selected in 1992 by more than 10,000 people.



To vote for your current favorite and for a new site to be added to the list, simply write your choices on a post card and mail it by Nov. 10 to City of Phoenix, Public Information Office, 200 W. Washington St., Phoenix, AZ 85003. One vote per post card. Ballots also will be available in The Arizona Republic and The Phoenix Gazette. The votes must be postmarked no later than Nov. 10 to be eligible.

The winning new selection will be given a distinctive marker visible to passers-by. Call 898-5665, Ext. 1843 for more details.

Maps of the current Points of Pride are available at any of the Points of Pride locations and the Phoenix & Valley of the Sun Convention & Visitor's Bureau, 400 E. Van Buren St.

*(See list of current sites on back page.)*

### We're counting on you

"We're Counting on You" to answer the Special Census this month when your neighbor comes to your door. The census is simple, confidential and takes only a few minutes.

And, if you'd like to earn some extra money, census takers are still needed. The job lasts three to six weeks and pays \$7.50 an hour plus 30 cents a mile. You'll work in your neighborhood on a flexible schedule. If you're interested, call the Special Census Hotline at 258-4178.

Census takers will be easy to recognize because they'll be wearing white T-shirts with a colorful logo that were provided by Bank One and Hazelwood Enterprises.

The census is important to everyone in our community because our federal- and state-shared revenue is based on our population. That adds up to \$175 for every person who lives in Phoenix. The money provides services for all of us, including police, parks, transportation, and community and senior centers.

## Home repair loans available

Is your home in need of repair?

If so, you might qualify for a low-interest loan through a city-sponsored program that helps people correct exterior code violations and make other necessary repairs to their homes.

Individuals and families with low and moderate incomes may qualify for loans of as much as \$20,000 to finance the repairs. Interest rates for a loan would be below the market rate and be determined by a family's annual income and the number of people in the household.

The reduced interest rates are available because of a \$500,000 federal grant that allows the city to buy down the rate. More than \$13 million has been loaned to Phoenix homeowners since the program began in 1988.

For more information or to obtain an application, call 534-4457 (English) or 534-4464 (Spanish).



## Worried about floods? Buy flood insurance

Flood insurance is available to Phoenix homeowners and renters who live in a flood hazard area, including high-risk, moderate-risk or low-risk.

The insurance is available from any licensed property insurance agent or broker.

Homeowners may buy policies that cover their houses and their contents, while renters may obtain policies that cover the contents of their homes.

Claims generally are handled quickly and there is no need to qualify for federal disaster assistance, which often times amounts to loans that must be repaid.

If you have questions about the National Flood Insurance Program or if you want to know if your home is in a flood hazard area, contact the Street Transportation Floodplain Management Office, Phoenix City Hall, 200 W. Washington St. fifth floor, or call 262-4960.



## Current Points of Pride sites

- America West Arena
- Arizona Biltmore
- Arizona Center
  - Camelback Mountain
  - Desert Botanical Garden
  - Encanto Park
  - Heard Museum
- Herberger Theater Center
- Historic Heritage Square
- Mystery Castle
- Orpheum Theatre
- Papago Park/  
Hole-In-The-Rock
- Patriots Square Park
- Phoenix Art Museum
- Phoenix Symphony  
Hall Plaza
- Phoenix Zoo
- Pueblo Grande Museum  
and Cultural Park
- St. Mary's Basilica
- Shemer Art Center  
and Museum
- South Mountain Park
- Squaw Peak  
Recreation Area
- Telephone Pioneers  
of America Park
- Tovrea Castle
- Wesley Bolin  
Memorial Plaza
- Wrigley Mansion

## notes

Published by the City of Phoenix  
Public Information Office  
200 W. Washington St.  
Phoenix, Arizona 85003  
262-7176

### Phoenix City Council

Mayor Skip Rimsza  
Vice Mayor Craig Tribken, District 4  
Thelda Williams, District 1  
Frances Emma Barwood, District 2  
Peggy A. Bilsten, District 3  
John Nelson, District 5  
Sal DiCiccio, District 6  
Salomon F. Leija, District 7  
Cody Williams, District 8

Garbage/Trash Service 262-7251  
Water/Wastewater 262-6251  
Recycling 256-5626



**City of Phoenix**

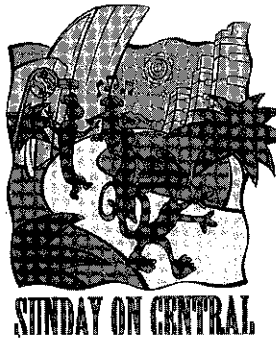
♻️ Printed on recycled paper

# notes

A Publication for the Citizens of the City of Phoenix

March 1996

## Join in the fun at Sunday on Central



Central Avenue will be the place to be April 14 when the city stages the 1996 edition of "Sunday on Central."

Once again, Central between McDowell and Osborn roads will be closed to traffic and transformed into a giant playground for people of all ages.

The fun begins at 11 a.m. and continues nonstop until 5 p.m. Several major events - a Phoenix version of the Indianapolis 500 car race among them - will be mixed with an array of games, sporting events, arts and crafts, city and business exhibits, food booths, and children's activities to entertain the thousands of people who are expected to attend. Past Sunday on Central celebrations have drawn as many as 100,000 people.

A variety of singers, dancers and musicians will perform throughout the day on four stages, and dozens of jugglers, clowns, magicians and other entertainers will stroll the street.

Activities include quarter-midget car races with boys and girls at the wheels; a pet parade with prizes for the winning animals; and a Kids Corner where clowns, story-tellers, face-painters, magicians, puppeteers and others will provide special entertainment for the young.

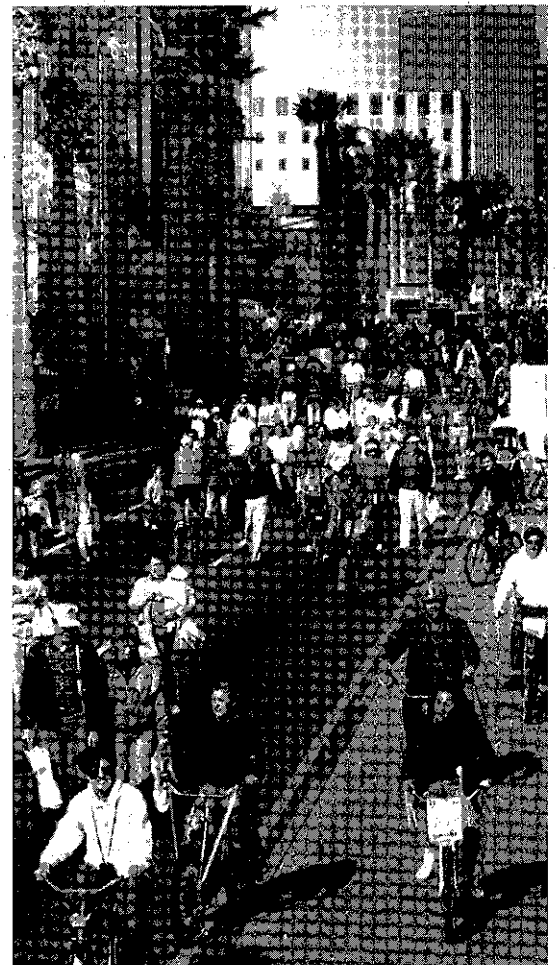
The Heard Museum at Central and Monte Vista Road and the Phoenix Art Museum at Central and McDowell also will take part.

New this year will be the Phoenix Mini-Indy race, which will feature more than 30 miniature Indianapolis 500 race cars. Valley celebrities, business executives and community leaders will race the colorful cars on a course that will be set up on Central from McDowell to Palm Lane. Former Arizona Gov. Rose Mofford and Indianapolis 500 driver Tom Sneva will be on hand to help host the

race, which is sponsored by Easter Seals.

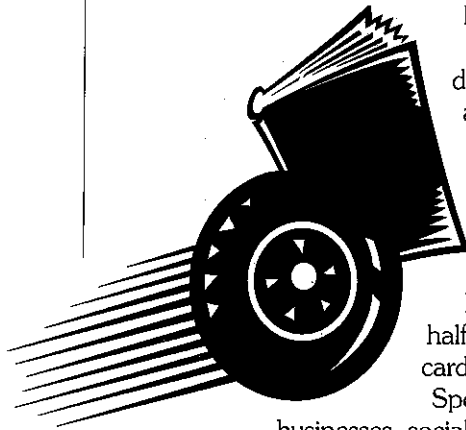
Sunday on Central was created by the Phoenix Pride Commission to help celebrate the city's distinctive outdoor lifestyle. The city and its Parks, Recreation and Library Department now sponsor the annual event with a number of area businesses and companies.

For more information, call 261-8069.





## Need information? Try "Facts to Go"



If it's just the facts you need, then try "Facts to Go."

The Phoenix Public Library offers research, copying and document delivery services to anyone in need of quick, complete and accurate information.

All you need to do is visit any of the city's public libraries or call 256-3544 between 8 a.m. and 5 p.m. Monday through Friday and you'll be put in touch with trained information specialists who are available to conduct research on just about any topic.

Facts to Go costs \$20, plus \$45 an hour for research, charged in half-hour increments. Payment for research is accepted by credit card only.

Specialists can answer questions and find information about businesses, social sciences, art, local history, economics, engineering, finance, agriculture, education, music and other topics.

Their resources are wide-ranging, too, and include local, national and international newspapers, books, magazines, directories of all kinds, trade journals, government documents, company reports and profiles, and computer databases. Legal research is out, however, and medical information is limited to definitions from available reference sources and copies of published materials. Also, the service cannot analyze information, prepare reports and summaries, or copy information for which reproduction is expressly forbidden by the owner.

Information gathered by the service's specialists can be faxed or delivered to any Phoenix branch library, home or business. Orders generally can be completed within two working days.

## Hazardous waste collection planned

A one-day Saturday collection of household hazardous waste is planned for spring.

Watch the City Page in The Arizona Republic and The Phoenix Gazette for details or call 256-3310 for the date and location.

The popular public event is an opportunity for Phoenix residents to dispose of unwanted household hazardous materials that are poisonous, flammable, toxic or corrosive. These items include batteries, oil, paint, antifreeze, cleaners, solvents and pesticides.

About 70 percent of the materials received in past hazardous waste collections are recyclable.

## Protect your property with flood insurance

Concerned about flood waters damaging your home?

City residents who live in designated flood hazard areas are eligible to purchase flood insurance to protect their homes and other property.

Property owners may purchase policies that cover their homes and contents, while renters may buy policies to cover their belongings only if the house or apartment they are renting also is insured.

Policies can be purchased from any licensed property insurance agent or broker.

If you're wondering if your home is in a flood hazard area, check with the Street Transportation Department, Floodplain Management, fifth floor, Phoenix City Hall, 200 W. Washington St. For more information, call 262-4960.



# notes

A Publication for the Citizens of the City of Phoenix

April 1995

## Prepare for flooding

Seasonal flooding can be especially dangerous for people with mobility problems, but a little preparation can make these conditions easier to handle. Use this checklist to help you plan:

- Learn how to turn off the water, gas and electricity at their main valves or switches.
- Plan and practice escaping from your home in an emergency. Let friends and relatives know when you've left your home and where you are going.
- Have these items on hand: extra wheelchair batteries, oxygen, any prescription medicine you may be taking, a water supply, battery-powered radio, flashlight, extra food, and food for guide or service dogs.
- Store backup equipment such as manual wheelchairs at a neighbor's home, nearby school or your work place.
- If you use a personal care attendant from an agency, check whether the agency has special provisions for emergencies.

The Federal Emergency Management Agency and the American Red Cross offer programs on flood preparation. For more information, contact the city's Floodplain Management Division, Street Transportation Department, Fifth Floor, 200 W. Washington St., Phoenix, Ariz. 85003-1611 or call 262-4960.

SERVING

Deer Valley  
Moon Valley  
North Mountain Village  
Northwest Phoenix  
Sunnyslope

# Northwest Phoenix COMMUNITY

THE PHOENIX  
Gazette

THE ARIZONA REPUBLIC

Friday, May 27, 1994

3

## Flood insurance rates will fall by 15 percent

By Ryan Konig  
Staff writer

Phoenix residents who live in flood plains will see a 15 percent reduction in their flood insurance premiums beginning Oct. 1, according to the Federal Emergency Management Agency.

The federal government is reducing the price that Phoenix homeowners have to pay for flood insurance because the city has reduced the threat of flooding.

The reduction is because of Phoenix's work since 1991 to improve the drainage of storm water runoff and inform residents about flooding hazards, said Ray Acuna, Phoenix's flood plain manager.

Many homeowners in the Sunnyslope area, which straddles the 10th Street Wash flood plain, were pleased to learn of the upcoming cost reductions.

Even so, some say they won't be buying the insurance.

Trudy Muller said her property has been flooded three or four times since she moved near the 10th Street Wash more than 30 years ago.

Twice the water penetrated her home, but caused no major damage. Muller said she has thought about getting insurance, but the cost is too high. Flood insurance is required of homeowners with a mortgage. It is optional if the home is paid off, as is the case with Muller.

"I was quoted at \$650 a year," Muller said. "I don't, at this point, think it's worth it. I would spend \$200 or \$300."

Paul Bellanger, who also has lived near the 10th Street Wash for more than 30 years, said he has no immediate plans to buy insurance even if rates are cut.

"We own our home so we're not required to buy flood insurance," Bellanger said. "If it washes away in a flood, we'll just pitch a tent here."

Phoenix has more than a dozen flood plains scattered as far north as the Carefree Highway and as far south as the Salt River area.

There are more than 13,000 buildings located in flood plains.

The Federal Emergency Management Agency recently rated Phoenix less likely to have flooding as a result of its participation in a national flood insurance program. The rating will reduce the yearly cost to residents by about \$900,000.

SERVING

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## Barriers gradually falling



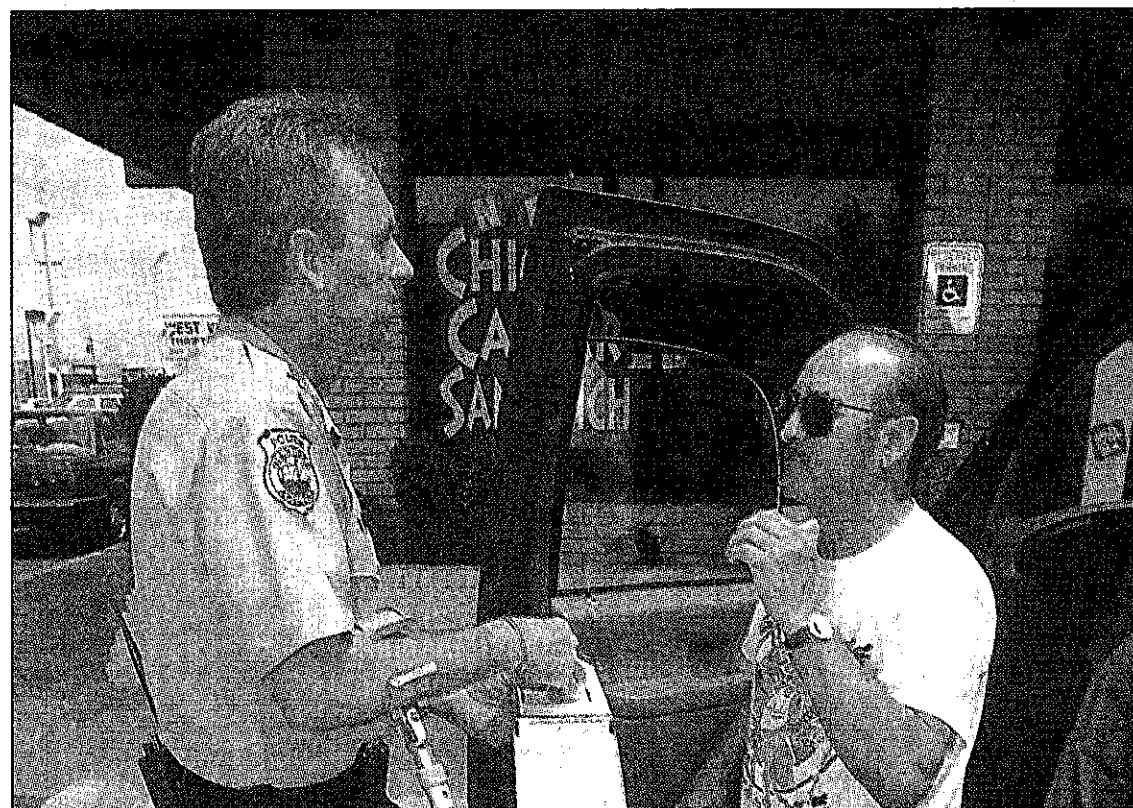
*Second of two parts on how disabled area citizens have been touched by the Americans with Disabilities Act. Part I on Wednesday focused on how businesses are making their buildings and services accessible to the handicapped.*

### Governments move to provide accessibility

By Lori Baker  
Staff writer

**W**hen it comes to taxes, there is no bias. Everyone must pay.

But not everyone can use the government buildings and services that their tax dollars buy.



### Handicapped parking sees enforcement

By Lori Baker  
Staff writer

**L**eaning on crutches, Craig Palmer watches as a man gingerly steps out of a car parked in a space reserved for the disabled.

"Excuse me, sir, is that your disabled placard?" Palmer asks.

"Well, no. It's my wife's," the man replies.

"Is your wife with you, sir?" Palmer asks.

"No, she's home, but I was just running in for a minute for bread," the man says.

"Did you know that it's against the law for you to park there? The placard was issued to your wife for her use only."

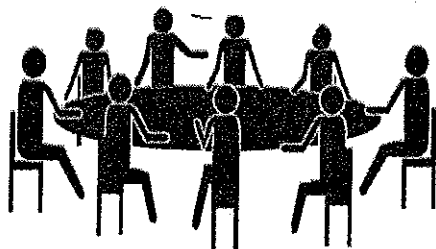


# April 2006 PAR Meetings

**Wednesday, April 19**

## HAREP Luncheon

Phoenix Mountain Preserve  
Reception Center  
1431 E. Dunlap, Phoenix  
11:00 a.m. to 1:00 p.m.



**Thursday, April 20**

## Women's Council of REALTORS® (WCR)

Moon Valley Country Club  
11:30 a.m.

**Margot Wilson:**

*"Using Technology for Time Management."*

**Friday, April 21**

## Commercial Marketing Session

Phoenix Assoc., Room #108  
Check-in: 7:30 a.m.  
Meeting: 8:00 - 9:00 a.m.

# Special Flood Hazard Area Information Available From The City

The City of Phoenix can help REALTORS®, Insurance Agents, Lenders and the general public identify whether a property is located in a Special Flood Hazard Area (SFHA). This free information should be of special value to those persons needing assistance interpreting Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA). This information is necessary in obtaining federally-required flood insurance for structures located within a SFHA.

This service provides flood hazard zone designations, the map panel number community number and the effective date of the FIRM. We also check our records to see if we have an elevation certificate on file for the subject property.

In addition, the City of Phoenix Staff keeps abreast of new flood studies in progress or changes to floodplain boundaries resulting from flood control projects or Letters of Map Amendment, and Letters of Map Revision issued by FEMA.

The City of Phoenix, Floodplain Management Staff accepts written, fax, telephone and walk-in inquiries. They can be reached by calling (602) 262-4960 between 7:30a.m. - 4:30p.m. or by writing or visiting their offices at Street Transportation, Floodplain Management, 200 W. Washington, 5th Floor, Phoenix, Arizona 85003.

# Use Up-To-Date ADRE Forms

by Linda Bevins

## Designated Brokers

ADRE Auditors have been receiving some Broker Supervision & Control Audit Declarations submitted on out-of-date forms. Be aware that the date of the most recent edition of the Broker Declaration Form is "Rev. 2/06"

# PHOENIX REALTOR MARKETING SESSIONS

## PARADISE VALLEY

2<sup>nd</sup> & 4<sup>th</sup> Thursdays, 8:30 a.m. — Marie Calenda  
4573 East Camelback Rd.

- Mike Tiers, Chairman, Phone - (602) 861-2300
- Holly Alton, Home Tour Director (4th Thursday), Phone - (602) 972-7653
- Nancy Sharp, Co-Chair for Program/Guest Speaker

## PHOENIX

Weekly Wednesday, 8:00 a.m. — Old Country Bldg.

- Sue Klima, Chairman, Phone - (602) 439-0085
- Steve Kersey, Vice Chair, Phone - (623) 972-7653
- Ray Evans, Program Chair, Phone - (602) 331-3011

## COMMERCIAL MARKETING BREAKFAST

Third Friday, 7:30 a.m. (Meeting 8:00 a.m.) — Phx. Assoc.  
• Eric Solheim, Chairman, Phone - (480) 948-5554

# PAR Tidbits

## All Your Printing Needs Now Available Online

Go to [www.PARonline.com](http://www.PARonline.com) and click on Member Services to locate the answers to all your printing needs. Easy to use. Create the look-exact. Plus, we ship right to your door. You can even upload logos to make it really unique. Business cards, flyers, etc. It costs nothing to create an account, and your wait time. Check it out today!

## "Traffic Tickets" in Real Estate

excerpted from a letter by ADRE Commissioner El...  
The administration of the disciplinary process in the Real Estate, much like the procedures in most government, is often confusing, time consuming, because all cases have to be processed in strict accordance with the rules, even the most minor of infractions can appear more threatening, intimidating and more time-consuming. In an effort to streamline the disciplinary process...

# THE ARIZONA REPUBLIC

Copyright (C) 1978 The Arizona Republic

th Year, No. 291 Circulation 271-8331

Classified 271-9111

Other 271-8000

Phoenix, Arizona, Friday, March 3, 1978

OX (4 Sections, 80 Pages)

g

20 cents

Today's chuckle

Overweight is what happens when  
you live in a foods paradise.

# Hundreds flee Valley flooding; state of emergency is declared



Hundreds of residents fled their homes in Phoenix and the area southwest of the city late Thursday and one man was believed to have been washed away as the Salt River Valley continued its war on rising water.

Gov. Wesley Bolin took a 90-minute helicopter tour of the devastation and declared a state of emergency, automatically mobilizing several Arizona National Guard units.

Runoff and a slight flow from the Cave Creek Dam north of Phoenix spread a wide area of water in an area south of 23rd Avenue and the Arizona Canal, flooding several areas along 19th Avenue.

National Guard units in an area south of Tolleson and Avondale evacuated 50 persons, and others fled their homes as the Salt River, unchanneled in the area, fanned out in depths of 2 to 3 feet.

Sheriff's Detective John Coppock said there were reports of looting in the area, bounded roughly by 67th and 123rd avenues and Lower Buckeye

Road and Southern. National Guardsmen were patrolling the area.

The area is a few miles east of where the Salt merges with the Agua Fria River.

Deputy Dave Baize said a maximum of 400 homes may be in the area, which generally runs west from 67th Avenue, but that not all would be affected by the rising water.

One man, Joseph Charles Mingo, 21, of 8523 E. Amelia, Scottsdale, was missing early today after he and two others tried to drive across the flooded Salt River at McKellips Road, Maricopa County sheriff's officials said.

Mingo was a passenger in a four-wheel drive vehicle that evaded barricades, entered the riverbed and went under immediately.

Mingo's two companions, Christopher Pfeifer, 19, of 8523 E. Amelia, and James George III, 17, of 8535 E. Amelia, made it to the shore safely.

Earlier, a National Guard helicopter rescued 20 persons from the top of a

building in the Tempe Industrial Park and a couple trapped on a eroding gravel pile at Gilbert Road and the Salt River.

The raging Salt River, which was flowing at about 90,000 cubic feet per second at 10 p.m., threatened a building at Sky Harbor International Airport housing the airport's radio equipment. Earth-moving equipment was used to construct an emergency dike.

Phoenix Mayor Margaret Hance said after a meeting Thursday night that the airport would have to be closed if the building was flooded.

The flooding situation in the area southwest of Phoenix began to develop Thursday evening.

"We deployed six National guard trucks to the area, and then they requested more help," Coppock said. "We deployed five more units."

The Phoenix Emergency Operations Center estimated that the Salt River would crest in the area of 91st Avenue.

Continued on Page A-16





## as Gila swells

Many of the approximately 800 residents of Duncan in Greenlee County were advised Thursday to evacuate the community because of rising flood waters from the Gila River.

One of the wettest winters in many years caused Arizona rivers and streams to overflow and created a situation at Duncan possibly more severe than occurred during October 1972, when flood waters poured into the town.

"It would take more water than in 1972 to get into the town, but it looks like we're going to have it," said Sheriff's Deputy Frank Edwards.

The Gila River was expected to crest between 1 and 3 a.m. today.

Since the last flood, the U. S. Army Corps of Engineers rebuilt and strengthened the dike along the river, but it was not expected to be able to withstand the rapid water rise.

In Little Hollywood, just outside of Safford, 18 families were evacuated because of high water, officials said.

From one end of the state to the other, the waters rose and fell, cutting into roads, sending people from their homes, destroying or damaging property, and spurring citizens into flurries of activity to protect themselves from the consequences of more storms.

The National Weather Service issued flash-flood watches for virtually the entire state, warning that the prospect for more showers was imminent and continuing.

Helicopters were used to rescue 15 persons when the New River ran over its banks, created an island and carried away two house trailers about a mile north of the town of New River, off Interstate 17.

Another helicopter hauled Kevin West, 21, of Scottsdale, to safety from a water-threatened island in the Salt River, about 10 miles below the Salt

## with Orme Dam in mind

By TOM KUHN

Because county officials thought Orme Dam was a certainty, bridges over the Salt River at Hayden and Scottsdale roads were designed small.

Thursday's floodwater carried away the bridge approaches.

Orme Dam, proposed at the confluence of the Salt and Verde rivers, probably never will be built.

"The bridges were designed for this to happen," said Francis Lathrop, deputy county highway engineer.

"Actually," he corrected, "when we designed the bridges we expected that Orme Dam would become a reality."

The federal government has scratched Orme Dam from the Central Arizona Project because of protests from the Fort McDowell Indians. The dam's waters would have inundated most of their reservation 15 miles upstream from the bridges.

Traffic approaches for the Olive Avenue Bridge across the New River near Peoria, west of Phoenix, also went

downstream with floodwater. Lathrop said that bridge also was built small to save money.

"We feel the farseness of the occasion is offset by the savings in cost," Lathrop said.

Some of the weaknesses in the Valley's flood defense were exposed once again by the 2-inch rainfall that turned dry desert washes into ugly torrents.

Cave Creek Dam backed its aged concrete arches into a gusher of muddy water that threatened Thursday to overwhelm the 55-year-old structure on Cave Creek 15 miles north of downtown Phoenix.

"It depends on what happens during the next 24 to 48 hours whether the old Cave Creek Dam will handle what's coming down Cave Creek now," a spokesman for the Maricopa County Flood Control District said.

A new earthen Cave Buttes Dam is under construction a mile downstream.

Continued on Page A-11

**ETHIOPIA CONTINUES TO BATTLE REBELS**

**Cubans are used to battle rebels**

Associated Press

Ethiopia confirmed for the first time Thursday that Cuban troops are manning front lines alongside Ethiopians in the African country's war against secessionist rebels.

A rebel leader claimed Cuban paratroopers and women tank crew members have been dropped into the battle zone.

Guerrillas fighting in southernmost Ethiopia, meanwhile, reported killing two Cuban officers. If the report is true, it represents the farthest that Cuba's troops have ranged southward in the war.

Cubans, who are renowned for shedding their blood anywhere and at all times in genuine struggle and for the sake of principles, are standing alongside the Ethiopian people's defense forces on the front.

"IT FEELS GOOD TO BE TOTALLY DEPENDENT ON JUST AS DEPENDENT"

3-3

FLOODS OF '93

# Floods roar through Arizona

— FLOODS, from page A1

said these crossings likely would be closed for days.

Grand Avenue was closed from 101st to 111th avenues.

Earlier Friday, the governor declared a "statewide flood emergency," a first step toward obtaining state and federal aid for victims.

Dams along the Salt, Verde and Agua Fria rivers seemed to be operating normally, though Roosevelt Dam has "lots of construction at risk" because of rising water, Symington said after an observation flight.

Two more storms are expected to sweep through central Arizona by Wednesday and together could drop an additional 2 inches of rain on the watersheds of the Salt and Verde rivers, said Anton Haffer, area manager for the National Weather Service.

Rain again is expected in Phoenix tonight and "we expect most of the state to be under rainfall, heavy at times, during the day on Sunday," Haffer said. Rain also is expected Tuesday night and Wednesday.

The most recent storm dumped as much as 7 inches of rain — the amount of rain the Valley gets in an average year — on some parts of the central Arizona watershed including both the Salt and Verde basins.

The National Weather Service extended flash-flood warnings until 9 a.m. this morning for Maricopa, Gila, Pinal and Yavapai counties.

The Verde River, before it reached the dams, raged Friday at up to 190,000 cubic feet per second — about 10 times the average Colorado River high. Some trailer parks along the Verde and its tributaries were evacuated. The Salt River tore through the Valley at up to 150,000 cfs.

Friday's flooding marked the Salt River's highest flow since a 1980 flood, when it reached 180,000 cfs, said David Carpenter, deputy meteorologist for the Weather Service.

Two spans of the new Mill Avenue

Tempe police spokesman.

One of the more dramatic rescues took place late Thursday night, when Prescott firefighters pulled an 18-year-old Cottonwood woman from raging Dry Beaver Creek near McGuireville.

Yavapai County Sheriff's officers said Amy Janes was canoeing on the creek when her boat overturned. She grabbed a tree and held on for seven hours until rescuers arrived, she told officers. The tree was about 40 yards offshore in the middle of a river that is usually dry but on Thursday was nearly 400 feet wide.

Near Tucson, Pima County sheriff's deputies said a 40-year-old man was hospitalized with hypothermia after he ignored deputies' warnings and tried to cross a swollen segment of Tanque Verde Wash. Witnesses saw the man, identified as Robert Hewett, carried away by strong currents. He was found about 90 minutes later clutching some brush and was airlifted to a local hospital.

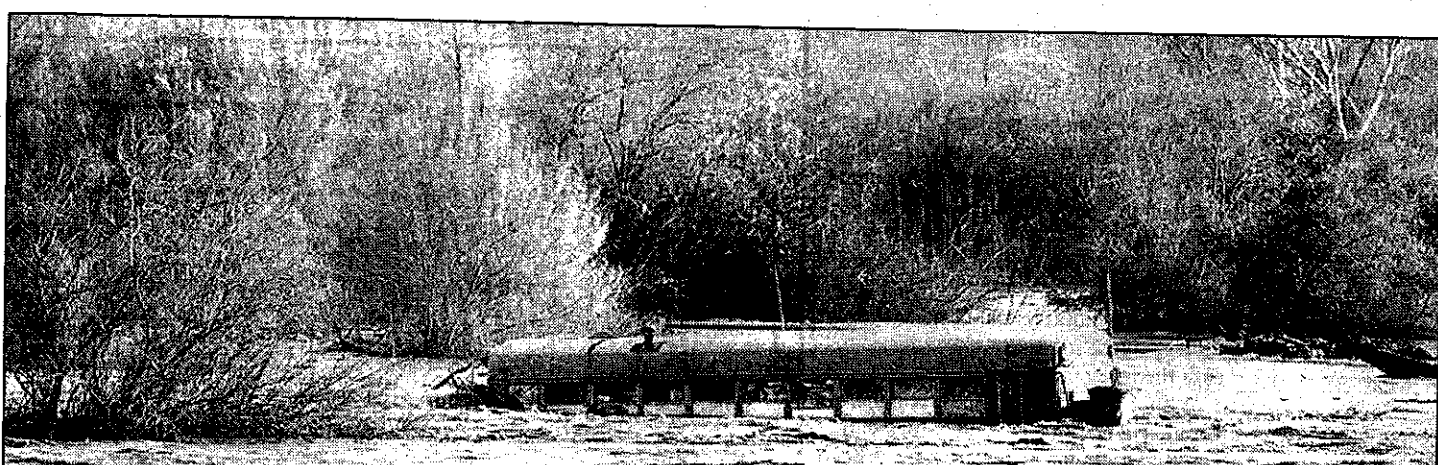
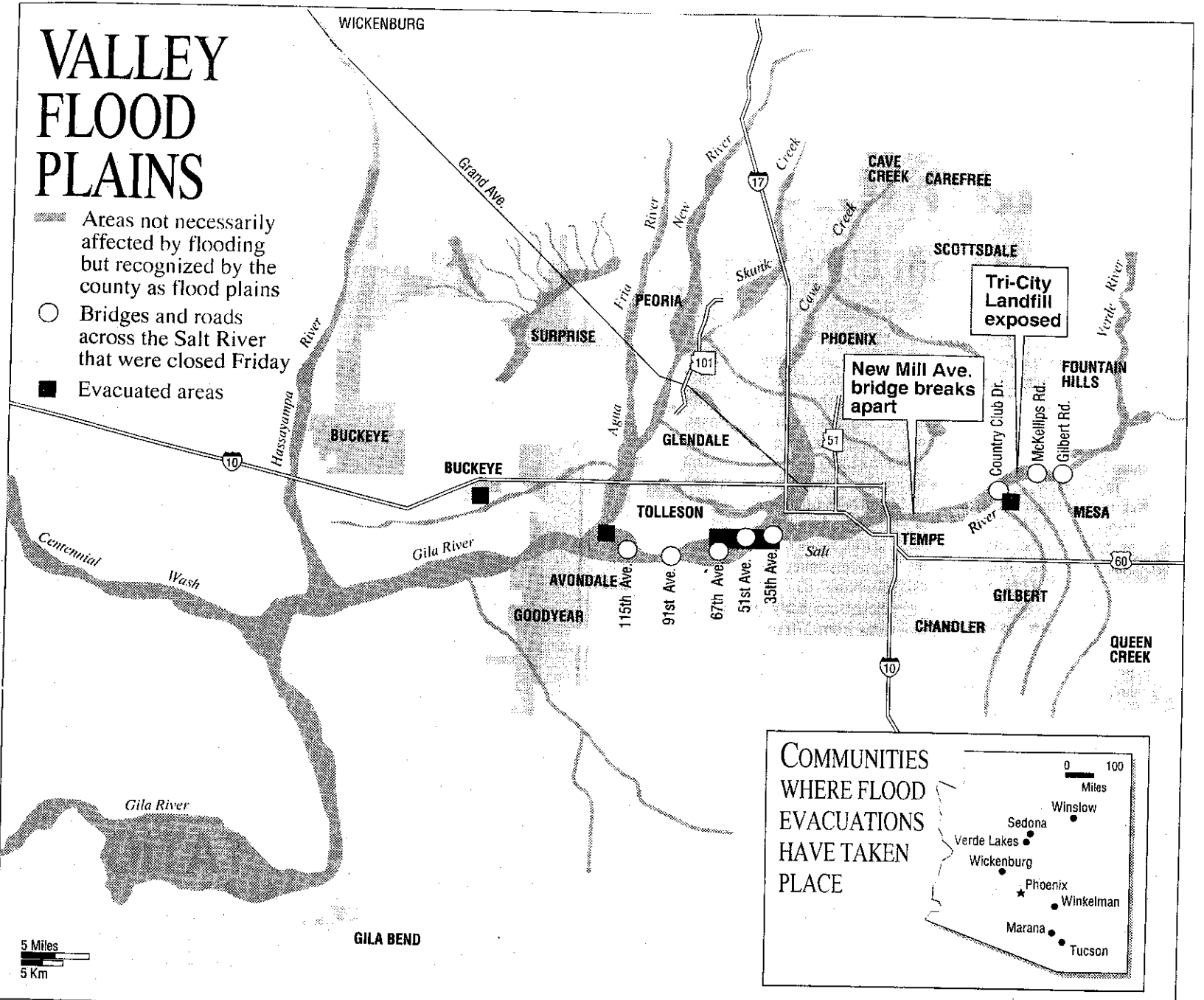
In Phoenix, the 35th Avenue bridge was closed at 2 p.m. but not before water rushing over its southern access nearly killed two people.

Phoenix police Sgt. William Johnston said the people were stranded on an island surrounded by raging waters and had to be rescued by police helicopter.

North of Cave Creek early Friday, a man who discovered a foot of water running through his house was rescued about four hours later by a television news helicopter, said Matt Phillips, spokesman for the Rural/Metro Fire Department.

The man, Michael Harris, lives in a wash but took refuge inside a pickup truck that was sitting on a high spot and called authorities by using a portable telephone, Phillips said.

"We arrived and found him pretty much stranded on an island," Phillips said. "He was talking to other people on the telephone when we were out there."



Water rises to the top of a bus in the Salt River at 91st Avenue, where about 18 people were living in buses.

Gus Walker/The Arizona Republic



# Floods aren't just from rivers: How to deal with all types

By Betty Beard  
The Arizona Republic

**D**on't assume you're free of flood threats just because your house is high on a hill or far from a wash or river.

The biggest cause of flooding in the Valley is not rain. It's those innocuous-looking, little flex hoses that connect the water to your washing machine, toilets and water heaters, according to water-damage restorers.

"It's quite surprising how much water they can put out," said Don LaBarge, owner of Desert Chem-Dry, a Mesa carpet-cleaning and water-damage restoration company.

"Say you go to work at 7 a.m., and the hose breaks shortly after you leave. You come back 10 hours later, and it's like you ran a garden hose loose in your house. A broken flex hose can put out 10,000 gallons in 24 hours."

Washing-machine flex hoses should be replaced every three years, he said. And it's a good idea to turn off the main water supply to your house whenever you leave for even one night.

Whether your house has been flooded from rain or broken hoses, it's still a shock, of course. Here are some tips to minimize personal danger and property damage.

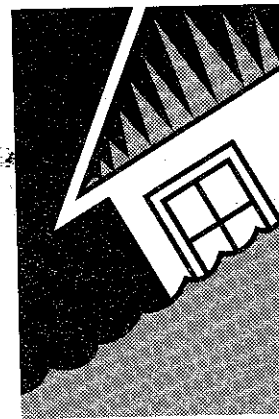
## Personal safety

Before re-entering a flooded house, make sure it's not about to collapse, advises the National Flood Insurance Program. Turn off outside gas lines at the meter or tank, and let the house air for several minutes to let any gases or foul odors escape. Don't use open flames for light. Use a battery-operated flashlight.

Turn off the main power switch before walking around the house. That pond in the living room could be hiding some electrical shorts or live wires that could give a fatal jolt. And after the house has dried, don't turn on any lights or appliances until an electrician has checked the system.

If the house has been flooded by river or wash water, throw out fresh foods and opened medicines contaminated by flood water. Disinfect all cups, utensils and plates with bleach before using them.

Boil any water for 10 minutes before using it for drinking or food preparation, even after the public



FLOODING

water has been declared safe, because some of the water in the pipes may have been contaminated. Another disinfection method is to mix half a teaspoon of liquid bleach with 2½ gallons of water and let it stand for five minutes.

## Insurance

If your house has been flooded because of a broken hose, your regular homeowner's policy will probably cover the damages and cleanup. However, regular homeowner's insurance does not cover flood damage due to natural disasters such as rain, although most people believe it does, said Diana Herrera, western regional manager for the National Flood Insurance Program in Sacramento. You have to buy separate flood insurance.

Start documenting everything, whether or not you have flood insurance. Keep lists of everything that is damaged, even if it has to be thrown away. The best way to document your losses is by taking lots of pictures, before and after the water has receded.

If you don't have flood insurance and you're the victim of rain flooding, you may be eligible for a low-interest loan from the federal government. Contact the Small Business Administration or Federal Emergency Management Agency.

## House structure

A river-flooded house is probably going to remain standing, although everything except the outside walls and roof may have to be gutted and rebuilt.

The most important thing about

rebuilding is to make sure all the concrete, blocks and wood in the house's foundation and walls are dry before rebuilding over them. Otherwise, mildew may develop and lead to rotting. Some water-damage specialists have meters that can measure the moisture in wood and cement.

The foundation is not likely to be damaged, unless it sits on weak or expansive soils, said Dave Swartz, operations manager and inspector for Semmens and Associates, a Phoenix civil and structural engineering firm.

Look out for any cracks more than 1/16 inch that develop in the foundation (outside base of the house) or concrete-block walls. To see whether the foundation has cracks, look at the outside base of the house. If you see a crack thicker than 1/16 inch that you believe is new, you may want to call a licensed structural engineer. Get estimates from several.

Otherwise, the flooring and all interior doors and cabinets probably will have to be replaced. And some of the drywall on interior walls may have to be redone.

## Flooring

Flooring, including carpeting and vinyl tiles, will have to be taken up so the floor underneath can dry thoroughly, LaBarge said. Otherwise, the house will start smelling like a lagoon.

Vinyl flooring will warp and come loose, anyway. There are varying opinions about whether carpeting and padding can be salvaged. Wet carpeting may rip when it's pulled up, and wet furniture and other items may stain the carpeting beyond repair.

## Furniture

Solid-wood antique furniture has the best chance of surviving a flood, because the wood can absorb water and retain its shape, said Norm Barth, owner of Custom Wood Finishing in Scottsdale. Furniture made of plywood also might survive. But pieces made of particleboard probably will be warped beyond repair.

Take all wooden furniture outdoor but keep it out of direct sunlight to prevent warping, advises the National Flood Insurance Program. Remove drawers, but don't pry them open from the front. Remove the backings and push the drawers out from the

— See MOTHER, page H1

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**Appendix E**  
Excerpts from Reports by  
City of Phoenix

The Floodplain Management Plan  
City of Phoenix  
Draft Workplan

**INTRODUCTION:** The City of Phoenix has over two decades of experience in the implementation of a City wide floodplain management program. To date the program has focused on the permitting aspects of the floodplain management regulations in addition to being a technical resource to other City Departments and the Flood Control District of Maricopa County. The strength of the program is reflected in the City achieving a Class 7 rating in FEMA's Community Rating System; that translates into a 15% reduction in flood insurance premiums to citizens of the City.

Based on the examination of other floodplain management programs especially those for large Cities or States, it is recognized that many activities taken by the City can influence drainage and flooding issues. The purpose of developing a Floodplain Management Plan for the City of Phoenix is to establish the policies and initiatives of the City in order to optimize flood protection benefits within the context of current activities. Likewise it can serve as the basis for developing and adopting strategic initiatives.

The following outline is intended to demonstrate a potential plan framework.

- 1.0 City Floodplain Management Resources- The purpose of this section is to evaluate on a Department level the potential interaction of that Department with floodplain management actions in the community.
- 2.0 National Flood Insurance Program- The purpose of this section is to provide in one location documentation associated with the City's participation in the NFIP with particular attention given to the Community Rating System; and cost effective efforts that promote additional cost savings to the citizens as well as cost effective measures to communicate to the citizens risk and what the City is doing to mitigate the flooding risk.
- 3.0 Federal Resources-A compendium of technical and financial resources available to the City. Includes creative thinking to evaluate non-traditional sources of funding that might be available via other Departments.
- 4.0 State Resources- See 3.0
- 5.0 Funding Strategies- Pulls together sections 3.0 and 4.0 as well as explores how other cities fund programs.
- 6.0 Statement of Needs- This section would condense what are the citizen based needs for the floodplain management program.
- 7.0 Five and Ten Year Plan- Identifies a strategy to accomplish the statement of needs.

**FLOODPLAIN MANAGEMENT PLAN**

**AND**

**REPETITIVE LOSS PLAN**

**PREPARED**

**BY**

**THE FLOODPLAIN MANAGEMENT SECTION**

**OF THE**

**STREET TRANSPORTATION DEPARTMENT  
CITY OF PHOENIX**

**125 EAST WASHINGTON STREET  
PHOENIX, ARIZONA 85004**

**DECEMBER, 1992**

**APPROVED BY MAYOR & COUNCIL - DECEMBER 9, 1992**



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## EXECUTIVE SUMMARY

The City of Phoenix is required to be a participant in the National Flood Insurance Program (NFIP) if flood insurance is to be made available within the City of Phoenix.

In 1990 the NFIP initiated a program to rate communities in order to encourage proactive measures which will reduce flood losses. Communities which carry out certain activities can obtain reductions in flood insurance premiums up to 45 percent. The program is called the Community Rating System (CRS). The City joined the Community Rating System on October 1, 1992 as a Class 9 community. This results in a 5 percent reduction in premiums within the City of Phoenix. Each 5 percent reduction results in a savings of about \$150,000 per year to City residents. At this time savings up to \$500,000 per year seem feasible. A requirement of belonging to the program is that the City must have a Repetitive Loss Plan. A Repetitive Loss is a property which has filed more than one claim of over \$1,000 against the NFIP. Since a Repetitive Loss Plan is part of a Floodplain Management Plan, which provides even more points towards a higher rating, it was decided to produce a Floodplain Management Plan and a Repetitive Loss Plan as one document.

The Plan discusses the floodplains and areas of local flooding within the City of Phoenix. The Local Flooding Mitigation program was established in 1990 to inventory and prioritize the local flooding problems. The Program has identified 147 separate projects which will cost \$300 million. The projects will prevent flooding to approximately 12,000 structures which are presently at risk of flooding. It is estimated that over 1,000 homes and businesses were flooded during the 1990 and 1992 rainstorms. The Plan identifies that the primary obstacle to reducing flood losses in the City of Phoenix is a lack of funds. A Stormwater Management Utility is badly needed, but the Flood Control District of Maricopa County is the major hindrance in creating a Stormwater Management Utility. The fact that Stormwater Management has never been funded as a line item in the City budget contributes to the problem. It has always been an overhead function of various departments and divisions within departments.



Mitigation efforts completed to date are reviewed which include the City's \$300 million dollar storm drain system, and the \$30 million dollar East Fork of Cave Creek Detention Basins. The plan documents that the City's development standards have contributed significantly to the reduction in flood losses.

The Plan reviews present activities which include Public Information, Mapping and Regulation, Acquisition of Open Space, Construction Projects, and Open Space Preservation. It discusses possible funding mechanisms and determines that there are not any funds available to fund a program to further reduce flood losses, other than the creation of a Stormwater Management Utility. It notes that City residents are included in the Flood Control District of Maricopa County, but due to present District policies these funds are not available to reduce flooding within the City of Phoenix. The reason is the method of allocating District funds for projects, and the requirement of 50 percent matching funds from the City for all projects. Since the City does not have any money budgeted for Local Flooding Mitigation Projects, no projects are possible. Conversely, because transportation funds are readily available, there is a strong bias to fund transportation related projects with Flood Control District of Maricopa County funds.

The Plan discusses a number of Public Information, Mapping and Regulation, Damage Reduction and Flood Preparedness activities which are already implemented or can be undertaken with a minimum amount of funds. It recommends that the City modify its relationship with the Flood Control District of Maricopa County in order to obtain funds to create a Stormwater Management Utility to fund Local Flooding Mitigation Projects. It recommends that Stormwater Management be included as a line item in the City's budget until a Stormwater Management Utility can be formed.

The public was involved in the process of the development of the Plan. Three meetings were held with the Village Planning Committees to secure input at the start of the planning process. An open house was held so that the public and the Village Planning Committees could view and comment on the Draft Plan. The City Planning Commission approved the Draft Plan on November 18, 1992 and included a statement that present Flood Control District of Maricopa County policies contribute to urban sprawl. Written comments in favor of the Plan have been received from the North Mountain Village Planning Committee, and the Phoenix Board of Realtors.

## SECTION I

### INTRODUCTION

The City of Phoenix became a participant in the Emergency Program of the National Flood Insurance Program (NFIP) on November 22, 1971 and in the Regular Flood Insurance Program on September 4, 1979. Participation in the National Flood Insurance Program (NFIP) is mandatory for any federally insured mortgages to be written on property located in designated floodplains. There are 35 square miles of Phoenix designated as floodplains by the National Flood Insurance Program (NFIP). This does not include 14 square miles of NFIP proposed floodplains. The City of Phoenix has a population of over 1 million people and includes an area of over 400 square miles. The City is located along the Salt River. As a result of the construction of several major irrigation dams it is now a dry riverbed. The City is bordered on three sides by other communities with similar development policies, and which also participate in the National Flood Insurance Program (NFIP). The City consists largely of low density development ranging from four homes per acre to one home per acre.

### COMMUNITY RATING SYSTEM (CRS)

On October 1, 1992 the City of Phoenix became a Class 9 rated community by the National Flood Insurance Program (NFIP). This was a result of its participation in the National Flood Insurance Program (NFIP) - Community Rating System (CRS) which had begun one year prior. The Community Rating System (CRS) has been designed to encourage communities to become proactive in the reduction of potential losses due to stormwater flooding. As a result of participating in various activities which are designed to reduce losses from stormwater flooding, communities are awarded a rating which will result in reduced flood insurance premiums to residents. Since the City of Phoenix takes part in the National Flood Insurance Program (NFIP) all structures within the City of Phoenix can purchase flood insurance at reasonable rates. It is anticipated that participation in the NFIP-CRS will save City residents approximately \$500,000 per year.

## FLOODPLAIN MANAGEMENT PLAN AND REPETITIVE LOSS PLAN

The City of Phoenix has twenty one repetitive loss properties. These are properties for which more than one claim for a loss from stormwater flooding has been filed. The NFIP-CRS requires that the City have a Repetitive Loss Plan which has been approved by the City Council. The Floodplain Management Plan includes the Repetitive Loss Plan. The purpose of the Floodplain Management Plan is to ensure that an open public process is followed in pursuing the reduction of flood losses and that the selected activities are best for the community. This plan describes the nature and magnitude of flooding and repetitive loss problems, previously taken actions, alternative remedies, and a plan for future action to address the problems. It is not the purpose or the intent of this plan to commit the City to large public expenditures. The objective is to quantify the problem and propose solutions which can be undertaken at this time, and in the future, if and when funds become available.

### SIGNIFICANT RAINFALL EVENTS

The City experienced major Cave Creek floods in 1919 and 1921. In 1978 and 1980 major floods occurred on the Salt River. These will be discussed below. In addition, the City has experienced several significant rainfall events. From records readily available, we can conclude that the City is experiencing a period of more intense and frequent rainfall at a given location. In 1972 the City established a network of recording rain gauges.

