EXECUTIVE SUMMARY

Across the United States, natural and human-caused disasters have led to increasing levels of death, injury, property damage, and interruption of business and government services. The toll on families and individuals can be immense and damaged businesses cannot contribute to the economy. The time, money and effort to respond to and recover from these emergencies or disasters divert public resources and attention from other important programs and problems. With 51 federal or state declarations, 281 other events, and a combined total of 332 disaster events recorded, the 28 jurisdictions contained within Maricopa County, Arizona and participating in this planning effort, recognize the consequences of disasters and the need to reduce the impacts of natural and human-caused hazards. The County and jurisdictions also know that with careful selection, mitigation actions in the form of projects and programs can become long-term, cost effective means for reducing the impact of natural and human-caused hazards.

The elected and appointed officials of Maricopa County and the 26 other participating jurisdictions demonstrated their commitment to hazard mitigation in 2003-2004 by preparing the first Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2004 Plan). The 2004 Plan was comprised of a multi-jurisdictional, county-wide umbrella plan and 27 jurisdiction specific annexes that addressed specific planning elements for each jurisdiction. The 2004 Plan was approved by FEMA on November 29, 2004 and requires a full, FEMA approved, update prior to the November 29, 2009 expiration.

In response, the Maricopa County Department of Emergency Management (MCDEM) secured a federal planning grant and hired JE Fuller/ Hydrology & Geomorphology, Inc. to assist the County and participating jurisdictions with the update process. MCDEM reconvened a multi-jurisdictional planning team (MJPT) comprised of veteran and first-time representatives from each participating jurisdiction, various county departments and organizations, Arizona Division of Emergency Management, National Weather Service, Arizona Geologic Survey, and Arizona Public Service. The MJPT met monthly through July 2009 in a collaborative effort to review, evaluate, and update the 2004 Plan into a single, consolidated Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (Plan). The Plan also contains a Tribal Annex for each of the two participating Indian Tribes, that address Tribal specific planning elements. The Plan will continue to guide the County and participating jurisdictions toward greater disaster resistance in full harmony with the character and needs of the community and region.

The Plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act or the Act), 42 U.S. C. 5165, enacted under Sec. 104 the Disaster Mitigation Act of 2000, (DMA 2000) Public Law 106-390 of October 30, 2000, as implemented at CFR 201.6 and 201.7 dated October, 2007. The Plan identifies hazard mitigation measures intended to eliminate or reduce the effects of future disasters throughout the County, and was developed in a joint and cooperative venture by members of the Maricopa County MJPT.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF MAPS

LIST OF APPENDICES

ANNEX DOCUMENTS (under separate cover)

SUPPLEMENTAL DOCUMENTS (under separate cover)

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 1: JURISDICTIONAL ADOPTION AND FEMA APPROVAL

Requirement §201.6(c)(5): *[The local hazard mitigation plan shall include…] Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted*.

Requirement §201.6(d)(3): *A local jurisdiction must review and revise its plan to reflect changes in development ,progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five (5) years in order to continue to be eligible for mitigation project grant funding.*

1.1 DMA 2000 Requirements

1.1.1 General Requirements

The Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (Plan) has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act), 42 U.S.C. 5165, as amended by Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000) Public Law 106-390 enacted October 30, 2000. The regulations governing the mitigation planning requirements for local mitigation plans are published under the Code of Federal Regulations (CFR) Title 44, Section 201.6 (44 CFR §201.6). Additionally, a DMA 2000 compliant plan that addresses flooding will also meet the minimum planning requirements for the Flood Mitigation Assistance program as provided for under 44 CFR §78.

DMA 2000 provides requirements for States, Tribes, and local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning[1]. The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

Under 44 CFR §201.6, local governments must have a Federal Emergency Management Agency (FEMA)-approved local mitigation plan in order to apply for and/or receive project grants under the following hazard mitigation assistance programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

FEMA, at its discretion, may also require a local mitigation plan under the Repetitive Flood Claims (RFC) program as well.

1.1.2 Update Requirements

DMA 2000 requires that existing plans be updated every five years, with each plan cycle requiring a complete review, revision, and re-approval of the plan at both the state and FEMA level.. Maricopa County, the incorporated communities of Avondale, Buckeye, Carefree, Cave Creek, Chandler, El Mirage, Fountain Hills, Gila Bend, Gilbert, Glendale, Goodyear, Guadalupe, Litchfield Park, Mesa, Paradise Valley, Peoria, Phoenix, Queen Creek, Scottsdale, Surprise, Tempe, Tolleson, Wickenburg, and Youngtown, and the Fort McDowell Yavapai Nation and Salt River Pima-Maricopa Indian Community all currently have FEMA approved hazard mitigation plans. The Plan is the result of an update process performed by the Maricopa County jurisdictions to both update and consolidate individual community plans developed in late 2004 and early 2005.

[1] FEMA, 2008, *Local Multi-Hazard Mitigation Planning Guidance*

1.2 Official Record of Adoption

Promulgation of the Plan is accomplished through formal adoption of official resolutions by the governing body for each participating jurisdiction in accordance with the authority and powers granted to those jurisdictions by the State of Arizona. Participating jurisdictions in the Plan include:

Counties	Tribes	Cities	Towns	Other
• Maricopa	• Fort McDowell Yavapai Nation • Salt River Pima-Maricopa Indian Community	• Avondale • Chandler • El Mirage • Glendale • Goodyear • Litchfield Park • Mesa • Peoria • Phoenix • Scottsdale • Surprise • Tempe • Tolleson	• Buckeye • Carefree • Cave Creek • Fountain Hills • Gila Bend • Gilbert • Guadalupe • Paradise Valley • Queen Creek • Wickenburg • Youngtown	• Salt River Project

Each jurisdiction will keep a copy of their official resolution of adoption located in Appendix A of their copy of the Plan.

1.3 FEMA Approval Letter

The Plan was submitted to the Arizona Division of Emergency Management (ADEM), the authorized state agency, and FEMA for review and approval. FEMA's approval letter is provided on the following page.

[Insert FEMA Approval Letter Here]

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 2: INTRODUCTION

2.1 Plan History

In 2003 and 2004, Maricopa County, two Indian Tribes, and all incorporated cities and towns in Maricopa County, participated in a multi-jurisdictional mitigation planning effort that resulted in the development of a multi-jurisdictional hazard mitigation plan with separate stand-alone annexes that covered each participating jurisdiction. The following is a list of those annexes:

- *Maricopa County Unincorporated Area Hazard Mitigation Plan*
- *City of Avondale Hazard Mitigation Plan*
- *Town of Buckeye Hazard Mitigation Plan*
- *Town of Carefree Hazard Mitigation Plan*
- *Town of Cave Creek Hazard Mitigation Plan*
- *City of Chandler Hazard Mitigation Plan*
- *City of El Mirage Hazard Mitigation Plan*
- *Fort McDowell Yavapai Nation Hazard Mitigation Plan*
- *Town of Fountain Hills Hazard Mitigation Plan*
- *Town of Gila Bend Hazard Mitigation Plan*
- *Town of Gilbert Hazard Mitigation Plan*
- *City of Glendale Hazard Mitigation Plan*
- *City of Goodyear Hazard Mitigation Plan*
- *Town of Guadalupe Hazard Mitigation Plan*
- *City of Litchfield Park Hazard Mitigation Plan*
- *City of Mesa Hazard Mitigation Plan*
- *Town of Paradise Valley Hazard Mitigation Plan*
- *City of Peoria Hazard Mitigation Plan*
- *City of Phoenix Hazard Mitigation Plan*
- *Town of Queen Creek Hazard Mitigation Plan*
- *Salt River Pima-Maricopa Indian Community Hazard Mitigation Plan*
- *City of Scottsdale Hazard Mitigation Plan*
- *City of Surprise Hazard Mitigation Plan*
- *City of Tempe Hazard Mitigation Plan*
- *City of Tolleson Hazard Mitigation Plan*
- *Town of Wickenburg Hazard Mitigation Plan*
- *Town of Youngtown Hazard Mitigation Plan*

Collectively and individually, these plans will be referred to herein as the 2004 Plan(s). The 2004 Plans received official FEMA approval on November 29, 2004. Additional planning was performed with the Fort McDowell Yavapai Nation to upgrade their 2004 Plan to a "state level" plan, which was approved by FEMA and retains the November 29,2004 approval date. The 2004 Plans are nearing the end of the 5-year planning cycle and are set to expire November 29, 2009.

2.2 Plan Purpose and Authority

The purpose of the Plan is to identify natural hazards that impact the various jurisdictions located within Maricopa County, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The Plan is prepared in compliance with DMA 2000 requirements and represents a multi-jurisdictional update of the 2004 Plans listed in Section 2.1.

Maricopa County and all of the Cities and Towns are political subdivisions of the State of Arizona and are organized under Title 9 (cities/towns) and Title 11 of the Arizona Revised Statutes (ARS). The Salt River Project Agricultural Improvement and Power District is also a political subdivision of the State and is organized under Title 48 of the ARS. The Fort McDowell Yavapai Nation is a federally recognized sovereign nation that

was created by Executive Order on September 15, 1903 and is governed by a Tribal Council that is elected by tribal members pursuant to the Tribe's Constitution. The Salt River Pima-Maricopa Indian Community was established by Executive Order on June 14, 1879 and is governed by community council comprised of a president, vice president and tribal council. As such, each of these entities are empowered to formally plan and adopt the Plan on behalf of their respective jurisdictions.

Funding for the development of the Plan was provided through a PDM planning grant obtained by MCDEM through the State of Arizona from FEMA. JE Fuller/ Hydrology & Geomorphology (JEF) was retained by MCDEM to provide consulting services in guiding the update planning process and Plan development.

2.3 General Plan Description

The Plan is generally arranged and formatted to be consistent with the 2007 State of Arizona Multi-Hazard Mitigation Plan (State Plan) and is comprised of the following major sections:

Planning Process – this section summarizes the planning process used to update the Plan, describes the assembly of the planning team and meetings conducted, and summarizes the public involvement efforts.

Community Description – this section provides an overall description of the participating jurisdictions and the County as a whole.

Risk Assessment – this section summarizes the identification and profiling of natural hazards that impact the County and the vulnerability assessment for each hazard that considers exposure/loss estimations and development trend analyses.

Mitigation Strategy – this section presents a capability assessment for each participating jurisdiction and summarizes the Plan mitigation goals, objectives, actions/projects, and strategy for implementation of those actions/projects.

Plan Maintenance Strategy – this section outlines the proposed strategy for evaluating and monitoring the Plan, updating the Plan in the next 5 years, incorporating plan elements into existing planning mechanisms, and continued public involvement.

Plan Tools – this section includes a list Plan acronyms and a glossary of definitions.

SECTION 3: PLANNING PROCESS

> ***§201.6 (b):*** *Planning process. An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*
> *(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
> *(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
> *(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*
>
> ***§201.6(c)(1)****: [The plan shall include…] (1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

This section includes the delineation of various DMA 2000 regulatory requirements, as well as the identification of key stakeholders and planning team members within Maricopa County. In addition, the necessary public involvement meetings and actions that were applied to this process are also detailed.

3.1 Update Process Description

MCDEM applied for and received a PDM planning grant to fund a multi-jurisdictional effort to review, update and consolidate the 2004 Plans. MCDEM solicited letters of support from all 2004 Plan towns, cities, and Tribes to aide in the preparation of the PDM planning grant application. Once the grant was received, the County then selected JE Fuller/ Hydrology & Geomorphology, Inc. (JEF) to work with the participating jurisdictions and guide the Plan update process. An initial project kick-off meeting between JEF and MCDEM was convened December 4, 2008 to line out the meeting dates and agendas for the next year's planning efforts, and to discuss the new plan format and other administrative tasks. Initial data collection contacts were also established. Seven planning team meetings, two make-up meetings, two tribal planning meetings, and several other individual community outreach meetings were conducted over the period of December 2008 to September 2009, along with all the work required to collect, process, and document updated data and make changes to the plan. Details regarding updated key contact information and promulgation authorities, the planning team selection, participation, and activities, and public involvement are discussed in the following sections.

3.2 Previous Planning Process Assessment

The first task of preparation for the Plan update, was to evaluate the process used to develop the 2004 Plan. This was initially discussed by MCDEM and JEF in the December 4, 2008 kick-off meeting with the goal of establishing the framework for the planning effort ahead. The 2004 Plan process employed a multi-jurisdictional approach with representation from each participating jurisdiction in larger multi-jurisdictional planning team meetings wherein concepts would be presented and discussed, and homework would be assigned for completion by each jurisdiction. MCDEM and JEF agreed to continue with the same approach due to both limited time and budget. Another conclusion of the 2004 Plan process assessment was that the new planning process and approach would result in a true multi-jurisdictional plan (one document for all participating jurisdictions). This required a slightly different strategy in gathering and compiling the Plan information.

The Plan update process was presented and discussed at the first multi-jurisdictional planning team meeting and was contrasted to the 2004 Plan approach. Over two-thirds of the planning team members were new to the hazard mitigation planning process altogether, so there was very little institutional knowledge of the prior process.

3.3 Primary Point of Contact

Table 3-1 summarizes the primary points of contact (PPOC) identified for each participating jurisdiction.

Table 3-1: List of jurisdictional primary points of contact

Jurisdiction	Name	Department / Position	Address	Phone	Email
Avondale	Art Snapp	Fire and Rescue Department – Division Chief	1825 N. 107th Ave. Avondale, AZ 85323	623.333.6000	asnapp@avondale.org
Buckeye	Bob Costello	Fire Department –Chief / Emergency Management Coordinator	530 East Monroe Avenue Buckeye, AZ 85326	623.349.6700	bcostello@buckeyeaz.gov
Carefree	Pat Farmer	Marshal's Office – Town Marshal	8 Sundial Circle Box 740 Carefree, AZ 85377	480.488.3686	pat@carefree.org
Cave Creek	Adam Stein	Marshal's Office – Town Marshal / Emergency Services Coordinator	37622 N. Cave Creek Rd. Cave Creek, AZ 85331	480.488.6636	astein@cavecreek.org
Chandler	Marc Walker	Fire Department – Assistant Fire Chief	221 E. Boston St. Chandler, AZ 85225	480.782.2135	marc.walker@chandleraz.gov
El Mirage	Howard Munding	Fire Department – Assistant Fire Chief	13513 N El Mirage Rd El Mirage, Arizona 85335	623.876.4248	hmunding@cityofelmirage.org
Fountain Hills	Randy Roberts	Fire Department – Assistant Fire Chief	16705 E. Avenue of the Fountains Fountain Hills, AZ 85268	480.816.5114	rroberts@fh.az.gov
Fort McDowell Yavapai Nation	Tom Christmas	Fire Department – Fire Chief	P.O. Box 17779 Fountain Hills, AZ 85269	480.789.7521	tchristmas@ftmcdowell.org
Gila Bend	Harry Parsi	Public Works – Town Engineer	644 W. Pima St. P.O. Box A Gila Bend, AZ 85337	928.683.2255	hparsi@gilabendaz.org
Gilbert	Sheri Gibbons	Fire Department – Emergency Manager	85 E. Civic Center Dr. Gilbert, AZ 85296	480.503.6333	sherig@ci.gilbert.az.us
Glendale	Debra Sheff	Office of Emergency Management – Operations & Training Officer	11550 W. Glendale Ave. Glendale, AZ 85307	623.872.5008	dsheff@glendaleaz.com
Goodyear	Othell Newbill	Emergency Management – Emergency Management Coordinator	175 N. 145th Ave. Goodyear, AZ 85338	623.882.7221	onewbill@goodyearaz.gov
Guadalupe	Gino Turrubiartes	Community Development – Director	9241 S. Avenida del Yaqui Guadalupe, AZ 85283	480.555.5399	gturrubiartes@guadalupeaz.org
Litchfield Park	Sonny Culbreth	Assistant City Manager, Community and Recreation Services Director, Emergency Management Coordinator	214 W. Wigwam Blvd. Litchfield Park, AZ 85340	623.935.9040	sculbreth@litchfield-park.org
Maricopa County	Cristina Herrera	MCDEM – Emergency Services Planner	2035 N. 52nd St. Phoenix, AZ 85008	602.273.1411	cristinaherrera@mail.maricopa.gov
Mesa	Gil Damiani	Emergency Management – Emergency Management Coordinator	40 N. Center St., Ste. 115 Mesa, AZ 85201	480.644.2631	gil.damiani@mesaaz.gov
Paradise Valley	Robert Lee	Building Safety – Building Official	6401 E. Lincoln Dr. Paradise Valley, AZ 85253	480.348.3631	rlee@paradisevalleyaz.gov

Table 3-1: List of jurisdictional primary points of contact

Jurisdiction	Name	Department / Position	Address	Phone	Email
Peoria	Glenn Jones	Emergency Management – Emergency Management Coordinator	8351 W. Cinnabar Ave. Peoria, AZ 85345	623.777.5202	glenn.jones@peoriaaz.gov
Phoenix	Mike DeBenedetto	Office of Emergency Management – Emergency Management Coordinator	200 W. Washington St., 12th Floor Phoenix, AZ 85003	602.534.0642	michael.debenedetto@phoenix.gov
Queen Creek	Joe LaFortune	Public Safety – Division Manager	22350 S. Ellsworth Rd. Queen Creek, AZ 85242	480.358.3502	joe.lafortune@queencreek.org
Salt River Pima-Maricopa Indian Community	Cliff Puckett	Emergency Management – Emergency Manager	10005 E. Osborn Rd. Scottsdale, AZ 85256	480.850.4408	cliff.puckett@srpmic-nsn.gov
Salt River Project	Patrick O'Toole	Business Continuity and Emergency Management – Principal Planning Analyst	P.O. Box 52025, MS PAB342 Phoenix, AZ 85072	602.236.5294	patrick.otoole@srpnet.com
Scottsdale	Thomas Shannon	Emergency Management – Emergency Management Officer	8401 E. Indian School Rd. Scottsdale, AZ 85251	480.312.1821	tshannon@scottsdaleaz.gov
Surprise	Kevin Pool	Fire Department – Assistant Chief	14250 W. Statler Plaza, Ste. 101 Surprise, AZ 85374	623.222.5022	kevin.pool@surpriseaz.com
Tempe	Tom Abbott	Fire Department – Deputy Chief	1400 East Apache Boulevard P. O. Box 5002 Tempe, AZ 85280	480.858.7219	tom_abbott@tempe.gov
Tolleson	Bob Hansen	Fire Department – Division Chief	9169 W. Monroe St. Tolleson, AZ 85353	623.936.8500	bhansen@tollesonaz.org
Wickenburg	Ronnie Miller	Police Department – Emergency Manager	155 N. Tegner, Ste. C Wickenburg, AZ 85390	928.684.3152	jeepride97@yahoo.com
Youngtown	Mark Hannah	Public Works – Director	12030 Clubhouse Sq. Youngtown, AZ 85363	623.933.8286	mhannah@youngtownaz.org

3.4 Planning Teams

Two levels of planning teams were organized for this Plan update. The first was a Multi-Jurisdictional Planning Team (MJPT) that was comprised of one or more representatives from each participating jurisdiction. The second level planning team was the Local Planning Team (LPT).

The role of the MJPT was to work with the planning consultant to perform the coordination, research, and planning element activities required to update the 2004 Plans. Attendance by each participating jurisdiction was required for every MJPT meeting as the meetings were structured to progress through the plan update process. Steps and procedures for updating the 2004 Plans were presented and discussed at each MJPT meeting, and homework assignments were normally given. Each meeting built on information discussed and homework assigned at the previous meeting. The MJPT representatives also had the responsibility of liaison to the LPT, and were tasked with:

- Conveying information and homework received at the MJPT meetings to the LPT
- Ensuring that all requested homework was completed fully and returned on a timely basis.
- Arranging for review and official adoption of the Plan.

The function and role of the LPT was to:

- Provide support and data
- Assist the MJPT representative in completing each homework assignment
- Make planning decisions regarding plan update components
- Review the Plan draft documents

3.4.1 Planning Team Assembly

At the beginning of the update planning process, MCDEM organized and identified members for the MJPT by initiating contact with all 24 incorporated towns and cities and the two Tribes that had participated in the 2004 Plan planning effort. In December 2008, MCDEM distributed a kick-off letter with an attached calendar of dates to the identified MJPT members announcing the start of the planning effort. The letter template and meeting schedule are provided in Appendix B. The participating members of the MJPT are summarized in Table 3-2. Returning planning team members are highlighted.

Table 3-2: Summary of multi-jurisdictional planning team participants

Name	Jurisdiction / Organization	Department / Position	Planning Team Role
Tom Abbott	Tempe	Fire Department – Deputy Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Jim Begansky	Maricopa County	MCDEM – Emergency Services Planner	MJPT participant Provided planning assistance to cities and towns
Brian Berndt	Avondale	Development Services – Director	MJPT participant Support in planning elements related to development
Meredith Bond	Maricopa County	MCDEM – Office Assistant	MJPT participant Administrative support
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department – Fire Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Shannon Cluff	Mesa	Fire Department – Deputy Fire Chief	MJPT participant Proxy attendance for PPOC
Ed Copp	Salt River Project	Business Continuity and Emergency Management – Manager	MJPT participant Managerial support for planning effort
Bob Costello	Buckeye	Fire Department – Chief / Emergency Management Coordinator	Jurisdictional PPOC and lead coordinator for LPT

Table 3-2: Summary of multi-jurisdictional planning team participants

Name	Jurisdiction / Organization	Department / Position	Planning Team Role
Sonny Culbreth	Litchfield Park	Assistant City Manager, Community and Recreation Services Director, Emergency Management Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Gil Damiani	Mesa	Emergency Management – Emergency Management Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Mike DeBenedetto	Phoenix	Office of Emergency Management – Emergency Management Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Karl Emberg	Paradise Valley	Police Department – Lieutenant	MJPT participant Provided context for past planning efforts and assisted new PPOC.
Pat Farmer	Carefree	Marshal's Office – Town Marshal	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Glen Floe	Maricopa County	MCDEM – Emergency Services Planner	MJPT participant Provided planning assistance to cities and towns
Devlin Fung	Glendale	Information Technology / GIS – Senior GIS Analyst	MJPT participant Provide GIS support and data
Mike Fusco	Peoria	Safety Mitigation Division – Safety Officer	MJPT participant Proxy attendance for PPOC
Michael Gease	Maricopa County	FCDMC – Floodplain Management Services – Floodplain Planning Specialist	MJPT participant Resource for County-wide floodplain management data and practices NFIP expert
Sheri Gibbons	Gilbert	Fire Department – Emergency Manager	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Rob Gunter	Glendale	Office of Emergency Management – Homeland Security Director	MJPT participant Managerial support for planning effort.
Mark Hannah	Youngtown	Public Works – Director	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Bob Hansen	Tolleson	Fire Department – Division Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Jennifer Henry	Maricopa County	MCDEM – Emergency Services Planner	MJPT participant Provided planning assistance to cities and towns
Cristina Herrera	Maricopa County	MCDEM – Emergency Services Planner	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Matt Holm	Maricopa County	Planning and Development – Principal Planner	MJPT participant Resource for planning and development issues Department representative
Dewey Horton	Buckeye	Fire Department – Assistant Chief / Emergency Management Coordinator	MJPT representative, jurisdictional PPOC and lead coordinator for LPT until replaced by Bob Costello
Jason Howard	Maricopa Association of Governments	GIS Manager	MJPT participant Resource for County-wide GIS data
Lee Jimenez	Maricopa County	FCDMC – Floodplain Management – Floodplain Representative	MJPT participant Resource for County-wide floodplain management data and practices
Glenn Jones	Peoria	Emergency Management – Emergency Management Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Lorenzo Jones	Scottsdale	Emergency Management – Emergency Management Officer	MJPT representative, jurisdictional PPOC and lead coordinator for LPT until replaced by Thomas Shannon
Mike Kellogg	JE Fuller/ Hydrology & Geomorphology, Inc.	Project Mitigation Planner / GIS Specialist	MJPT Consultant GIS analysis and hazard profile mapping Asset inventory database management
Joe LaFortune	Queen Creek	Public Safety – Division Manager	MJPT representative and jurisdictional PPOC Lead coordinator for LPT

Table 3-2: Summary of multi-jurisdictional planning team participants

Name	Jurisdiction / Organization	Department / Position	Planning Team Role
Scott LaGreca	Fountain Hills	Fire Department – Fire Chief / Emergency Management Coordinator	MJPT participant Managerial support for planning effort
Richard Langevin	Maricopa County	MCDEM – Emergency Services Planner	MJPT participant Provided planning assistance to cities and towns
Pam Lansberry	Arizona Public Service	Technical Operations – Manager	MJPT participant Resource for APS data
Robert Lee	Paradise Valley	Building Safety – Building Official	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Russ Loumav	Paradise Valley	*none provided*	MJPT participant Proxy attendance for PPOC
Bob Marshall	Goodyear	Fire Department – Emergency Manager	MJPT participant Proxy attendance for PPOC
Dave McGhan	Arizona Public Service	Costumer Accounts Manager – Technical Account Representative	MJPT participant Resource for APS data
Alfred Medina	Guadalupe	Fire Department – Captain	MJPT participant Proxy attendance for PPOC
Ronnie Miller	Wickenburg	Police Department – Emergency Manager	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Howard Munding	El Mirage	Fire Department – Assistant Fire Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Tim Murphy	Maricopa County	FCDMC – Floodplain Delineation – Branch Manager	MJPT participant Resource for FEMA floodplain delineation data and statistics
Othell Newbill	Goodyear	Emergency Management – Emergency Management Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Chris Ochs	Glendale	Water Utility – Deputy Director	MJPT participant Resource for city water and wastewater data
W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.	Project Manager	MJPT Lead Consultant Preparation and presentation of plan update elements and materials Co – Primary point of contact for overall planning effort.
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management – Principal Planning Analyst	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
John Padilla	Maricopa County	MCDEM – Emergency Services Planner	MJPT participant Provided planning assistance to cities and towns
Harry Parsi	Gila Bend	Public Works – Town Engineer	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Michael Paz	General Public (Motorola)	Government and Public Safety – Account Executive	MJPT attendee
Rodney Phelps	Gila River Indian Community	Office of Emergency Management – Emergency Operations Specialist	MJPT participant GRIC liaison
Jen Pokorski	Maricopa County	FCDMC – Planning and Project Management – Project Manager	MJPT participant Resource for FCDMC project and planning information.
Kevin Pool	Surprise	Fire Department – Assistant Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management – Emergency Manager	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
John Rae	Litchfield Park	Building Safety – Senior Inspector	MJPT participant Proxy attendance for PPOC
David Ramirez	Goodyear	Engineering Department – City Engineer	MJPT participant Proxy attendance for PPOC Resource for city engineering standards, policies and projects.
Darrell Rezendes	El Mirage	Fire Department – Emergency Management Director	MJPT participant Managerial support for planning efforts

Table 3-2: Summary of multi-jurisdictional planning team participants

Name	Jurisdiction / Organization	Department / Position	Planning Team Role
Randy Roberts	Fountain Hills	Fire Department – Assistant Fire Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Duren Robertson	Youngtown	Police Department / Emergency Management – Lieutenant	MJPT participant Proxy attendance for PPOC
John Rose	Maricopa County	MCDOT – Survey Branch – Survey Manager	MJPT participant Resource for county roads, bridges and culverts
Mike Sabatini	Maricopa County	MCDOT – Department Manager	MJPT participant Managerial support for planning efforts
Sharon Sanders	Maricopa County	Planning and Development	MJPT participant
Renelle Schaffer	General Public	*none*	MJPT attendee
Jim Shank	Buckeye	Fire Department – Fire Prevention Specialist	MJPT participant Proxy attendance for PPOC
Thomas Shannon	Scottsdale	Emergency Management – Emergency Management Officer	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Debra Sheff	Glendale	Office of Emergency Management – Operations & Training Officer	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Art Snapp	Avondale	Community Services – Division Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Ken Sowers	Avondale	Building Safety – Building Official	MJPT participant Resource for codes and enforcement for city
Adam Stein	Cave Creek	Marshal's Office – Town Marshal / Emergency Services Coordinator	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Tracy Stevens	Avondale	Planning Department – Planning Manager	MJPT participant Resource for city planning policies and elements
Julie Syrmopoulus	Maricopa County	MCDEM – Public Relations Director	MJPT participant Public relations and county website development resource
Jeri Todd	Phoenix	Office of Emergency Management – Administrative Assistant II	MJPT participant Proxy attendance for PPOC Administrative support for city PPOC
Gino Turrubiartes	Guadalupe	Community Development – Director	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Bruce Van Scyoc	Surprise	Fire Department – Battalion Chief	MJPT participant Proxy attendance for PPOC
Mitch Wagner	Maricopa County	MCDOT – Planning – Senior Planner	MJPT participant Resource for countywide transportation planning
Marc Walker	Chandler	Fire Department – Assistant Fire Chief	MJPT representative and jurisdictional PPOC Lead coordinator for LPT
Steve Waters	Maricopa County	FCDMC – Flood Warning Branch – Manager	MJPT participant Resource for countywide flood warning data and history of disaster management
Ken Waters	National Weather Service	Phoenix Warning and Forecast Office – Warning Coordination Meteorologist	MJPT participant Resource for countywide weather information and statistics
Pete Weaver	Maricopa County	MCDEM - Director	MJPT participant Managerial support for planning efforts
Sue Wood	State of Arizona	ADEM – Mitigation Division – Program Manager	MJPT participant Resource for State MHM Plan information State reviewer

Lists of LPT members and their respective roles, for each jurisdiction, are provided in Appendix B.

3.4.2 Planning Team Activities

The MJPT met for the first time on January 15, 2009 to begin the plan update process. Two additional meetings covering the same material were conducted on January 29 and February 11, 2009 for jurisdictions unable to attend the January 15th meeting. Six more meetings were convened on about

a monthly basis to step through the plan review and update process. Each MJTP member was required to bring a copy of the 2004 Plan for their jurisdiction for review and reference, and was instructed to review the section being updated in advance of the meeting that section was discussed. Additional copies of the plans were provided by Sue Wood of ADEM. Following each MJPT meeting, the PPOC for each jurisdiction would convene a meeting of the LPT to work through the assigned homework as needed. One tribal planning meeting was convened with each of the participating Tribes to develop the extra items needed for the Tribal Annex to bring the Tribes into compliance DMA 2000 Section 201.7. There were also six other outreach meetings conducted by MCDEM staff with individual communities to assist them in the development of the plan elements. Table 3-3 summarizes the MJPT, Tribal, and outreach meetings convened, along with a brief list of the agenda items discussed. Detailed meeting notes for all of the MJPT meetings are provided in Appendix B. There are no details of the LPT meetings.

Table 3-3: Summary of planning meetings convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
Pre-Planning Kick-Off Meeting December 4, 2008 MCDEM Conference Room Phoenix, AZ	• Discuss schedule of MJPT meetings • Discuss Plan outline • Strategize the MJPT list • Discuss roles of MCDEM and JEF in the overall planning process
MJPT Meeting No. 1 <u>Initial Meeting:</u> January 15, 2009 FCDMC – Adobe Room Phoenix, AZ <u>Make Up Meetings:</u> January 29, 2009 JEF Conference Room Tempe, AZ and February 11, 2009 MCDEM Conference Room Phoenix, AZ	• Present an overview of mitigation planning and the update process • Team introductions • Discussed the MJPT meeting schedule and overall plan update schedule • Reviewed roles of MJPT and LPT, as well as requirements for attendance. • Assignments included o Identify a PPOC for each jurisdiction o Begin organizing the LPT o Review the current plan Risk Assessment and Public Involvement sections.
MJPT Meeting No. 2 February 12, 2009 MCDOT – Apache Room Phoenix, AZ	• Introduction and quick review of major Mtg No. 1 highlights. • Discussed the promulgation schedule in detail. • Discussed public involvement strategy. • Discussed 2004 Plan hazards and stepped through an initial hazard screening and profiling process. • Assignments included o Begin work on performing the PI strategy o Review historic hazard database and add to it as necessary. o Perform CPRI evaluation for post-screened list of hazards

Table 3-3: Summary of planning meetings convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
MJPT Meeting No. 3 March 19, 2009 MCDOT – Apache Room Phoenix, AZ	• Homework status review • Discussed the promulgation schedule again. • Discussed plan format and proposed change to a truly MJ plan. • Reviewed CPRI results and finalized list of hazards for vulnerability analysis. • Discussed asset inventory work, needs, and homework. • Assignments included o Complete prior homework. o Begin asset inventory work. o Verify municipal boundaries. o Review current Plan Maintenance section and come prepared to discuss past activities.
Community Outreach Meeting with Town of Wickenburg April 13, 2009 MCDEM Conference Room Phoenix, AZ	• Reviewed and worked on the following homework assignments: o Public notice, o Website posting, o Hazard list, o Prior mitigation activity list, o Capability assessment update, o Corporate boundary verification.
MJPT Meeting No. 4 April 16, 2009 FCDMC – Operations Building Phoenix, AZ	• Homework status review. • Presented and discussed hazard profile mapping data and hazard classifications. • Reviewed and discussed the updating of the current capability assessment. • Discussed past plan maintenance activities and strategized future plan maintenance. • Assignments included o Complete prior homework. o Complete, update and revise capability assessment worksheets o Provide list of completed mitigation activities over the last 5 years. o Review current plan Mitigation Strategy section.
Community Outreach Meeting with Town of Youngtown April 17, 2009 Public Works Office Youngtown, AZ	• Reviewed and worked on the following homework assignments: o Public notice, o Website posting, o Hazard list, o Prior mitigation activity list, o Capability assessment update, o Corporate boundary verification.

Table 3-3: Summary of planning meetings convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
MJPT Meeting No. 5 May 14, 2009 MCDOT – Apache Room Phoenix, AZ	• Homework status review. • Reviewed and discussed the updating of the goals and objectives. • Discussed the review of the 2004 Plan mitigation actions/projects and performing an assessment to document status and determine which would carry forward. • Assignments included o Complete prior homework. o Review template goals & objectives and review with LPT. o Complete existing mitigation actions/projects assessment.
Community Outreach Meeting with City of Surprise June 9, 2009 Surprise Fire Department Surprise, AZ	• Reviewed and worked on the following homework assignments: o Website posting, o Hazard list, o Prior mitigation activity list, o Corporate boundary verification.
Community Outreach Meeting with Town of Buckeye June 10, 2009 Buckeye Fire Department Buckeye, AZ	• Reviewed and worked on the following homework assignments: o Hazard list, o Prior mitigation activity list, o Capability assessment.
Community Outreach Meeting with Town of Wickenburg June 16, 2009 MCDEM Conference Room Phoenix, AZ	• Reviewed and worked on the following homework assignments: o Mitigation actions/projects, o Implementation strategy.
MJPT Meeting No. 6 June 25, 2009 FCDMC – Operations Building Phoenix, AZ	• Homework status review. • Reviewed and discussed the results of the vulnerability analysis. • Discussed the process for developing new mitigation actions/projects and the implementation strategy. • Brainstormed NFIP compliance action/projection and developed implementation strategy. • Assignments included o Complete prior homework. o Review details of VA results and respond with comments/questions to JEF. o Develop new updated list of mitigation actions/projects with updated implementation strategy.

Table 3-3: Summary of planning meetings convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
Community Outreach Meeting with Town of Gila Bend July 6, 2009 Public Works Office Gila Bend, AZ	• Reviewed and worked on the following homework assignments: o Worked through all assignments to get Gila Bend caught up.
MJPT Meeting No. 7 July 16, 2009 FCDMC – Operations Building Phoenix, AZ	• Homework status review. • Final revisit of project schedule. • Discussed the second phase of public involvement. • Reviewed and edited a template resolution of adoption. • Summarized with closing thoughts. • Assignments included o Last chance to complete prior homework. o Review draft as quickly as possible. o Post updated PI announcement to websites on or around mid September.
Tribal Planning Meeting Fort McDowell Yavapai Nation August 27. 2009 FMYN Safety Building Fountain Hills, AZ	• Reviewed Tribal plan requirements as they differ from Local plans • Discussed and resolved Tribal assurances language. • Developed a definition for "public". • Discussed and summarized agency coordination and integration of the Plan into other Tribal mechanisms. • Discussed the cultural resource assessment. • Discussed and summarized the Tribal capability assessment. • Discussed the mitigation strategy progress assessment.
Tribal Planning Meeting Salt River Pima-Maricopa Indian Community August 26, 2009 JEF Conference Room Fountain Hills, AZ	• Reviewed Tribal plan requirements as they differ from Local plans • Discussed and resolved Tribal assurances language. • Developed a definition for "public". • Discussed and summarized agency coordination and integration of the Plan into other Tribal mechanisms. • Discussed the cultural resource assessment. • Discussed and summarized the Tribal capability assessment. • Discussed the mitigation strategy progress assessment.

3.5 Public Involvement

3.5.1 Previous Plan Assessment

The public involvement strategy for the 2004 Plan development included holding several open house meetings in regionally strategic locations to educate citizens, public officials, and business leaders about the hazard mitigation planning process, and to gather community input into the local Goals, Objectives, and Mitigation Actions that each of the various jurisdictions had drafted. The meetings were publicized via newspaper announcements, websites, public notices, other means. The resulting public response and turnout was very poor and ill-attended. The MJPT discussed the repetition of this option and concluded that the time and expense was not warranted and an inefficient means of getting public input.

The second opportunity for public input was provided through the normal city/town/tribal council and/or county board of supervisors public meeting process associated with each jurisdiction's formal adoption of the 2004 Plan. The details of the meeting process varied from jurisdiction to jurisdiction, but typically included some form of advertisement of the meeting agenda two to four weeks in advance of the council/board meeting. In most cases, an informal, pre-adoption presentation of the 2004 Plan was made during a working session of the council/board. The final adoption of the resolutions were almost unanimously done as part of a consent agenda at a formal council/board meeting. There are no records of any public comment on the 2004 Plan adoption process. Because the process is required for any formal council/board action and has a built-in public notification and comment opportunity, the MJPT chose to continue using this process as one of the post-draft mechanisms for getting the Plan update before the public.

3.5.2 Plan Update

The opportunity for public involvement and input to the plan update process was accommodated using several venues throughout the course of the pre-draft planning. Participating jurisdictions posted public notices to their respective websites that included a link to the full time website maintained on the Maricopa County servers. A copy of the 2004 Plan was made available on the County website along with all of the MJPT meeting dates, locations, and times. Additional notices inviting public participation were published in local and regional newspapers, jurisdictional newsletters, and flyer inserts to utility bills. Invitations to participate in the planning process were also extended to key agencies and organizations outside of the MJPT including: Arizona Public Service, National Weather Service, and Pinal County, Arizona Geological Survey, Gila River Indian Community, Tohono O'Odham Nation, Luke Air Force Base and local academia.

Two responses, one phone and one letter, were received from the first round of notices and two people from the general public attended the MJPT meetings (See Table 3-2). Both responses were from local surgical centers explaining their capabilities to respond to a disaster and they had no input or comment on the Plan.

A second wave of post-draft public notices were posted to jurisdiction websites and a copy of the draft Plan was posted to the County website for review and comment. Interested citizens were also encouraged to participate in the local community adoption process which, depending upon the jurisdiction, include a formal public hearing and may have included a prior informal presentation.

Copies of the public notices, web pages, and newspaper notices are provided in Appendix C. Other than those mentioned, there were no substantive public comments received.

SECTION 4: COMMUNITY DESCRIPTIONS

4.1 General

The purpose of this section is to provide updated basic background information on Maricopa County as a whole and includes information on geography, climate, population and economy. Abbreviated details and descriptions are also provided for each participating jurisdiction.

4.2 County Overview

4.2.1 Geography

Maricopa County is located in central Arizona and encompasses 9,226 square miles. Situated in the upper Sonoran Desert and varying in elevation from 436 feet above sea level in the southwest to 7,645 feet at the northeast, the county contains several plant communities. At the lower elevations, desert scrub punctuated with saguaro cactus predominate. The higher elevations contain woodlands and sparse forests. Along the rivers, streams, and washes, riparian communities flourish and sustain the majority of the diverse plant and animal life found in the county. The Salt and Verde Rivers enter the County at the northeast quadrant, combine, and continue on a bisecting path as the Salt River until confluencing with the Gila River in the central portion of the County near Avondale. The Gila River then continues bisecting the County as it journeys southwesterly towards the confluence with the Colorado River in Yuma, Arizona. The life-sustaining water this extensive river system brings to the region has defined life in Maricopa County from the earliest Native American settlements to the present day. Maricopa County has one of the most ample water supplies of any desert region in the west. The watershed of the Salt and Verde Rivers is impounded behind the dams of the Salt River Project. The Central Arizona Project canal which brings water from the Colorado River, can supply more than a fifth of the total water for the county. In addition to this supply, the metropolitan area is situated over a prolific aquifer. To assure an adequate water supply for future generations, the state legislature adopted the Groundwater Management Act in 1980. This act requires careful water management and conservation measures to ensure water will be available for the influx of people expected in the next 20 years and beyond [2].

Several major roadways support both local and regional transportation needs in Maricopa County. Interstates 10, 17, and 8 all intersect in or near Phoenix, and provide access to surrounding states. Several other State and US Highways provide local and regional access throughout Arizona. Sky Harbor International Airport, located in central Phoenix, is one of the busiest air travel facilities in the United States.

Federal and State government entities own 50 percent of Maricopa County land, including the U.S. Bureau of Land Management (28 percent), the U.S. Forest Service (11 percent), and the State of Arizona (11 percent). An additional 16 percent is publicly owned, and 5 percent is Indian reservation land.

General County features are depicted in Figure 4-1.

4.2.2 Climate

The climate in Maricopa County is characterized by the mild winters and hot summers typical of the upper Sonoran Desert regions. Temperatures and precipitation across the County vary somewhat due to the changes in elevation and orographic influences of local mountains and valleys. Climate statistics for weather stations within the County are produced by the Western Region Climate

[2] Maricopa County Planning and Development Services, 2002, *Maricopa County Comprehensive Plan, 2020 Eye to the Future*, adopted October 20, 1997, revised August 7, 2002.