The seven most intense local rainstorms from City records are:

Ranking	Approximate Storm Center	Date
1. (450 yr.)	24th Street & Camelback Road	June 22, 1972
2. (380 yr.)	27th Avenue & Camelback Road	July 24, 1992
3. (350 yr.)	51st Avenue & Glendale Avenue	August 16, 1963
4. (130 yr.)	North of City	August 2, 1943
5. (80 yr.)	16th Street & Missouri Avenue	August 14, 1990
6. (40 yr.)	27th Avenue and Northern	September 1, 1984
7. (30 yr.)	16th Street & Missouri Avenue	July 29, 1981

Many of the most severe storms have occurred recently. As a result of these very intense storms, the stormwater run-off caused an extensive amount of flooding in 1990 and in 1992. In many cases this was the first time residents had been flooded in more than thirty years. Many of them associate this with present development policies or recent construction in their neighborhood. However, generally the stormwater flooding occurred because the most heavy rainstorm in 30 or more years occurred at that location.



## SECTION II

### PROBLEM IDENTIFICATION

This section discusses the degree of flooding in the City of Phoenix. The major watercourses have been mapped as floodplains and are shown on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM). Other areas of local flooding and historical flooding are discussed. The lack of funds for stormwater management activities is identified as a major problem

#### DESIGNATED FLOODPLAINS

The City of Phoenix has twenty-eight floodplains which have been mapped and are included on the forty-seven Flood Insurance Rate Maps (FIRM) which are published by the Federal Emergency Management Agency (FEMA) for the City of Phoenix. A major floodplain has been proposed by FEMA for the area east of Cave Creek Wash and north of the Central Arizona Project Canal. A brief description of the floodplains follows.

#### The Salt River Floodplain

The Salt River, which is a major tributary to the Gila River, drains a watershed of 13,000 square miles. As a result of the construction of several irrigation dams upstream the riverbed is normally dry. It had not flowed since 1943 until March 2, 1978 when it flowed at a rate of 138,000 cubic feet per second (cfs.), a 40-year flow rate, and in December, 1978 when it flowed at a rate of 140,000 cfs. In February, 1980 it flowed at 170,000 cfs. which was the 100-year flow rate at that time. The present calculated 100-year flood flow rate is 215,000 cfs. This has been calculated by the U.S. Army Corps of Engineers (COE). As a result of the 1978 and 1980 floods, the river cut itself deeper and greatly reduced the extent of the floodplain. The floods also washed out most of the major highway and street bridges which had been designed to pass a much lower flow in anticipation of a major dam project which would have reduced the flow. Shortly after the bridges had been washed out, the dam project (Orme) was canceled for environmental reasons.

All of the bridges have been replaced and constructed to pass the 100-year flow of 215,000 cfs. Bridges now exist at 24th Street, 16th Street, 7th Street, Central Avenue, 7th Avenue, 19th Avenue, and 35th Avenue over the Salt River. There are no longer any unbridged crossings on city streets over the Salt River. The Arizona Department of Transportation (ADOT) has also reconstructed the Interstate 10 bridges over the Salt River to pass the 100-year flow, as well as several new freeway and state highway bridges in the vicinity of the airport. In summary, there are no longer any unbridged crossings over the Salt River, or bridge crossings which do not pass the present 100-year flow within the City of Phoenix. Furthermore, as a result of a present Bureau of Reclamation project to increase the capacity of dams upstream, the 100-year flow will soon be reduced to approximately 170,000 cfs. This will provide an even greater safety factor for the bridge crossings and channel.

The Salt River has been channelized through most of Phoenix. Some of the projects were constructed by the City to protect Sky Harbor International Airport, which is the major regional airport for the area. Several miles of dike and channel have been constructed by the private sector, as parts of reclamation projects to reclaim old sand and gravel operations. The Salt River in Phoenix is going through a change with sand and gravel extraction becoming less important. The old sand and gravel pits are being refilled with non-biodegradable construction rubble, and the land being reclaimed for development purposes. The length of river within the City is approximately 15 miles and the floodplain consists of approximately 4,700 acres. The most recent count of structures from aerial photographs indicates 193 residential structures and 195 commercial structures in the Salt River floodplain.

#### Irrigation Canals

The City of Phoenix was originally primarily an agricultural area with irrigation provided by above ground canals. The uphill side of all the irrigation canals have been designated as floodplains where they are elevated since they cause ponding along the uphill side of the canal. On the north side of the Salt River this is the north side of the canal, and on canals on the south side of the Salt River, the higher side is the south side of the canal. Because the ponding is shallow with zero or low velocities, there is little threat to loss of life from the flooding along the canals, however it is extremely burdensome to those homeowners who live in these floodplains. At this time, there are a total of 62 miles of canals in the City of Phoenix. The total area of the floodplain is 3,881 acres and the total number of structures in these floodplains is 3,451.

### Buchanan Wash

Buchanan Wash is a small wash which is tributary to Skunk Creek above Happy Valley Road. The floodplain is 1.5 miles in length, and consists of 126 acres. At this time only 5 structures are located in the Buchanan Wash floodplain.

### Cave Creek Wash above the Arizona Canal

Cave Creek Wash is a major drain which starts at a controlled outlet from Cave Buttes Dam and flows to the Arizona Canal Diversion Channel (ACDC). It is 23 miles in length and the floodplain consists of 3,078 acres. Only 142 structures are left in the Cave Creek Wash floodplain. The City has four unbridged crossings on Cave Creek Wash; 7th Avenue, Union Hills Drive, Deer Valley Road, and Beardsley Road. The 7th Avenue and Union Hills bridges are presently funded by the 1988 Bond program. The Beardsley bridge will be constructed as part of the Arizona Department of Transportation (ADOT) Outer Loop Freeway.

### Cave Creek Wash below the Arizona Canal

Cave Creek Wash has been intercepted by the large Arizona Canal Diversion Channel (ACDC) project. This is a major flood control feature which is nearly complete. It intercepts the Cave Creek Wash as well as a number of other major washes which flow from the North Phoenix Mountains. South of the ACDC, the shallow valley where Cave Creek Wash used to flow still exists. It lies approximately along the alignment of 17th Avenue from Dunlap Avenue to Van Buren and 23rd Avenue. It then crosses Interstate 17 and flows westerly south of Durango Street and enters the Salt River at about 35th Avenue. This area is subject to shallow flooding caused by the water flowing from the north, east and west into this low area. The flooding is very shallow and many of the structures would probably be found to be above the base flood elevation if a property survey were made. This floodplain continues to contain the most structures with a total of 4,849 residential structures and 734 commercial structures. The total acreage in the floodplain is 36,134 acres and the length is approximately 24-1/2 miles.

### Dreamy Draw Wash East and West

These are two small washes, one of which is now the controlled outlet from Dreamy Draw Dam. They flow for .6 and 2.5 miles respectively to the Arizona Canal Diversion Channel (ACDC). They contain 157 residential structures and 7 commercial structures. The floodplain consists of a total of 111 acres.

### East Fork of Cave Creek

The East Fork of Cave Creek is the remaining major tributary to Cave Creek and drains the area north and east of 7th Street and the Greenway Parkway. A series of detention basins presently under construction will result in the removal of nearly all of this floodplain. At this time the floodplain is 7.8 miles long and contains 1,395 residential structures and 55 commercial structures. The total acreage is 1,039. It contains one unbridged crossing at 7th Avenue.

### Echo Canyon Wash and Flynn Lane Wash

Echo Canyon Wash and Flynn Lane Wash are two small washes which flow out of the North Phoenix Mountains into the ACDC. Echo Canyon Wash is 1.5 miles long, with 52 residential structures on 93 acres. Flynn Lane Wash is .8 miles long, with 117 residential structures and 3 commercial structures on 44 acres.

### Indian Bend Wash

Indian Bend Wash drains the area from about 32nd Street and Acoma, southeast to Paradise Valley. It contains 1,102 residential structures and 2 commercial structures on 641 acres of floodplain. It is 6 miles in length.

### Moon Valley Wash

Moon Valley Wash drains the area considered as Moon Valley above Thunderbird and east of Moon Mountain. It is tributary to Cave Creek. It includes 847 residential structures and 43 commercial structures on 669 acres of floodplain. It is approximately 7 miles in length. Flooding is very shallow with low velocities.

### Myrtle Avenue Wash

Myrtle Avenue Wash is another small wash draining the North Phoenix Mountains with 18 structures on 14 acres. It is four tenths of a mile long.

### New River

A small portion of New River crosses Phoenix at the west side. It is 1.2 miles long on 343 acres with 2 structures in it.



### Scatter Wash

Scatter Wash is another tributary to Skunk Creek, draining the area north of Deer Valley Road east of 43rd Avenue. It contains 314 residential structures and 9 commercial structures on 475 acres with 4.65 lengths of miles. Scatter Wash presently has unbridged crossings at 43rd Avenue and 35th Avenue. The 43rd Avenue bridge presently is funded by the 1988 Bond Program.

### Skunk Creek

Skunk Creek drains a large area north of Phoenix, however it is well confined in the channel. It flows along the east side of Interstate 17, crossing Interstate 17 above Happy Valley Road and drains into Adobe Dam. It has 7 residential structures and 6 commercial structures on 24,094 acres. Its length is 14-1/2 miles long. A major problem with Skunk Creek is two unbridged crossings on Pinnacle Peak Road and Happy Valley Road. These unbridged crossings make it very difficult for residents who live to the west of Skunk Creek to get to Interstate 17. They have an alternate route which adds approximately two miles to the drive. There have been several incidents of near drowning while Skunk Creek was flowing due to automobile drivers ignoring barricades and trying to cross the wash when the water was several feet deep.

### 10th Street Wash

10th Street Wash drains the Sunnyslope Area along 10th Street and Cave Creek Road. It contains 446 residential structures 127 commercial structures on 310 acres. Its total length is about 2-1/2 miles long.

## HISTORICAL FLOODING

### Salt River

The highest recorded flow on the Salt River occurred in 1891 with an estimated flow of 300,000 cubic feet per second (cfs.). The flows during the March and December, 1978 floods were estimated to be 122,000 cfs. and 140,000 cfs. respectively. The peak of 170,000 cfs. which was experienced in February, 1980 is the most recent large flow on the Salt River.

### February/March 1978 Flood

This storm did not damage many residences and it was only necessary to evacuate approximately 200 families. Industrial losses were \$2 million and commercial losses of approximately \$300,000 occurred. The largest loss was \$3.2 million of damage to Sky Harbor International Airport. This storm caused substan-

tial damage to all of the bridges on the Salt River with a total bridge damage cost of approximately \$10 million. The only City bridge which remained opened during the event was the Central Avenue Bridge, which still sustained \$190,000 dollars damage. This was a 35-year flood.

#### December 1978 Flood

The total estimated damage from the 1978 flood along the Salt River was \$24 million. \$5.2 million of this damage was to sand and gravel operations in the Salt River. Additional damages to the bridges in the City of Phoenix added up to approximately \$3 million. This was a 40-year flood.

#### February 1980 Flood

This flood was approximately a 100-year flood. Total estimated damages in the Phoenix Metropolitan area along the Salt River were \$49 million. This includes both income loss and emergency costs. Commercial damages were a little over approximately \$2 million and combined business losses were \$4.5 million. The Central Avenue bridge was one of only two operational bridges over the Salt River during the flood. Damages to various roads and bridges were \$7.5 million. An additional \$6 million damage occurred to Sky Harbor International Airport, sewer systems, gas lines, landfills, and flood control works. Little or no damage to residences was noted.

#### Cave Creek Wash

Cave Creek Wash used to drain an area of over 300 square miles. The construction of Cave Creek Dam in the 1920's reduced the drainage area to approximately 34 square miles above the Arizona Canal Diversion Channel (ACDC). A large flood occurred on Cave Creek Wash in 1919 of which little information is available. On August 22, 1921 Cave Creek Wash had a very high flow event which caused two feet of water in the first floor of the State House (next to the State Capitol). A solid sheet of water extended from 15th Avenue to 19th Avenue with a maximum depth of five feet. The State Fairgrounds at McDowell Road and 19th Avenue were covered to a depth of several feet of water. Damages in the 1921 flood were estimated to be \$1 million. On August 4, 1943 another flood occurred on Cave Creek Wash for the area below the dam. Hundreds of Phoenix homes and businesses were reported flooded. In 1967 the damages of the 1943 flood were estimated to be \$20 million in 1967 dollars. Since 1943 only small floods have occurred along Cave Creek Wash. The large 1972 storm did not occur on the Cave Creek watershed, and no flooding was experienced from Cave Creek Wash. A number of other smaller storms have caused small amounts of water to flow out the Arizona Canal spillway downstream from Cave Creek Wash.

## Flooding Adjacent to Canals

Much of the damage in Phoenix has been due to flooding adjacent to canals. The June 22, 1972 storm caused extensive flooding along the Arizona Canal which overtopped, and then subsequently caused flooding along the Grand Canal. The 1972 storm was approximately a 70-year storm centered at Camelback Road and 24th Street. Damage along the Arizona Canal totaled about \$608,000 dollars. Twelve miles of land adjacent to the canal were flooded with average depths of one to three feet. In August 1963 a heavy thunderstorm occurred over the Glendale/Maryvale area. This flooded structures mostly along the Grand Canal west of 27th Avenue. The storm was estimated to be in excess of a 100-year storm by the Corps of Engineers (COE) with approximately 5-1/4 inches of rainfall falling at 51st Avenue and Glendale Avenue in a six hour period. Damages along the Grand Canal exceeded \$1 million. Damage to over 504 residential units was noted. Total damage to streets, roads, and bridges was about \$200,000. Little or no damage occurred below the Grand Canal, indicating that it usually acts as a dam for all of the flood waters.

## Local Flooding

On September 1, 1984 an approximately 40-year storm was measured on the City rain gauge at Northern Avenue and 27th Avenue. This storm was 2.35 inches of rain in approximately two hours. On July 29, 1981 a 30-year storm was recorded at Missouri Avenue and 16th Street. This included 2.21 inches of rain in 1-1/2 hours. On July 24, 1992 a storm in excess of 100-year was recorded at 27th Avenue and Camelback Road. The Street Transportation Department estimated damages to be \$3 million. On August 14, 1990 an 80-year storm was recorded at Missouri Avenue and 16th Street. This amounted to 3.72 inches of rain in less than 24 hours.

The general nature of flooding from these intense local thunderstorms is to flood structures in the vicinity of the center of the thunderstorm but stormwater is quickly dissipated down the streets. Occasional flooding exists where structures are located below the elevation of the street or where sharp turns in the streets, dead-ends, or curves occur.

The City now is protected from Cave Creek Wash and other North Phoenix Mountain streams as a result of the completion of the Arizona Canal Diversion Channel (ACDC), the new Cave Buttes

Dam and other small dams. Protection from the Salt River has been effected by the deepening of the channel and construction of channel protection. Very little floodplain remains along the Salt River or Cave Creek Wash above the Arizona Canal Diversion Channel (ACDC). The remaining threat to flooding in the City of Phoenix is due to intense thunderstorms which cause ponding along the canals and a few other areas which are no longer able to drain due to obstructions downhill from them, or very low floor elevations.

### Local Flooding Mitigation Program

As a result of the large amount of flooding which occurred in 1990, a Local Flooding Task Force was formed. This Task Force has looked at approximately 147 locations of flooding to date and prioritized and categorized them. These have been compiled in a book of Local Flooding Projects which now have an unfunded cost of approximately \$300 million. These have been consolidated into 20 different planning areas.

#### AREAS OF MOST CRITICAL NEED

The City of Phoenix has several areas which have experienced flooding repeatedly during the last few years. The location and a brief description of the areas follow:

##### 26th Avenue and Verde Lane

This is a repetitive loss area and is discussed below. A local detention basin is required to mitigate the flooding.

##### 24th Avenue and Camelback Road

This is a small depression created by Camelback Road, Interstate 17 on the west, and 23rd Avenue on the east. The problem was created in the 1940's when development was allowed to block off the drainage from this shallow valley. Subsequent development has made it no longer economically feasible to drain this area. Therefore, several houses on 24th Avenue north of Camelback Road, as well as the car dealerships south of Camelback Road experience flooding one to two feet deep. The most probable solution to this flooding will be the construction of a detention basin in the area.

##### 15th Avenue Between Union Hills Drive and Bell Road

This area is the drain for approximately 1 1/2 square miles of developed area to the north and east. 15th Avenue cannot contain the stormwater and floods homes along 15th Avenue as well



as flowing into the Helena Drive cul-de-sac west of 15th Avenue flooding homes in the cul-de-sac and on 16th Avenue, and on down 16th Avenue. This flooding problem will be solved by the north-west detention basins project.

#### 42nd Street South of Camelback Road

This is a rather unusual flooding problem. Originally an apartment project was constructed adjacent to the Arizona Canal in the 1960's. This was prior to current development standards. The area has flooded quite frequently, most severely in 1972. In the mid-1970's the apartment project was allowed to subdivide into a condominium project. This may or may not have been done with the normal development review. The only solution is to remove the condominiums and create a detention basin in this area. The planned Arcadia storm drain which will flow into the Old Cross Cut Canal channel would be the outlet for the detention basin.

#### Rue De Lamour and Sharon Lane West of 39th Avenue

This area, just below Thunderbird Road and west of 39th Avenue floods quite frequently when an intense rainstorm occurs in this area. This flooding would be alleviated by the Northwest Detention Basins project.

#### Baseline Road Between 7th Street and 16th Street

The area south of Baseline Road experiences frequent flooding as a result of water coming down from the South Mountains. The South Mountain Detention Basins project is necessary to correct this flooding.

#### 43rd Avenue South of Southern

This area was platted in 1971 while still in Maricopa County and cannot drain. It is blocked to the west by an irrigation canal, it is uphill north to the Salt River and to the south. Water ponds east of 43rd Avenue in Alta Vista Avenue, Burgess Lane, and Nancy Avenue to several feet of depth. A drain to the Salt River or to the west must be constructed.

#### Miscellaneous Flooding

A number of areas that flood consist of one or two homes which are the result of cul-de-sacs which drain to the end, or sharp turns in the street, or other local problems. These would be corrected on a selected basis.

## REPETITIVE LOSS AREAS

The City of Phoenix has been notified by the National Flood Insurance Program (NFIP) that it contains 21 repetitive loss properties. These are properties which have been flooded and filed a claim for more than \$1,000 with the National Flood Insurance Program (NFIP) on more than one occasion.

### Grand Canal Floodplain

The Grand Canal Floodplain is caused by ponding along the Grand Canal. It contains seven repetitive loss properties.

### Cave Creek Wash Floodplain

The Cave Creek Wash Floodplain contained five repetitive loss properties. Three of these have been removed from the floodplain by the construction of the Cave Creek Channel above the Arizona Canal Diversion Channel (ACDC).

### Salt River Floodplain

The Salt River Floodplain contained two repetitive loss properties. The reduction in the floodplain due to the river cutting a deeper channel has removed one of these from the floodplain.

### 26th Avenue and Verde Lane

This flooding is caused by a depression created by Thomas Road, Interstate 17, and 27th Avenue. The neighborhood has a long history of flooding, and in the past the City has purchased flowage easements across some of the lots. This area contains three repetitive loss properties.

### Isolated Local Flooding

The remaining four properties include one property which is flooded as a result of being located on a cul-de-sac which drains to the end of the cul-de-sac. A second is due to low floors in a private street development. The remaining two are the result of shallow flooding exceeding the street capacities and are caused by intense local thunderstorm activity. One was due to poor site drainage which has been corrected.

## SPECIAL HAZARDS

Most, if not all major river or wash crossings have been bridged to pass 50-year or greater flows, or are presently identified as part of the 1988 Bond Program. Other than the Salt River and Skunk Creek, all of the other washes are not particularly large and do not present a particular hazard to the public. There are not any areas which do not lack access during a 100-year storm.

## Subsidence

Subsidence has been identified over an area of 45 square miles. The City checks benchmarks in this area on a 2-year basis. The City has located control for the subsidence areas on bed rock monuments outside the subsidence areas so that subsidence can be measured. At this time subsidence does not appear to be a problem to the proper administration of the Floodplain Management program in Phoenix.

## FUNDING OF STORMWATER MANAGEMENT

The City of Phoenix presently has a small Floodplain Management staff of 2 1/2 full-time persons managing the NFIP program for a City of over 1 million people. This staff also does all drainage planning for the City. The Floodplain Management Section has always been funded through the overhead of other functions. Originally it was part of the overhead of the Engineering Department which caused it to be an overhead function of the Capital Improvement Program. Upon transfer to the Street Transportation Department in 1990, it became part of the overhead of the Street Transportation Department Design & Construction Management Division again primarily the Capital Improvement Program. It is presently part of the overhead for the Street Maintenance Division of the Street Transportation Department and charged as Street Maintenance. This creates a number of problems.

1. As an overhead function Senior Management is not aware of the cost and necessity of the Floodplain Management Program. The program is required if flood insurance is to be available in the City of Phoenix.
2. It distorts the cost of overhead since the Floodplain Management function has little or nothing to do with the Capital Improvement Program or the maintenance of streets in the City of Phoenix.
3. It is now funded by the General Fund which is a limited resource and must compete with many other functions.

4. As a result of not having its own budget, it is constantly under funded in staff, training, and equipment.
5. Funds are not not available to correct old floodplain mapping errors and changes to the floodplains.

In addition to being unable to fund floodplain management functions properly, funds are not available to construct any mitigation projects including acquisition and relocation.

#### Stormwater Management Activities Funded by the General Fund

The City of Phoenix presently has a number of items which are funded by the General Fund which are stormwater related. They include the Floodplain Management Section, the maintenance of the storm drain and drainage systems, the enforcement of the stormwater regulations, and the present Environmental Programs associated with the Clean Water Act. All of these items are related to Stormwater Management and either reduction of floodplain related losses or water related environmental programs. The total cost of these programs is estimated to be approximately \$3 million per year. The City also is using its present bonding capacity to pay for bonds which have been used for the construction of storm drains, detention basins and channels.

#### Flood Control District of Maricopa County Funding Policies

The City of Phoenix corporate limits are presently included within the limits of the Flood Control District of Maricopa County (FCDMC). Phoenix residents contribute approximately 50 percent of the income of the Flood Control District of Maricopa County (FCDMC). Over the years the Flood Control District has adopted a number of policies which result in City residents receiving a poor return on their tax dollar and not being treated the same as residents in the unincorporated area of the County. Inequities include, but are not limited to:

1. Projects within the incorporated areas require an additional 50 percent match from the incorporated area. This results in the City of Phoenix paying 75 percent of Flood Control District of Maricopa County projects in the City. Residents of the unincorporated area are paying approximately 5 percent of the total costs of projects in the unincorporated area. In effect, City residents pay twice for their projects. Once through the County Flood Control Tax and then through their City property tax.



2. Many of the unincorporated areas which benefit from District projects and policies have up to several times the per capita income of City residents. For example, Litchfield Park is receiving 100% flood protection while it contributes only \$100,000 per year to the District. Yet, Litchfield Park has twice the per capita income of the City of Phoenix. The Town of Carefree receives 100% free service from the District while it has the second highest per capita income in the state.
3. Because the City, along with most of the other cities in the State of Arizona, have elected to keep control of Floodplain Management activities, the County has not funded floodplain management activities in the incorporated areas such as mapping and floodplain delineations. This has resulted in the Flood Control District of Maricopa County spending large amounts of money in the unincorporated area for floodplain management activities while the cities have been unable to spend even a minimum amount for mapping and delineation. For example, the Flood Control District of Maricopa County has completed mapping of 1150 miles of floodplain delineations in relatively uninhabited areas, while the City of Phoenix has not had the funds to perform any floodplain delineations or corrections within the City. The City still has floodplains on FIRM maps which have not been mapped by detailed methods.

District policies made it impossible to make a significant contribution to the City's CRS application which caused a one year delay and has cost the local economy a loss of \$500 thousand.

4. The Flood Control District of Maricopa County has begun to assume maintenance responsibilities on small local channels in the unincorporated areas, such as in Sun City.
5. The Flood Control District of Maricopa County has continued to make unilateral decisions as to what plans and projects it undertakes. The present \$3 million Salt River Study is an example. Several million dollars worth of Area Drainage Master Studies within the City limits are other examples.
6. While the City of Phoenix has spent over \$300 million for a storm drain system, the Flood Control District of Maricopa County is now providing storm drain systems for other cities, and in the unincorporated area.

### SECTION III

#### MITIGATION EFFORTS COMPLETED

The City has been proactive in reducing flooding since the 1960's. Over \$300 million have been spent for storm drains in major streets. While the storm drains are only a 2 year design, they have reduced the amount of local flooding from small storms significantly. They have had little effect in reducing flooding from storms over a 10 year frequency. Grading and Drainage standards which provide for the elevation of finish floors, and on site retention, have been in effect since 1972.

#### THE CITY OF PHOENIX STORM DRAIN SYSTEM

In the mid 1960's the City of Phoenix began planning a program of providing a two-year storm drain system underneath all of its major streets. This network is quite extensive since the City of Phoenix does not have any major drains in the Central part of the City. There are no rivers, brooks, washes, channels, or canals to drain stormwater between the Arizona Canal and the Salt River, from 44th Street to the Agua Fria River at approximately 120th Avenue, a total distance of 20 miles and an area of over 150 square miles. As a result, the major streets must serve as the stormwater drains.

The City has constructed a major storm drain under nearly every major street which are located on one mile intervals. In some cases, storm drains have been added at 1/2 mile intervals. The total cost of storm drains installed to date is over \$300 million. The total miles of storm drain trunk lines exceeds 350 miles. These storm drains prevent flooding from minor storms and provide more than 2-year protection for small areas since the small intense thunderstorms dissipate rather quickly into the storm drains. As a result almost all of the major streets in the City are driveable up to a 2-year storm event.

The design standard is for the street to have one lane of traffic open in each direction during a 2-year storm event. The typical storm drain begins with an 84" drain at the Salt River, and extends for approximately 7 miles reducing down to a 36" storm drain at the Arizona Canal. Unfortunately, as a result of the storm drain system the public has a sense of false security and believe that they are protected from flooding. An education program is underway to explain to the public that the storm drain

system is part of the transportation system, and not intended to provide for major flood protection.

#### DEVELOPMENT STANDARDS

In 1972 the City of Phoenix was the first City in the area, and one of the first cities in the country, to adopt a Grading and Drainage Ordinance, and a Grading and Drainage Manual. This provided for 10-year storm retention on all new development, and the elevation of the floors to be 14" above the outfall of the lots. In 1988 this standard was increased to a 100-year retention.

The results of the Local Flooding Task Force investigation of the 147 flooding locations indicated a median development date of 1955. That is; one half of the projects were developed before 1955, and one half were developed after 1955. More than 80 percent of the projects had been developed prior to 1972 and the adoption of current development standards. Seventy five percent of these projects were developed while the area was in the County and prior to annexation by the City. The joint effort of the Development Services Department, the Planning Department, the Street Transportation Department, and the development community has resulted in sound development policies which allow the private use of land and still provide protection for the new home buyer and the public. The remaining problem to be solved is the elimination of problems which were created through development prior to any development standards.

The Local Flooding Task Force identified 9 major causes of flooding which are:

- Constructed prior to Development Standards.
- Floors too low.
- Streets abandoned so that drainage was cut off.
- Failure to continue existing street pattern.
- Failure to allow drainage through new projects.
- Streets which drain to the end of a cul-de-sac or otherwise dead end.
- Major storm run-off exceeds street capacity.
- Structures constructed in natural drainage channels or drainage easements.
- Structures constructed in ponding areas along canal.

If one standard could prevent flooding, it would be the simple elevation of the floor to at least 14" above the outfall of the lot. In almost every incident, the flooding would not have occurred if this had been done. The exception to this is deep ponding along the canals in certain areas.

## CRITICAL FACILITIES

The City of Phoenix is served by 6 police stations, 44 fire stations (approximately 32 have paramedics on duty), and 19 hospitals. As a result of the number of these facilities and the spread out nature of the floodplains, it is believed that emergency vehicles can reach every part of the city during an emergency in a reasonable amount of time. The one exception to this would be the area west of Skunk Creek on Pinnacle Peak Road. This area was developed in the County and recently annexed to the City. A feasibility study is presently underway for a bridge to serve this area. The City of Phoenix has cooperative agreements with the cities of Glendale and Peoria. Their emergency equipment can reach the area when Skunk Creek is flowing.

## PERIPHERAL PLANNING AREAS C AND D.

The City had conducted Master Storm Drain Planning Studies for most of the city up to approximately the Central Arizona Project (CAP) canal. In 1984 and 1988 Bond money was appropriated to study Peripheral Planning Areas C and D. This area is generally located above the Central Arizona Project Canal (CAP) and Jomax Road. As a result of this funding, seven planning studies were undertaken and completed. The watersheds studied include: the Paradise Valley Fan Terrace; Apache Wash; Buchanan Wash; Scatter Wash; Little Deer Valley; East Biscuit Flat; and Deadman Wash. The studies have been completed and provide a guide to development for the future.

## EAST FORK DETENTION BASINS

Several years ago the City conducted a planning study for the East Fork of Cave Creek Wash. Approximately \$30 million has been spent with the construction of five detention basins, connecting channels and storm drains to remove the floodplain and provide a minimum of 100-year flood protection to this area. This project serves as a guide to a number of future projects. It is nearly 80 percent complete.

## COMMUNITY NEEDS, GOALS AND PLANS

The Phoenix General Plan serves as a general guide for the City Council, Planning Commission, City staff, and the public regarding the physical development of the City. It emphasizes goals and policies necessary to implement the urban village concept, as well as respond to citywide and regional needs. It is intended to be a flexible document.



The General Plan is divided into twelve elements. The Public Services Element contains a Stormwater Management goal and associated policies regarding storm drainage.

The Goal is that " The threat of flooding within the City of Phoenix should be minimized".

At one time the only means of disposing of stormwaters was by surface flow in the streets, natural washes, and the irrigation system of the Salt River Water User's Association. The urbanization of Phoenix increased the concentration of stormwater and decreased the land available for natural dissipation. These factors led to the need for an adequate stormwater management system.

The City has aggressively addressed this problem through the construction of stormwater management facilities funded through the Capital Improvement Program. The City has also worked in conjunction with other governmental entities to construct major stormwater facilities such as the Arizona Canal Diversion Channel (ACDC) and the Upper East Fork Cave Creek Detention Basins.

Policies include: Keep storm sewers apart from both the sanitary sewer system and active irrigation ditches.

Provide underground facilities in areas where the natural topography has been disturbed.

Encourage projects such as the Cave Creek Wash Plan with natural desert with vegetation accommodating recreational activities while serving as a floodway.

Support future bond issues for Stormwater Management and construction of drainage facilities.

Cooperate with the Parks, Recreation and Library Department to plan for joint use of space for recreation and stormwater detention purposes.

## SECTION IV

### REVIEW OF POSSIBLE ACTIVITIES

The City has aggressively planned and funded measures to reduce stormwater flooding over the past two decades. New development provides for nearly 100 percent of its infrastructure including the retention of on-site water, channels, and transportation facilities. The City continues to develop its major streets with storm drains and bridges as required. This program is presently up to about the alignment of Bell Road and is proceeding north of Bell Road to the Central Arizona Project Canal. Due to the change in terrain above the Central Arizona Project Canal the City anticipates fewer storm drains and more natural drainage channels such as recreation and drainage corridors which have been identified in the seven planning studies discussed above.

### PUBLIC INFORMATION

The City has been and will continue to make use of the "Notes" publication which is sent out monthly with the City water bills. Through the use of the "Notes" the City will publicize on an annual basis: The Local Flood Hazard; Flood Safety; Flood Insurance; Property Protection Measures; Floodplain Permit Requirements; and Drainage System Maintenance. A database is being prepared which will eventually include all structures located in the floodplain. Periodic mailings to residents of the different floodplains could be undertaken on an annual basis. The City will continue to keep an inventory of floodplain related information including the Flood Insurance Rate Maps at the Central Library. The City could continue to use the private sector to prepare Letters of Map Amendment to refine the edge of the city floodplains. The City will continue to notify the real estate industry, insurance industry, and mortgage institutions as to the availability of floodplain information on an annual basis.

### Hazard Disclosure

The City could put on work shops with the real estate industry and provide them with the results of the Local Flooding Mitigation Program. This would call attention to the areas which experience shallow flooding, and alert the public to these areas. The City could continue to work with the real estate industry to ensure full disclosure of the known flooding status of properties listed for sale.

### Local Flooding Mitigation Program

The City could continue its Local Flooding Mitigation Program by identifying and publicizing areas which experience shallow flooding, but which are not part of the Special Flood Hazard Area (SFHA).

### Flood Protection Assistance

The City could put on work shops for engineers, land surveyors, and contractors explaining how they could assist the public and make their services available to calculate the degree of flood hazard and construction of flood protection measures.

### MAPPING AND REGULATION

The City could implement regulations to regulate cumulative substantial improvements and providing storage for the elimination of storage in existing floodplains.

### ACQUISITION AND OPEN SPACE USE

The City could acquire some of the areas which experience frequent flooding and create combination parks and detention basins.

### CONSTRUCTION PROJECTS

The City could begin to seek a funding mechanism for the \$300 million worth of projects which have been identified. These projects have been discussed elsewhere in this report.

### OPEN SPACE PRESERVATION

The City could continue to encourage open space preservation in the floodplain areas in Peripheral Planning Areas C and D.

## POSSIBLE FUNDING SOURCES FOR STORMWATER MANAGEMENT

If local flooding is to ever be mitigated a new funding source must be located. Possible funding sources are discussed below.

### Raise Taxes and Sell Additional Bonds

Since the City has reached its bonding capacity, it is not reasonable to expect that bonds would be available for the construction of any Stormwater Management projects in the long term. Even in good times bond funds were not available for Stormwater Management.

### Improvement Districts

The use of Improvement Districts is not a viable alternative because most flood control measures do not impact only those people adjacent to the project, but people upstream and downstream. In many cases, the people who are immediately adjacent to the project may receive the least benefit from an improvement district.

### General Fund

The General Fund is totally used up for Police, Fire, and Social Services and can not be considered to be a viable alternative for funding Stormwater Management activities.

### Water Bill Fee

It is not equitable to expect the City taxpayers to fund a second Flood Control District through a new fee collected with the water bills. The City has already imposed a water bill fee to fund required Clean Water Act activities which the County Flood Control District provides to the unincorporated areas.

### Modify Relationship with the Flood Control District

Several alternatives are possible which would result in City residents receiving more benefit from their County flood control tax money.

1. Obtain State legislation which would allow the cities to remove themselves from the Flood Control District if they so desired. This would allow the City to form its own Stormwater Management Utility and apply the approximately \$21 million in annual revenues from the present County flood control tax to Stormwater Management and Clean Water Act activities in the City. This could save the General Fund more than \$3 million each year.



2. Request the Maricopa County Board of Supervisors to redraw the limits of the Flood Control District to exclude the City of Phoenix. At that time the City of Phoenix could then form a Stormwater Management Utility with the existing flood control tax as outlined above.

3. Request that the Maricopa County Board of Supervisors establish a zone which includes only the City of Phoenix corporate boundaries and agree to spend income received from City taxpayers within the zone. A disadvantage of this would be that the Flood Control District presently has about 30 percent of its revenue committed to day-to-day operations. This would result in about a one-third loss of revenue even in a zone situation. Zones are allowed under present State law.

4. Require the Flood Control District to drop the requirement for cities to provide matching funds for projects and to establish a means for the various municipalities to obtain a fair return on their County flood control tax.

5. The City Council could pass a resolution which would require the District to take over floodplain management within the City. This would force the District to take over all the Stormwater Management activities and responsibility for all flooding problems within the City. State law requires the District to provide the function. It would take effect immediately and the Maricopa County Board of Supervisors would then have the responsibility instead of the City Council.

## SECTION V

### PROPOSED ACTIVITIES

The City will continue a number of activities which have already been implemented and consider implementing a number of new activities after staff and public input is received.

#### PUBLIC INFORMATION

The City will continue to provide or consider implementing the following Public Information activities.

##### Elevation Certificates

The City will continue to require that all new structures constructed in the floodplain have an elevation certificate prepared and kept on file. The City will keep a record of elevation certificate information on a computer. The City will make copies of the elevation certificate available to any inquirer. The City may charge a fee for this service.

##### Map Determinations

The City will continue to provide map determination information to banks, insurance agents, real estate agents, and anyone else who needs flood hazard information. The City will continue to notify lenders, insurance agents, and real estate agents on an annual basis of the availability of the service through an annual mailing to these three groups. The City may charge a fee for this service.

##### Outreach Projects

The City will continue to notify the entire community through a notice with the utility bills on the following topics:

1. The local flood hazard
2. Flood safety
3. Flood insurance
4. Property protection measures
5. Floodplain development permit requirements
6. Drainage system maintenance

The City will attempt to send a notice to every address which is located in a floodplain in the City. The notice will cover the six topics noted above.

#### Additional Outreach Projects

The City will attempt to have one publication in the newspaper per year on the six topics noted above subject to the availability of funds.

#### Hazard Disclosure

The City will engage in discussions with the real estate industry's multiple listing service to investigate the possibility of requiring a letter from the City of Phoenix as a part of the listing package for each new listing with the Multiple Listing Service. Additionally, the City will work with the Multiple Listing Service to have the flood insurance requirement noted on the listing, as well as the flood zone, date of construction, and estimated flood insurance cost.

The City will make available to the real estate agents the latest information on the location of local flooding as documented in the Local Flooding Mitigation Program. This will provide all the real estate agents the up to date information as to where shallow flooding has been experienced in the City. The City may charge a fee for this service.

#### Flood Protection Library

The City will continue to have the following information available at the Central Public Library. The minimum materials that will be made available will consist of the following:

1. One set of the Flood Insurance Rate Maps (FIRM) and Floodway Maps and copies of the booklet explaining their use.
2. A copy of the current Flood Insurance Manual.
3. A copy of current Flood Protection Manuals published by FEMA.
4. A copy of the Local Flooding Mitigation Program indicating areas which have experienced shallow flooding.
5. A listing of addresses and telephone numbers of agencies that can provide more information on the above topics.
6. Locally published documents as available.

7. The information that this is available will be publicized with the utility bills on an annual basis.

#### Flood Protection Assistance

The City will provide the following Flood Protection Assistance and publicized that it is available once a year in the utility bills.

1. Provide a list of registered land surveyors and civil engineers willing to prepare elevation certificates.
2. Provide elevation certificate information when it is available.
3. Provide data on historical flooding in a neighborhood. Sources of such data would include but is not limited to Corps of Engineers (COE) Flood Damage Reports, Local Flooding Mitigation Reports, Risk Management Insurance Claim information, and Repetitive Loss Claim Information from the National Flood Insurance Program (NFIP).
4. Provide a list of contractors and consultants knowledgeable or experienced in Retrofitting Techniques and Construction.
5. Provide information on how to select a qualified contractor and recourse where people are dissatisfied with the contractor.
6. Make a site visit upon request to advise owners of appropriate flood protection measures.
7. Review Retrofitting plans.

#### MAPPING AND REGULATION

The City will continue to provide or consider implementing the following Mapping and Regulation activities.

##### Open Space Preservation

The City will continue to preserve the floodplains as open space in Peripheral Planning Areas C and D, and other areas.

##### Higher Regulatory Standards

The City will continue to require floors of structures be one foot above the Base Flood Elevation (BFE). It will also continue to require that non-residential structures be flood-



proofed to an elevation of one foot above the Base Flood Elevation (BFE).

The City will continue to protect foundations from damage through the use of its Grading and Drainage Ordinance.

The City will continue to require engineered fill below all buildings constructed in the City.

The City will investigate the possibility of requiring that cumulative substantial improvements not exceed 50 percent of the value of a structure (value at the time a new regulation takes effect).

#### Protection of Floodplain Storage Capacity

The City will consider adopting Ordinance language which will prevent the filling of the floodplain without providing compensatory storage.

#### Flood Data Maintenance

The City will continue to proceed with implementing the Geographic Information System (GIS). The floodplain maps will be digitized into the Geographic Information System. The system will include the delineation for the base floodplain boundaries, corporate limits, streets, parcels or lot boundaries, and floodways. It will not include base flood elevations. It will include the 500-year floodplain boundary.

The City presently keeps its Letters of Map Revisions in a database keyed to addresses. This information will be transferred to the Geographic Information System as the system comes on-line.

#### Elevation Reference Mark Maintenance

The City of Phoenix will continue to maintain approximately 2,000 benchmarks throughout the City. Normal maintenance will attempt to be done on a 5-year basis to check location and elevation. In the approximately 45 square miles of the City effected by subsidence, benchmarks will be checked on a 2-year basis. The City has located control for the subsidence areas on bed rock monuments outside the subsidence areas, so that subsidence can be measured. The City responds to replacement of benchmarks which have been disturbed. The City will continue to provide elevation information concerning its benchmarks upon request. The benchmarks are on National Vertical Geodetic Datum and are also used for referenced monuments for most of the Flood Insurance Rate Maps (FIRM).

## Stormwater Management

The City has adopted Ordinance language which 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 also that the hydrograph time will not be changed".

The City has completed several Stormwater Master Drainage Plans for the undeveloped areas north of the City. The City will endeavor to adopt these Master Plans as specific planning documents during the next year.

The City will continue to require that all new buildings are protected from local drainage problems by enforcing the Grading and Drainage Ordinance. This Ordinance requires among other things that each structure be elevated a minimum of 14" above the outfall of the lot.

The City has demonstrated that approximately 80 percent of its watersheds are managed by the City of Phoenix. During the year, the City will attempt to obtain evidence from the surrounding communities that their standards are equal to those of the City of Phoenix.

The City of Phoenix will continue to require grading plans and regulate new development down to a minimum of 1/2 acre site.

The City will continue to use the 100-year storm as the design storm for new development.

The City will continue to provide a 2-year storm drain system to drain major streets as funds are available.

The City will continue to conduct public maintenance of drainageways as funds are available.

## DAMAGE REDUCTION

The City will continue to provide or will consider implementing the following Damage Reduction activities.

### Repetitive Loss Projects

The City of Phoenix presently has 21 Repetitive Loss properties identified in four repetitive loss areas. The City will map the general boundaries of the four repetitive loss areas. It will advise the Federal Emergency Management Agency (FEMA) of errors in printouts, and of the cause of the repetitive loss flooding. It will annually write to the occupant of each repetitive loss address. Five repetitive losses are presently in areas

which are isolated instances and can not be determined to be an actual repetitive loss area. These properties will still be notified on an annual basis. Five of the repetitive losses have been removed as a result of channel construction on Cave Creek Wash, the construction of the Arizona Canal Diversion Channel (ACDC), and the deepening of the Salt River bed. The description of the cause of the repetitive flooding was discussed above in the review of Possible Activities. The City will publish the location of the four repetitive loss areas in the newspaper once a year in addition to writing to the residents of the repetitive loss area.

#### Acquisition and Relocation

The City will apply for credit for any properties acquired as a result of the construction of the Arizona Canal Diversion Channel (ACDC) and Upper East Fork Detention Basins. This credit would be applied for properties not already acquired and credited in the previous fiscal year.

#### Retrofitting

The City of Phoenix will endeavor to provide information on retrofitting technique to properties which have been subject to shallow flooding, and have been identified in the Local Flooding Mitigation Program.

#### Drainage System Maintenance

The City will develop a formal listing of major drainage channels and a maintenance schedule for these channels. A level of maintenance document prescribing the level of maintenance required for different types of channels will be prepared.

The City Code prevents any dumping in streams or watercourses. The City will continue to publicize this.

The City Grading and Drainage Ordinance has language that prevents erosion and soil loss, and the City will continue to enforce the Grading and Drainage Ordinance.

#### FLOOD PREPAREDNESS

The City of Phoenix experiences two types of storms. A slow winter storm over large areas which results in high water flows in the major rivers, such as the Salt River, Agua Fria, and Skunk Creek. It also receives summer thunderstorms which result in shallow flooding in the areas of the City over which the thunderstorm cell is located. It is not unusual for one of these thunderstorm cells to cause up to 5 inches of rain over an area

of a five mile diameter. Ample flood warning is available for the floods on the Salt River since they are normally in the form of a controlled release from the irrigation dams. It is not statistically possible to predict the location of the intense summer storm locations. Consequently warnings are limited to television and radio announcements of the possibility of intense thunderstorms over the entire City area. These can not be made more specific. Because the flooding is shallow it is not normally necessary to evacuate areas experiencing the shallow flooding.

#### Dam Safety

The City of Phoenix meets Dam Safety Standards and continues to apply for credit under the State Dam Safety Program. The City of Phoenix does not have any dams which are considered unsafe by the State.

#### FUNDING STORMWATER MANAGEMENT ACTIVITIES

The City will consider the following activities to provide more adequate funding of Stormwater Management Activities.

#### Modify Relationship with the Flood Control District

The City will review past and present funding policies of the Flood Control District of Maricopa County and consider alternatives to the present relationship between the District and the City.

#### Operating Budget Line Item

The City will investigate the possibility of including the Floodplain Management Program as a line item in the Operating Budget so that it is clear to management that this is an important program which should not be considered part of the overhead of any unrelated City function, such as the maintenance of streets.



## SECTION VI

### PUBLIC INVOLVMENT

The Public was involved in the development of this plan through meetings with the Village Planning Committees, a public open house, and a Planning Commission Public Hearing.

#### VILLAGE PLANNING COMMITTEES

The City of Phoenix Village Planning Committees were used to provide information for the plan and as a method of keeping the community informed.

There are eleven Village Planning Committees within the City of Phoenix. Members of the Village Planning Committees are appointed by the Mayor and City Council. Nine of the current committees have twenty-one members, two of the committees have fifteen. There are 219 members on the Valley Planning Committee. The purpose of the Village Planning Committees is to oversee Planning issues within the various urban villages within Phoenix. These issues can vary from general plan land use issues; zoning issues and development of area plans. Members of the committee normally represent the residents of the villages as well as dispersed property owners and people who work in the villages. At least half of the members are residents within their respective villages.

Three public meetings were held with members of the Village Planning Committees in order to advise them of the development of the plan and obtain guidance from them. After the draft plan was prepared it was mailed to all of the Village Planning Committees two weeks prior to a public open house. They were invited to attend the Open House which was held on November 5, 1992.

#### PUBLIC OPEN HOUSE

An open house was held on November 5, 1992 to allow the public and the Village Planning Committees to review and comment on the draft plan. It was advertised in the Arizona Republic and the Phoenix Gazette on Friday, October 2, 1992. The purpose of the Open House was to obtain additional public participation in the development of the plan. The Phoenix Board of Realtors, Inc. attended the open house and provided written comments.

The North Mountain and Deer Valley Village Planning Committees reviewed the draft plan at their November meeting. They provided written comments which are attached.

PLANNING COMMISSION PUBLIC HEARING

The City Planning Commission held a public hearing on the plan at its November 18, 1992 meeting. One person spoke in favor of the plan. The Commission recommended that the plan be forwarded to the City Council by a unanimous vote with the following comment:

"The Draft Floodplain Management Plan documents flooding problems in the City and outlines reasonable steps that should be taken to reduce repetitive and other flood losses. It also highlights what has been a concern to the Commission for some time, and that is that sometimes policies inadvertently encourage urban sprawl. It appears that the Flood Control District, by encouraging large projects in unincorporated areas, has subsidized development in these areas by constructing projects funded by residents of the latter Cities, including Phoenix.

This Plan recommends that the City review its relationship with the District during the next year. The Commission believes that this will be constructive for both the City of Phoenix and the District".

A copy of the preliminary minutes of the Planning Commission meeting is attached.



**City of Phoenix**

**JURISDICTIONAL SUMMARY**

**FOR THE**

**CITY OF PHOENIX**

**MARICOPA COUNTY  
MULTI-JURISDICTIONAL  
HAZARD MITIGATION PLAN  
2015**



**CITY OF PHOENIX JURISDICTIONAL SUMMARY**

Mitigation actions and projects and implementation strategy for Phoenix									
Mitigation Action/Project					Implementation Strategy				
ID No.	Description	Hazard(s) Mitigated	Community Assets Mitigated (Ex/New)	Estimated Cost	Priority Ranking	Planning Mechanism(s) for Implementation	Anticipated Completion Date	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
1	Review building permits for compliance with Floodplain Ordinance and NFIP regulations.	Flood, Dam Inundation,	Both	Staff Time	High	Staff Training, Plan Review	Annual-Ongoing	Street Transportation / Floodplain Manager	General Funds
2	Continue to include in the General Plan policies that protect the natural flow regimes of washes and designate areas for Open Space and Preserves.	Flood, Dam Inundation	Both	Staff time	High	Land acquisition and natural resource protection	Annual - ongoing	Parks and Recreation / PPPI Administrator	Phoenix Parks Preserves Initiative; General Fund; Bonds
3	Storm Drain CIP Program. Construct drainage facilities to mitigate flooding hazard to residents of the city.	Flood, Levee Failure	Both	Variable	High	Staff Training, Plan Review, Design and Construction	Ongoing	Street Transportation Department/ Deputy Street Transportation Director	Bonds/Impact Fees
4	Coordinate data sharing and development communication within city departments through documentation in GIS	Flood, Extreme Heat	Both	Staff time	High	GIS	Annual - ongoing	Planning and Development Department / Planning Researcher	General Fund
5	Summer Respite regional program to network with faith-based organizations to provide heat relief, hydration and respite with wellness checks. Program services are provided for the affected populations.	Extreme Heat	N/A - people	Donations totaling \$70,000 annually	High	Heat Relief Network	Annual - ongoing	Human Services/Family Advocacy Director	Corporate, Community, and faith-based contributions
6	Maintain and execute the Drought Response Plan (Revision in Draft - No Ordinance Change)	Drought	Both	Staff Time	Medium	Master Plan Update and Water Resource Plan Update	Ongoing	Water	WSD Operating Budget
7	Maintain and execute a water use awareness outreach program.	Drought	Both	Staff Time	Medium	Master Plan Update, Water Resource Plan Update, Drought Response Plan	Ongoing	Water	WSD Operating Budget





**CITY OF PHOENIX JURISDICTIONAL SUMMARY**

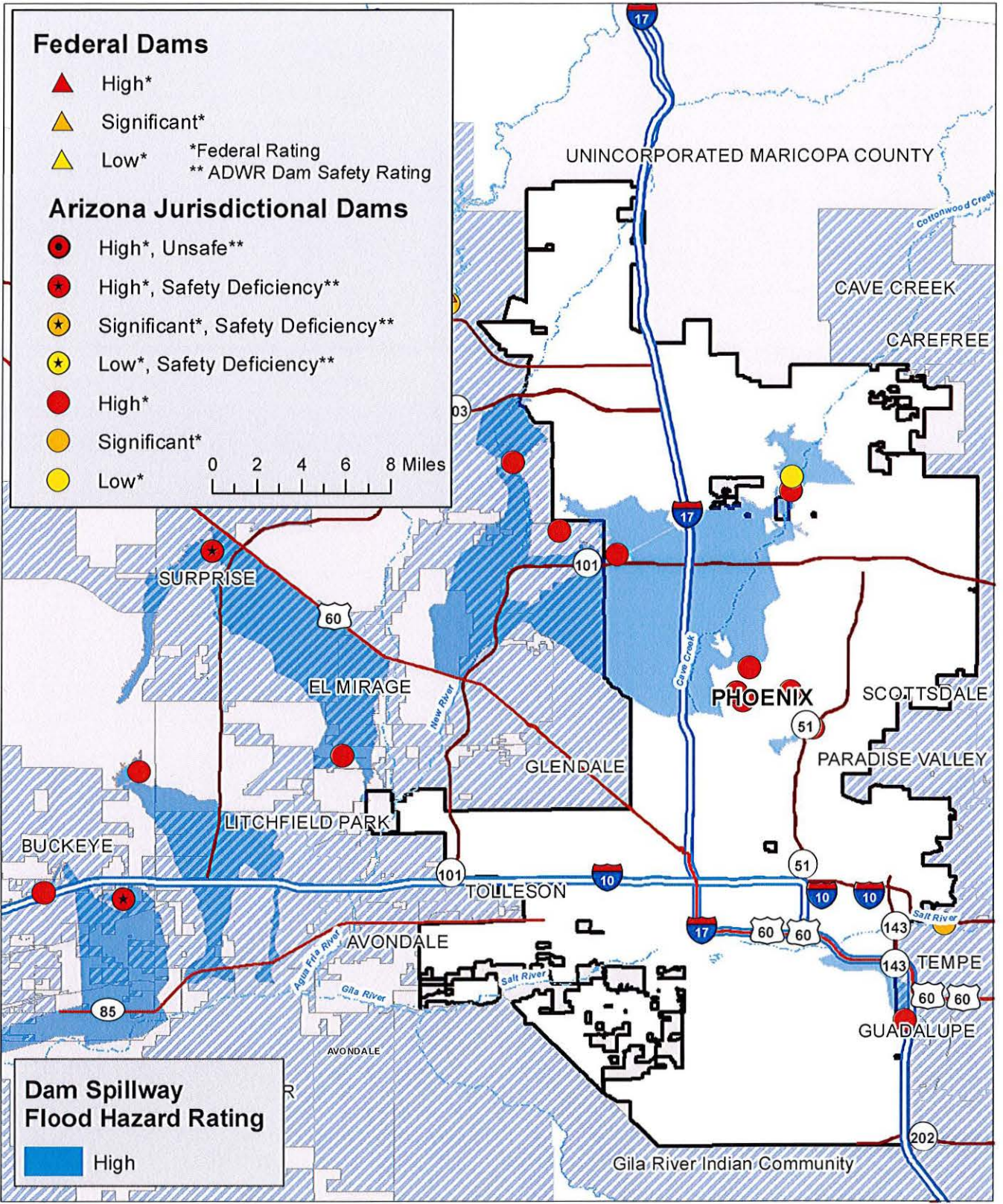
Mitigation actions and projects and implementation strategy for Phoenix									
Mitigation Action/Project					Implementation Strategy				
ID No.	Description	Hazard(s) Mitigated	Community Assets Mitigated (Ex/New)	Estimated Cost	Priority Ranking	Planning Mechanism(s) for Implementation	Anticipated Completion Date	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
8	Revise and ratify the General Plan every ten years.	Flood	Both	Staff time	Medium	State statute; Smart Growth Requirement	Ongoing	Planning and Development Department/ Planning Manager	General Fund
9	Update and adopt a revised building code.	Flood, Severe Wind, Excessive Heat	Both	Staff time; Materials	Medium	Staff training; Community Outreach; Plan review	Annual - ongoing	Planning and Development Department / Assistant Director	Permit fees
10	Continue to insure zoning stipulations are met before construction permits are issued, and zoning is compatible with the zoning ordinance.	Flood, Excessive Heat	Both	Staff time	Medium	Zoning Ordinance; Staff training; Plan review	Annual - ongoing	Planning and Development Department / Deputy Director	Permit fees
11	Dam/Levee Safety Program – Operate and Maintain Dams/Levees to mitigate flooding hazard to the residents of the city.	Flood, Dam Inundation, Levee Failure	Both	Staff Time, Materials	Medium	Staff Training, Plan Review	Annual - Ongoing	Street Transportation Department / Deputy Street Transportation Director	General Funds
12	Continue to provide links on the Phoenix.gov/Office of Emergency Management website to sources of hazard mitigation educational materials such as FEMA.gov and Ready.gov	Dam Inundation, Drought, Flood, Severe Wind, Wildfire	Both	Staff Time	Medium	N/A	Annual - ongoing	Office of Homeland Security and Emergency Management, City of Phoenix IT	General Funds
13	Continue to adhere to the City of Phoenix Building Standards and Review Process, which are regularly updated. The Building and Review Process requires site assessment for presence of, among other conditions, subsidence and fissures.	Subsidence, Fissure	Both	Staff Time	Medium	Staff Training, Plan Review, Design and Construction	Annual - ongoing	Street Transportation Department: Design and Construction Management	General Funds
14	Enforce City Ordinance 39-7D, which addresses overgrown vegetation, dead trees, brush and weeds or other conditions that present a health, fire or safety hazard.	Wildfire	Both	Staff Time	Low	Staff Training, Zoning Ordinance Review	Annual – Ongoing	Neighborhood Services Department	General Funds



**CITY OF PHOENIX JURISDICTIONAL SUMMARY**

Mitigation actions and projects and implementation strategy for Phoenix									
Mitigation Action/Project					Implementation Strategy				
ID No.	Description	Hazard(s) Mitigated	Community Assets Mitigated (Ex/New)	Estimated Cost	Priority Ranking	Planning Mechanism(s) for Implementation	Anticipated Completion Date	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
15	Coordinate with private companies and public agencies to study and map subsidence and fissure activity in critical or key areas of the community so that effective mitigation or avoidance strategies can be implemented.	Subsidence, Fissure	Both	Staff Time	Low	Staff Training, Plan Review, Design and Construction	Annual - ongoing	Street Transportation Department: Design and Construction Management	General Funds





**Legend**

- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ☐ Other Communities

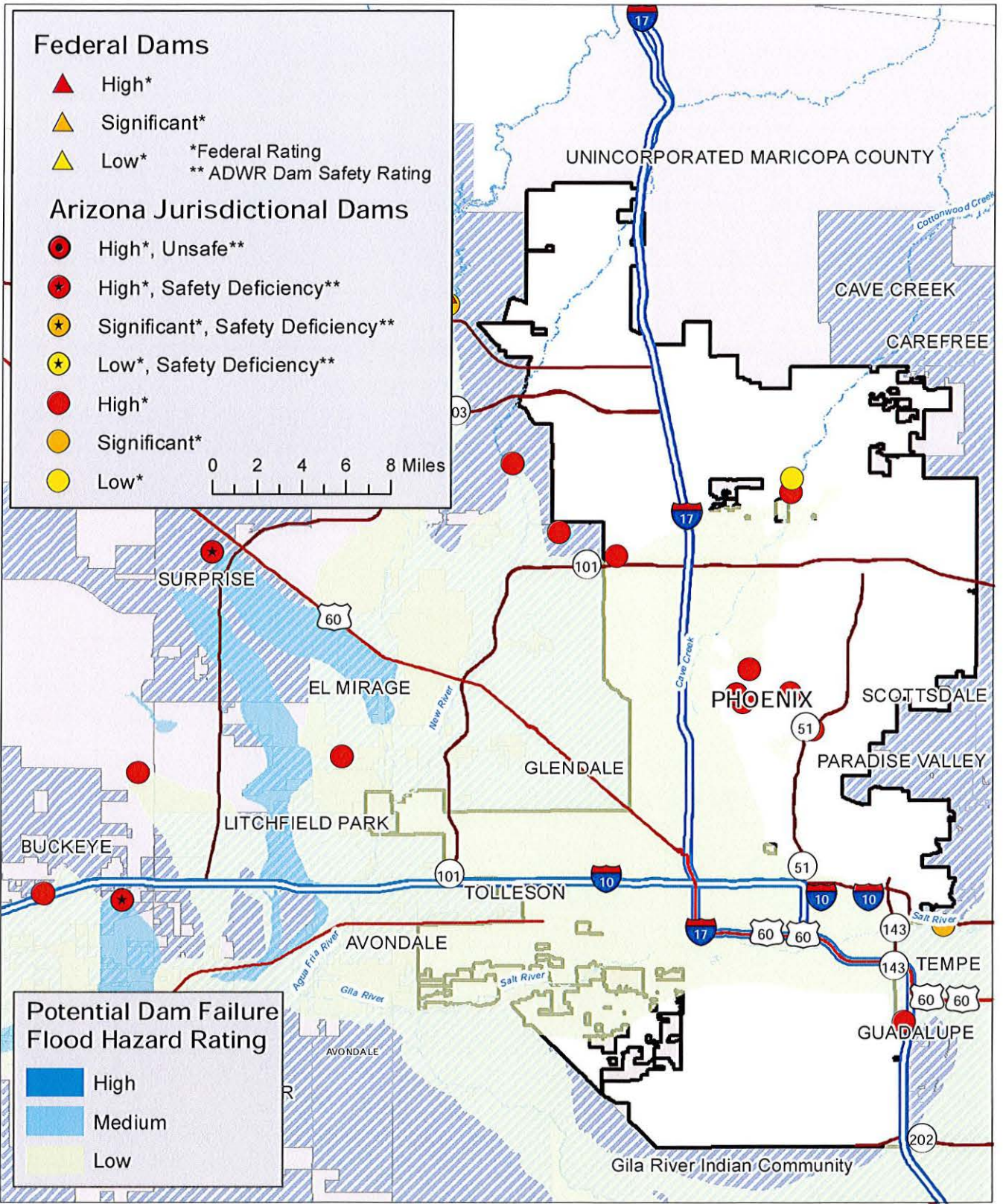
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Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

**City of Phoenix**

Map #1D18  
City of Phoenix  
Dam Spillway  
Flood Hazard Map  
as of Jan. 2015






**Legend**


- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ☐ Other Communities

N

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

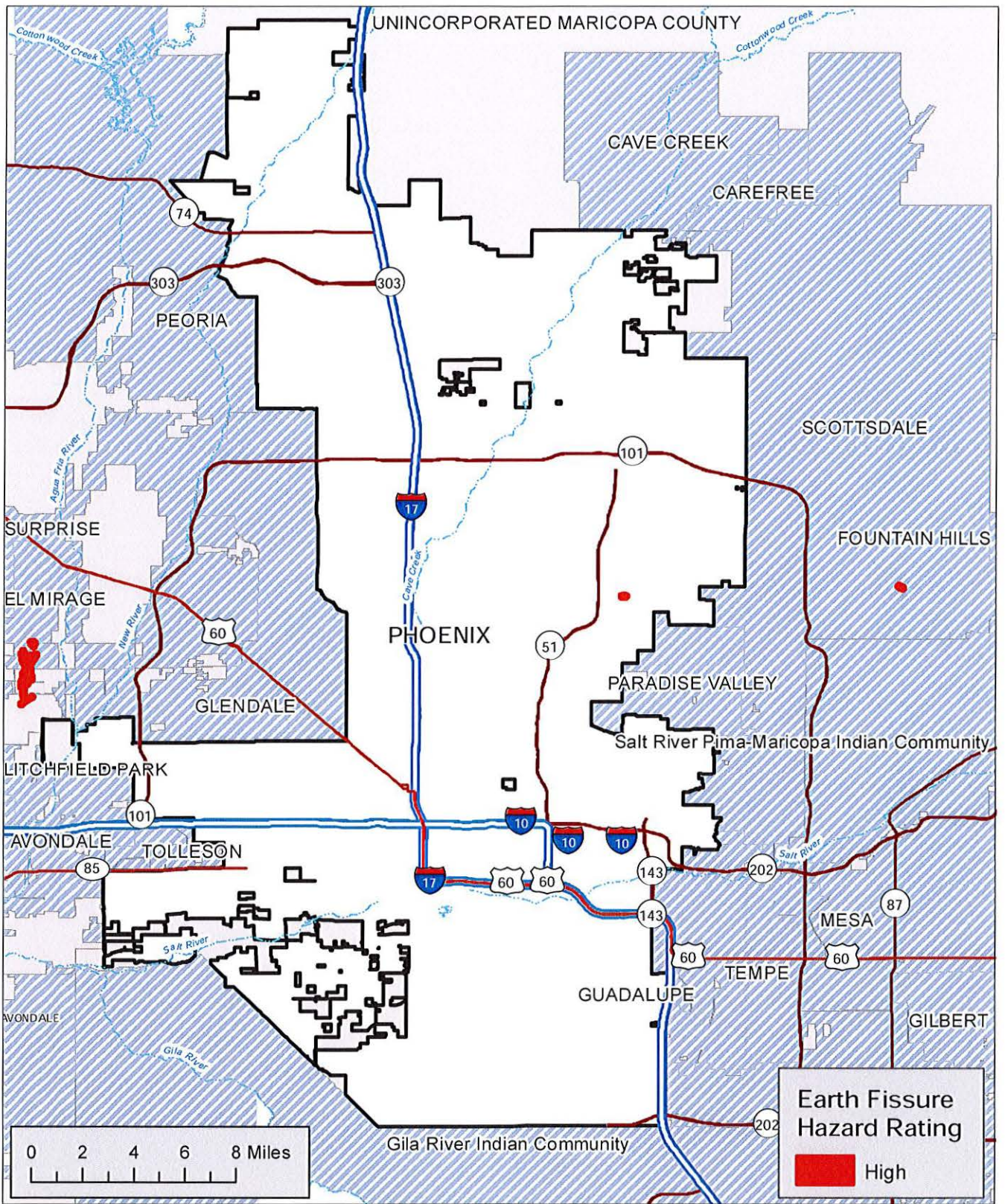


Map #2D18  
City of Phoenix  
Potential Dam Failure  
Flood Hazard Map  
as of Jan. 2015



**City of Phoenix**






**Legend**


- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

N  
▲

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

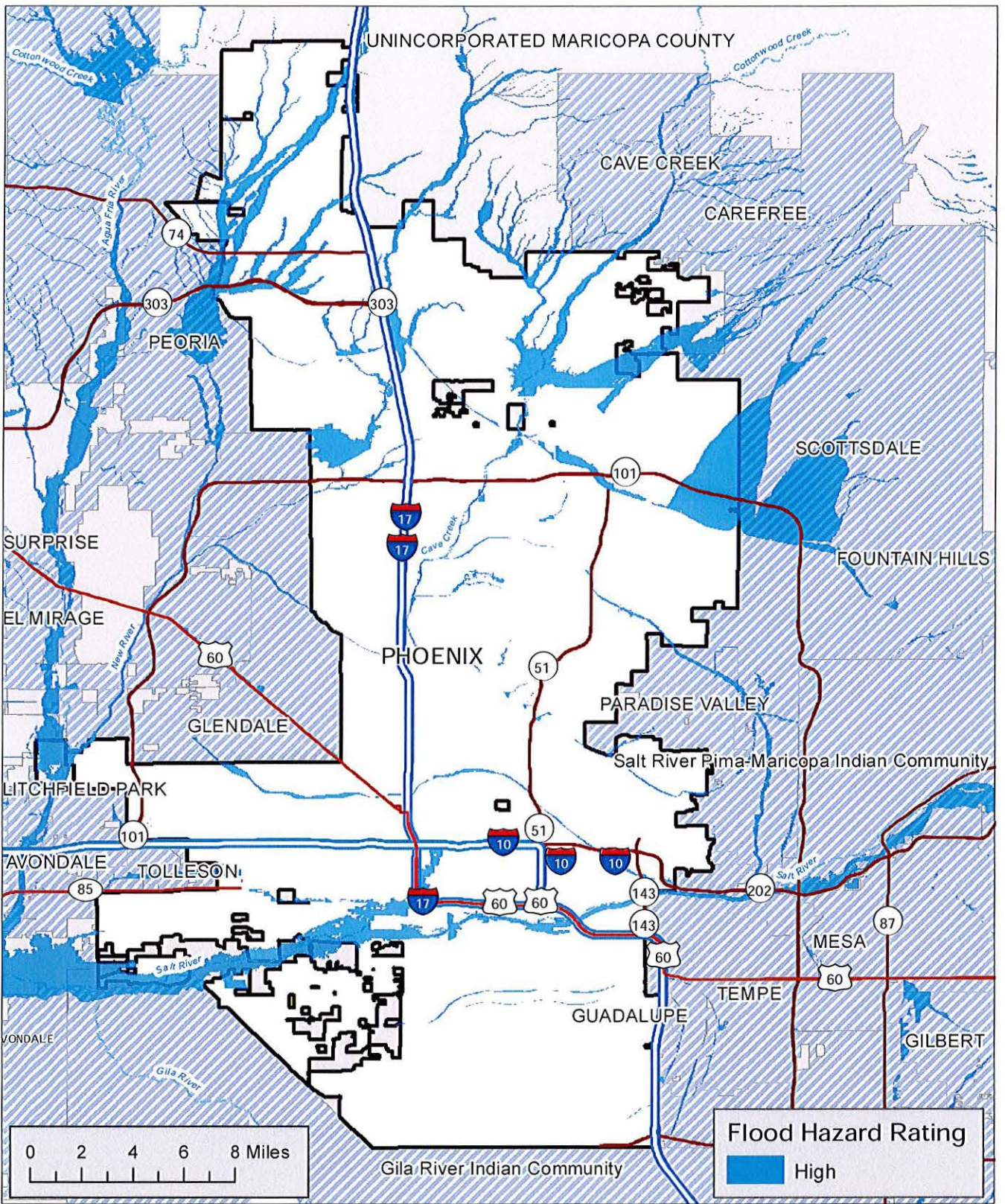


**City of Phoenix**



Map #3D18  
City of Phoenix  
Earth Fissure Hazard Map  
as of Jan. 2015






**Legend**


- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

N  
▲

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan



**City of Phoenix**

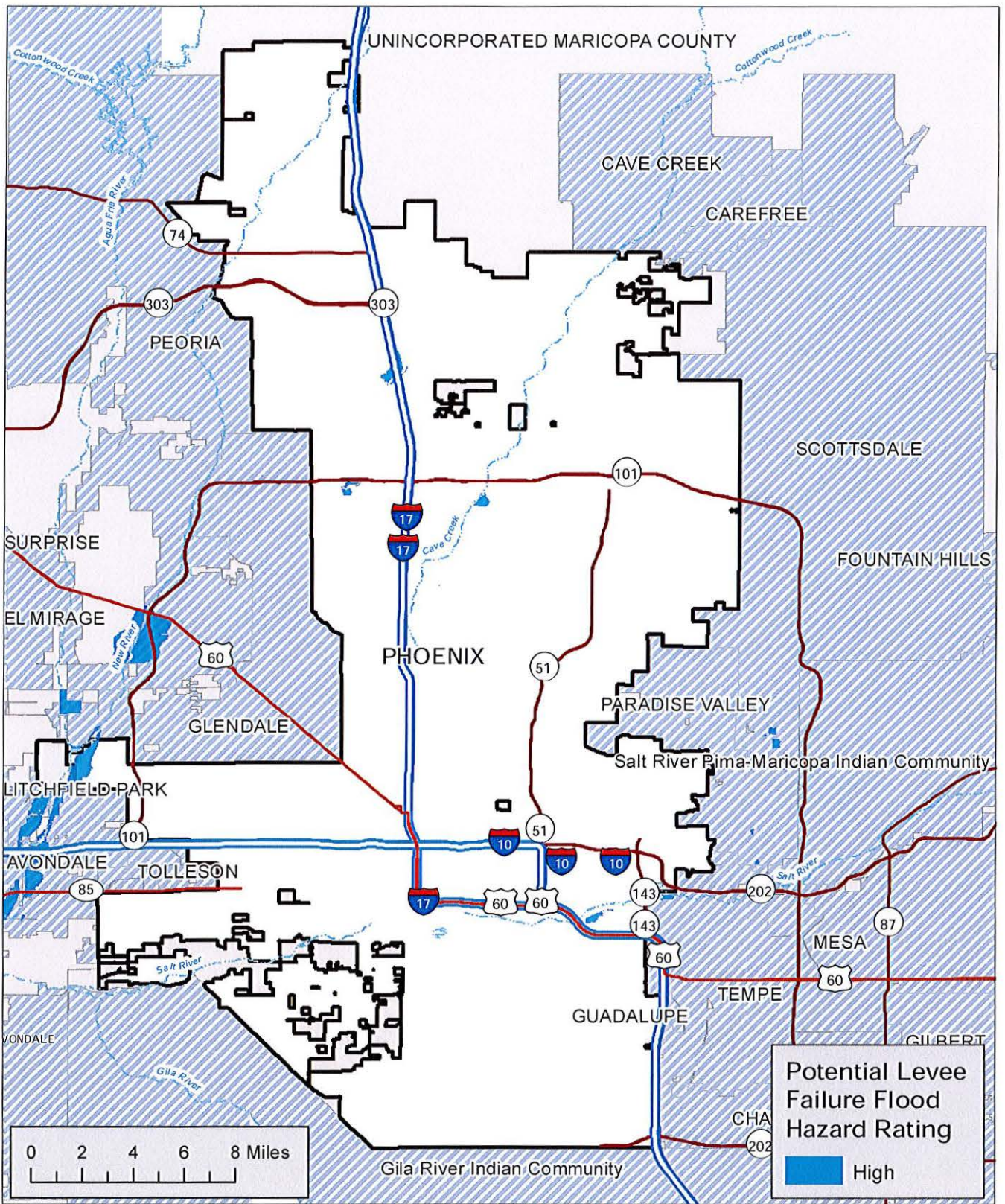


Map #4D18  
City of Phoenix  
Flood Hazard Map  
as of Jan. 2015

**Flood Hazard Rating**

High






**Legend**

- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

N  
▲

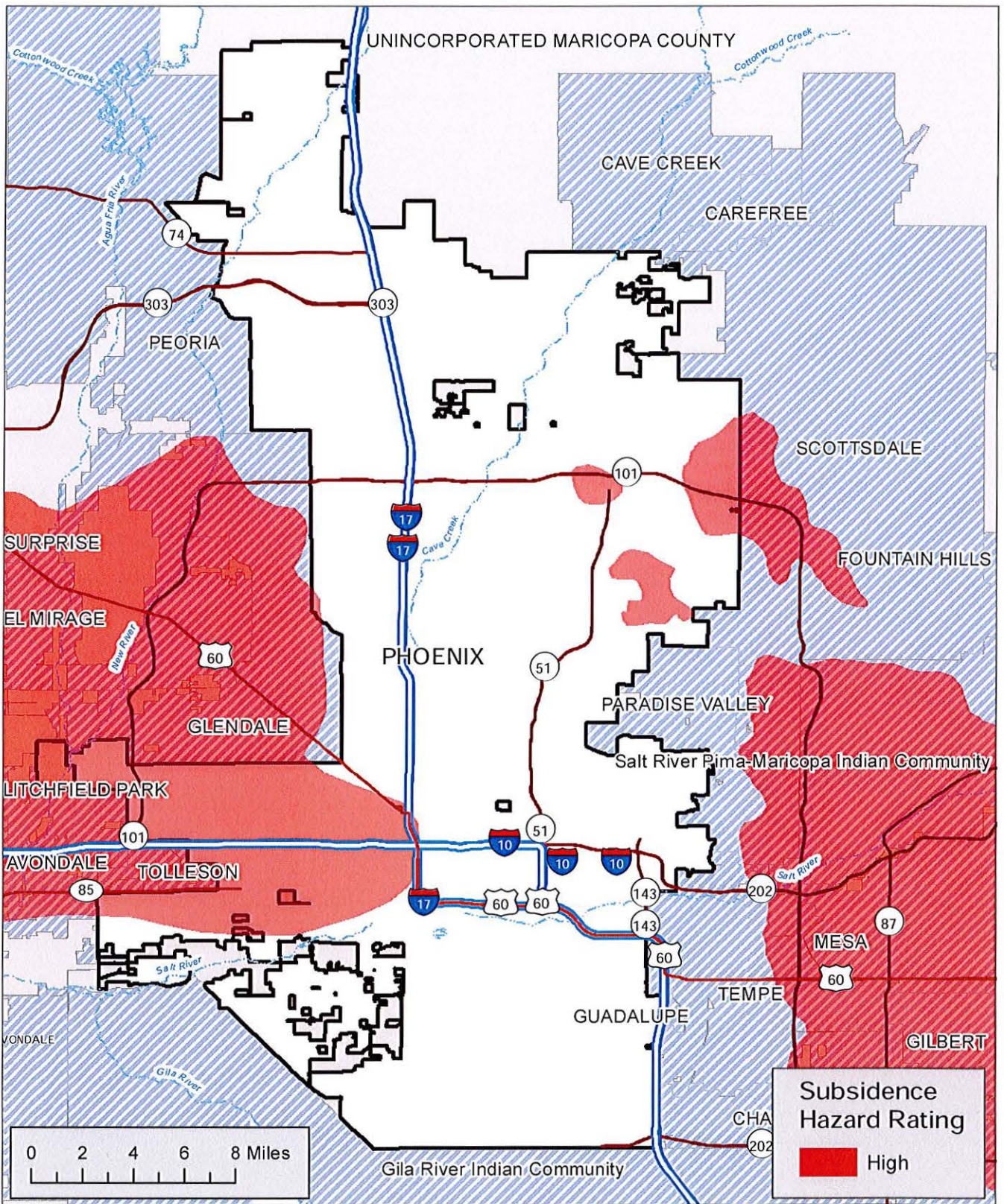
Maricopa County Multi-Jurisdictional Hazard Mitigation Plan



**City of Phoenix**

Map #5D18  
City of Phoenix  
Potential Levee Failure  
Flood Hazard Map  
as of Jan. 2015






**Legend**


- Arterial Road
- Major Streams
- ☐ Phoenix
- ☐ Maricopa County
- ☐ Other Communities

N

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

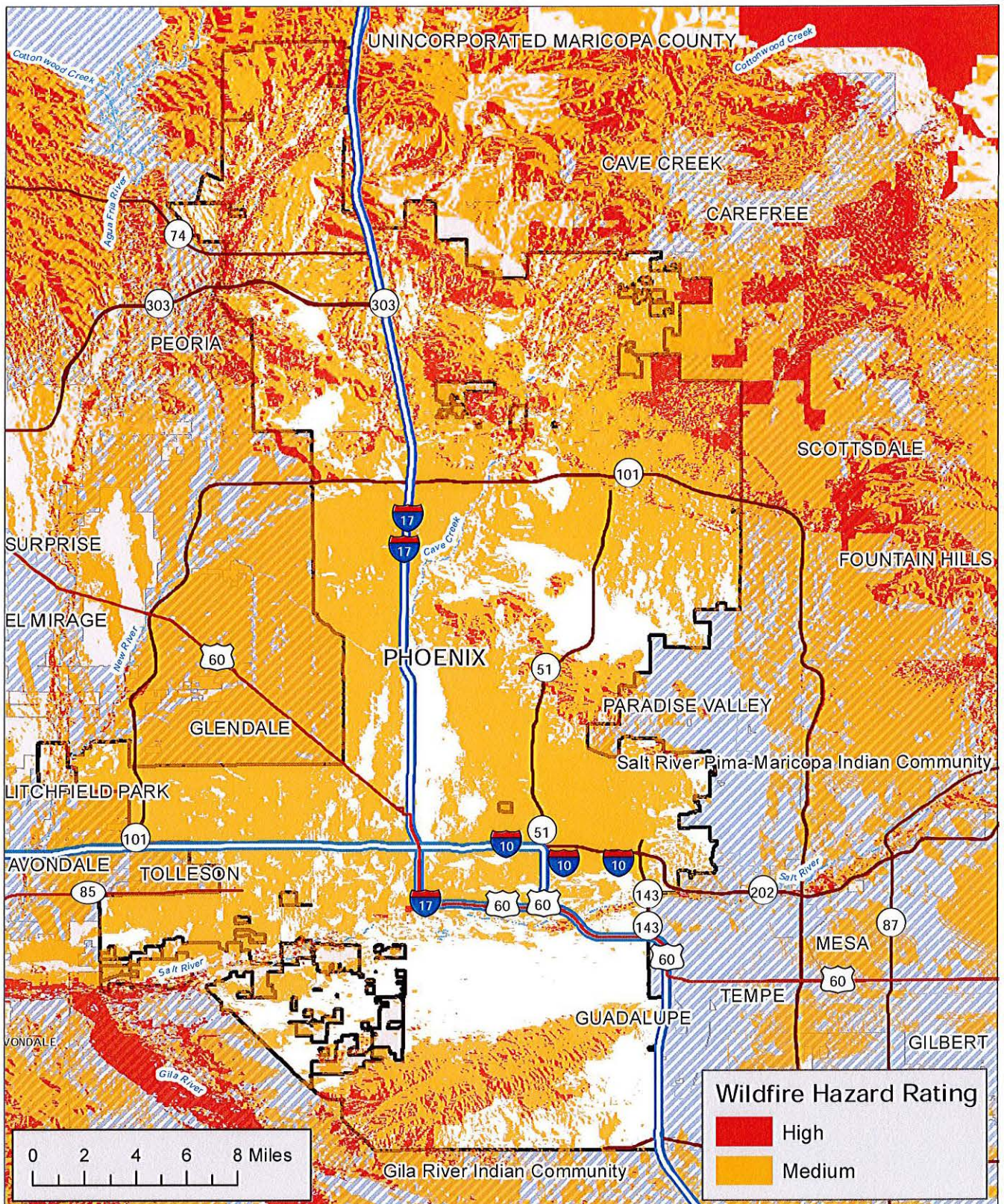


**City of Phoenix**



Map #6D18  
City of Phoenix  
Subsidence Hazard Map  
as of Jan. 2015





**Legend**

— Arterial Road

— Major Streams

**Communities**


☐ Phoenix

☐ Maricopa County


☐ Other Communities

N

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan



**City of Phoenix**



Map #7D18  
City of Phoenix  
Wildfire Hazard Map  
as of Jan. 2015



# CRS ACTIVITY 510

## FLOODPLAIN MANAGEMENT PLAN PROGRESS REPORT

The City of Phoenix Mayor and the City Council passed the Floodplain Management Plan and the Repetitive Loss Plan on December 9, 1992. City of Phoenix Floodplain Management Section received a federal grant to update the existing Floodplain Management Plan.

The City of Phoenix continues to work with the Flood Control District of Maricopa County (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 which occurred in 1990, a Local Drainage Improvement Program was formed. Due to a limited amount of funds, these projects have been prioritized according to severity of flooding. Drainage improvements are designed and constructed where repetitive and severe flooding occurs as funds become available. The City of Phoenix Mayor and City Council has moved up future projects and approved funding for all small projects receiving outside funding due to major storm damages from the August and September 2014 monsoons.

### 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 a hard copy to be kept on file. We currently have 3,024 elevation certificates on file.

### 320 MAP DETERMINATIONS

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 Floodplain Management web page which include request forms for floodplain determinations and/or elevation certificates. The City of Phoenix Floodplain Management Section continues to make use of an on-hold phone message which is played for the public.

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 flood zone determinations and elevation certificates on Phoenix Board of Realtors website.

The City of Phoenix continues to keep our FIRM panels & 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 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 outreach letter on our web page informing residents about floodplains, flood insurance policies, flood warning system, 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.

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. Staff utilizes the email/blog informing realtors about the availability of flood zone determinations and elevation certificates on Phoenix Board of Realtors website. The City of Phoenix Floodplain Management Section continues to make use of an on-hold phone message which is played for the public.

The City of Phoenix publishes Public Notices in local newspapers to notify property owners about area studies and the potential impacts on the surrounding special flood hazard areas.

The City of Phoenix notifies affected property owners that they are no longer in a floodplain area when a Letter of Map Amendment or a Letter of Map Revision is received from FEMA, in which any property or structure is removed from the floodplain.

### 340 HAZARD DISCLOSURE

City of Phoenix discloses whether or not a property is located in a special flood hazard area during planning, zoning, pre-application, preliminary, grading & 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. City of Phoenix Planning & Development Department also provides a checklist for building in a special flood hazard area.

### 350 FLOOD PROTECTION MATERIALS

The Phoenix City Library continues to maintain floodplain information materials. 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.

### 360 FLOOD PROTECTION ASSISTANCE

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

The City of Phoenix floodplain manager received a certificate after successfully completed “Managing Floodplain Development through the NFIP”.

The City of Phoenix makes site visits upon request to advise owners of appropriate flood protection measures. An example of a local drainage prioritization form for drainage issues, evaluated by Street Maintenance drainage foremen, is attached under 360 section. The City of Phoenix also encourages residents with flooding inside their homes to read and utilize the advice laid out in the manual called “Repairing Your Flooded Home”.



## 410 NEW DEVELOPMENT REVIEW

The City of Phoenix continues to review new development site plans. The site plan review ensures that projects follow the requirements according to our floodplain ordinance. We inform the planner for the development about the floodplain stipulations that must be met before a new development can be built in a floodplain area.

The City of Phoenix continues to review and update the Area Drainage Master Plans (ADMP) and Area Drainage Master Study (ADMS) with better methodology and existing conditions for the following: Middle Indian Bend ADMP, Laveen ADMP Update, South Phoenix/Laveen ADMP Update (ongoing), Tempe ADMP, Pinnacle Peak West ADMP, Cave Creek ADMP and Ahwatukee ADMP.

## 420 OPEN SPACE PRESERVATION

The City of Phoenix continues to preserve floodplain areas as open space in Peripheral Planning Areas and other undeveloped areas. A table and map illustrating the percentage of the open space within special flood hazard areas within the city limits is attached. We increase open space (in acres) within the floodplain by 1.7%.

## 430 HIGHER REGULATORY STANDARDS

The City of Phoenix continues to require the finish floor of new structures be set one foot above the Base Flood Elevation (BFE). The City of Phoenix also continues to require that non-residential structures are elevated and/or flood proofed 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 revise City of Phoenix Zoning and City Codes including Chapter 32-B Floodplains.

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). Flood proofed freeboard shall be required to prevent seepage out of the wash corridor. Drainage that leaves the development will be redistributed in a manner similar to 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 24 inches above the highest adjacent natural grade elevation of the residential lot and/or the structural foot print. 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 2012 International Code Council Codes, 2011 Electric Code /NFPA-70, 2012 International Fire Code, and 2012 Uniform Plumbing Code. The City of Phoenix Ordinance G-5809 signed on May 15, 2013 adopted the 2012 building codes.

The City of Phoenix requires that the cumulative total of all substantial improvements are not to exceed 40% of the value of the existing structure (a higher standard).

Twenty-five (50%) of the floodplain staff has CFM training. Staff have received certificates for the following: Arizona Floodplain Management Conference in Carefree (18.5 CEC), HEC-RAS 2D modeling (12 CEC), MAG 317 (Community Emergency Response Team), Drainage Design System for Windows Hydrology (6 hours) and River Mechanics Storm Drainage Hydraulics (6 hours), ASDSO Dam Safety Conference (PHD 16.5 hours), Managing Floodplain Development through the NFIP (12 CEC). Training certificates are attached under 430 section.

#### 440 FLOOD DATA & ELEVATION REFERENCE MARK 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 for City of Phoenix community. GIS also include City limits, canals, light rail and railroad lines and stops, freeways, street names, addresses, subdivision names, assessor's parcel number, easements, block & 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, Bling Maps 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 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 which are known to have been disturbed or covered up by street improvement project. The City continues to provide elevation information for the benchmarks upon request. The benchmarks are on National Geodetic Vertical Datum 1929 (NGVD29). Flood Insurance Rate Maps (FIRM) use North American Vertical Datum of 1988 (NAVD88). The City utilizes the NOAA VERTCON to convert between the two vertical datums.

#### 450 STORMWATER MANAGEMENT

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

The City of Phoenix has completed several storm water Area Drainage Master Plans for the undeveloped areas north of the City (see attached Surface Drainage System). The City of Phoenix has adopted these Area Drainage Master Plans as specific planning documents. The City of Phoenix is also in the process of developing Master Drainage Plans for the southwest portion of the City that is experiencing rapid growth.

In the alluvial fan AO zones, the lowest finished floor including attached garages shall be a minimum 24 inches 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 (any utilities in the garage must be elevated or flood proofed).

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 storm water requirements impact new projects. Discussions of storm water volumes are integrated with storm water 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 storm water 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 are elevated above the street.

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

## 510 PROPERTY PROTECTION & ANNUAL PROGRESS REPORTS

The City of Phoenix sends out notices regarding the threat of flooding to all repetitive loss properties. The notice informs the property owner about flood insurance, property protection, myths and facts about the NFIP, and a questionnaire. The City of Phoenix also has a Hazard Mitigation Plan attached under 510 section. A copy of this annual progress report is sent to our state NFIP Coordination office. A copy of the repetitive loss area notices, repetitive loss site map, repetitive loss addresses, letter to NFIP Coordinator, and our annual progress report are also attached under 510 section. Twelve (12) new properties were placed on repetitive loss list due to unprecedented back to back storm event occurring in August and September 2014.

## 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. A table of acquired properties with the APN numbers, addresses, acquired year, flood hazard data, and remarks are attached under 520 section.

The City of Phoenix maintains open spaces for acquired lots. A copy of an acquired lot's demolition permit and a current picture of lot are attached.

## 530 FLOOD PROTECTION

The City of Phoenix continues to design and construct projects that protect structures from flood damage by structural flood control projects (storm drain, retention and detention basins). A list of structural flood control projects is attached.

## 540 DRAINAGE SYSTEM MAINTENANCE & DUMPING REGULATIONS

The City of Phoenix continues to provide maintenance to our drainage system and improving drainage system through our Capital Improvement Projects. A copy of a typical inspection report and a maintenance log from each of our maintenance service centers is attached. A list of flooding areas (choke points or flat areas) to be vactored during a storm event is also attached for each maintenance service center. A list of Capital Improvement Projects which includes maintenance and improvements of our drainage system is also attached from the past year.

The City of Phoenix continues to enforce storm water dumping regulations. Storm Water Management also provides educational pamphlets for their Outreach program. Storm Water dumping regulations, Water Department standard operating procedure #6008 and a photo of a “No Dumping” sign are attached under 540 section.

## 610 FLOOD THREAT RECOGNITION SYSTEM

The City of Phoenix maintains and tests our flood threat recognition system. We also tested our warning dissemination equipment and procedures this year. We conducted at least one exercise of our flood response plan this year. An outreach letter regarding our flood threat recognition and warning system with flood and safety measures is attached under 610 section.

## 620 LEVEE SAFETY

The City of Phoenix Scatter Wash Levee System (Levee ID #46) have been accredited by FEMA as stated in the attached memo dated January 26, 2015. Scatter Wash Levee Operation and Maintenance Plan is also attached under 620 section. The City of Phoenix is also waiting for accreditation of the Skunk Creek Levee from FEMA.

## 630 DAM SAFETY

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

cover letter for the dam safety program and the dam failure emergency action plan are attached under 630 section. The City of Phoenix also participated in a Dam Failure table top exercise with multiple government entities, utility companies and charitable organizations on June 10, 2015.



**Appendix F**  
Excerpts from Reports by Others



# **Arizona Department of Health Services Flooding Response Plan**



**Division of Public Health Services  
Bureau of Emergency Preparedness and Response**

**January 2007**

## **APPENDIX B**

### Sample Press Release Topics:

1. Emergency Supplies and Evacuation Preparation Tips
2. Sanitation & Hygiene During A Flood
3. Safe Water Supply During A Flood
4. Safe Well Water During A Flood
5. Food Safety During A Flood
6. Returning Home After A Flood
7. Tetanus Shots After A Flood
8. Clean-up of Flood Water
9. Animals and Controlling Mosquitoes
10. Protect Yourself From Mold
11. Protect Yourself From Carbon Monoxide Poisoning

## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

# **Emergency Supplies and Evacuation Preparation** **Tips**

### **If you are under a flood watch or warning:**

- Gather the emergency supplies you previously stocked in your home and stay tuned to local radio or television station for updates.
- Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary.
- Have your immunization records handy or be aware of your last tetanus shot, in case you should receive a puncture wound or a wound becomes contaminated during or after the flood.
- Fill bathtubs, sinks and plastic soda bottles with clean water. Sanitize the sinks and tubs first by using bleach. Rinse and fill with clean water.
- Bring outdoor possessions, such as lawn furniture, grills and trash cans inside or tie them down securely.

### **Emergency Supplies You Will Need**

You should stock your home with supplies that may be needed during the emergency period. At a minimum, these supplies should include:

- Several clean containers for water, large enough for a 3-5 day supply of water (about five gallons for each person).
- A 3-5 day supply of non-perishable food and a non-electric can opener.
- A first aid kit and manual and prescription medicines and special medical needs.
- A battery-powered radio, flashlights, and extra batteries.
- Sleeping bags or extra blankets.
- Water-purifying supplies, such as chlorine or iodine tablets or unscented, ordinary household chlorine bleach.
- Baby food and/or prepared formula, diapers, and other baby supplies.
- Disposable cleaning cloths, such as "baby wipes" for the whole family to use in case bathing facilities are not available.
- Personal hygiene supplies, such as soap, toothpaste, sanitary napkins, etc.
- An emergency kit for your car with food, flares, booster cables, maps, tools, a first aid kit, fire extinguisher, sleeping bags, etc.
- Rubber boots, sturdy shoes, and waterproof gloves.
- Insect repellent containing DEET or Picaridin, screens, or long-sleeved and long-legged clothing for protection from mosquitoes which may gather in pooled water remaining after the flood. (More information about these and other recommended repellents can be found in the fact sheet [Updated Information Regarding Insect Repellents.](#))

## **Preparing to Evacuate**

Expect the need to evacuate and prepare for it. When a flood watch is issued, you should:

- Fill your vehicle's gas tank and make sure the emergency kit for your car is ready.
- If no vehicle is available, make arrangements with friends or family for transportation.
- Fill your clean water containers.
- Review your emergency plans and supplies, checking to see if any items are missing.
- Tune in the radio or television for weather updates.
- Listen for disaster sirens and warning signals.
- Put livestock and family pets in a safe area. Due to food and sanitation requirements, emergency shelters cannot accept animals.
- Adjust the thermostat on refrigerators and freezers to the coolest possible temperature.

## **If You Are Ordered to Evacuate**

You should never ignore an evacuation order. Authorities will direct you to leave if you are in a low-lying area, or within the greatest potential path of the rising waters. If a flood warning is issued for your area or you are directed by authorities to evacuate the area:

- Take only essential items with you.
- If you have time, turn off the gas, electricity, and water.
- Disconnect appliances to prevent electrical shock when power is restored.
- Follow the designated evacuation routes and expect heavy traffic.
- Do not attempt to drive or walk across creeks or flooded roads.

## **If You Are Ordered NOT to Evacuate**

To get through the storm in the safest possible manner:

- Monitor the radio or television for weather updates.
- Prepare to evacuate to a shelter or to a neighbor's home if your home is damaged, or if you are instructed to do so by emergency personnel.

For more information about preparing for an evacuation during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.



SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

## **Sanitation & Hygiene in a Flood**

It is critical for you to remember to practice basic hygiene during the emergency period. Always wash your hands with soap and water that has been boiled or disinfected:

- before preparing or eating food;
- after toilet use;
- after participating in flood cleanup activities; and
- after handling articles contaminated with flood water or sewage.

When clean water is not available, you can use alcohol-based products made for washing hands.

Flood waters may contain fecal material from overflowing sewage systems, and agricultural and industrial byproducts. Although skin contact with flood water does not, by itself, pose a serious health risk, there is some risk of disease from eating or drinking anything contaminated with flood water. If you have any open cuts or sores that will be exposed to flood water, keep them as clean as possible by washing well with soap to control infection. If a wound develops redness, swelling, or drainage, seek immediate medical attention.

In addition, parents need to help children avoid waterborne illness. Do not allow children to play in flood water areas, wash children's hands frequently (always before meals), and do not allow children to play with flood-water contaminated toys that have not been disinfected. You can disinfect toys using a solution of one cup of bleach in 5 gallons of water.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

### **Safe Water Supply During a Flood**

#### Water for Drinking, Cooking, and Personal Hygiene

Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Your local authorities can make specific recommendations for boiling or treating water in your area. If you get your water from a [cistern](#) or a [well](#), please refer to the information on disinfecting cisterns or wells. If you do not get your water from a cistern or a well, follow these general rules concerning water for drinking, cooking, and personal hygiene.

- Do not use contaminated water to wash dishes, brush your teeth, wash and prepare food, wash your hands, make ice, or make baby formula. If possible, use baby formula that does not need to have water added. You can use an alcohol-based hand sanitizer to wash your hands.
- If you use bottled water, be sure it came from a safe source. If you do not know that the water came from a safe source, you should boil or treat it before you use it. Use only bottled, boiled, or treated water until your supply is tested and found safe.
- Boiling water, when practical, is the preferred way to kill harmful bacteria and parasites. Bringing water to a rolling boil for 1 minute will kill most organisms.
- When boiling water is not practical, you can treat water with chlorine tablets, iodine tablets, or unscented household chlorine bleach (5.25% sodium hypochlorite):
  - If you use chlorine tablets or iodine tablets, follow the directions that come with the tablets.
  - If you use household chlorine bleach, add 1/8 teaspoon (~0.75 mL) of bleach per gallon of water if the water is clear. For cloudy water, add 1/4 teaspoon (~1.50 mL) of bleach per gallon. Mix the solution thoroughly and let it stand for about 30 minutes before using it.

Note: Treating water with chlorine tablets, iodine tablets, or liquid bleach will not kill parasitic organisms.

Use a bleach solution to rinse water containers before reusing them. Use water storage tanks and other types of containers with caution. For example, fire truck storage tanks and previously used cans or bottles may be contaminated with microbes or chemicals. Do not rely on untested devices for decontaminating water.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

###

**SAMPLE NEWS RELEASE**

FOR IMMEDIATE RELEASE – \_\_\_\_\_

**Safe Well Water During Flooding**

Listen for public announcements on the safety of the municipal water supply. Flooded, private water wells will need to be tested and disinfected after flood waters recede. Questions about testing should be directed to your local or state health departments.

**Disinfecting Wells**

If you suspect that your well may be contaminated, contact your local or state health department or agriculture extension agent for specific advice. Here are some general instructions for disinfecting wells.

*To Disinfect Bored or Dug Wells*

1. Use [Table 1](#) to calculate how much bleach (liquid or granules) to use.
2. To determine the exact amount to use, multiply the amount of disinfectant needed (according to the diameter of the well) by the depth of the well. For example, a well 5 feet in diameter requires 4½ cups of bleach per foot of water. If the well is 30 feet deep multiply 4½ by 30 to determine the total cups of bleach required (4½ X 30 = 135 cups). There are sixteen cups in each gallon of liquid bleach.
3. Add this total amount of disinfectant to about 10 gallons of water. Splash the mixture around the wall or lining of the well. Be certain the disinfectant solution contacts all parts of the well.
4. Seal the well top.
5. Open all faucets and pump water until a strong odor of bleach is noticeable at each faucet. Then stop the pump and allow the solution to remain in the well overnight.
6. The next day, operate the pump by turning on all faucets, continuing until the chlorine odor disappears. Adjust the flow of water faucets or fixtures that discharge to septic systems to a low flow to avoid overloading the disposal system

<b>Diameter of well (in feet)</b>	<b>Amount of 5.25% laundry bleach chlorine per foot of water</b>	<b>Amount of 70% chlorine granules per foot of water</b>
3	1½ cups	1 ounce
4	3 cups	2 ounces
5	4½ cups	3 ounces



6	6 cups	4 ounces
7	9 cups	6 ounces
8	12 cups	8 ounces
10	18 cups	12 ounces
<i>Source: Illinois Department of Public Health. Recommendations may vary from state to state.</i>		

*To Disinfect Drilled Wells*

1. Determine the amount of water in the well by multiplying the gallons per foot by the depth of the well in feet. For example, a well with a 6-inch diameter contains 1.5 gallons of water per foot. If the well is 120 feet deep, multiply 1.5 by 120 (1.5 X 120 = 180).
2. For each 100 gallons of water in the well, use the amount of chlorine (liquid or granules) indicated in [Table 2](#). Mix the total amount of liquid or granules with about 10 gallons of water.
3. Pour the solution into the top of the well before the seal is installed.
4. Connect a hose from a faucet on the discharge side of the pressure tank to the well casing top. Start the pump. Spray the water back into the well and wash the sides of the casing for at least 15 minutes.
5. Open every faucet in the system and let the water run until the smell of chlorine can be detected. Then close all the faucets and seal the top of the well.
6. Let stand for several hours, preferably overnight.
7. After you have let the water stand, operate the pump by turning on all faucets continuing until all odor of chlorine disappears. Adjust the flow of water from faucets or fixtures that discharge into septic tank systems to a low flow to avoid overloading the disposal system.