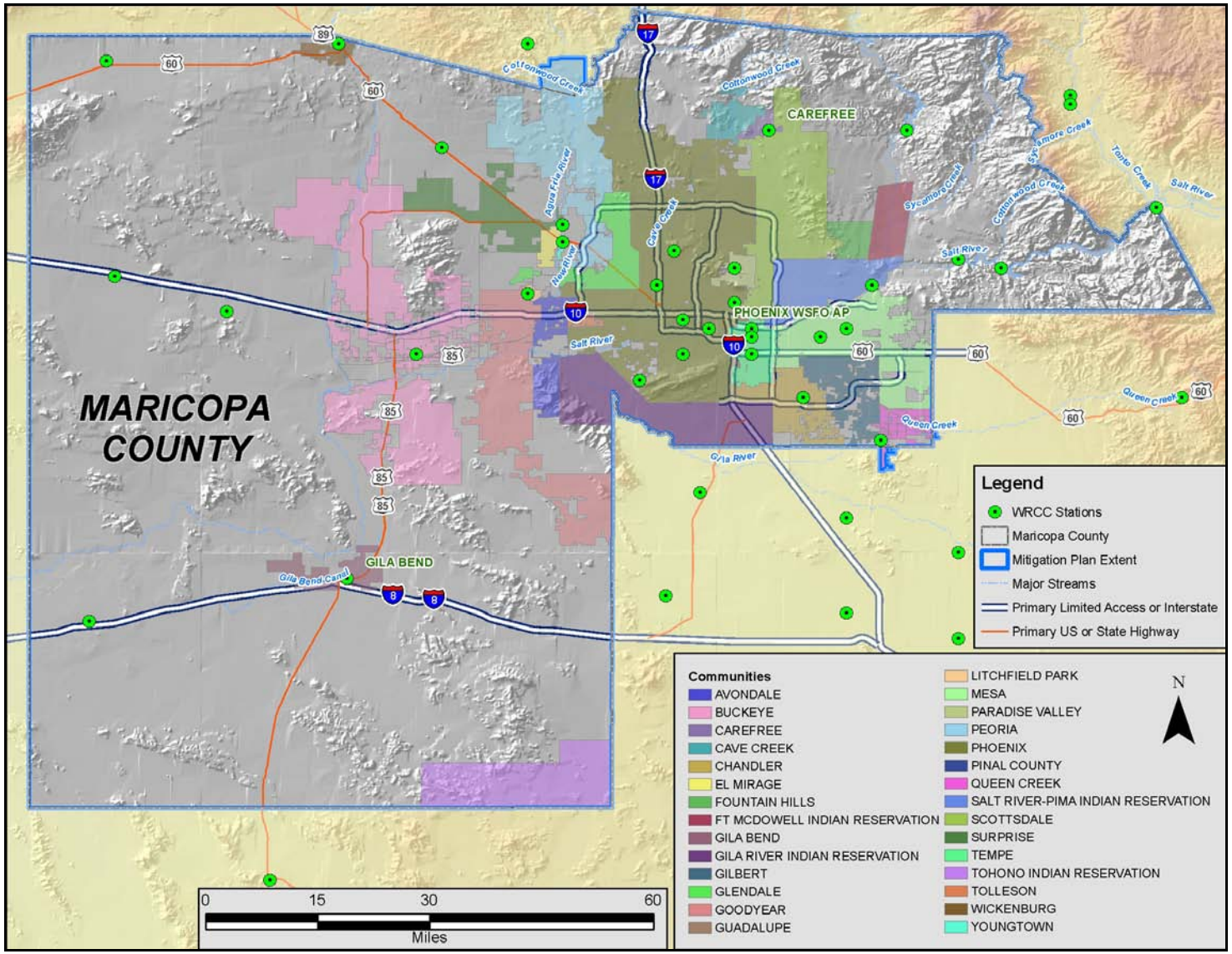


Figure 4-1: Map of general features for Maricopa County

Center[3] (WRCC) and span records dating back to the early 1900's. Locations for WRCC stations within Maricopa County are shown on Figure 4-1.

Average temperatures within the County range from near freezing during the winter months to over 110 degrees Fahrenheit during the hot summer months. The severity of temperatures in either extreme is highly dependent upon the location, and more importantly the altitude, within the County. For instance, temperature extremes in the northeastern portion of the County are notably different from those for the lower Gila River valley.

Figures 4-2, 4-3, and 4-4 present a graphical depiction of temperature variability and extremes throughout the year for the Carefree (elevation = 2,530 ft), Gila Bend (elevation = 730 ft), and Phoenix WSFO AP (elevation = 1,110 ft). In general, there is a ten degree reduction in temperatures between the lower and upper elevation stations.

Precipitation throughout the County is governed to a great extent by elevation and season of the year. From November through March, storm systems from the Pacific Ocean cross the state as broad winter storms producing longer duration precipitation events with low intensity rainfall and snowstorms at the higher elevations. Summer rainfall begins early in July and usually lasts until mid-September. Moisture-bearing winds move into Arizona at the surface from the southwest (Gulf of California) and aloft from the southeast (Gulf of Mexico). The shift in wind direction, termed the North American Monsoon, produces summer rains in the form of thunderstorms that result largely from excessive heating of the land surface and the subsequent lifting of moisture-laden air, especially along the primary mountain ranges. Thus, the strongest thunderstorms are usually found in the mountainous regions of the central southeastern portions of Arizona. These thunderstorms are often accompanied by strong winds, blowing dust, and infrequent hail storms[4].

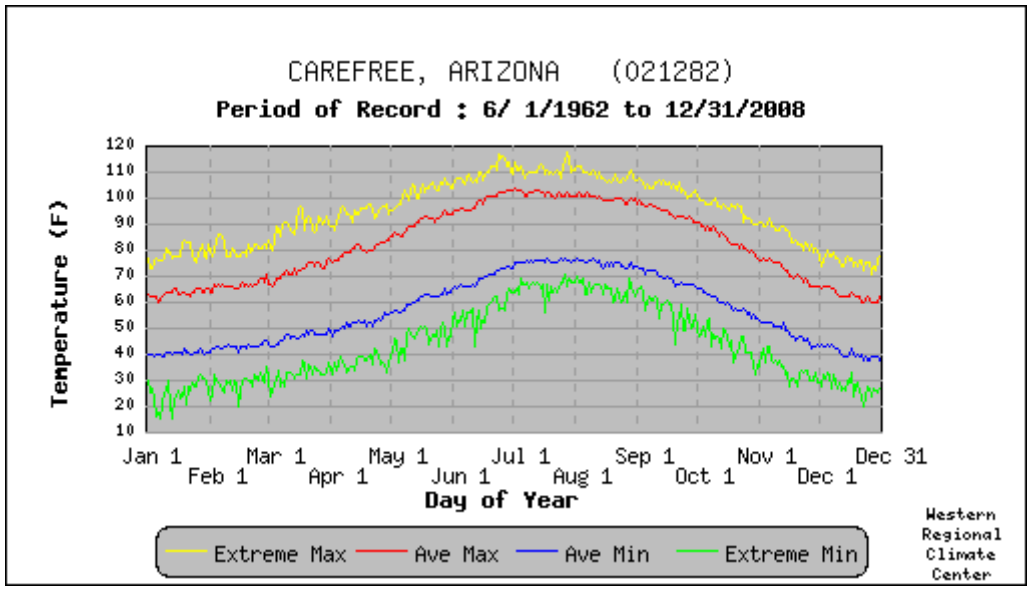


Figure 4-2: Daily Temperatures and Extremes for Carefree Station, Arizona

[3] Most of the data provided and summarized in this plan are taken from the WRCC website beginning at the following URL: http://www.wrcc.dri.edu/CLIMATEDATA.html

[4] Office of the State Climatologist for Arizona, 2004. Partially taken from the following weblink: http://geography.asu.edu/azclimate/narrative.htm

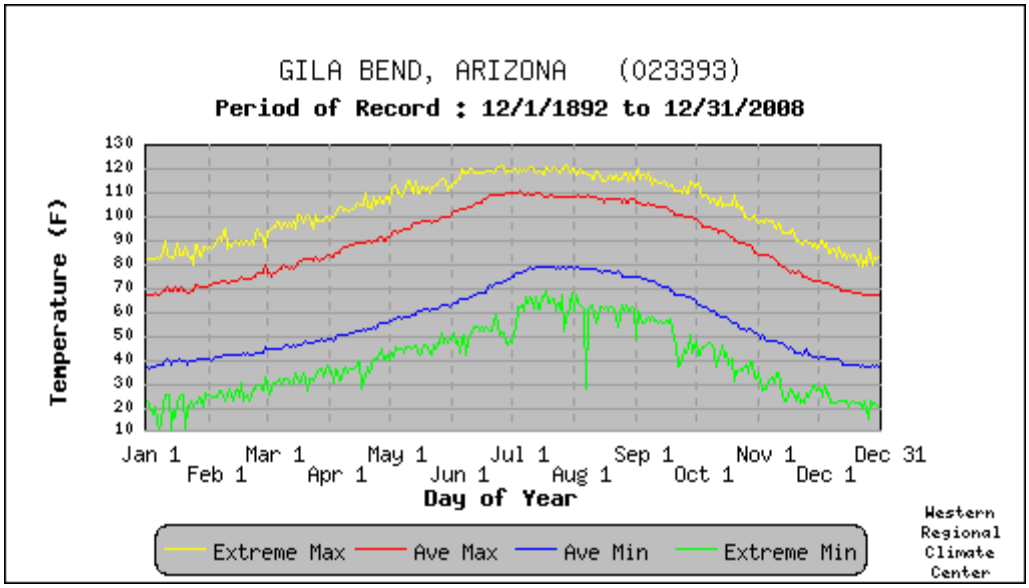


Figure 4-3: Daily Temperatures and Extremes for Gila Bend Station, Arizona

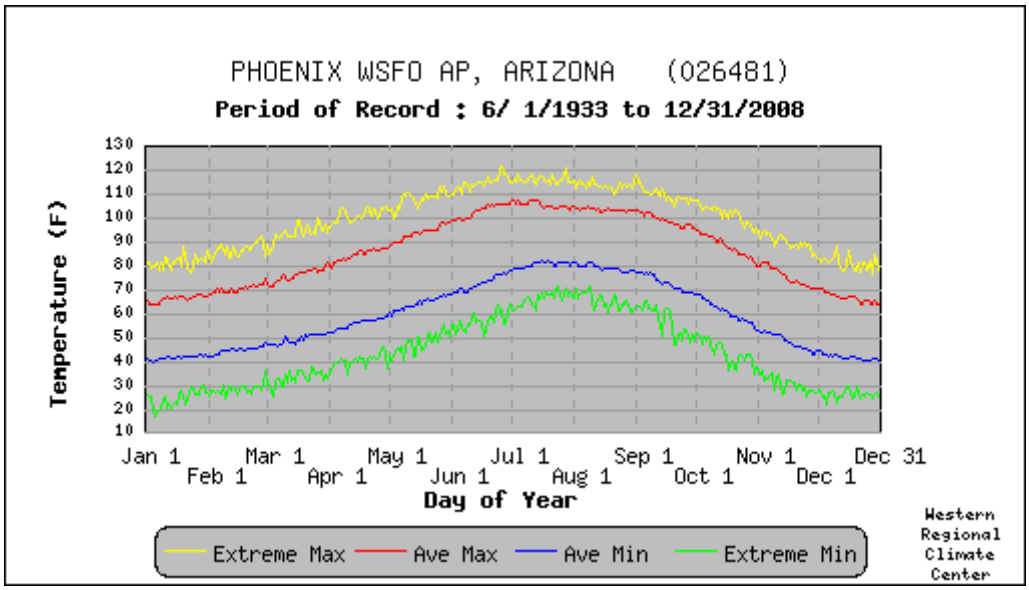


Figure 4-4: Daily Temperatures and Extremes for Phoenix WSFO AP Station, Arizona

Figures 4-5, 4-6, and 4-7 present tabular temperature and precipitation statistics for the Carefree, Gila Bend, and Phoenix Airport Weather Service Forecast Office (WSFO AP) Stations. It is noteworthy that average annual precipitation more than doubles from the lower elevation of the county to the upper regions.

CAREFREE, ARIZONA (021282)

Period of Record Monthly Climate Summary

Period of Record : 6/ 1/1962 to 12/31/2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	63.6	66.7	71.9	79.9	90.2	98.7	101.9	100.0	94.8	84.3	71.6	62.7	82.2
Average Min. Temperature (F)	40.7	43.0	46.7	51.8	60.6	69.1	75.6	74.9	69.5	59.6	48.4	40.5	56.7
Average Total Precipitation (in.)	1.44	1.44	1.62	0.59	0.13	0.13	1.19	1.68	1.12	1.10	1.03	1.50	12.97
Average Total SnowFall (in.)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 79.5% Min. Temp.: 79.5% Precipitation: 81% Snowfall: 81.7% Snow Depth: 81%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Figure 4-5: Monthly climate summary for the Carefree Station, Arizona

GILA BEND, ARIZONA (023393)

Period of Record Monthly Climate Summary

Period of Record : 12/1/1892 to 12/31/2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	69.0	73.6	79.9	88.0	96.8	106.1	108.9	107.2	103.1	92.1	78.6	69.2	89.4
Average Min. Temperature (F)	38.7	41.8	46.2	51.8	59.7	68.3	78.2	76.9	70.1	57.2	45.3	38.7	56.1
Average Total Precipitation (in.)	0.61	0.63	0.62	0.22	0.13	0.05	0.73	1.01	0.51	0.39	0.51	0.69	6.11
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 83.9% Min. Temp.: 83.7% Precipitation: 90.6% Snowfall: 90.8% Snow Depth: 90.8%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Figure 4-6: Monthly climate summary for the Gila Bend Station, Arizona

PHOENIX WSFO AP, ARIZONA (026481)

Period of Record Monthly Climate Summary

Period of Record : 6/ 1/1933 to 12/31/2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	66.1	70.1	75.9	84.4	93.7	103.0	105.6	103.4	99.0	88.2	75.3	66.6	85.9
Average Min. Temperature (F)	41.5	44.4	49.1	55.7	64.0	72.6	80.4	79.1	72.8	60.8	48.3	41.6	59.2
Average Total Precipitation (in.)	0.78	0.76	0.85	0.29	0.13	0.10	0.84	1.04	0.70	0.58	0.57	0.90	7.55
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 100% Min. Temp.: 100% Precipitation: 100% Snowfall: 98% Snow Depth: 98%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Figure 4-7: Monthly climate summary for the Phoenix WSFO AP Station, Arizona

4.2.3 Population

Maricopa County is home to more than half of Arizona's overall population, with the 2008 count estimated at nearly 4 million. In the 1990's, the County was the fastest growing county in the United States, gaining nearly 1 million new residents with a growth rate of 44.8 percent during that decade. Maricopa County is expected to have over 4.2 and 5.2 million residents by the years 2010 and 2020, respectively. Table 4-1 summarizes jurisdictional population statistics for Maricopa County communities and the County as a whole. Figure 4-8 is a map prepared by the Maricopa Association of Governments (MAG) that presents an illustration of 2010 population density projections for the County.

Table 4-1: Summary of jurisdictional population estimates for Maricopa County

Jurisdiction	1990	2000	2008	2010	2020
Maricopa County	2,122,101	3,096,600	3,987,942	4,216,499	5,230,300
Major					
Avondale	16,169	35,833	76,648	83,856	105,989
Buckeye	5,038	6,537	50,143	74,906	218,591
Carefree	1,666	2,920	3,948	4,418	5,816
Cave Creek	2,925	3,685	5,132	5,781	7,815
Chandler	90,533	185,300	244,376	265,107	282,991
El Mirage	5,001	7,518	33,647	38,620	38,717
Fountain Hills	1,030	20,199	25,995	27,166	33,331
Fort McDowell Yavapai Nation	640	829	824	839	1037
Gila Bend	1,747	1,944	1,899	2,575	3,950
Gilbert	29,188	109,935	214,820	218,009	285,819
Glendale	148,134	230,300	248,435	279,807	315,055
Goodyear	6,258	18,779	59,436	71,354	174,521
Guadalupe	5,458	5,228	5,990	5,790	5,982
Litchfield Park	3,303	3,813	5,093	5,140	7,000
Unincorporated Maricopa County	173,612	125,925	246,701	86,423	110,285
Mesa	288,091	441,800	459,682	518,944	565,693
Paradise Valley	11,671	13,629	14,444	14,790	15,224
Peoria	50,168	114,100	155,557	172,793	236,154
Phoenix	983,403	1,350,500	1,561,485	1,695,549	1,990,450
Queen Creek	2,667	4,317	23,329	34,506	55,529
Salt River Pima-Maricopa Indian Community	4,852	6,403	6,822	7,087	7,308
Scottsdale	130,069	204,300	242,337	249,341	269,266
Surprise	7,122	30,886	108,761	146,890	268,359
Tempe	141,865	158,900	172,641	177,771	191,881
Tolleson	4,434	4,963	6,833	7,748	9,646
Wickenburg	4,515	5,050	6,442	11,022	13,311
Youngtown	2,542	3,007	6,522	6,820	7,275

Figures for 1990 and 2000 from US Census Bureau; Figures for 2010, and 2020 from MAG; Figures for 2008 from Arizona Department of Commerce. Litchfield Park 2010 and 2020 estimates provided by Litchfield Park

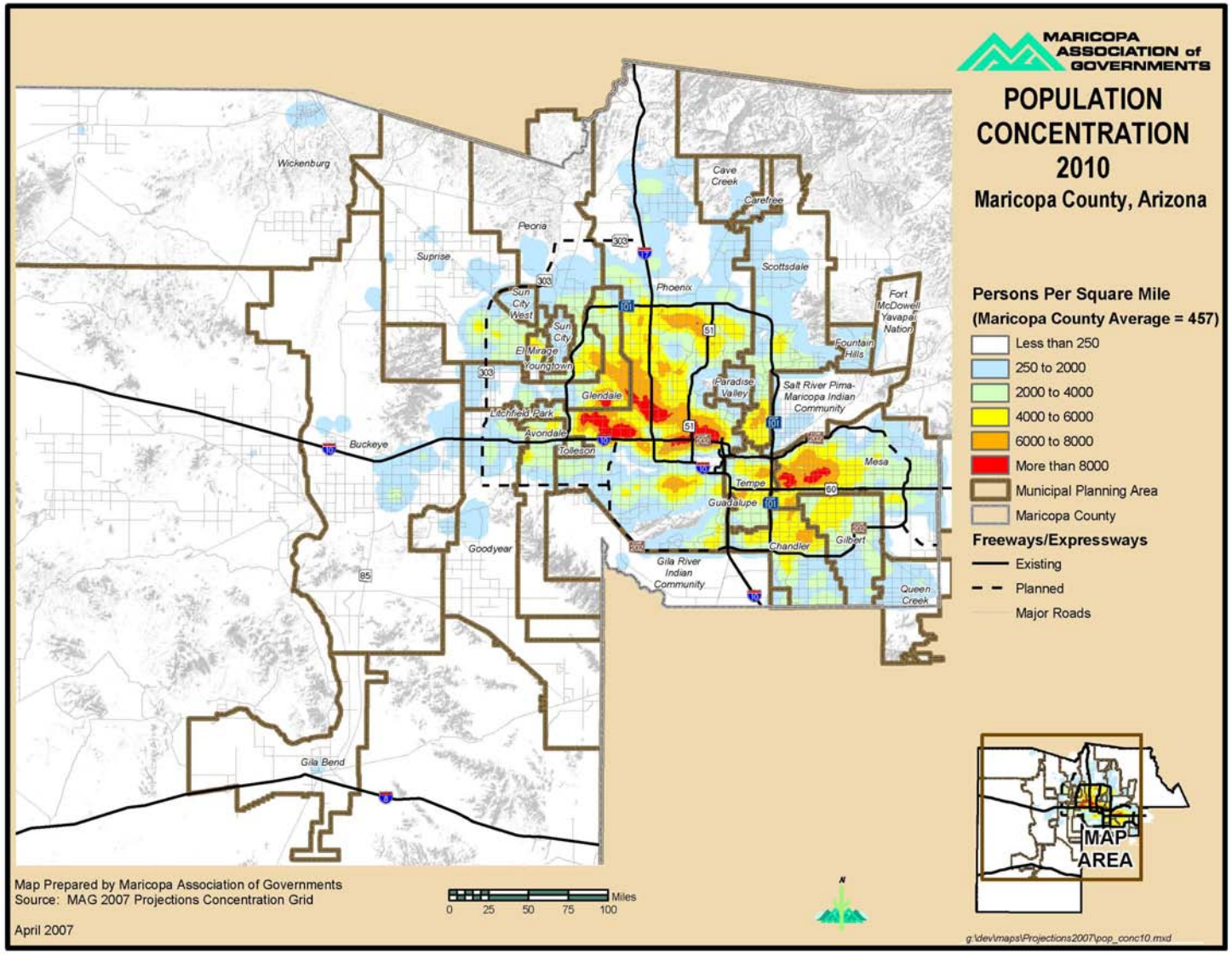


Figure 4-8: 2010 population density projections for Maricopa County

4.2.4 Economy

Maricopa County was originally inhabited by Native Americans, who abandoned the area during the 1300's for unexplained reasons. Agriculture was the prominent activity in the region and was reestablished during the 1860's as the first European settlers migrated to the Salt River Valley. Rapid growth and robust development have been the hallmark of Maricopa County ever since. In 1870 the town site of Phoenix was established, and on February 14, 1871, the Territorial Legislature created Maricopa County. By 1872, there were over 700 people in the county with 5,000 acres under cultivation. The arrival of the railroad in 1877 caused a surge in economic activity. In the early 1900s, the larger farm parcels scattered throughout the region were divided into small farm communities such as Chandler, Gilbert, and Tolleson. In 1902—at the request of President Theodore Roosevelt—after a series of devastating floods, Congress passed the Reclamation Act of 1902. Shortly thereafter, the U.S. Bureau of Reclamation started construction on Theodore Roosevelt Dam east of Phoenix. Irrigated agricultural production and population exploded after the completion of Roosevelt Dam in 1912, providing the region with a reliable water supply. Maricopa County quickly became one of the leading agricultural producing counties in the United States. During this period, the County also became a winter haven for tourists.

Growth in the area continued as tourism, automobile travel, military, and industrial activities came to the County. Construction continued on residential developments, highways, and commercial districts, making Maricopa County an increasingly popular place to live. Until the end of World War II, the traditional economic engines of both the State of Arizona and Maricopa County were known as the five "Cs": Cotton, Copper, Cattle, Climate, and Citrus. Newly established wartime industries fueled the monumental growth of the county in the post-war era. By 1960, the population was over 660,000 people, and reached one million residents in the early 1970s. Combined with the general economic expansion of the 1980s and the rush to the Sun Belt, Maricopa County claimed over 2.2 million residents by 1990. Even with economic sluggishness in the early 1990s, the region continued to grow through 2007 at rate of about four times the national average. Average and per capita 2007 incomes of $76,465 and $26,132 per year for the greater Phoenix area, tracked closely with national averages [5].

In the last couple of years, economic growth and employment within the County have declined significantly. For the Greater Phoenix area, the seasonally adjusted employment rate stands at 7.3 percent as compared to less than 3 percent for years prior. For many of the construction and employment service trades, the unemployment rates are as high as 40 percent [6]. Figure 4-9 is a map prepared by MAG that projects employment densities for the year 2010.

[5] Greater Phoenix Economic Council, http://www.gpec.org/media/docs/DemoandLabor%20-%20Fact%20Book%20Sheet.pdf

[6] Center for Workforce Development, Maricopa Community Colleges, 2009, *Maricopa County Economic Workforce Overview*, http://www.maricopa.edu/bwd/pdf/Economic-WorkforceOverview.pdf

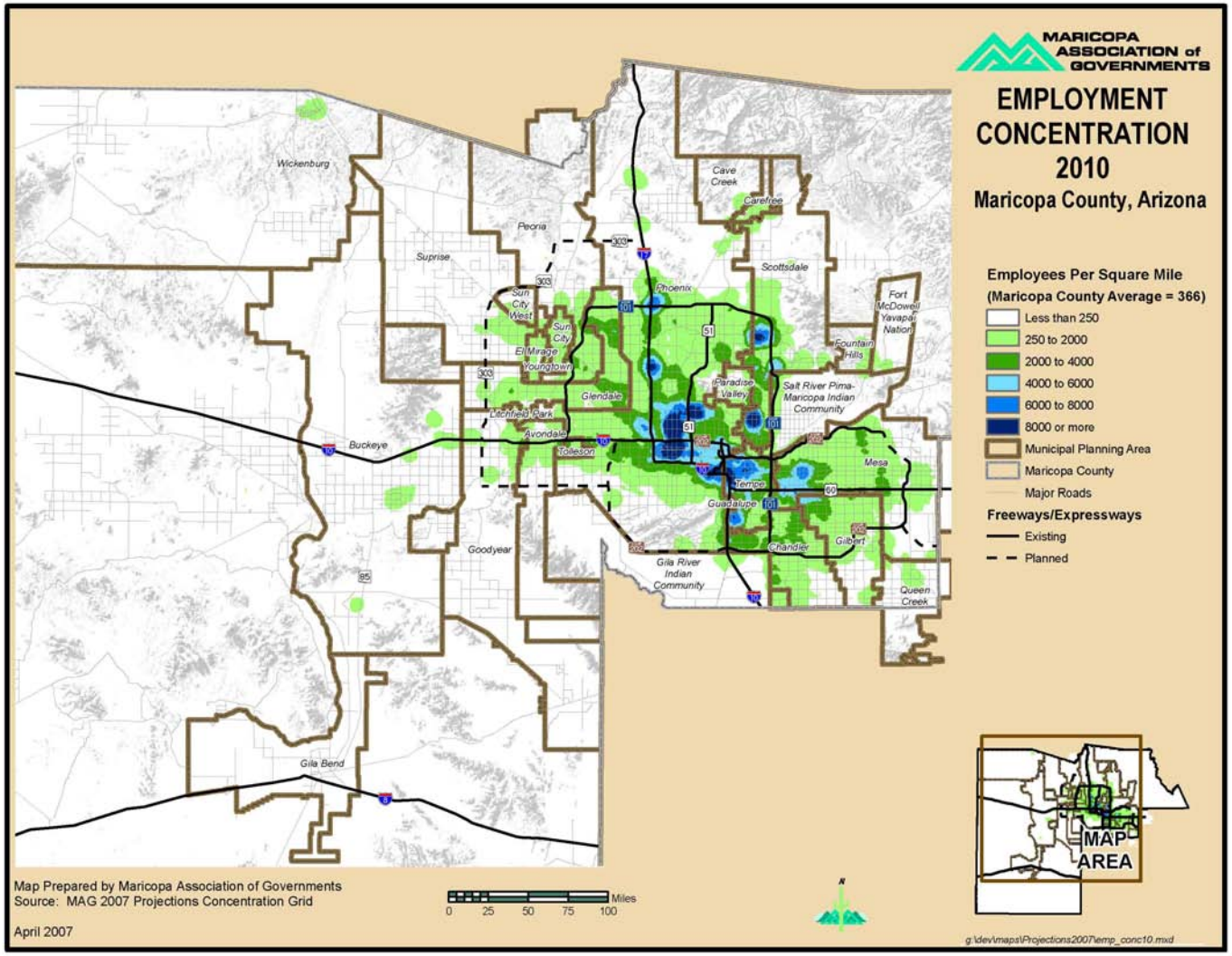


Figure 4-9: 2010 employment concentration projections for Maricopa County

4.3 Jurisdictional Overviews

The following are brief overviews for each of the participating jurisdictions in the Plan.

4.3.1 Avondale

Situated along Interstate 10 approximately 15 miles west of downtown Phoenix, the City of Avondale lies immediately east of Goodyear and west of Tolleson in the West Valley region of Maricopa County, as shown in Figure 4-10.

The Estrella Mountain Park lies to the south of Avondale, and the Gila River Native American Community influences the southeastern region of the City. Like most of the communities located in the greater metropolitan area, Avondale has experienced rapid growth in both population and land area. In 2008 the City of Avondale's planning area encompassed nearly 94.4 square miles, which contrasts with the 40 square miles contained in the City's planning area in 1990.

While Avondale reflects the common growth trends of its west Valley neighbors, the City also has a unique natural climate due to the confluence of the Agua Fria and Gila River basins which form the Gila River junction in the southwest portion of the City. This unique feature compliments the diverse Estrella Mountain Regional Park in the southern region of Avondale's planning area. The primary man-made features that influence Avondale's land uses include: Interstate 10, which bisects the community's north side; a Salt River Power transmission line which runs north-south through Avondale and meets its east-west counterpart in the south central portion of the City; and the St. Johns and Roosevelt Irrigation District Canals which transverse the City's north and south sides, respectively. These features are complimented by an arterial roadway network in the portion of the City located north of the Estrella Mountains.

Avondale was founded in 1900 and became incorporated in 1946. Avondale is governed by a Council-Manager form of government with a seven member City Council consisting of a Mayor and six Council members elected at-large for a term of four years. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-2, in 2000 the population of Avondale was 35,833. With development opportunities continuing to open, this population is forecast to nearly triple to 105,989 by 2020. As a result, Avondale's population will comprise a steadily increasing percentage of Maricopa County's population. Similarly, Avondale's labor force is forecast to reflect an ever-larger share of the region's jobs. In 2008, there were 36,923 jobs in Avondale. The 2020 projections anticipated 37,776 jobs, which indicates that job growth in Avondale has outpaced over 12 years of projection. In addition to having a growing population and employment role within the region, Avondale's ratio of jobs-per-capita is also forecast to rise from 0.17 in 1990 to 0.36 in 2020.

Currently, Avondale has a growing light industrial and commercial economy, a change from its agricultural tradition. Employment projections forecast office employment as the major source of jobs by 2020. Avondale's major private employers include Beam Corporation/Deena Inc., Phoenix International Raceway, SunBridge Estrella Care Center, Gateway Chevrolet and Geo, and Rudolfo Bros. Plastering. Major public employers include the Aqua Fria School District, Estrella Mountain Community College, and the City of Avondale.

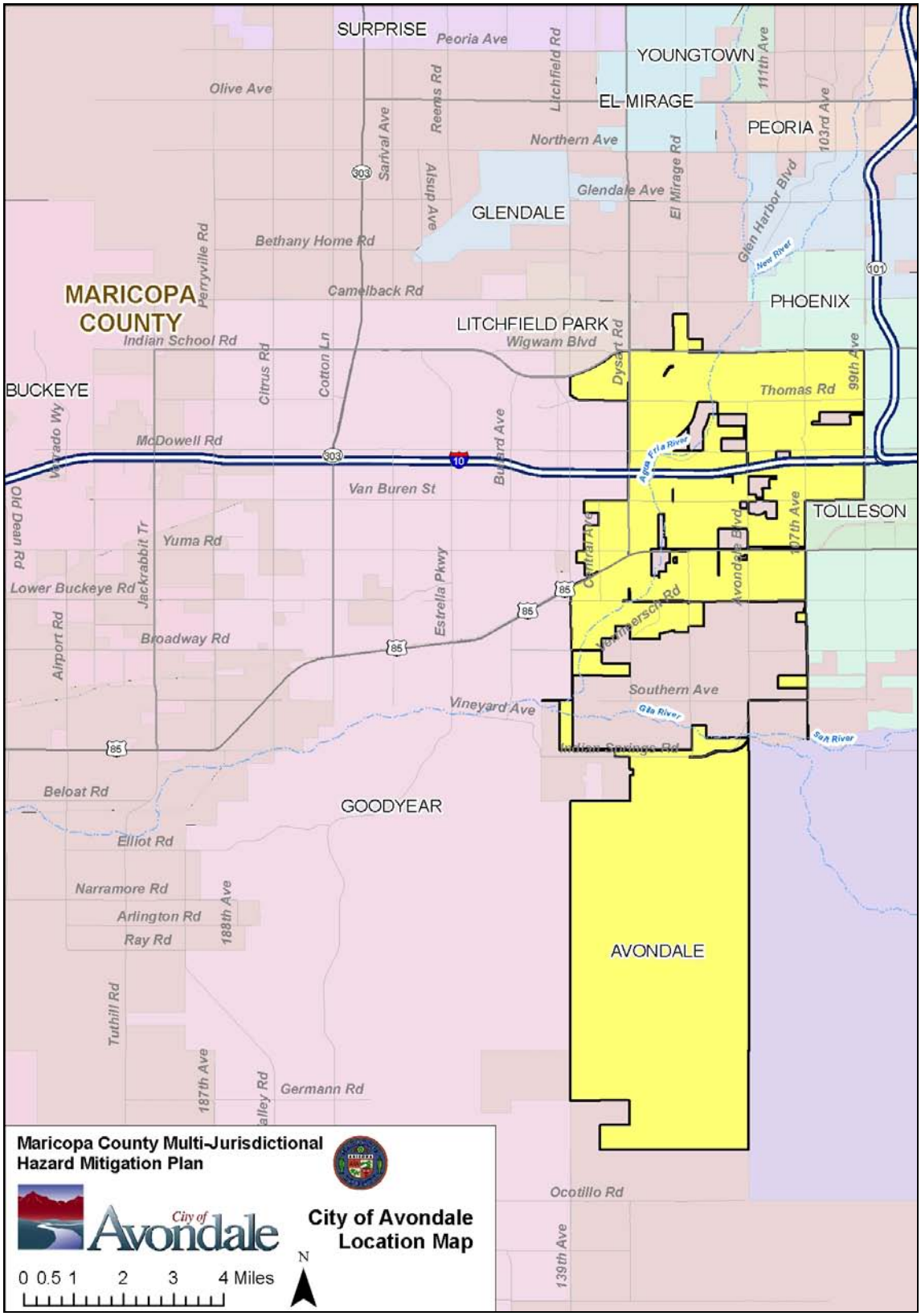


Figure 4-10: City of Avondale location map

Table 4-2: Summary of population and employment estimates for Avondale

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Avondale	16,169	35,833	76,648	83,856	105,989
As a % of County	0.76%	1.17%	1.92%	1.99%	2.37%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Avondale	2,777	9,000	36,923	20,599	37,776
As a % of County	0.00%	0.58%	2.04%	1.88%	1.88%
Jobs per Capita	0.17	0.25	0.48	0.25	0.36
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Avondale's General Plan[7], approved in June of 2002, reflects a community that is responding to the natural and man-made features of the region, as shown in Figure 4-11. According to the City's build out projections, Low Density Residential areas will occupy around 18% of the City's total land area. These homes will be focused in the more environmentally sensitive regions near the Estrella Mountains and the Gila River basin. Medium Density Residential, with approximately 4 units to the acre, will occupy a majority of the City's land area (44%), and are interspersed throughout the north portion of the City. Pockets of high- and multi-family residential areas will develop along arterial streets and near Interstate 10. Similarly, Neighborhood and Community-level commercial uses will appear at many of the City's arterial street intersections, with higher-intensity commercial growth areas projected to develop along Interstate 10. Avondale's General Plan also includes a Safety Element that places an emphasis on three specific natural and man-made pressures: (1) the identification and mitigation of noise and safety concerns associated with Luke Air Force Base, (2) geologic hazards created by the various watercourses that affect the City, and (3) emergency response systems that are challenged by continued residential growth.

4.3.2 Buckeye

The Town of Buckeye is positioned as the Western-most community in the greater metropolitan area, giving the community the unique title of "Western Gateway" for the Salt River Valley. Situated along Interstate 10 approximately 30 miles west of downtown Phoenix, the Town of Buckeye lies immediately west of the communities of Goodyear and Surprise, as shown in Figure 4-12. Now encompassing all or portions of the west, south, and east sides of the White Tank Regional Park, Buckeye's historical town center—located four miles south of Interstate 10 near State Route 85—lies many miles away from what is expected to become the Town's new growth area to the west of the White Tank Mountains. Like most of the communities located in the greater metropolitan area, Buckeye has been growing steadily for the past several decades. While it was once one of the smallest communities in Maricopa County, recent annexations and growth initiatives have resulted in Buckeye's planning area becoming second in size only to Phoenix.

[7] City of Avondale. June 2009. *City of Avondale General Plan*. http://www.avondale.org/documents/City%20Departments/Water%20Resources/GIS/Other_Maps/gen_plan.PDF

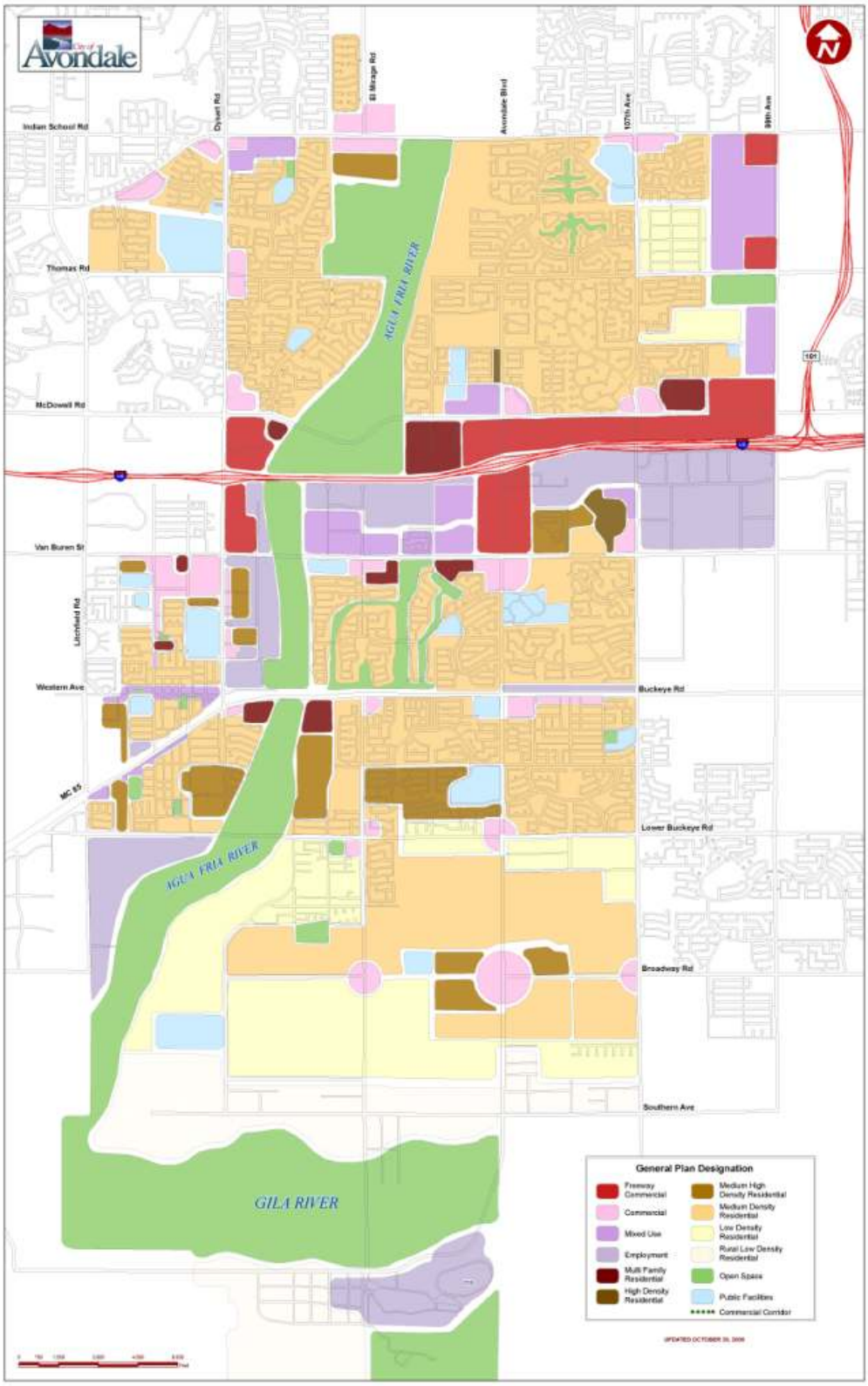


Figure 4-11: City of Avondale land use planning map

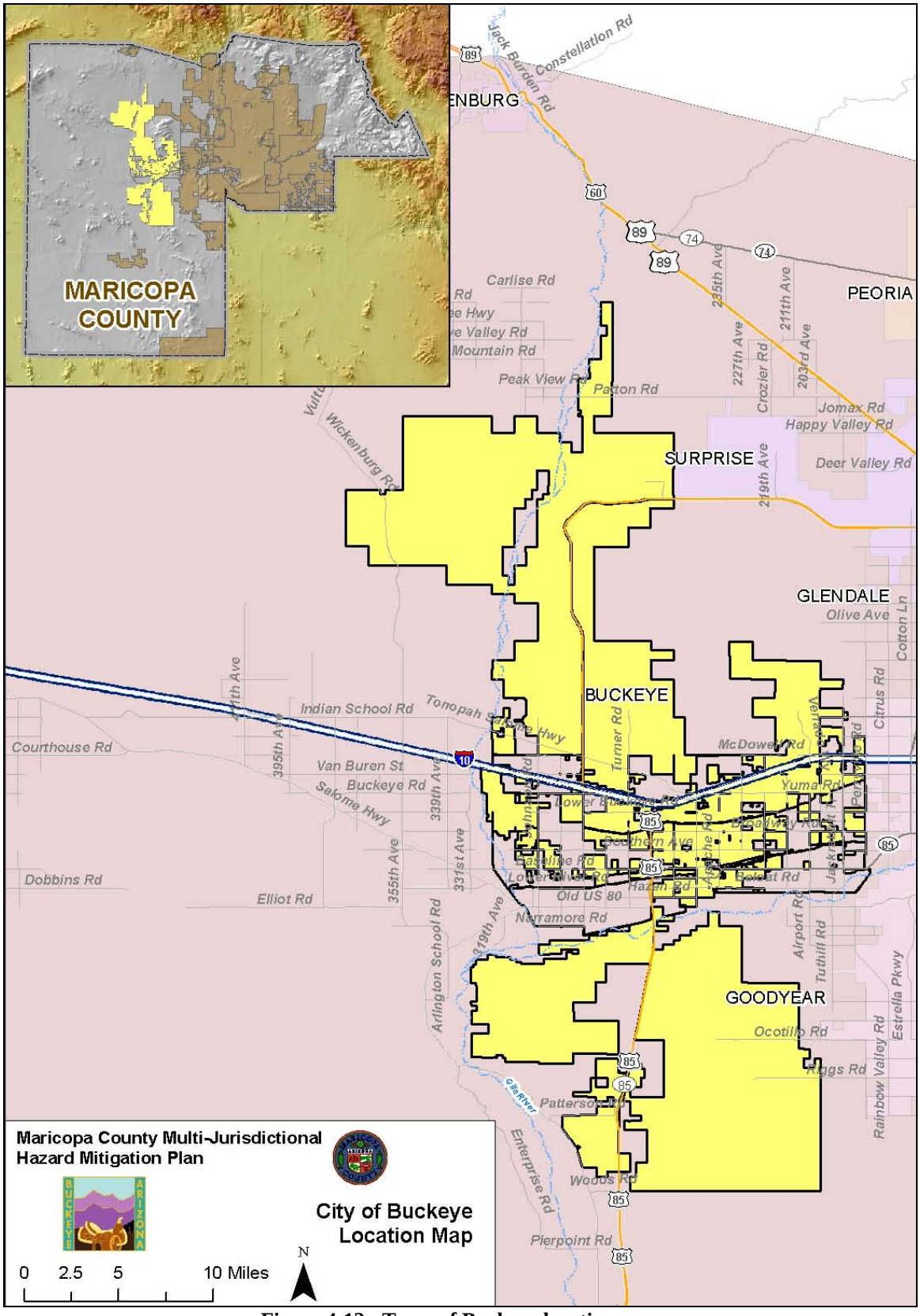


Figure 4-12: Town of Buckeye location map

The primary features that influence Buckeye's land uses include: Interstate 10, which bisects the community's south side; the White Tank Mountains, which effectively separate Buckeye from its eastern neighbors, and the Hassayampa River and its tributaries, which influence the north and west sides of Buckeye. Various overhead power lines transect the community's southern half, as does a traditional network of arterial streets. The Sun Valley Parkway, a multi-lane, limited access roadway proceeds north from interstate 10 through Buckeye and connects with the Town of Surprise on the northeast section of the White Tank Regional Park.