<b>Table 2. Bleach for a Drilled Well</b>	
<b>Diameter of Well (in inches)</b>	<b>Gallons per foot of water</b>
3	0.37
4	0.65
5	1.0
6	1.5
8	2.6
10	4.1
12	6.0
<b>Table 3. Amount of disinfectant required for each 100 gallons of water</b>	
Laundry Bleach (5.25% Chlorine)	3 cups*

Hypochloride Granules (70% Chlorine)	2 ounces**
<p>*1 cup = 8-ounce measuring cup  **1 ounce = 2 heaping tablespoons of granules</p> <p><i>Source: Illinois Department of Public Health.  Recommendations may vary from state to state.</i></p>	

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

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## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

### ***Food Safety During and After A Flood***

Do not eat any food that may have come into contact with flood water. Discard any food without a waterproof container if there is any chance that it has come into contact with flood water. Undamaged, commercially canned foods can be saved if you remove the can labels, thoroughly wash the cans, and then disinfect them with a solution consisting of one cup of bleach in 5 gallons of water. Relabel your cans, including expiration date, with a marker. Food containers with screw-caps, snap-lids, crimped caps (soda pop bottles), twist caps, flip tops, and home canned foods should be discarded if they have come into contact with flood water because they cannot be disinfected. For infants, use **only** pre-prepared canned baby formula that requires no added water, rather than powdered formulas prepared with treated water.

#### **Frozen and Refrigerated Foods**

If your refrigerator or freezer may be without power for a long period:

- Divide your frozen foods among friends' freezers if they have electricity;
- Seek freezer space in a store, church, school, or commercial freezer that has electrical service; or
- Use dry ice -- 25 pounds of dry ice will keep a 10-cubic-foot freezer below freezing for 3-4 days. (Exercise care when handling dry ice, because it freezes everything it touches. Wear dry, heavy gloves to avoid injury.)

Thawed food can usually be eaten or refrozen if it is still "refrigerator cold," or if it still contains ice crystals. To be safe, remember, "When in doubt, throw it out." Discard any food that has been at room temperature for two hours or more, and any food that has an unusual odor, color, or texture.

Your refrigerator will keep foods cool for about 4 hours without power if it is unopened. Add block or dry ice to your refrigerator if the electricity will be off longer than 4 hours.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

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## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

# **Precautions When Returning to Your Home**

## **Precautions When Returning to Your Home**

Electrical power and natural gas or propane tanks should be shut off to avoid fire, electrocution, or explosions. Try to return to your home during the daytime so that you do not have to use any lights. Use battery-powered flashlights and lanterns, rather than candles, gas lanterns, or torches. If you smell gas or suspect a leak, turn off the main gas valve, open all windows, and leave the house immediately. Notify the gas company or the police or fire departments or State Fire Marshal's office, and do not turn on the lights or do anything that could cause a spark. Do not return to the house until you are told it is safe to do so.

Your electrical system may also be damaged. If you see frayed wiring or sparks, or if there is an odor of something burning but no visible fire, you should immediately shut off the electrical system at the circuit breaker.

Avoid any downed power lines, particularly those in water. Avoid wading in standing water, which also may contain glass or metal fragments.

You should consult your utility company about using electrical equipment, including power generators. Be aware that it is against the law and a violation of electrical codes to connect generators to your home's electrical circuits without the approved, automatic-interrupt devices. If a generator is on line when electrical service is restored, it can become a major fire hazard. In addition, the improper connection of a generator to your home's electrical circuits may endanger line workers helping to restore power in your area. All electrical equipment and appliances must be completely dry before returning them to service. It is advisable to have a certified electrician check these items if there is any question. Also, remember not to operate any gas-powered equipment indoors.

## **Cleanup**

Walls, hard-surfaced floors, and many other household surfaces should be cleaned with soap and water and disinfected with a solution of 1 cup of bleach to five gallons of water. Be particularly careful to thoroughly disinfect surfaces that may come in contact with food, such as counter tops, pantry shelves, refrigerators, etc. Areas where small children play should also be carefully cleaned. Wash all linens and clothing in hot water, or dry clean them. For items that cannot be washed or dry cleaned, such as mattresses and upholstered furniture, air dry them in the sun and then spray them thoroughly with a disinfectant. Steam clean all carpeting. If there has been a backflow of sewage into the house, wear rubber boots and waterproof gloves during cleanup. Remove and discard contaminated household materials that cannot be disinfected, such as wallcoverings, cloth, rugs, and drywall.



## **Immunizations**

Outbreaks of communicable diseases after floods are unusual. However, the rates of diseases that were present before a flood may increase because of decreased sanitation or overcrowding among displaced persons. Increases in infectious diseases that were not present in the community before the flood are not usually a problem. If you receive a puncture wound or a wound contaminated with feces, soil, or saliva, have a doctor or health department determine whether a tetanus booster is necessary based on individual records.

Specific recommendations for vaccinations should be made on a case-by-case basis, or as determined by local and state health departments.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

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SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

**Tetanus Shots Available for Those Affected by  
Flood**

The Arizona Department of Health Services is recommending that anyone who has been exposed to floodwaters or have suffered injuries as a result of the flood, obtain a tetanus shot from the \_\_\_\_\_ County Health Department if they haven't received one in the last five years.

The \_\_\_\_\_ County Health Department will be providing tetanus shots at \_\_\_\_\_ location/address \_\_\_\_\_ from \_\_\_\_:\_\_\_\_ to \_\_\_\_:\_\_\_\_ until \_\_\_\_\_ date \_\_\_\_\_ or the flood cleanup is complete.

People with open cuts or wounds should especially take extreme care when walking through floodwaters due to the possibility of contracting tetanus.

“We are urging people who are not part of the cleanup effort to stay clear of the flood waters.” commented \_\_\_\_\_, \_\_\_\_\_ County Health Officer.

Those persons concerned about their tetanus status, but not involved with flood-related activities should consult their physician.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

### **After the Flood: Cleanup of Flood Water**

When returning to your home after a flood, be aware that flood water may contain sewage. Protect yourself and your family by following these steps:

#### **Inside the Home**

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Remove and discard items that cannot be washed and disinfected (such as, mattresses, carpeting, carpet padding, rugs, upholstered furniture, cosmetics, stuffed animals, baby toys, pillows, foam-rubber items, books, wall coverings, and most paper products).
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks, and other plumbing fixtures) with hot water and laundry or dish detergent, then disinfect with a solution of 1 cup of household bleach to 5 gallons of water. (Note: this solution should not be used for drinking, cooking, or personal hygiene.)
- Help the drying process by using fans, air conditioning units, and dehumidifiers.
- After completing the cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands).
  - Or you may use water that has been disinfected for personal hygiene use (solution of  $\frac{1}{8}$  teaspoon of household bleach per 1 gallon of water). Let it stand for 30 minutes. If the water is cloudy, use a solution of  $\frac{1}{4}$  teaspoon of household bleach per 1 gallon of water.
- Wash all clothes worn during the cleanup in hot water and detergent. These clothes should be washed separately from uncontaminated clothes and linens.
- Wash clothes contaminated with flood or sewage water in hot water and detergent. It is recommended that a laundromat be used for washing large quantities of clothes and linens until your onsite waste-water system has been professionally inspected and serviced.
- Seek immediate medical attention if you become injured or ill.

#### **Outside the Home**

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Have your onsite waste-water system professionally inspected and serviced if you suspect damage.
- Wash all clothes worn during the cleanup in hot water and detergent. These clothes should be washed separately from uncontaminated clothes and linens.

- After completing the cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands).
  - Or you may use water that has been disinfected for personal hygiene use (solution of  $\frac{1}{8}$  teaspoon of household bleach per 1 gallon of water). Let it stand for 30 minutes. If the water is cloudy, use solution of  $\frac{1}{4}$  teaspoon of household bleach per 1 gallon of water.
- Seek immediate medical attention if you become injured or ill.

For more information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

###



## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

# **Animals and Controlling Mosquitoes**

## **Animals**

Many wild animals have been forced from their natural habitats by flooding, and many domestic animals are also without homes after the flood. Take care to avoid these animals, because they may carry rabies. Remember, most animals are disoriented and displaced, too. Do not corner an animal. If an animal must be removed, contact your local animal control authorities. Your local and state health department can provide information about the types of wild animals that carry rabies in your area.

Rats may be a problem during and after a flood. Take care to secure all food supplies, and remove any animal carcasses in the vicinity by contacting your local animal control authorities.

If you are bitten by any animal, seek immediate medical attention. If you are bitten by a snake, first try to accurately identify the type of snake so that, if poisonous, the correct anti-venom may be administered.

## *Animal Disposal After a Flood*

Most states have their own guidelines on disposal of dead animals, so people with questions regarding the specific situation in their state are highly encouraged to contact local or state health and agricultural officials for clarification.

## *Frequently Asked Questions*

### **Are there any special health risks I need to be aware of when disposing of dead animals after a flood?**

The risk to humans from animal carcasses is low if proper precautions are taken.

- Practice proper hand washing to prevent infection with certain pathogens that may be transmitted from farm animals, including *Salmonella* and *E. coli*.
- Secure all food sources and remove any animal carcasses to avoid attracting rats.
- Wear insect repellent when outdoors. Flooding may lead to more mosquitoes, which can carry disease.
- Be on the alert for snakes that may be hiding in unusual places after flooding. If you are bitten, try to identify the snake so that if it is poisonous, you can be given the correct antivenin. Do not cut the wound or attempt to suck the venom out. Contact your local emergency department for further care.

People working to clean up areas containing swine or poultry carcasses should take the following precautions:

- Wear protective clothing, including waterproof gloves, waterproof boots, and protective eyewear (cover any open wounds).
- Use duct tape to seal tops of gloves and boots to prevent water seepage.
- Wear respiratory protection – an N-95 respirator or better.
- If you smell hydrogen sulfide (a rotten egg smell), get out of the building and call your county extension office.
- Clean and disinfect all clothing and boots after handling carcass-contaminated materials.
- Wash work clothes separately from street clothes.
- Wash hands thoroughly before placing fingers in mouth (nail biting, etc.).
- Shower and wash hair thoroughly after handling carcass-contaminated materials.

### **How do I dispose of a dead animal on my property during flood cleanup?**

It is usually the responsibility of the owner or person in charge of domesticated animals to appropriately dispose of dead animals in accordance with local or state ordinances within 24 hours after knowledge of the death. It can be the responsibility of the municipal or county government to designate appropriate people to dispose of any domestic dead animals whose owner cannot be identified.

Contact your local animal control department, local health department, or state veterinarian for specific disposal guidance.

### **My pet was killed in the flood. Can I bury it on my property?**

Several cities require Animal Care and Control agencies to manage the disposal of family pets and other dead animals, except for livestock. Check with your local authorities for more information.

### **If not, how do I dispose of the remains?**

1. Wear gloves.
2. Cover your gloved hand with a plastic trash bag, pick up the remains, then invert the trash bag over the remains and seal the bag.
3. For larger animals, use a shovel to place remains inside a plastic trash bag, then rinse off the shovel with water.
4. Call your local animal care and control agency for further instructions and to request pickup.
5. Wash your hands.

### **I am a farmer and I lost a lot of livestock during the flood. How do I dispose of multiple animal remains?**

Each farm operation should have specific plans for animal disposal in the event of an emergency. Farm operations should check with state and local authorities to ensure their plan meets local requirements.

## **Mosquitoes**

The large amount of pooled water remaining after the flood will lead to an increase in mosquito populations. Mosquitoes are most active at sunrise and sunset. The majority of these mosquitoes will be pests, but will not carry communicable diseases. Local, state, and federal public health authorities will be actively working to control the spread of any mosquito-borne diseases.

To protect yourself from mosquitoes, use screens on dwellings, and wear long-sleeved and long-legged clothing. Insect repellents containing DEET are very effective. Be sure to read all instructions before using DEET. Care must be taken when using DEET on small children. Products containing DEET are available from retail outlets and through local and state health departments.

To control mosquito populations, drain all standing water left in containers around your home.

information about health and safety during a flood, please visit the Arizona Department of Health Services' Web site at [www.azdhs.gov](http://www.azdhs.gov) or call the State Public Health Information line at (602) 364-4500 or statewide toll-free at (800) 314-9243.

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## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

### **Protect Yourself From Mold**

After natural disasters such as hurricanes, tornadoes, and floods, excess moisture and standing water contribute to the growth of **mold** in homes and other buildings. When returning to a home that has been flooded, be aware that mold may be present and may be a health risk for your family.

#### **People at Greatest Risk from Mold**

The following groups of people may be at greater risk than others for mold:

- Infants and children
- The elderly
- People with asthma, allergies, and other respiratory (breathing) conditions
- People with weakened immune systems (such as people with HIV infection, cancer patients taking chemotherapy, and people who have received an organ transplant)

**Any person at risk from mold should not be in an area that is likely to be contaminated with mold.**

#### **Possible Health Effects of Mold Exposure**

- Stuffy nose, irritated eyes, or wheezing can occur in people who are sensitive to molds.
- Wheezing, difficulty in breathing, and shortness of breath can be an allergic reaction to mold and can sometimes be severe.
- Skin reactions can develop.
- Mold infections can develop in the lungs of people with weakened immune systems and with chronic lung diseases such as obstructive lung disease.

#### **Treating Symptoms of Mold Exposure**

If you or your family members have health problems after exposure to mold, contact your doctor or other health care provider.

#### **Recognizing Mold**

You *may* recognize mold by:

- **Sight** ( Are the walls and ceiling discolored, or do they show signs of mold growth or water damage?)
- **Smell** (Do you smell a bad odor, such as a musty, earthy smell or a foul stench?)



**Note: Controlling moisture in your home is the most critical factor for preventing mold growth.**

When you reenter your home, first dry out your house. (See the fact sheet for drying out your house, [Reentering Your Flooded Home](#).) Mold spores may be present and can become airborne.

### **Taking Steps to Protect Yourself**

Note: If the cleanup is a large job, you should consult or contract with a professional who is experienced in cleaning up mold. If it is a smaller job that you can do yourself, then take these precautions:

- Protect your eyes with glasses or goggles.
- Wear rubber boots and waterproof gloves during cleanup.
- Wear outer clothing (long-sleeved shirts and long pants) that can be easily removed and laundered or discarded.
- Shorten the amount of time you are in the area.
- Minimize the spread of airborne spores by using work practices such as
  - decreasing foot traffic in the area,
  - avoiding dry sweeping,
  - avoiding rapid movements (such as jerking or throwing moldy objects), and
  - covering moldy objects when removing them.

### **Deciding Whether to Wear Respiratory Protection**

Respirators are most commonly used in workplaces, where employer programs ensure that the correct type is selected and properly fitted. Employees in workplaces with such programs understand the limitations and whether they are physically capable of wearing a respirator. Homeowners using respirators for short periods don't have the support of a workplace program.

When wearing a respirator, please be aware of the following limitations:

- **People should check with their doctor** to ensure that they are physically capable of wearing a respirator. Wearing a respirator can pose a health risk.
  - For example, if a wearer has preexisting respiratory issues, the pressure drop created by a well-fitted respirator can put the wearer at risk.
- Wearers should read the instructions that come with the respirator on how to get the best fit. Proper adjustment and fit is important to lessen leakage into the respirator.
- Without proper training, wearers often use respirators for purposes for which the respirator was not intended. The N-95 respirator is designed to protect only against dusts and particles the size of mold spores with 95 percent or greater efficiency. (The N-95 is the respirator to use for mold clean-up if the decision has been made to wear one.)
- Wearers are not protected from disinfectant vapors.
- Wearers often think they are protected in hazardous areas when they are actually not protected.

## Cleaning Up Mold

After drying out your house and taking protective measures, remove items that cannot be cleaned, and then clean your home and household items.

**Removal and cleaning are important because even dead mold may cause allergic reactions in some people.**

- Make sure the working area is well ventilated.
- Remove all porous items that have been wet for more than 48 hours and that cannot be thoroughly cleaned and dried. These items can remain a source of mold growth and should be removed from the home. **When in doubt, take it out!** However, homeowners may want to temporarily store items outside of the home until insurance claims can be filed. [See recommendations by the Federal Emergency Management Agency \(FEMA\)](#).
- Porous, noncleanable items include carpeting and carpet padding, upholstery, wallpaper, drywall, floor and ceiling tiles, insulation material, clothing, leather, paper, wood, or food.
- Clean nonporous surfaces such as walls, floors, and counter surfaces with soap and water. **(Use non-ammonia soap or detergent.)** Use a stiff brush on rough surface materials such as concrete.
- If you wish to disinfect, refer to the U.S. Environmental Protection Agency (EPA) document, *A Brief Guide to Mold and Moisture in Your Home* at <http://www.epa.gov/iaq/molds/images/moldguide.pdf>.

## Preventing Mold from Coming Back

The key to preventing mold from coming back is to control moisture. Mold spores are found in outdoor air, so mold can grow again if conditions are suitable indoors. **Previously damp areas must be kept completely dry.**

- Clean fabrics (curtains, upholstery, bedding, etc.) often and keep them dry.
- Store clean fabric items in well-ventilated areas.
- Reduce moisture in the air with dehumidifiers, open windows, or air conditioners, especially in hot weather.
- Keep the humidity in your home between 40% and 60%. Humidity in the home can be measured with a household humidity sensor available at your local hardware store.
- Reduce condensation on cold surfaces by insulating. Examples include insulating air-conditioning ducts, cold water pipes, etc.
- Routinely check potential problem spots such as the bathroom and laundry for moisture and moldy odors.
- Fix leaks in pipes, and investigate any damp areas around tubs and sinks.
- Vacuum and clean surfaces frequently.
- Seek the advice of a mold remediation company if mold growth persists.

## SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE – \_\_\_\_\_

# **Protect Yourself From Carbon Monoxide Poisoning**

**Never use generators, grills, camp stoves, or other gasoline, propane, natural gas, or charcoal-burning devices inside your home, basement, garage, or camper—or even outside near an open window.**

**Install a carbon monoxide detector in your house, and check its battery every time you check your smoke detector batteries.**

**Carbon monoxide (CO) is an odorless, colorless gas that can cause sudden illness and death if you breathe it.** When power outages occur during emergencies such as hurricanes or winter storms, you may try to use alternative sources of fuel or electricity for heating, cooling, or cooking. CO from these sources can build up in your home, garage, or camper and poison the people and animals inside.

**If you are too hot or too cold, or you need to prepare food, don't put yourself and your family at risk—look to friends or a community shelter for help. If you must use an alternative source of fuel or electricity, be sure to use it only outside and away from open windows.**

**Every year, more than 500 people die from accidental CO poisoning.** CO is found in combustion fumes, such as those produced by small gasoline engines, stoves, generators, lanterns, and gas ranges, or by burning charcoal and wood. CO from these sources can build up in enclosed or partially enclosed spaces.

People and animals in these spaces can be poisoned and can die from breathing CO in an enclosed or partially enclosed space.

### **How to Recognize CO Poisoning**

**Exposure to CO can cause loss of consciousness and death.** The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. People who are sleeping or who have been drinking alcohol can die from CO poisoning before ever having symptoms. If you think you may have CO poisoning, consult a health care professional right away.

### **Important Tips**

- Never use a gas range or oven to heat a home.

- Never use a charcoal grill, hibachi, lantern, or portable camping stove inside a home, tent, or camper.
- Never run a generator, pressure washer, or any gasoline-powered engine inside a basement, garage, or other enclosed structure, even if the doors or windows are open, unless the equipment is professionally installed and vented. Keep vents and flues free of debris, especially if winds are high. Flying debris can block ventilation lines.
- Never run a motor vehicle, generator, pressure washer, or any gasoline-powered engine outside an open window or door where exhaust can vent into an enclosed area.
- Never leave the motor running in a vehicle parked in an enclosed or partially enclosed space, such as a garage.



## APPENDIX C

# Health and Safety Universal Precautions for Post-Flood Buildings

The following article was written by Matthew Klein of Indoor Air Quality Solutions and Mark Fleming of Blue Chip Builders, Inc. This sheet contains only information relevant to **health and safety hazards of buildings after floods**. It doesn't contain detailed instructions about cleaning or claims procedures. This sheet was developed in response to the lack of comprehensive information about health and safety hazards due to floods. The health and safety information in this sheet has been developed from review of information from a broad range of sources and the authors' personal experience in building environment problems.

### *Universal Precautions:*

This information sheet contains universal precautions. **Universal precautions** are used with the assumption that a hazard exists, whether it actually does or not, unless proven otherwise.

Therefore, protective measures are used until the hazard is proven to not exist. Yes, universal precautions might not be needed. However, they're used because: experience has shown that a hazard most likely exists; the consequences of a hazard far outweigh the trouble and cost of using precautions; lack of time or cost prohibit the analysis needed to rule out a hazard; and/or persons who don't have the knowledge or skills to analyze for a hazard will be working in a potentially hazardous environment. One point needs to be made, **post-flood buildings have a high probability of having health or safety hazards. Whenever you are unsure about how hazardous a situation is, always use caution until the situation is proven otherwise.**

### *Health Precautions:*

Any tetanus shot that was received more than 5 years ago is assumed to be ineffective protection. Other immunizations might also be needed based on local health department recommendations. If you cannot remember when you last received a particular shot, assume it to be ineffective. **Any** person injured while working in post-flood buildings needs to be up-to-date on his or her tetanus shots. **All** persons might need other shots; pay attention to news bulletins from health organizations.

**All** persons with the following health problems shouldn't enter post-flood buildings until after the they are completely cleaned up, decontaminated, and dried out: persons with severe asthma, mold allergies or chronic respiratory disease; persons who have had other hypersensitivity respiratory reactions to bacteria or mold, such as hypersensitivity pneumonitis or humidifier fever; and persons who are immunocompromised in any way, such as persons with HIV or AIDS. Even after the buildings are cleaned, dried and decontaminated, such persons should leave the building if they develop symptoms, until the problem can be investigated.

Anyone who develops unusual symptoms, such as the following, should seek **immediate** medical attention: wheezing, difficulty breathing, chest tightness, chronic cough, fever, rashes or hives, extreme respiratory irritation. Remember that this cleanup is being performed in an environment where you can potentially be exposed to hazardous materials. Furthermore, the stress of working harder than many people are used to could cause injury. **Any** unusual

symptoms could signal serious exposure to hazardous chemical or biological materials, or another serious medical problem.

**Wash hands and face frequently** with anti-bacterial soap and drinking-quality water. When washing hands, scrub the areas under nails with a fingernail brush; dirt under the nails can harbor contaminated material. Wash hands and face before eating anything or smoking; contaminated material from dirt on the face and hands can be transferred to food or cigarettes, and ingested or inhaled. Avoid touching your eyes, mouth, ears, or nose with dirty hands. Keep in mind that personal cleanliness can be a major prevention of illness or disease.

Wash all cuts, abrasions, lacerations, and puncture wounds **immediately** with anti-bacterial soap and drinking-quality water for at least one minute, then apply an anti-bacterial salve and bandage. Have all deep cuts treated **immediately** by a medical professional. Infection can set in rapidly after injury. When in doubt about treating an injury, seek medical care.

Don't use showers, toilets, or other facilities until you are certain that the sanitary lines from the building are clear. Sewer water could back up into the building if the sewer or septic system is not working correctly.

*General Safety Precautions:*

Unless proven otherwise, consider **all** mud, debris and water pools to be hiding electrical shock, laceration or slip hazards, chemical or biological exposure hazards, or wild animals. First, verify that all power is out in the area before walking through mud or water, or before clearing debris. Shuffle walk through mud and water pools when entering for the first time. Lift debris in piles with poles or sticks to check for hazards or wild animals before moving the debris. Inspect the building using only flashlights-never open flames of any kind.

Consider **all** pooled water inside and outside of the building to be biological or chemical exposure hazards, unless proven otherwise by qualified personnel. Don't permit children to play in water pools or mud. Attempts should be made to drain and dry the pools as soon as possible. Flooded basements should be emptied as soon as possible; but care should be taken to assure that the foundation will not collapse during draining. (Pressure from the water in the ground surrounding the foundation could cause the foundation to collapse.) If you don't know how to drain the basement without causing collapse, have a qualified person do it.

Consider all mold (a.k.a. fungi or mildew) and bacteria to be toxin producers. Some mold produce particles and volatile organic compounds that irritate most people's eyes and respiratory systems. But, some mold and bacteria have been linked to serious respiratory health problems and death. **Risking exposure isn't worth the time that could be spent in recovery from illness, and definitely not worth death.**

**Unusual odors, or irritation of the skin and mucous membranes** should be considered to be signs of toxic chemical exposure, unless proven otherwise by qualified personnel. Be aware that some toxic chemicals don't have odors that warn of their presence. If irritation of the skin or mucous membranes is encountered, leave the area immediately, wash the affected skin area with soap and water, and then be checked by medical personnel. Have qualified personnel check the area for chemical hazards before returning to it.

Combustion appliances and equipment will cause **carbon monoxide** poisoning when used in a building, unless proven otherwise by qualified personnel. Use all combustion equipment, such as gas-powered electrical generators and grills outside of the building. Make certain to locate them where their exhaust will not enter the building. Only heaters made to be used indoors should be used indoors; however, use them with caution and adequate ventilation. Follow manufacturers precautions about using combustion equipment. If you show symptoms of dizziness, chronic headaches or nausea, excessive tiredness, or a cherry red skin color, suspect carbon monoxide poisoning and seek medical care.

Any materials or furnishings that might have **absorbed water** (furniture, building materials, mattresses, etc.) could weigh over five times more than they did before flooding. (Water weighs over 60 lbs per cubic foot.) **Use caution when lifting anything**, and lift with the legs. Remember that water can wick farther up some materials than the level of the water; so, an item might have absorbed more water than expected.

Don't connect electrical generators to the electrical systems of the building. This could be a shock hazard to those in the building or those working on power lines. **Use generators to power only devices connected to extension cords.** Make sure that all extension cords are protected by ground fault circuit interrupters (GFCIs) and overload protectors. Make sure that the extension cords have adequate capacity to handle the equipment they are being used for, and that they are approved for use in wet areas. Don't use frayed or damaged extension cords. Follow all equipment safety precautions; even then, don't use equipment that you aren't skilled in using without supervision.

Use only wet/dry shop vacuums for vacuuming up water and wet materials. If possible, **pipe the vacuum exhaust out of the building** using additional length of vacuum hose. The exhaust could contain water aerosol from the material being vacuumed up. This aerosol might contain microbiological materials.

All debris should be moved immediately to disposal containers, such as dumpsters, or placed in plastic garbage bags and sealed. **Don't accumulate piles of debris** that could be microbiological breeding grounds or hiding places for wild animals.

**Fatigue, stress, and rushing leads to accidents.** Don't overwork yourself and get plenty of rest. Don't rush the work or take short cuts.

#### *Cleaning and Decontamination Procedures:*

Note that surfaces should always be cleaned **and** decontaminated. The following procedure is used for cleaning and decontaminating surfaces that were under water inside post-flood buildings:

1. Remove debris and materials that cannot be shoveled or scooped.
2. Shovel or scoop up dirt and mud, and remove it from the building.
3. Wash all surfaces with clean water.
4. Wash with a soap or detergent solution.
5. Rinse with clean water.
6. Apply a disinfectant solution.

7. After 15 to 20 minutes, rinse the disinfecting solution off.
8. Remove as much water as possible using a wet/dry vacuum or dry cloths.
9. Air dry as rapidly as possible, without damaging the item.

Water used in cleaning should be clean water, but doesn't have to be of the same quality as drinking water. **Disinfectant solutions can be made from household bleach** that contains at least 5.25% sodium hypochlorite. For porous, dirty surfaces (wood, cloth, concrete, etc.), one cup of bleach should be used for every 10 cups (about 1/2 gallon) of water. For non-porous, dirt-free surfaces (metal, glass, plastic, etc.), one cup of bleach should be used for every 100 cups (about 6 gallons) or water. Note that these concentrations are the maximum and minimum concentrations; they aren't absolutes. Use your judgment about concentration based on the surface to be disinfected. The more porous or rough a surface is, the more concentrated the bleach solution should be because porous or rough surfaces cannot be cleaned as effectively as non-porous or smooth surfaces.

**Note that bleach can corrode**, etch, lighten or otherwise negatively affect some materials, depending on the concentration. Small sections of a material should be tested with the bleach solution first to see if it affects the material. Be sure to leave the bleach solution on for as long as you would during the decontamination process. If the bleach solution harms the material, other disinfectants, such as Lysol or PineSol, can be used. Note that these other disinfectants can be used at any time instead of bleach. Bleach is less expensive, but as effective as the other disinfectants for decontaminating flood damaged items. Bleach should never be mixed with any other products unless the product label states that it is okay, because the bleach could react with them and produce hazardous gases. If in doubt, don't mix them.

Gloves need to be worn when using any cleaner, detergent, or disinfectant because the cleaner can cause skin problems. **Furthermore, most cleaners and disinfectants contain respiratory irritants, whether or not masking fragrances have been added.** Well ventilate the areas where cleaner and disinfectant solutions are mixed and used. **Read and follow all safety precautions on the labels of the cleaner and disinfectant products you use.**

#### *Protective Equipment:*

Use protective personal equipment. **Required equipment should be long-sleeved shirts, long pants, goggles, head protection against bumps and falling debris, heavy-soled shoes or boots, and work gloves.** Quality respirators are needed in areas where dust, mist or fibers are being generated into the air from cleanup or demolition work, and recommended in areas that have a musty odor. Heavy soled rubber boots or waders are needed when walking through water pools or deep mud.

#### *Food and Drinking Water:*

Drink only water you know is safe for drinking. Safe water is usually water in sealed bottles that weren't under water, water that has been stated as being safe by health officials, or water that you have treated according to health department guidelines. Wash and decontaminate any containers used for water before refilling.



Discard all food not in tin cans; it should be considered unfit to eat. Discard all food in tin cans that are swollen, leaking, or corroded. For the remaining tin cans, the Center for Disease Control (CDC) recommends removing their labels, washing and disinfecting them. Be sure to mark them to be able to identify their contents later. **In all cases, when in doubt, throw it out.**

#### *Building Structure:*

Unless qualified personnel state otherwise, **the following are signs of unsafe structural conditions:**

- buildings moved off of or shifted on their foundations;
- washed out soil around foundations;
- large cracks or gaps in foundations or basement walls that didn't exist before the flood;
- missing floor joist, main beam, or porch roof supports;
- sagging roofs, floors or ceilings;
- floors that bounce or give when walked on;
- walls that move when pushed;
- gaps between steps and porches;
- leaning walls;
- loose ceiling or wall materials;
- doors or windows stuck for reasons other than swelling due to water or whose frame is racked;
- or other changes in the shape or structure of the building.
- For buildings with chimneys, fireplaces, or other interior brick or stone structures, consider unusual gaps, cracks, loose materials, sags, misalignments or leaning in the structure to be signs of weak structure.

Never enter a building that has an unsafe structural condition until a qualified person checks out the building and the structure is properly braced or repaired. If the condition is found after entering the building, everyone should leave the building **immediately**, an inspector called in, and unsafe materials removed or structures braced before work resumes inside the building.

#### *Electrical Systems:*

Consider **any** downed power lines within one block of the building to be potential shock hazards until proven otherwise. (Electricity can travel for great distances through water, fence materials or other conductors, and some wires might be hidden in the mud.) Consider **all** wiring in buildings to be shock hazards until it has been checked out by a building inspector or electrician. Until then, turn the power off at the building's **service panel**. Have only persons knowledgeable about electrical shock hazards shut the power off. **All** electric circuit breakers, GFCIs and fuses that were under water need replacing. Switches and outlets that were under water can be cleaned and reused if still functional; but **when in doubt, throw it out**. All electrical motors that were under water need cleaning, drying and inspection by a qualified person before being put back in service. All light fixtures that were under water need to be opened, cleaned, dried and checked before being put back in service.

#### *LP, Natural Gas and Fuel Oil Lines:*

Consider **all** gas lines to be leaking unless proven otherwise by leak checks. Gas lines should be cut off at the service supply until after cleanup is completed and gas appliances have been

serviced. All gas control valves on gas-combustion appliances that were under water need to be replaced. Leak checks need to be performed on all lines when the appliances are returned to service. At **any** time and **even if the gas has been turned off**, gas odors should be considered to be a sign of a leak, unless proven otherwise by fire or utility personnel. (Gas can travel underground from leaks in other locations.) When odors are detected, the building should be evacuated **immediately** and fire or utility personnel called in to check for leaks.

Oil tanks are considered to be leaking, unless proven otherwise. Shut the line off at the tank until after cleanup is completed and the oil furnace has been serviced. When the furnace is put back in service, check for leaking lines.

#### *Building Materials:*

Assume that any building materials (carpet, padding, wallboard, wallpaper, ceiling tiles, etc.) that are **moist or wet 24 hours after the water recedes has mold growing on or in it**, even if you cannot see or smell it. Replaceable building materials that cannot be thoroughly cleaned, decontaminated and rapidly dried should be discarded. Irreplaceable building materials should be cleaned and decontaminated by professionals as soon as possible. Wall paneling made from wood laminates or vinyl might be cleaned and decontaminated, and reinstalled. Low-cost paneling, made of particle board for example, should be discarded. Consider all wall and floor coverings (for example, wallpaper, carpet, padding, and vinyl flooring) and insulation other than foam insulation to be contaminated with mold growth, and discard them if they are replaceable. Foam insulation needs to be cleaned, decontaminated, and dried thoroughly. Irreplaceable floor and wall coverings should be cleaned and decontaminated professionally as rapidly as possible. Remember, **if in doubt, throw it out**.

Consider all enclosed wall, ceiling and floor cavities that were under water to be areas where toxic mold or bacteria are growing. **These cavities must be opened, cleaned, decontaminated, and thoroughly dried.** In general, walls that were under water should be stripped to the studs and outer skin of the building up to about one foot above the flood line. The remaining wall cavity above the flood line should be checked for mold growth, and areas where mold is found growing should also be opened. Floor and ceiling cavities usually can have one side of the cavity exposed for work. Note that checking for mold growth in ceiling cavities above the flood line might also be prudent if these areas have gotten wet. Walls, ceilings and floor cavities with non-replaceable sheeting materials or wall coverings will need access holes made in each stud or joist cavity to allow cleaning, disinfecting and drying. These cavities should be professionally cleaned and decontaminated.

**Building materials made from particle and wafer board that were under water should be discarded.** Some of these materials swell when gotten wet and will never return to their previous shape. Mold might have also grow within the material and be nearly impossible to remove. Buildings built before 1975 might have asbestos or lead paint. Asbestos was used primarily as insulation or a tape on heating systems. Consider all white fibrous material used on heating system components to be asbestos and extremely hazardous. Loose or friable asbestos needs to be removed. Paint can be tested for lead using testing kits available at some building supply centers. If in doubt, have questionable materials checked by qualified personnel. If you find asbestos or lead, contact your state or federal Environmental Protection Agency (EPA) or Occupational Safety and Health Administration (OSHA), the National Institute for Occupational

Safety and Health (NIOSH) or an industrial hygiene firm for information on proper removal and disposal techniques.

**Dry the interior of the building as rapidly as possible using dehumidifiers, heated air, and outdoor ventilation air.** Using a wet/dry vacuum to pull water out of the materials will also help speed drying.

*Personal Property:*

**Assume that any material that is moist or wet 24 hours after the water recedes has mold growing on or in it,** even if you cannot see or smell it. Most paper items, and clothing and linens made from natural materials are highly susceptible to fungal growth. These items should be taken care of first.

- **All** personal items that are being kept and that were under water should be rinsed off. **Clothing and linens** should be laundered in hot water and dried in a dryer, or sent to a dry cleaner.
- Nonessential **paper items** should be discarded. Other paper items should be air dried. Photos can be wiped off and air dried. If possible, copy essential paper items after they have dried and discard the original. If you cannot tend to the paper items quickly, rinse and freeze them until you can.
- Discard all **health and beauty supplies**, cosmetics, bandages and medicines that were under water.
- **Children's toys** that are being kept should be cleaned and decontaminated before the children play with them.
- All other personal property will also most likely be contaminated. All replaceable property that cannot be cleaned, disinfected and dried thoroughly, such as **upholstered furniture, and mattresses**, should be discarded.
- Property made from particle or wafer board should also be discarded. Property that doesn't readily absorb water, such as **metal or quality wood furniture**, should be cleaned and decontaminated. Invaluable property that has absorbed water should be professionally cleaned and decontaminated. If possible, upholstery and fabric on irreplaceable furniture should be replaced. If these cannot be replaced, the fabric should be removed and decontaminated, and the stuffing replaced.
- **Consider all electric appliances that were under water to be shock hazards.** All appliances will need to be cleaned, decontaminated, dried thoroughly and checked before being used. Some appliances might have to be discarded. Qualified appliance service personnel should do the work on larger appliances, and probably on the smaller ones too.

*Heating, Ventilating, and Air Conditioning (HVAC) Systems:*

**The interior surfaces of HVAC equipment that were under water are reservoirs for mold and bacteria growth.** The interior components of the air handling unit (a.k.a. furnace, air conditioner, central air system) will need to be inspected, cleaned and decontaminated by professionals. Insulation inside the air handling unit might need to be replaced if it is damaged or if it has mold growing on it.

Fans will need to be removed, cleaned, decontaminated and dried thoroughly **before being placed back in the air handling unit.** Qualified service personnel need to replace the gas control valves on gas-combustion units. These personnel also need to clean, check and service

the heating and air conditioning equipment, and control systems of all air handling units that were under water.

**Registers or diffusers can be removed, washed, decontaminated, and reinstalled.** Unlined ductwork can be disassembled, washed, decontaminated, dried and reassembled by persons doing cleanup if they have the necessary skills. Lined ductwork should be checked and cleaned by professionals. If the lining in the ductwork is damaged or has mold growing on it, the insulation should be replaced. Ductboard ducts should be replaced.

**Exhaust fans** need to be removed, cleaned, decontaminated and dried thoroughly before being reinstalled and put back in service. Persons doing the cleanup can do this work if they have the skills to do it.

---

*Information Sources:*

If you have any questions about information in this publication, please contact:

[Matthew Klein](#)

Indoor Air Quality Solutions

PO Box 7

Bethel, OH 45106

513-734-6868

513-734-6860

[mkklein@cinti.net](mailto:mkklein@cinti.net)

[Mark Fleming](#)

Blue Chip Builders, Inc.

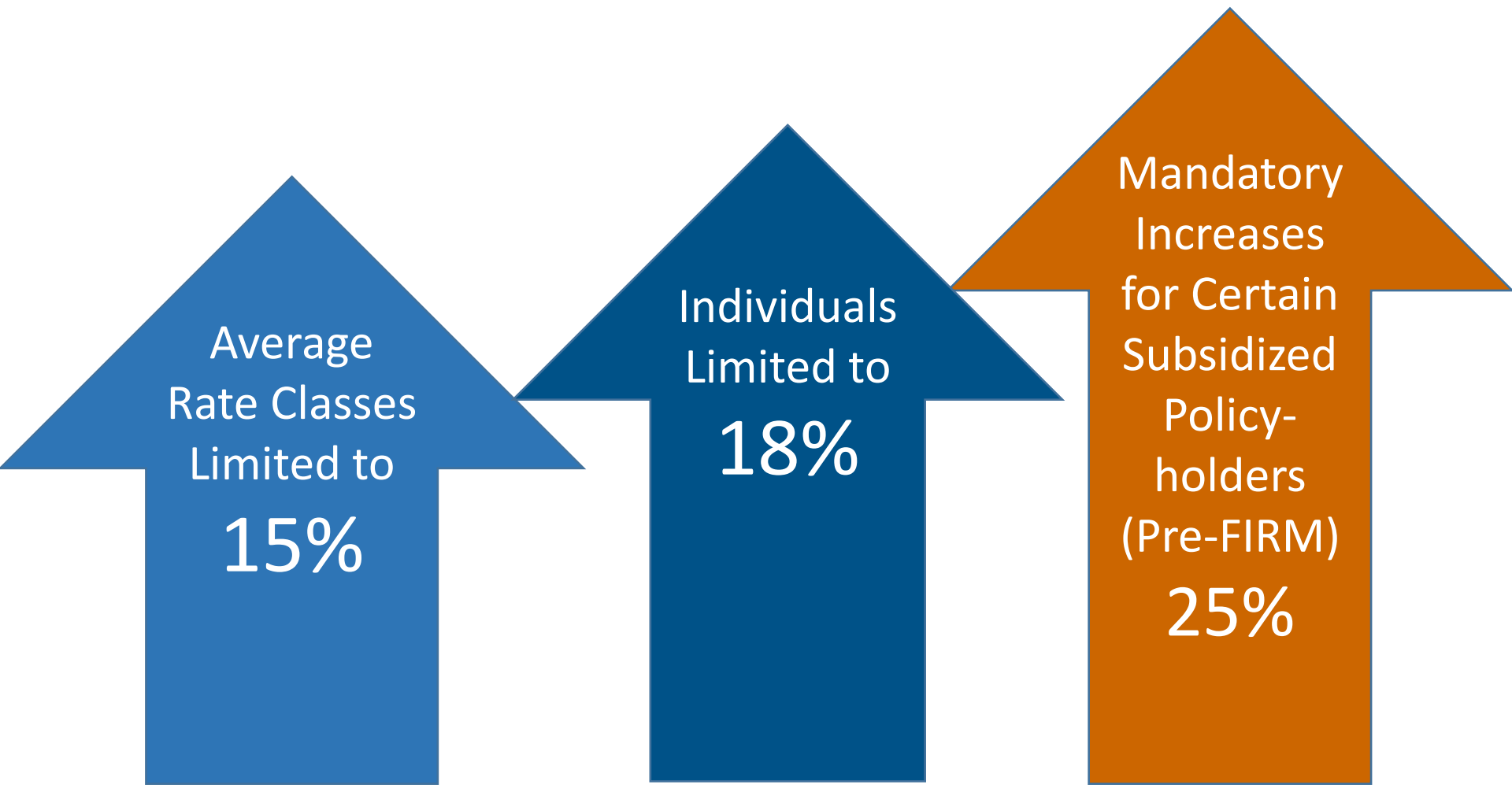
5160 Kieley Place

Cincinnati, OH 45217

513-242-1300

(FAX) 513-242-2338 (FAX)





## Premium Increase Caps

# Pre-FIRM Homes in Zone A, D, V

- **Primary Residences**

- Rates increase up to 15-18% a year;
- April 1, 2015 – average increase is 14%
- Policy and rate can be transferred at sale



# Pre-FIRM Buildings in Zone A, D, V

- **Receive 25% Annual Increase Until Full-Risk Rated**
  - Non-primary Residences
  - Repetitively Flooded Buildings
  - Substantially Improved Buildings
  - Businesses
    - Becomes effective April 1, 2016



# Surcharges – Started April 1, 2015

## Annual surcharges applied:

- \$25 for primary residences
- \$250 for all other buildings
- Included on **ALL** policies until **ALL** pre-FIRM subsidies are eliminated
- Surcharge revenue goes into the NFIP Reserve Fund
- Surcharges are *not* subject to premium increase caps





# Newly Mapped Scenarios

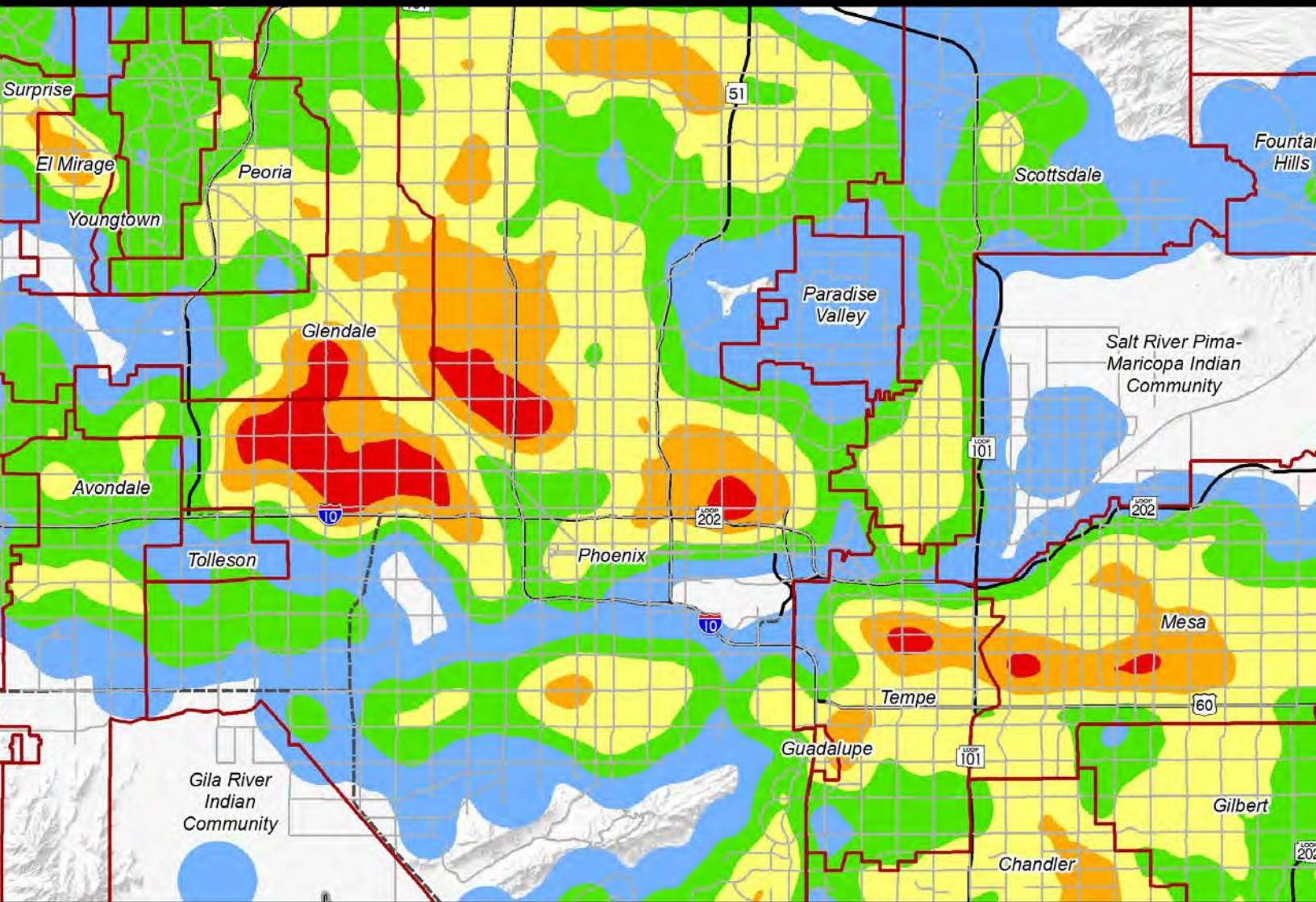
SCENARIO	ACTION TO TAKE
Newly mapped into the SFHA <b>on/after 04/01/2015</b>	<b>Properties Newly Mapped Rate</b> if covered within 12 months of the map revision date
Newly mapped into the SFHA <b>on/after 04/01/2015, not covered within 12 months of the map revision date</b>	<b>Eligible for grandfathering. If no continuous coverage:</b> <ul style="list-style-type: none"> <li>• Pre-FIRM buildings—rate using the new flood map</li> <li>• Post-FIRM buildings—grandfather using built in compliance rules</li> </ul>
Newly mapped into an SFHA <b><i>between 10/01/2008, and 03/31/2015, and are not currently covered</i></b>	<b>Eligible for the Properties Newly Mapped Rate if covered before 04/01/2016</b>
<b>PRP Eligibility Extension policies issued prior to 04/01/2015</b>	<b>Renewed with the Properties Newly Mapped Rate</b> on the first effective date on or after 04/01/2015

***Buy PRP before the map changes; get two years at PRP rates instead of one!***

# Other April 2015 Changes

- **New \$10K Deductible for Home & Contents**
- **Reserve Assessments**
  - Increased from 5% to 15% for most policies, including Newly Mapped Properties getting PRP rates
  - PRP Reserve Assessment increased from 0% to 10%
  - Are part of rate cap, so many rates see little increase
- **Federal Policy Fee**
  - PRP stays at \$22
  - Newly Mapped Properties get \$45
  - All others at \$45





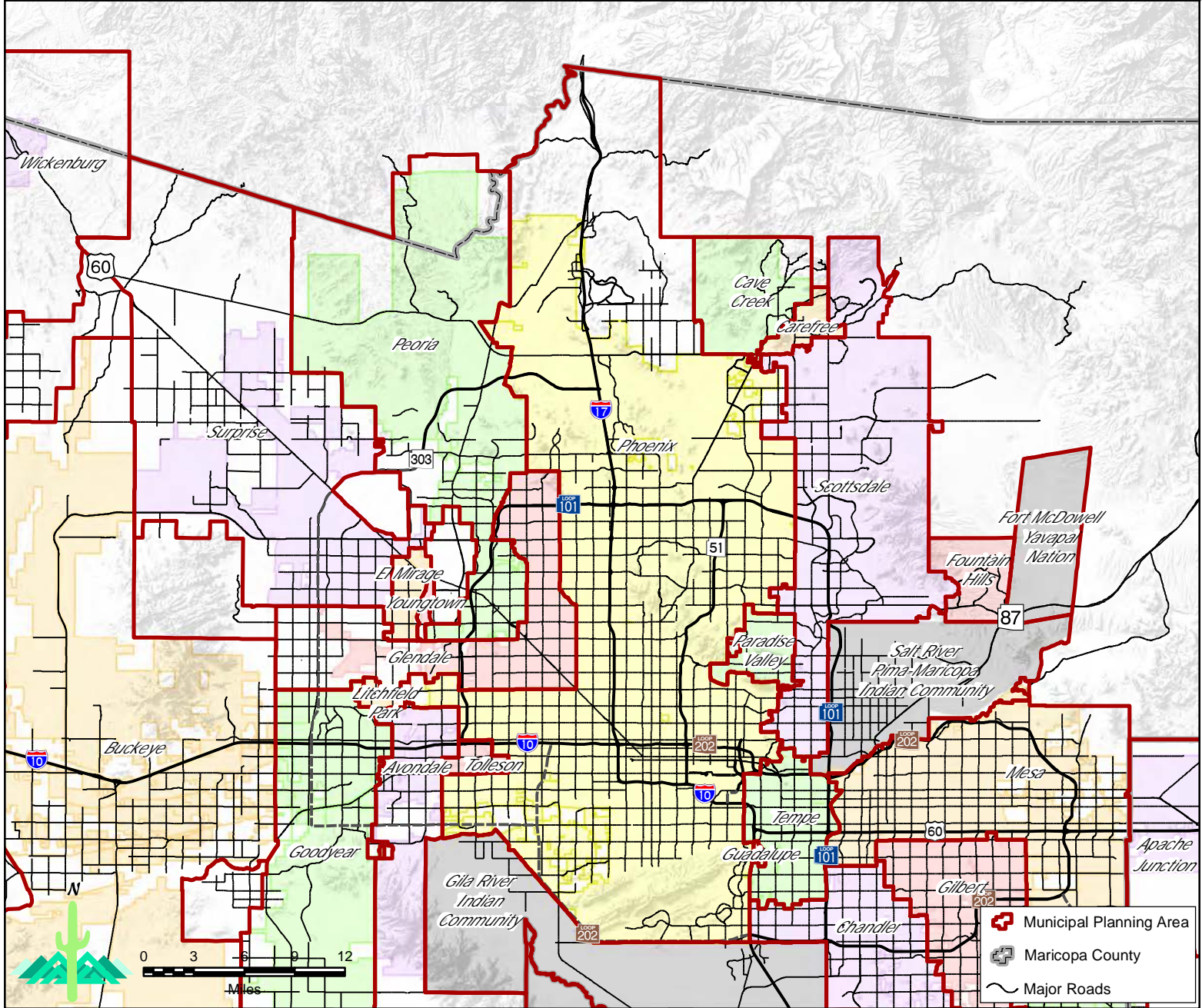
# Municipal Planning Area Socioeconomic Profile Phoenix, Arizona