Although prominent new growth in Buckeye will contribute steadily to the demographic, economic, and land use climate of the West Valley, Buckeye is one of the older "outer ring" suburbs in Maricopa County. Founded in 1888 and incorporated in 1929, Buckeye's rural-residential character is reinforced by its agricultural economic base—Buckeye is still among the largest producers of Pima Cotton in Maricopa County. Buckeye's 50,000 residents are governed under a Council-Town Manager form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Council appoints the Town Manager and other officers necessary to produce an administration of the community's affairs.

As illustrated in Table 4-3, the 2000 population of Buckeye was 6,537. With large residential growth opportunities existing within Buckeye's newly annexed lands, this population is forecast to explode to 218,591 by 2020. Expectedly, Buckeye's population will comprise a rapidly increasing percentage of Maricopa County's population. By 2020 it is anticipated that Buckeye will contribute over 4% of Maricopa County's population, compared to roughly 0.2% in 2000. Complimenting this population increase will be a labor force that is forecast to reflect a growing share of the region's jobs. In 1990, Buckeye had 1,842 jobs, while 2020 projections anticipate over 57,000 jobs within the community. In addition to having a growing population and employment role within the region, Buckeye's ratio of jobs-per-capita is forecast to decrease from 0.37 in 1990 to 0.26 in 2020. Today more than 25% of Buckeye's 50,000 working people are employed. Currently, major private and public employers in Buckeye include the Palo Verde Nuclear Generating Station, the Lewis Prison Complex, Quincy Joist, Wal-mart Distribution, Schult Homes, the Arizona Department of Corrections, Buckeye Elementary School District, the Town of Buckeye, Arizona Public Service, and Buckeye Union High School. Buckeye has a growing light industrial and commercial economy, a change from its agricultural tradition. Employment projections forecast office employment becoming providing a majority share of the Town's jobs by 2020.

Table 4-3: Summary of population and employment estimates for Buckeye

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Buckeye	5,038	6,537	50,143	74,906	218,591
As a % of County	0.24%	0.21%	1.26%	1.81%	4.23%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Buckeye	1,842	7,100	12,781	22,400	57,297
As a % of County	0.19%	0.45%	0.70%	1.06%	2.12%
Jobs per Capita	0.37	1.09	0.25	0.30	0.26
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

Buckeye's General Plan[8], approved in January 2008, reflects a community that is preparing for the massive growth influences that will be placed upon the community in the coming years. Buckeye's Land Use Map, shown in Figure 4-13, illustrates these future development influences. Much of Buckeye's future development areas are designated residential with a significant amount of open space along the watercourse and hillside areas. Several large master planned communities are anticipated for the areas generally north of I-10 along with other mixed use core areas.

4.3.3 Carefree

One of Maricopa County's few slowly developing communities, the Town of Carefree is located in the far northeast portion of the Phoenix Metropolitan Area, approximately 25 miles from downtown Phoenix. To the west, Carefree is bordered for its full length by the Town of Cave Creek. On the south and east, it is bordered by Scottsdale and on the north by unincorporated Maricopa County. The City of Phoenix approaches within a mile from the southwest. Developed as a planned community in the 1950s and incorporated in 1984, the Town of Carefree has become known as a residential town with resort-style living. Historically, the Town of Carefree was master planned to be entirely distinct from the surrounding communities by allowing its small population to preserve a lifestyle that integrates with the surrounding desert environment. On December 4, 1984, the Maricopa County Board of Supervisors declared Carefree a legally incorporated town in the State of Arizona.

Illustrated in Figure 4-14, the primary east-west roadway into the area—the Carefree Highway—has been constructed as a four-lane arterial from Interstate 17 to Cave Creek Road. Other major roadway and infrastructure improvements to the south have been completed or are in the planning stages by the Cities of Scottsdale and Phoenix. Most of the vacant desert that once surrounded the Town of Carefree on the south, east, and west in the 1980's is now developed with semi-rural urban uses. Recent development opportunities to the north of Carefree suggest that growth of the metropolitan area may continue with the potential to surround the Town at some point in the future.

Today, Carefree's residents are governed under a Council-Administrator form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Town Council appoints the Town Administrator and other officers necessary to manage the daily affairs of the Town.

As illustrated in Table 4-4, in 2000 the population of Carefree was 2,920. With new residential development opportunities rare to the Town, this population is forecast to grow only slightly, to 5,816, by 2020. As a result, Carefree's population will continue to comprise only a fraction of Maricopa County's population. Similarly, Carefree's small labor force is forecast to parallel the Town's population growth by comprising a consistently small share of the region's jobs. In 2000, Carefree had 1,500 jobs, while 2020 projections anticipate 3,992 jobs within the community. There are approximately 1,700 jobs presently within the community; a majority of these positions are in the tourism, resort, and service sectors of the local economy.

Approved in June of 2002, Carefree's General Plan reflects a community that is preserving the historical trend of low-density residential growth that is complimented by the dramatic natural features of the area. As illustrated in Figure 4-15[9], single-family homes and open space are expected to remain the two dominant land use types in Carefree. Currently, nearly one-half of the acreage of Carefree is classified as vacant, and only 1% of the Town is commercial. Furthermore, single-family development of some type represents about 78% of all developed lands in the Town. The Town's growth plans indicate a continuation of this pattern. Figure 4-15 shows a Town build-out scenario that includes only a fraction of commercial land on the Town's southern border with the Carefree Highway

[8] Town of Buckeye, http://www.buckeyeaz.gov/DocumentView.aspx?DID=177

[9] Town of Carefree, http://www.carefree.org/vertical/Sites/%7B7E577914-08B7-498C-8013-7E6515AE5610%7D/uploads/%7B6E5A1642-361B-4CD6-89D0-1DE975305A8B%7D.PDF

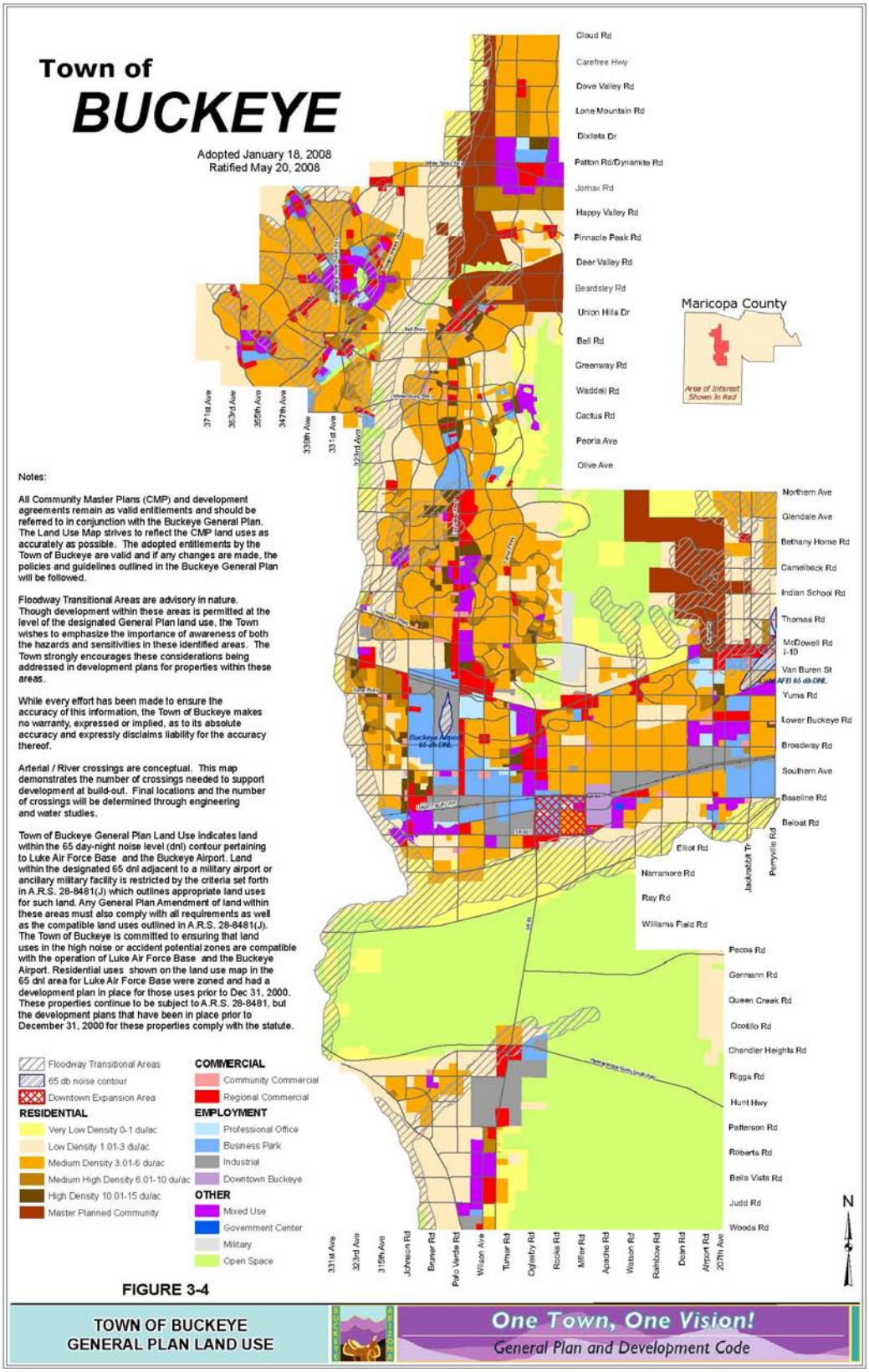


Figure 4-13: Town of Buckeye land use planning map

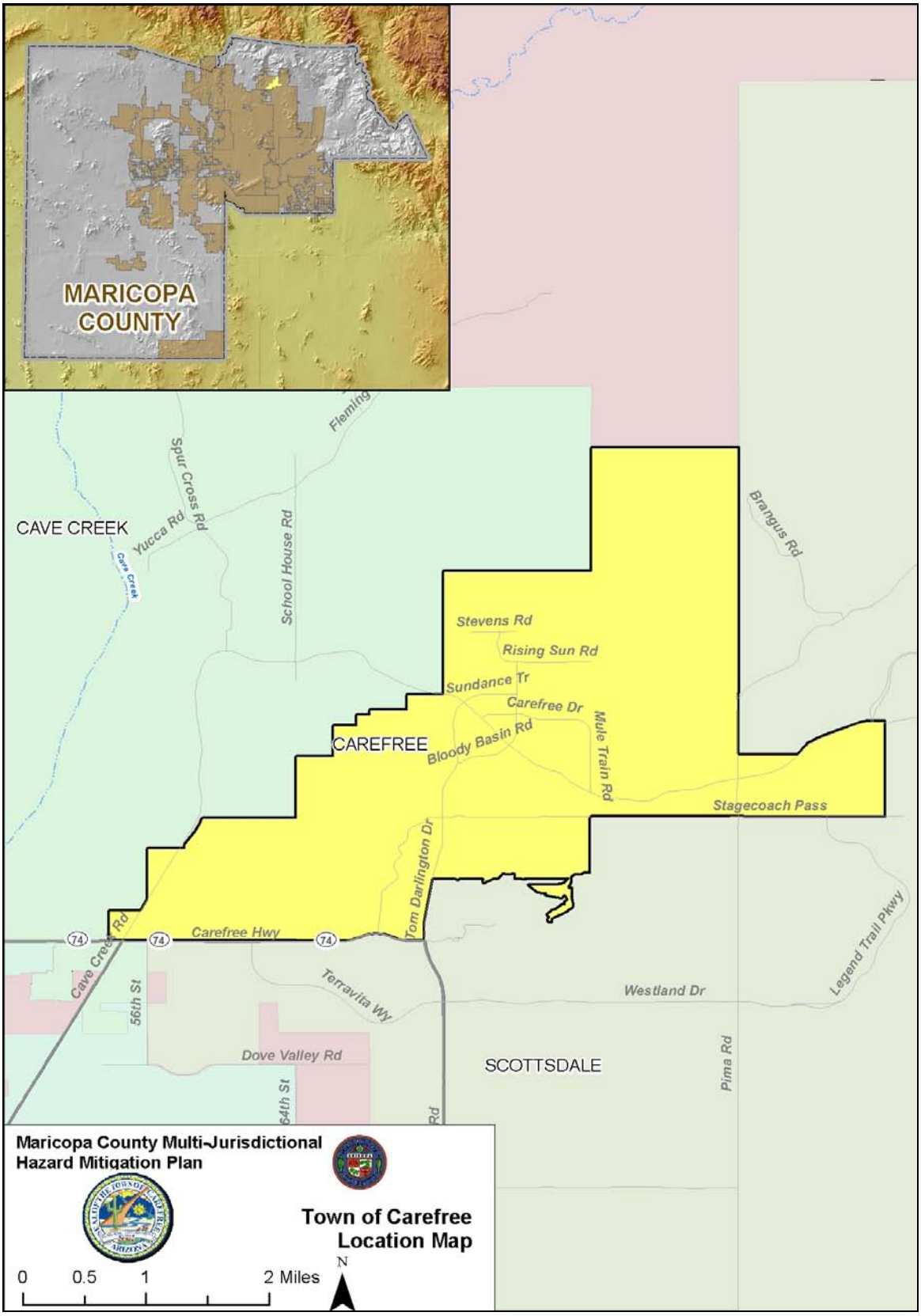


Figure 4-14: Town of Carefree location map

Table 4-4: Summary of population and employment estimates for Carefree

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Carefree	1,666	2,920	3,948	4,418	5,816
As a % of County	0.08%	0.10%	0.10%	0.11%	0.11%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Carefree	N/A	1,500	1,700	3,270	3,992
As a % of County	N/A	0.10%	0.09%	0.15%	0.15%
Jobs per Capita	N/A	0.51	0.43	0.74	0.69
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

and adjacent to the Town Center's northwest corner. Similarly, a small area anticipated to accommodate garden office uses is expected to develop in east Carefree near Pima Road, and within the Town Center. An overwhelming proportion of the remaining land uses will be occupied by rural and low-density residential uses.

4.3.4 Cave Creek

One of the few communities in Maricopa County that has not experienced a rapid rate of growth, the Town of Cave Creek is located in the far northeast portion of the Greater Metropolitan Area, approximately 25 miles from downtown Phoenix. To the east, the Town of Carefree borders Cave Creek for its full length. On the south, it is bounded by Phoenix and on the north and west by unincorporated Maricopa County. A community more closely associated with a frontier and cowboy image than its "sister community" to the east—Carefree—the Town of Cave Creek exists in and near some of the most scenic country in Maricopa County. The area that now includes the Town of Cave Creek was originally settled in the late 1870s, and quickly became an active mining area during the 1880s. Incorporated in 1986, Cave Creek today is struggling to maintain its rural appearance while existing in a rapidly growing region of Maricopa County.

Illustrated in Figure 4-16, the primary east-west roadway into the area—the Carefree Highway—has been constructed as a four-lane arterial east from Interstate 17. This roadway intersects with the primary north-south access to the area—Cave Creek Road—on the south side of the Town and runs north, bisecting the Town. Sharing a development pattern that roughly parallels that of Carefree, most of the vacant desert that once surrounded the Town of Cave Creek in the 1980's is now developed with semi-rural urban uses. Complimenting the rugged landscape of the area has been a recent effort to preserve these natural amenities. Today the Spur Cross Ranch Conservation Area, Cave Creek Park, and Black Mountain Summit Preserve reflect this movement, and are located on the north, west, and southeast portions of Cave Creek, respectively. Recent development opportunities to the south of Cave Creek, especially in north Phoenix and Scottsdale, suggest that growth of the metropolitan area may continue with the potential to surround the Town at some point in the future.

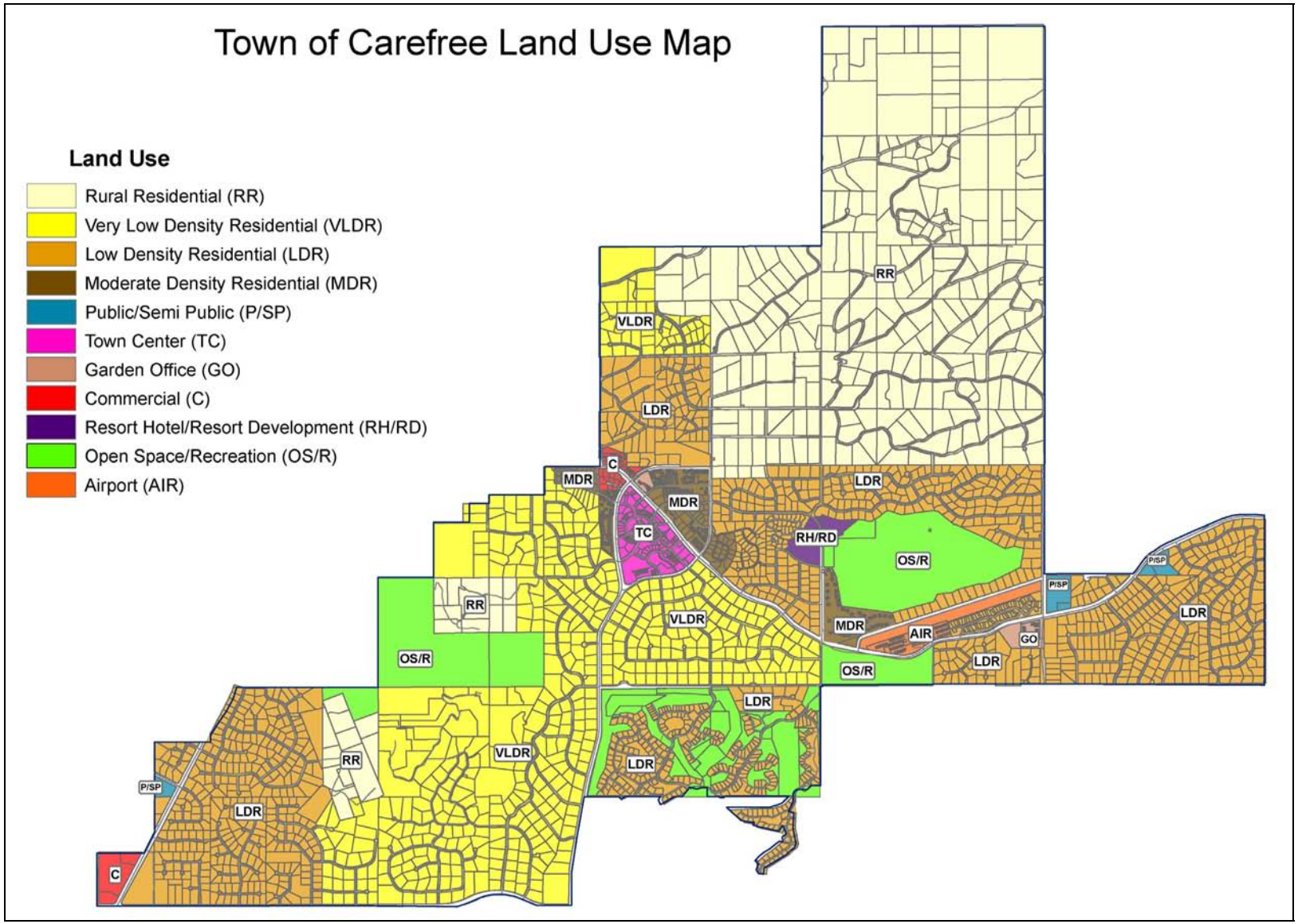


Figure 4-15: Town of Carefree land use planning map

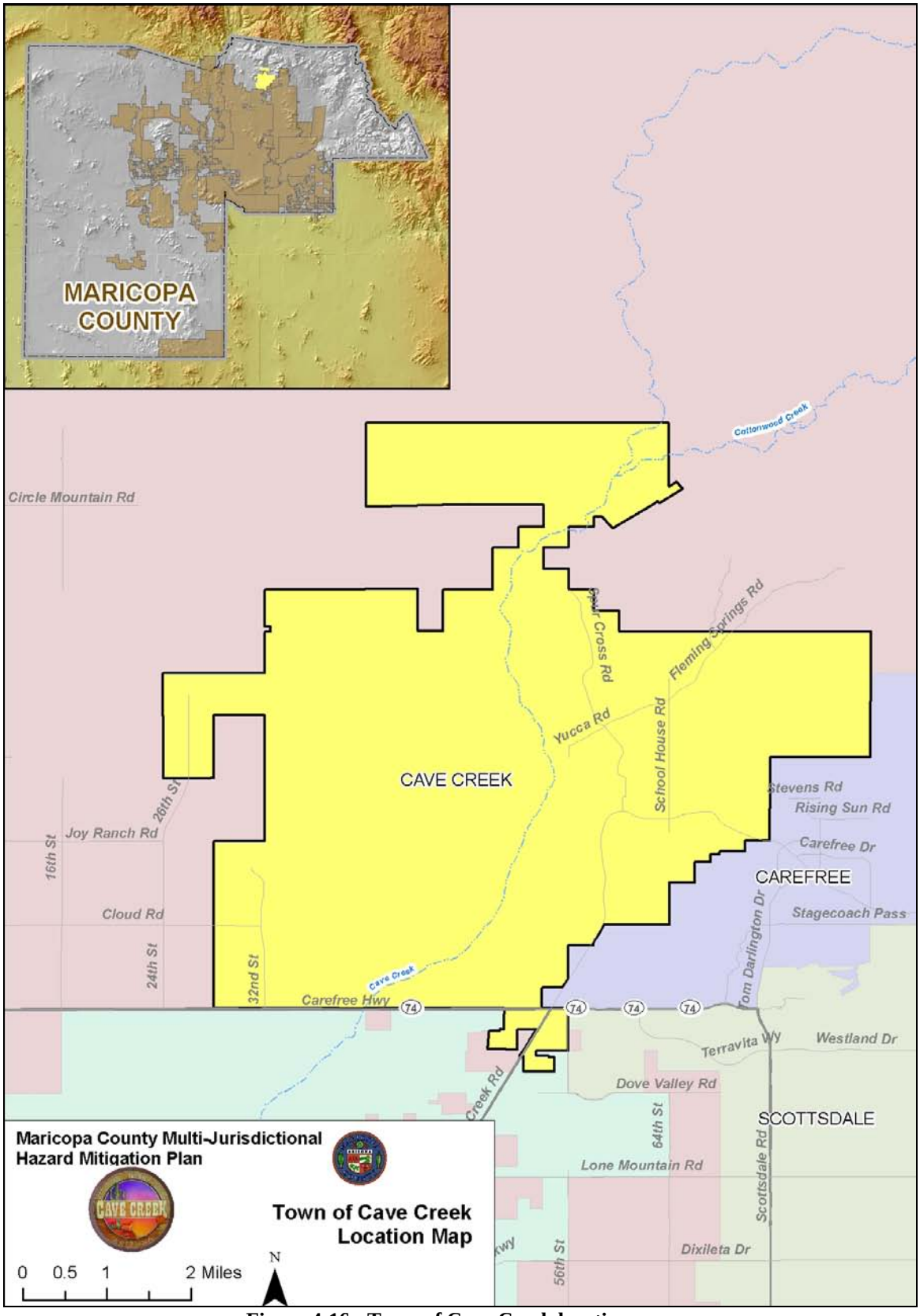


Figure 4-16: Town of Cave Creek location map

Cave Creek's residents are governed under a Council-Town Administrator form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Town Council appoints the Town Administrator and other officers necessary to manage the daily affairs of Cave Creeks' residents.

As illustrated in Table 4-5, the 2000 population of Cave Creek was 3,685. With new residential growth in the Town slow to develop, this population is forecast to grow slightly to 5,800 by 2020. As a result, Cave Creek's population will continue to comprise only a small portion of Maricopa County's population. Similarly, Cave Creek's small labor force is also predicted to parallel the Town's population growth by comprising a consistently small share of the region's employment. In 2000, Cave Creek had 800 jobs, while 2020 projections anticipate 4,666 jobs within the community.

Table 4-5: Summary of population and employment estimates for Cave Creek

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Cave Creek	2,925	3,685	5,132	5,781	7,815
As a % of County	0.14%	0.12%	0.13%	0.14%	0.15%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Cave Creek	770	800	2,570	3,564	4,666
As a % of County	0.08%	0.05%	0.14%	0.17%	0.17%
Jobs per Capita	0.26	0.22	0.50	0.62	0.60
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

With a historical development pattern that reflects the mining, ranching, and rural lifestyle of the region, Cave Creek has struggled with the urban forces that are spreading to its borders from the south. Land development in Cave Creek is currently guided by the General Plan that was approved by the Town in 2005. Major portions of the Town are set aside for open space and rural or low density residential areas, as depicted on Figure 4-17[10]. A small Town Core and Commercial area straddles Cave Creek Road to define areas of business and retail.

[10] Town of Cave Creek, http://www.parkecommercial.com/pdf/generalplans/cavecreek-gp.pdf

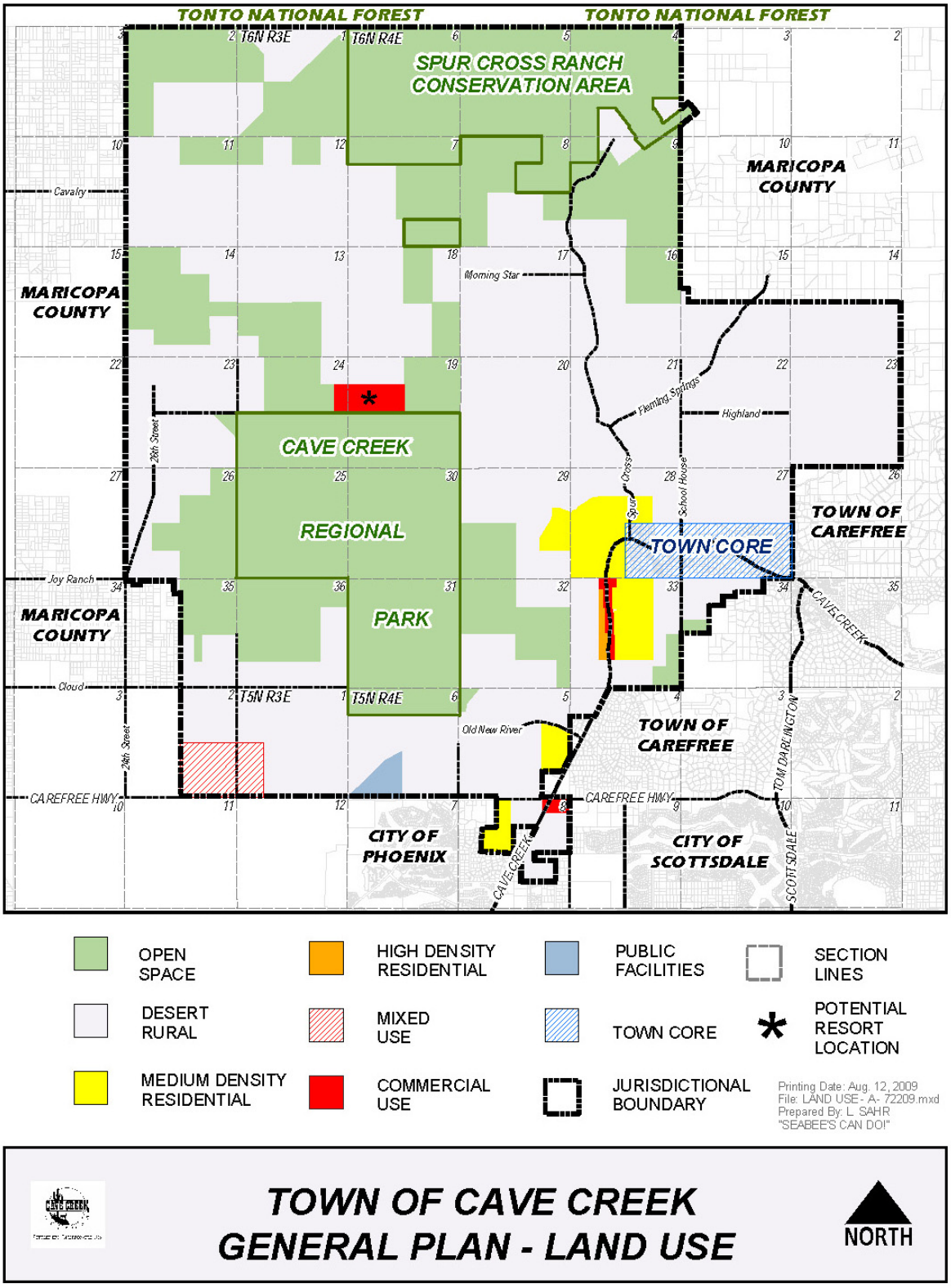


Figure 4-17: Town of Cave Creek land use planning map

4.3.5 Chandler

Located approximately 19 miles east of downtown Phoenix, Chandler is located in the southeast Maricopa County. The City of Chandler was one of the fastest growing cities in Arizona and the United States, having grown 116 percent from 1990 to 2002. Chandler, known as the "Oasis of the Silicon Desert" was once a quiet tree-lined farming community. It has since blossomed into a city that is home to a dynamic high-tech industry. Its incorporated area is 63.6 square miles, and the City's planning area is 71.4 square miles.

Chandler is characterized by a generally flat landscape framed by views of the Santan Mountains to the southeast and the Superstition Mountains to the east as shown in Figure 4-18. The Loop 101 freeway passes through the west-central portion of the City, the planned 202 (Santan) Freeway will pass through the south-central portion of the City, and the existing State Route 60 provides access just north of the City's northern border. The Town of Gilbert borders the City to the east, Tempe and Mesa border Chandler to the north, Phoenix forms the western border, and the Gila River Indian Community lies to the south.

Incorporated in 1920, today Chandler's residents are governed under a Council-Manager form of government, which includes a seven member City Council consisting of a Mayor and six Council members elected at-large for a term of four years. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-6, in 2000 the population of Chandler was 176,338, making it the fifth most populated in Maricopa County equal to a 95% increase from the City's 1990 population of 90,533. With residential development continuing to expand in Chandler this population is forecast to grow to 282,991 by 2020. Despite this growth it is not anticipated that Chandler will comprise a rapidly growing ratio of Maricopa's overall resident population. This fairly stable representation is due to Chandler's finite land development opportunities, which are expected to be exhausted by the year 2030. Similarly, Chandler's labor force is forecast to remain steady through build out. In 2000, approximately 4.5% of Maricopa County's labor force was employed in Chandler, with 6.2% forecast to be reflected in Chandler's labor pool in the year 2020. Chandler has a diverse economy, based in large part on the high-tech companies who have settled there. Motorola and Intel combined have five plants in the city, including Motorola's Iridium and Intel's Pentium III chip facilities. Other high-tech companies with locations in Chandler include Rogers, Avnet, AMKOR, SpeedFam, Orbital Sciences and Microchip Technology. Over 75 percent of the city's manufacturing employees work in high-tech. Major public employers include: Chandler Regional Hospital, the City of Chandler, and the Chandler School District.

Table 4-6: Summary of population and employment estimates for Chandler

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Chandler	90,533	176,338	244,376	265,107	282,991
As a % of County	4.27%	5.74%	6.13%	6.41%	5.48%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Chandler	25,421	71,000	123,867	128,244	168,141
As a % of County	2.68%	4.54%	6.83%	6.07%	6.22%
Jobs per Capita	0.28	0.40	0.51	0.48	0.59
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

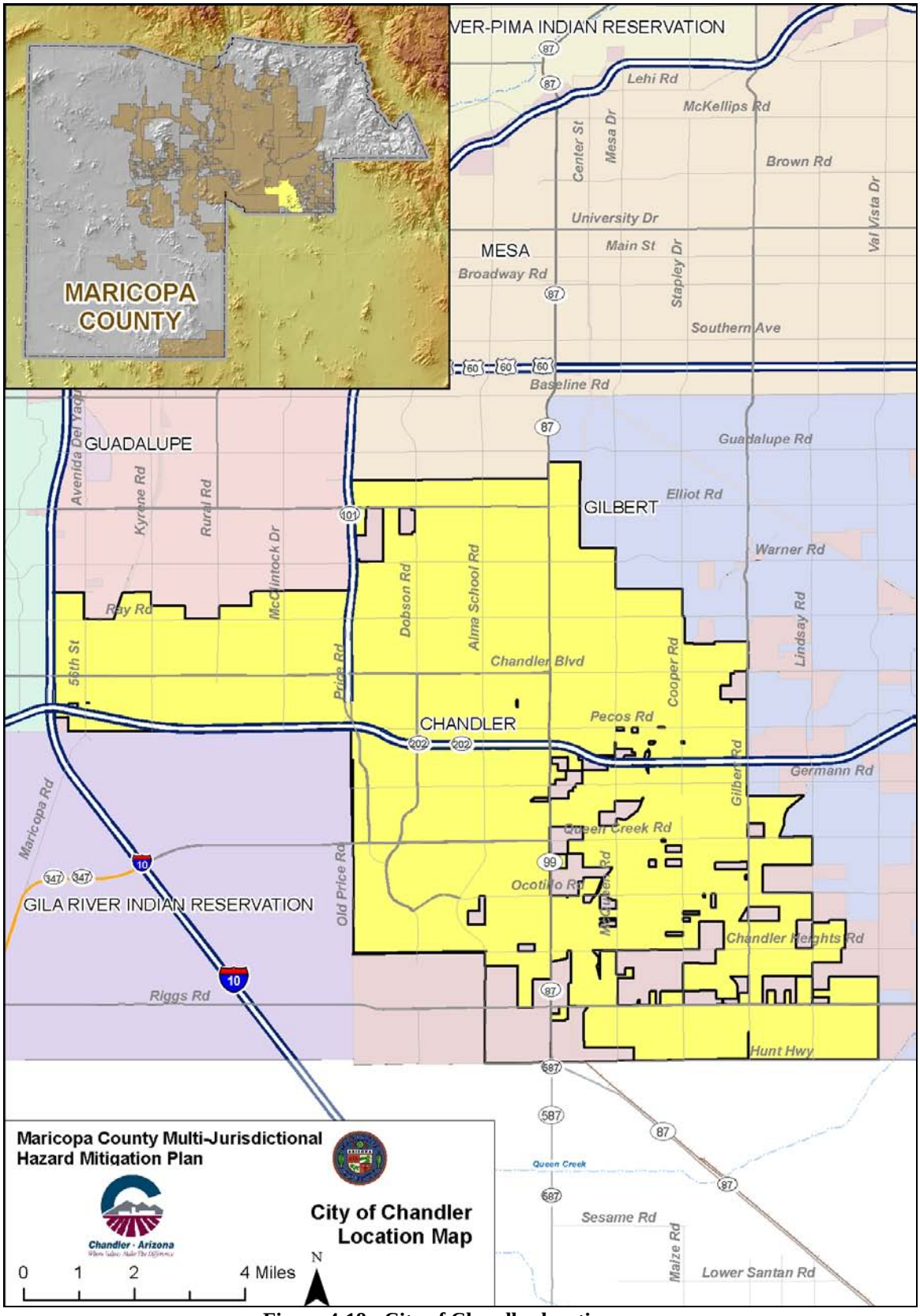


Figure 4-18: City of Chandler location map

Chandler's General Plan, approved in November of 2008, reflects a maturing community with limited land resources and a desire to maintain sustainable economic growth. Today significant portion of Chandler's 71.4 square mile planning area is developed, and over half of the developed land uses are residential, as shown in Figure 4-20[11]. The General Plan goals are to preserve enough land for future commercial and employment opportunities with a balance of residential properties. The General Plan also includes a Safety Element, which identifies goals, objectives and policies to prevent, reduce and combat natural and man-made hazards. This element addresses general emergency planning, evacuation routes, peak load water supply requirements, and clearances around structures, geologic hazard identification, and minimum road widths.

4.3.6 El Mirage

The City of El Mirage is located approximately 15 miles northwest of downtown Phoenix in the western portion of the Phoenix Metropolitan area. South of Peoria Avenue, El Mirage is bordered to the west and south by the City of Glendale. It is enclosed on the west and north by the City of Surprise. On the east, the City is bordered by the Town of Youngtown and unincorporated areas of Maricopa County. El Mirage sits on the west bank of the Agua Fria River, which runs the length of the City's eastern border.

United States Highway 60 – Grand Avenue—is a divided, four to six lane road that extends from the Town of Wickenburg southeast to Van Buren Street in the City of Phoenix. As shown in Figure 4-20, Highway 60 diagonally traverses the north portion of El Mirage. The Burlington Northern Santa Fe (BNSF) Railroad runs along Grand Avenue's east side through the City of El Mirage. The centerpiece of El Mirage's recreation facilities is Gateway Park, located at the northwest corner of Thunderbird and El Mirage Roads. The Agua Fria River represents the City's largest open space area, entailing 1,120 acres.

Originally a farming community, migrant farm workers founded El Mirage in 1937, and the City was incorporated in 1951. El Mirage's residents are governed under a Council-Manager form of government, which includes a seven member City Council consisting of a Mayor and six Council members elected at-large for a term of four years. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-7, in 2000 the population of El Mirage was 7,518. With residential development continuing, this population is forecast to more than quadruple to 38,717 by 2020. Despite this growth, El Mirage will not represent a dramatically increasing ratio of Maricopa County's overall population. El Mirage's job to housing figures indicate a City that will struggle to achieve balance until build-out is achieved. In 2000, approximately 0.12% of Maricopa County's labor force was employed in El Mirage, with employment growth up to 0.63% in 2008. Labor projections are anonymously low for 2010 and 2020 when compared with 2008. This may be due to annexation of lands, underestimates of growth, or other factors.

El Mirage's General Plan, approved in 2003 and revised in 2009, guides development within the City. Figure 4-21[12], indicates the current land use planning for the City and shows primarily employment based uses for the southern half of the City and residential dominated uses in the northern half. Open space mostly coincides with the Agua Fria River and commercial development is primarily limited to small businesses located along Grand Avenue and Thunderbird Road.