June 2013









City of Phoenix  
 200 West Washington Street  
 Phoenix, AZ 85003  
 (602) 262-6011  
<http://www.phoenix.gov>

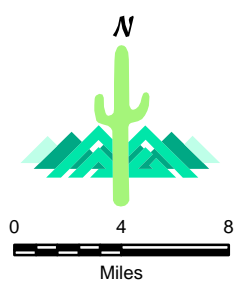
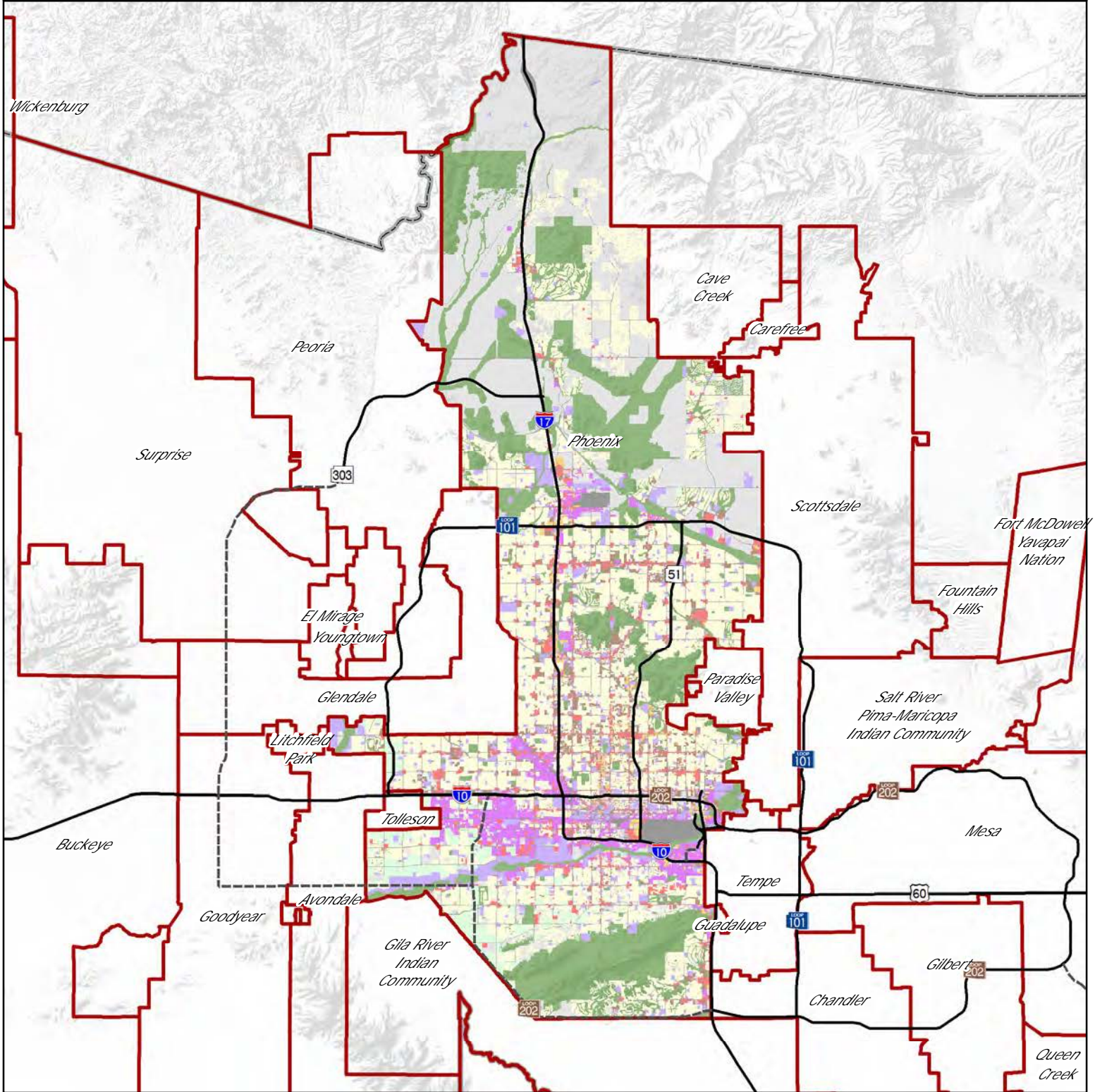
## Incorporated Area Statistics

	1990	2000	2010	2012
Incorporated Area (Sq. Mi.)	423.3	473.7	519.2	519.2
Municipal Planning Area (Sq. Mi.)	553.3	644.4	661.1	660.9
Incorporated Area as % of MPA	77%	74%	78%	78%
Population	983,392	1,321,045	1,445,632	1,464,727
Population in Households	968,506	1,298,577	1,423,894	N/A
Housing Units	422,032	495,832	590,149	593,618
Occupied Housing Units	369,918	465,834	514,806	N/A
Occupancy Rate	88%	94%	87%	N/A
Persons per Occupied Unit	2.62	2.79	2.77	N/A

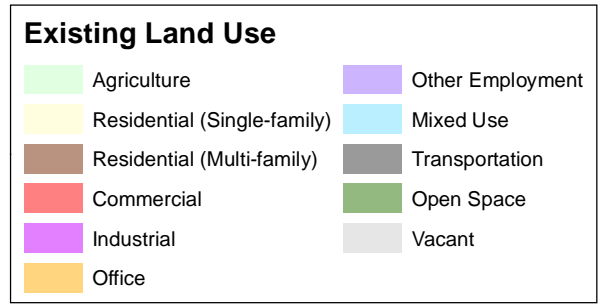
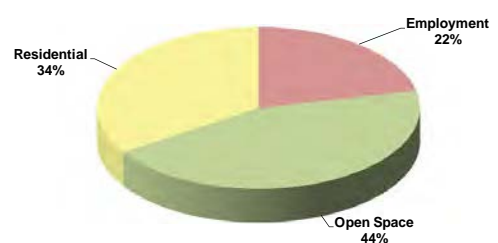
While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.  
 Date: June 2013

Source: 1990, 2000, 2010: U.S. Census Bureau Decennial Census



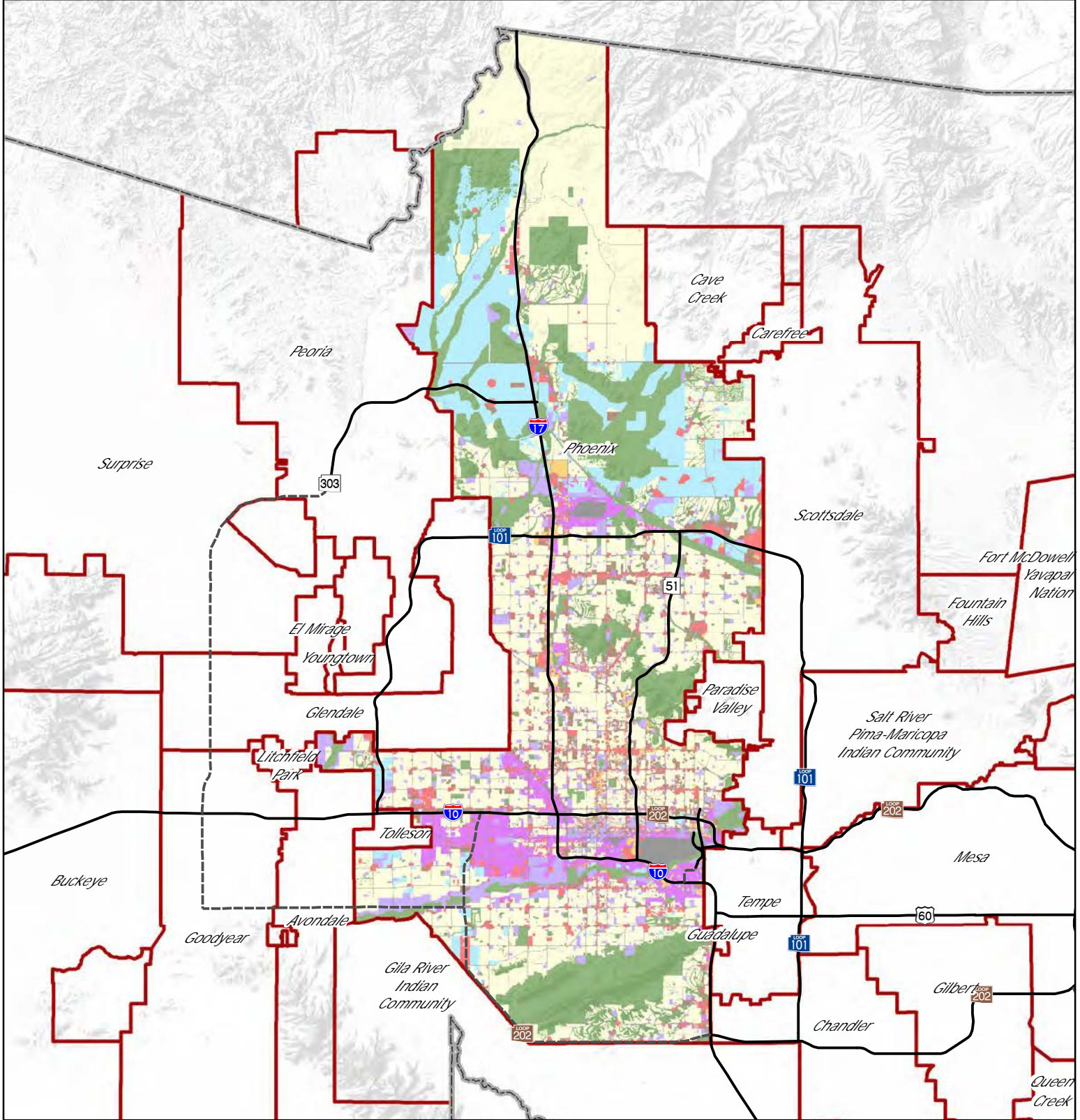


Existing Land Use (as % of incorporated area)



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.





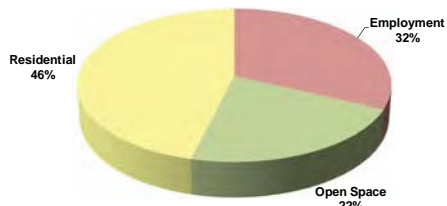
N



0 3 6 9

Miles

Future Land Use (as % of total area)



### Future Land Use Categories

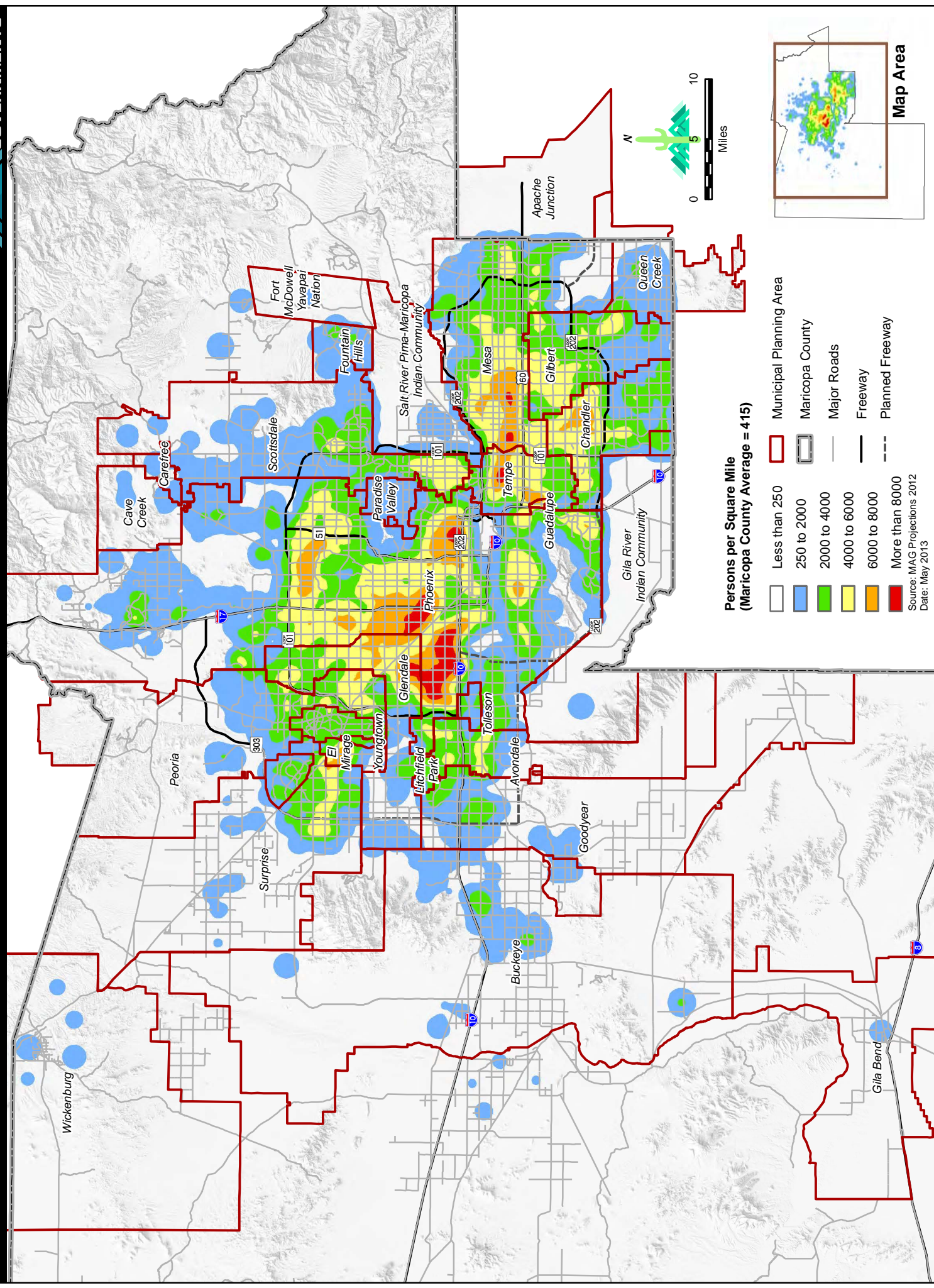
- |                             |                  |
|-----------------------------|------------------|
| Agriculture                 | Other Employment |
| Residential (Single-family) | Mixed Use        |
| Residential (Multi-family)  | Transportation   |
| Commercial                  | Open Space       |
| Industrial                  | Vacant           |
| Office                      |                  |

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Date: June 2013

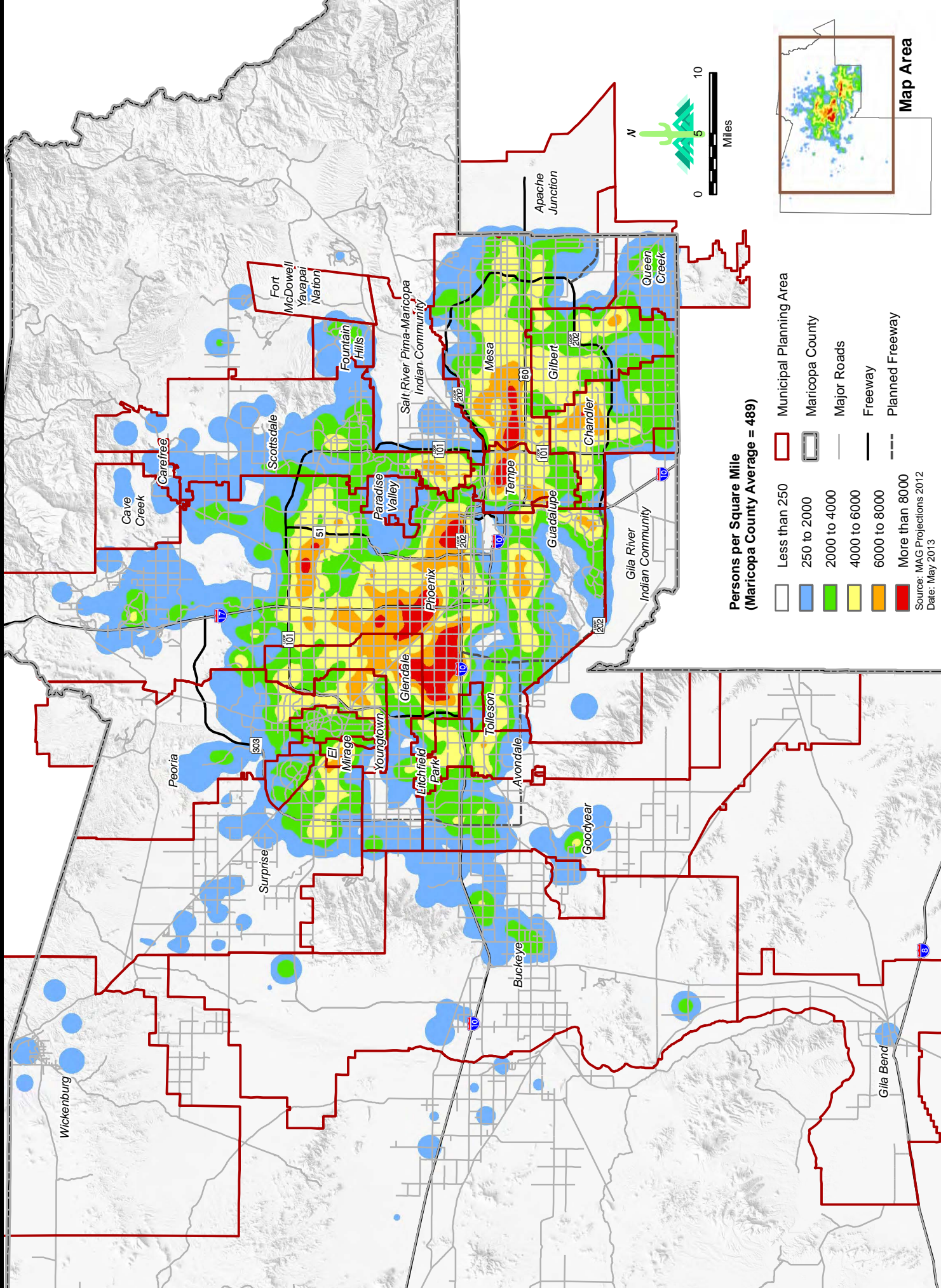


Population Concentration, 2010, Maricopa County, Arizona





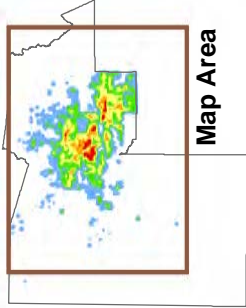
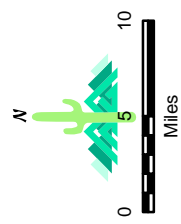
Population Concentration, 2020, Maricopa County, Arizona



Persons per Square Mile  
(Maricopa County Average = 489)

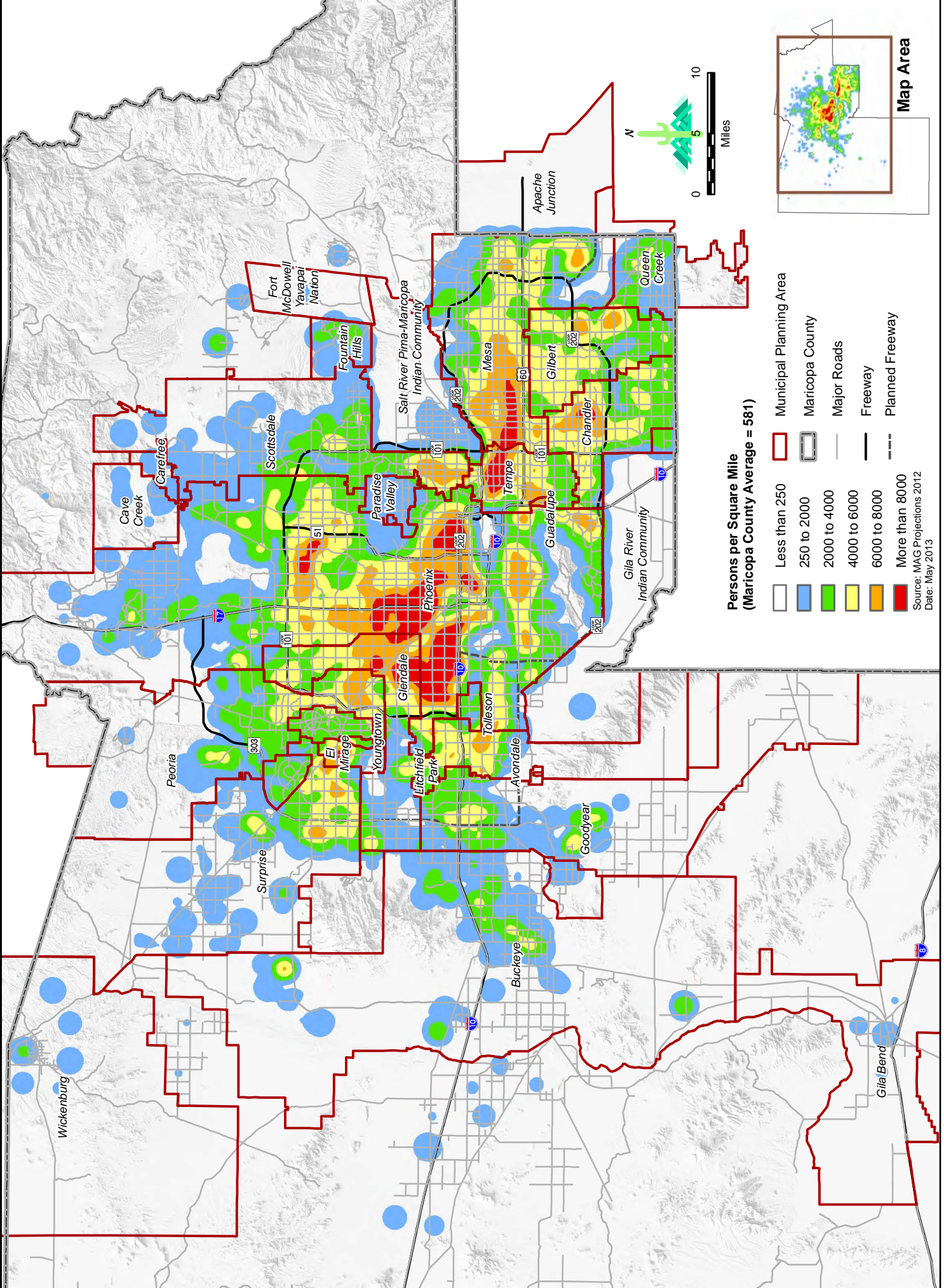
- Less than 250
- 250 to 2000
- 2000 to 4000
- 4000 to 6000
- 6000 to 8000
- More than 8000
- Municipal Planning Area
- Maricopa County
- Major Roads
- Freeway
- Planned Freeway

Source: MAG Projections 2012  
Date: May 2013



Map Area

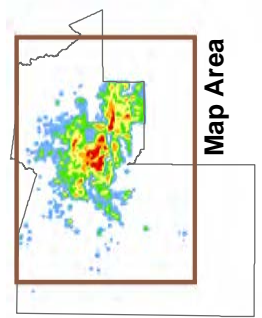
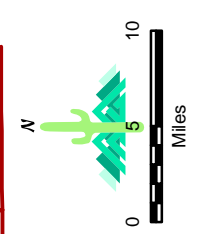




Persons per Square Mile  
(Maricopa County Average = 581)

- Less than 250
  - 250 to 2000
  - 2000 to 4000
  - 4000 to 6000
  - 6000 to 8000
  - More than 8000
- Municipal Planning Area
  - Maricopa County
  - Major Roads
  - Freeway
  - Planned Freeway

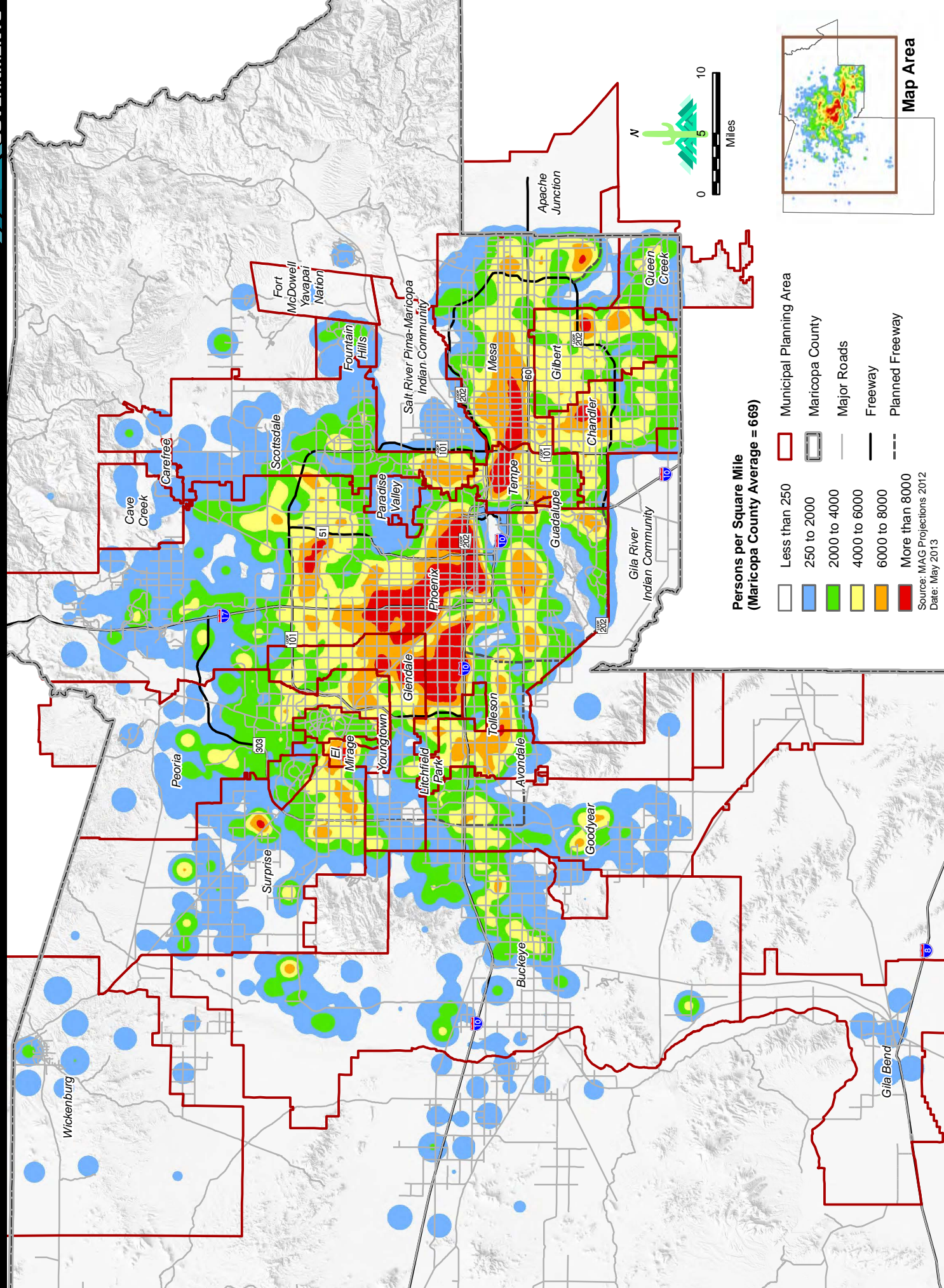
Source: MAG Projections 2012  
Date: May 2013



Map Area



Population Concentration, 2040, Maricopa County, Arizona



Persons per Square Mile  
(Maricopa County Average = 669)

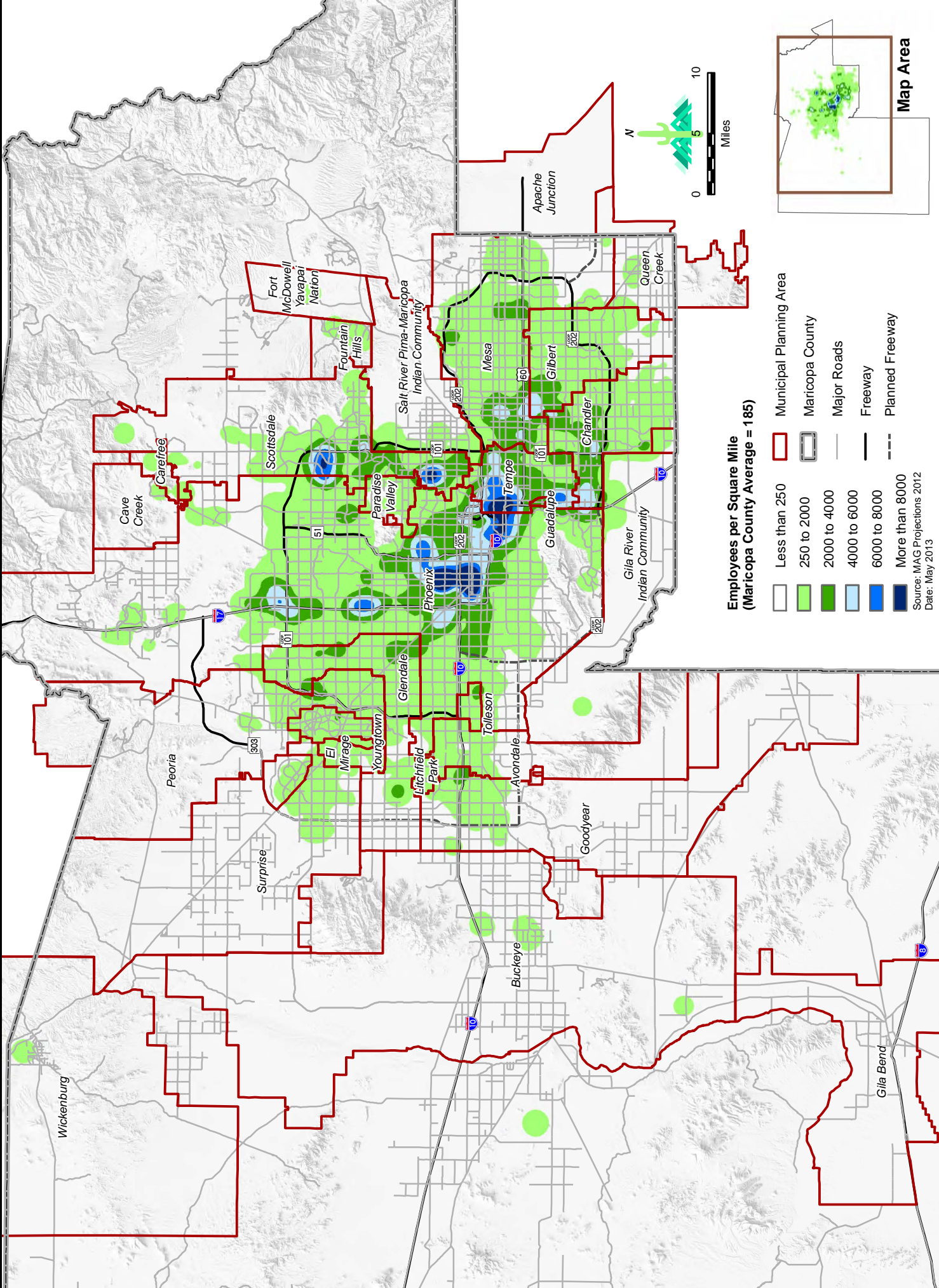
- Less than 250
  - 250 to 2000
  - 2000 to 4000
  - 4000 to 6000
  - 6000 to 8000
  - More than 8000
- Municipal Planning Area
  - Maricopa County
  - Major Roads
  - Freeway
  - Planned Freeway

Source: MAG Projections 2012  
Date: May 2013

Map Area



# Employment Concentration, 2010, Maricopa County, Arizona



Employees per Square Mile  
(Maricopa County Average = 185)

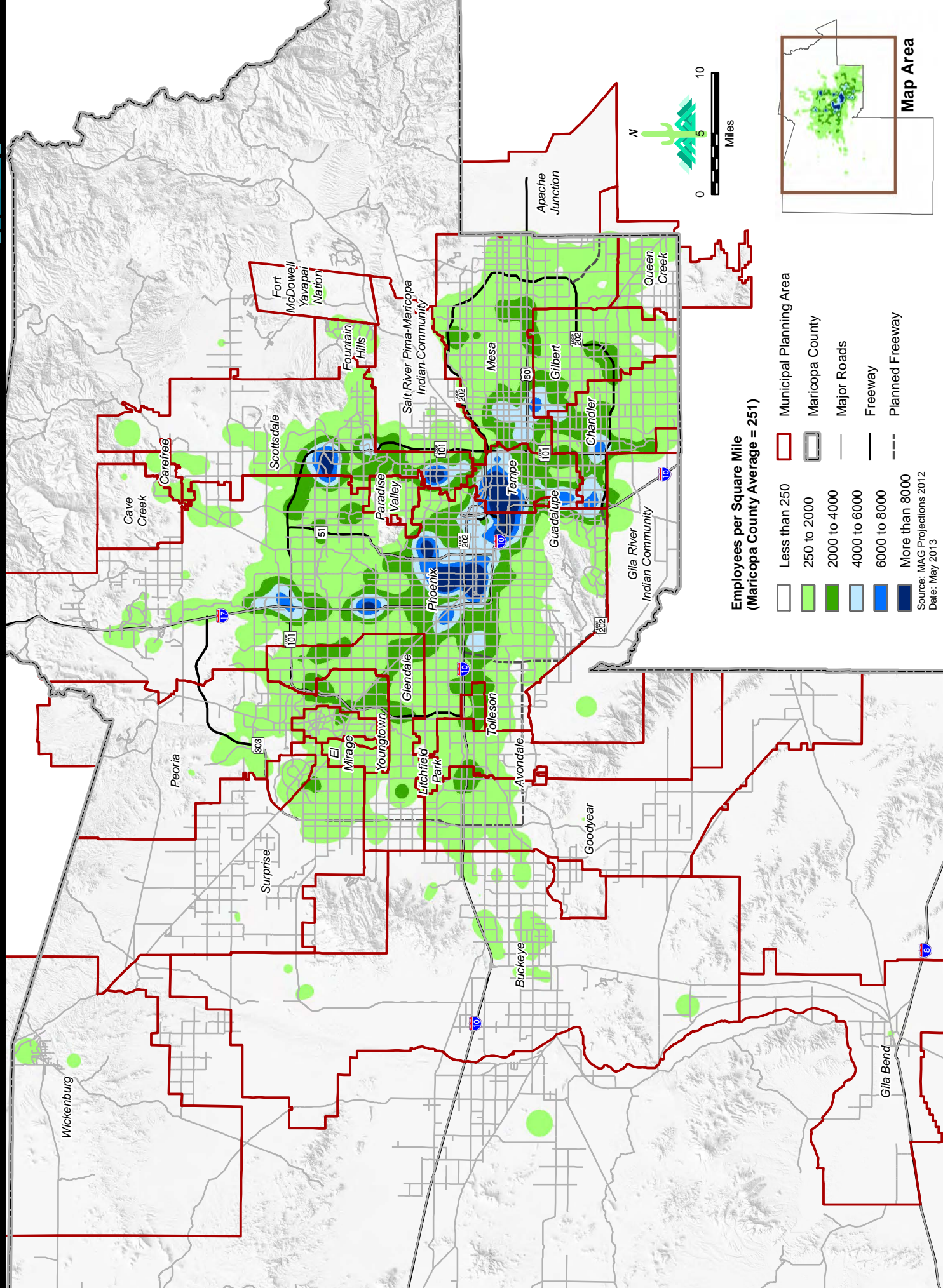
- Less than 250
  - 250 to 2000
  - 2000 to 4000
  - 4000 to 6000
  - 6000 to 8000
  - More than 8000
- Municipal Planning Area
  - Maricopa County
  - Major Roads
  - Freeway
  - Planned Freeway

Source: MAG Projections 2012  
Date: May 2013

Map Area



# Employment Concentration, 2020, Maricopa County, Arizona



**Employees per Square Mile  
(Maricopa County Average = 251)**

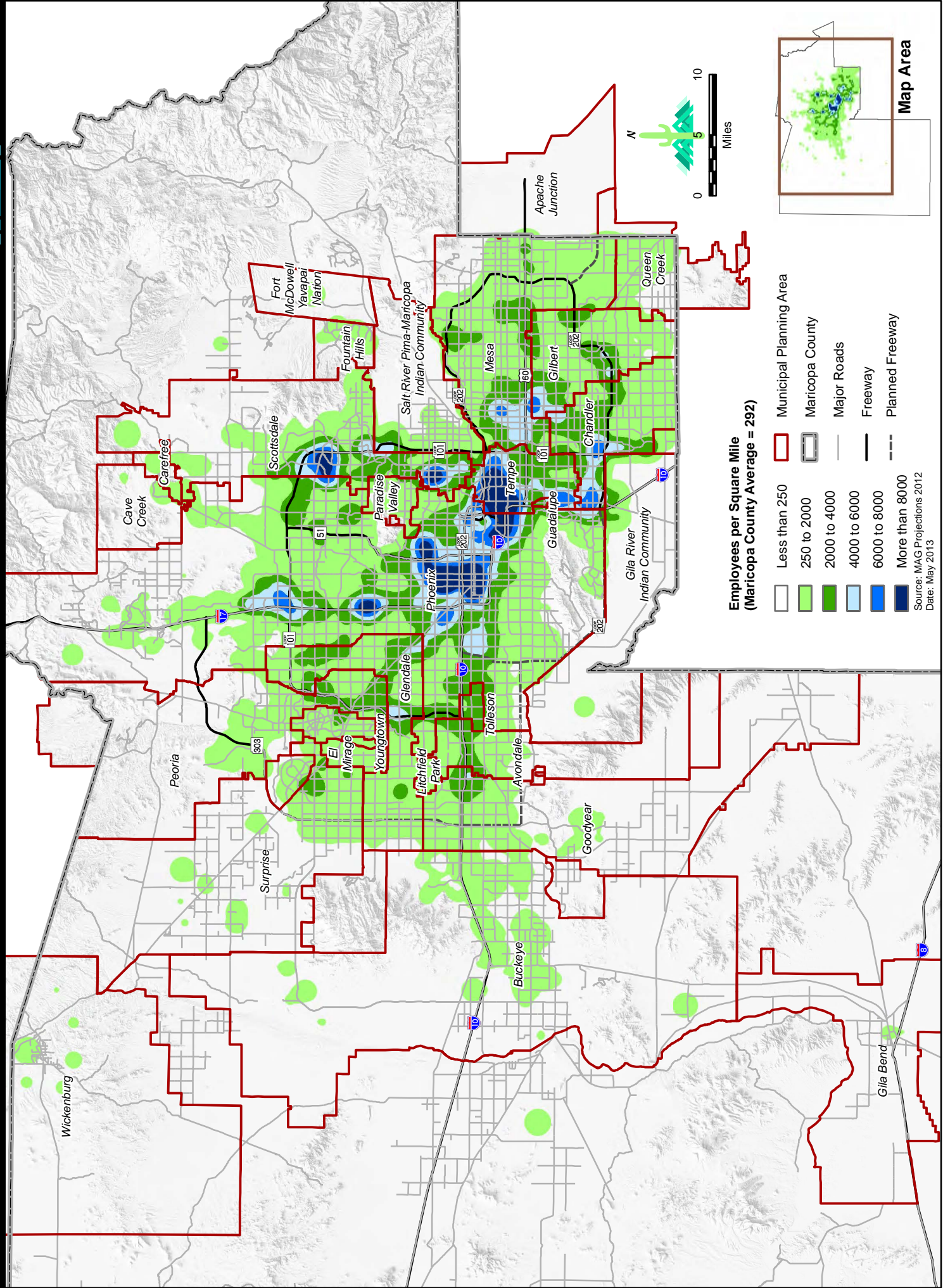
- Less than 250
  - 250 to 2000
  - 2000 to 4000
  - 4000 to 6000
  - 6000 to 8000
  - More than 8000
- Municipal Planning Area
  - Maricopa County
  - Major Roads
  - Freeway
  - Planned Freeway

Source: MAG Projections 2012  
Date: May 2013

Map Area

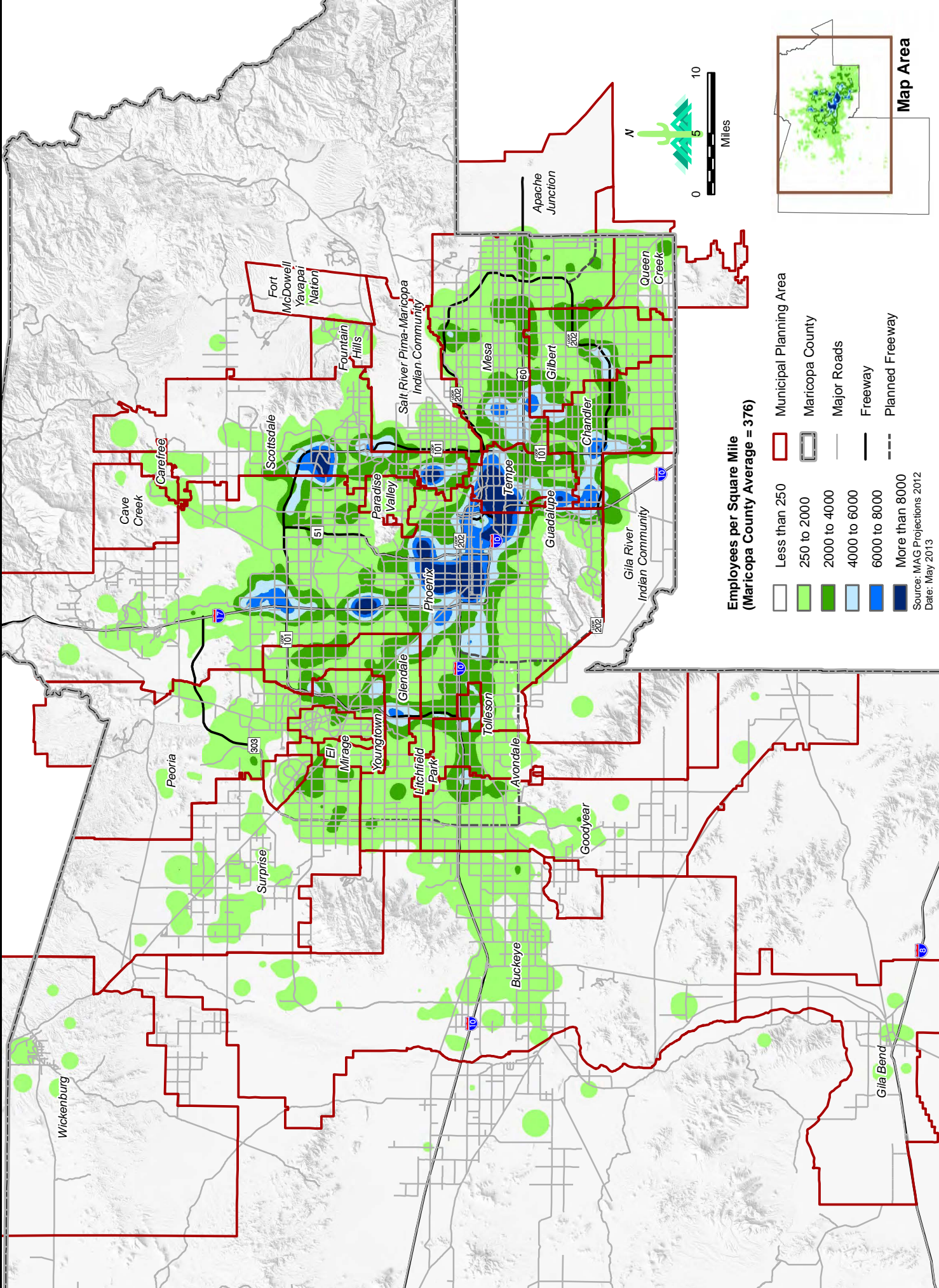


# Employment Concentration, 2030, Maricopa County, Arizona





# Employment Concentration, 2040, Maricopa County, Arizona



**Employees per Square Mile  
(Maricopa County Average = 376)**

- Less than 250
  - 250 to 2000
  - 2000 to 4000
  - 4000 to 6000
  - 6000 to 8000
  - More than 8000
- Municipal Planning Area
  - Maricopa County
  - Major Roads
  - Freeway
  - Planned Freeway

Source: MAG Projections 2012  
Date: May 2013

Map Area


## **NOTES AND CAVEATS FOR 2013 PROJECTIONS**

1. The projections by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ) were prepared to be consistent with the April 1, 2010 Census and have been prepared for July 1<sup>st</sup> of the base year 2010 and projected for July 1<sup>st</sup> of 2020, 2030, and 2040.
2. The 2010 housing and population base was developed by aggregating Census 2010 data to Traffic Analysis Zones. Census place mismatches were corrected in this process and are reflected in the Base 2010 MPA and RAZ numbers.
3. The population projections are for resident population only and do not include nonresident seasonal or transient population.
4. The projections are required to use the latest Census as the base. The 2010 Census data were released in July 2011. Subsequent to the release, the Arizona Department of Administration, Office of Employment and Population Statistics, prepared a new set of Maricopa County projections consistent with the 2010 Decennial Census. These County projections were recommended for approval by the MAG Population Technical Advisory Committee (POPTAC) in October 2012 and the Management Committee in November 2012. The projections were approved by the Regional Council in December 2012.
5. The MAG socioeconomic projections by MPA and RAZ were recommended for approval by the MAG POPTAC on May 28, 2013 and by the MAG Management Committee on June 12, 2013. The projections were approved by MAG Regional Council on June 19, 2013.
6. The projections include the Maricopa County portion of Apache Junction, Gila River Indian Community, Peoria, Queen Creek and Wickenburg only.
7. The projections were based upon the latest version of each member agency's land use plan. These plans are subject to change.
8. The databases and assumptions upon which the projections are based have been reviewed by MAG member agencies, revised by MAG staff based on input received and approved by members of the MAG POPTAC.
9. The projections are based upon previous review and local insight by members of the MAG POPTAC.
10. The "other" employment category includes work-at-home, construction employment, and non-site based employment. Because construction and non-site based employment follows development, employment projections may show declines in future years.
11. The projections should be used with caution. They are subject to change as a result of fluctuation in economic and development conditions, local development policies and updated data.





**Appendix G**  
National Flood Insurance Program  
- Community Rating System -  
Excerpts

<b>Community:</b>	PHOENIX, CITY OF	<b>State:</b>	ARIZONA
<b>County:</b>	MARICOPA COUNTY 	<b>CID:</b>	040051

Current CRS Class = 6

[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
	PIF	5,070	3,108	250	1,712
	PREMIUM	\$3,572,079	\$2,670,020	\$198,403	\$703,656
	AVERAGE PREMIUM	\$705	\$859	\$794	\$411
<b>CRS Class</b>					
09	Per Policy	\$35	\$54	\$44	\$0
	Per Community	\$177,900	\$166,878	\$11,022	\$0
08	Per Policy	\$68	\$107	\$44	\$0
	Per Community	\$344,775	\$333,753	\$11,022	\$0
07	Per Policy	\$101	\$161	\$44	\$0
	Per Community	\$511,653	\$500,630	\$11,022	\$0
06	Per Policy	\$136	\$215	\$88	\$0
	Per Community	\$689,550	\$667,505	\$22,045	\$0
05	Per Policy	\$169	\$268	\$88	\$0
	Per Community	\$856,428	\$834,383	\$22,045	\$0
04	Per Policy	\$202	\$322	\$88	\$0
	Per Community	\$1,023,302	\$1,001,258	\$22,045	\$0
03	Per Policy	\$235	\$376	\$88	\$0
	Per Community	\$1,190,180	\$1,168,136	\$22,045	\$0
02	Per Policy	\$268	\$430	\$88	\$0
	Per Community	\$1,357,055	\$1,335,010	\$22,045	\$0
01	Per Policy	\$301	\$483	\$88	\$0
	Per Community	\$1,523,933	\$1,501,888	\$22,045	\$0

\* SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

\*\* SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

\*\*\* Preferred Risk Policies are not eligible for CRS Premium Discounts.



# Changes to the 10-step Floodplain Management Planning Process Effective with the 2013 CRS Coordinator's Manual

— A Handout for the National Flood Insurance Program Community Rating System —

*NOTE : This handout covers the MAJOR CHANGES TO THE CREDIT CRITERIA ONLY. For a full discussion of Activity 510's current credit criteria and points per step, please refer to the 2013 CRS Coordinator's Manual.*

A floodplain management plan (FMP) must meet all 10 CRS steps in order to be credited in Activity 510. If a plan is approved by FEMA, it may miss one CRS step, but credit will be capped at 50 points. If a FEMA-approved plan misses two steps, it will not qualify for CRS credit.

## Step 1: Organize to prepare the plan

If a community wants FMP credit for a multi-jurisdictional planning effort, the community requesting credit must have at least two representatives on the planning committee, from departments responsible for implementing the action items for that community.

In previous years, communities could earn credit in Step 1(a) for having a “professional planner” involved in the planning process. This has been discontinued. Credit is now earned if the office responsible for the community's land use and comprehensive planning is actively involved in the floodplain management planning process.

Full credit in Step 1(b) for having a planning committee of community departments and agencies is available now only if the committee has expertise in the six mitigation categories reviewed under Step 7. Partial credit is provided if some of the categories are not represented. See also the handout on planning committees.

### Step 7 Categories

- Preventive measures (e.g., codes)
- Property protection (e.g., elevation)
- Natural resource protection
- Emergency services
- Structural flood control projects
- Public Information

## Step 2: Involve the public

Credit for having a planning committee with representatives of the public or stakeholders is contingent on having the planning committee meeting open to the public and the meeting schedule publicly posted. See also the handout on planning committees.

Credit was added to recognize a variety of methods that encourage public input.

## Step 3: Coordinate

In general, the credit criteria for this step did not change. Clarification was added to explain that the intent is for the planner(s) to contact agencies or organizations, ask for data or information related to hazards, ask what the organizations are doing that might affect flooding or properties in the flood prone areas, and offer these agencies and organizations an opportunity to be involved in the planning effort.

## Step 4: Assess the hazard

Credit was added to recognize plans that include an assessment of less-frequent flood hazards, areas likely to be flooded, and flood problems that are likely to get worse in the future as a

result of changes in floodplain development and demographics, development in the watershed, and climate change or sea level rise.

### **Step 5: Assess the problem**

Repetitive loss Category B and C communities must include repetitive loss areas in the problem assessment for credit under Step 5(c).

Credit was added for describing in the assessment the impact of the future flooding conditions described in Step 4(c) on people, property, and natural floodplain functions.

### **Step 6: Goals**

The goals must address all of the flood-related problems identified in Step 5.

### **Step 7: Review possible activities**

*NOTE: This step is not the same as the “capabilities assessment” included in FEMA’s planning process for hazard mitigation. This step calls for an examination of possible alternatives.*

There is a new requirement that the discussion of activities must include the community’s capability to fund and implement the activity. If the activity is currently being implemented, the plan must note whether it is achieving expectations and, if not, whether it should be modified. In addition, if the plan is an update of the previously credited plan, each activity of the previous plan must be discussed, along with the status of its implementation.

A review of preventive activities is required.

Credit criteria were added to recognize plans that discuss whether the community’s floodplain management regulatory standards are sufficient for current and future conditions, as discussed under Steps 4(c) and 5(f).

### **Step 8: Draft an action plan**

Credit criteria were added that require the plan to include at least one action item for each stated goal.

### **Step 9: Adopt the plan**

There was no change to the credit criteria for this step in the 2013 *Coordinator’s Manual*.

### **Step 10: Implement, evaluate, and revise**

Credit for Step 10(b) is now based on how frequently the planning committee meets per year.

To earn credit for this step under the 2007 *Coordinator’s Manual*, the planning committee had to be the same committee as that credited in Step 2(a). Beginning with the 2013 *Coordinator’s Manual*, credit for Step 10(b) can be earned with EITHER the same planning committee as credited under Step 2(a), OR for a successor committee with similar membership that was created to replace the original committee and charged with monitoring and evaluating implementation of the plan.





## CRS Credit for Planning Committees

— A Handout for the National Flood Insurance Program Community Rating System —

The CRS strongly encourages locally designed programs to prevent and reduce flood losses. Three CRS activities specifically credit local planning committees that design such programs and periodically evaluate their effectiveness:

**Activity 330 (Outreach Projects)** credits a committee that develops and evaluates a Program for Public Information (PPI).

**Activity 370 (Flood Insurance Promotion)** credits a committee that helps develop and evaluate a flood insurance coverage improvement plan (CI).

**Activity 510 (Floodplain Management Planning)** has two credits for a committee that helps draft a floodplain management or a hazard mitigation plan. The Step 1 committee consists of staff with expertise in different areas and the Step 2 committee is designed to involve the public in the planning process. Members of the public may be part of the planning committee created under Step 1 or they may be organized as a separate committee.

Three of the committees have similar membership criteria. In fact, it is recommended that a community have only one committee, charged with work on all three activities. The committee could be one that already exists, such as a mitigation planning committee or advisory board, or a subcommittee of an existing group, as long as it meets the membership criteria.

**Membership.** The number of participants and their identities are determined by the community, but the committee's membership must meet the following CRS criteria.

### **Activity 330 Program for Public Information (PPI) Committee**

- There must be at least five people on the committee.
- At least half of the members must be from outside the local government ("stakeholders").
- There must be representation from the community's floodplain management office and public information office (if there is one).

### **Activity 370 Committee for the Flood Insurance Coverage Improvement Plan**

- Same three criteria as for the 330 PPI committee, plus
- There must be representation from a local insurance agency and a local bank or lender.

### **Activity 510 Step 1 Floodplain Management Plan Staff Committee**

- The members are staff members from those community departments that implement or have expertise in the activities that will be reviewed in Step 7. Credit is based on how many of the six categories are represented by the offices.

#### **Step 7 Categories**

- Preventive measures (e.g., codes)
- Property protection (e.g., elevation)
- Natural resource protection
- Emergency services
- Structural flood control projects
- Public Information

### **Activity 510 Step 2 Public Planning Committee**

- Staff members from the Step 1 staff committee, plus
- For full credit, at least half of the members must be from outside the local government ("stakeholders").  
Credit can be prorated if less than half of the members are stakeholders.

**Stakeholders.** For three of the four committees, it is required that at least half of the members be “stakeholders.” Stakeholders are people from outside the local government. They could be members of the public, representatives of key community organizations, and/or agencies and organizations that will likely implement the recommended outreach projects.

Stakeholder participants could be

- Floodplain residents, representatives of neighborhood or homeowner associations
- Emergency/disaster responders, e.g., Red Cross, Salvation Army
- Utility companies
- Chamber of commerce/business organization
- Builders/contractors trade association
- Developers/real estate organization
- Environmental organizations, “Friends of the River,” etc.
- Real estate agents, insurance agencies, lenders (for Activity 370 credit)
- Major employer(s)
- Government agencies other than the community, e.g., school district, levee or flood control district, regional planning agency, state coastal management office, or the National Weather Service.

Employees and elected officers of a community do not qualify as stakeholders. A member of an advisory board, such as a planning commission, can qualify provided that the board’s authority is limited to making recommendations to another body. If the board has the final authority (as is often the case with a board of appeals), its members are considered community employees or officers.

Stakeholders are counted as individuals. If one person is a member of two or three organizations (e.g., a homeowners association, chamber of commerce, and planning commission), that person is counted as one person toward the 50% criterion. An employee of the community cannot be appointed as a representative of a stakeholder organization, unless that person is an active member of that organization and is not counted as an employee.

**Multi-jurisdictional committees.** Sometimes CRS communities in a metropolitan area or members of a CRS Users Group want to develop a joint or coordinated program or plan. This approach has the advantage of sharing resources and avoiding duplication of effort.

This approach can also have a disadvantage if an individual community’s needs are lost in the bigger operation. Accordingly, in order to avoid this, if a community wants CRS credit for a multi-jurisdictional committee under any of the four credits, then

- (1) The community must send at least two representatives to the multi-jurisdictional committee,
- (2) At least half of the community’s representatives must be stakeholders from outside the local government, and
- (3) At least half of the representatives must attend all the meetings of the multi-jurisdictional committee. In effect, there must be a quorum from each community. Remote attendance, e.g., via a webinar that allows for everyone to talk, is acceptable.

**Getting members.** Several communities have noted problems getting volunteer stakeholders because of the potential workload. It must be noted that the committee is the focal point for discussions and decisions. That doesn’t mean that committee members have to do all the work. Staff should conduct the research and draft the reports for review at committee meetings. For a PPI, for example, the work could be done with as few as three committee meetings. For an Activity 510 floodplain management plan, there needs to be at least five committee meetings.



# Changes to the Community Rating System to Improve Disaster Resiliency and Community Sustainability

In 2011, the National Flood Insurance Program (NFIP) completed a comprehensive review of the Community Rating System (CRS) that will result in the release of a new *CRS Coordinator's Manual*.

The changes to the 2013 *CRS Coordinator's Manual* are the result of a multi-year program evaluation that included input from a broad group of contributors to evaluate the CRS and refine the program to meet its stated goals.

The upcoming changes will drive new achievements in the following six core flood loss reduction areas important to the NFIP: (1) reduce liabilities to the NFIP Fund; (2) improve disaster resiliency and sustainability of communities; (3) integrate a Whole Community approach to addressing emergency management; (4) promote natural and beneficial functions of floodplains; (5) increase understanding of risk, and; (6) strengthen adoption and enforcement of disaster-resistant building codes.

## CRS Background

The CRS program, started in 1990, provides flood insurance premium reductions based on a participating community's implementation of floodplain management programs that exceed the minimum requirements established by the NFIP. Credit points for the CRS floodplain management activities determine a community's CRS Class. Currently, there are 1,229 communities participating in CRS. The CRS continues to see growth with an average of 35 new communities joining each year, and 80 communities achieving CRS Class improvements.

The CRS is governed by three goals: reduce and avoid flood damage to insurable property; strengthen and support insurance aspects of the NFIP; and foster comprehensive floodplain management.

The primary motivators for communities to join the CRS are to reduce the cost of flood insurance for citizens, receive recognition for their strong floodplain management



The 2013 CRS Manual changes will give more recognition to the benefits of flood loss reduction and floodplain natural functions.

programs, and enjoy the positive sense of community pride that comes with CRS participation.

**What led to the 2013 changes in the CRS?** The CRS program has over 20 years of experience, which has allowed for understanding of how floodplain management has changed and has provided a valuable base from which to guide program improvements. Although minor revisions to the CRS have occurred regularly with the release of each *CRS Coordinator's Manual*, there had been a growing list of suspected changes needing research and assessment to fully understand. In 2008, Federal Insurance and Mitigation Administration (FIMA) and the CRS Task Force began to implement *A Strategic Plan for the Community Rating System*, which, based on the CRS goals, detailed CRS objectives that guided the program evaluation that led to the 2013 changes.

**How were suggestions for the 2013 changes gathered?** FIMA and the CRS Task Force managed an extensive effort to gather input and recommendations from nationally recognized flood loss reduction experts, community CRS coordinators, insurance industry professionals, professional organizations, and others about the effectiveness of CRS activities in meeting the CRS goals. Due to the wide range of CRS activities, numerous opportunities were pursued for learning and receiving input, including:



- 11 CRS committees were convened to review and comment on CRS activity revisions.
- 50 individuals participated in a 2011 “weighting forum” to provide recommendations on the relative importance and viability of various CRS changes.
- 3 newsletters were distributed that highlighted anticipated revisions and sought input from participating community CRS coordinators.
- 5 academic institutions conducted original research related to CRS and provided reports and recommendations
- 34 two-hour webinars with a total of 1,000 participants were hosted in 2011 that provided details on the anticipated changes and collected input.
- 45 written comments were received about the changes. Comments overwhelmingly acknowledged the need to move in a direction that contributed greatest to flood loss reduction.

**What do the 2013 changes mean for CRS Class improvements or retrogrades?** The 2013 *CRS Coordinator's Manual* changes will impact each CRS community differently. Some communities will see an increase in the points they receive since points for certain activities have increased (e.g., Activity 420 Open Space Preservation). Other communities will receive fewer points for certain activities (e.g., Activity 320 Map Information Service). It is likely that some communities with marginal CRS Class 9 programs will have to identify new CRS credits in order to remain in the CRS.

Typically, CRS communities do not request credit for all the activities they are currently implementing unless it would earn enough credit to advance the community to a higher CRS Class. A community that finds itself losing CRS credit with the 2013 *Manual* could likely identify activities deserving credit they had not previously received.

**How will the changes affect a specific community and its current CRS Class?** Due to the changes in both activities and CRS points, community CRS coordinators should speak with their ISO/CRS Specialist to understand how the 2013 *Manual* will impact their community and when.



Credit: David Zapotosky

The CRS 600 Warning and Response activities have been enhanced to focus more clearly on the emergency management aspects associated with flood warning, levees, and dams.

**When must communities use the 2013 *CRS Coordinator's Manual*?** Any community receiving a CRS verification cycle visit before the 2013 *CRS Coordinator's Manual* becomes effective will be verified using the current *Manual*. Once the 2013 *Manual* becomes effective – anticipated to be Spring 2013 – any community receiving a CRS verification cycle visit will be verified using the 2013 *Manual*. As with all verification visits, the ISO/CRS Specialists will work with communities to identify additional CRS activities eligible for CRS points that the community might not have previously received.

**How does a community CRS coordinator get more information?** In addition to contacting a community's ISO/CRS Specialist, CRS coordinators will be kept informed through the *CRS Update* newsletter.

## Summary

The CRS program strives to improve community floodplain management programs. Changing demographics and other built environment conditions are likely to result in increased risk of flooding. Additionally, communities face future challenges posed by climate change, including more intense storms, frequent and heavy precipitation, extreme flooding, and high sea levels. CRS communities are striving to adjust to changing environments in order to reduce the vulnerabilities of individual families and their communities. Similarly, these challenges require the CRS program to make adjustments that best complement community capabilities and uphold the CRS goals.





## CRS Credit for a High Water Mark Initiative

*The National Flood Insurance Program's Community Rating System (CRS) provides a flood insurance premium discount for policy holders in communities that participate in CRS. The discount is based on an assessment of floodplain management activities implemented by the community to reduce flood losses, promote flood risk awareness and flood insurance, and protect natural floodplain functions.*

### CRS Outreach Projects and Programs for Public Information

Communities that participate in CRS earn credits toward flood insurance premium discounts through a variety of activities including public information programs and projects. One of these is Activity 330 (Outreach Projects), which provides credit points based on the type of project, the audience reached, and the message(s) conveyed. Other public information activities credit providing floodplain map information, disclosing a property's flood status to a potential buyer, putting references in a library, posting information on a website, and providing one-on-one technical advice.

A CRS Program for Public Information (PPI) is an ongoing public information effort designed to transmit the messages that the community determines are most important to its flood safety and the protection of its floodplains' natural functions. It is developed following a seven step process designed to assess the community's public information needs, determine messages and outcomes appropriate for different audiences, and implement the most effective measures. Working with partners is a key factor throughout the process, resulting in greater credit for more involvement of other organizations and agencies.

### High Water Marks and CRS Points

One activity that communities are implementing more often is providing information on past floods, such as posting high water marks in public places and maps and photographs of past floods on their websites. These high water mark initiatives and a CRS-credited PPI have a lot in common. To maximize CRS credit for such an initiative,

communities are encouraged to use high water marks as a way to generate greater flood risk awareness. For example, a ceremony to unveil flood level signs could be used to announce the formation of a PPI committee or the release of the PPI report.



### CRS High Water Mark Highlights

Four communities occupy the highest levels of the CRS.

- CRS points can be earned through high water mark posting and ongoing outreach
- The greater the supporting outreach, the greater the possible CRS points that can be earned
- CRS points are explained in the *CRS Coordinator's Manual*



To learn more about CRS, visit:

[www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-rating-system](http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-rating-system)

FEMA and seven other Federal agencies have recently been promoting such efforts in its “Know Your Line: Be Flood Aware” initiative. This initiative encourages communities to post signs showing historical high water levels and educating residents about the risk of flooding.

## Ongoing Outreach and CRS Points

It is important to note that both the High Water Mark initiative and the CRS call for more than just putting lines on a building or a sign. High water marks can be a catalyst for a master cooperative and coordinated public information program. Such an approach can receive CRS credit through a PPI, also credited under Activity 330 in the 2013 *CRS Coordinator’s Manual*. Reviewing the criteria for both the High Water Mark Initiative and PPI is recommended, so communities can benefit from both programs via the same local activity. Credits are based on three factors:

- What and how many messages are conveyed;
- What type of projects they are (e.g., informational materials that people pick up, activities that reach out to people, or projects targeted to a specific audience); and
- How often they are delivered. Outreach Projects in CRS must be delivered at least once each year.

The 2013 *CRS Manual* provides more detailed information about the priority topics areas to be communicated for CRS credits, with sample messages for each.

## Promoting Action

Community outreach is one of many things communities can do to promote flood risk awareness. More than awareness, communities need to promote action. By examining ways communities can bolster mitigation actions, a community may discover how CRS points can be earned. In fact, there are activities communities can do concerning everything from floodplain mapping, flood damage reduction planning, or enacting new flood warning and response actions that can make communities more resilient...and safer!

### For More Information

For more information on CRS credit for public information activities, contact your ISO/CRS Specialist. They are listed at <http://crsresources.org/100-2>.

More information on “Know Your Line: Be Flood Aware” can be found at [www.fema.gov/knowyourline](http://www.fema.gov/knowyourline).

### Contact Information for the High Water Mark Campaign

**Vince Brown:** [vincent.brown@fema.dhs.gov](mailto:vincent.brown@fema.dhs.gov)

**Website:** [www.fema.gov/knowyourline](http://www.fema.gov/knowyourline)



## Community Rating System

March 2014

*The National Flood Insurance Program (NFIP) Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS.*

### 1,296 Communities Participate in the CRS

Nearly 3.8 million policyholders in 1,296 communities participate in the CRS by implementing local mitigation, floodplain management, and outreach activities that exceed the minimum NFIP requirements.

Under the CRS, flood insurance premium rates are discounted to reward community actions that meet the three goals of the CRS, which are: (1) reduce flood damage to insurable property; (2) strengthen and support the insurance aspects of the NFIP; and (3) encourage a comprehensive approach to floodplain management.

Although CRS communities represent only 5 percent of the over 22,000 communities participating in the NFIP, more than 67 percent of all flood insurance policies are written in CRS communities.

### CRS Classes

The CRS uses a Class rating system that is similar to fire insurance rating to determine flood insurance premium reductions for residents. CRS Classes\* are rated from 9 to 1. Today, most communities enter the program at a CRS Class 9 or Class 8 rating, which entitles residents in Special Flood Hazard Areas (SFHAs) to a 5 percent discount on their flood insurance premiums for a Class 9 or a 10 percent discount for Class 8. As a community

engages in additional mitigation activities, its residents become eligible for increased NFIP policy premium discounts. Each CRS Class improvement produces a 5 percent greater discount on flood insurance premiums for properties in the SFHA.

### Best of the Best

Four communities occupy the highest levels of the CRS. Each has developed a floodplain management program tailored to its own particular hazards, character, and goals. Under these programs, each community carries out numerous and varied activities, many of which are credited by the CRS. The average discount in policyholder premiums varies according to a community's CRS Class and the average amount of insurance coverage in place. Some highlights:

**Roseville, California** was the first to reach the highest CRS rating (Class 1). Damaging floods in 1995 spurred Roseville to strengthen and broaden its floodplain management program. Today the City earns points for almost all CRS creditable activities. The average premium discount for policies in the Special Flood Hazard Area (SFHA) is \$832.

Comprehensive planning for floodplain management has been a key contributor to **Tulsa, Oklahoma's** progress in reducing flood damage from the dozens of creeks within its jurisdiction. The City (Class 2) has cleared more than 900 buildings from its floodplains. The average premium discount for policies in the SFHA is \$583.

**King County, Washington** (Class 2) has preserved more than 100,000 acres of floodplain open space and receives additional CRS credit for maintaining it in a natural state. The average premium discount for policies in the SFHA is \$650.

**Pierce County, Washington** (Class 2) maintains over 80 miles of river levees. County officials annually mail informational brochures to all floodplain residents. The average premium discount for policies in the SFHA is \$666.

\* CRS Class changes occur on May 1 and October 1 of each year. The data contained in this fact sheet were current through May 2014.

## CRS Credit

A community accrues points to improve its CRS Class rating and receive increasingly higher discounts. Points are awarded for engaging in any of 19 creditable activities, organized under four categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Warning and response.

Formulas and adjustment factors are used to calculate credit points for each activity.

The communities listed below are among those that have qualified for the greatest premium discounts:

Class 1: Roseville, California

Class 2: Tulsa, Oklahoma  
King County, Washington  
Pierce County, Washington

Class 3: Sacramento County, California

Class 4: Fort Collins, Colorado  
Skagit County, Washington  
Snohomish County, Washington  
Charleston County, South Carolina  
Maricopa County, Arizona  
Louisville-Jefferson County, Kentucky  
Thurston County, Washington

## Benefits of the CRS

Lower cost flood insurance rates are only one of the rewards a community receives from participating in the CRS. Other benefits include:

- Citizens and property owners in CRS communities have increased opportunities to learn about risk, evaluate their individual vulnerabilities, and take action to protect themselves, as well as their homes and businesses.
- CRS floodplain management activities provide enhanced public safety, reduced damage to property and public infrastructure, and avoidance of economic disruption and loss.
- Communities can evaluate the effectiveness of their flood programs against a nationally recognized benchmark.

- Technical assistance in designing and implementing some activities is available to community officials at no charge.
- CRS communities have incentives to maintain and improve their flood programs over time.

## How to Apply

To apply for CRS participation, a community must initially inform the Federal Emergency Management Agency (FEMA) Regional Office of its interest in applying to the CRS and will eventually submit a CRS application, along with documentation that shows it is implementing the activities for which credit is requested. The application is submitted to the Insurance Services Office, Inc. (ISO)/CRS Specialist. ISO works on behalf of FEMA and insurance companies to review CRS applications, verify communities' credit points, and perform program improvement tasks.

A community's activities and performance are reviewed during a verification visit. FEMA establishes the credit to be granted and notifies the community, the State, insurance companies, and other appropriate parties.

Each year, the community must verify that it is continuing to perform the activities that are being credited by the CRS by submitting an annual recertification. In addition, a community can continue to improve its Class rating by undertaking new mitigation and floodplain management activities that earn even more points.

## CRS Training

CRS Specialists are available to assist community officials in applying to the program and in designing, implementing, and documenting the activities that earn even greater premium discounts. A week-long CRS course for local officials is offered free at FEMA's Emergency Management Institute (EMI) on the National Emergency Training Center campus in Emmitsburg, Maryland, and can be field deployed in interested states. A series of webinars is offered throughout the year.

### For More Information

A list of resources is available at the CRS website: [www.fema.gov/national-flood-insurance-program-2/community-rating-system](http://www.fema.gov/national-flood-insurance-program-2/community-rating-system) For more information about the CRS or to obtain the CRS application, contact the Insurance Services Office by phone at (317) 848-2898 or by e-mail at [nfipcrs@iso.com](mailto:nfipcrs@iso.com).



# HOW RECENT LEGISLATIVE CHANGES AFFECT FLOOD INSURANCE >>>



FEMA



The National Flood Insurance Program (NFIP) is in the process of implementing Congressionally mandated reforms required by the Homeowner Flood Insurance Affordability Act of 2014 that repeal and modify the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12). This fact sheet provides an overview of the changes to flood insurance rates under the NFIP. While the new law is implemented, policyholders are encouraged to maintain and keep their current flood insurance policies. Allowing policies to lapse will leave policyholders unprotected.

Policyholders who have questions about their flood insurance policies should contact their insurance agent.

## CHANGES TO FLOOD INSURANCE SUBSIDIES

Several provisions of both the 2012 and 2014 laws apply to older buildings constructed before the effective date of the community's first Flood Insurance Rate Map (FIRM). Such buildings are referred to as "pre-FIRM." Many pre-FIRM buildings located in high-risk flood zones have flood insurance policies with subsidized rates. Most subsidies remain, although they will be phased out over time. The rate of phaseout will depend on the type of policy. The following charts explain how premium rates are affected for different policy types.

### PRE-FIRM PRIMARY RESIDENCE POLICIES IN HIGH-RISK AREAS

***For Most Pre-FIRM Primary Residences in High-Risk Areas, Subsidized Rates Remain in Effect, but with Newly Required Minimum Increases—and an 18 Percent Increase Limit for Any Individual Policy—Until Premiums Reach Their Full-Risk Rates.<sup>1</sup>***

Policy Type	Impact On Rate
Existing policies	Policies can be renewed at subsidized rates. <sup>2</sup>
Newly written policies	Policies can be issued and renewed at subsidized rates.
Policies on newly purchased buildings	Policies can be issued and renewed at subsidized rates.
Policies re-issued after a lapse <sup>3</sup>	Policies for pre-FIRM buildings in high-risk areas that lapsed due to a late renewal payment (received after the 30-day grace period but less than 90 days after expiration) can be re-issued and renewed at subsidized rates.

### PRE-FIRM BUILDING POLICES IN HIGH-RISK AREAS

***For Other Pre-FIRM Buildings in High-Risk Areas, Subsidized Rates Continue, but Will Increase More Quickly to Reach Full-Risk Rates.***

Policy Type	Impact On Rate
Policies for non-primary residences (secondary or vacation homes or rental properties)	25% annual increases at policy renewal until premiums reach their full-risk rates.
Policies for business buildings	Future 25% annual increases at policy renewal.
Policies for Severe Repetitive Loss properties	25% annual increases at policy renewal for severely or repetitively flooded properties that include 1 to 4 residences.

<sup>1</sup> Full-risk rates are determined using data from an Elevation Certificate.

<sup>2</sup> Full-risk rates could be lower than subsidized rates.

<sup>3</sup> Buildings with lapsed policies are not eligible for the subsidy unless the lapse was the result of the policy no longer being required to retain flood insurance coverage.

## OTHER POLICIES

*For Most Other Policy Types, Rates Will Increase by No More than 18 Percent for Any Individual Policy.*

Policy Type	Impact On Rate
<b>Policies for newer (“post-FIRM”) buildings in high-risk areas</b>	Not affected by subsidies; already paying full-risk rates.
<b>Policies for buildings in moderate- to low-risk areas</b>	Not affected by subsidies; properties in these areas (shown as B, C, or X zones on flood maps) do not pay subsidized rates.
<b>Policies for buildings “grandfathered in” when map changes show higher flood risk</b>	Grandfathering remains in effect at this time. Buildings constructed in compliance with earlier maps or continuously covered by flood insurance stay in their original rate class when maps change or properties are sold.
<b>Policies for buildings covered by Preferred Risk Policy Eligibility Extension (PRP EE)</b>	Properties continue to be eligible for lower, preferred-risk rates for the first year after a map change. Starting the following year, rates will increase by no more than 18% for any individual policy until premiums reach their full-risk rate.

## REFUNDS

BW-12 required an immediate move to property-specific, full-risk rates when pre-FIRM properties were sold or new policies issued. Some policyholders saw significant premium increases. The new law allows a return to subsidized rates for most properties—and refunds of the difference paid between the subsidized rate and current full-risk rate. FEMA is working with participating insurance companies to start the refund process by the end of this year.

## RATE CHANGES WHEN PROPERTIES ARE SOLD

The 2014 law protects policyholders from significant and unanticipated increases in flood insurance costs that could impact their property sales. Subsidized rates continue to apply, and as of May 1, 2014, both the policy and its subsidized rates can be transferred to the new owner. Grandfathered rates can also be transferred at the time of sale.

## OTHER PROVISIONS OF THE NEW LAW

**Surcharges.** A new surcharge will be added to all new and renewed policies to offset the subsidized policies and achieve the financial sustainability goals of BW-12. A policy for a primary residence will include a \$25 surcharge. All other policies will include a \$250 surcharge. This new surcharge will be included on all policies, including full-risk-rated policies and Preferred Risk Policies. The surcharge will be implemented in 2015.

**Deductibles.** To help homeowners manage their premium costs, the law raises maximum residential deductible limits from \$5,000 to \$10,000.

To keep current as FEMA implements these and other changes to the National Flood Insurance Program, visit [fema.gov/flood-insurance-reform](http://fema.gov/flood-insurance-reform).

Policyholders who have questions about their flood insurance policies should contact their insurance agents.



## Community Rating System

October 2015

*The National Flood Insurance Program (NFIP) Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS.*

### 1,368 Communities Participate in the CRS

Nearly 3.8 million policyholders in 1,368 communities participate in the CRS by implementing local mitigation, floodplain management, and outreach activities that exceed the minimum NFIP requirements.

Under the CRS, flood insurance premium rates are discounted to reward community actions that meet the three goals of the CRS, which are: (1) reduce flood damage to insurable property; (2) strengthen and support the insurance aspects of the NFIP; and (3) encourage a comprehensive approach to floodplain management.

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The CRS uses a Class rating system that is similar to fire insurance rating to determine flood insurance premium reductions for residents. CRS Classes\* are rated from 9 to 1. Today, most communities enter the program at a CRS Class 9 or Class 8 rating, which entitles residents in Special Flood Hazard Areas (SFHAs) to a 5 percent discount on their flood insurance premiums for a Class 9 or a 10 percent discount for Class 8. As a community

engages in additional mitigation activities, its residents become eligible for increased NFIP policy premium discounts. Each CRS Class improvement produces a 5 percent greater discount on flood insurance premiums for properties in the SFHA.

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Comprehensive planning for floodplain management has been a key contributor to **Tulsa, Oklahoma's** progress in reducing flood damage from the dozens of creeks within its jurisdiction. The City (Class 2) has cleared more than 900 buildings from its floodplains. The average premium discount for policies in the SFHA is \$630.

**King County, Washington** (Class 2) has preserved more than 100,000 acres of floodplain open space and receives additional CRS credit for maintaining it in a natural state. The average premium discount for policies in the SFHA is \$664.

**Pierce County, Washington** (Class 2) maintains over 80 miles of river levees. County officials annually mail informational brochures to all floodplain residents. The average premium discount for policies in the SFHA is \$687.

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Ocala, Florida  
Louisville-Jefferson County, Kentucky

Class 4: Fort Collins, Colorado  
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Maricopa County, Arizona  
Thurston County, Washington

## Benefits of the CRS

Lower cost flood insurance rates are only one of the rewards a community receives from participating in the CRS. Other benefits include:

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- CRS floodplain management activities provide enhanced public safety, reduced damage to property and public infrastructure, and avoidance of economic disruption and loss.
- Communities can evaluate the effectiveness of their flood programs against a nationally recognized benchmark.

- Technical assistance in designing and implementing some activities is available to community officials at no charge.
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25 Years

1990 - 2015

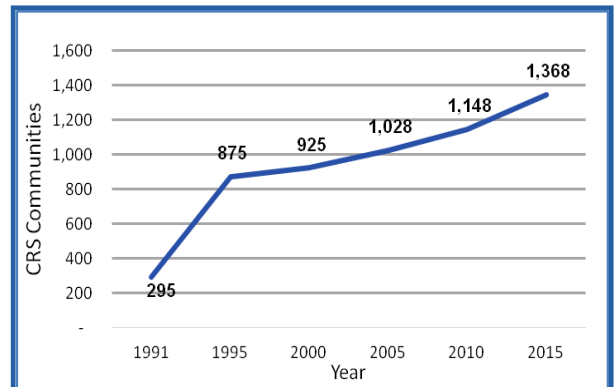
# NFIP/CRS UPDATE

September / October 2015

## The Community Rating System Celebrates 25 Years

It's been 25 years since FEMA launched the Community Rating System as a voluntary program to both recognize and encourage community activities that exceed the minimum floodplain management standards of the National Flood Insurance Program.

Since its beginnings with 295 participating jurisdictions in 1991, the CRS has grown to include 1,368 communities across the United States. These communities represent roughly two-thirds of all NFIP policies. Policyholders in each CRS community receive discounts on flood insurance premiums in recognition of the reduced flood risk brought about by the activities their community chooses to implement. The CRS is an insurance-rating program, but the CRS-credited activities also have come to exemplify some of the best approaches to reducing flood losses and protecting the natural resources and functions of floodprone areas.



“These local governments work hard to maintain their status as models of best practice in floodplain management,” says Bill Lesser, CRS Program Manager at FEMA. “They have every reason to be proud both of their CRS rankings and their success in improving their communities’ resilience and well-being.”

Throughout its history, the CRS has encouraged communities to employ a multi-disciplinary, collaborative approach involving many stakeholders. The collective energy and expertise of state and federal agencies, the private sector, academics, businesses, and others has helped communities design and execute more effective floodplain management programs. This

*[continued on next page]*

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## **The CRS Celebrates 25 Years (cont.)**

is exemplified by the increasing number of CRS communities in the higher-rated classes: today, almost half of all CRS communities are Class 7 or better.

In moving forward, Lesser envisions three “shared ambitions,” to help both the program and its communities focus their ongoing efforts.

### **Shared Ambition: Growth**

It is a significant step when a community joins the CRS, but there are additional important kinds of growth for the CRS and CRS communities. Among the ways to progress are

- Adopting higher regulatory standards and other measures for flood loss reduction and the protection of floodplain functions and resources;
- Advancing in CRS Class;
- Improving resiliency for communities and their floodplain occupants; and
- Identifying and implementing comprehensive local programs.

### **Shared Ambition: Demonstrate the Effectiveness of the CRS**

Over the last several years the CRS team has been working to document the program’s effectiveness. Foremost are the flood damage, disruption, and assorted losses that are avoided when CRS techniques are in place. It is notoriously difficult to document things that “don’t happen,” but ways are being found to do just that—and to show other ways in which the CRS is effective, including these:

- Examples are being gathered in post-disaster situations of how storm losses have been reduced.
- Increased numbers of insurance policies and expanded coverage are being tracked;
- Local and state staff are testifying that the CRS is being leveraged as justification for adopting higher regulatory standards.
- A study by Texas A&M University is showing that CRS communities tend to sustain fewer flood losses than non-CRS communities.
- Stories of community successes are being gathered, and will be featured in this newsletter and on a website in the future.

### **Shared Ambition: A Spirit of Helping Each Other**

The CRS has many faces—local CRS Coordinators; local staff, elected officials and stakeholders; CRS Users Groups; the Insurance Services Office staff and consultants; members of the CRS Task Force; FEMA’s Regional CRS Coordinators; the Emergency Management

*[continued on next page]*

## The CRS Celebrates 25 Years (cont.)

Institute; state staff; and others. Continuing to work together will keep all of these forces strong and ensure the continued effectiveness of the CRS. Some ways to do this are to

- Participate in a CRS Users Group.
- Be a mentor—to other communities, new CRS Coordinators, anyone new to the CRS.
- If you need help, ask. There are plenty of CRS faces willing to share experiences and help.

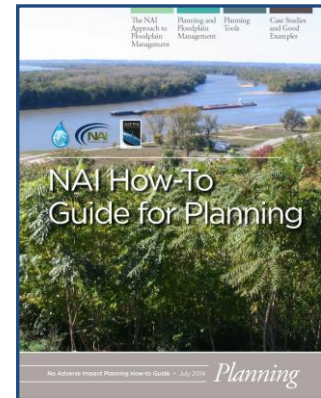
In the decades to come, the CRS will continue to evolve to reflect the times. Communities will face shifts in their local flood risks both from population growth and as a result of changes in climate and sea level rise. There will be further advancements in technology and science. The importance of protecting natural floodplain resources and functions will become more obvious and the value of insurance and mitigation will be brought into sharper focus. The CRS team looks forward shaping the CRS to respond to all these aspect of our future! ≡ ≡ ≡

## New Aids from ASFPM

Two new guides from the Association of State Floodplain Managers (ASFPM) can be helpful to CRS communities working on Activity 510 (Floodplain Management Planning) and Activity 330 (Outreach Projects), as well as other planning and public information work.

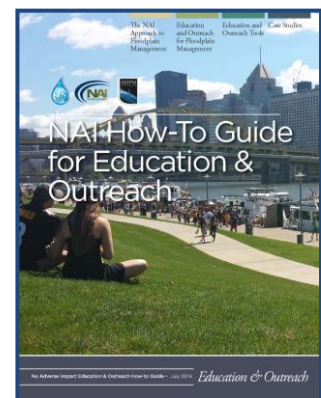
The *No Adverse Impact (NAI) How-To Guide for Planning* introduces the concept of managing floodprone areas so that activity on one property has no negative effect on others. Given this background, it goes on to describe—and give case-study examples for—planning tools such as hazard mitigation planning, comprehensive planning, post-disaster planning, risk assessment, and public involvement. Throughout, it incorporates the CRS planning steps into the processes described, and notes when and how CRS credit points figure into the NAI approach. Some of the case studies focus on CRS communities.

Download it at [http://www.floods.org/NoAdverseImpact/NAI\\_Planning\\_How\\_to\\_Guide\\_Final.pdf](http://www.floods.org/NoAdverseImpact/NAI_Planning_How_to_Guide_Final.pdf).



The *No Adverse Impact How-To Guide for Education & Outreach* begins with the NAI philosophy and goes on to summarize social science research findings on public awareness and outreach. Then it discusses five outreach tools: developing a master program for education and outreach, holding open houses on flooding, educating developers and contractors, portraying flood risk with maps and models, and deploying high-water mark signs. Real-world examples are provided, many from CRS communities.

Download it at <http://www.floods.org/ace-files/NAI/EdcOutHowToGuideSept2015.pdf>. ≡ ≡ ≡



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# Success with CRS

*Editor's note: Here we begin a new regular column highlighting some positive floodplain management outcomes communities have experienced through participation in the Community Rating System. These stories are being collected for use on a future website. The CRS welcomes suggestions of community successes (see box, page 7).*

## For New CRS Community, Benefits are Many

When he first tackled the idea of joining the Community Rating System, Mark Pasquali admits he was daunted by the “650-page manual of instructions.” The Superintendent of the Department of Public Works for Roselle Park, New Jersey, soon realized, however, that the community was already doing a lot of CRS-credited work. “It was simply a matter of systematically documenting these activities,” he says.

The borough now earns CRS credit points for many of its local initiatives, including outreach projects, stormwater management, protection of open space, floodplain mapping, higher regulatory standards, drainage system maintenance, and others.

## Public Awareness Grows

Roselle Park entered the CRS in October 2015 as a Class 8 community, and already local officials and citizens have an overall better awareness and understanding of floodplain management, the National Flood Insurance Program, and other flooding issues that they didn't have before.

Mayor Carl Hokanson and the City Council have enthusiastically supported Roselle Park's participation in the CRS. Besides approving upgrades in equipment and procedures such as those for the stormwater and sanitary sewer systems, the mayor sent out a newsletter to citizens encouraging them to drop by the Department of Public Works for flood zone determinations and other information about flooding and flood insurance.

“The Mayor and Council have endorsed the numerous handouts and other items the staff has developed to distribute to the public,” Pasquali explained, “and their buy-in has helped a lot.”

## Support from the State of New Jersey

Roselle Park gets a boost from State of New Jersey initiatives, too. The Borough receives CRS credit for state laws that mandate disclosure of the flood hazard during property sales. All New Jersey CRS communities are eligible for this credit, as well as for other statewide requirements.

Beyond this, the state makes sure Roselle Park and other CRS communities realize a financial benefit from being in the CRS. Beginning in 2015, participation in the CRS is one of New Jersey's “50 Best Practices.” Under this program, the state determines how much of the state-collected energy taxes and other fees will flow back to the municipality. Each year, a municipality inventories its best practices on a spreadsheet of 50 undertakings the state considers to be part of conscientious local government. Item number 8 on the 2015 inventory is participation in the CRS,

*[continued on next page]*



## CRS Benefits for Roselle Park, New Jersey (cont.)

with the note that “a municipality’s participation in the NFIP’s Community Rating System can lead to significant flood insurance premium reductions for its homeowners.”

“Because of the CRS,” Pasquali says, “Roselle Park will receive more money from this state program.”

### The CRS serves as a Launching Pad

“While participating in the CRS, Roselle Park has embraced a deeper understanding of flooding issues, which has generated ideas for improvements in our other flood-related systems, too,” Pasquali notes.

For example, the stormwater drainage system has always been important in this 13,500-person borough in the urbanized eastern part of the state. But with participation in the CRS, the community is taking a more systematic approach to cleaning, tracking, and recording the maintenance of its 804 catch basins, designed to modulate the rate of runoff during and after rain.

Roselle Park is developing a procedure for evaluating the sanitary sewer mains and the lateral connections to individual homeowner’s properties. The Department of Public Works will then be cleaning out the main lines on a regular basis, in hopes of avoiding overloads and backups in the system. This new approach included the acquisition of a camera truck, which will be equipped with a closed-circuit television unit. The inspection system for the sanitary sewer main line will be coupled with a camera inspection system for the lateral lines.

Roselle Park will also be using the camera truck to check the stormwater lines. The Public Works staff will be able to find out where there are blockages or debris buildup and clear these areas. The new equipment and enhanced maintenance of the stormwater lines will facilitate the flow of rainwater, especially during flooding.

The camera truck will also be equipped with a GIS (geographic information system) and accompanying software that will catalog which specific pipes, manholes, catch basins, or sanitary sewer locations have been filmed and are in proper working condition.

The television camera truck was a substantial expenditure. Its approval by the mayor and city council demonstrated commitment to having a state-of-the-art system for maintaining the stormwater and sanitary sewer system, as well as trust in the expertise of Roselle Park’s Superintendent of Public Works/CRS Coordinator. ≡ ≡ ≡



**Cleaning the Walnut Street Basin.** The jet-vac truck vacuumed out the leaves and debris, which would have restricted flow of stormwater. When Roselle Park puts the camera truck into service, it will be able to view the lines to see if there are any obstructions, and clear them to alleviate future flooding.

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*NOTE: these are just some highlights of Roselle Park’s floodplain management program. For more, information please contact Mark Pasquali at the Roselle Park Department of Public Works at (908) 245-7676.*

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# Debbie's Dish . . . . . on CRS Users Groups

**Debbie Cahoon Vascik, CFM**  
*Users Groups Liaison*

## Expanding Your Horizons

Program for Public Information—those are four words that can spark anxiety in a lot of CRS Coordinators. The PPI is a great tool that responds to the educational needs of the public with regard to flooding hazards and floodplain resources. In addition, having the PPI means 78 bonus points in other activities (hazard disclosure, flood protection information, and flood protection assistance) so even though it's one of those non-required activities, you almost feel like you HAVE to do it or you'll miss out on other credits. And since every community naturally wants to achieve the best CRS rating possible, you should consider the PPI to help accomplish that goal.

A PPI is not a small undertaking. Because the PPI is viewed by some as an overwhelming endeavor, a few of the CRS Users Groups have decided to take a multi-jurisdictional approach to help lighten the load. An organized and unified approach among several communities for delivering consistent messages can be the best way to get your point across to the general public.

I definitely see the benefits in having a multi-jurisdictional PPI, but I also see a few challenges. It's hard to manage a larger number of people, maintain a larger group's focus, avoid having one person do it all, remember to include all existing outreach efforts, etc. The plus for me is that when I have these questions about how all of this can come together, I simply turn to the groups and ask them directly how they did it.

With that in mind, I gathered some information from five CRS Users Groups—Santa Clara County (California), CRAFT (Louisiana), FLOAT (Louisiana), JUMP (Louisiana), and Volusia County (Florida)—who are working on or have completed their multi-jurisdictional PPIs. I wanted to get some insight on how they did it. Here are their thoughts on using a regional approach to the PPI.

- “The first meeting was an overview of the PPI and followed Steps 1 and 2, corresponding to the “information gathering” work. I provided a PowerPoint presentation and facilitated the meeting and received a lot of good input. Then, about two weeks before the second meeting, I contacted all of the members by email and then again by phone to make sure we were going to get the required representation from all the communities. I took a pretty tough stance. I explained that if the jurisdiction's representative was not going to make it to the meeting, the community would be left out of the multi-jurisdictional effort because we were not going to start over.”
- “The biggest difficulty was making sure everyone had a stakeholder. In the future, I would take a more active role in this because without the stakeholders' participation, you don't meet the CRS requirements. I would also pay more attention to making sure that all of the categories of stakeholders are represented, so that we could maximize the number of points.”

*[continued on next page]*

## Debbie's Dish (cont.)

- “We had each community explain its existing efforts, and most of those were included in the PPI. We also identified several projects that could be expanded and implemented in multiple communities.”
- “We essentially looked at what’s already out there from FEMA, FloodSmart, the Red Cross, and other entities who could offer free copies of certain brochures when considering our new projects. This was done with the intent to save time and money with developing new materials. Also, we’ve considered ways to save on postage by providing flood-related excerpts to existing newsletters and similar projects.”
- “Our brochures, letters, websites, presentations, etc. are being reformatted with participating communities’ contact numbers so all will be benefitted.”
- “We kept reminding each other that, although we wanted to be creative and optimistic about what we could accomplish, we needed to be practical and include only those projects that we thought we could actually implement on our own or with identified stakeholder assistance.”
- “We used the K.I.S.S approach. We did not invent new wheels . . . just consolidated existing projects.”
- “We were directed to include as much as possible and were told that we would get points for the things we implemented. But there isn’t a penalty for including things in the PPI that you don’t get to. We put things in the PPI, so they would be eligible for that PPI multiplier.”
- “For the list of existing projects, we did our best to create an exhaustive list of what’s being done in the parish. We came up with 70 projects. Then for new projects, we have 63 listed. That’s far more than we need, but I wanted to see how implementation goes before deciding to remove any. Some of the new projects are only going to be implemented in one or two of the communities, not all six. Also, this list serves purposes other than just the PPI. It’s helpful for us with the Hazard Mitigation Plan, MS4 Program, and new resilience efforts. I think it comes down to what you all agree on and what you can actually implement.”

And don’t forget, a community can always contact its ISO/CRS Specialist informally to talk about its ideas for a PPI and/or get a courtesy review of a draft.

A big THANK YOU to Pat Showalter (Santa Clara County), Monica Farris (CRAFT and FLOAT), Maggie Olivier (JUMP), and Becky Weedo (Volusia County) for their cooperation and consideration of this subject. Your insights will help any CRS Users Group that is planning to undertake a regional PPI and calm the anxieties of individual communities ready to tackle this challenge. ≡ ≡ ≡

### How does YOUR community spell Success?

Did you find a way—via the CRS—to minimize flood damage, build partnerships, enhance your community resilience, or improve habitat? If so, we would like to hear about it. YOU DO NOT HAVE TO WRITE ANYTHING. We will interview you by phone, and write a description of what your community did. You will be able to review the writeup yourself.

If you have an experience to share, contact your ISO/CRS Specialist or send an email to [NFIPCRS@iso.com](mailto:NFIPCRS@iso.com) [put “story” in the subject line].

# Tidbits from the CRS Task Force

The Community Rating System Task Force met in Norfolk, Virginia, during the week of September 14th. The meeting included these items:

- Review of a draft summary of the study by Texas A&M University, “Evaluating the Community Rating System’s Effectiveness in Reducing Flood Losses.”
- A presentation about the possibility of doing “remote” cycle visits for certain communities.
- A presentation about generating “success stories” to demonstrate the effectiveness of the CRS.
- A conversation about the next edition of the *CRS Coordinator’s Manual* (anticipated for 2017), including a schedule for committee and other work during 2016.
- Activity 510 (Floodplain Management Planning) and repetitive loss structures were discussed, including a suggestion to revise the community categories based on the number of repetitive loss properties.
- Discussion about nominations for the 2015 CRS Award for Excellence.
- Participation in a survey about the customer service experience for flood policyholders being done by a contractor for FEMA.

The Community Rating System Task Force is the inter-agency, multidisciplinary advisory body that has provided guidance to FEMA since the inception of the program. The CRS Task Force is made up of professionals from diverse backgrounds—representatives of FEMA, the insurance industry, professional organizations, local governments, and other governmental entities. It serves to monitor the program, discuss needed changes, and make recommendations to FEMA.

In addition, Task Force members enjoyed presentations from

- Charley Banks, Virginia State NFIP Coordinator;
- Mary-Carson Stiff, Wetlands Watch;
- Shannon Jarbeau, Barnstable County/Cape Cod, Massachusetts, Cooperative Extension Service (formerly with Wetlands Watch);
- Kevin DuBois and Justin Shafer, City of Norfolk, Virginia;
- Fred Brusso and Meg Pittenger, City of Portsmouth, Virginia; and
- Michelle Hamor, U.S. Army Corps of Engineers.

The next meeting of the CRS Task Force is set for the week of January 25, 2016. ≡ ≡ ≡

## Further Extension for Effectiveness of Elevation Certificate

Some communities have noted that the FEMA Elevation Certificate form now in use has an expiration date of July 31, 2015. Please let your surveyors and others know that the Office of Management and Budget has extended the expiration date to October 31, 2015, while it continues its review of the proposed new form.

OMB has indicated it will issue additional 30-day extensions for the Elevation Certificate form until the OMB review is done. At that time, the new form will become available. Until then, the current form is still valid under the Paperwork Reduction Act.

Online and downloadable versions of the Elevation Certificate can be found at <https://www.fema.gov/media-library/assets/documents/160>.





## Online Resources

### At FloodSmart.gov

Remember that the CRS pages of the FloodSmart website [[https://www.floodsmart.gov/floodsmart/pages/crs/community\\_rating\\_system.jsp](https://www.floodsmart.gov/floodsmart/pages/crs/community_rating_system.jsp)] are THE place to go for people new to the CRS, elected officials, newly hired CRS Coordinators, and the public. It is designed for those who don't need the full technical details posted elsewhere.

### At CRSresources.org

Check frequently at [www.CRSresources.org](http://www.CRSresources.org) to see what's been added in the way of CRS materials. All documents referred to in the *Coordinator's Manual* are posted here as soon as they are available. If you cannot find a piece of information or document, please notify your ISO/CRS Specialist or [NFIPCRS@iso.com](mailto:NFIPCRS@iso.com). Here are some recent additions to the website.

- **Webinar Schedule**—A schedule for the rest of calendar year 2015 and early 2016 is posted under the Training & Videos tab at [www.CRSresources.org/training](http://www.CRSresources.org/training). This link also has registration information. And, see the webinar schedule below.
- The most recent issue of the *NFIP/CRS Update* newsletter, in case you missed it (July/August 2015), along with all other past issues, can be found at [www.CRSresources.org/100](http://www.CRSresources.org/100). ≡ ≡ ≡



## Training Opportunities

### Webinars

The CRS offers webinars to help communities with their CRS requirements. Many will be recorded, so they can be accessed later. Registration is free, but required, as space is limited. Some courses provide continuing education credits for Certified Floodplain Managers (CFMs). See [www.CRSresources.org/training](http://www.CRSresources.org/training). The following one-hour topical webinars are on the calendar, and others will be scheduled. All webinars begin at 1:00 pm EST / 10:00 am PST.