[11] City of Chandler, http://www.chandleraz.gov/Content/Landuse%20Element.pdf

[12] City of El Mirage, 2009, http://az-elmirage2.civicplus.com/DocumentView.aspx?DID=619

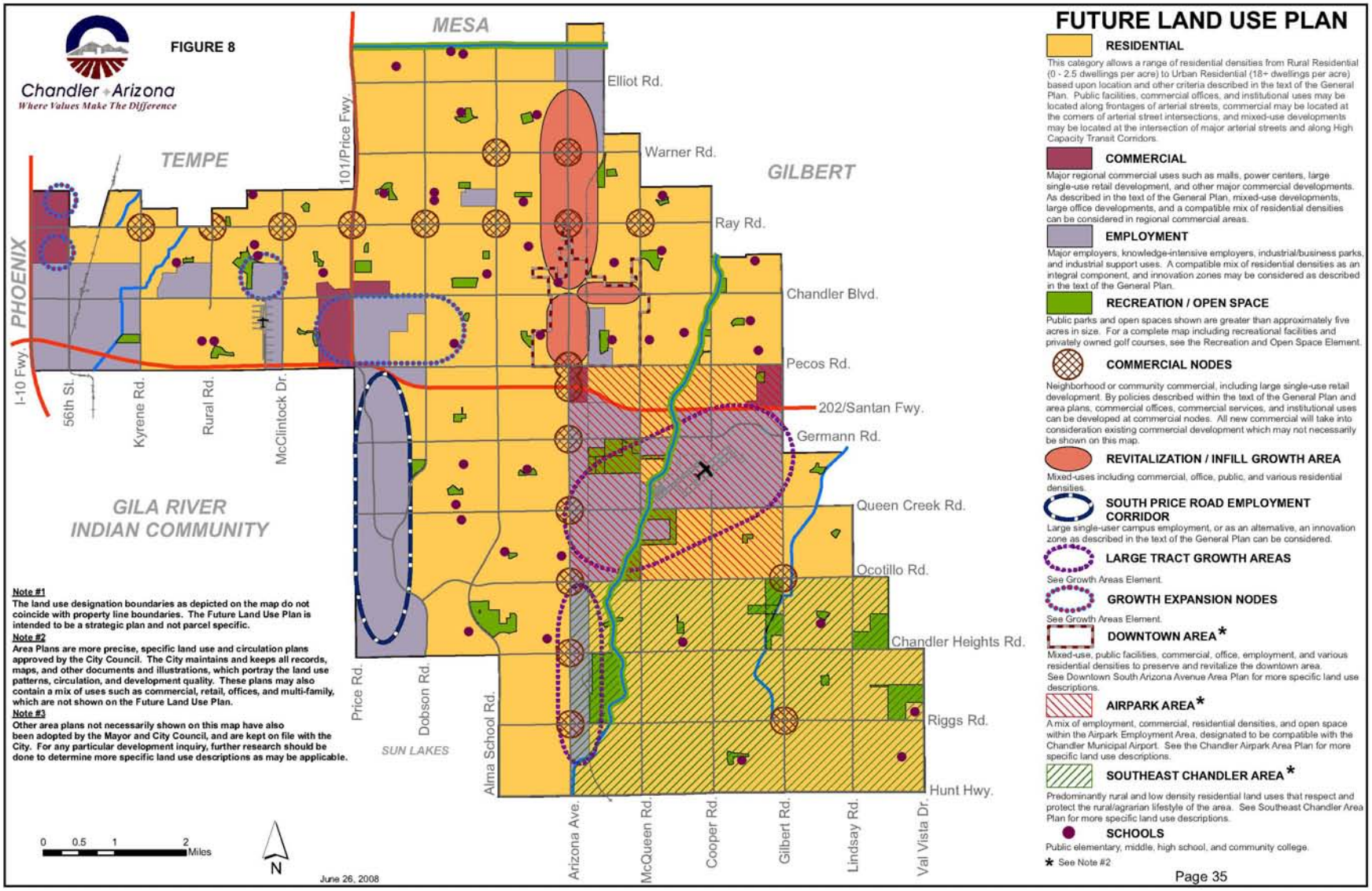


Figure 4-19: City of Chandler land use planning map

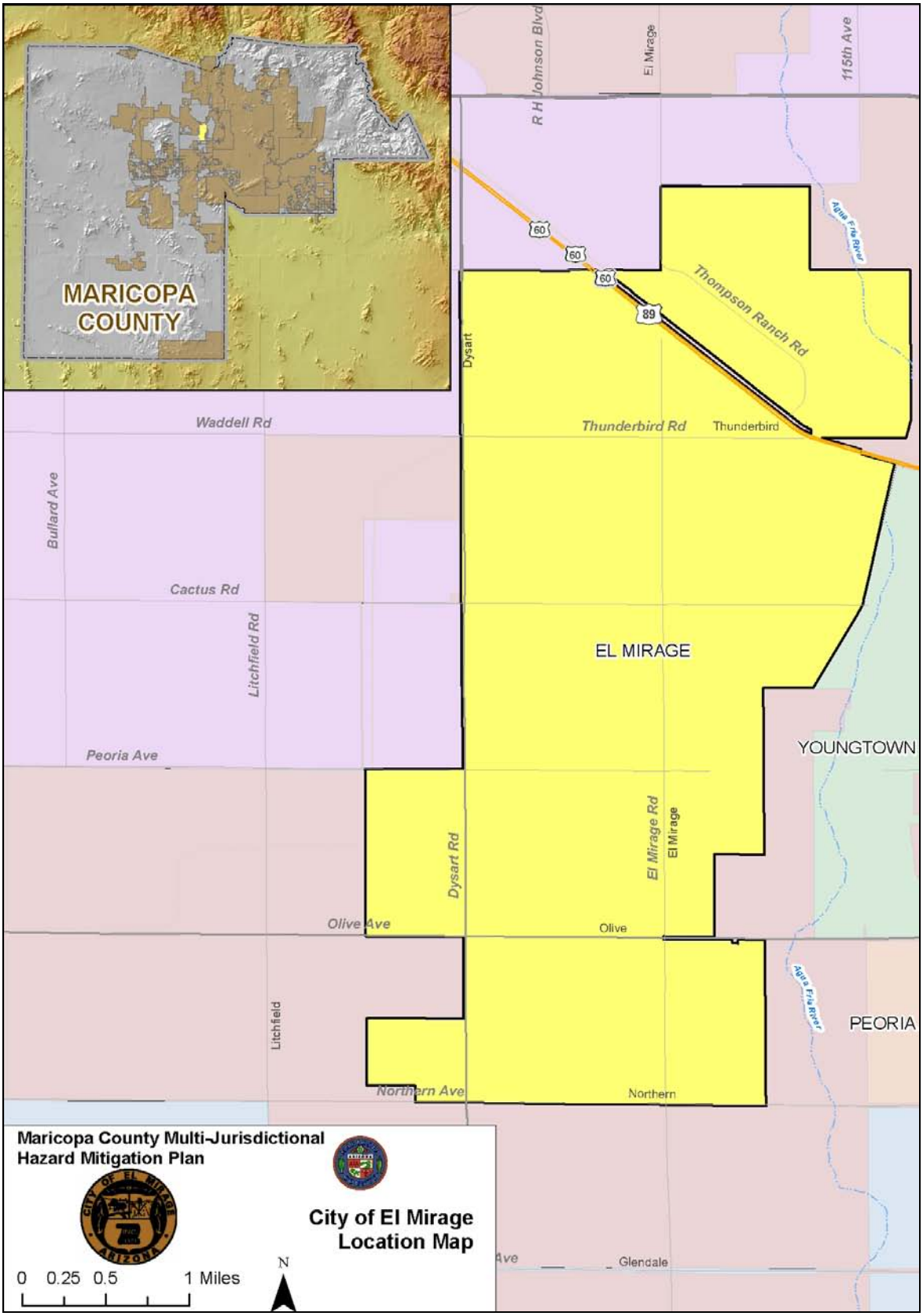


Figure 4-20: City of El Mirage location map

Table 4-7: Summary of population and employment estimates for El Mirage

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
El Mirage	5,001	7,518	33,647	38,620	38,717
As a % of County	0.24%	0.24%	0.84%	0.93%	0.75%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
El Mirage	991	1,900	11,446	5,001	9,276
As a % of County	0.10%	0.12%	0.63%	0.24%	0.34%
Jobs per Capita	0.20	0.25	0.34	0.13	0.24
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Of the City of El Mirage's 9.9 square miles, less than one-third remains undeveloped. Most new development in El Mirage is projected to occur in the area south of Peoria Avenue and north of Grand Avenue. Numerous options also exist for residential single-family infill development in the City's established residential areas. These opportunities are largely related to a transit plan that identifies a commuter rail stop in El Mirage. The City's General Plan also includes a Safety Element, which contains goals, objectives and policies to protect residents of the City of El Mirage from natural and man-made disasters. This element focuses on emergency planning and measures that can be taken to mitigate community health hazards.

4.3.7 Fountain Hills

The Town of Fountain Hills lies in the northeast quadrant of Maricopa County approximately 30 miles northeast of central Phoenix. The Town's hillside topography, in the upper Sonoran Desert on the eastern slope of the McDowell Mountains, provides the community with a rugged terrain and rich natural desert vegetation. Separated from much of greater Phoenix, the Town of Fountain Hills lies atop the McDowell Mountains, which create elevations in the Town between 1,510 and 3,170 feet—averaging about 400-500 feet higher than other Phoenix-area communities.

As shown in Figure 4-22, the City of Scottsdale borders Fountain Hills on the west, the Salt River Pima-Maricopa Indian Community on the south, the Fort McDowell Yavapai Nation on the east, the McDowell Mountain Regional Park on the northwest, and State owned land on the northeast. Major access to Fountain Hills is provided via Shea Boulevard, which is the Town's primary connection to the greater metropolitan area to the west. To the east, adjacent to the Town boundary, Shea Boulevard intersects State Highway 87 connecting the Town to the south and east Valley, including the Cities of Mesa, Chandler, Gilbert, and also north toward the Verde River, the Salt River, and further north to Payson and the Mogollon Rim country.

The close proximity of both the Verde River and Fort McDowell, established in the late 1800's, brought attention to a region that rapidly became known for ranching opportunities in the area. In 1968, still a ranching community, a large land holding in the area came into the possession of the McCulloch Oil Corporation. In 1970 this firm directed the development of a 12,000-acre model town, which would become the community of Fountain Hills. Among the many amenities these developers included with this planned development would be the world's tallest fountain, which is still the community's most prominent feature.

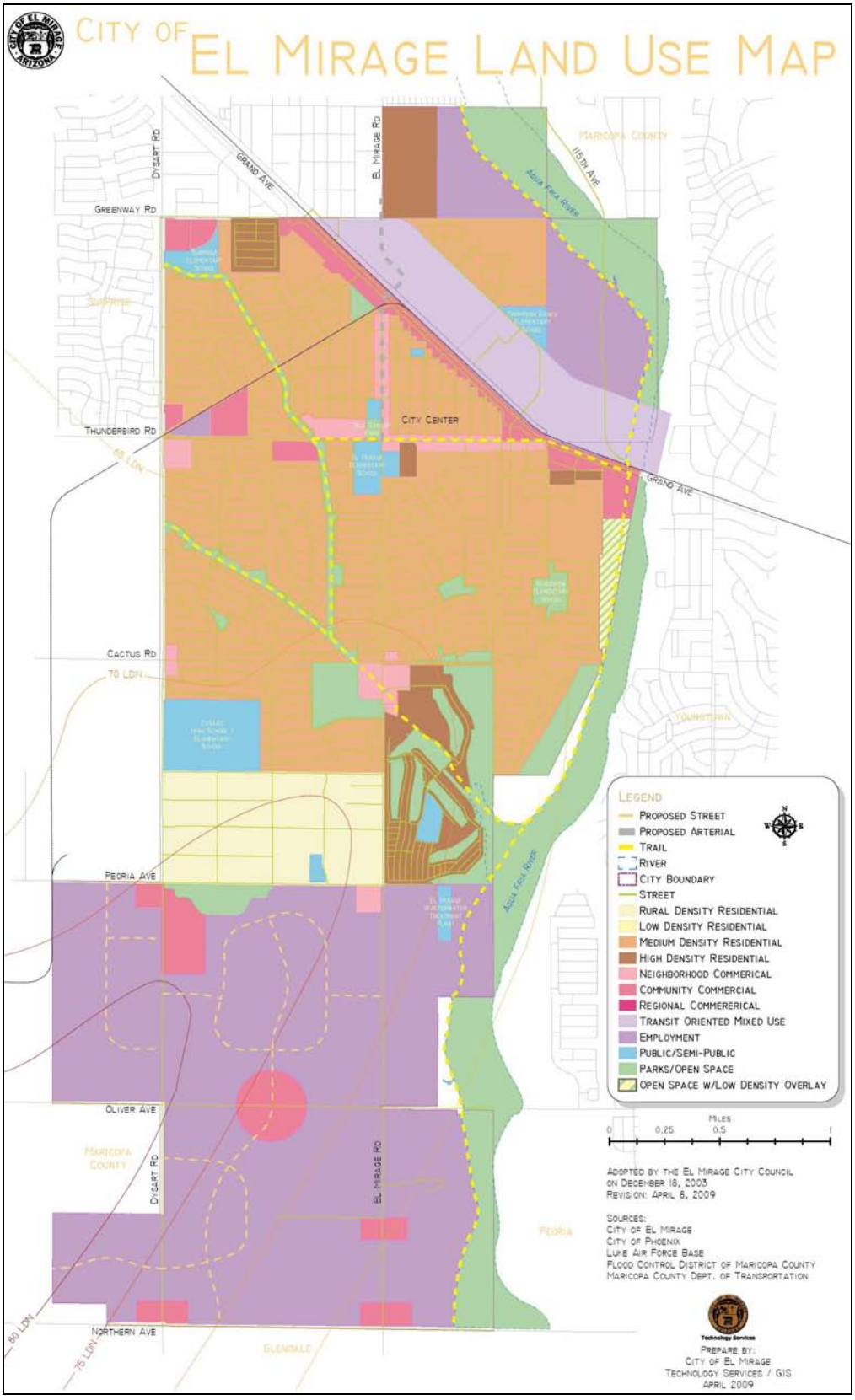


Figure 4-21: City of El Mirage land use planning map

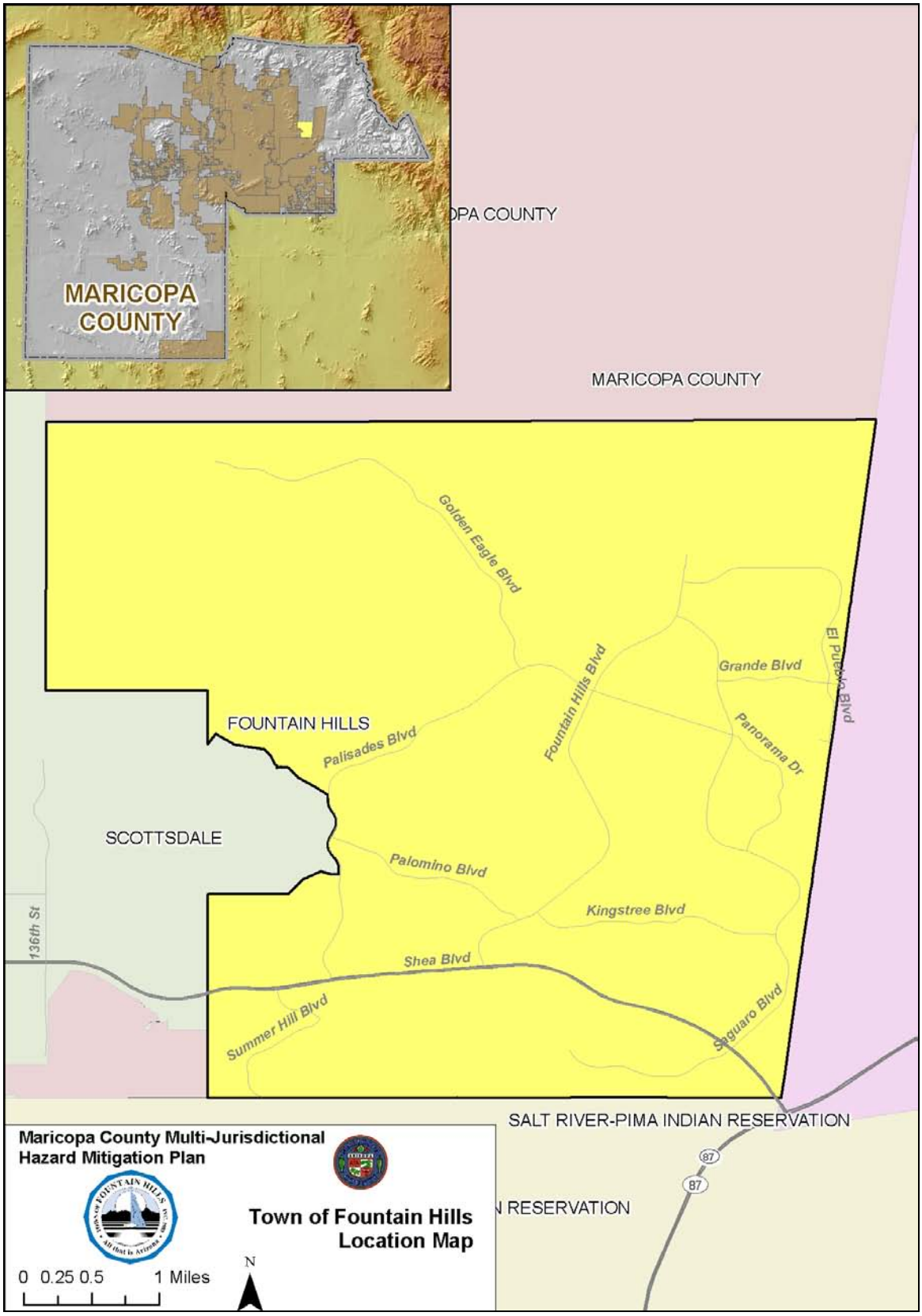


Figure 4-22: Town of Fountain Hills location map

In December of 1989 the Town was incorporated, and now operates under a Council-Mayor form of government, including a mayor and six council members elected at-large. Development of Fountain Hills continued steadily throughout the 1990's, with land annexed to the south.

As illustrated in Table 4-8, in 2000 the population of Fountain Hills was 20,199. With residential development continuing to climb steadily in Fountain Hills this population has grown to nearly 26,000 by 2008. Despite this growth Fountain Hills will comprise an increasingly diminished percent of Maricopa County's overall resident population. This increasing local population, but diminished role within the County, is a reflection of the strong growth throughout the Phoenix area. This trend also indicates the influence of relatively controlled growth in Fountain Hills, which is due largely to the master-planned heritage of the Town. Similarly, Fountain Hills' labor force is forecast to reflect a very small proportion of total county jobs. Some of the community's largest employers are Fountain Hills School District, Safeway, MCO Properties Inc., Bashas', and the Gaming Center at Fort McDowell Reservation. In 2008, Fountain Hills had a labor force of 13,195 people with a 2.3% unemployment rate.

Table 4-8: Summary of population and employment estimates for Fountain Hills

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Fountain Hills	1,030	20,199	25,995	27,166	33,331
As a % of County	0.05%	0.66%	0.65%	0.66%	0.65%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Fountain Hills	978	4,300	13,195	9,954	11,569
As a % of County	0.10%	0.27%	0.73%	0.47%	0.43%
Jobs per Capita	0.95	0.21	0.51	0.37	0.35
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

The Fountain Hills General Plan, ratified in June of 2002, supports the themes of the original 1970's Town concept. This plan envisioned a complete, self-supporting town of approximately 70,000 people. In 1980 this concept was revised to anticipate a build-out population of 45,000. The rugged topography continues to be the major constraint for development in Fountain Hills. Currently, most of the land in Fountain Hills is already platted with an existing land use or is in the developing stages of construction. As shown through Figure 4-23[13], low to mid-density single-family homes predominate throughout the community, and tend to follow the ridgelines. A large share of the undeveloped areas of Fountain Hills is devoted to open space, much of which includes the necessary gulches and valleys that facilitate runoff. Following its heritage as a planned community, Fountain Hills includes a fairly concentrated core area that includes residential, commercial, multi-family and some industrial uses. Highway commercial uses are scattered along Shea Boulevard to the south of Fountain Hills' core.

[13] Town of Fountain Hills, 2002, http://www.fh.az.gov/content/pdfs/planning-and-zoning/general_plan.pdf

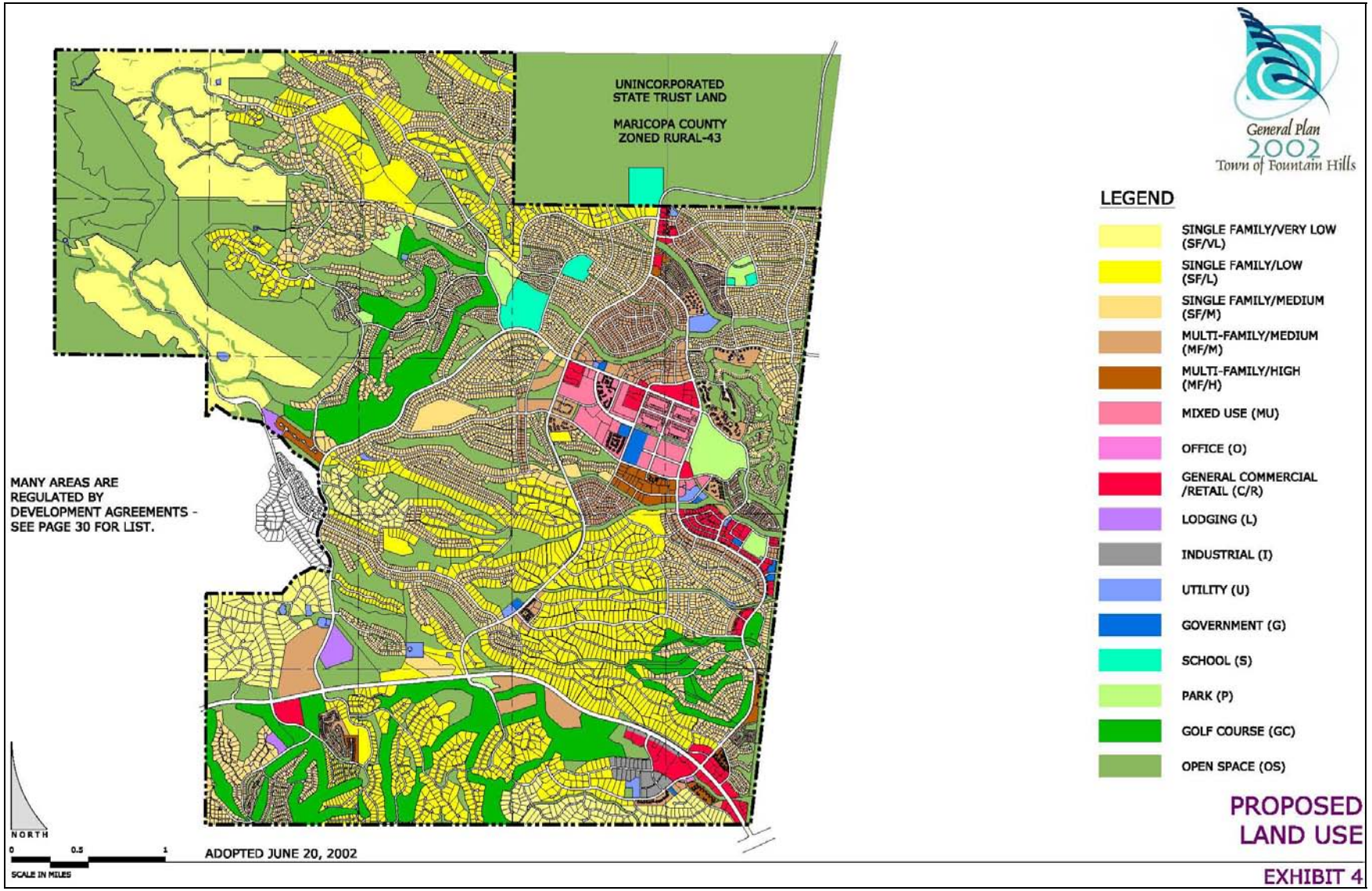


Figure 4-23: Town of Fountain Hills land use planning map

4.3.8 Fort McDowell Yavapai Nation

The Fort McDowell Yavapai Nation (FMYN) is located in the east portion of Maricopa County approximately 23 miles northeast of downtown Phoenix. The FMYN lies adjacent to the east side of the Town of Fountain Hills and the McDowell Mountain Park, and is linked to the north end of the Salt River Pima-Maricopa Indian Community, as shown in Figure 4-24.

With an average elevation of 1,350 feet, the area's diverse landscape ranges from tree-lined bottomlands to cactus studded rolling hills. This desert landscape is contrasted by the riparian areas of the Verde River and Sycamore Creek. The 40-square mile area is now home to over 600 tribal members, while another 300 live off the reservation.

The FMYN was created by Executive Order on September 15, 1903. The Community is governed by a Tribal Council that is elected by tribal members pursuant to the Tribe's Constitution.

As illustrated in Table 4-9, in 1990 the population of FMYN was 640 residents. With the reservation largely immune to the growth influences found in many Maricopa County incorporated communities, the FMYN will experience only natural growth rates through the foreseeable future. The 2000 population was estimated to be 829 persons, while 2020 estimates put FMYN's population at 1,037 residents.

Table 4-9: Summary of population and employment estimates for the Fort McDowell Yavapai Nation

Population	**1990**	**2000**	**2005**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Fort McDowell Yavapai	640	829	824	839	1,037
As a % of County	0.03%	0.03%	0.02%	0.02%	0.02%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Fort McDowell Yavapai	N/A	N/A	227	1,323	1,647
As a % of County	N/A	N/A	0.01%	0.06%	0.06%
Jobs per Capita	N/A	N/A	0.28	1.58	1.59
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

FMYN's prime economic activity is its casino and related facilities. Built in 1984, the Fort McDowell Casino now occupies nearly 150,000 square feet with 950 employees. Other businesses include a large sand and gravel quarrying operation, a concrete plant, a hotel, golf courses, and various farming activities. Ft. McDowell's labor force is predicted to be nearly double its population in 2010 and 2020. In 2002, Fort McDowell had a labor force of 303 people and is expected to rise to 1,647 by 2020.

Existing land use elements for FMYN are indicated on Figure 4-25[14]. Open space dominates most of the reservation land mass, with agricultural and very low density residential uses comprising the next two largest elements.

[14] Maricopa Association of Governments, 2007 (DRAFT), *Municipal Planning Area Socioeconomic Profiles Maricopa County, Arizona*

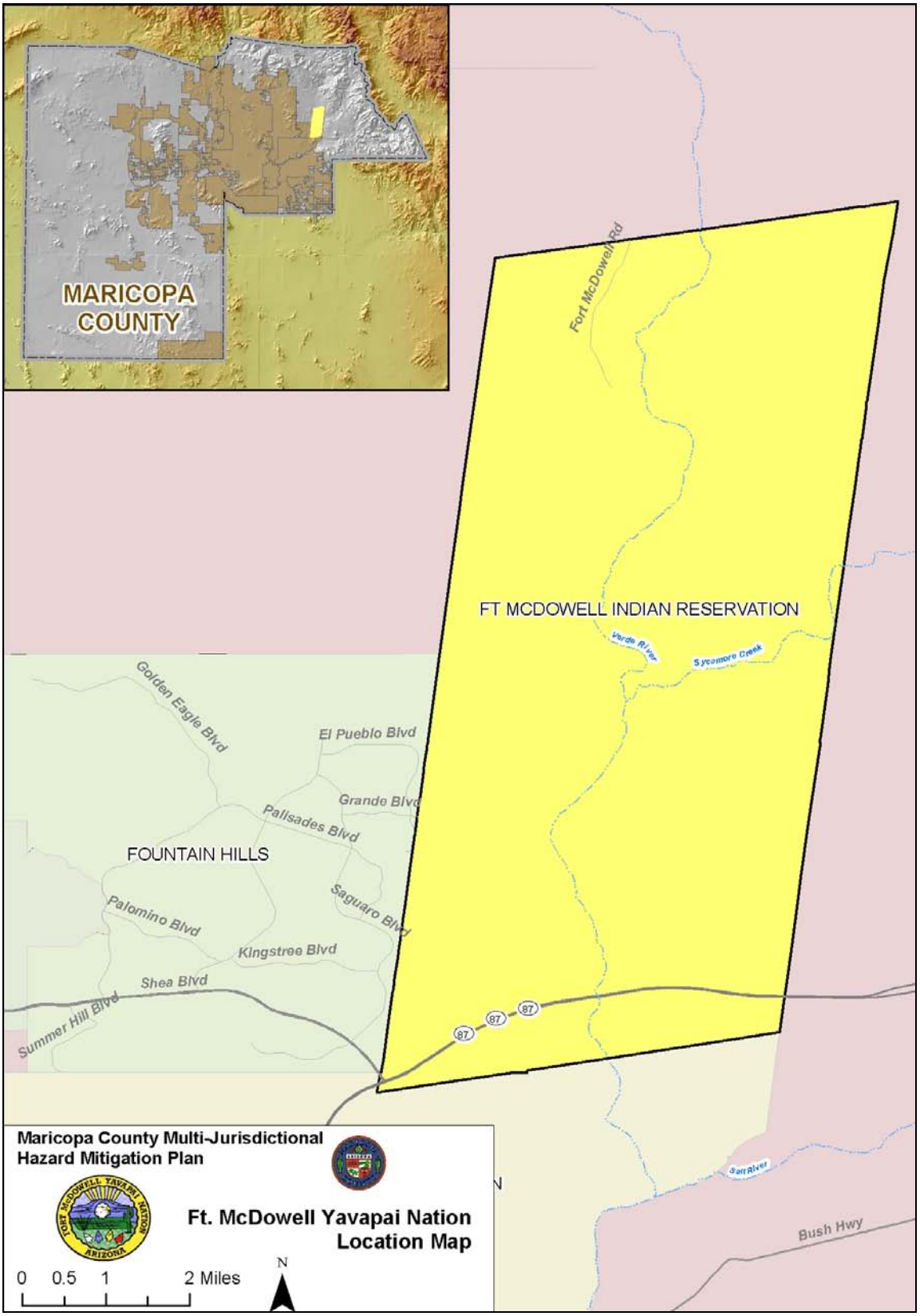


Figure 4-24: Fort McDowell Yavapai Nation location map

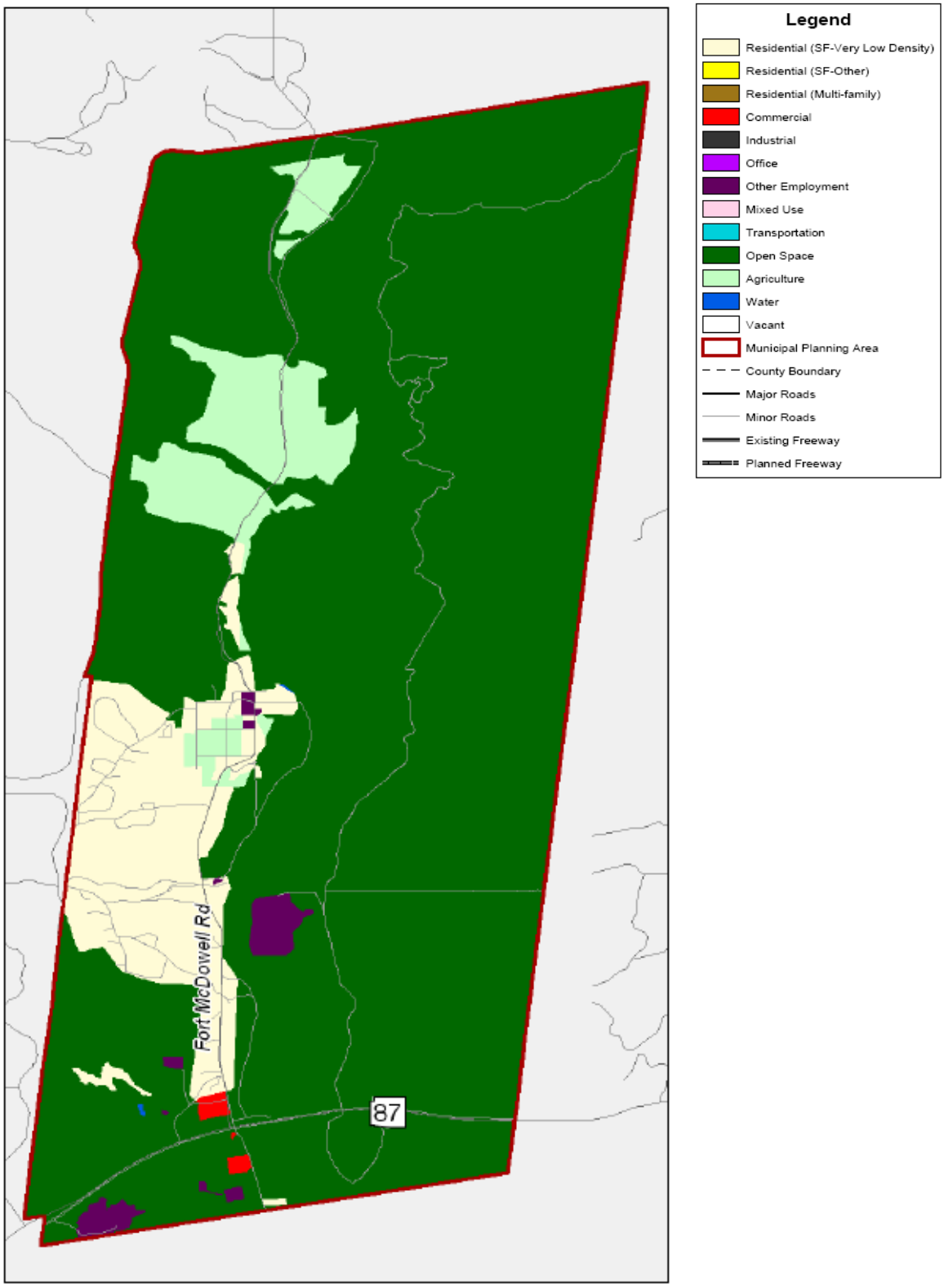


Figure 4-25: Fort McDowell Yavapai Nation land use map

4.3.9 Gila Bend

One of the few Maricopa County communities that is not adjacent to another municipality, the Town of Gila Bend is located at the intersection of State Highway 85 and Interstate 8 approximately 65 miles southwest of downtown Phoenix, as illustrated through Figure 4-26. Prominent land features that influence Gila Bend include the Woolsey Peak Wilderness approximately ten miles to the northwest, the North Maricopa Mountains Wilderness to the northeast, the South Maricopa Mountains Wilderness to the east, and the Barry M. Goldwater Gunnery Range to the immediate south of the community. The Tohono O'odham Nation's San Lucy District sits adjacent to the Town's northern border. Incorporated in 1962, the Town is appropriately named for a dramatic bend of the Gila River, which approaches the community from the north before heading west to join the Colorado River. Gila Bend sits at an elevation of 735 feet and includes approximately nine square miles, making the Town one of the geographically smallest communities in Maricopa County.

As illustrated in Table 4-10, the population of Gila Bend in 2000 was 1,944. While growth is anticipated to occur only moderately until 2010, Gila Bend's proximity to the Greater Phoenix metropolitan area is expected to create a greater increase in residential development in the years that follow. By 2020 it is expected that Gila Bend will have a population of nearly 4,000 people. Expectedly, Gila Bend's population will comprise a growing share of Maricopa County's population. By 2020 it is anticipated that Gila Bend will contribute 0.08% of Maricopa County's population, compared to only 0.06% in 2000.

Table 4-10: Summary of population and employment estimates for Gila Bend

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Gila Bend	1,747	1,944	1,899	2,575	3,950
As a % of County	0.08%	0.06%	0.05%	0.06%	0.08%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Gila Bend	N/A	1,200	977	1,691	2,760
As a % of County	N/A	0.08%	0.05%	0.08%	0.10%
Jobs per Capita	N/A	0.62	0.51	0.66	0.70
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

In 2000, 1,200 jobs existed in the Town, while nearly 2,800 are projected to exist by 2020. With 90,000 acres under cultivation in the Gila Bend trade area, agriculture still forms the backbone of the Gila Bend economy. Cotton heads the list of crops grown, along with alfalfa and grain.

Gila Bend's General Plan, adopted November 2006, indicates a dramatic mix of land uses as shown in Figure 4-27[15]. This diverse blend is highlighted by various industrial zoning districts, as well as several pockets of low density residential and larger agriculturally designated parcels. Higher density residential districts exist closer to the historical core of Gila Bend, as well as industrial land that is influenced by the Southern Pacific Railroad.

[15] Town of Gila Bend, http://www.gilabendaz.org/vertical/Sites/%7B460CCFC8-4ABF-4D56-9D05-343DF365E86C%7D/uploads/%7BADBAFC26-4C10-424E-B173-E59B29CAA9C6%7D.PDF

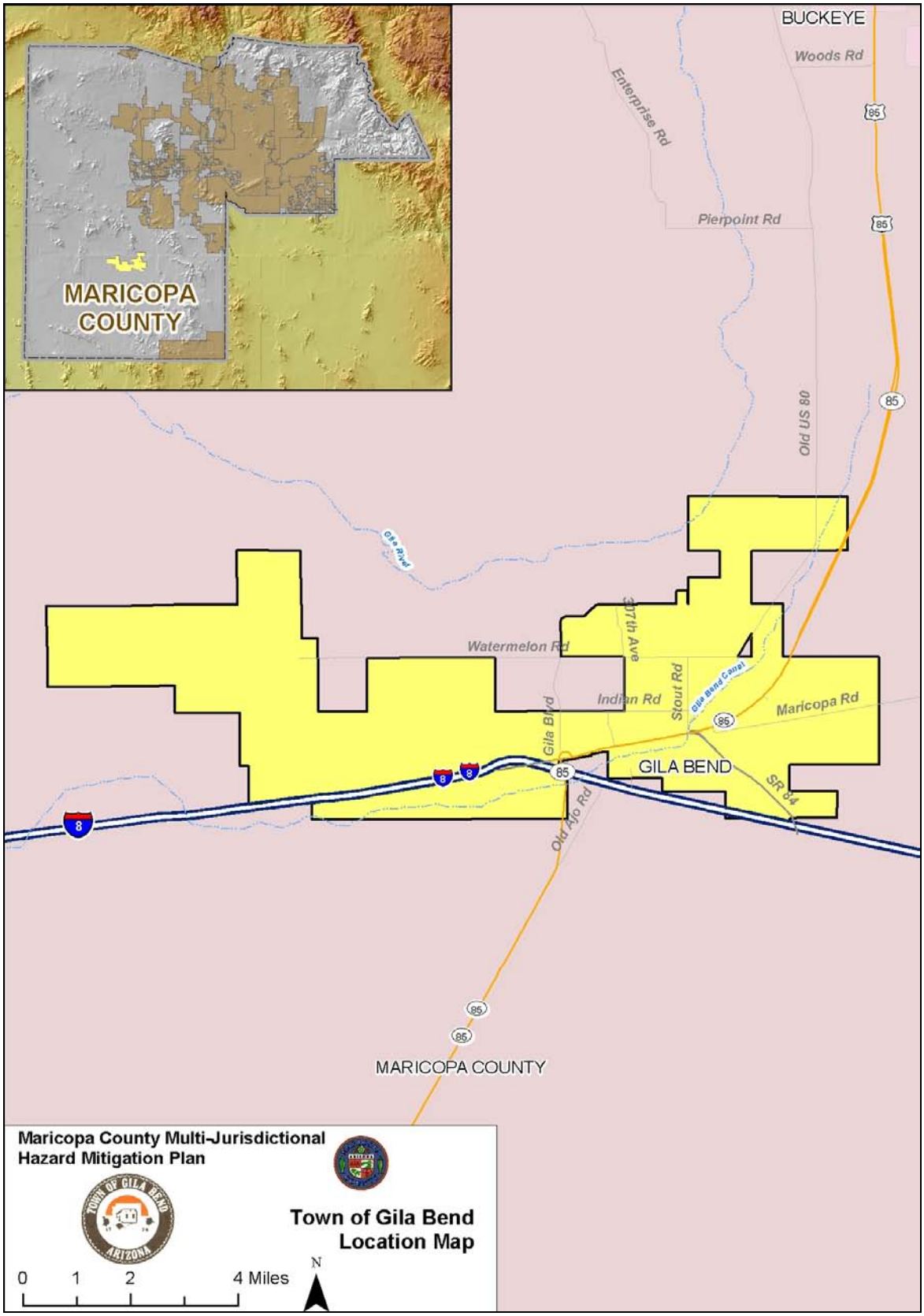


Figure 4-26: Gila Bend location map

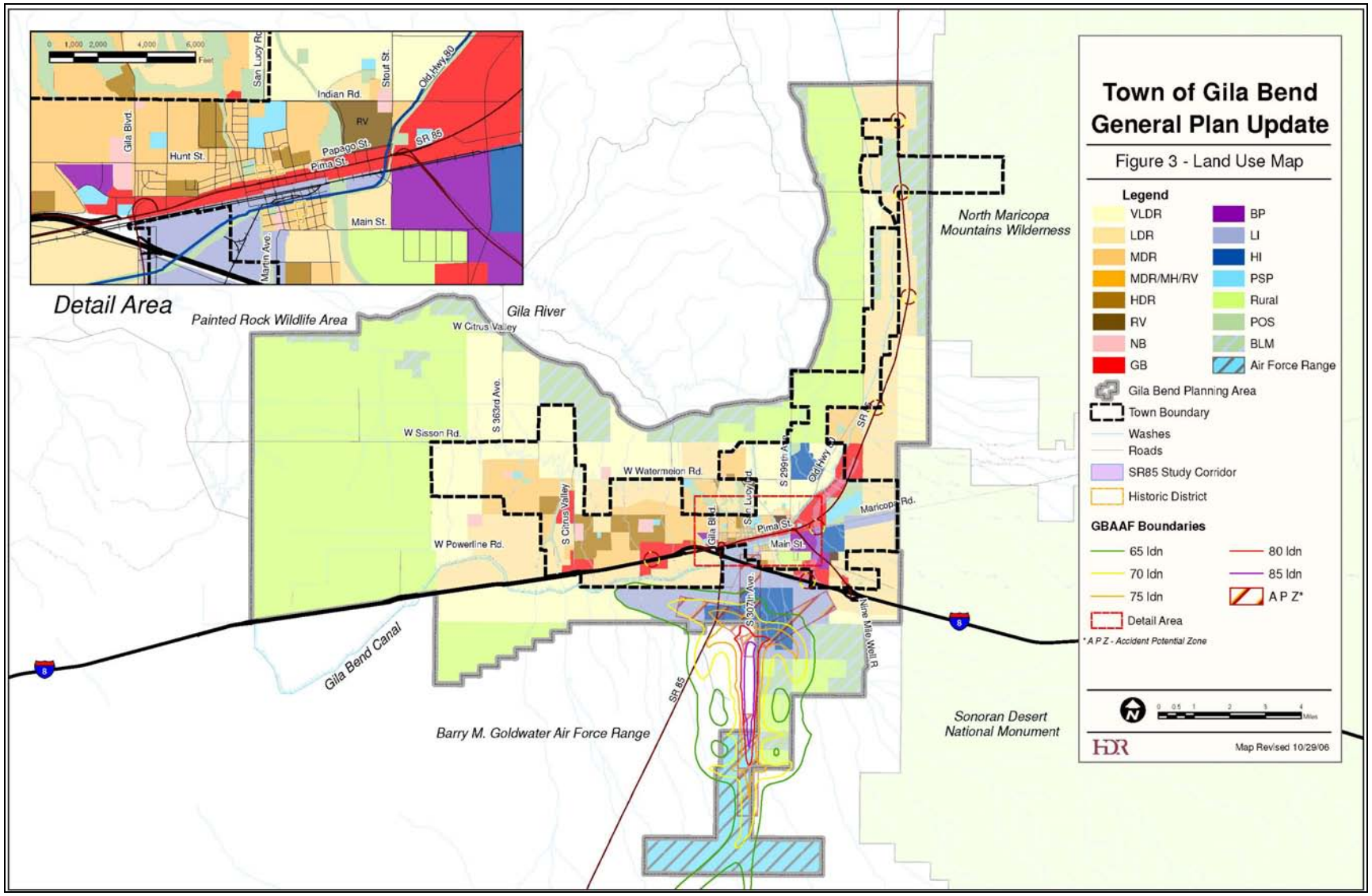


Figure 4-27: Town of Gila Bend land use planning map

4.3.10 Gilbert

The Town of Gilbert, located in the southeast valley, was incorporated in 1920. The original town site of just less than one square mile has grown rapidly today into a 74 square mile planning area in southeast Maricopa County. As shown in Figure 4-28, the Town shares boundaries with the City of Mesa, City of Chandler, Town of Queen Creek, the Gila River Indian Community, and Pinal County. A region that is defined more by roadways than natural features, the Town's northern boundary is Baseline Road; the eastern boundary is generally along Power Road; the southern boundary is Hunt Highway; and the western boundary is along several roads as it jogs between Arizona Avenue and Val Vista Road. Numerous pockets of unincorporated land dot the planning area, some of which are entirely surrounded by the Town.

Like many communities in Maricopa County, Gilbert's origins lie in agriculture. In 1902, the Arizona Eastern Railway established a rail line between the towns of Phoenix and Florence. A rail siding was established on property owned by William "Bobby" Gilbert. The siding, and the town that sprung up around it, eventually became known as Gilbert.

Gilbert became an active farming community, fueled by the construction of the Roosevelt Dam and the Eastern and Consolidated Canals. It remained an agricultural town for many years, and was known as the "Hay Capital of the World" until the late 1920s.

Gilbert began to take its current shape during the 1970s when the Town Council approved a strip annexation that encompassed 53 square miles of county land. Today Gilbert's residents are governed under a Council-Manager form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Council appoints the Town Manager and other officers necessary to produce an orderly administration of the Town's affairs.

As of April 2008 the population of Gilbert is estimated at nearly 215,000 persons. As illustrated through Table 4-11, in 2000 the population of Gilbert was 109,936. With residential development continuing to expand in Gilbert, the population is forecast to almost 286,000 by 2020. Despite continued growth Gilbert's ratio of overall County population is anticipated to diminish after the Town's growth area is built out sometime after 2020. Gilbert's labor force is also forecast to remain steady through build out. In 2000, 2.24% of Maricopa County's labor force was employed in Gilbert, with 4.36% forecast to reflect Gilbert's labor pool in the year 2020. Commercial and industrial development has increased significantly; in three years, Gilbert has added over 2 million square feet of industrial and commercial space. In 2008, the town had a civilian labor force of 113,468 people and a 2.7% unemployment rate.

Table 4-11: Summary of population and employment estimates for Gilbert

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Gilbert	29,188	109,936	214,820	218,009	285,819
As a % of County	1.38%	3.58%	5.39%	5.27%	5.53%
Emplolyment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Gilbert	5,680	35,000	113,486	81,852	117,984
As a % of County	0.60%	2.24%	6.25%	3.88%	4.36%
Jobs per Capita	0.19	0.32	0.53	0.38	0.41
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

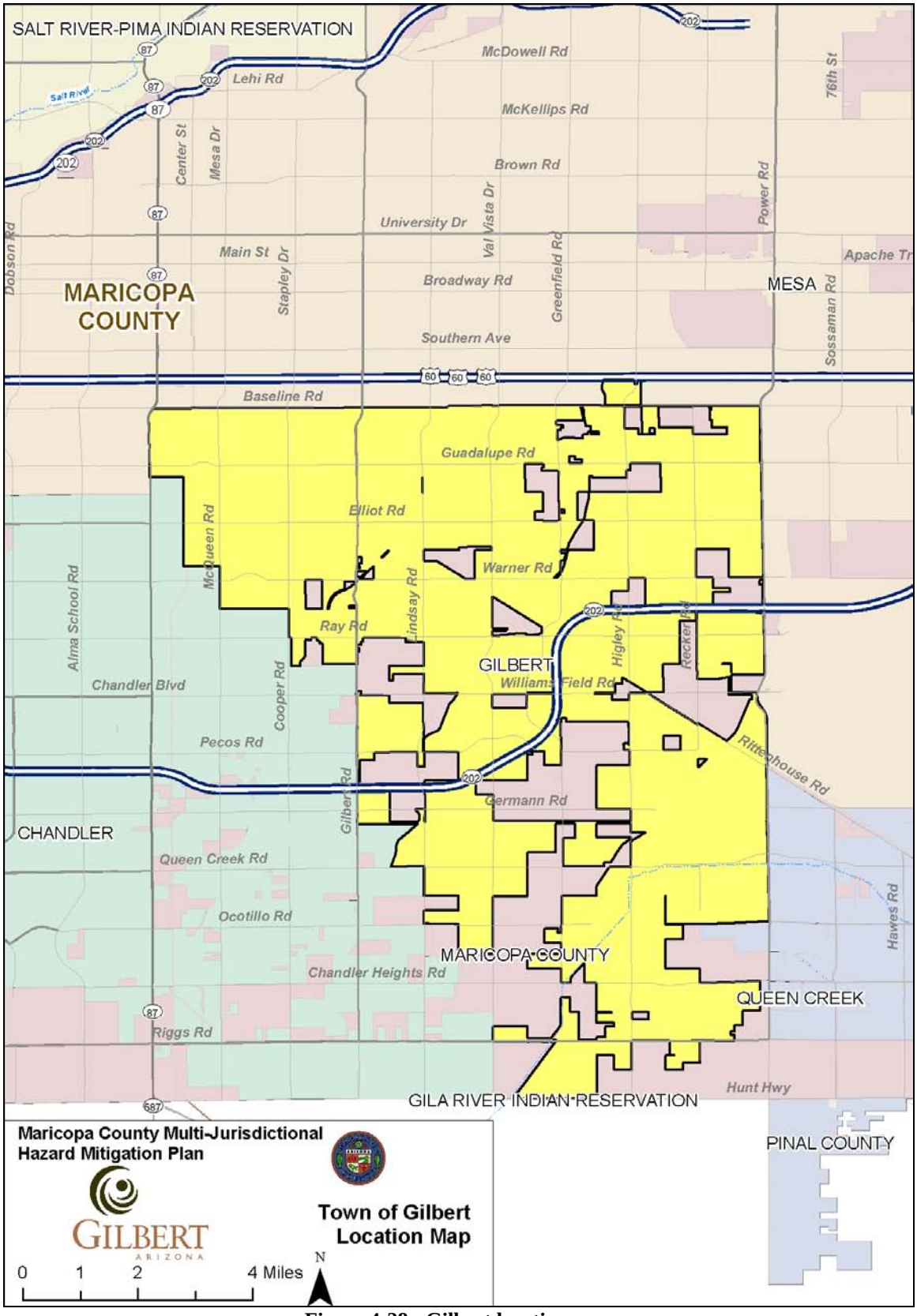


Figure 4-28: Gilbert location map

Gilbert's General Plan, ratified in 2001 and amended in April 2006, reflects a community that is continuing the trend of single-family home construction that has propelled Gilbert to the upper ranks of fast-growing cities in the Country. Between 1990 and 2000 Gilbert became the fastest growing community over 100,000 residents in the United States. Estimates as of 2008 place Gilbert's population at 214,820 people. The pressures felt from this growth have caused Gilbert to expand all services to the new population. Gilbert's growth has generally moved from northwest to southeast, mirroring the availability of sanitary sewer service. The Town's adopted Land use Plan, shown in Figure 4-29[16], indicates a patchwork of varying densities of single-family homes interspersed with commercial nodes along the arterial streets. The Santan Freeway, which bisects the community, also provides opportunities for commercial, retail, and office development. Two very large master-planned communities located in the southeast part of Town and vacant land in all parts of the planning area will also develop in the next ten years. The Town's General Plan also includes a Public Facilities and Services element, which has been prepared to provide the forecasted needs of Gilbert for public services and infrastructure.

4.3.11 Glendale

Located on the Western portion of the greater metropolitan area, Glendale is located approximately 13 miles from downtown Phoenix. Bordered on the east, north, and south by the City of Phoenix, and on the west by the City of Peoria, Glendale is one of the most rapidly growing and diverse cities in Maricopa County. Between 1990 and 2000, Glendale was the 19th fastest-growing large city in the Country, and stands today as the fourth most populous community in Arizona. Strategically located in the northwest region of the metropolitan area, Glendale has aggressively pursued economic development forces to the City including the Arizona Cardinals and Phoenix Coyotes professional sports franchises. Established in 1892 and incorporated in 1910, the City's planning area now stretches west into unincorporated Maricopa County to an area immediately south of the communities El Mirage and Surprise. As shown in Figure 4-30, major access to Glendale is provided via the Loop 101 Freeway, which enters the City from the north and meets Interstate 10 on the south. Interstate 17 and State Highway 93 (Grand Avenue), provide alternate routes to other communities in the metropolitan area.

Today Glendale's residents are governed under a Council-Manager form of government, which includes a seven member City Council consisting of a Mayor and six Council members from various districts within the community who serve four-year terms. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-12, in 2000 the population of Glendale was 218,596. With residential growth forecast to continue climbing through the foreseeable future, Glendale's population is expected to grow to over 300,000 by 2020. Despite this growth Glendale will comprise an increasingly diminished ratio of Maricopa County's overall resident population. This increasing local population, but decreasing role within the County, is a reflection of the strong growth throughout the region.

[16] Town of Gilbert, http://www.ci.gilbert.az.us/generalplan/land-use.cfm

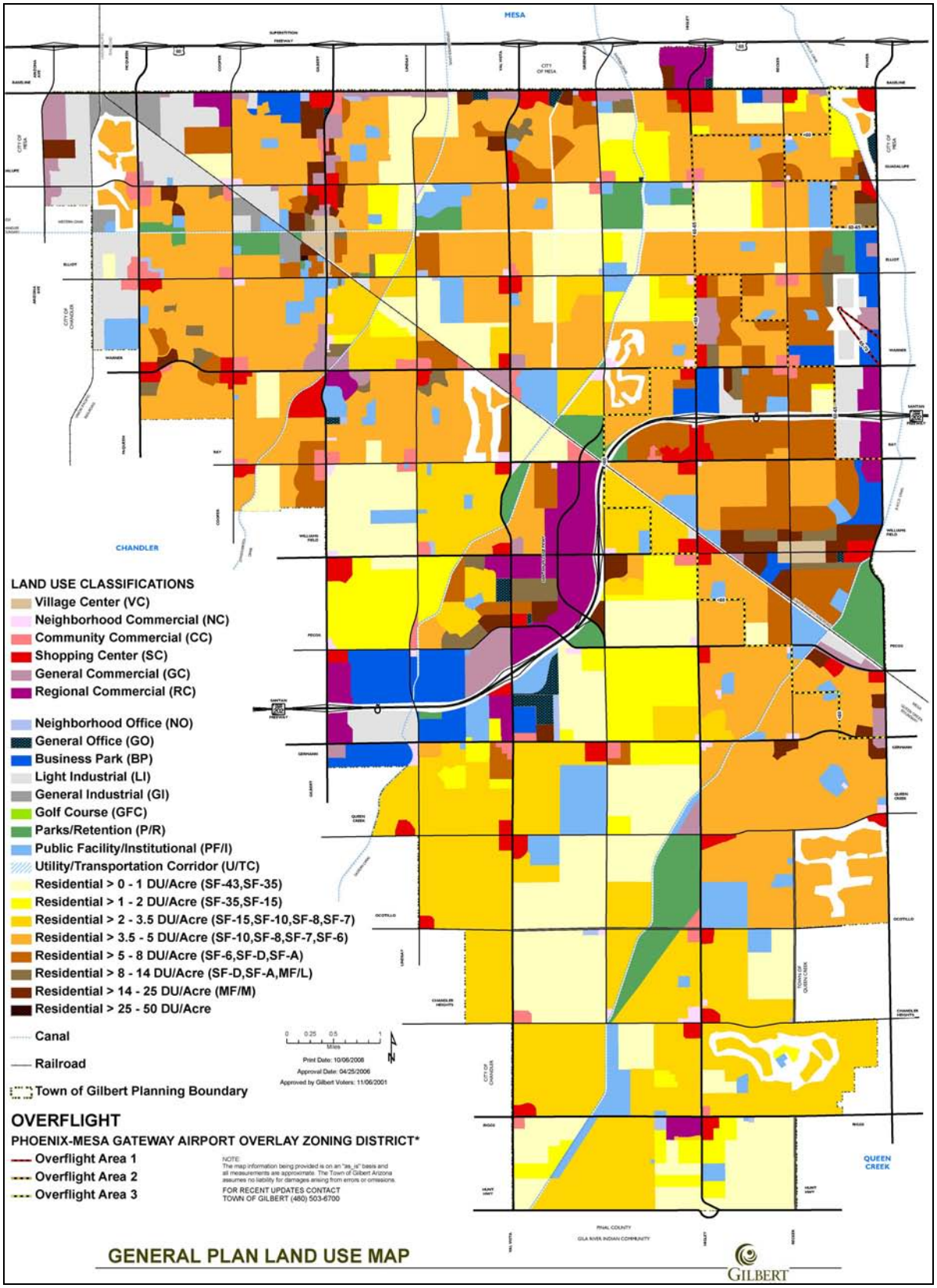


Figure 4-29: Town of Gilbert land use planning map

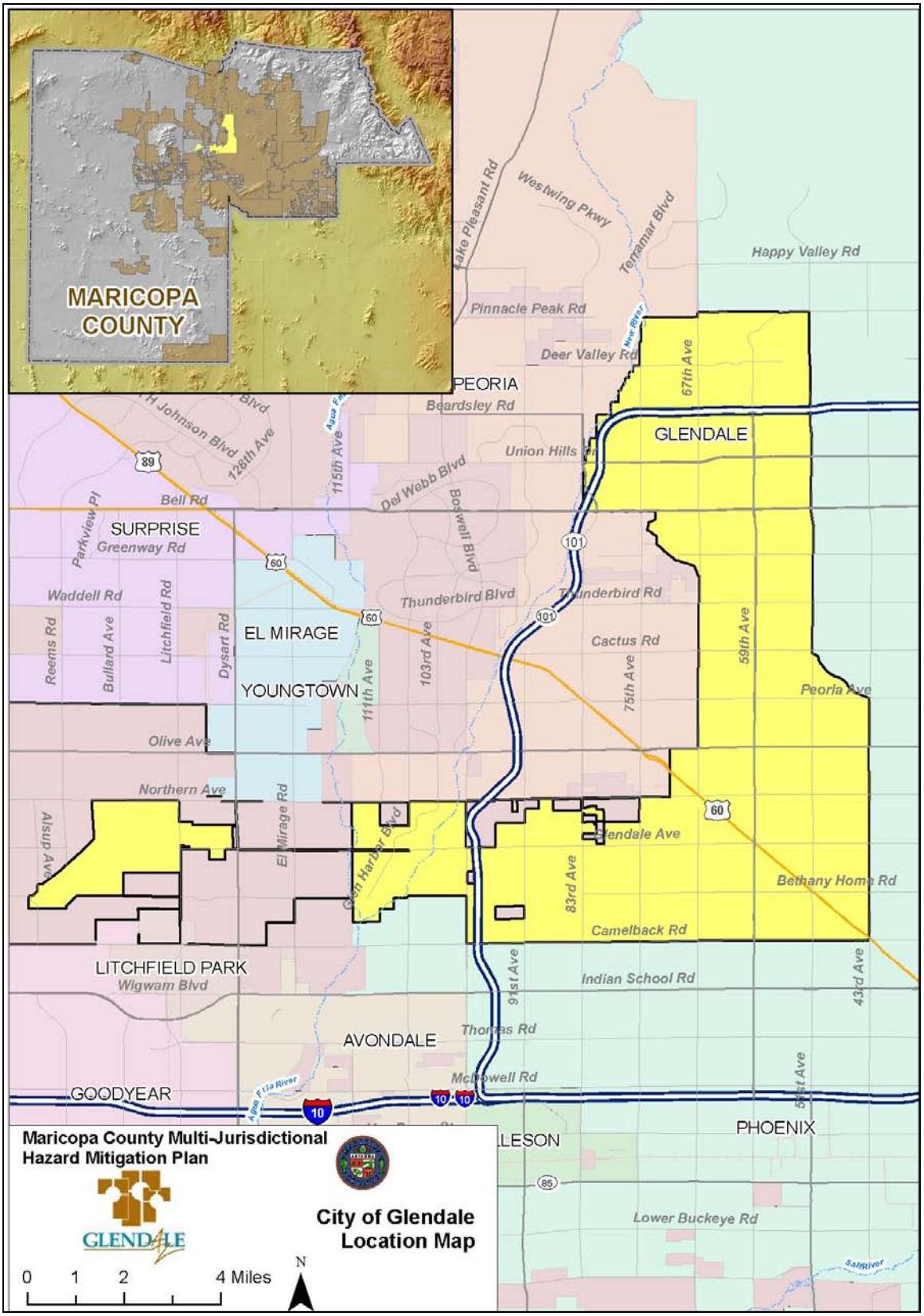


Figure 4-30: Glendale location map

Table 4-12: Summary of population and employment estimates for Glendale

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Glendale	148,134	218,596	248,435	279,807	308,100
As a % of County	6.98%	7.12%	6.23%	6.77%	5.97%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Glendale	37,956	84,500	138,266	117,110	156,508
As a % of County	4.00%	5.40%	7.62%	5.54%	5.79%
Jobs per Capita	0.26	0.39	0.56	0.42	0.51
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Home to Luke Air Force Base, the Thunderbird School of International Management, and a growing sports and entertainment district near the Loop 101 Freeway, Glendale is becoming the commercial, industrial and educational hub of the west valley. The basis of Glendale's economic progress throughout its 100-year history as a community has been focused on the availability of both water and transportation. Specifically, the Arizona Canal and Roosevelt Dam assured a stable water supply and protection from the effects of droughts and floods. As a result of these investments in the early part of the 1900's, Glendale became an agricultural community that specialized in lettuce, melons, sugar beets, and cotton production. Today Luke Air Force Base, the largest fighter pilot training base in the world, is Glendale's largest employer with over 6,000 military and civilian employees. Luke's annual economic impact to Glendale and Arizona is estimated at over $2 billion. Other major employers in Glendale include the Arrowhead Towne Center, Thunderbird Samaritan Medical Center, and Honeywell.

Ratified in May of 2002, Glendale's General Plan reflects a community that is responding to the many diverse and dynamic land use opportunities in the region. As shown in Figure 4-31[17], land in Glendale is available for future use in all sectors of the City. Effectively characterized as a community with very distinct growth regions, Glendale is positioning itself to take advantage of its proximity to the various freeways that affect the area, as well as the two most prominent economic development features in the West Valley—Luke Air Force Base and a developing sports-based entertainment core that is home to the NHL Coyotes, NFL Cardinals, and Super Bowl 2008. Complimenting the fairly standard pattern of single family residential uses, commercial, business, and entertainment development types are planned for strategic locations near transportation facilities, and various industrial and open space uses are called for in the large impact zone created by Luke. Low-density residential uses are also forecast to develop in the City's westernmost region. The City's General Plan also includes a Public Facilities Element, which provides the foundation to ensure the provision of adequate personnel, operations and maintenance of the services and facilities required by Goodyear's residents and businesses.

[17] City of Glendale, http://www.glendaleaz.com/planning/documents/GlendaleLandUseMap.pdf

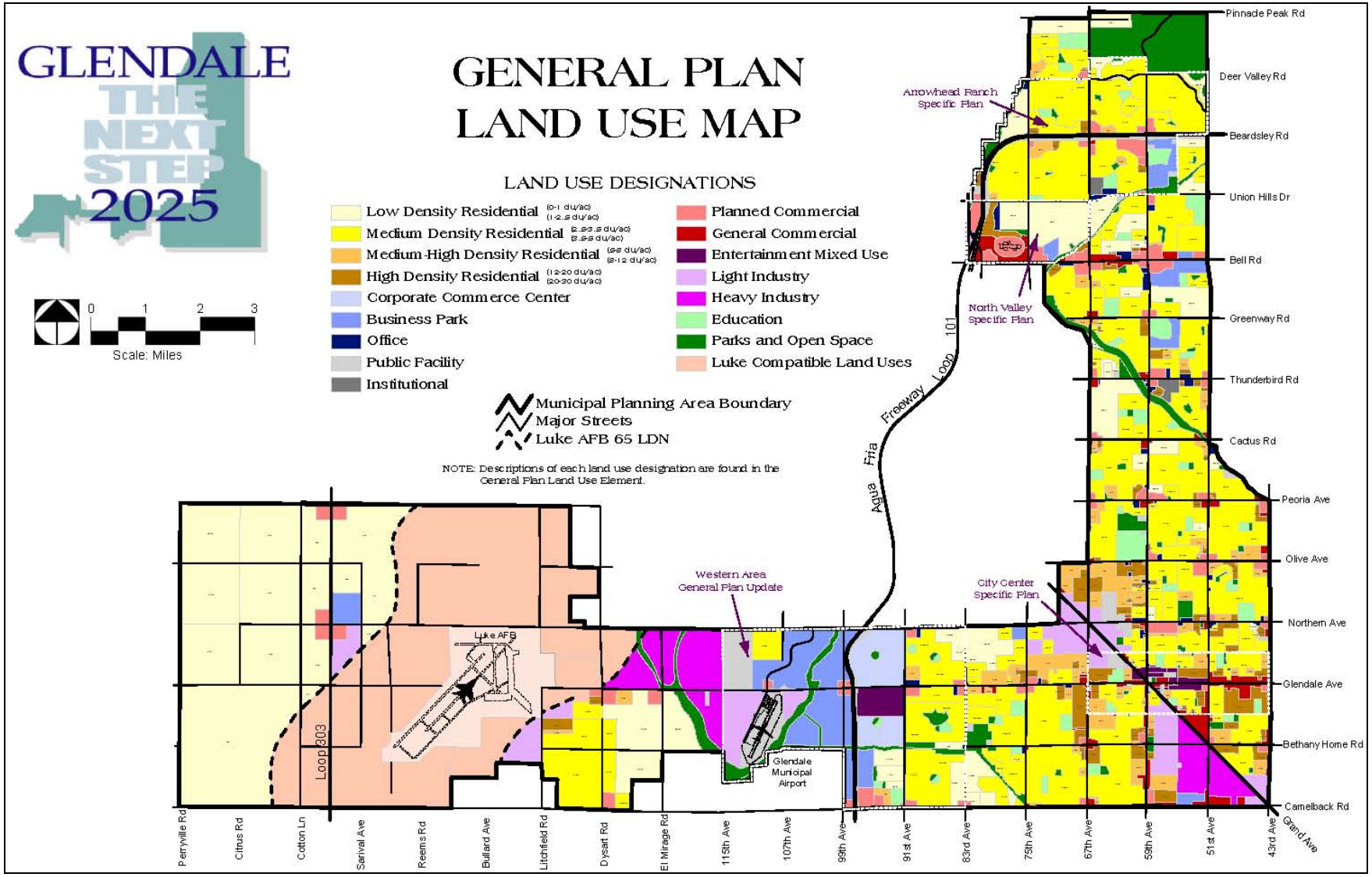


Figure 4-31: City of Glendale land use planning map

4.3.12 Goodyear

The City of Goodyear, located on the west side of the metropolitan area, was founded in 1916 by the Goodyear Tire and Rubber Company, which grew cotton in the area for use in its tire manufacturing. Later, a naval air station was established in Goodyear and a subsidiary, Goodyear Aircraft, began manufacturing flight decks for Navy seaplanes. Aerospace and food processing industries, and its proximity to California markets, have provided Goodyear with a strong economic base and have contributed to its rapid growth.

As illustrated through Figure 4-32, two major roadways contribute to the economic and residential growth in the City: Interstate 10, which bisects the City's northern region, and Maricopa County Highway 85, which runs through central Goodyear and connects to Interstate 8. The Union Pacific Rail Line also runs through Goodyear, providing industrial sites with rail access. The two primary natural features that affect the City of Goodyear include the Estrella Mountains, which border a portion of Goodyear's east side, and the Gila River watershed, which east to west bisecting the community. The incorporated area of Goodyear exhibits an elongated rectangular shape, ranging between 6 and 7 miles from east to west, and 22 miles from north to south. Currently Goodyear's incorporated area contains approximately 117 square miles of land. The majority of its land area exhibits slopes less than 3 percent, draining to the middle of the planning area where the Gila River flows from east to west. The City incorporated on November 19, 1946.

Today Goodyear's residents are governed under a Council-Manager form of government, which includes a seven member City Council consisting of a Mayor who serves a two-year term and six Council members elected at-large for a term of four years. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-13, in 2000 the population of Goodyear was 18,779. With large tracts of available land expected to open for development for the foreseeable future, this population is forecast to grow exponentially to more than 174,000 by 2020. As a result of this substantial growth, Goodyear's population will comprise a steadily increasing percentage of Maricopa County's population. Similarly, Goodyear's labor force is forecast to reflect an ever-larger share of the region's jobs. In 1990, the City had 3,569 jobs, while 2020 projections anticipate nearly 74,000 jobs within the community. Exhibiting a trend that is shown in few Maricopa County communities, Goodyear's jobs-per-capita ratio is forecast to fall from 0.57 in 1990 to 0.42 in 2020.

Table 4-13: Summary of population and employment estimates for Goodyear

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Goodyear	6,258	18,779	59,436	71,354	174,521
As a % of County	0.29%	0.61%	1.49%	1.73%	3.38%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Goodyear	3,569	13,900	22,392	28,167	73,622
As a % of County	0.38%	0.89%	1.23%	1.33%	2.72%
Jobs per Capita	0.57	0.74	0.38	0.39	0.42
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

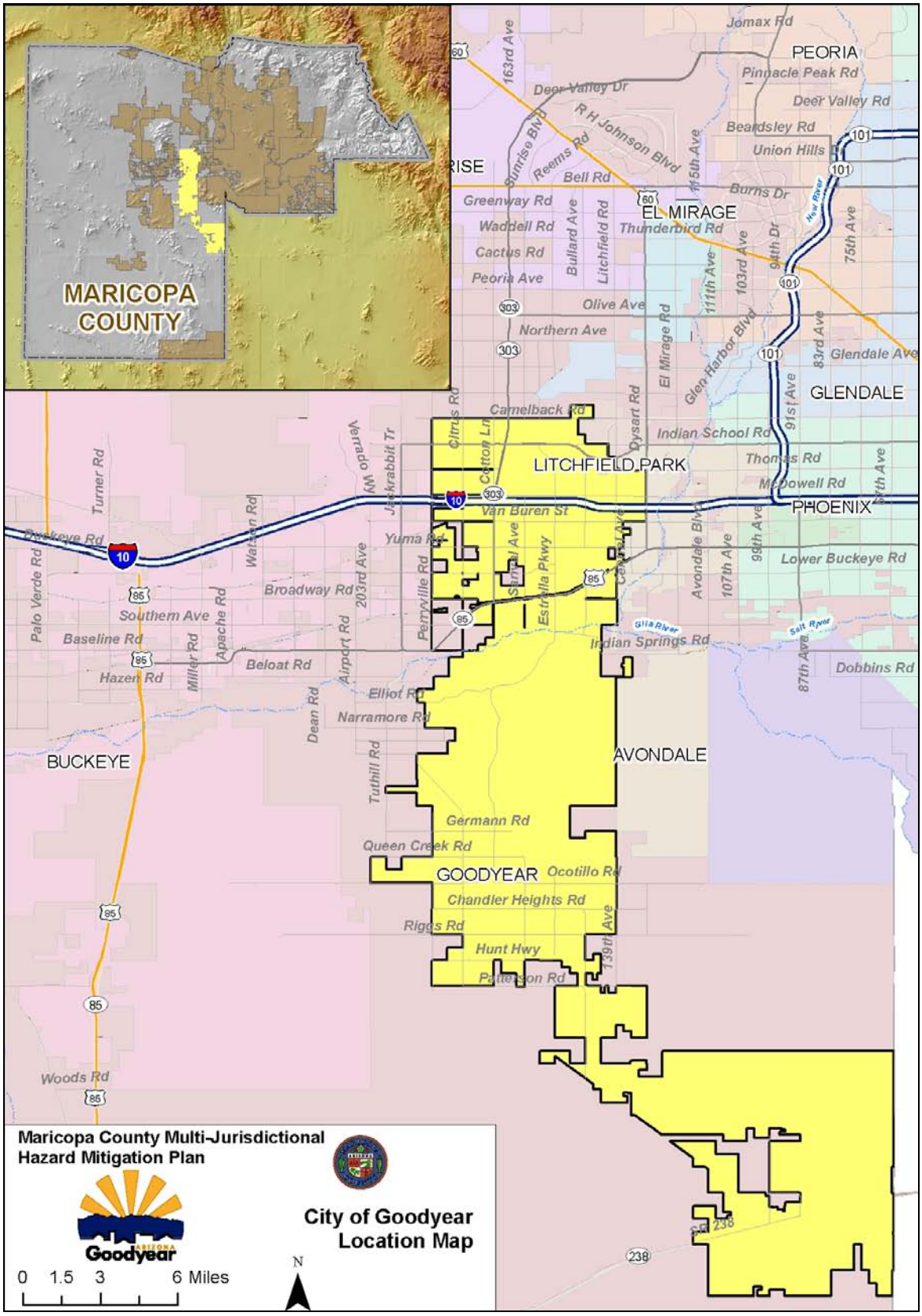


Figure 4-32: Goodyear location map

Today, Goodyear maintains a strong economic base of a diverse group of industries ranging from aerospace to food processing and an excellent quality of life. The three largest employers within the City include the State of Arizona-Perryville Prison, McLane Sunwest (a division of Wal-Mart) and Lockheed Martin Corporation. Several industries are represented in the City of Goodyear including the aerospace industry, food processing, and manufacturing. There is also a large sector of companies within the food processing and manufacturing industry including Poore Brothers, Snyder's of Hanover Southwest Specialty Foods, and DelMonte Fresh Produce. Employment projections forecast office employment as the major source of jobs by 2020.

Goodyear's General Plan, which was ratified in November of 2003, reflects a community that is preparing for the massive growth opportunities and stresses that the City will be addressing in the coming decades. The Land Use Plan, shown in Figure 4-33[18], encompasses 17 land use and 3 overlay categories including 6 residential, 2 commercial, 1 mixed-use, 2 industrial, 3 public use, 2 recreational, and 1 preservation designations. The three overlay designations respond to the desire for future resort development, village centers, and mixed land uses at selected locations or corridors within the planning area. This development of Goodyear will be continually challenged by several unique features of the region including the Luke Air Force Base flight routes, the Gila River basin, and the alignment of an Interstate 10 companion roadway that may be developed in the coming decade.

4.3.13 Guadalupe

One of the smallest towns in Maricopa County, Guadalupe is a Native American and Hispanic community of about 6,000 residents sitting between Phoenix and Tempe at the base of South Mountain. Yaqui Indians founded Guadalupe around the turn of the century and the town proudly maintains a strong cultural and ethnic identity. The Town of Guadalupe was incorporated in 1975 and is approximately one square mile in area. Guadalupe is expected to retain its current shape because it is surrounded by man-made boundaries: Interstate 10 and the City of Phoenix on the west; Baseline Road and the City of Tempe on the North; the City of Tempe on the South; and the Highline Canal on the East. These features are illustrated through Figure 6 3.

The Town was founded in 1914 and today has a council-manager form of government. Municipal services are provided by the town or on a contractual basis, and the Maricopa County Sheriff's Department provides public safety services.

Over the years many Hispanic families have located in Guadalupe, and it has becoming well known as a stopping point for Mexican immigrant workers. As illustrated in Table 4-14, in 2000 the population of Guadalupe was 5,228. With vacant, developable land non-existent in the community, this population has grown only slightly to 5,990 by 2008.

[18] City of Goodyear, http://www.ci.goodyear.az.us/DocumentView.aspx?DID=4018

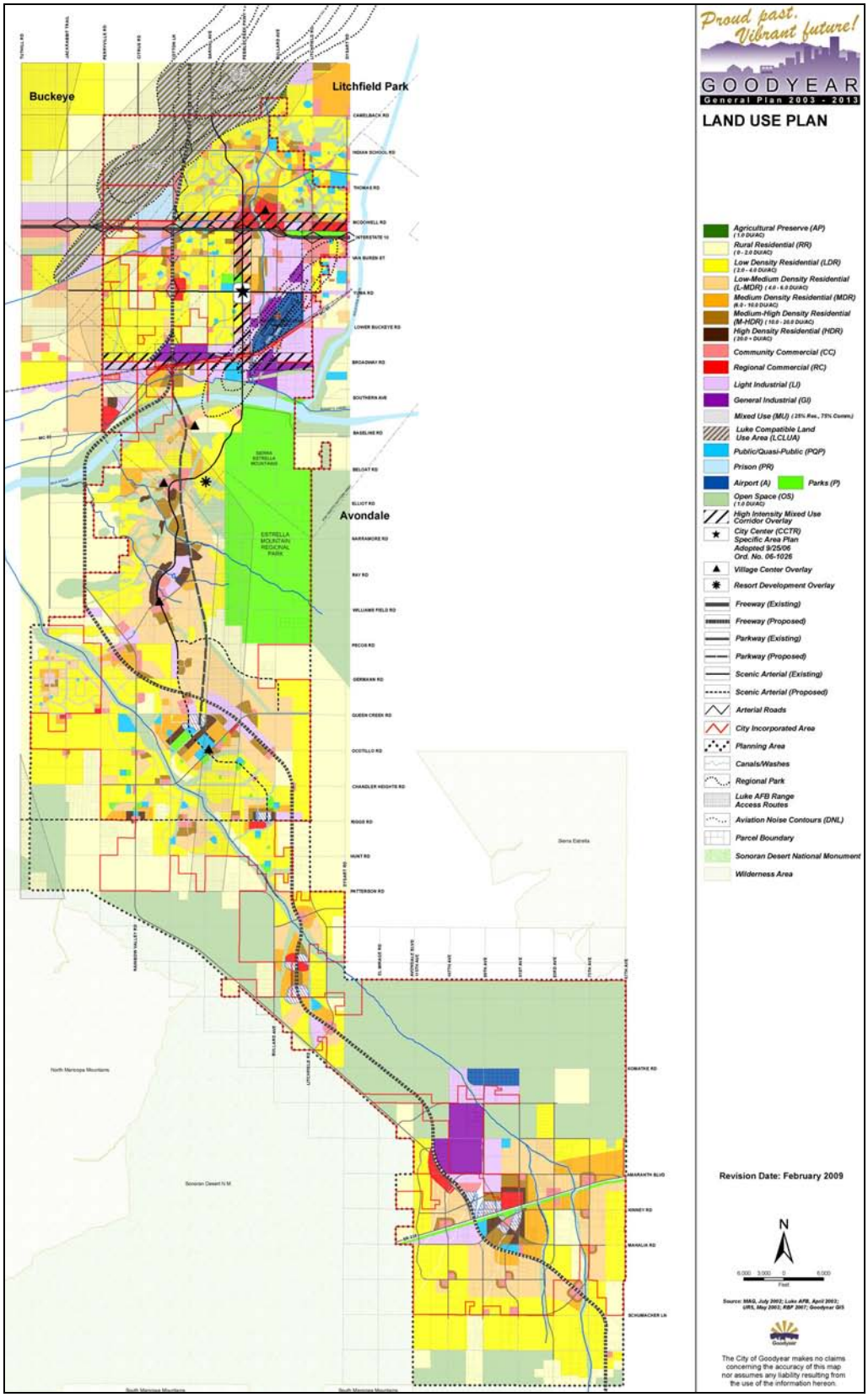
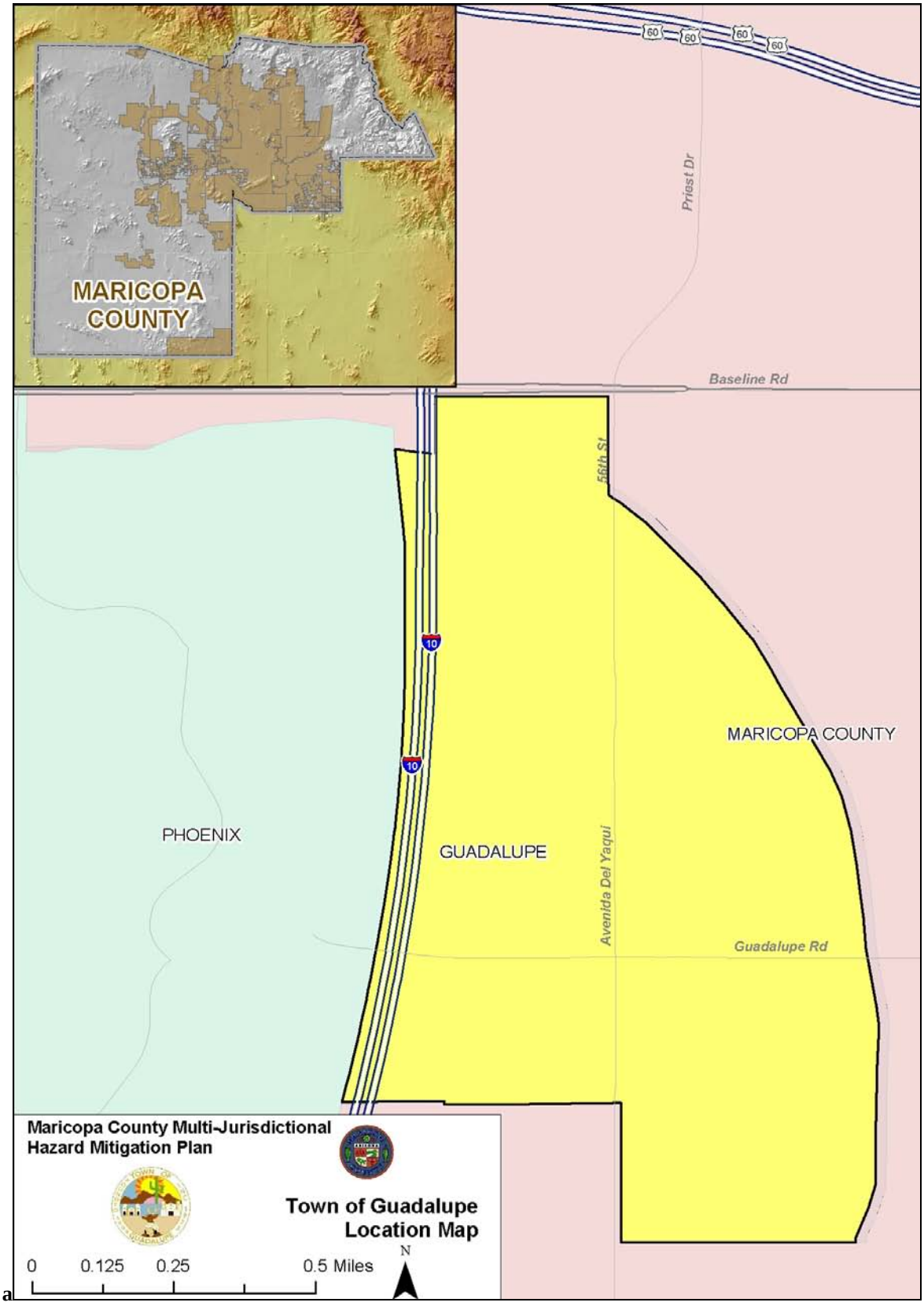


Figure 4-33: City of Goodyear land use planning map



a

Figure 4-34: Guadalupe location map

Table 4-14: Summary of population and employment estimates for Guadalupe

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Guadalupe	5,458	5,228	5,990	5,790	5,982
As a % of County	0.26%	0.17%	0.15%	0.14%	0.12%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Guadalupe	330	600	2,570	1,387	1,467
As a % of County	0.03%	0.04%	0.14%	0.07%	0.05%
Jobs per Capita	0.06	0.11	0.43	0.24	0.25
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (July 2003), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Guadalupe's labor force is forecast to reflect a slightly larger share of the region's jobs. In 1990, the Town had 330 jobs, which have increased to 2,570 in 2008. In addition to having a proportionately growing employment role within the region, Guadalupe's ratio of jobs-per-capita has also seen a rise from 0.06 in 1990 to 0.43 in 2008. Guadalupe is primarily a residential community with retail and service businesses catering to local residents and visitors. Commercial districts include one along Baseline Road and I-10 with several restaurants and hotels, and another on Avenida Del Yaqui that caters to tourists and locals. El Tianguis is a Mexican-style 22,000 square-foot shopping square, with restaurants and shops offering imported products. Manufacturing, service and agriculture also provide jobs within the Town.

Figure 4-35[19] clearly illustrates the two most prominent land features of Guadalupe; namely, the preponderance of residential land uses and the Town's inability to expand beyond its current borders. While residential land uses dominate the built environment of Guadalupe, other commercial and industrial areas along the border with Interstate 10 and in the Town's eastern and southern regions also take advantage of the Town's proximity to active regional features such as the Arizona Mills Mall and the dynamic retail core areas in Chandler.

4.3.14 Litchfield Park

Situated north of Interstate 10 approximately 16 miles west of downtown Phoenix, the City of Litchfield Park lies immediately east of Goodyear and north of Avondale in the West Valley region of Maricopa County, as shown in Figure 4-36, Litchfield Park is a planned residential community. Incorporated in 1987, Litchfield Park began in 1916 when the Goodyear Tire and Rubber Company bought farmland to grow Egyptian long-staple cotton to use in tire cords. Litchfield Park eventually became the headquarters for Goodyear Farms, which had thousands of acres under cultivation. From 1931 to 1944, it was also the test site for Goodyear auto, truck and tractor tires. In the 1960's, Litchfield Park designed a master plan for development including several self-sufficient villages.

As illustrated in Table 4-15, in 2000 the population of Litchfield Park was 3,813. With development opportunities opening steadily, this population is forecast to more than double to 10,305 by 2020. As a result, Litchfield Park's population will comprise a steadily increasing percentage of Maricopa County's population through 2020. Litchfield Park's labor force is forecast to reflect a growing share of the region's jobs until available land is developed. In 1990, Litchfield Park had 1,280 jobs, while 2020 projections anticipate 3,200 jobs within the community. Litchfield Park's projected percentage of Maricopa County employment is projected to remain flat at 0.12% over the next decade.

[19] Maricopa Association of Governments, 2007 (DRAFT), *Municipal Planning Area Socioeconomic Profiles Maricopa County, Arizona*

The Wigwam Golf Resort and Spa is Litchfield Park's largest employer with over 600 employees. Luke Air Force Base, located just north of Litchfield Park, is the largest training center for F16 fighter pilots in the world, and many Litchfield Park residents are retired military personnel. Morton Salt has a facility just north of Litchfield Park; nearby Goodyear is home to Rubbermaid, Inc., Lockheed Martin and Lufthansa German Airlines Pilot School. Palo Verde Nuclear Generating Station is 30 miles away and provides additional job opportunities.