- **Introduction to the CRS**— December 15, 2015
- **Preparing for a Verification Visit**— November 17, 2015; January 16, 2016
- **Outreach Projects (Activity 330)**— December 16, 2015
- **Floodplain Management Planning (Activity 510)**— November 18, 2015; January 20, 2016

[continued on next page]

# Training Opportunities (cont.)

Some other anticipated webinars include **CRS Credit for Mapping and Regulations (the 400 Series)**; **CRS Credit for Flood Damage Reduction (the 500 Series)**; and **CRS and Climate Change**. If you'd like to have a webinar on the 2013 *Coordinator's Manual*, the FEMA Elevation Certificate, or any other activity, contact your ISO/CRS Specialist.

For more on the CRS webinars, go to [www.CRSresources.org/training](http://www.CRSresources.org/training). If you have questions about or suggestions for the CRS Webinar Series, contact [Becca.Croft@atkinglobal.com](mailto:Becca.Croft@atkinglobal.com).

## Workshops and Training related to the CRS

- **The Community Rating System (E278)** (field-deployed course is designated as L278)
  - .....April 18–21, 2016
  - .....July 18–21, 2016
  - .....September 19–22, 2016

This is the all-purpose training course for the CRS. It is taught at both the Emergency Management Institute (see below) and at sites throughout the country at the request of interested communities, groups, or states, pending available funding. It is based on the 2013 *CRS Coordinator's Manual*.

- Attendees of E278 CRS courses based on previous *Coordinator's Manuals* may want to repeat this course. Therefore, restrictions on repeat attendance have been waived.
- For continuing education credit for Certified Floodplain Managers, the ASFPM will award CECs earned at the E278 CRS course.
- No more than two persons per community may attend at one time.

Prerequisite: To enroll in the CRS course, you must be a Certified Floodplain Manager (CFM<sup>®</sup>), or have completed the National Flood Insurance Program course (E273), or be a full-time floodplain manager with over two years of specific floodplain management experience.

- **Hazus-MH for Flood (E172)** .....June 20–23, 2016
- **Hazus-MH for Floodplain Managers (E176)** ..... December 14–17, 2015
- **Advanced Floodplain Management Concepts I (E194)** .....April 11–14, 2016
- **Unified Hazard Mitigation Assistance Program:**  
     **Application Review and Evaluation (E213)** .....January 4–5, 2016
- **Unified Hazard Mitigation Assistance Program:**  
     **Project Implementation & Closeout (E214)** .....January 6–7, 2016
- **Retrofitting Floodprone Residential Buildings (E279)** ..... May 2–5, 2016
- **Advanced Floodplain Management Concepts II (E282)** .....July 11–14, 2016
- **Managing Floodplain Development through the NFIP (E273)** .. November 16–19, 2015  
     .....March 7–10, 2016  
     .....June 27–30, 2016  
     .....September 12–15, 2016

E273 is also field deployed periodically. Contact your State NFIP Coordinator for more information (see <http://www.floods.org/index.asp?menuID=274>).

[continued on next page]

## Training Opportunities (cont.)

- **Advanced Floodplain Management Concepts III** (E284) August 29—September 1, 2016
- **Residential Coastal Construction** (E386) .....August 22–25, 2016

CRS communities can receive CRS credit points after their staff members complete certain training sessions. Under Section 432.o, regulations administration (RA) of the *Coordinator's Manual*, five points are provided for each member of a community's floodplain permit staff who graduates from courses E194, E273, E278, E282, E284, or E386 (up to 25 points). Graduating from E279 is worth up to five points under Activity 360 (Flood Protection Assistance).

### About the Emergency Management Institute

FEMA's Emergency Management Institute (EMI), in Emmitsburg, Maryland, offers training on topics related to floodplain management, mitigation, and construction, including the basic CRS course (E278). These are oriented to local building, zoning, planning, and engineering officials. Tuition is free for state and local government officials, travel stipends are available, and on-campus lodging is free. Free transportation is provided from the airport to the campus and back to the airport. The only out-of-pocket expense is a meal ticket—all-you-can-eat breakfast, lunch, and dinner. Go to the EMI website for specific details at [http://www.usfa.fema.gov/downloads/pdf/NETC\\_Welcome\\_Package.pdf](http://www.usfa.fema.gov/downloads/pdf/NETC_Welcome_Package.pdf). The application to attend can be found at <http://training.fema.gov/Apply/>, or call EMI at 1-800-238-3358 or (301) 447-1035. Signed applications should be submitted through the state's Emergency Management Training Officer.

### Bring the CRS to Your Home Town

The CRS conducts the field-deployed CRS course (L278, the same as EMI's E278, but tailored to local conditions) throughout the year, depending on funding availability. The 2013 *CRS Coordinator's Manual* and increased interest by non-CRS communities are generating a growing demand for CRS training. A state, CRS Users Group, or organization that would like to host a course or discuss CRS training opportunities should contact its FEMA Regional CRS Coordinator (see [www.CRSresources.org/100](http://www.CRSresources.org/100)). ≡ ≡ ≡

#### Statement of Purpose

The *NFIP/CRS Update* is a publication of the National Flood Insurance Program's Community Rating System. It provides local officials and others interested in the CRS with news they can use.

The *NFIP/CRS Update* is produced in alternate months. It is distributed electronically, at no cost, to local and state officials, consultants, and other interested persons. Communities are encouraged to copy and/or circulate the *Update* and to reprint its articles in their own local, state, or regional newsletters. No special permission is needed.

To become a subscriber or to suggest a topic that you would like addressed, contact

*NFIP/CRS Update*  
P.O. Box 501016  
Indianapolis, IN 46250-1016  
(317) 848-2898 fax: (201) 748-1936 [NFIPCRS@iso.com](mailto:NFIPCRS@iso.com)

## The Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program (NFIP) Community Rating System (CRS)

Information is provided on the CRS at a national level (All 50 US states, the District of Columbia, and all US territories).

### CRS Classifications

CRS Classes	Percentage of Communities Participating in CRS by Class
1 through 4 (Advanced Classes)	0.9% of total
5 through 7 (Intermediate Classes)	43.26% of total
8 and 9 (Introductory Classes)	55.83% of total

### Insurance Services Office (ISO) Territories

ISO Territory Number	States Included in Territory
1	Includes Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island
2	Includes Ohio, Pennsylvania, West Virginia, Virginia, Delaware, Washington, DC and Maryland
3	Includes North Carolina
4	Includes New York, Georgia, and South Carolina
5	Includes Kentucky and Tennessee
6	Includes Mississippi, Alabama, Florida and southern Louisiana
7	Includes North Dakota, Minnesota, Wisconsin, Michigan, Illinois, Indiana, Iowa, Missouri, Nebraska, and Kansas
8	Includes Oklahoma, Arkansas, northern Louisiana, Texas, southern New Mexico, and Puerto Rico
9	Includes Montana, Wyoming, South Dakota, Utah, Colorado, northern New Mexico, Arizona and southern Nevada
10	Includes southern Oregon, northern Nevada, California, and Hawaii
11	Includes Alaska, Washington, northern Oregon, and Idaho

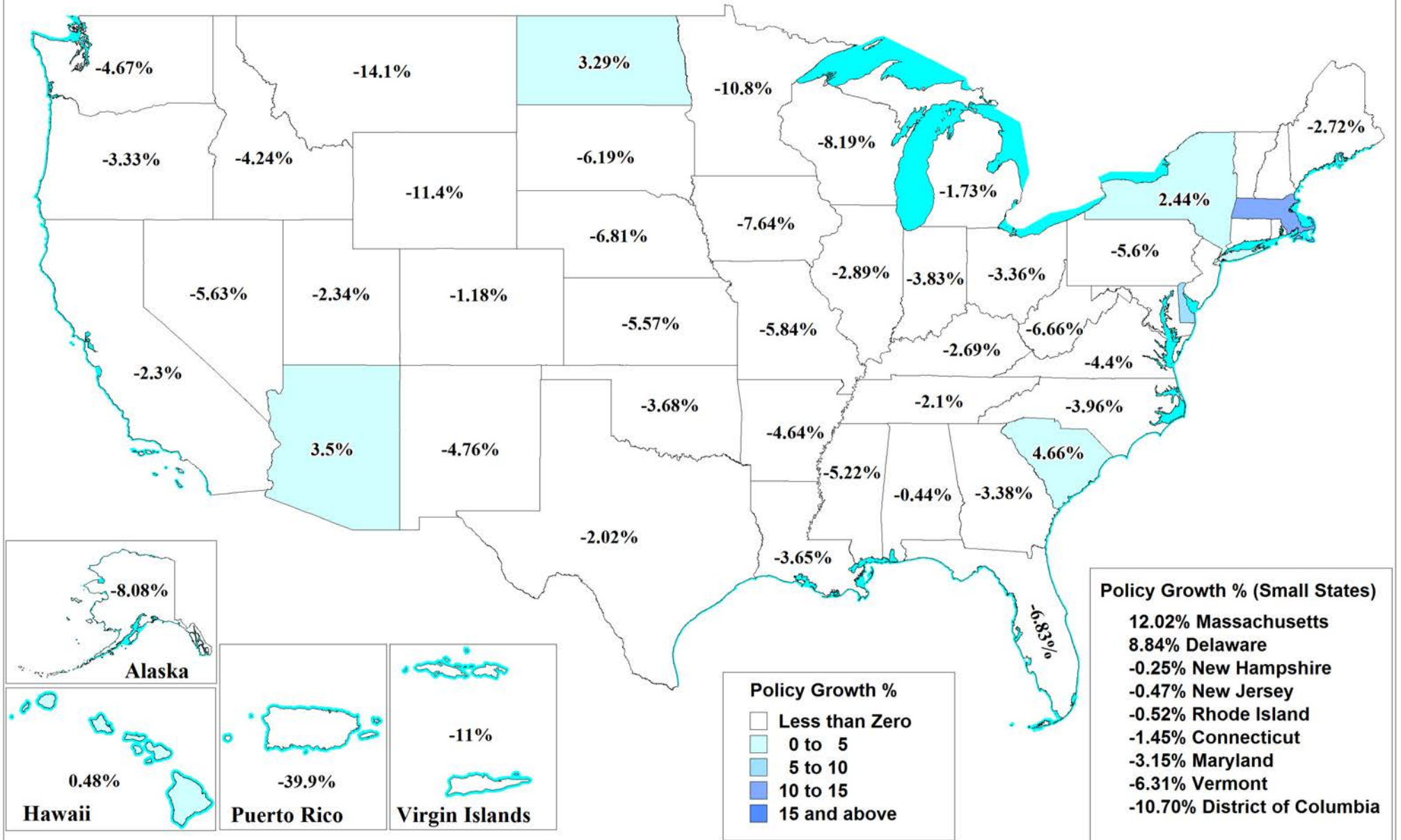
### NFIP and CRS participation and Flood Insurance Policies

	NFIP	CRS	CRS as a % of NFIP total
Participating Communities	21,705	1,211	5.57%
Policies in Force	5,583,461	3,779,513	67.69%
Insurance in Force	1.27 Billion Dollars	882 Billion Dollars	69.45%



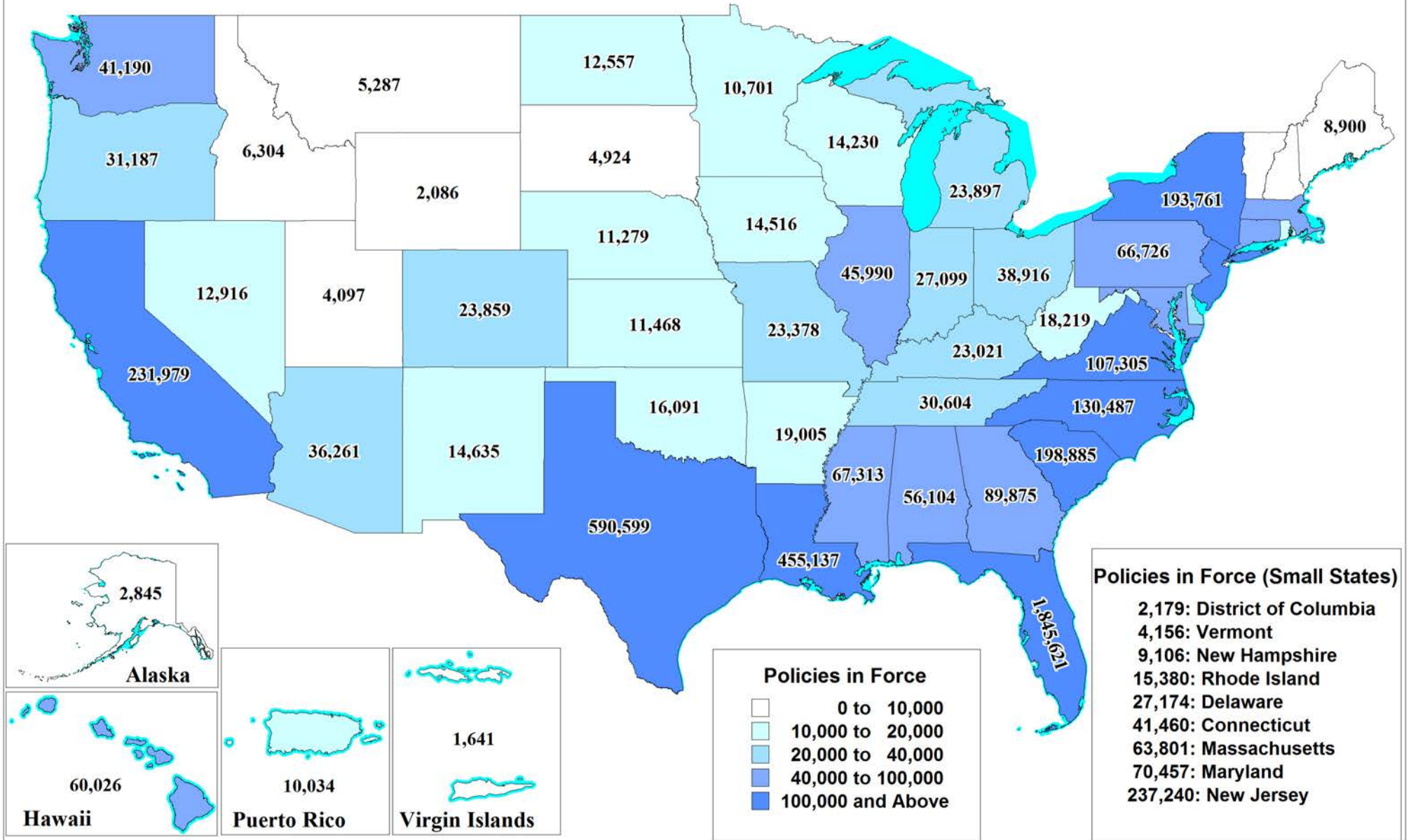
# National Flood Insurance Program Policy Growth Percentage Change

FROM OCTOBER 1, 2014 THROUGH SEPTEMBER 30, 2015



# National Flood Insurance Program Total Number of Policies in Force

AS OF SEPTEMBER 30, 2015



### Policies in Force (Small States)

- 2,179: District of Columbia
- 4,156: Vermont
- 9,106: New Hampshire
- 15,380: Rhode Island
- 27,174: Delaware
- 41,460: Connecticut
- 63,801: Massachusetts
- 70,457: Maryland
- 237,240: New Jersey

### Policies in Force

- 0 to 10,000
- 10,000 to 20,000
- 20,000 to 40,000
- 40,000 to 100,000
- 100,000 and Above

## Policy Statistics

in effect on report "AS OF" date below

Policy Statistics  
Country-Wide  
AS OF 03/31/2016

State Name	Policies In-force	Insurance In-force whole \$	Written Premium in-force
<a href="#">Alaska</a>	2,794	720,728,200	2,411,958
<a href="#">Alabama</a>	55,426	12,420,259,600	35,488,229
<a href="#">Arkansas</a>	18,549	3,138,887,100	13,708,032
<a href="#">Arizona</a>	36,115	8,722,520,900	22,296,641
<a href="#">California</a>	304,388	85,119,995,800	217,347,115
<a href="#">N Mariana Islands</a>	16	2,303,400	66,928
<a href="#">Colorado</a>	23,389	5,715,166,700	18,206,864
<a href="#">Connecticut</a>	40,657	10,179,632,000	52,364,822
<a href="#">District Columbia</a>	2,193	488,963,800	1,430,390
<a href="#">Delaware</a>	26,872	6,884,055,900	19,211,404
<a href="#">Florida</a>	1,813,592	434,989,264,000	950,245,557
<a href="#">Georgia</a>	89,295	22,846,213,900	65,908,948
<a href="#">Guam</a>	229	45,117,000	425,348
<a href="#">Hawaii</a>	60,199	13,422,059,200	37,068,094
<a href="#">Iowa</a>	14,052	2,716,493,100	12,870,029
<a href="#">Idaho</a>	6,168	1,460,702,900	4,393,948
<a href="#">Illinois</a>	45,200	8,598,174,000	43,108,115
<a href="#">Indiana</a>	26,250	4,949,709,800	23,885,702
<a href="#">Kansas</a>	11,058	1,982,511,100	8,871,792
<a href="#">Kentucky</a>	22,719	3,699,573,000	19,245,555
<a href="#">Louisiana</a>	452,680	111,538,955,500	350,001,223
<a href="#">Massachusetts</a>	64,689	16,077,474,300	75,262,825
<a href="#">Maryland</a>	68,386	15,779,473,700	40,197,598
<a href="#">Maine</a>	8,712	2,010,954,300	9,035,362
<a href="#">Michigan</a>	23,261	4,205,694,300	21,309,987
<a href="#">Minnesota</a>	10,217	2,322,998,500	8,494,782
<a href="#">Missouri</a>	22,955	4,255,268,000	21,516,959
<a href="#">Mississippi</a>	66,169	15,648,514,900	41,508,692
<a href="#">Montana</a>	5,292	1,045,960,400	3,545,298
<a href="#">North Carolina</a>	130,258	31,808,699,000	102,599,384
<a href="#">North Dakota</a>	11,411	3,047,865,400	7,135,129
<a href="#">Nebraska</a>	10,784	1,980,633,200	9,666,723
<a href="#">New Hampshire</a>	8,756	1,898,496,500	8,676,802
<a href="#">New Jersey</a>	233,789	57,163,849,800	228,554,074
<a href="#">New Mexico</a>	14,342	2,871,536,900	10,995,665
<a href="#">Nevada</a>	12,978	3,318,012,200	8,354,643
<a href="#">New York</a>	188,530	50,341,107,000	201,908,131
<a href="#">Ohio</a>	37,810	6,707,481,300	34,483,880
<a href="#">Oklahoma</a>	15,752	3,130,149,900	11,876,980
<a href="#">Oregon</a>	30,788	7,396,952,400	25,429,029
<a href="#">Pennsylvania</a>	64,588	12,969,920,300	68,048,427
<a href="#">Puerto Rico</a>	8,865	1,270,436,900	7,344,329
<a href="#">Rhode Island</a>	15,066	3,875,641,300	19,840,492
<a href="#">South Carolina</a>	201,373	51,316,604,700	131,466,325
<a href="#">South Dakota</a>	4,734	1,083,003,300	4,155,483
<a href="#">Tennessee</a>	30,333	7,034,097,800	23,526,050
<a href="#">Texas</a>	589,357	156,676,285,700	351,638,183
<a href="#">Utah</a>	3,996	983,076,200	2,473,972
<a href="#">Virginia</a>	106,005	26,875,210,300	77,044,774
<a href="#">Virgin Islands</a>	1,629	312,753,900	1,969,079
<a href="#">Vermont</a>	4,128	903,304,300	5,224,387
<a href="#">Washington</a>	40,034	9,797,349,900	34,255,881
<a href="#">Wisconsin</a>	13,814	2,623,536,100	12,124,082
<a href="#">West Virginia</a>	17,373	2,491,686,000	17,121,594
<a href="#">Wyoming</a>	2,029	486,422,800	1,685,571
Total	5,120,044	1,249,351,738,400	3,527,027,266

	DUNCAN, TOWN OF	17	1,755,000
	GREENLEE COUNTY*	25	2,961,400
LA PAZ COUNTY	LA PAZ COUNTY*	268	59,244,900
	PARKER, TOWN OF	4	853,800
	QUARTZSITE, TOWN OF	31	4,452,400
MARICOPA	APACHE JUNCTION, CITY OF	67	14,800,900
MARICOPA COUNTY	AVONDALE, CITY OF	71	17,576,500
	BUCKEYE, CITY OF	86	23,783,200
	CAREFREE, TOWN OF	40	13,067,500
	CAVE CREEK, TOWN OF	84	22,819,400
	CHANDLER, CITY OF	406	110,279,200
	EL MIRAGE, CITY OF	18	4,319,000
	FOUNTAIN HILLS, TOWN OF	37	9,256,200
	GILA BEND, TOWN OF	15	2,616,300
	GILBERT, TOWN OF	536	160,368,800
	GLENDALE, CITY OF	256	70,493,500
	GOODYEAR, CITY OF	160	44,952,000
	GUADALUPE, TOWN OF	3	771,000
	LITCHFIELD PARK, CITY OF	8	2,268,000
	MARICOPA COUNTY*	2,966	742,420,200
	MESA, CITY OF	511	131,611,700
	PARADISE VALLEY, TOWN OF	169	60,386,400
	PEORIA, CITY OF	334	97,708,400
	PHOENIX, CITY OF	5,029	1,227,265,700
	QUEEN CREEK, TOWN OF	63	16,842,600
	SCOTTSDALE, CITY OF	8,861	2,342,513,400
	SURPRISE, CITY OF	251	70,375,900
	TEMPE, CITY OF	215	56,732,100
	TOLLESON, CITY OF	30	8,167,300
	WICKENBURG, TOWN OF	49	11,098,700
	YOUNGTOWN, TOWN OF	5	1,045,000
MOHAVE COUNTY	BULLHEAD CITY, CITY OF	416	83,847,000
	KINGMAN, CITY OF	111	24,510,900
	LAKE HAVASU, CITY OF	40	10,802,300
	MOHAVE COUNTY*	1,079	224,303,500
MOJAVE COUNTY	FORT MOJAVE INDIAN TRIBE	11	2,359,800

\* Unincorporated areas of county only

Policy Statistics  
Arizona  
AS OF 03/31/2016

County Name	Community Name	Policies In-force	Insurance In-force whole \$
NAVAJO COUNTY	HOLBROOK, CITY OF	7	1,258,200
	NAVAJO COUNTY *	123	22,169,600
	PINETOP-LAKESIDE, TOWN OF	23	4,423,400
	SHOW LOW, CITY OF	58	10,788,000
	SNOWFLAKE, TOWN OF	27	5,324,600
	TAYLOR, TOWN OF	42	8,269,000
	WINSLOW, CITY OF	465	74,059,300
PIMA COUNTY	MARANA, TOWN OF	333	86,267,100
	ORO VALLEY, TOWN OF	181	50,224,000
	PIMA COUNTY *	2,430	564,353,400
	SAHUARITA, TOWN OF	40	11,490,900
	TUCSON, CITY OF	1,818	396,081,000
PINAL COUNTY	CASA GRANDE, CITY OF	89	19,817,500
	COOLIDGE, CITY OF	5	973,000
	ELOY, CITY OF	59	12,595,800
	FLORENCE, TOWN OF	47	12,118,400
	KEARNY, TOWN OF	4	740,000
	MAMMOTH, TOWN OF	3	267,800
	MARICOPA, CITY OF	608	170,185,500
	PINAL COUNTY*	517	113,476,400
	SUPERIOR, TOWN OF	10	1,125,000
SANTA CRUZ COUNTY	NOGALES, CITY OF	270	58,414,000
	PATAGONIA, TOWN OF	55	10,480,700
	SANTA CRUZ COUNTY*	348	86,986,400



# National Flood Insurance Program

## Total Number of Policies in Force

As of September 30, 2015

STATE NAME	POLICIES IN FORCE
Alabama	56,104
Alaska	2,845
American Samoa	0
Arizona	36,261
Arkansas	19,005
California	231,979
Colorado	23,859
Connecticut	41,460
Delaware	27,174
District of Columbia	2,179
Florida	1,845,621
Georgia	89,875
Guam	231
Hawaii	60,026
Idaho	6,304
Illinois	45,990
Indiana	27,099
Iowa	14,516
Kansas	11,468
Kentucky	23,021
Louisiana	455,137
Maine	8,900
Maryland	70,457
Massachusetts	63,801
Michigan	23,897
Minnesota	10,701

<b>STATE NAME</b>	<b>POLICIES IN FORCE</b>
Mississippi	67,313
Missouri	23,378
Montana	5,287
Nebraska	11,279
Nevada	12,916
New Hampshire	9,106
New Jersey	237,240
New Mexico	14,635
New York	193,761
North Carolina	130,487
North Dakota	12,557
Ohio	38,916
Oklahoma	16,091
Oregon	31,187
Panama Canal Zone	0
Pennsylvania	66,726
Puerto Rico	10,034
Rhode Island	15,380
South Carolina	198,885
South Dakota	4,924
Tennessee	30,604
Texas	590,599
Unknown	0
Utah	4,097
Vermont	4,156
Virgin Islands	1,641
Virginia	107,305
Washington	41,190
West Virginia	18,219
Wisconsin	14,230
Wyoming	2,086

# National Flood Insurance Program Policy Growth Percentage Change

October 1, 2014 Through September 30, 2015

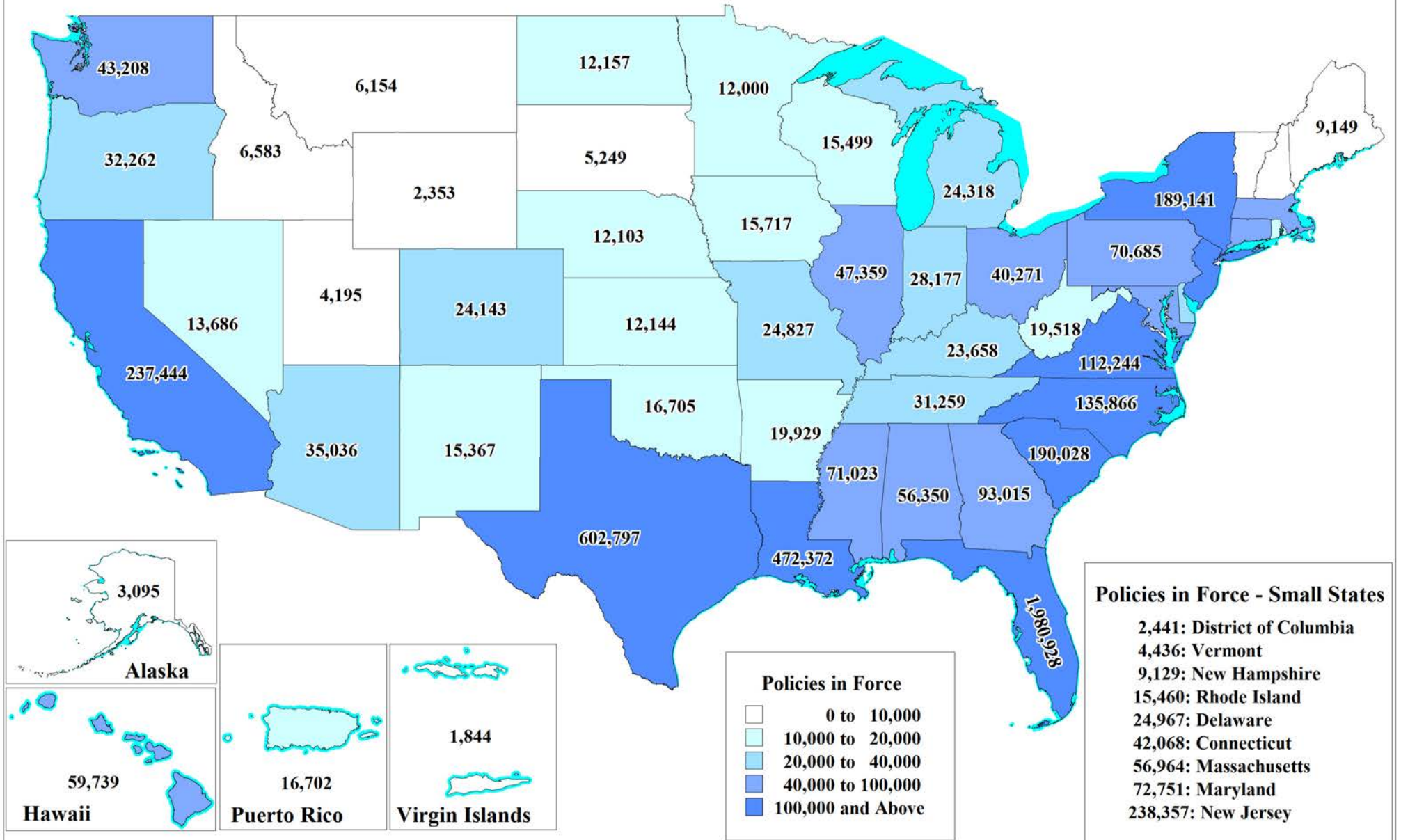
STATE NAME	POLICY GROWTH PERCENTAGE CHANGE
Alabama	-0.44
Alaska	-8.08
American Samoa	0.00
Arizona	3.50
Arkansas	-4.64
California	-2.30
Colorado	-1.18
Connecticut	-1.45
Delaware	8.84
District of Columbia	-10.70
Florida	-6.83
Georgia	-3.38
Guam	-8.70
Hawaii	0.48
Idaho	-4.24
Illinois	-2.89
Indiana	-3.83
Iowa	-7.64
Kansas	-5.57
Kentucky	-2.69
Louisiana	-3.65
Maine	-2.72
Maryland	-3.15
Massachusetts	12.02
Michigan	-1.73
Minnesota	-10.80

<b>STATE NAME</b>	<b>POLICY GROWTH PERCENTAGE CHANGE</b>
Mississippi	-5.22
Missouri	-5.84
Montana	-14.10
Nebraska	-6.81
Nevada	-5.63
New Hampshire	-0.25
New Jersey	-0.47
New Mexico	-4.76
New York	2.44
North Carolina	-3.96
North Dakota	3.29
Ohio	-3.36
Oklahoma	-3.68
Oregon	-3.33
Panama Canal Zone	0.00
Pennsylvania	-5.60
Puerto Rico	-39.90
Rhode Island	-0.52
South Carolina	4.66
South Dakota	-6.19
Tennessee	-2.10
Texas	-2.02
Unknown	0.00
Utah	-2.34
Vermont	-6.31
Virgin Islands	-11.00
Virginia	-4.40
Washington	-4.67
West Virginia	-6.66
Wisconsin	-8.19
Wyoming	-11.40



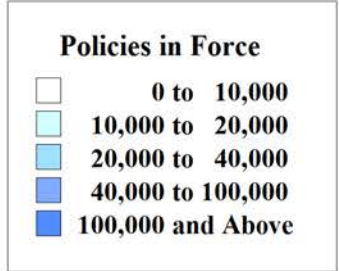
# National Flood Insurance Program Total Number of Policies in Force

AS OF SEPTEMBER 30, 2014



**Policies in Force - Small States**

- 2,441: District of Columbia
- 4,436: Vermont
- 9,129: New Hampshire
- 15,460: Rhode Island
- 24,967: Delaware
- 42,068: Connecticut
- 56,964: Massachusetts
- 72,751: Maryland
- 238,357: New Jersey



# National Flood Insurance Program

## Total Number of Policies in Force

As of September 30, 2014

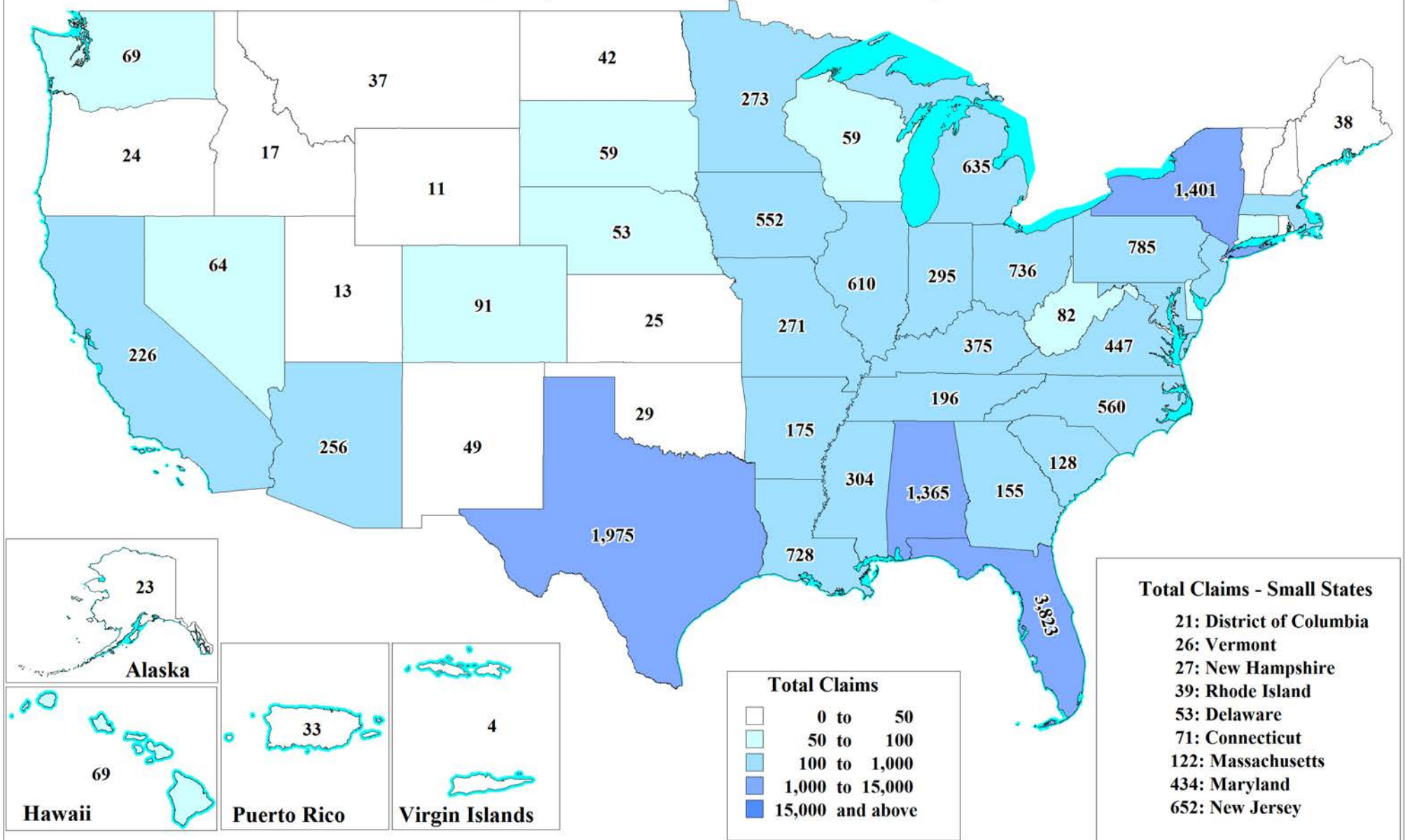
STATE NAME	POLICIES IN FORCE
Alabama	56,350
Alaska	3,095
American Samoa	0
Arizona	35,036
Arkansas	19,929
California	237,444
Colorado	24,143
Connecticut	42,068
Delaware	24,967
District of Columbia	2,441
Florida	1,980,928
Georgia	93,015
Guam	253
Hawaii	59,739
Idaho	6,583
Illinois	47,359
Indiana	28,177
Iowa	15,717
Kansas	12,144
Kentucky	23,658
Louisiana	472,372
Maine	9,149
Maryland	72,751
Massachusetts	56,954
Michigan	24,318
Minnesota	12,000
Mississippi	71,023

<b>STATE NAME</b>	<b>POLICIES IN FORCE</b>
Missouri	24,827
Montana	6,154
Nebraska	12,103
Nevada	13,686
New Hampshire	9,129
New Jersey	238,357
New Mexico	15,367
New York	189,141
North Carolina	135,866
North Dakota	12,157
Ohio	40,271
Oklahoma	16,705
Oregon	32,262
Panama Canal Zone	0
Pennsylvania	70,685
Puerto Rico	16,702
Rhode Island	15,460
South Carolina	190,028
South Dakota	5,249
Tennessee	31,259
Texas	602,797
Unknown	0
Utah	4,195
Vermont	4,436
Virgin Islands	1,844
Virginia	112,244
Washington	43,208
West Virginia	19,518
Wisconsin	15,499
Wyoming	2,353

# National Flood Insurance Program

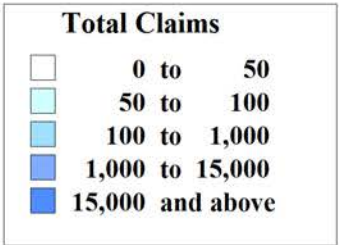
## Total Number of Claims

OCTOBER 1, 2013 THROUGH SEPTEMBER 30, 2014



**Total Claims - Small States**

- 21: District of Columbia
- 26: Vermont
- 27: New Hampshire
- 39: Rhode Island
- 53: Delaware
- 71: Connecticut
- 122: Massachusetts
- 434: Maryland
- 652: New Jersey





# National Flood Insurance Program

## Total Number of Claims

OCTOBER 1, 2013 THROUGH SEPTEMBER 30, 2014

State Name	Total Number of Claims
Alabama	1,365
Alaska	23
Arizona	256
Arkansas	175
California	226
Colorado	91
Connecticut	71
Delaware	53
District of Columbia	21
Florida	3,823
Georgia	155
Guam	2
Hawaii	69
Idaho	17
Illinois	610
Indiana	295
Iowa	552
Kansas	25
Kentucky	375
Louisiana	728
Maine	38
Maryland	434
Massachusetts	122
Michigan	635
Minnesota	273

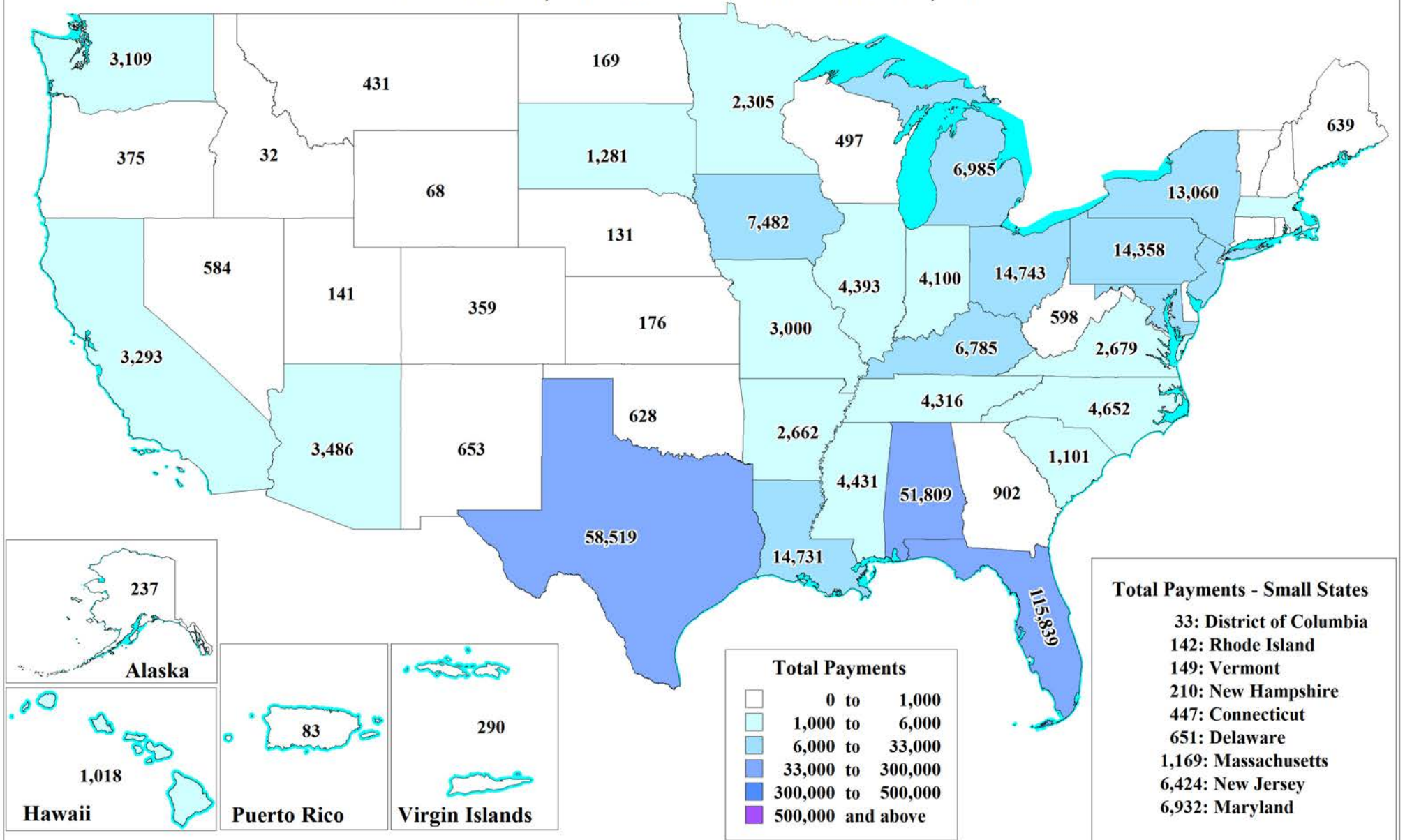
<b>State Name</b>	<b>Total Number of Claims</b>
Mississippi	304
Missouri	271
Montana	37
Nebraska	53
Nevada	64
New Hampshire	27
New Jersey	652
New Mexico	49
New York	1,401
North Carolina	560
North Dakota	42
Ohio	736
Oklahoma	29
Oregon	24
Pennsylvania	785
Puerto Rico	33
Rhode Island	39
South Carolina	128
South Dakota	59
Tennessee	196
Texas	1,975
Unknown	0
Utah	13
Vermont	26
Virgin Islands	4
Virginia	447
Washington	69
West Virginia	82
Wisconsin	59
Wyoming	11

# National Flood Insurance Program

## Total Claim Payments

(THOUSANDS OF DOLLARS)

OCTOBER 1, 2013 THROUGH SEPTEMBER 30, 2014



**Total Payments - Small States**

- 33: District of Columbia
- 142: Rhode Island
- 149: Vermont
- 210: New Hampshire
- 447: Connecticut
- 651: Delaware
- 1,169: Massachusetts
- 6,424: New Jersey
- 6,932: Maryland

**Total Payments**

- 0 to 1,000
- 1,000 to 6,000
- 6,000 to 33,000
- 33,000 to 300,000
- 300,000 to 500,000
- 500,000 and above

# National Flood Insurance Program

## Total Claim Payments

OCTOBER 1, 2013 THROUGH SEPTEMBER 30, 2014

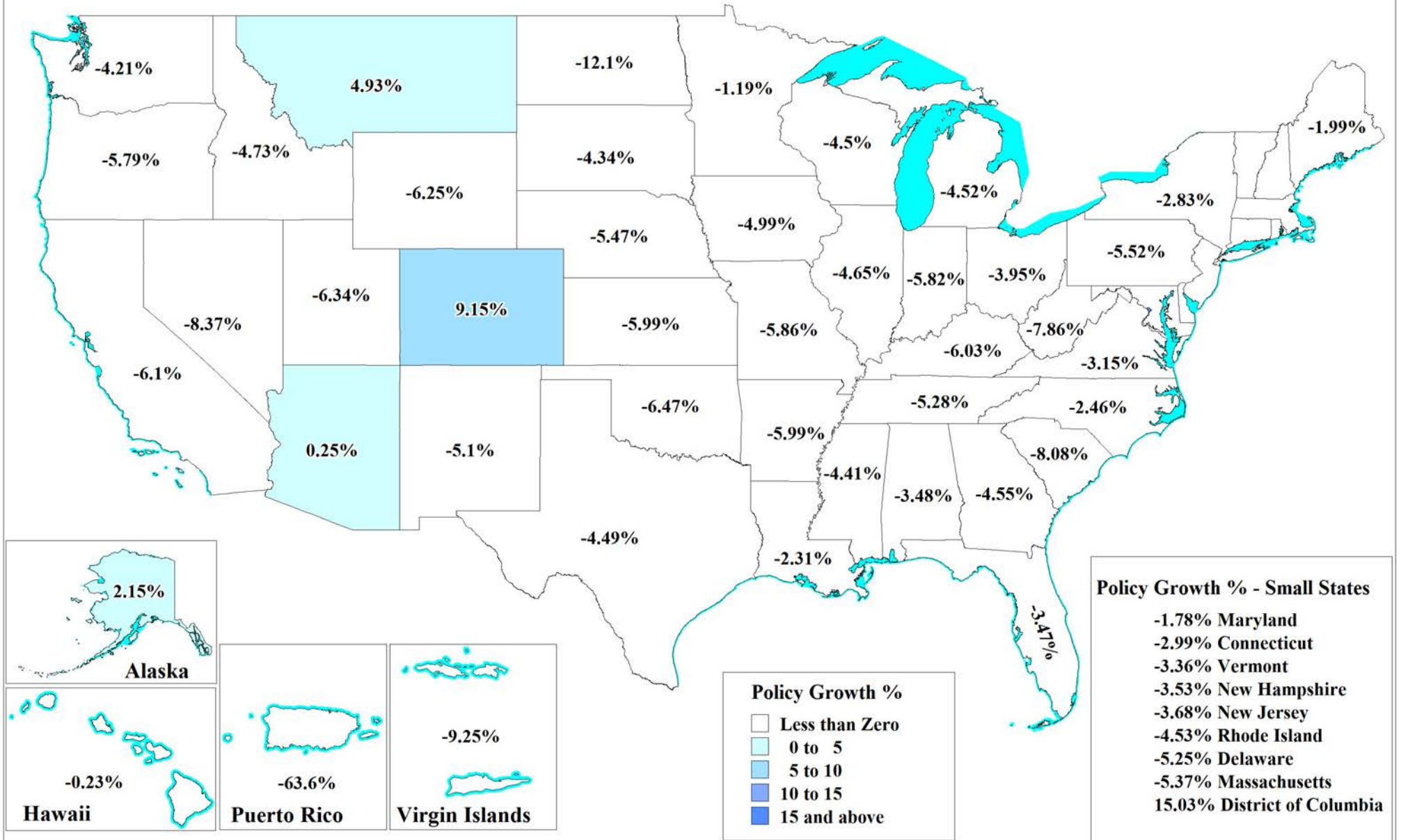
State Name	Total Claim Payments
Alabama	\$51,808,848.31
Alaska	\$237,205.37
Arizona	\$3,485,664.49
Arkansas	\$2,662,189.71
California	\$3,292,828.25
Colorado	\$358,538.24
Connecticut	\$447,249.34
Delaware	\$651,369.28
District of Columbia	\$32,998.52
Florida	\$115,839,230.82
Georgia	\$902,167.12
Guam	\$25,564.80
Hawaii	\$1,018,491.18
Idaho	\$31,609.99
Illinois	\$4,392,771.84
Indiana	\$4,100,238.54
Iowa	\$7,482,016.92
Kansas	\$176,384.63
Kentucky	\$6,785,165.34
Louisiana	\$14,730,696.85
Maine	\$639,370.82
Maryland	\$6,931,705.11
Massachusetts	\$1,168,619.73
Michigan	\$6,984,881.68
Minnesota	\$2,304,815.21



<b>State Name</b>	<b>Total Claim Payments</b>
Mississippi	\$4,431,367.72
Missouri	\$2,999,802.06
Montana	\$430,802.12
Nebraska	\$131,351.14
Nevada	\$584,288.33
New Hampshire	\$210,003.90
New Jersey	\$6,424,146.96
New Mexico	\$653,021.72
New York	\$13,060,259.85
North Carolina	\$4,651,549.50
North Dakota	\$169,003.91
Ohio	\$14,743,296.15
Oklahoma	\$627,601.44
Oregon	\$374,724.58
Pennsylvania	\$14,358,294.89
Puerto Rico	\$83,275.20
Rhode Island	\$141,836.19
South Carolina	\$1,100,583.68
South Dakota	\$1,280,801.11
Tennessee	\$4,316,335.84
Texas	\$58,519,231.24
Unknown	\$0.00
Utah	\$140,765.94
Vermont	\$149,025.41
Virgin Islands	\$290,125.40
Virginia	\$2,679,268.21
Washington	\$3,109,494.72
West Virginia	\$598,289.54
Wisconsin	\$496,797.82
Wyoming	\$68,024.26

# National Flood Insurance Program Policy Growth Percentage Change

OCTOBER 1, 2013 THROUGH SEPTEMBER 30, 2014



# National Flood Insurance Program Policy Growth Percentage Change

October 1, 2013 Through September 30, 2014

STATE NAME	POLICY GROWTH PERCENTAGE CHANGE
Alabama	-3.48
Alaska	2.15
American Samoa	0.00
Arizona	0.25
Arkansas	-5.99
California	-6.10
Colorado	9.15
Connecticut	-2.99
Delaware	-5.25
District of Columbia	15.03
Florida	-3.47
Georgia	-4.55
Guam	-0.39
Hawaii	-0.23
Idaho	-4.73
Illinois	-4.65
Indiana	-5.82
Iowa	-4.99
Kansas	-5.99
Kentucky	-6.03
Louisiana	-2.31
Maine	-1.99
Maryland	-1.78
Massachusetts	-5.37
Michigan	-4.52
Minnesota	-1.19
Mississippi	-4.41

<b>STATE NAME</b>	<b>POLICY GROWTH PERCENTAGE CHANGE</b>
Missouri	-5.86
Montana	4.93
Nebraska	-5.47
Nevada	-8.37
New Hampshire	-3.53
New Jersey	-3.68
New Mexico	-5.10
New York	-2.83
North Carolina	-2.46
North Dakota	-12.10
Ohio	-3.95
Oklahoma	-6.47
Oregon	-5.79
Panama Canal Zone	0.00
Pennsylvania	-5.52
Puerto Rico	-63.60
Rhode Island	-4.53
South Carolina	-8.08
South Dakota	-4.34
Tennessee	-5.28
Texas	-4.49
Unknown	0.00
Utah	-6.34
Vermont	-3.36
Virgin Islands	-9.25
Virginia	-3.15
Washington	-4.21
West Virginia	-7.86
Wisconsin	-4.50
Wyoming	-6.25



EO 11988 guidelines

<https://www.fema.gov/executive-order-11988-floodplain-management>

This page is about Executive Order 11988: Floodplain Management.