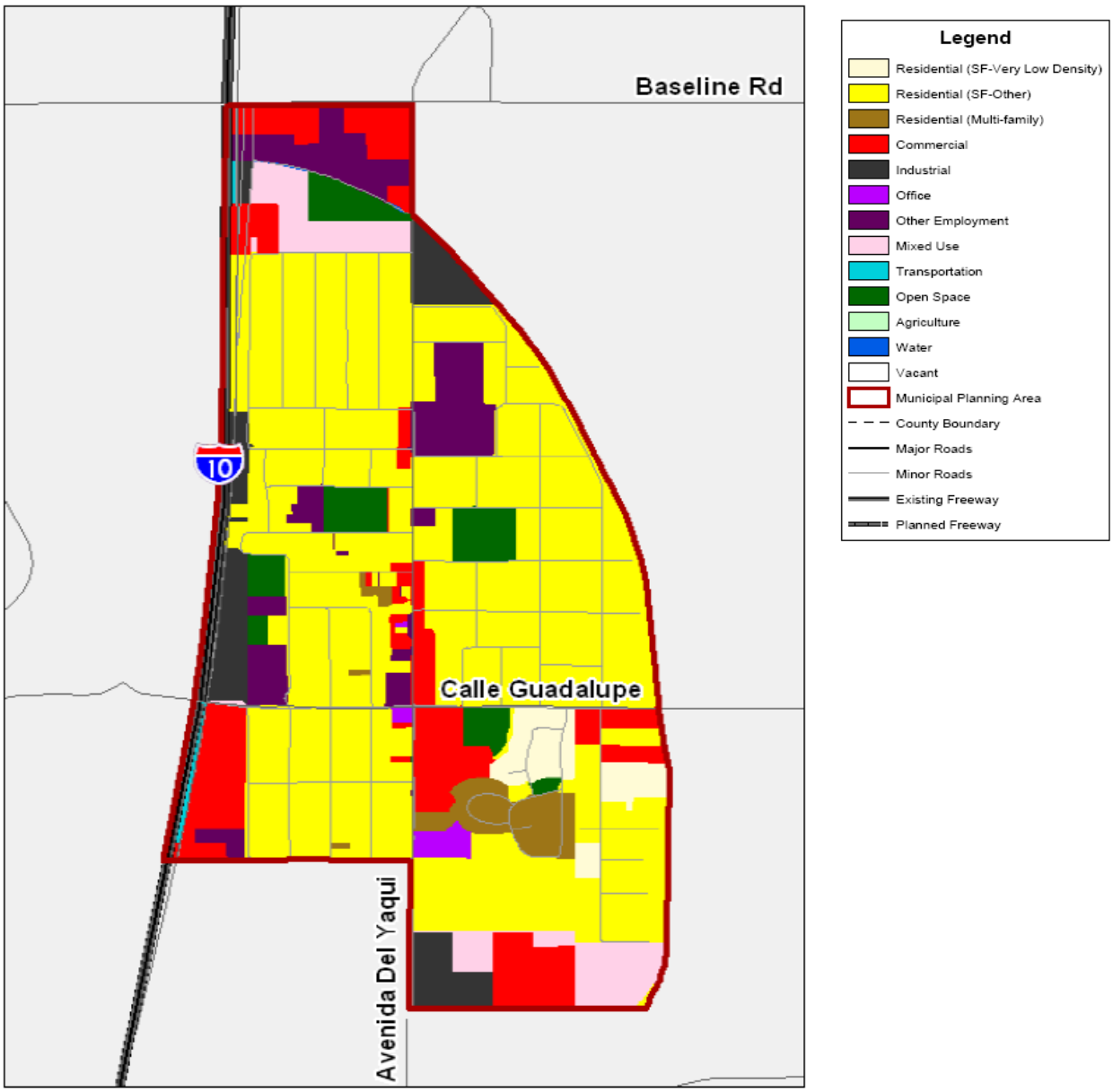


Figure 4-35: Town of Guadalupe land use map

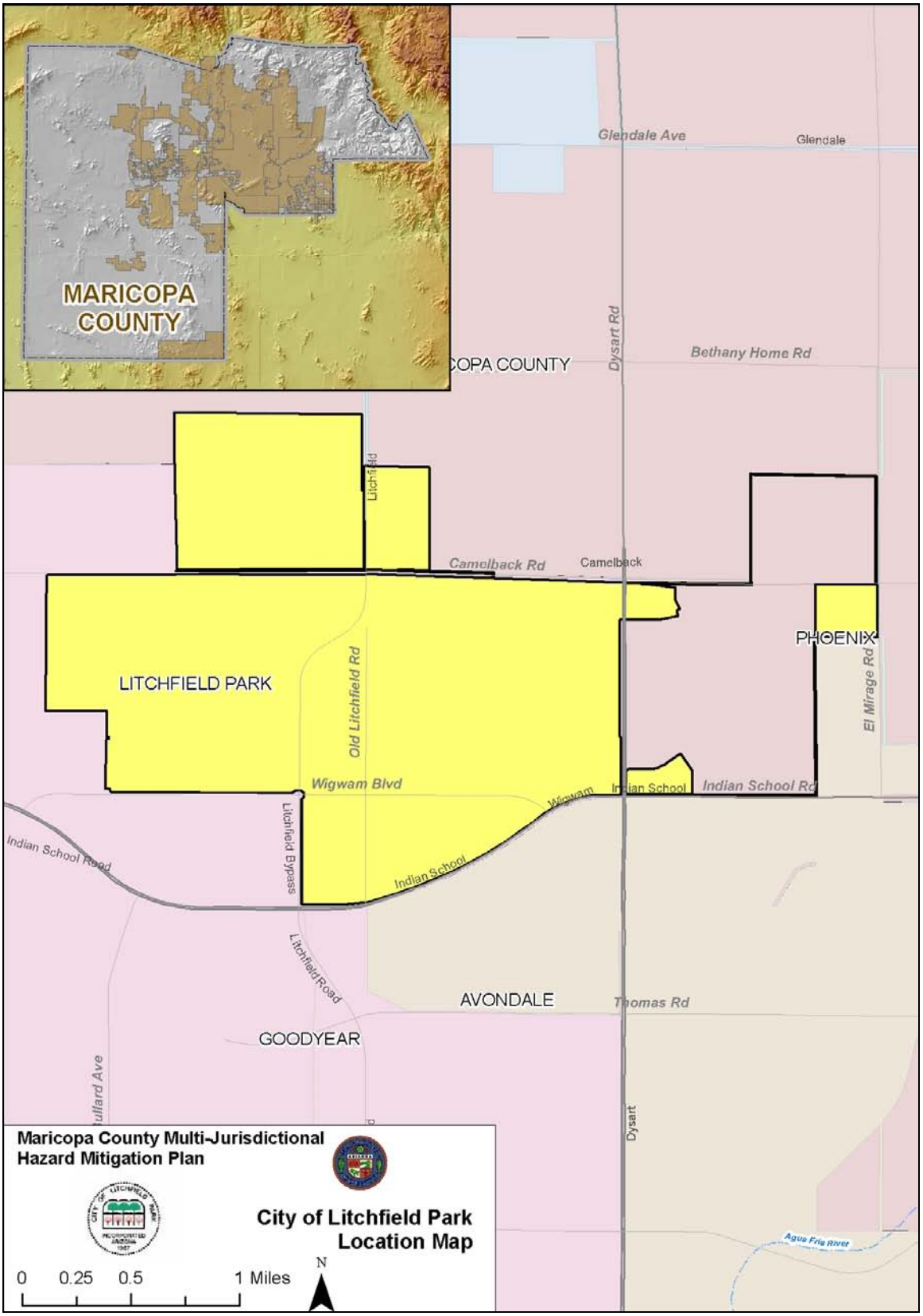


Figure 4-36: Litchfield Park location map

Table 4-15: Summary of population and employment estimates for Litchfield Park

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Litchfield Park	3,303	3,813	5,093	5,140	7,000
As a % of County	0.16%	0.12%	0.13%	0.12%	0.14%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Litchfield Park	1,280	1,200	2,181	2,405	3,200
As a % of County	0.13%	0.08%	0.12%	0.11%	0.12%
Jobs per Capita	0.39	0.31	0.43	0.47	0.46
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009), City of Litchfield Park (2009)					

The General Plan for Litchfield Park, adopted in 2001, is currently being updated and has guided the development of the City for almost a decade. As shown in Figure 4-37[20], the primary man-made features that influence Litchfield Park's land uses include an arterial roadway network and the Wigwam Golf Course, which occupies a substantial share of this small community. Regionally the features that most affect Litchfield Park's environment include the Luke Air Force Base and Interstate 10. Within the City the land uses indicate a fairly balanced community, with a dispersion of low and mid-density single family residential, and neighborhood commercial, all encircling the Wigwam Golf Course. Future growth in the community will be made available through expansion to the City's north and east sides, which are currently in unincorporated Maricopa County.

4.3.15 Mesa

The City of Mesa, located in the southeast Phoenix valley, was incorporated in 1883. As shown in Figure 4-38, the City shares boundaries with the communities of Tempe, Gilbert, Queen Creek, and Apache Junction, and with the Salt River Pima-Maricopa Indian Community to the north. A region that is generally defined more by a roadway network than by natural features, the environment of north Mesa is enhanced by the presence of both the Salt River watershed and Red Mountain. Numerous notable pockets of unincorporated land dot the planning area, some of which are entirely surrounded by the City. As part of the greater metropolitan area, Mesa is the third-largest city in Arizona and the nation's 40th-largest city., today more than 430,000 people call Mesa home, taking advantage of Mesa's family-oriented lifestyle. Just 15 miles east of downtown Phoenix, incorporated Mesa currently includes 129.7 square miles, with a future land area that will include more than 170 square miles.

Since its incorporation over 100 years ago, the City of Mesa has experienced tremendous growth. Mesa's modern history began in 1877 when a group of Mormon colonists arrived in Lehi and built Fort Utah in the north-central portion of Mesa near the Salt River. In 1883, the City of Mesa was officially incorporated and had an estimated 200 residents. By 1980, boundaries had expanded significantly, increasing the City's area to over 66 square miles.

[20] City of Litchfield Park, http://az-litchfieldpark.civicplus.com/DocumentView.aspx?DID=31

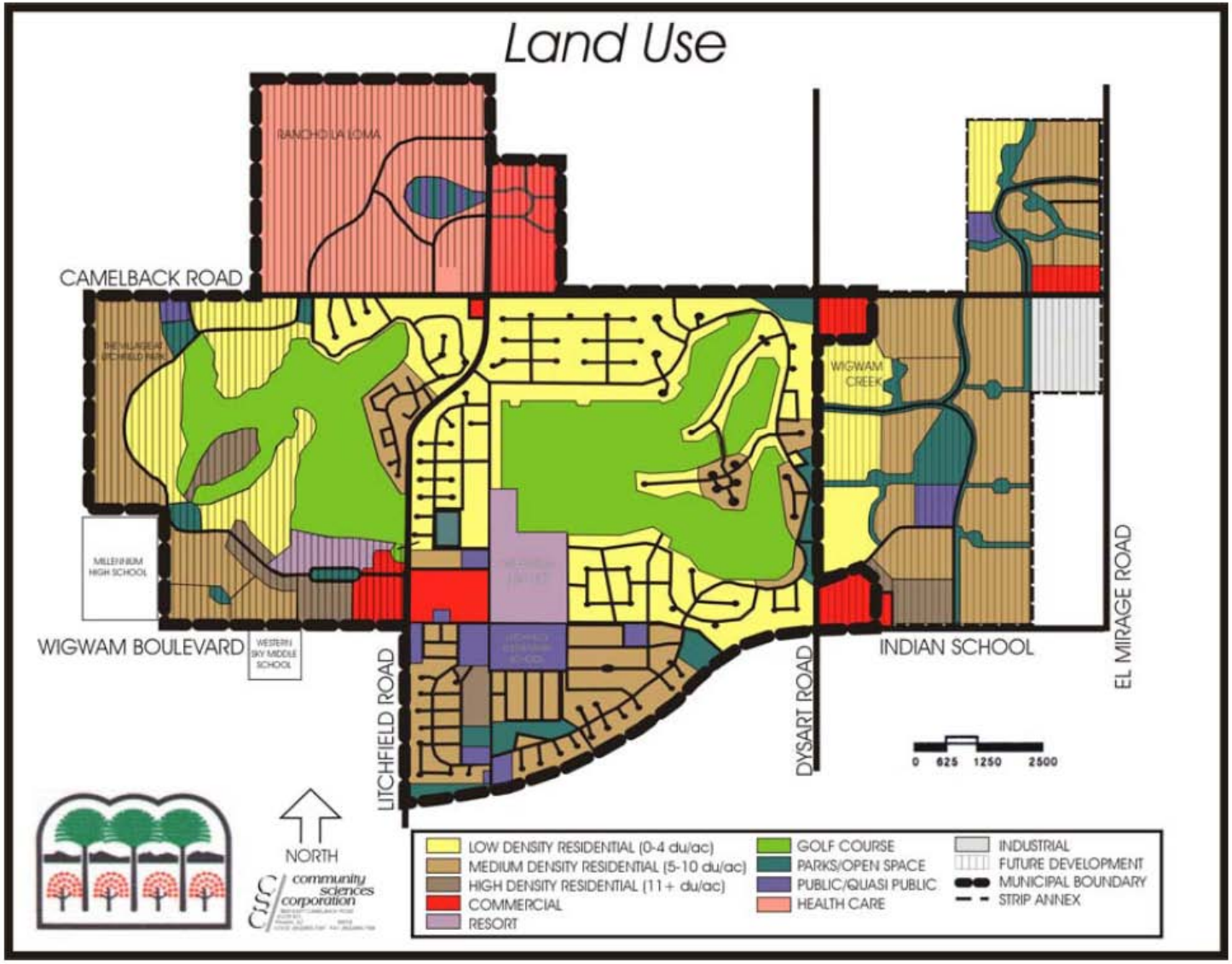


Figure 4-37: City of Litchfield Park land use map

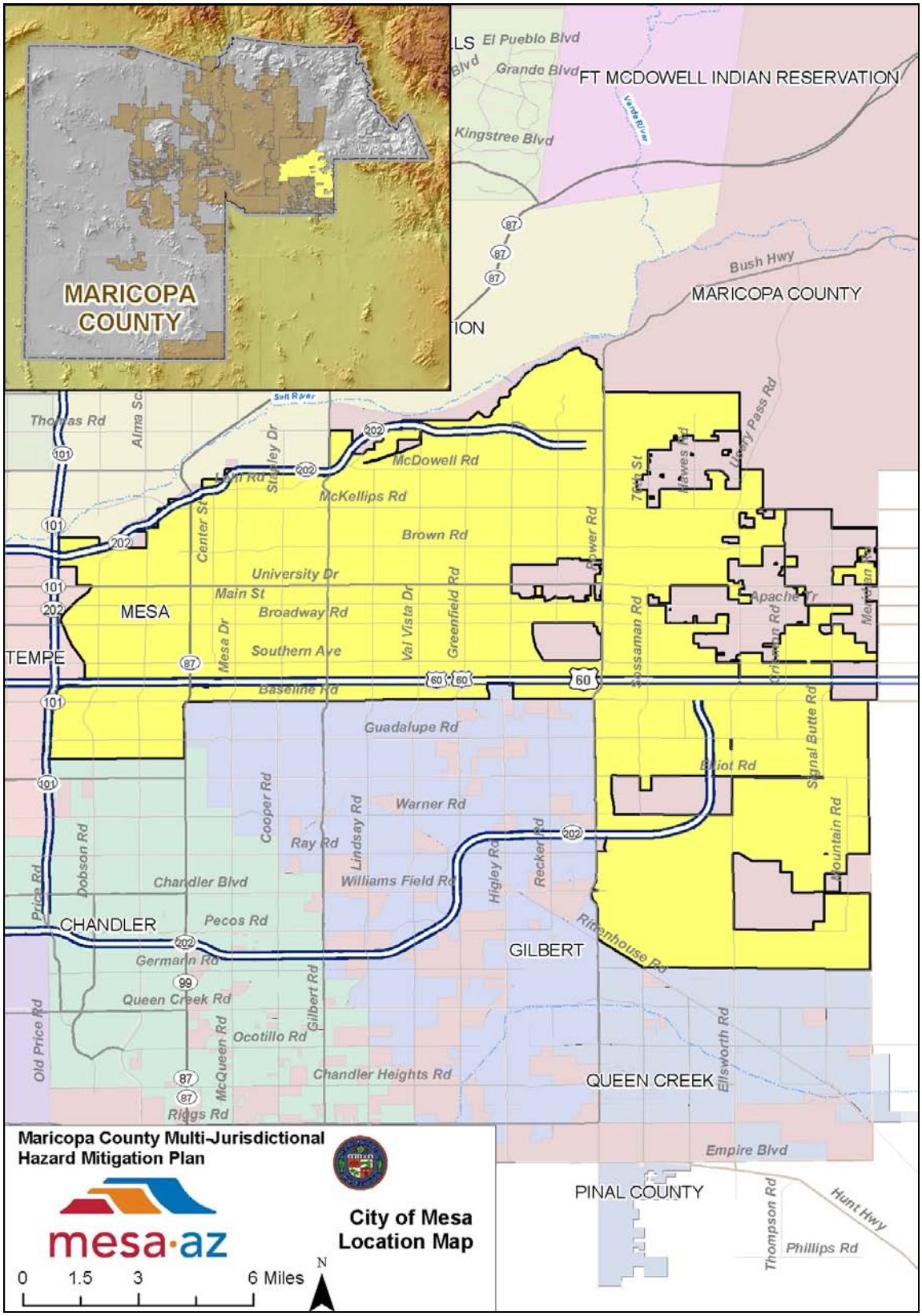


Figure 4-38: Mesa location map

Mesa's early development was triggered partly by the influence of military training in the region. In 1941 two bases were constructed to provide training for World War II pilots. Falcon Field, now Falcon Field Airport, was built for the British Royal Air Force. Williams Field, later Williams Air Force Base, and now Williams Gateway Airport, was built for U.S. pilots. After the war, many military families decided to settle in Mesa. The decade of the 1950's brought more commerce and industry to Mesa, including early aerospace companies. However, until 1960 more than 50 percent of the residents earned their living directly or indirectly from farming, mainly citrus and cotton. The 1960's through 1990's saw more high-technology companies, now over 100 firms. Health facilities grew especially during the 1980's and 1990's to service the larger population.

The City of Mesa has an elected Mayor and six City Council members that are limited to two consecutive terms. The City operates under a charter form of government, with the Mayor and City Council setting policy. In 1998, a voter initiative changed the election of the council members from an at-large system to a system of six districts. Council members serve a term of four years, with three members elected every two years. The mayor is elected at-large every four years. The Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As shown in Table 4-16, Mesa currently has a population of over 450,000. With large vacant areas opening for development the population of Mesa is expected to grow to nearly 566,000 by 2020. Complimenting this massive residential growth will be commensurate job growth, which may result in over 275,000 jobs by the year 2020. This figure will represents over 10% of the jobs occupied in Maricopa County.

Table 4-16: Summary of population and employment estimates for Mesa

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Mesa	288,091	397,125	459,682	518,944	565,693
As a % of County	13.58%	12.93%	11.53%	12.55%	10.95%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Mesa	93,216	172,000	247,707	218,085	275,236
As a % of County	9.83%	10.99%	13.65%	10.33%	10.18%
Jobs per Capita	0.32	0.43	0.54	0.42	0.49
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Ratified in November of 2002, Mesa's General Plan provides a framework for a community that will be exposed to both growth pressures from new development, as well as revitalization and infill issues from its older neighborhoods. As shown in Figure 4-39, the existing pattern of land use within the approximate 170-square-mile Mesa planning area reveals two dominant land uses: small-lot, single family detached housing, and vacant land. The majority of undeveloped land is concentrated in the eastern third of the planning area, which illustrates the west to east growth pattern of the City. Community and neighborhood commercial districts are located primarily along arterial roadways and in the City's core. The dominant industrial activity is concentrated in the northern and southeastern portions of the planning area. Mesa's General Plan also includes a Safety Element that addresses the goals, objectives and policies necessary to provide a comprehensive program to deal with local, area-wide, regional and national emergencies.

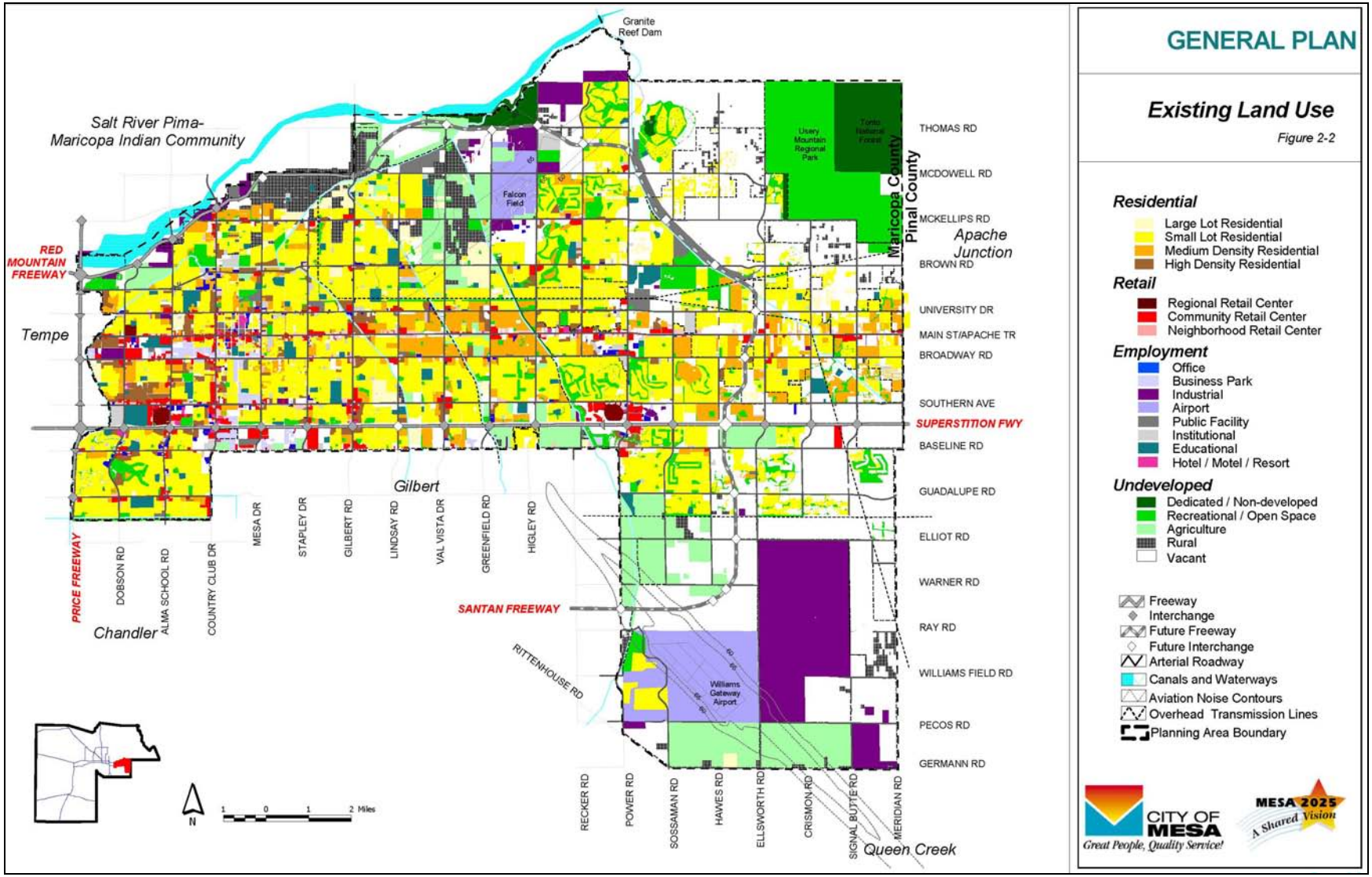


Figure 4-39: City of Mesa land use map

4.3.16 Paradise Valley

Located approximately 10 miles northeast of downtown Phoenix, the Town of Paradise Valley lies in the central region of the metropolitan area between the cities of Phoenix and Scottsdale, as shown in Figure 4-40. Incorporated as a community in May of 1961, the Town's founders initiated the integration in response to concerns that the relaxed, sparsely populated desert lifestyle of their community was in danger of eroding due to threatened annexation by and the changing density and commercialization of neighboring Phoenix and Scottsdale. The area originally incorporated as the Town included 2.7 square miles. By 1970, Paradise Valley had grown to 13.3 square miles, and the population had reached 6,637 residents. By 1980, the Town had a population of approximately 11,000 residents and included roughly 14 square miles. While Paradise Valley reflects a unique focus on low-density, resort style living, the Town also has a rugged terrain that compliments the beautiful homes

Today Paradise Valley's residents are governed under a Council-Manager form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Town Council appoints the Mayor and Town Manager and other officers necessary to produce an orderly administration of the Town's affairs.

As illustrated in Table 4-17, in 2000 the population of Paradise Valley was 13,629. With development opportunities continuing to open, this population is forecast to grow only marginally to 15,224 by 2020. As a result of this modest growth, Paradise Valley's population will comprise a steadily decreasing percentage of Maricopa County's population. Similarly, Paradise Valley's labor force is forecast to reflect a slightly decreasing share of the region's jobs. In 1990, the Town had 4,323 jobs which increased to 7,682 by 2008. In addition to having a relatively stable population and employment base, Paradise Valley's ratio of jobs-per-capita is forecast to increase from 0.37 in 1990 to 0.51 in 2020. Almost all of the jobs held within the community are in the service and resort industries.

Table 4-17: Summary of population and employment estimates for Paradise Valley

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Paradise Valley	11,671	13,629	14,444	14,790	15,224
As a % of County	0.55%	0.44%	0.36%	0.36%	0.29%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Paradise Valley	4,323	5,400	7,682	6,717	7,707
As a % of County	0.46%	0.35%	0.42%	0.32%	0.28%
Jobs per Capita	0.37	0.40	0.53	0.45	0.51
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

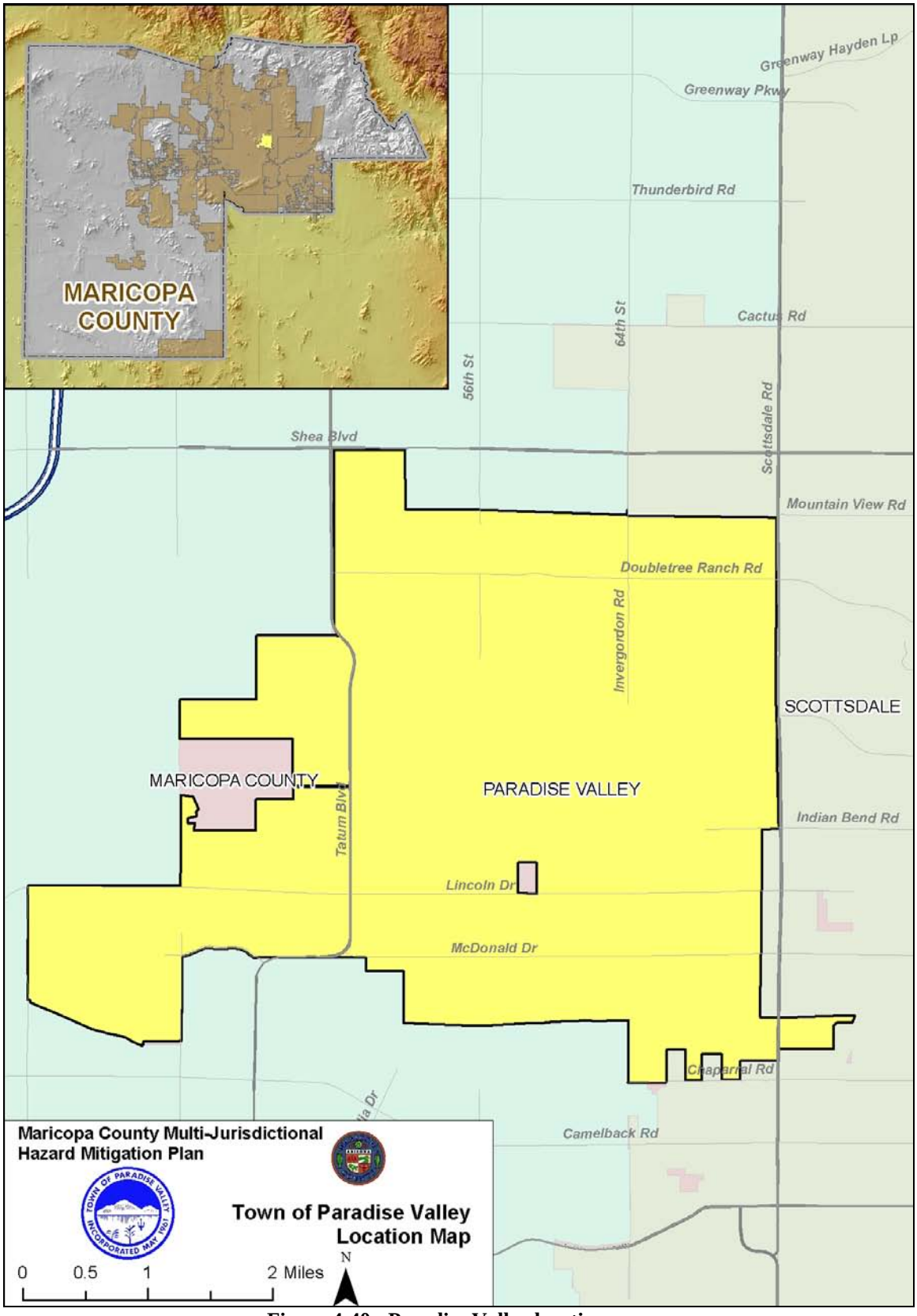


Figure 4-40: Paradise Valley location map

Paradise Valley's General Plan, ratified in March of 2003, indicates a Town that has positioned itself to retain the low intensity, residential development pattern that it has known for decades. Paradise Valley is, almost without exception, a community of single-family homes. The zoning map for the Town reflects this one use, at a preferred density of one home per acre. Other uses, which include open space and resort industry, are permitted within this district only as a special use. The Town's Land Use Plan, which is shown in Figure 4-41[21], reflects the predominance of the single-family home in Paradise Valley. The land use breakdown for the Town indicates that Low Density Residential will occupy over 80% of the Town, with 4% reserved for Resort/Country Club uses, and 11% in Open Space. Paradise Valley's General Plan also includes a Public Safety/Cost of Development Chapter that articulates the Town's commitment to maintaining a high level of public services in the Town, particularly those related to public safety.

4.3.17 Peoria

The City of Peoria was established in the 1880's when local leader William J. Murphy's vision for the Arizona Canal was completed in 1885. The City was incorporated in 1954, with boundaries covering only one square mile of land. The incorporated area of Peoria covers nearly 176 square miles and is currently home to over 156,000 residents. Northern Peoria's planning area includes a landscape dominated by the Lake Pleasant Recreational Area. This park is complimented by both the Gila River and New River watersheds, which enter the City from the north and depart to the south. As shown in Figure 4-42, Peoria is provided access through various arterial roadways and major throughways. Most notably, State Route 74 provides access to the City's north end, the Loop 101 Freeway bisects the City's southern region, and the future Loop 303 Freeway alignment will afford access to the central portion of the City.

Today, Peoria's residents are governed under a Council-Manager form of government, which includes a seven member City Council consisting of a Mayor and six Council members elected from six districts within the City for four-year terms. The City Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

As illustrated in Table 4-18, in 2000 the population of Peoria was 108,462. With development continuing to occur throughout the City the population is forecast to grow nearly 250% to more than 236,000 by the year 2020. As a result, Peoria's population will comprise a steadily increasing percentage of Maricopa County's population. Peoria's labor force is forecast to reflect an ever-larger share of the region's jobs. In 1990, the City had 9,216 jobs, while 2020 projections anticipate over 87,000 jobs within the community. In addition to having a growing population and employment role within the region, Peoria's ratio of jobs-per-capita is also forecast to rise from 0.15 in 1990 to 0.37 in 2020.

Peoria has a growing light industrial and commercial economy, a change from its agricultural tradition. Peoria's business community is emerging as a leading center in Maricopa County. Peoria has attracted a variety of businesses to include professional office projects, call centers, small and medium manufacturers, biotechnology, retail, specialty centers and automotive sales operations. Along with new businesses, "Class A" Office buildings have recently opened and many more are planned.

[21] Town of Paradise Valley, http://www.ci.paradise-valley.az.us/docs/General_Plan/GP%20012703%20Land%20Use.pdf

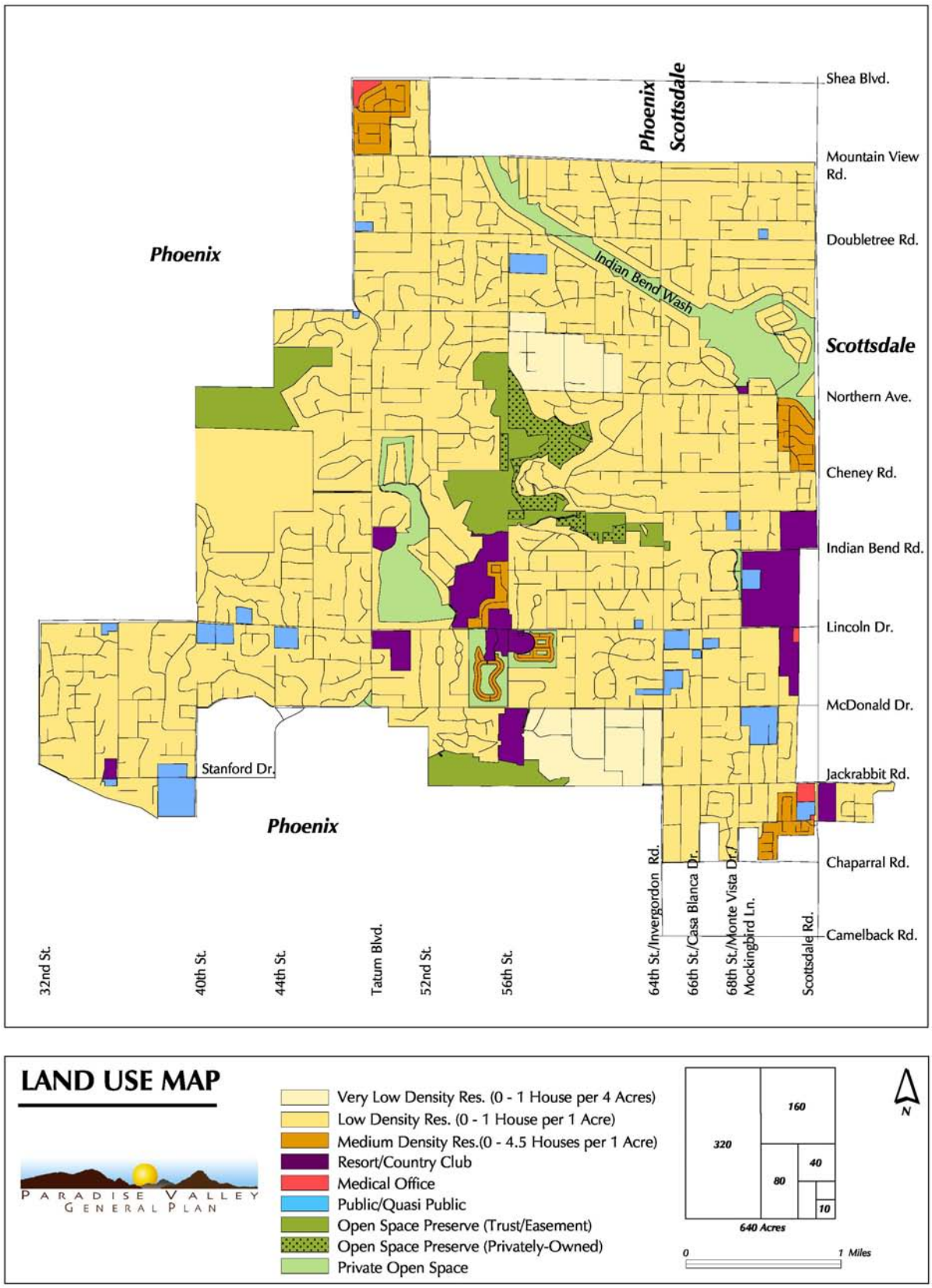


Figure 4-41: Town of Paradise Valley land use map

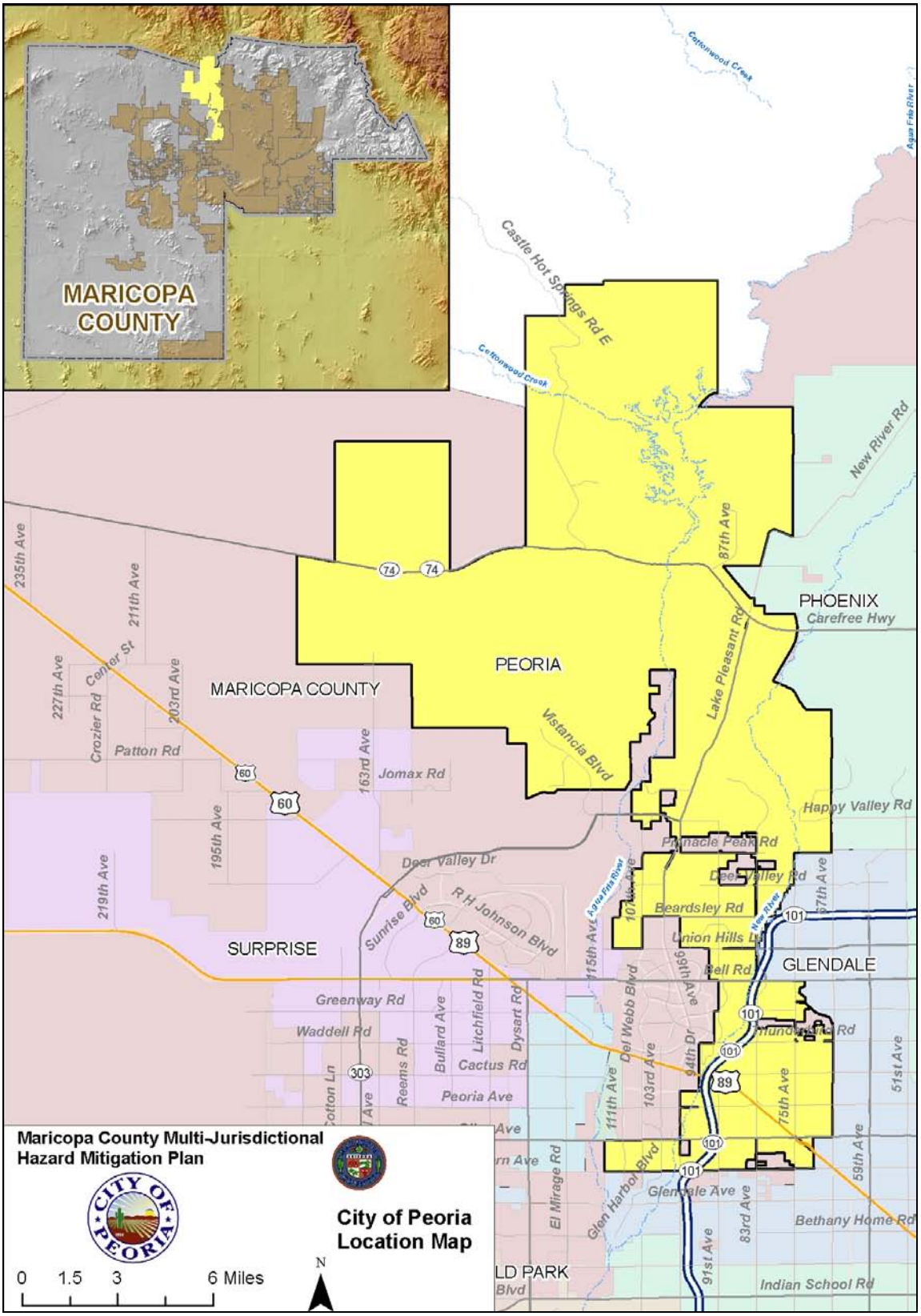


Figure 4-42: Peoria location map

Table 4-18: Summary of population and employment estimates for Peoria

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Peoria	60,618	108,462	155,557	172,793	236,154
As a % of County	0.76%	1.17%	1.92%	1.99%	2.37%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Peoria	9,216	28,400	66,537	51,300	87,400
As a % of County	0.00%	0.58%	2.04%	1.88%	1.88%
Jobs per Capita	0.15	0.26	0.43	0.30	0.37
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

Peoria's General Plan, revised in 2009, reflects a community that will continue to experience rapid residential growth, but will also secure valuable recreational and environmental amenities for the region. The City's Land Use Plan, illustrated in Figure 4-43[22], indicates two prevailing land uses in Peoria—Single-Family and Open Space. A good share of the City's Open Space will exist in and around the Lake Pleasant region, however the Agua Fria and New Rivers will also afford additional recreational opportunities. Much of the City's new commercial growth is expected to occur near and between loops 101 and 303 Freeway corridors. Future plans for a Lake Pleasant Parkway corridor that will attract office and commercial development. Peoria's General Plan includes a Safety Element that identifies methods of protecting residents, businesses, and property from the threat of natural, technological and manmade hazards and emergencies.

4.3.18 Phoenix

The City of Phoenix, located in the heart of the greater metropolitan area, dominates the political, economic, and cultural landscape not only of Maricopa County, but also much of Arizona. In 1867, Phoenix founder Jack Swilling formed a canal company and diverted water from the Salt River, helping to capitalize on the region's agricultural value. In 1911, the Roosevelt Dam was completed and water supplies—vital to growth in the region—was stabilized. Strong growth in the region began during World War II when several military airfields were constructed in Maricopa County, and various defense industries followed. Formally incorporated in 1881, today the City of Phoenix includes over 500 square miles, and is the nation's sixth most populous City. Phoenix is Arizona's capitol and is located in the County Seat: Maricopa County.

As suggested through Figure 4-44, Phoenix has grown more north south than east west since its inception. To the south Phoenix is bounded by the Gila River Indian Community and on the north by unincorporated Maricopa County. Many smaller communities, including Tempe, Paradise Valley, and Scottsdale define the City to the east, and Peoria and Glendale form the City's western border. The natural environment of Phoenix is typical of the Sonoran Desert climate. Rugged urban mountain

[22] City of Peoria, http://www.peoriaaz.gov/uploadedFiles/Peoriaaz/Departments/Community_Development/Planning_and_Zoning/General_Plan/Fig2-1LandUsePlan.pdf

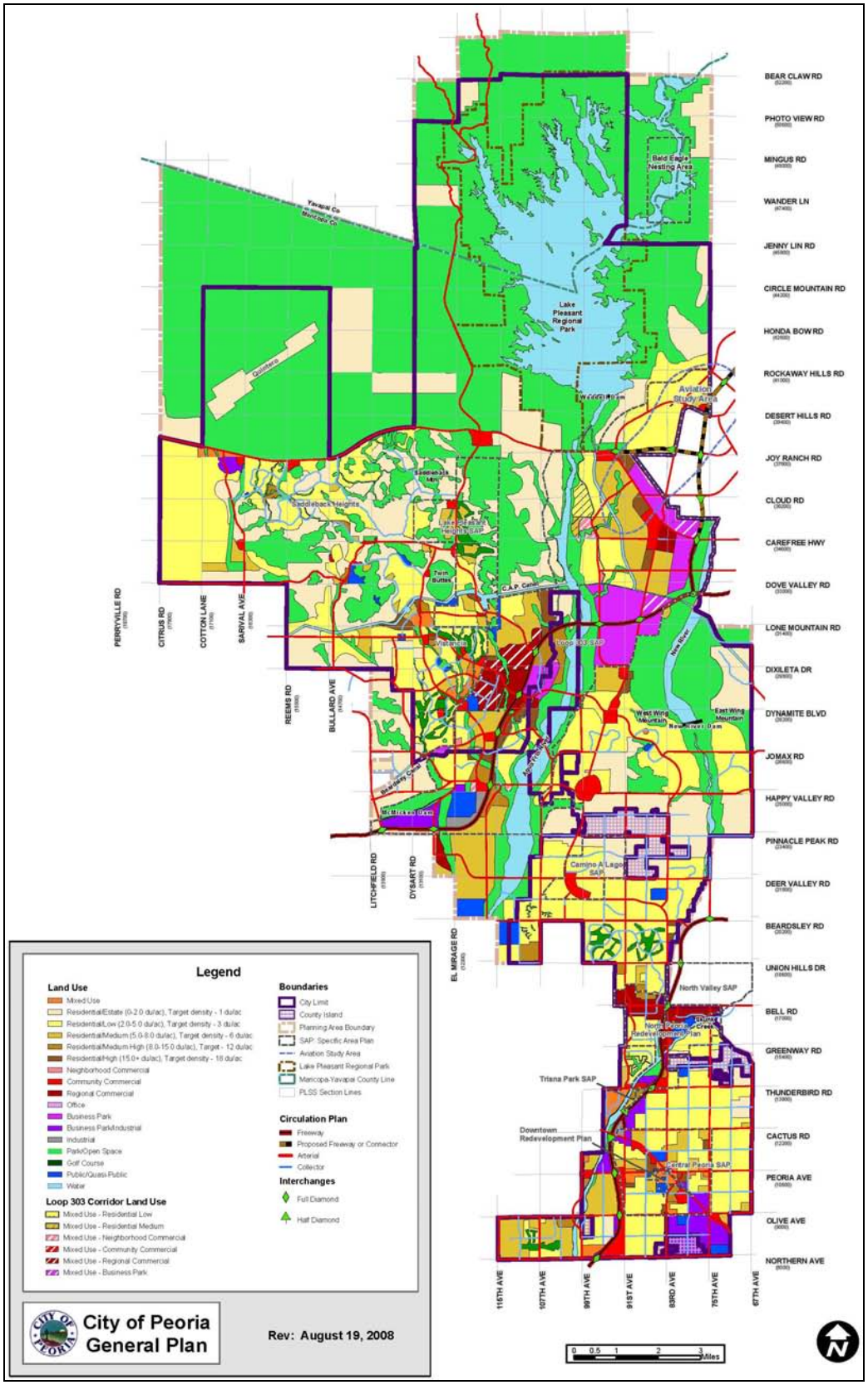


Figure 4-43: City of Peoria land use map

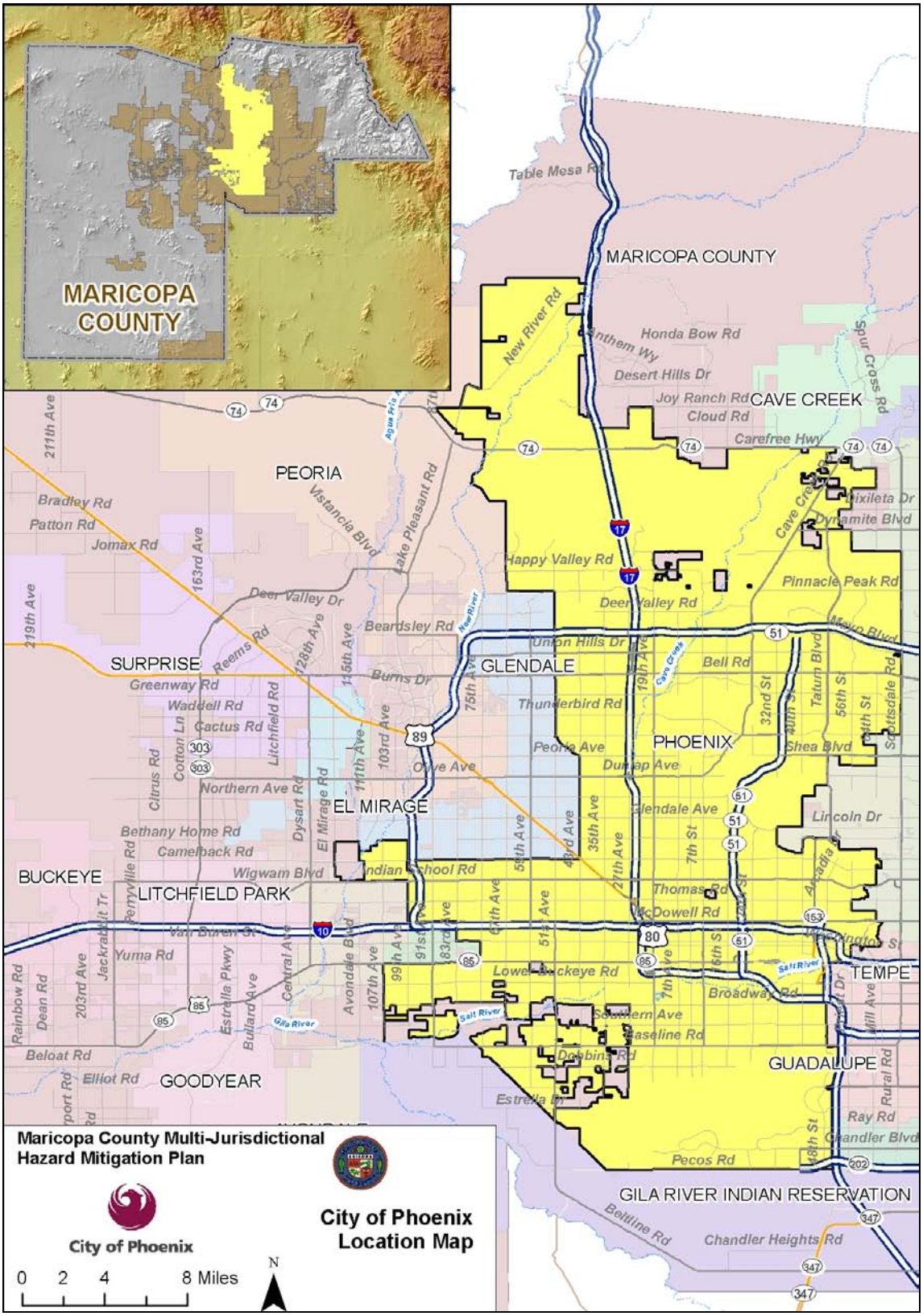


Figure 4-44: Phoenix location map

parks, including South Mountain—the nation's largest urban park—and the Phoenix Mountain Preserve create a memorable skyline. The region's catalyst, the Salt River, now runs dry through the center of the City, and is complemented by various smaller watersheds. A massive arterial roadway network and, more recently, the development of a large freeway system, now serve Phoenix. The primary roadway network includes Interstates 17 and 10, with State Highway 51 and the Loop 101 and 202 Freeways also providing transportation service throughout the region. Phoenix and the region are also served by Sky Harbor International Airport, located only two miles east of the City's central business district.

The City of Phoenix has an elected Mayor and eight City Council members that represent various districts within the City. The City operates under a charter form of government, with the Mayor and City Council setting policy. The Mayor and eight Council members serve terms of four years. The mayor is elected at-large every four years. The Council appoints the City Manager and other officers necessary to produce an orderly administration of the City's affairs.

Since its incorporation over 100 years ago, the City of Phoenix has experienced tremendous growth, becoming one of the nation's fastest-growing large metropolitan areas. Illustrated in Table 4-19, this growth has led Phoenix to a current population of over 1.5 million people and representing over 39% of the county's population. Despite its prominent role within Maricopa County, Phoenix will occupy less of the region's overall population by the year 2020, when the 1.9 million people residing in the City will represent only 38.5% of Maricopa County. Similarly, employment within Phoenix, currently 815,000 workers, reflects over 44% of the County's jobs. However, by 2020 this figure is expected to drop to 41%. The diminished role of both population and employment in Phoenix, while increasing dramatically, speaks to the remarkable development of both categories regionally.

Table 4-19: Summary of population and employment estimates for Phoenix

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Phoenix	983,403	1,350,500	1,561,485	1,695,549	1,990,450
As a % of County	46.34%	43.96%	39.16%	41.01%	38.54%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Phoenix	541,574	687,574	815,225	937,182	1,108,031
As a % of County	57.11%	43.94%	44.92%	44.37%	40.96%
Jobs per Capita	0.55	0.51	0.52	0.55	0.56
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

Ratified in March of 2002, Phoenix's General Plan provides a framework for a community that will be exposed to growth pressures from new development in the north, as well as revitalization and infill issues from its older neighborhoods. Figure 4-45[23] illustrates a very dynamic land use pattern that reflects the massive post-war, suburban style residential growth that prevails in the central and mid-central portions of the City, as well as consistent commercial development along the many miles of arterial streets that symbolize the street network throughout the region. Industrial development is expected to continue to occur primarily near Sky Harbor International Airport, as well as along the Salt River and near the Deer Valley Airport in north Phoenix. Not known for its dramatic downtown skyline, Phoenix is also planning for commercial and civic development in the central business district,

[23] City of Phoenix, http://www.phoenix.gov/PLANNING/gpmap.pdf

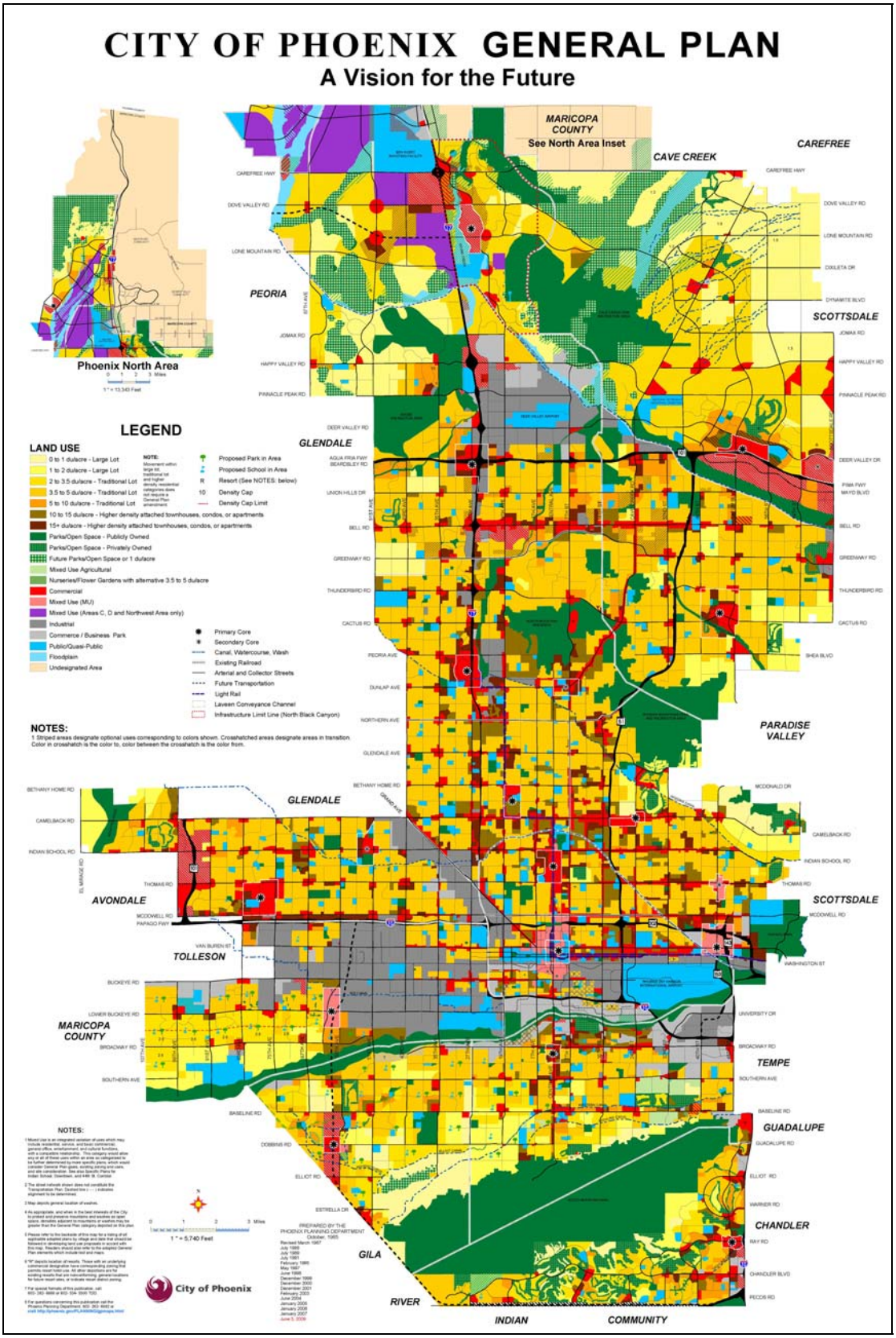


Figure 4-45: City of Phoenix land use map

as well as along the City's "spine"—Central Avenue. Unique character will be strengthened in areas including Ahwatukee in south Phoenix, in the historic neighborhoods that are clustered in the central portion of the City, and near the many urban parks that characterize the recreational opportunities in urban Maricopa County. The most rapidly developing region of Phoenix is expected to be in the north, where unincorporated Maricopa County is already being prepared for development. The Phoenix General Plan also addresses public safety through its Safety Element, which recommends ways to reduce the risks of natural and man-made hazards including the following: soil and geologic hazards, fire hazards, emergency medical service, hazardous materials, police and crime, aircraft and airport safety, and ground transportation and emergency response programs.

4.3.19 Queen Creek

Like most of the communities located in the greater metropolitan area, Queen Creek has experienced rapid growth in both population and land area, yet is still known as a very rural community that is rich in agricultural and rustic lifestyles. The Town of Queen Creek is situated in the southeastern corner of Maricopa County and a portion of western Pinal County, as shown in Figure 4-46. The Gila River Indian Community borders the southwest boundary of Queen Creek, the Town of Gilbert lies to the immediate west, and Mesa forms the northern boundary of the Town. The San Tan Mountains Regional Park boundary comprises the southern boundary of the planning area. Downtown Mesa is approximately 20 miles north, yet the southernmost border of Mesa is Germann Road, which forms the northern boundary of the Queen Creek planning area. Williams Gateway Airport, a growing regional facility in Mesa, is only one mile north of the northern boundary of Queen Creek.

The Queen Creek planning area is 64.7 square miles while the current incorporated Town area is approximately 26 square miles. Before it became a community Queen Creek was a home for early Indian communities and the homesteaders who farmed and ranched along Queen Creek Wash. By the time Arizona became a state in 1912, an organized farming town had been formed in the area. The Town of Queen Creek formally incorporated in 1989.

Large farms throughout the area grow a variety of crops including citrus, pecans, cotton, corn, soybeans, wheat, potatoes, and alfalfa. The Union Pacific Railroad runs northwest to the southeast through the Town. Queen Creek Wash and Sonoqui Wash also traverse the planning area, and periodically convey water flows generally due to flash floods. The San Tan Mountains and Goldmine Mountains are the most dramatic landform in the area, and lie immediately to the south. The Superstition Mountains, to Queen Creek's northeast, can be seen from virtually anywhere within the planning area. Major arterials in the Town are based on a grid system, with Rittenhouse Road crossing diagonally through the region. The southern section of the Loop 202 Freeway will pass through Mesa and Gilbert several miles to the north, and will provide primary access to the metropolitan area.

As illustrated in Table 4-20, in 2000 the population of Queen Creek was 4,317. With development opportunities opening rapidly in the ensuing years, this population is forecast to multiply over 20 times to 55,500 by 2020. As a result, Queen Creek's population will comprise a steadily increasing percentage of Maricopa County's population. Similarly, Queen Creek's labor force, although small, is forecast to reflect an ever-larger share of the region's jobs. In 1990, the Town had just 266 jobs, while 2020 projections anticipate over 22,000 jobs within the community. In addition to having a growing population and employment role within the region, Queen Creek's ratio of jobs-per-capita is also forecast to rise from 0.10 in 1990 to 0.40 in 2020.

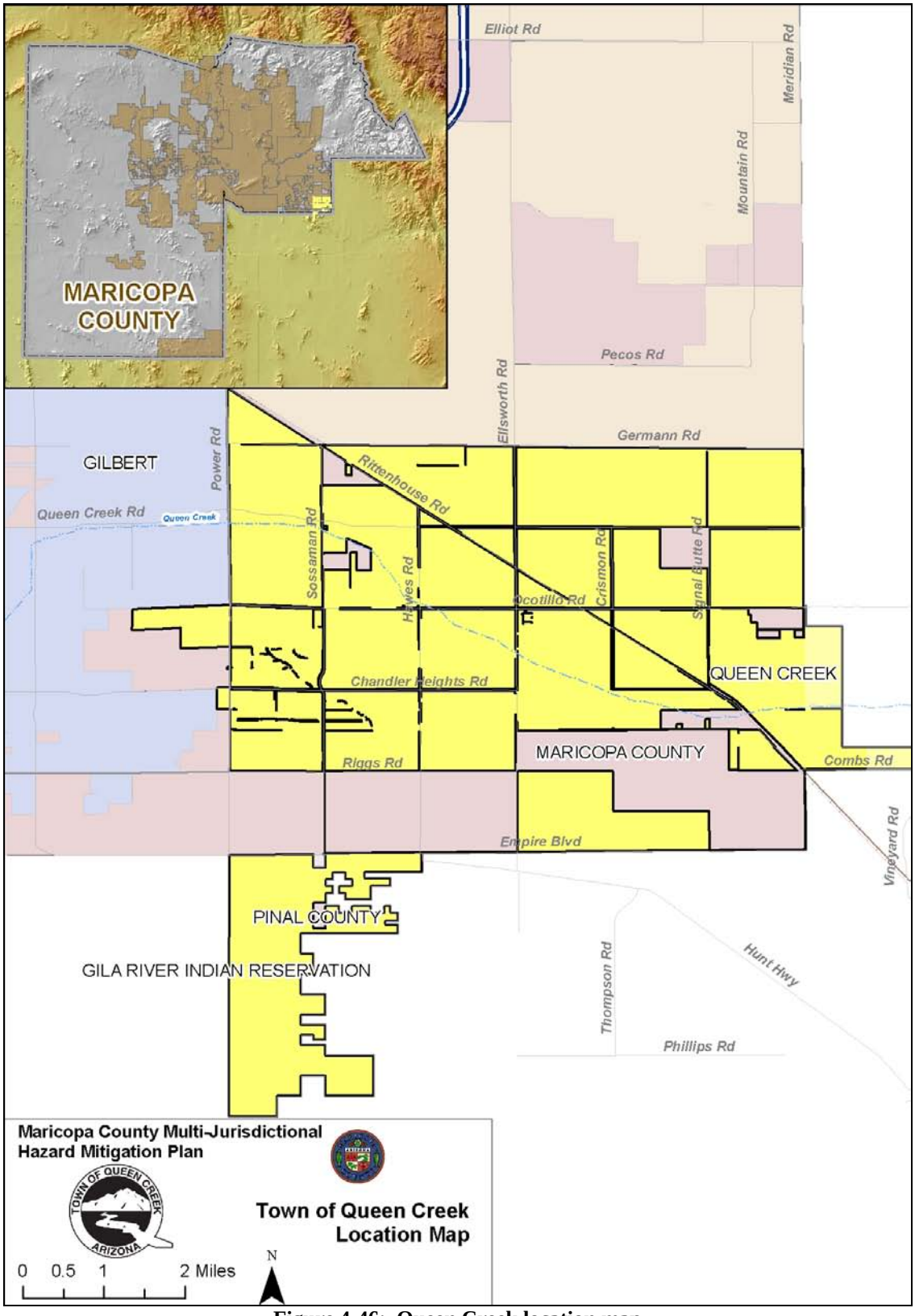


Figure 4-46: Queen Creek location map

Table 4-20: Summary of population and employment estimates for Queen Creek

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Queen Creek	2,667	4,317	23,329	34,506	55,529
As a % of County	0.13%	0.14%	0.58%	0.83%	1.08%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Queen Creek	266	1,700	2,675	9,652	22,213
As a % of County	0.03%	0.11%	0.15%	0.46%	0.82%
Jobs per Capita	0.10	0.39	0.11	0.28	0.40
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

The Town of Queen Creek General Plan, adopted April 2008, provides the framework for guiding the Town's rapid development. The Town Land Use Plan for Queen Creek, illustrated in Figure 4-47[24], emphasizes the creation of a concentrated, strong community core to balance other traditional uses. Historically, the majority of the Queen Creek planning area has included agricultural uses, with scattered residential and undeveloped areas. Newer land uses include a predominate mixture of residential densities for most of the areas. Capitalizing on its proximity to the Williams Gateway economic development area, much of north Queen Creek is expected to grow with commercial and industrial uses. Supporting the community's rural character several mixed-use projects have also been approved and many equestrian-oriented developments have also been created.

4.3.20 Salt River Pima-Maricopa Indian Community

The Salt River Pima-Maricopa Indian Community (SRPMIC) is located approximately 17 miles northeast of Phoenix, Arizona, and is bounded by Scottsdale to the north and west, Mesa and Tempe to the south, and Fountain Hills to the northeast. As a result of the Community's location in the Phoenix metropolitan area it has experienced steady population and economic growth. Primary access to the Community is offered through both the Loop 101 and 202 Freeways, and by State Highway 87, which runs north from Mesa to Payson through SRPMIC land. As shown through Figure 4-46, the most visible natural features of the region include the Salt River, which runs along the southern reservation border, and Red Mountain, a feature that exists on the Community's east side.

The SRPMIC was established in 1879 by an Executive Order signed by President Rutherford B. Hayes. The Executive Order enabled the Pima and Maricopa people to occupy the same 54,000 acres of fertile agricultural land as their ancestors. The Community Council, which is comprised of a President, Vice President and seven Council members, governs the SRPMIC.

Despite urbanization to the south, west and north, the Community has maintained its natural beauty and rural qualities. The Community offers many public facilities including six parks, two swimming pools, a library, museum, and golf course, youth recreational centers, and two theater complexes. In total, the Community consists of 53,600 acres, 12,000 acres of the Community are used for agriculture and maintains 19,000 acres as a natural preserve. The land under cultivation produces a variety of crops including cotton, melons, potatoes, onions, broccoli and carrots. Further commercial development is planned for an area along the Community's western boundary where the Loop 101 Freeway provides access to Scottsdale and the rest of growing Maricopa County.

[24] Town of Queen Creek, http://www.queencreek.org/Modules/ShowDocument.aspx?documentid=3236

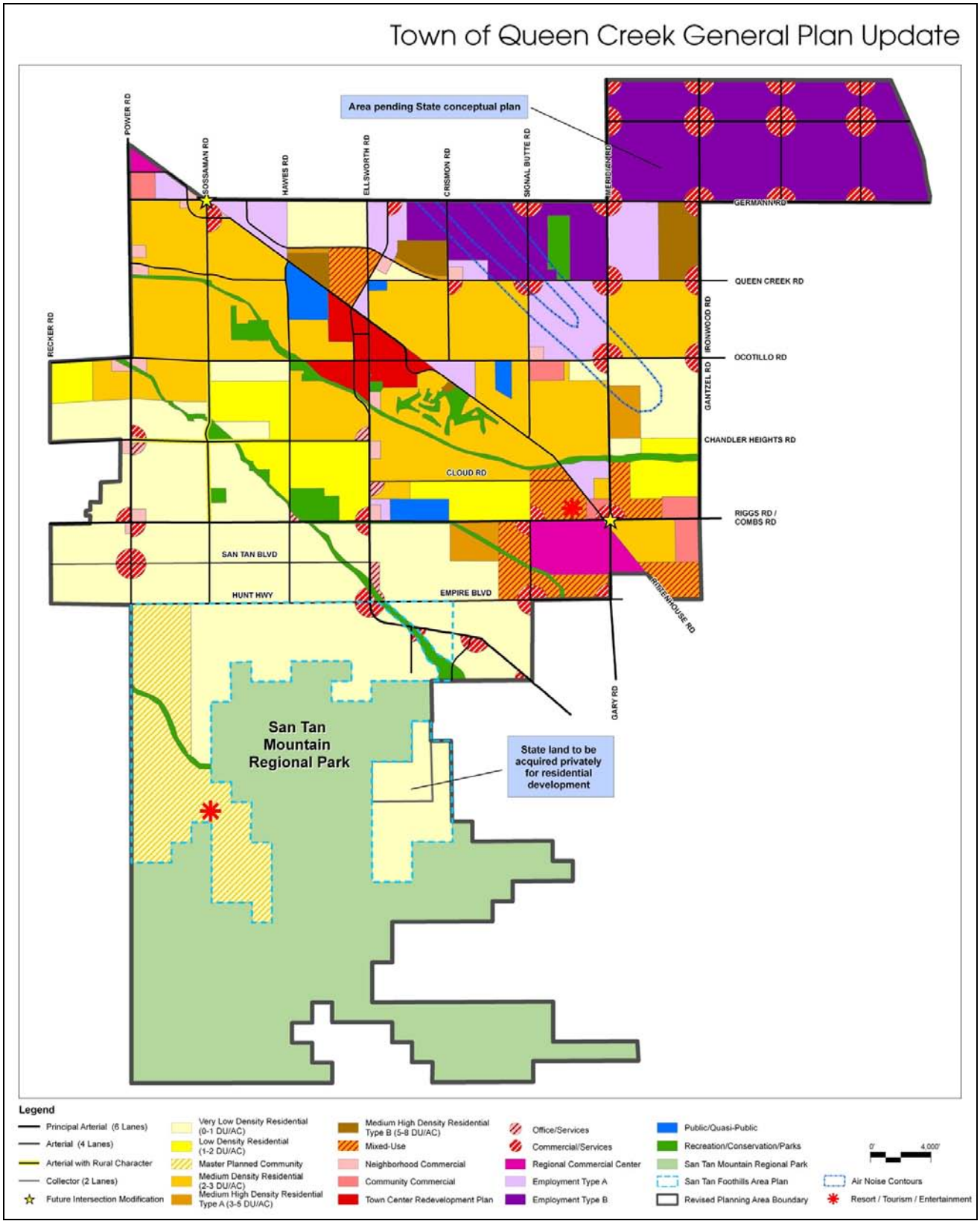


Figure 4-47: Town of Queen Creek land use map

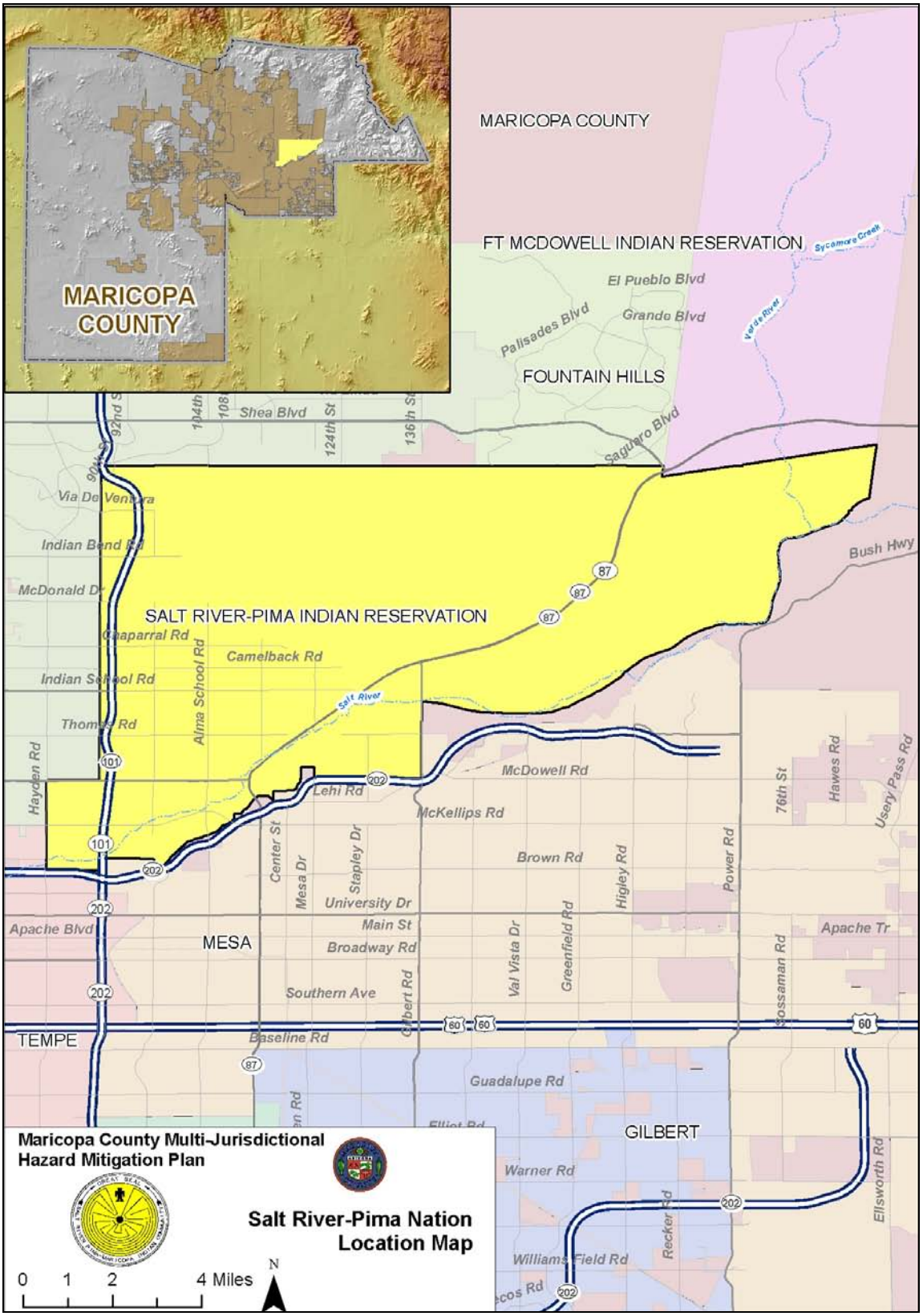


Figure 4-48: Salt River Pima-Maricopa Indian Community location map

As shown in Table 4-21, in 2000 the population of Salt River Pima-Maricopa Indian Community was 6,403. Population projections for this jurisdiction indicate that growth is likely to top out near the 7,300 mark in 2020, indicating a finite growth potential for the Salt River Pima-Maricopa Indian Community. By contrast, employment estimates for the Community project a growing job market, with over 25,000 jobs on the Salt River community by 2020. Much of this growth is anticipated to occur on the western edges of the region, where office and commercial development is expected to develop. In addition to having a growing employment role within the region, the Salt River Pima-Maricopa Indian Community is also expected to demonstrate a job per capita increase from 1.14 in 2000 to a substantial 3.5 by 2020. Major employers within the Community include the Casino Arizona, Home Depot, Target, Mervyn's, Wal-Mart, Bureau of Indian Affairs, and the Salt River Pima-Maricopa Tribal Government.

Table 4-21: Summary of population and employment estimates for Salt River Pima-Maricopa Indian Community

Population	**1990**	**2000**	**2005**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Salt River Pima-Maricopa IC	4,852	6,403	6,822	7,087	7,308
As a % of County	0.23%	0.21%	0.17%	0.17%	0.14%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Salt River Pima-Maricopa IC	N/A	7,300	5,977	11,131	25,587
As a % of County	N/A	0.47%	0.33%	0.53%	0.95%
Jobs per Capita	N/A	1.14	0.88	1.57	3.50
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

The SRPMIC is governed by the Community Council, which is comprised of the Community President, Community Vice-President, and the Tribal Council. The President and Vice President are elected at large and serve a four-year term. The Council members serve a staggered term of four (4) years. The Community President and Vice President oversee the management of the comprehensive government development, operations and services including: administration, general counsel, treasury, budgets and records, gaming regulatory office, self governance, community development, economic development, construction and engineering, education, human resources, community relations, congressional and legislative affairs, cultural and environment, finance, fire, police, health and human services, judicial center, public works, transportation, recreation, museum, purchasing, and learning center.

Planned land use for the SRPMIC is presented on Figure 4-49[25]. The majority of use will remain open space and agriculture, with parcels of residential sprinkled throughout and a few clusters of higher density residential and commercial areas.

[25] Maricopa Association of Governments, 2007 (DRAFT), *Municipal Planning Area Socioeconomic Profiles Maricopa County, Arizona*

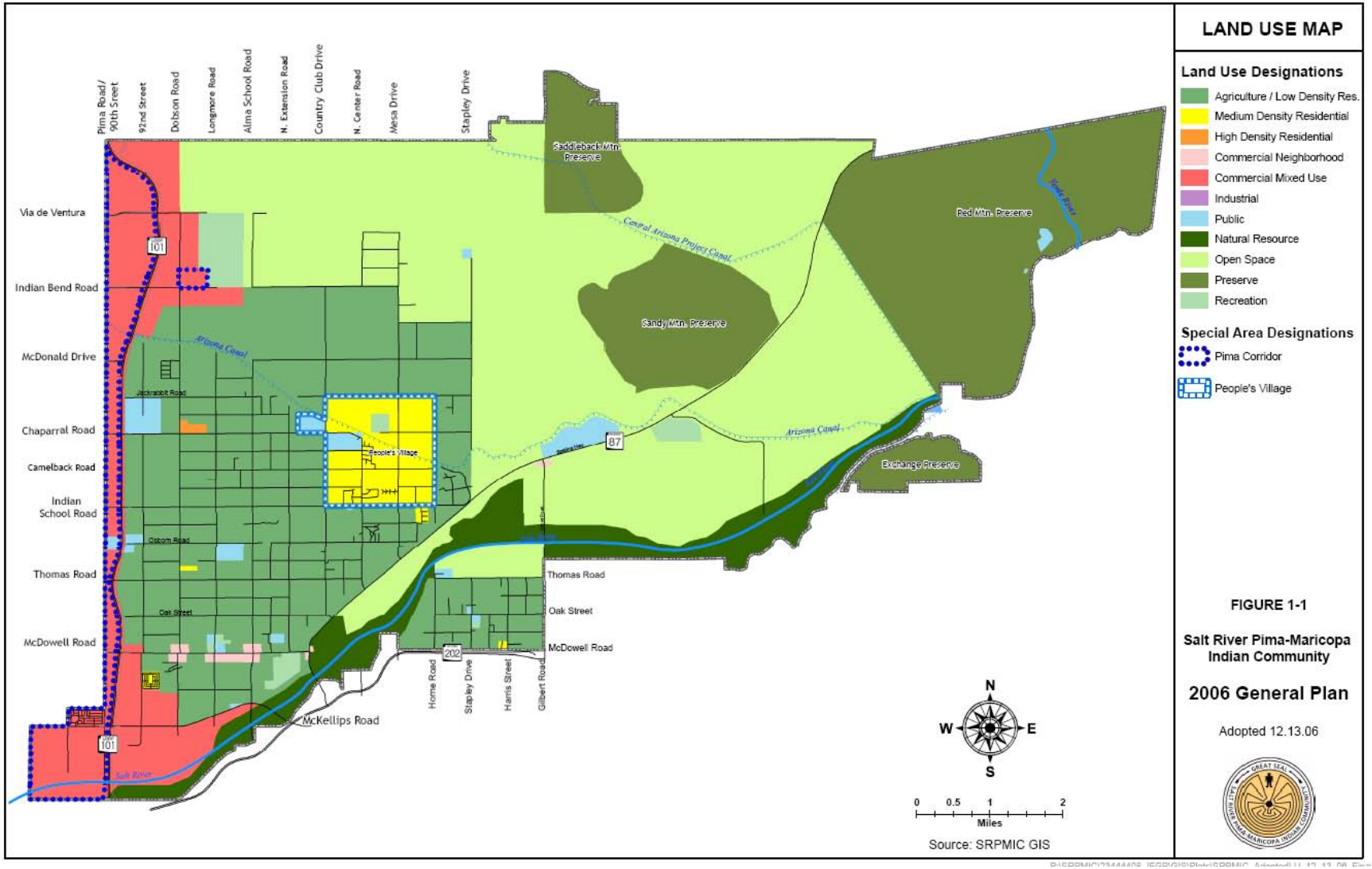


Figure 4-49: Salt River Pima-Maricopa Indian Community land use map

4.3.21 Salt River Project

The Salt River Project (SRP) is two companies: the Salt River Project Agricultural Improvement and Power District (District) a political subdivision of the state of Arizona; and the Salt River Valley Water Users' Association (Association), a private corporation. The District provides electricity to retail customers in the Phoenix area. It operates or participates in seven major power plants and numerous other generating stations, including thermal, nuclear and hydroelectric sources. The Association delivers nearly 1 million acre-feet of water to a service area in central Arizona. An extensive water delivery system is maintained and operated by the Association, including reservoirs, wells, canals and irrigation laterals. For the purpose of this Plan, the District is the eligible branch of SRP to receive funding under the DMA 2000 impacted mitigation grant programs.

The president is the chief executive officer and chairman of the Board for each organization. The vice president fulfills the duties and responsibilities of the president during the president's absence. Together, they serve as the day-to-day representatives of the Boards in the management of SRP.

In the District, landowners elect a president, a vice president, 14 Board members and 30 Council members. Each of the 10 voting divisions elects one Board member and three Council members. The president, vice president and four remaining Board members are elected at-large from all of the voting divisions.

During the Great Depression, Valley farmers were hard-pressed to make payments on the federal loans for Theodore Roosevelt Dam and other dams on the Salt River. To help reduce payments on the outstanding loans, the Arizona Legislature enacted a law in 1936 that allowed the formation of the Salt River Project Agricultural Improvement and Power District in 1937. As a political subdivision of the state, the District can issue tax-exempt municipal bonds, thereby reducing interest costs and saving SRP electric and water users millions of dollars.

As the Valley's population has grown, the District has tapped many power sources to provide electricity to more than 929,000 customers. Besides the time-honored hydroelectric generating units at the dams on the Salt River, the District owns or participates in 10 generating stations in the Southwest. Customers also are served by power drawn from various other generating facilities in the Valley and state, as well as from contractual power purchases.

4.3.22 Scottsdale

Situated in the northeast portion of Maricopa County approximately 15 miles west of downtown Phoenix, the City of Scottsdale is bordered by several communities including Phoenix and Paradise Valley on the west, Tempe on the south, the Salt River Pima-Maricopa Indian Community on the east, and the Tonto National Forest to the north and east, as shown in Figure 4-50. Founded in 1888, Scottsdale, has long been known as the “West’s Most Western Town”. Today the City is an example of a community that combines a rich western heritage with civic culture and a resort lifestyle. Contributing to these influences are several natural features that affect community lifestyle including the McDowell Mountain Park, the McDowell Sonoran Preserve, and the Salt River to the south.

The primary man-made features that influence Scottsdale’s land uses include: the Loop 101 Freeway, which runs along the east and north portions of Scottsdale and which provides both transportation to the rest of the Valley and also offers opportunities for commercial growth; the Scottsdale Road corridor, which runs north-south for the length of the community, bisects Scottsdale into east and west halves. This roadway intersects the spectrum of Scottsdale land uses, including the Old Town shopping district in the south, the upscale shops and office areas near the Scottsdale Airpark, and finally the preserved open lands on the City’s far north area. These facilities compliment a wide array of resort and golf communities that have strengthened Scottsdale image as a destination community.

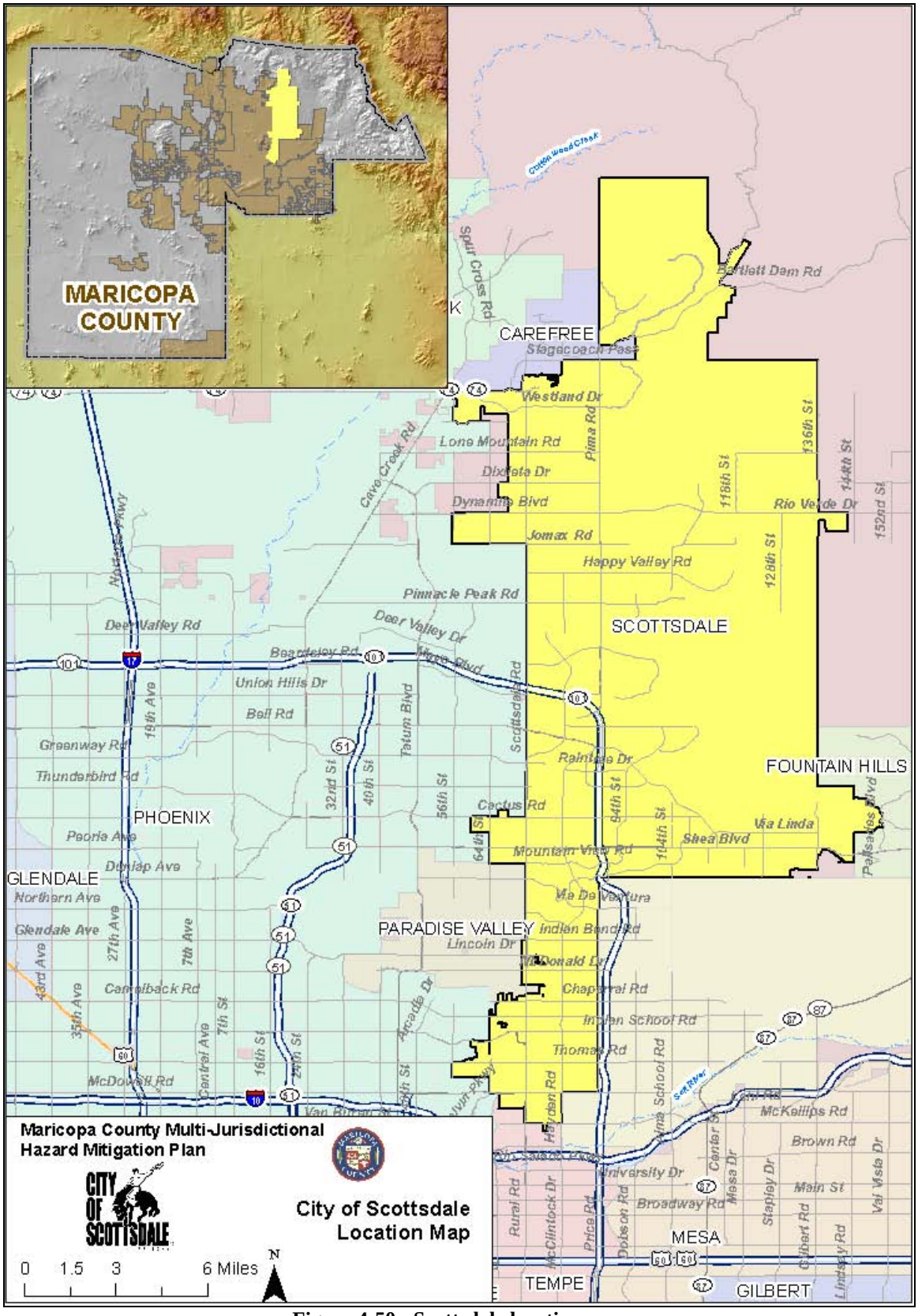


Figure 4-50: Scottsdale location map

Scottsdale has evolved and grown since its founding in the late 1800's and incorporation in 1951, and currently includes over 184 square miles within its corporate boundary. Starting as a small residential community sprinkled with farms and citrus groves, Scottsdale has become a community that features a variety of land uses.