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The guidelines address an eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain. The eight steps, which are summarized below, reflect the decision-making process required in Section 2(a) of the Order.

1. Determine if a proposed action is in the base floodplain (that area which has a one percent or greater chance of flooding in any given year).
2. Conduct early public review, including public notice.
3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.
4. Identify impacts of the proposed action.
5. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate.
6. Reevaluate alternatives.
7. Present the findings and a public explanation.
8. Implement the action.

Among a number of things, the Interagency Task Force on Floodplain Management clarified the EO with respect to development in flood plains, emphasizing the requirement for agencies to select alternative sites for projects outside the flood plains, if practicable, and to develop measures to mitigate unavoidable impacts.

## EXECUTIVE ORDER 11988

### FLOODPLAIN MANAGEMENT

HISTORY: May 24, 1977; 42 FR 26951, 3 CFR, 1977 Comp., p. 117; Amended by Executive Order 12148, July 20, 1979; 44 FR 43239, 3 CFR, 1979 Comp., p. 412

[EDITOR'S NOTE: Executive Order 12148 --Federal Emergency Management, July 20, 1979, substituted "Director of the Federal Emergency Management Agency" for "Federal Insurance Administration" in Section 2(d).]

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et seq.), and the Flood Disaster Protection Act of 1973 (Public Law 93-234, 87 Stat. 975), in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative, it is hereby ordered as follows:

#### Section 1.

Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities. Sec. 2.

In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

(a)(1) Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain -- for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2)(C) of the National Environmental Policy Act. This determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977.

(2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only

practicable alternative consistent with the law and with the policy set forth in this Order requires siting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.

(3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and areawide A-95 clearinghouses for the geographic areas affected. The notice shall include: (i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action.

(4) Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended.

(b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order.

(c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.

(d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council, and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Director of the Federal Emergency Management Agency, and the Council on Environmental Quality, and shall update such procedures as necessary.

In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

(a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.

(b) If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.

(c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards.

(d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance.

#### Sec. 4.

In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain.

#### Sec. 5.

The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness.

#### Sec. 6.

As used in this Order: (a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting



floodplains.

(b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year.

(c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Sec. 7.

Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order.

Sec. 8.

Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

Sec. 9.

To the extent the provisions of Section 2(a) of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decisionmaking, and action pursuant to the National Environmental Policy Act of 1969, as amended.

/s/JIMMY CARTER  
THE WHITE HOUSE  
May 24, 1977



# Applicability of Floodplain Management and FFRMS Executive Orders to USACE Permitting Authorities

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

## Background

On January 30, 2015, the president signed Executive Order (E.O.) 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, which amended E.O. 11988, Floodplain Management, issued in 1977. Once implemented by Federal agencies, the Federal Flood Risk Management Standard (FFRMS) is intended to reduce the risk and cost of future flood disasters by ensuring that Federal investments in and affecting floodplains are constructed to better withstand the impacts of flooding.

## Historical Applicability of E.O. 11988 to USACE Regulatory Program Permits

Under Section 404 of the Clean Water Act, a Department of Army (DA) permit is required for the discharge of dredged or fill material into waters of the U.S., including wetlands. Under Section 10 of the Rivers and Harbors Act, a DA permit is required for work on structures in, over, or under navigable waters of the U.S., or that affects the course, location or condition of such waters.

The USACE Regulatory Program regulations (33 CFR 320.4) require USACE to consider the requirements of E.O. 11988 when determining whether or not to issue a DA permit under these authorities. Specifically, USACE must consider the requirements of E.O. 11988 as part of its public interest review when an application is received requesting authorization to impact waters of the U.S. that also has the potential to alter a floodplain.

In accordance with 33 CFR 320.4(j)(2), the primary responsibility for determining zoning and land use matters rests with Tribal, state, and local governments.

## Applicability of E.O. 13690 to USACE Regulatory Program Permits

Activities requiring DA authorization under Section 404 or Section 10 are not subject to Section 2(i) of E.O. 13690, which amends Section 6(c) of E.O. 11988 and establishes three methods for determining the floodplain of concern. The USACE Regulatory Program will continue to review applications by applying the area subject to the “base flood” as the relevant “floodplain” as defined in E.O. 11988 and under 33 CFR 320.4.

## For More Information

- Fact Sheet on E.O. 13690  
[https://www.whitehouse.gov/administration/eop/ceq/Press\\_Releases/January\\_30\\_2015](https://www.whitehouse.gov/administration/eop/ceq/Press_Releases/January_30_2015)
- Website on E.O. 13690 and the Federal Flood Risk Management Standard  
<https://www.fema.gov/federal-flood-risk-management-standard-ffrms>
- Executive Order 11988 – Floodplain Management  
<https://www.fema.gov/executive-order-11988-floodplain-management>
- USACE Regulatory Program Website -  
<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>
- 33 CFR Part 320 - [http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title33/33cfr320\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title33/33cfr320_main_02.tpl)

U.S. ARMY CORPS OF ENGINEERS – HEADQUARTERS

441 G Street, NW  
Washington, DC 20314-1000  
[www.usace.army.mil](http://www.usace.army.mil)



## The Applicability of Executive Order (E.O.) 11988/13690 to FEMA Programs

### Introduction

On January 30, 2015, the President signed Executive Order (E.O.) 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, which amended E.O. 11988, Floodplain Management, issued in 1977. Once implemented by Federal agencies, the Federal Flood Risk Management Standard (FFRMS) will reduce the risk and cost of future flood disasters by ensuring that Federal investments in and affecting floodplains are constructed to better withstand the impacts of flooding. It will support the thousands of communities across the country that have strengthened their local floodplain management codes and standards and will help ensure Federal projects last as long as intended. The FFRMS will apply to the Hazard Mitigation Assistance Grants, the Public Assistance Program, and any other FEMA grants when they fund construction activities in or affecting a floodplain.

This fact sheet responds to questions that have been raised in this process about the intended scope of the FFRMS, as well as anticipated impacts to the National Flood Insurance Program (NFIP).

### FEMA's National Flood Insurance Program (NFIP)

The FFRMS will not affect the standards or rates of the NFIP. The FFRMS will not change the minimum floodplain management criteria in 44 CFR Part 60 that communities must adopt in order to participate in the NFIP for floodprone areas, FEMA's flood mapping standards, or the rating and claims practices of the NFIP. This means that the FFRMS will have no effect on the cost or availability of Federal flood insurance for policyholders. FEMA will continue to identify and map floodprone areas and designate flood risk zones based on the 1-percent-annual-chance floodplain using available engineering methods and depict these zones on Flood Insurance Rate Maps (FIRMs).

FEMA also will not require property owners and renters to obtain insurance if they are outside the Special Flood Hazard Area (SFHA), defined as the area within a floodplain

that has a 1-percent or greater chance of flooding in any given year- as delineated on the FIRMs - because it will not incorporate the expanded floodplain delineation or elevated flood heights into the FIRMs. However, since approximately 25 percent of all flood loss claims come from areas outside the designated SFHA, property owners may still wish to purchase flood insurance for financial protection during a flood. In addition, individual mortgage lenders continue to have the discretion to require property owners to obtain flood insurance for areas both inside and outside the SFHA as a condition of their mortgage financing.

The FFRMS will not impact a flood insurance policy's Increase Cost of Compliance (ICC) coverage. These funds are considered a part of the Standard Flood Insurance Policy and are not a financial transaction subject to FFRMS requirements. As a result, NFIP policy holders who have ICC coverage may use this coverage to bring their home or business into compliance with their community's floodplain ordinance through mitigation activities such as, floodproofing nonresidential structures, elevation, relocation, or demolition.

### FOR MORE INFORMATION:

#### Fact Sheet on E.O. 13690

[https://www.whitehouse.gov/administration/eop/ceq/Press\\_Releases/January\\_30\\_2015](https://www.whitehouse.gov/administration/eop/ceq/Press_Releases/January_30_2015)

#### Website on E.O. 13690 and the Federal Flood Risk Management Standard

<https://www.fema.gov/federal-flood-risk-management-standard-ffrms>

#### Executive Order 11988 – Floodplain Management

<https://www.fema.gov/executive-order-11988-floodplain-management>



### FEDERAL FLOOD RISK MANAGEMENT STANDARD

- Executive Order 11988 as amended by Executive Order 13690 requires all future federal investments in and affecting floodplains to meet the level of resilience established by the Federal Flood Risk Management Standard (FFRMS).
- Existing U.S. Army Corps of Engineers (USACE) guidance for EO 11988 applies to planning, design, and construction of Civil Works projects, operations and maintenance activities, and real estate program activities. The USACE regulatory program also has guidance on the applicability of EO 11988.
- E.O. 11988 as amended by E.O. 13690 applies to federal actions. USACE will be evaluating existing guidance to determine which programs and activities EO 11988 as amended applies.
- Post Hurricane Katrina and Hurricane Sandy, the USACE incorporates the best available science and data, including sea level rise projections and climate resilience, into our water resources project planning and design.
- USACE incorporates authorized levels of risk reduction, loading and factors of safety, and risk considerations beyond the criteria and options required by the Federal Flood Risk Management Standard.
- USACE complies with Executive Order 11988 to include its 8-step decision making process and will continue to use the FFRMS to inform our team's engineering and analysis expertise in developing flood risk management solutions.
- The FFRMS is not expected to impact Public Law 84-99 or emergency actions.
- The standard is not retroactive and will only apply to new federal actions in the floodplain that use federal funding.
- The FFRMS is consistent with findings and recommendations put forth in the recently released North Atlantic Coast Comprehensive Study (NACCS). Both the NACCS and the FFRMS aim to reduce risk and increase resilience of communities' abilities to withstand and rapidly recover from storm damages.
- Both the NACCS and FFRMS encourage the use of natural systems, ecosystem processes, and nature-based approaches. The recently issued Principles, Guidelines and Requirements reflect a similar recognition of these approaches and encourage considering a broader set of measures to reduce risk, and increase resilience.
- The NACCS was conducted by USACE over two years with collaboration from experts in coastal planning, engineering, and science from more than 90 governmental, academic, and non-governmental entities. As a result of the study's findings and broad collaboration, USACE continues to make advances in both coastal risk management and the development of resilient designs.
- The risk framework presented in the NACCS is a model that can be applied elsewhere and is consistent with the President's Climate Action Plan, the FFRMS and the draft interagency Implementing Guidelines.
- In the months ahead, USACE will seek public dialogue as the agency develops its Implementing Guidance for the FFRMS. We look forward to robust engagement with our stakeholders and will continue to share information, as it becomes available, about how can they participate in the listening sessions.
- We continue to remain engaged in development of the interagency Implementing Guidelines and will participate on the technical writing team.
- USACE has heard several comments from stakeholders regarding a desire to extend the 60-day timeframe for receiving public input on the Implementing Guidelines. USACE encourages this and other comments be provided to FEMA for consideration. USACE will consider all public comments regarding our implementation of the FFRMS.

**For More Information Visit: [www.fema.gov/floodplain-management/FFRMS](http://www.fema.gov/floodplain-management/FFRMS)  
(AS OF: 1000 hrs, 9 March 2015)**





**Consumer Affairs Division**  
**Arizona Department of Insurance**  
2910 North 44<sup>th</sup> Street, Suite 210  
Phoenix, Arizona 85018-7269

Phone: (602) 364-2499  
Email: [consumers@azinsurance.gov](mailto:consumers@azinsurance.gov)

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## FLOOD INSURANCE INFORMATION

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*Standard homeowners insurance does not cover damage or losses caused by flooding. If renters, homeowners or business owners want financial protection from floods, they must buy insurance through the National Flood Insurance Program. Here are some points to keep in mind about coverage for floods.*

- Many people do not know how insurance companies define “flooding.” For purposes of insurance, “flood” means any water outside your home that flows inside at ground level. In Arizona, the hard desert ground does not soak up water and water pools on the ground surface. If water flows into your home and causes damage, this is “flooding” and is not covered by homeowners insurance.
- “Flood insurance” is a separate insurance policy purchased through the National Flood Insurance Program (NFIP) which is overseen by the Federal Emergency Management Agency (FEMA). Visit [www.floodsmart.gov](http://www.floodsmart.gov) for more information.
- Many insurance agents (producers) who sell homeowners insurance can also sell flood insurance under the NFIP. You can use the NFIP website ([www.floodsmart.gov](http://www.floodsmart.gov)) to find a flood insurance agent near you.
- There is generally a 30-day waiting period before a new flood insurance policy takes effect.
- The NFIP offers a policy to cover damage to your dwelling, and one to cover your personal belongings. The NFIP also offers policies to cover renters, residential condo associations and businesses.
- Homeowners can obtain up to \$250,000 of flood insurance coverage on their residence. Homeowners and renters can obtain up to \$100,000 in coverage for their contents. Businesses can obtain up to \$500,000 of flood insurance coverage on business structures and up to \$500,000 on the business structure contents.

- The NFIP requires separate flood insurance policies for each building, and separate flood insurance policies covering belongings inside each building.
- To find out what type of flood zone you live in, visit the NFIP website ([www.floodsmart.gov](http://www.floodsmart.gov)) or call (888) 379-9531.
- If you live in an area designated by the federal government as a "high risk" flood zone your mortgage company will require you to buy flood insurance. If you do not buy flood insurance, your mortgage company will obtain "forced place" flood insurance on your dwelling. "Forced place" means that the mortgage company will obtain flood insurance to protect the mortgage company's interest in the property, and the insurance premium is made a part of your mortgage payment.
- Changes to the terrain surrounding your property can change the risk of flooding. For example, a wildfire may destroy the ground cover that helps deflect flooding. It is a good idea to periodically re-evaluate your flood risk.
- Many homeowners insurance agents sell flood insurance as well. If your agent cannot help, contact the NFIP to find an agent in your area that specializes in flood insurance. You can use the NFIP's Agent Locator service at [https://www.floodsmart.gov/floodsmart/pages/choose\\_your\\_policy/agent\\_locator.jsp](https://www.floodsmart.gov/floodsmart/pages/choose_your_policy/agent_locator.jsp) or call the NFIP at 888-379-9531.
- Arizona storms can cause other types of damage that may be covered by homeowners insurance. Contact your homeowners insurance producer or insurance company to review your coverages.
- Auto insurance policies may cover damage to vehicles from a flood or storm if you carry "comprehensive" coverage on the vehicle.
- If you have questions or a complaint about flood insurance including coverage, rates or cancellation issues, contact the NFIP at  
Email: [FloodSmart@dhs.gov](mailto:FloodSmart@dhs.gov)  
Website: [www.floodsmart.gov](http://www.floodsmart.gov)  
Phone: (888) 379-9531  
FAX: (202) 646-2818

- If you have questions or a complaint about an insurance agent, or your homeowners insurance company, contact the Arizona Department of Insurance at:

Email: [consumers@azinsurance.gov](mailto:consumers@azinsurance.gov)

Website: [insurance.az.gov](http://insurance.az.gov)

Phone: 602-364-2499 or 800-325-2548 (outside the Phoenix metropolitan area)

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*Persons with disabilities may request materials be presented in an alternative format by contacting the ADA Coordinator at (602) 364-3100. Requests should be made as early as possible to allow time to procure the materials in an alternative format.*

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## City of Phoenix

To: Street Maintenance Employees

Date: August 12, 2015

From: Jack Noble  
Street Maintenance Superintendent

Deputy Director  
Signature

MARK A. GLOCK, P.E. 

Subject: STORM EVENT STANDARD OPERATING PROCEDURES

The purpose of this memo is to establish guidelines for major storm events that occur within the City of Phoenix after established work hours (e.g. – overtime hours), Street Maintenance Division crews will comply with the following standard operating procedures (SOP's).

### Day 1:

1. Initial contact for the department for an event will be with the Street Maintenance Division Rapid Responder(s).
2. When the Rapid Responder is notified of storm impacts affecting traffic (i.e. downed trees blocking traffic or flooded streets), he/she will deploy to the area to deal with the issue.
3. When the Rapid Responder arrives on site he/she will assess the situation and take immediate action to clear the street.
4. If the situation exceeds the Rapid Responder's capabilities, then he/she will contact the Street Maintenance Supervisor for the affected area.
5. The Street Maintenance Supervisor will assess the severity of the situation, and determine the magnitude of the response needed from his/her available resources.
6. When it becomes apparent that department staff will need to be deployed, the Street Maintenance Supervisor will notify his/her Foremen to assemble at their service center.
7. The Street Maintenance Foremen will begin to contact their crews depending on the magnitude of the response needed.
8. Street Maintenance Crews will assemble at their service center(s) and mobilize for the clean-up effort needed.
9. Once "boots are on the ground" the Street Maintenance Supervisor will send an email to [storm.report@phoenix.gov](mailto:storm.report@phoenix.gov). This email shall contain a short, 1-3 sentence message related to the response for their area (e.g. – CEGM has brought in three crews to deal with downed trees, localized flooding, and debris in the right-of-way). The Street Maintenance Supervisor will send updates throughout the response to [storm.report@phoenix.gov](mailto:storm.report@phoenix.gov). Updates shall include road closures, areas of the City affected, etc. Road closure information shall also be relayed to the Street Maintenance Superintendent's Administrative Assistant's voicemail at 602-534-3739.
10. As debris is cleared out of the streets, the Street Maintenance Supervisor will determine if support is needed from the Parks Forestry Division to cut up fallen trees that are larger than 12-inch in diameter. Parks Department Forestry After-Hours Hotline Number is 602-534-9440, on-call Foreman is at 602-769-5163, and Richard Adkins, Forestry Supervisor, is at 602-319-7399.



11. 8-hours after the Service Center response has begun, the first Emergency Report is due to [storm.event@phoenix.gov](mailto:storm.event@phoenix.gov). This report should cover the time from the start of the response up to 8-hours in. Following reports will be sent at 8-hour intervals to [storm.event@phoenix.gov](mailto:storm.event@phoenix.gov), and should only contain information related to locations worked at during the 8-hour time frame listed on the report. A final report is due at the end of the storm response once all of the crews have returned to the service center, and should be sent to [storm.event@phoenix.gov](mailto:storm.event@phoenix.gov), and marked as - **Final Report**.
12. If debris continues to accumulate that exceeds the capacity of the Street Transportation vehicles deployed in the area, the Street Maintenance Supervisor shall notify the Street Maintenance Superintendent, who shall contact the Public Works Solid Waste Division for additional support at 602-361-3925. Either the Street Maintenance Superintendent, or a delegated Street Maintenance Supervisor, shall make contact with Public Works for additional support.

The expected response time is approximately sixty minutes from the first notification to the Area Supervisor until "boots are on the ground".

Typically, initial contact regarding storm events is from the Police and Fire Departments when they have located a downed tree, a missing manhole cover, or are standing-by at a flooding location. The Street Transportation Department rarely has a storm response event that is not initiated by the Police or Fire Departments.

Street Maintenance staff will make every effort to take pictures showing before, during, and after storm related clean-up areas.



# Arizona Flood Fact Sheet

## Risks and Protection

*Floods are a common and costly natural hazard in Arizona. Whether caused by heavy rain, monsoons, or the remnants of tropical storms, the results of flooding can be devastating. While some floods develop over time, flash floods—particularly common in the state—can occur within minutes after the onset of a rainstorm. Even mountainous areas are at risk for flash flooding, as higher grounds tend to funnel water down into canyons. Residents need to protect their homes and assets with flood insurance **now**—before a weather event occurs and it's too late.*

Many Arizona residents may be at an even greater risk of flooding due to the recent wildfires that have burned across the state. Strings of large-scale wildfires have dramatically altered the landscape and ground conditions in the state. In 2009 alone, 147,531 acres in Arizona were severely damaged (source: National Interagency Fire Center).

### HISTORICAL FLOODING

In the last 10 years (2000-2010), Arizona has experienced five federally declared flood disasters. Below, are some examples of flood impact worth noting:

**Flash Flooding (2010):** The Schultz Wildfire charred more than 15,000 acres, leaving the area susceptible to flooding and debris flows. One month later, heavy rains and monsoons in late July through early August brought flooding to the Flagstaff area. More than 38 homes flooded, 24 of which experienced additional damage from mud and debris.

**Summer Flooding (2006):** During July and August, monsoons caused flooding in more than 93 communities throughout the state. Some homes were hit with a 20-foot surge of water. Overall, the flooding caused a flood-recovery bill of more than \$4.2 million.

**Winter Flooding (2000):** From October 21 through November 8, flooding in La Paz, Maricopa, Pinal, and Yavapai counties damaged more than 440 homes causing more than \$4.4 million in damages.

Despite this pattern of flooding, only 19 percent of buildings at high risk for flooding in Arizona are covered by flood insurance.

### BE FLOODSMART—REDUCE YOUR RISK

#### Arizona Flood Coverage At-a-Glance

Currently there are nearly 35,000 flood insurance policies in force (PIF) in Arizona, just more than 25,000 of which are in high-risk areas. However, **many state residents remain at risk**—less than two percent of households are covered.

- **Learn your flood risk.** Find out your flood risk by entering your address at **FloodSmart.gov** “**Assess Your Risk.**” Insurance agents can provide more detailed information and insurance options.
- **Purchase a flood insurance policy.** Most homeowners insurance does not cover floods and there is a 30-day wait before a policy becomes effective. If you already have a flood policy, remember that it needs to be renewed each year.
- **Make a flood plan.** Plan evacuation routes. Keep important papers in a safe, waterproof place. Itemize and take pictures of possessions. Build an emergency supply kit.
- If you live in a high-risk area and carry a mortgage from a federally regulated lender, you are required to purchase a flood insurance policy. If your property is located in a moderate-to-low risk flood area, you may be eligible for a lower-cost Preferred Risk Policy (PRP), which starts at just \$119 a year.
- Visit **FloodSmart.gov** or call **1-800-427-2419** to learn about individual flood risk, explore coverage options, and to find an agent in your area. **Most standard homeowners’ policies do not cover flood damage.**





## ARIZONA DEPARTMENT OF INSURANCE

2910 N. 44<sup>th</sup> Street, Ste. 210 ~ Phoenix, AZ 85018  
(602) 364-2499 ~ [www.azinsurance.gov](http://www.azinsurance.gov)

# Flood Insurance

Insurance companies generally define “flood” or “flooding” to mean any water outside your home that flows inside at ground level. If this water damages your home or belongings it is NOT covered by your homeowner’s insurance policy.

**Flood insurance is obtained through the *National Flood Insurance Program (NFIP)*.**

Changes to the terrain surrounding your property can increase your risk for flood! For instance, a wildfire may destroy the ground cover that helps deflect flooding. *Periodically re-evaluate your flood risk.*

### How to buy NFIP flood insurance:

- Start by calling your homeowner’s or renter’s insurance agent to ask if they write flood insurance. If they can’t help, call the NFIP to find an agent that specializes in flood insurance: **(888) 379-9531**.
- Unlike homeowner’s insurance, there is a **30-day waiting period** before a flood insurance policy takes effect.
- You will need to know what flood zone your home is in. To find out, call **877-336-2627** or visit [www.FloodSmart.gov](http://www.FloodSmart.gov).
- If your home is *not* in a low-risk flood zone, you may need to seek assistance from your local **County Flood Control District** office to obtain documentation for flood insurance. This process can take some time.
- Unlike homeowner’s insurance, flood insurance requires separate policies for *each* building and separate coverage for your belongings inside *each* building.
- Flood insurance can be purchased by homeowners, condo-owners, renters, and business-owners

**Nearly 25% of flood insurance claims to the NFIP come from low-to-moderate flood risk areas! Everyone is at risk for flood to varying degrees.**

Questions or complaints about flood insurance benefits or claims can be addressed to:

#### **National Flood Insurance Program**

Phone: (888) 379-9531 or 877-336-2627

Email: [FloodSmart@dhs.gov](mailto:FloodSmart@dhs.gov)

Website: [www.floodsmart.gov](http://www.floodsmart.gov)

Questions or complaints about other insurance issues can be addressed to:

#### **Arizona Department of Insurance**

Phone: (602) 364-2499 or (800) 325-2548 (outside Phoenix)

FAX: (602) 364-2505

Email: [consumers@azinsurance.gov](mailto:consumers@azinsurance.gov)

Website: [www.azinsurance.gov](http://www.azinsurance.gov)





## Appendix H

Future FMP Activities



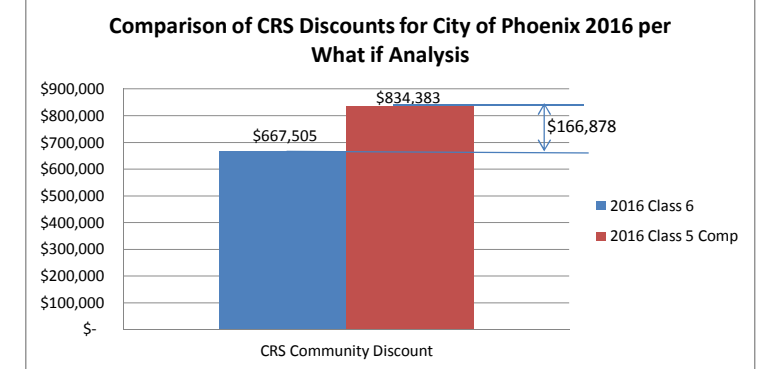


State: Arizona County: Maricopa County City: City of Phoenix Community Identification Number: 40051

Updated 5/27/2016

Estimated Savings to City of Phoenix Residents based upon What if Scenario for 2016

Class 6 - Special Flood Hazard Area		Class 5 - Special Flood Hazard Area		RESULTS	Time Basis
Discount	20%	Discount	25%		
Loan, yrs.	30	Loan, yrs.	30		
Policies in Force	3108	Policies in Force	3108		
Estimated NFIP Premium 2016	\$ 2,669,772.00	Estimated NFIP Premium 2016	\$ 3,327,901.84		
Estimated CRS Discount 2016	\$ 667,505	Estimated CRS Discount 2016	\$ 834,383		
Per Policy in SFHA	\$ 215.00	Per Policy in SFHA	\$ 268.00		
				\$ 53.00	Per Policy Savings going to Class 5 in SFHA
				\$ 166,878.00	Savings per Policy x 3108 Policies
				\$ 5,006,340.00	Estimated savings from policies in SFHA at Class 5 over 30 years
<b>Class 6 - SFHA</b>		<b>Class 5 - SFHA</b>			
Per Community	\$ 667,505.00	Per Community	\$ 834,383.00	\$ 166,878.00	Estimated Savings Per Community from Class 6 to 5
				\$ 5,006,340.00	Estimated Savings from Policies in SFHA at Class 5 over 30 years



Example Condition From CRS State Profile Data per the State CRS Summary: Arizona January 2014

Table 3 Excerpted for Community NFIP Data, Reported Page 6

Jan 2014 Reporting Comparison Per CRS

May 2013 NFIP Policies	4589	Total	
2013 NFIP Premium	\$ 3,213,704.00	for 2014	
2013 CRS Discount	\$ 626,488.00		\$ 642,740.80
Difference			\$ 16,252.80
2013 Average Premium	\$ 700.31	***Estimated Average Price per Policy 2014	

As of the date of this report (May 2016) the City of Phoenix has 5,070 total flood insurance Policies in Force (PIF) with 3,108 policies in the Special Flood Hazard Area (SFHA). Policies covering the SFHA are eligible for premium reductions based upon NFIP CRS Table 110.1.

CRS Printable What If Page 1 of 1

Community:	PHOENIX, CITY OF	State:	ARIZONA	
County:	MARICOPA COUNTY	CID:	040051	
Current CRS Class = 6 [Printable Version]				
	TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF	5,070	3,108	250	1,712
PREMIUM	\$3,572,079	\$2,670,020	\$198,403	\$703,656
AVERAGE PREMIUM	\$705	\$859	\$794	\$411
CRS Class				
09	Per Policy \$35	\$54	\$44	\$0
	Per Community \$177,900	\$166,878	\$11,022	\$0
08	Per Policy \$68	\$107	\$44	\$0
	Per Community \$344,775	\$333,753	\$11,022	\$0
07	Per Policy \$101	\$161	\$44	\$0
	Per Community \$511,653	\$500,630	\$11,022	\$0
06	Per Policy \$136	\$215	\$88	\$0
	Per Community \$689,550	\$667,505	\$22,045	\$0
05	Per Policy \$169	\$268	\$88	\$0
	Per Community \$856,428	\$834,383	\$22,045	\$0
04	Per Policy \$202	\$322	\$88	\$0
	Per Community \$1,023,302	\$1,001,258	\$22,045	\$0
03	Per Policy \$235	\$376	\$88	\$0
	Per Community \$1,190,180	\$1,168,136	\$22,045	\$0
02	Per Policy \$268	\$430	\$88	\$0
	Per Community \$1,357,055	\$1,335,010	\$22,045	\$0
01	Per Policy \$301	\$483	\$88	\$0
	Per Community \$1,523,933	\$1,501,888	\$22,045	\$0

\* SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.  
 \*\* SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.  
 \*\*\* Preferred Risk Policies are not eligible for CRS Premium Discounts.

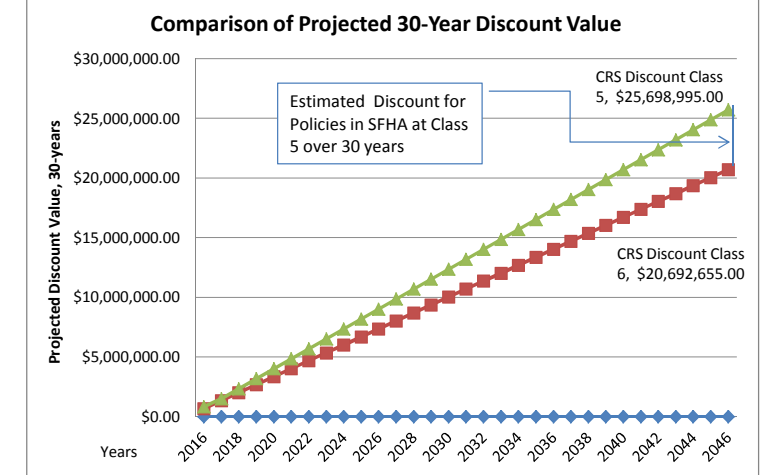
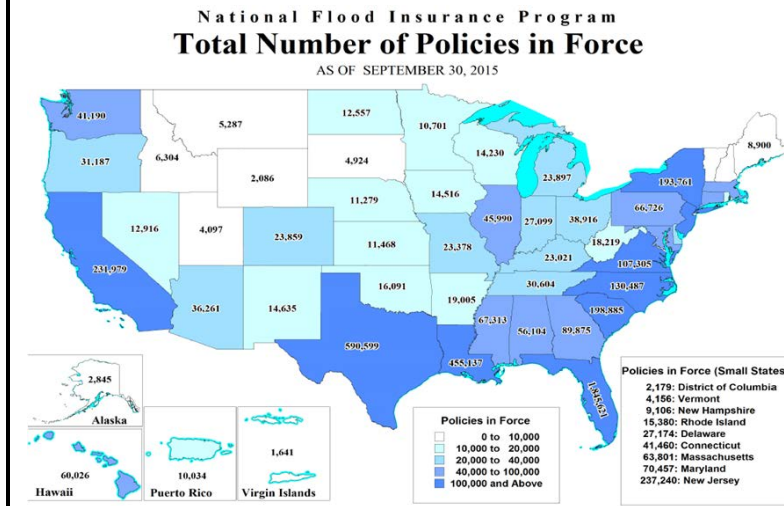


Table 3.

Community	NFIP Policies	NFIP Premium	CRS Discount
Camp Verde	273	\$210,093	\$32,655
Casa Grande	89	\$50,623	\$3,567
Chandler	289	\$184,419	\$17,269
Clarkdale	24	\$18,227	\$2,453
Cochise County	799	\$557,662	\$24,058
Cocoino County	878	\$477,967	\$27,522
Dewey-Humbolt	11	\$5,931	\$729
Flagstaff	451	\$410,911	\$59,082
Gilbert	336	\$229,347	\$15,882
Glendale	186	\$109,713	\$4,405
Holbrook	10	\$5,983	\$449
Marana	401	\$194,941	\$11,928
Maricopa County	2,288	\$1,152,438	\$336,004
Mohave County	1,464	\$632,727	\$123,999
Navajo County	145	\$106,499	\$8,774
Phoenix	4,589	\$3,213,704	\$626,488
Pima County	2,565	\$1,724,408	\$425,513
Prescott	420	\$316,456	\$45,645
Santa Cruz County	382	\$220,926	\$22,315
Scottsdale	8,624	\$3,932,869	\$840,613
Sedona	138	\$105,866	\$6,334
Show Low	46	\$45,260	\$4,211
Tempe	185	\$115,440	\$6,078
Tucson	2,045	\$1,690,166	\$345,561
Yavapai County	1018	\$605,788	\$117,532
CRS Communities	27,656	\$16,318,363	\$3,109,068
Non-CRS Communities	7,183	\$5,045,590	\$0
All Communities	34,839	\$21,363,953	\$3,109,068



The State of Arizona had 36,261 Total Policies in Force as of September 30, 2015 per the National Flood Insurance Program. The statewide policy growth percent change for Arizona between 10/2014 and 9/2015 was +3.5%. Source Report: PIFW0902

The total number of Policies in Force for the City of Phoenix fluctuates over time however the trend of increased policies has been observed historically. As of March 31, 2016 the City has reduced slightly to 5,029 Total Policies in Force.



## CRS Credit for a High Water Mark Initiative

*The National Flood Insurance Program's Community Rating System (CRS) provides a flood insurance premium discount for policy holders in communities that participate in CRS. The discount is based on an assessment of floodplain management activities implemented by the community to reduce flood losses, promote flood risk awareness and flood insurance, and protect natural floodplain functions.*

### CRS Outreach Projects and Programs for Public Information

Communities that participate in CRS earn credits toward flood insurance premium discounts through a variety of activities including public information programs and projects. One of these is Activity 330 (Outreach Projects), which provides credit points based on the type of project, the audience reached, and the message(s) conveyed. Other public information activities credit providing floodplain map information, disclosing a property's flood status to a potential buyer, putting references in a library, posting information on a website, and providing one-on-one technical advice.

A CRS Program for Public Information (PPI) is an ongoing public information effort designed to transmit the messages that the community determines are most important to its flood safety and the protection of its floodplains' natural functions. It is developed following a seven step process designed to assess the community's public information needs, determine messages and outcomes appropriate for different audiences, and implement the most effective measures. Working with partners is a key factor throughout the process, resulting in greater credit for more involvement of other organizations and agencies.

### High Water Marks and CRS Points

One activity that communities are implementing more often is providing information on past floods, such as posting high water marks in public places and maps and photographs of past floods on their websites. These high water mark initiatives and a CRS-credited PPI have a lot in common. To maximize CRS credit for such an initiative,

communities are encouraged to use high water marks as a way to generate greater flood risk awareness. For example, a ceremony to unveil flood level signs could be used to announce the formation of a PPI committee or the release of the PPI report.



### CRS High Water Mark Highlights

Four communities occupy the highest levels of the CRS.

- CRS points can be earned through high water mark posting and ongoing outreach
- The greater the supporting outreach, the greater the possible CRS points that can be earned
- CRS points are explained in the *CRS Coordinator's Manual*



To learn more about CRS, visit:

[www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-rating-system](http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-rating-system)

FEMA and seven other Federal agencies have recently been promoting such efforts in its “Know Your Line: Be Flood Aware” initiative. This initiative encourages communities to post signs showing historical high water levels and educating residents about the risk of flooding.

## Ongoing Outreach and CRS Points

It is important to note that both the High Water Mark initiative and the CRS call for more than just putting lines on a building or a sign. High water marks can be a catalyst for a master cooperative and coordinated public information program. Such an approach can receive CRS credit through a PPI, also credited under Activity 330 in the 2013 *CRS Coordinator’s Manual*. Reviewing the criteria for both the High Water Mark Initiative and PPI is recommended, so communities can benefit from both programs via the same local activity. Credits are based on three factors:

- What and how many messages are conveyed;
- What type of projects they are (e.g., informational materials that people pick up, activities that reach out to people, or projects targeted to a specific audience); and
- How often they are delivered. Outreach Projects in CRS must be delivered at least once each year.

The 2013 *CRS Manual* provides more detailed information about the priority topics areas to be communicated for CRS credits, with sample messages for each.

## Promoting Action

Community outreach is one of many things communities can do to promote flood risk awareness. More than awareness, communities need to promote action. By examining ways communities can bolster mitigation actions, a community may discover how CRS points can be earned. In fact, there are activities communities can do concerning everything from floodplain mapping, flood damage reduction planning, or enacting new flood warning and response actions that can make communities more resilient...and safer!

### For More Information

For more information on CRS credit for public information activities, contact your ISO/CRS Specialist. They are listed at <http://crsresources.org/100-2>.

More information on “Know Your Line: Be Flood Aware” can be found at [www.fema.gov/knowyourline](http://www.fema.gov/knowyourline).

### Contact Information for the High Water Mark Campaign

**Vince Brown:** [vincent.brown@fema.dhs.gov](mailto:vincent.brown@fema.dhs.gov)

**Website:** [www.fema.gov/knowyourline](http://www.fema.gov/knowyourline)



COMMUNITY  
RATING  
SYSTEM

VERIFICATION  
REPORT

---

City of Phoenix, AZ

Verified Class 6

NFIP Number: 040051

Cycle

Date of Verification Visit: April 2, 2012

This Verification Report is provided to explain the recommendations of Insurance Services Office, Inc. (ISO) to DHS/FEMA concerning credits under the Community Rating System (CRS) for the above named community.

A total of 2049 credit points are verified which results in a recommendation that the community remain classified as a CRS Class 6. The community has met the Class 6 prerequisite with a Building Code Effectiveness Grading Schedule (BCEGS) Classification of 2/2. The following is a summary of our findings with the total CRS credit points for each activity listed in parenthesis:

**Activity 310 – Elevation Certificates:** The Street Transportation Department – Floodplain Management maintains elevation certificates for new and substantially improved buildings. Copies of elevation certificates are made available upon request. Elevation Certificates are also kept for post-FIRM buildings. (70 points)

**Activity 320 – Map Information Service:** Credit is provided for furnishing inquirers with flood zone information from the community's latest Flood Insurance Rate Map (FIRM), publicizing the service annually and maintaining records. (140 points)

**Activity 330 – Outreach Projects:** A community brochure is mailed to all properties in the community on an annual basis. The community also provides flood information to some floodplain residents. (16 points)

**Activity 340 – Hazard Disclosure:** Credit is provided for community regulations requiring disclosure of flood hazards. (5 points)

**Activity 350 – Flood Protection Information:** Documents relating to floodplain management are available in the reference section of the Phoenix Public Library. Credit is also provided for floodplain information displayed on the community's website. (20 points)

**Activity 360 – Flood Protection Assistance:** The community provides technical advice and assistance to interested property owners and annually publicizes the service. (64 points)



**Activity 410 – Additional Flood Data:** Credit is provided for conducting and adopting flood studies for areas not included on the FIRMs and that exceed minimum mapping standards. (85 points)

**Activity 420 – Open Space Preservation:** Credit is provided for preserving 10,273 acres in the Special Flood Hazard Area (SFHA) as open space. (345 points)

**Activity 430 – Higher Regulatory Standards:** Credit is provided for enforcing regulations that require freeboard for new and substantial improvement construction, foundation protection, natural and beneficial functions, and state mandated regulatory standards. Credit is also provided for a BCEGS Classification of 2/2, adoption of the International Building Code series, and for staff education and certification as a floodplain manager. (314 points)

**Activity 440 – Flood Data Maintenance:** Credit is provided for maintaining and using digitized maps in the day to day management of the floodplain. Credit is also provided for maintaining copies of all previous FIRMs and Flood Insurance Study Reports. (118 points)

**Activity 450 – Stormwater Management:** The community enforces regulations for stormwater management, soil and erosion control, and water quality. Credit is also provided for stormwater management master planning. (201 points)

**Activity 510 – Floodplain Management Planning:** Based on the updates made to the NFIP Report of Repetitive Losses as of January 31, 2011, the City of Phoenix has 22 repetitive loss properties and is a Category C community for CRS purposes. All requirements for the 2012 cycle have been met. Credit is provided for the adoption and implementation of the Floodplain Management Plan. Since the City of Phoenix is a Category C community with an approved Floodplain Management Plan. **A progress report must be submitted on an annual basis.** (107 points)

**Activity 520 – Acquisition and Relocation:** Credit is provided for acquiring and relocating buildings from the community's flood hazard area. (100 points)

**Activity 540 – Drainage System Maintenance:** All of the community's drainage system is inspected regularly throughout the year and maintenance is performed as needed by Phoenix Public Works Department. Records are being maintained for both inspections and required maintenance. Credit is also provided for an ongoing Capital Improvements Program. (300 points)

**Activity 610 – Flood Warning Program:** Credit is provided for a program that provides timely identification of impending flood threats, disseminates warnings to appropriate floodplain residents, and coordinates flood response activities. (95 points)

**Activity 630 – Dam Safety:** All Arizona communities currently receive CRS credit for the state's dam safety program. (69 points)

Attached is the Community Calculations Worksheet that lists the verified credit points for the Community Rating System.

**CEO Name / Address:**

David Cavazos  
City Manager  
200 West Washington Street, 12<sup>th</sup> floor  
Phoenix, Arizona 85003

**CRS Coordinator Name / Address:**

Hasan Mustaq, Ph. D., P.E.  
Floodplain Manager  
200 West Washington Street, 5<sup>th</sup> floor  
Phoenix, Arizona 85003  
(602) 262-4026

Date Report Prepared: January 14, 2013

**720 COMMUNITY CREDIT CALCULATIONS (Cycle):****CALCULATION SECTION :**

Verified Activity Calculations:	Credit
c310      70	70
c320      140	140
c330      16	16
c340      5	5
c350      20	20
c360      64	64
c410      70      x CGA      1.22      =	85
c420      283      x CGA      1.22      =	345
c430      257      x CGA      1.22      =	314
c440      97      x CGA      1.22      =	118
c450      165      x CGA      1.22      =	201
c510      107	107
c520      100	100
c530	
c540      300	300
c610      95	95
c620	
c630      69	69

**722 Community Classification Calculation:**

cT = total of above

cT = 2049

Community Classification (from Appendix C):

Class = 6**CEO Name/Address:**

David Cavazos  
City Manager  
200 West Washington Street, 12th floor  
Phoenix, Arizona 85003

**CRS Coordinator Name/Address:**

Hasan Mustaq, Ph. D., P.E.  
Floodplain Manager  
200 West Washington Street, 5th floor  
Phoenix, Arizona 85003  
(602) 262-4026

Date Report Prepared: January 14, 2013

Community: Phoenix, AZ (040051)  
**Maricopa County MJHMP**

**510 FLOODPLAIN MANAGEMENT PLANNING**

**511.a Floodplain Management Planning (FMP)**

**Credit Points:** Enter the section or page number in the plan where each credited item can be found. Add notes on AW-510-4.

CRS Step	Section/Page	Item Score	Step Total
1. Organize to prepare the plan. a. Supervision or direction of a professional planner (2) b. Planning committee of department staff (6) c. Process formally created by the community's governing board (2)	No Documentation to support this Credit		6
	OK, Section 3.4.1, Pages 10 - 13 & Appd. B	6	
	No Documentation to support this Credit		
2. Involve the public. a. Planning process conducted through a planning committee (40) b. Public meetings held at the beginning of the planning process (15) c. Public meeting held on draft plan (15) d. Questionnaires ask the public for information (5) e. Recommendations are solicited from advisory groups, etc. (5) f. Other public information activities to encourage input (5)	Partail Credit, Section 3.4.1, Pgs. 10 - 13	7	24
	Partial Credit, Section 3.5 and Appendix C	6	
	Partial Credit, Section 3.5 and Appendix C	6	
	No Documentation to support this Credit		
	No Documentation to support this Credit		
	OK, Section 3.5.2 and Appendix C	5	
3. Coordinate with other agencies. a. Review of existing studies and plans (required) (3) b. Invited neighboring communities and other agencies (required) (1) c. Contacted communities and NFIP and EM agencies (4) d. NWS, ARC and others are asked how they can help community (4) e. Meetings are held with agencies on mitigation strategies (10) f. Draft action plan sent to agencies for comments (3)	OK, Pages 278 and 279	3	4
	OK, Section 3.4.1, Pages 10 - 13 & Appd. B	1	
	No Documentation to support this Credit		
	No Documentation to support this Credit		
	No Documentation to support this Credit		
	No Documentation to support this Credit		
4. Assess the hazard. a. Plan includes an assessment of the flood hazard (REQUIRED) with: (1) A map of known flood hazards (5) (2) A description of known flood hazard (5) (3) A discussion of past floods (5) b. The plan describes other natural hazards (REQUIRED FOR DMA) (5)			20
	OK, Pages 201 through 203	5	
	OK, Pages 191 through 199	5	
	OK, Pages 191 through 193	5	
	OK, Section V - Various Pages	5	





Community: Phoenix, AZ (040051)

CRS Step	Section/Page	Score	Total
9. Adopt the plan. (2)		4/7/2010	2
10. Implement, evaluate and revise.			
a. Procedures to monitor and recommend revisions (required) (2)	OK, Section Section 7.1, page 405	2	
b. Same planning committee or successor committee that qualifies under Section 511.a.2 (a) does the evaluation (13)	Partail Credit, Section 7.2, Page 405	2	4

Add the totals for steps 1 through 10 above: OK SH (AMEC) 10/31/12      FMP= 107

**514 Credit Documentation:**

- a. FMP: The completed CRS activity worksheet (AW-510-1–510-3) or the mitigation plan review crosswalk.
- b. A copy of the floodplain management plan, hazard mitigation plan, repetitive loss area analysis, and/or Habitat Conservation P
- c. Documentation showing how the public was involved in preparing or reviewing the plan, including a copy of the notice(s) advisi residents about the public meeting(s) held pursuant to steps 2(b) and (c), and a record of the meeting(s).
- d. Documentation showing that the plan was adopted by the community’s governing board.

**The following will be needed at the annual recertification:**

- f. An annual report on evaluating progress toward implementing the action plan’s objectives.

**The following will be needed at least every five years:**

- g. An update to the floodplain management or hazard mitigation plan.

## Fountain, Mark

---

**From:** Redente, Kerry <KRedente@verisk.com>  
**Sent:** Friday, November 06, 2015 10:22 AM  
**To:** Fountain, Mark  
**Subject:** RE: CRS Recertification

Yes, the next cycle verification visit will be in 2017.

**Kerry Redente, CFM**  
ISO/CRS Specialist  
ISO Community Hazard Mitigation  
c: 719-207-0121  
[kredente@iso.com](mailto:kredente@iso.com)  
[www.verisk.com/insurance](http://www.verisk.com/insurance)

Verisk Insurance Solutions ISO AIR Worldwide Xactware

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**From:** Fountain, Mark [<mailto:Mark.Fountain@hdrinc.com>]  
**Sent:** Friday, November 06, 2015 9:39 AM  
**To:** Redente, Kerry  
**Subject:** FW: CRS Recertification  
**Importance:** High

Kerry,

Can you provide me a copy of the information you forwarded to Tina Jensen along with a copy of the 510 score sheet from the City of Phoenix most recent review?

Any information you can provide on the history of their CRS Scores is of value

Lastly, I would like to confirm their timeline for next verification visit (5-YR review) will be in 2017. Is that correct?

Thank you in advance,  
Mark

**Mark Fountain**, P.E., CFM, ENV SP  
*Water Resources Project Manager*

**D** 602-522-7762 **M** 602-309-9848

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

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**From:** Tina Jensen [<mailto:kristina.jensen@phoenix.gov>]  
**Sent:** Monday, November 02, 2015 12:58 PM  
**To:** Redente, Kerry  
**Cc:** Fountain, Mark  
**Subject:** RE: CRS Recertification

Kerry,

We are updating our Floodplain Management Plan. Does CRS keep track of our rating (Class 10 to 6) for all the years that the City of Phoenix has been a participant? If they do, can you tell me which years we advanced to become a Class 6? Any information is extremely helpful.

Thank you,  
Kristina (Tina) Jensen, EIT, CFM  
Civil Engineer II

City of Phoenix Street Transportation Department  
Floodplain Management Section  
200 W. Washington St., 5<sup>th</sup> Floor  
Phoenix, AZ 85003  
(602) 261-8417  
(602) 262-7322 (f)

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**From:** Redente, Kerry [<mailto:KRedente@verisk.com>]  
**Sent:** Monday, October 05, 2015 6:23 PM  
**To:** HASAN MUSHTAQ  
**Cc:** Myesha Harris; Tina Jensen  
**Subject:** CRS Recertification



**INSURANCE SERVICES OFFICE, INC.**

224 W. Hwy 50 #315, Salida, CO 81201 Phone/Fax: (719) 207-0121  
[kredente@iso.com](mailto:kredente@iso.com)

October 5, 2015

Dr. Hasan Mushtaq, Ph. D, P.E.  
Floodplain Manager  
200 West Washington St., 5<sup>th</sup> Fl.  
Phoenix, AZ 85003

Dear Dr. Mushtaq:

This is to acknowledge receipt of your 2015 Community Rating System (CRS) Recertification for City of Phoenix has been reviewed and everything appears to be in order. This completes the Recertification process for 2015 and your community remains in good standing in the CRS for the next year.

Thank you for your cooperation in completing annual CRS Recertification form. Please don't hesitate to contact me when I can be of future assistance.

Yours very truly,

*Kerry L. Redente*

Kerry L. Redente, CFM  
ISO/CRS Specialist

Cc: Myesha Harris, City of Phoenix  
Tina Jensen, City of Phoenix





3200 E. Camelback Rd, Suite 350  
Phoenix, AZ 85018  
602.522.7700

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