Today Scottsdale is governed by a Council-Manager form of government, which includes a Mayor and six council members elected at-large for a period of four years.

As illustrated in Table 4-22, in 2000 the population of Scottsdale was 202,744. With vacant land continuing to provide residential growth opportunities, this population is forecast to grow to more than 269,000 by 2020. In spite of this continued growth in Scottsdale continued development countywide will reduce Scottsdale's share of the metropolitan population. Similarly, Scottsdale's labor force is forecast to grow substantially over the course of the coming decades to 232,800 by 2020. However, this labor pool will also represent a shrinking share of the region's jobs. In addition to having a growing local population and employment pool, Scottsdale's ratio of jobs-per-capita is also forecast to rise from 0.58 in 1990 to 0.86 in 2020. This relationship indicates that Scottsdale has one the healthiest balances of economy and population in the region. The Scottsdale economy today contains, in addition to its many resorts, a diverse mix of financial services from banking to insurance and investment; business services from advertising and public relations to software development; computer services, professional services from major health care providers anchored by Scottsdale Memorial Health systems, and the world renowned Mayo Clinic. A growing office and commercial environment is also developing in and around the Scottsdale Airpark.

Table 4-22: Summary of population and employment estimates for Scottsdale

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Scottsdale	130,069	202,744	242,337	249,341	269,266
As a % of County	6.13%	6.60%	6.08%	6.03%	5.21%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Scottsdale	75,353	152,100	139,712	208,073	232,832
As a % of County	7.95%	9.72%	7.70%	9.85%	8.61%
Jobs per Capita	0.58	0.75	0.58	0.83	0.86
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

Ratified in March of 2002, Scottsdale's General Plan reflects a land use pattern, as many other Maricopa County cities do, a preponderance of residential and open space uses, as shown in Figure 4-51[26]. Scottsdale is also a community with several unique "character" areas. Most notably, Scottsdale's Old Town district, the Shea Boulevard Corridor, the Loop 101 Freeway region in north Scottsdale, and the various mountain and desert preserves all contribute to the unique qualities of Scottsdale. These regions have been identified through the General Plan process, and will be preserved and strengthened through the continued residential growth in the ensuing years. Scottsdale's General Plan also includes a Public Services and Facilities Element that represents the public's investment in the design, development and delivery of the package of service systems and programs, and the physical facilities required to satisfy the needs of a growing community.

[26] City of Scottsdale, http://www.scottsdaleaz.gov/Assets/documents/generalplan/landuse.pdf

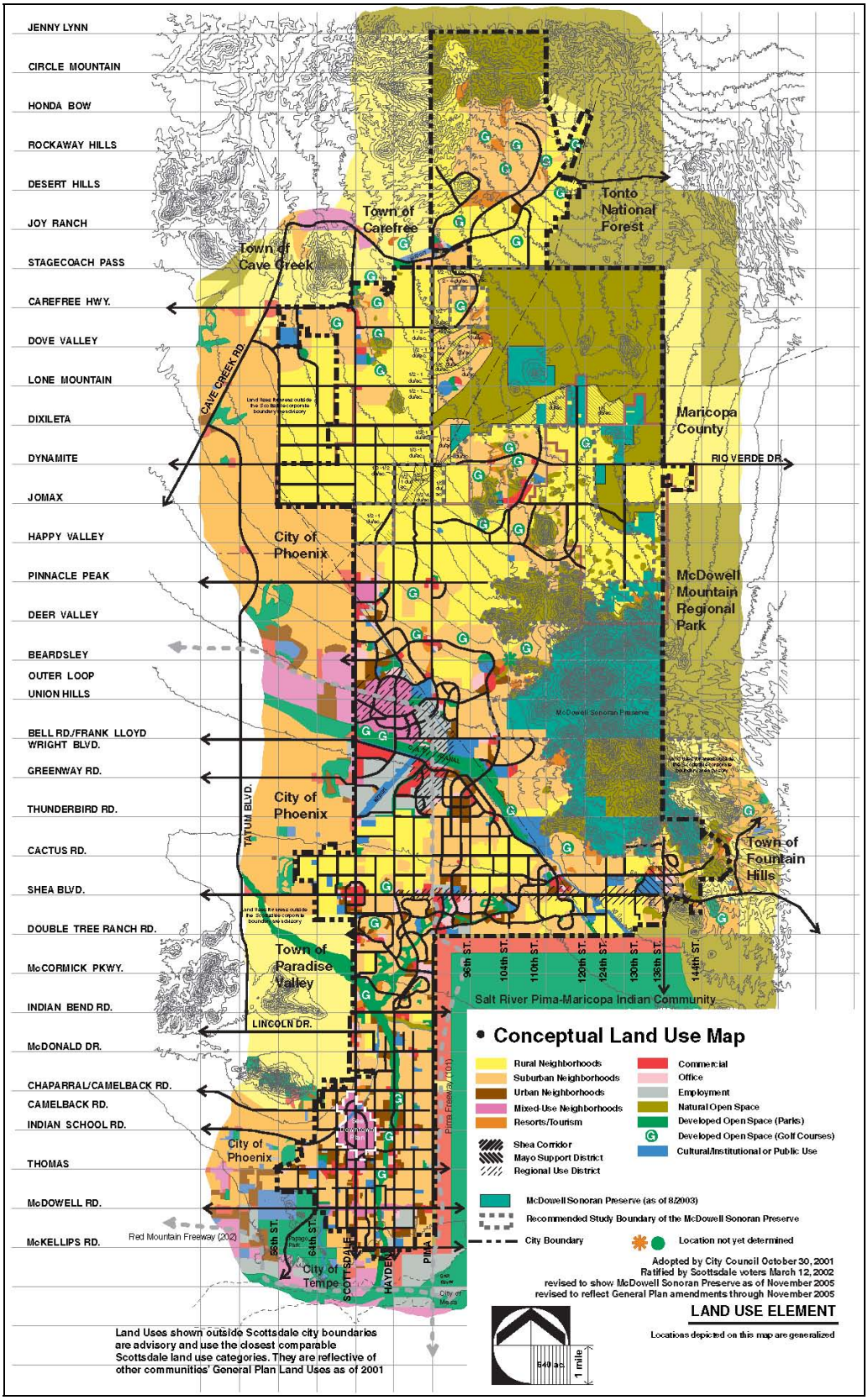


Figure 4-51: City of Scottsdale land use map

4.3.23 Surprise

Surprise is located 25 minutes northwest of downtown Phoenix along US Route 60/State Highway 93 in the northwest valley of the metropolitan area. It is positioned about 13 miles west of Interstate 17, and 18 miles north of Interstate 10. Luke Air Force Base is 2.5 miles south of the Surprise planning area, located in the City of Glendale. The City of Surprise is bordered on the east by the cities of Peoria and El Mirage and on the west by the Town of Buckeye. The unincorporated retirement communities of Sun City West and Sun City lie to east of the City of Surprise, and Glendale lies immediately to the south of Surprise. The White Tank Mountain Regional Park is located in the southwest portion of the planning area and Lake Pleasant Regional Park is located approximately ten miles to the northeast.

Surprise became an incorporated town on December 12, 1960 and boasted a population of nearly 1,600 people located on a one square mile site. Today Surprise's 31,000 residents are governed by a Council-Manager form of government, which includes a mayor and six council members who are elected from six council districts for four-year terms.

Over the course of nearly 50 years, Surprise has grown to a city of 74 square miles with an estimated population of over 108,000 in 2008. The planning area contains both natural and man-made landforms that are, and will continue to influence, the pattern of development within the city and its planning area. At an elevation of 1,817 feet, one of the more unique natural features located within the planning area is Bunker Peak. As shown in Figure 4-52, manmade landforms located within the planning area include McMicken Dam. Land features that frame the planning area include White Tank Mountain Regional Park to the west, Hieroglyphic Mountains to the northeast, and the Vulture Mountains to the northwest.

As illustrated in Table 4-23, in 2000 the population of Surprise was 30,886. Population is forecast to expand to 268,359 by 2020. Surprise's population will comprise a steadily increasing percentage of Maricopa County's population. Similarly, Surprise's labor force is forecast to reflect an ever-larger share of the region's jobs. In 1990, the City had 1,176 jobs, while 2020 projections anticipate over 81,400 jobs within the community. In addition to having a growing population and employment role within the region, Surprise's ratio of jobs-per-capita is also forecast to rise from 0.17 in 1990 to 0.30 in 2020.

Table 4-23: Summary of population and employment estimates for Surprise

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Surprise	7,122	30,886	108,761	146,890	268,359
As a % of County	0.34%	1.01%	2.73%	3.55%	5.20%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Surprise	1,176	9,000	32,405	31,105	81,423
As a % of County	0.12%	0.58%	1.79%	1.47%	3.01%
Jobs per Capita	0.17	0.29	0.30	0.21	0.30
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					
Highlighted cells indicate anomously low forecast estimates. Causes may include annexation of additional land into town limits, higher growth rates than projected, etc.					

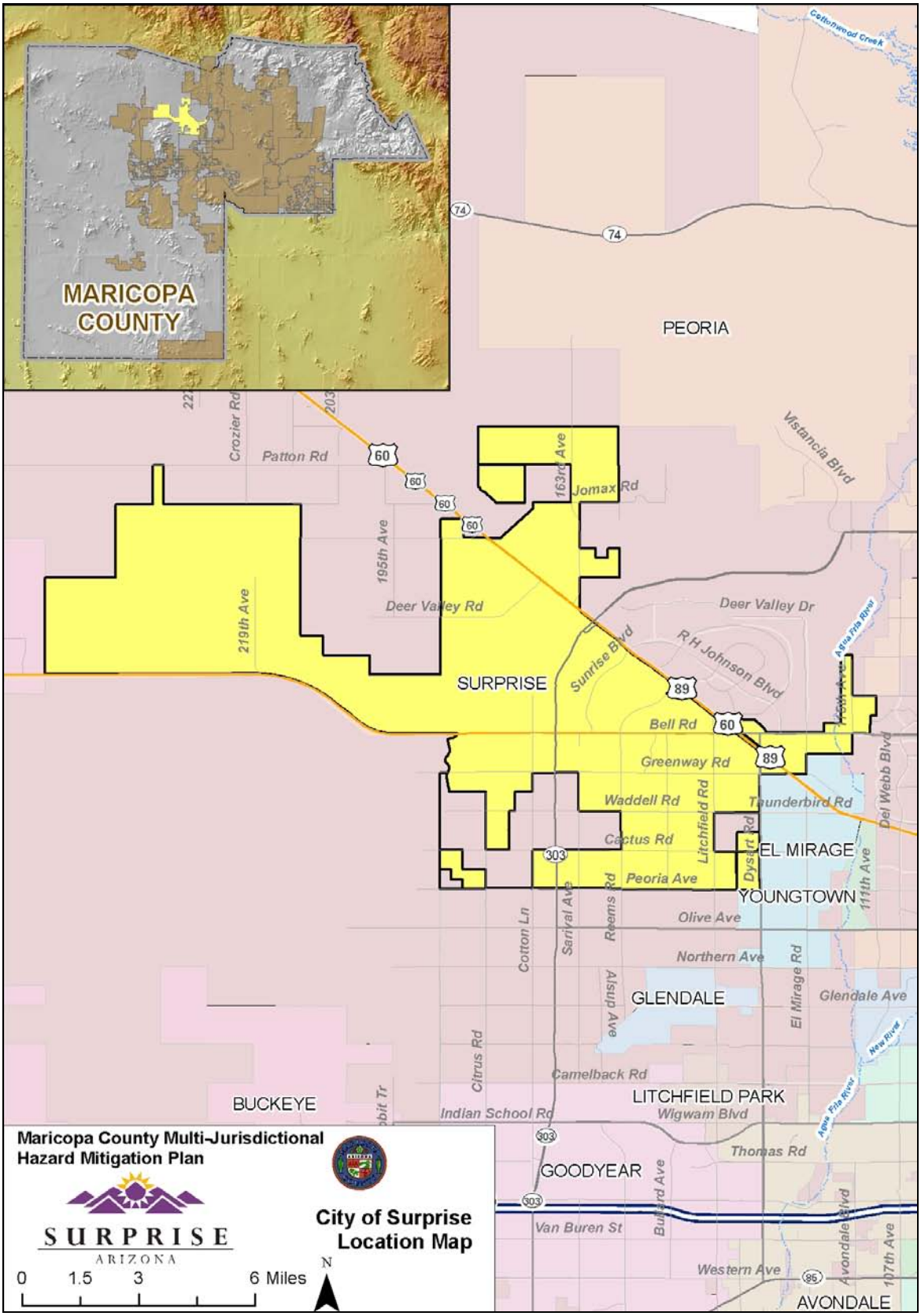


Figure 4-52: Surprise location map

In the past, the economy of Surprise was heavily reliant on the success of agriculture in the region. Although farming is still one of its primary economic functions, the City's tremendous growth has triggered considerable employment in the construction and service sectors. The City now offers business and industry many opportunities for growth.

Surprise's General Plan, effective December 2005, reflects a growth rate that, if maintained, will make Surprise one of the most populous communities in the State by the year 2010. Currently, the landscape of Surprise is dominated by residential uses. As shown in Figure 4-53[27], this trend is expected to continue, with residential densities diminishing the farther the distance from Surprise's Town Center. In addition, job growth is anticipated to occur in and around the airport and along Grand Avenue. The Land Use Plan also anticipates the creation of various Arterial Roadways that will better serve this new population, and applies lower densities near the environmental areas of the City including the White Tank Mountain Regional Park and the Trilby Wash Detention basin. The Surprise General Plan also includes a Public Services and Cost of Development Element that provides an overview of the various public safety, public administration, and school and health facilities located within the Surprise planning area. This element encourages the City of Surprise to provide the necessary public facilities and services to support new and existing growth and development as well as adequate policies in place to determine what role the public sector plays in financing public services and facilities.

4.3.24 Tempe

The City of Tempe consists of 40 square miles in the heart of the metropolitan area. It straddles the Salt River and is generally bounded on the east and west by freeways, with two additional freeways bisecting the City and running across its northern section. As illustrated through Figure 4-54, the City of Tempe is landlocked on all sides by adjacent communities: Scottsdale to the north, the Salt River Pima-Maricopa Indian Community and Mesa to the east, Chandler to the south and Guadalupe, and Phoenix to the west. Tempe's central location is augmented by its proximity to an intricate freeway network that provides access to and from these surrounding communities. Arizona State University, with a main campus of over 44,000 students, is located in Tempe. Tempe also includes several prominent natural land features including Hayden Butte, Papago Butte and the Tempe Town Lake, which is the only length of the Salt River in the Phoenix area that has a continuous supply of water.

Founded in 1894, Tempe is one of the oldest communities in the Valley and historically has been one of the most densely populated. Its position in the region is both advantageous and challenging. Land-locked Tempe falls in the middle of a large transportation commute zone, significantly impacting land use planning, environmental issues and public health and safety. Tempe's planning area is five miles wide by eight miles long, or about forty square miles. Within this area are approximately 24.2 linear miles of freeway, 23 miles of canal, 30 miles of power lines, 14 miles of active railroad lines, and five miles of departure/landing air flight corridor. In spite of these tremendous right-of-way impacts, Tempe has some of the most desirable residential and commercial areas in the Valley. Today Tempe is administered by a Council-Manager form of government that includes a mayor and six council members elected at-large for a period of four years.

As illustrated in Table 4-24, in 2000 the population of Tempe was 158,426. As a landlocked community that is largely built out, residential growth in Tempe is somewhat less active than in many neighboring communities. As such, population is forecast to grow only moderately to 191,881 by 2020. However, Tempe does have more jobs in the City than residents. In 2000 the City held over 162,000 jobs, compared to 158,000 residents. Projections for 2020 indicate that this trend will continue, with 219,500 jobs in Tempe contrasted with 191,800 citizens. Remarkably, Tempe's ratio of jobs-per-capita is forecast to rise from 0.66 in 1990 to 1.1 in 2020.

[27] City of Surprise, http://www.surpriseaz.com/DocumentView.aspx?DID=1512

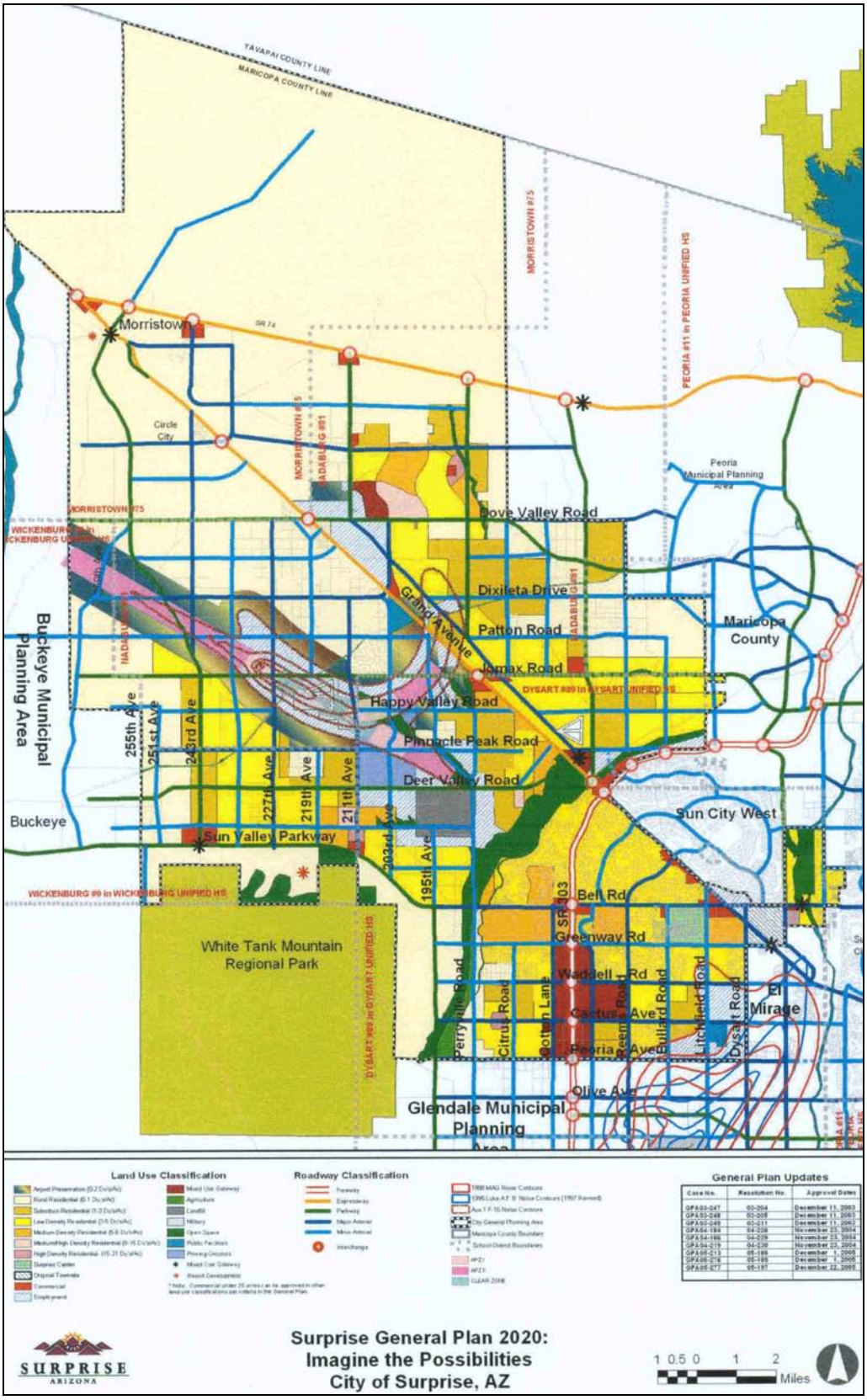


Figure 4-53: City of Surprise land use map

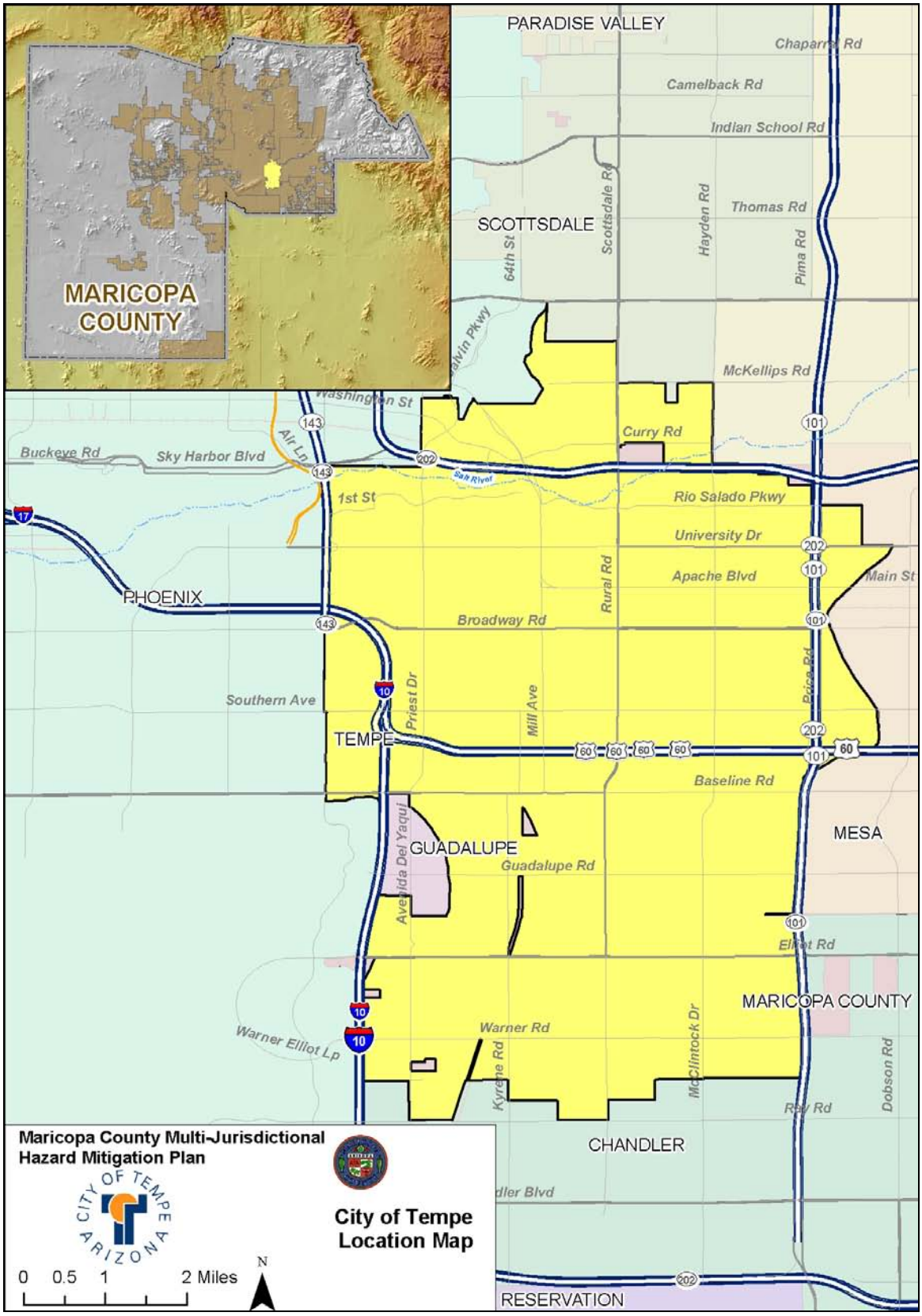


Figure 4-54: Tempe location map

Table 4-24: Summary of population and employment estimates for Tempe

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Tempe	141,865	158,426	172,641	177,771	191,881
As a % of County	6.69%	5.16%	4.33%	4.30%	3.72%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Tempe	93,461	162,400	118,675	198,243	219,543
As a % of County	9.86%	10.38%	6.54%	9.39%	8.12%
Jobs per Capita	0.66	1.03	0.69	1.12	1.14
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

Tempe has a very strong and diversified economy featuring a manufacturing base of over 750 companies, and is home to the "Tech Oasis"—a cluster of over 200 high-tech companies. Other growing industries include biotechnology, financial, and business services. Real estate has been strong in Tempe, with property along and near the Town Lake and in the Mill Avenue corridor fueling most growth. Arizona State University continues to be a major catalyst for jobs and tech innovation.

Tempe's General Plan, adopted in December 2003, presents a very different land use pattern than in most other Maricopa County Communities. Specifically, Tempe supports a series of unique land use and institutional amenities that create a more compact and dynamic urban form. As shown in Figure 4-55[28], Arizona State University, Mill Avenue, and the Tempe Town Lake are all identified as primary growth areas for the community. The impact of this core development will be felt throughout north Tempe, which also supports a growing office and industrial region in the flight path of Phoenix's Sky Harbor Airport lying north of the 202 Freeway. In addition, office and commercial centers will continue to grow along the many miles of freeway and arterial street frontage in Tempe. The region of Tempe that borders Interstate 10 in the southern portion of the City is expected to become an especially active employment and commercial center for Tempe. Tempe's General Plan also includes a Public Facilities and Services Element, which: (1) provides an inventory of all existing and proposed municipal buildings, objectives for providing for future infrastructure needs, and strategies for maintaining sustainable structures; (2) identifies existing services provided by the City of Tempe, and other service providers, including social service, education and utilities; and (3) identifies existing and proposed human services, programs and facilities designed to integrate resources and opportunities to assist residents of all ages and abilities in improving their quality of life and self-sufficiency.

4.3.25 Tolleson

Situated along Interstate 10 approximately 14 miles west of downtown Phoenix, the small community of Tolleson lies in the west Valley region of Maricopa County, and is surrounded by the City of Tolleson on the west and Phoenix on the north, east, and south, as shown in Figure 4-56. Founded in 1912 and incorporated in 1929, the incorporated boundary of Tolleson measures only about five square miles in area.

[28] City of Tempe, http://www.tempe.gov/generalplan/FinalDocument/GP2030ProjectedLandUse.pdf

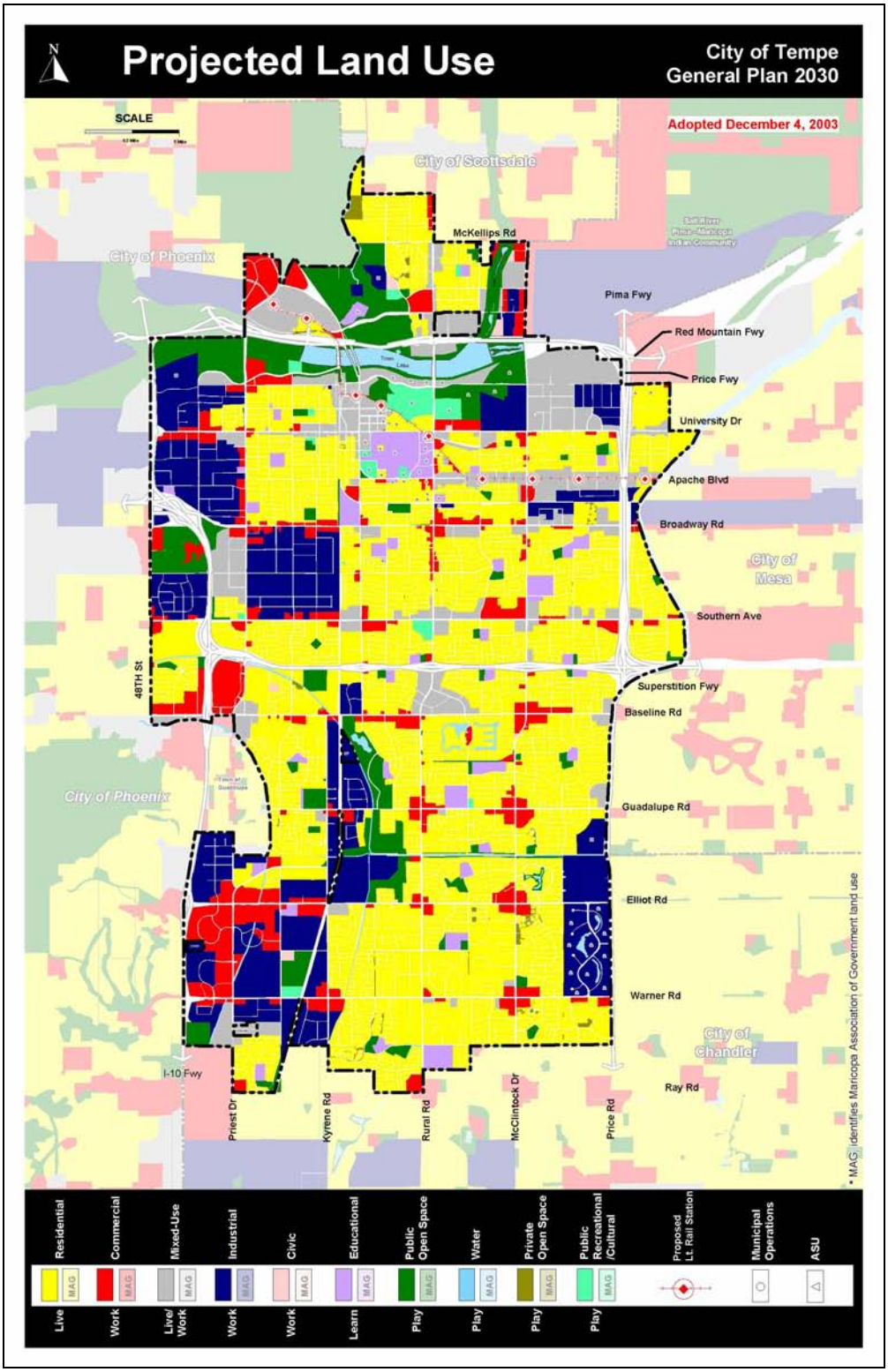


Figure 4-55: City of Tempe land use map

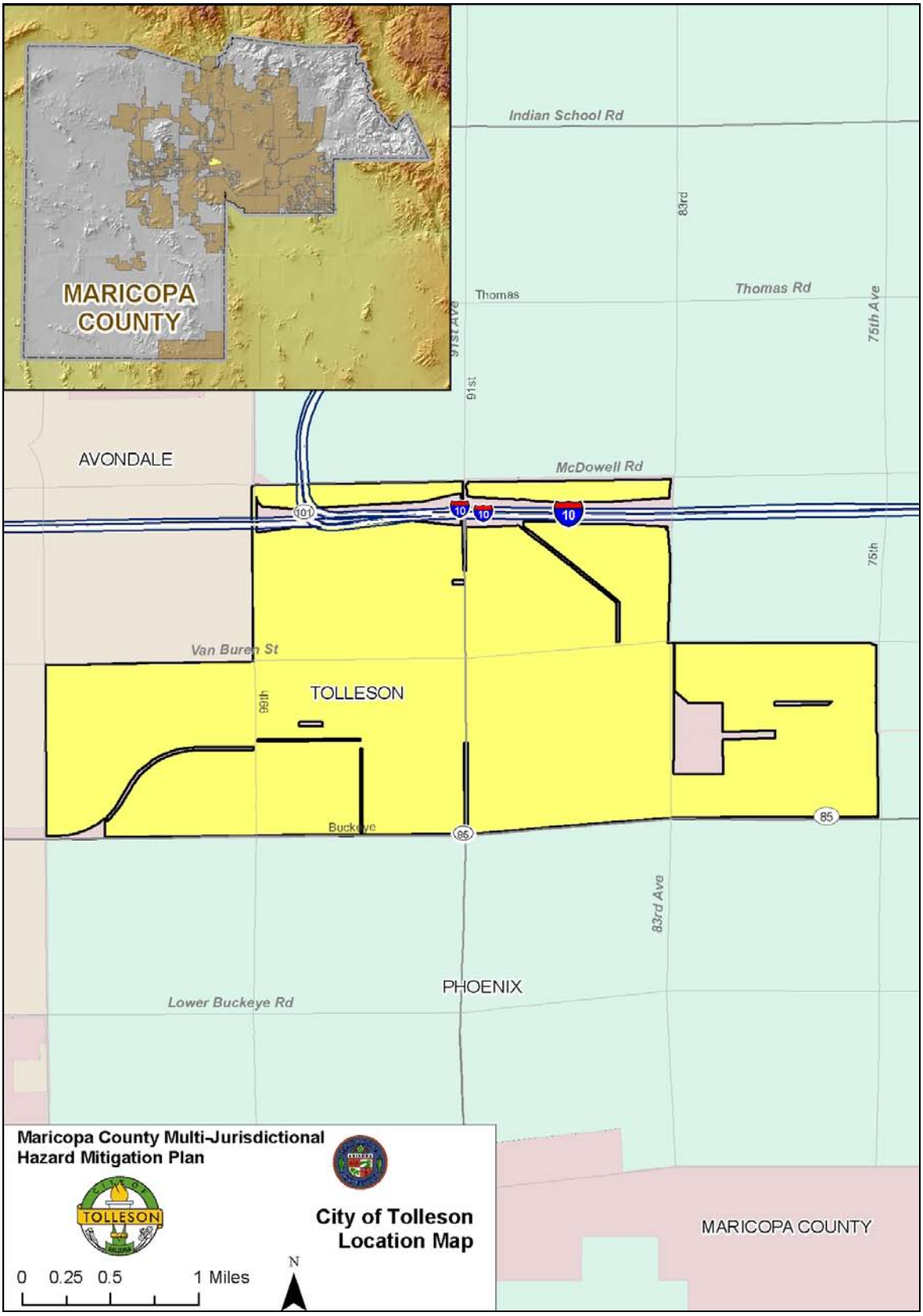


Figure 4-56: Tolleson location map

Once dependent on agriculture, Tolleson today has a sound commercial and industrial base. Tolleson is served by the Papago Freeway, which is a segment of Interstate 10. Tolleson is also served by the Loop 101, which allows traffic headed toward Flagstaff to bypass downtown Phoenix and also connects the city to northeast Phoenix. To the west of Tolleson, Highway 85 intersects Interstate 10 and then runs south to Interstate 8 in Gila Bend. The Union Pacific rail line runs through Tolleson, providing a number of industrial sites with rail access. Today, Tolleson is administered by a Council-Manager form of government that includes a mayor and six council members elected at-large to four-year terms.

As illustrated in Table 6 2, in 2000 the population of Tolleson was 4,963. As a land locked community, Tolleson's residential base is expected to grow only slightly to 9,646 by 2020. As a result, Tolleson's population will comprise a steadily decreasing percentage of Maricopa County's population. By contrast, Tolleson's labor force is forecast to reflect an increasing share of the region's jobs. In 1990, the City had 2,183 jobs, while 2020 projections anticipate nearly 20,000 jobs within the community. In addition to having a growing population and employment role within the region, Tolleson's ratio of jobs-per-capita is also forecast to rise from 0.49 in 1990 to a remarkable 2.0 in 2020.

Table 4-25: Summary of population and employment estimates for Tolleson

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Tolleson	4,434	4,963	6,833	7,748	9,646
As a % of County	0.21%	0.16%	0.17%	0.19%	0.19%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Tolleson	2,183	12,800	2,891	15,808	19,854
As a % of County	0.23%	0.82%	0.16%	0.75%	0.73%
Jobs per Capita	0.49	2.58	0.42	2.04	2.06
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

Tolleson has become a strong distribution hub for companies wishing to deliver products to southwestern markets. This is primarily due to its excellent location just south of Interstate 10 and the nearby interchange with the Loop 101 Freeway. Tolleson hosts several large employers, including Sunland Beef, Kroger's, Albertson's, Salt River Project, and Sysco Food Systems. In addition to distribution and food, fiber and natural products, the community has a strong manufacturing structure, which accounts for a large percentage of employment.

The future land plan for Tolleson, shown in Figure 4-57[29], indicates the predominance of industrial and commercial land use planned by the City to capitalize of the prime freeway access and location in the West Valley. These land uses also coincide with job growth projections that will yield many more jobs than residents in the community by 2030. As of 2006, the total housing inventory was nearly 2,000 units, which represents an 46 percent increase since 2000.

[29] Maricopa Association of Governments, 2007 (DRAFT), *Municipal Planning Area Socioeconomic Profiles Maricopa County, Arizona*

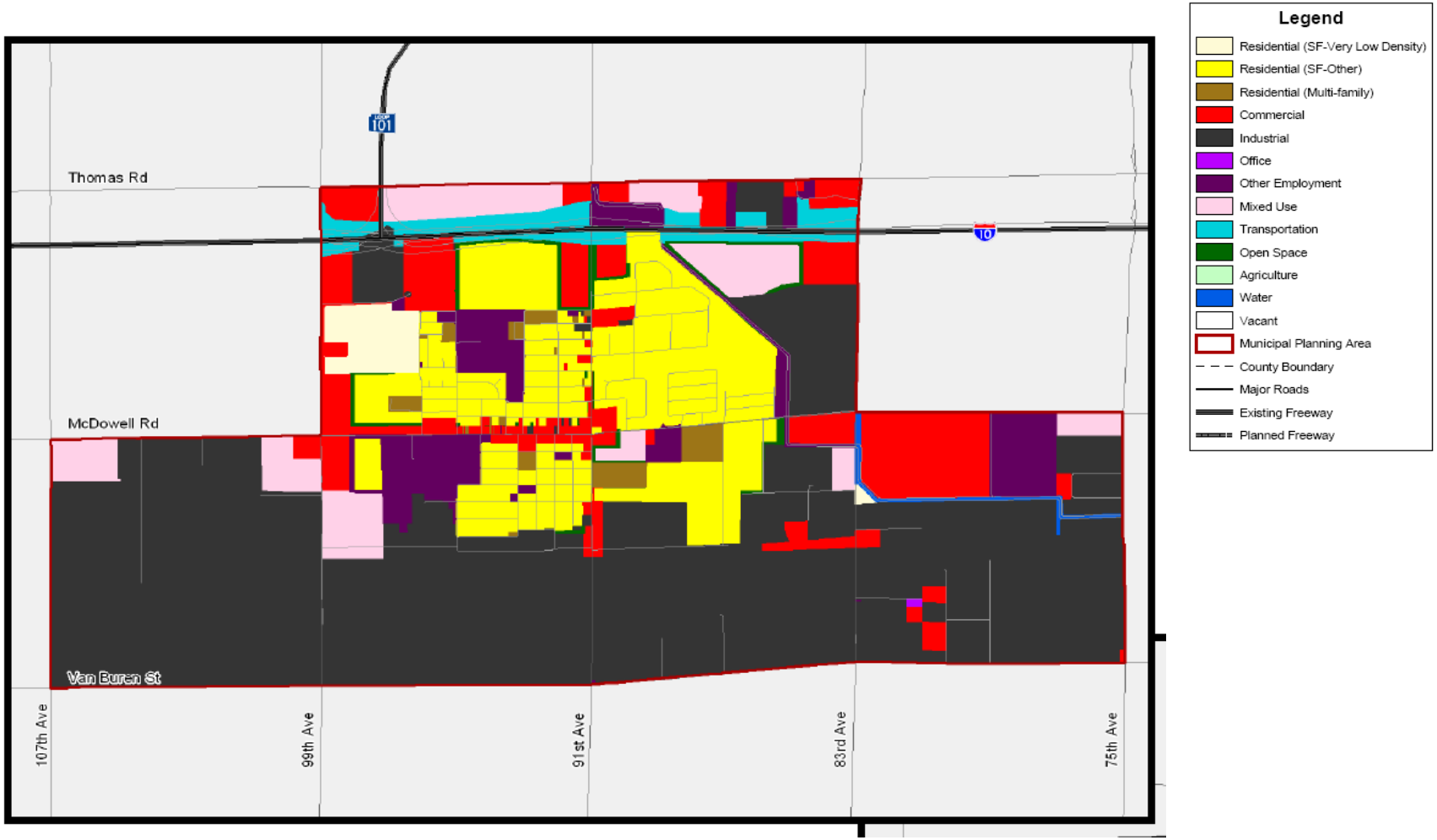


Figure 4-57: City of Tolleson land use map

4.3.26 Wickenburg

One of Maricopa County's most historic and scenic communities, the Town of Wickenburg lies in north central Maricopa County on the border with Yavapai County, approximately 60 miles from downtown Phoenix. The Town of Wickenburg is distinct from most of the communities in Maricopa County for its isolation from the greater Phoenix metropolitan area. Illustrated in Figure 4-58, Wickenburg is highlighted by the Hassayampa River and its tributaries, which are protected through the Hassayampa River Canyon Wilderness to the north of Wickenburg in Yavapai County. Wickenburg also serves as a crossroads of various highways in northwest Maricopa County, with US Highway 60 and Arizona Highways 93 and 89 providing access to Loa Angeles, Las Vegas, and Prescott, respectively.

Along the town's main historic district, early businesses built structures that still exist in Wickenburg's downtown area. In the 1900's Wickenburg's clean air and wide-open spaces attracted guest ranches and resorts to the Wickenburg neighborhood. Later, the construction of Highway 60 from Phoenix to California brought even more tourists, making Wickenburg the unofficial dude ranch capital of the World. Today, some of these ranches still offer their unique brand of Western hospitality.

Founded in 1863, Wickenburg operates under a Council Manager form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. In Wickenburg the Town Council functions as the legislature, and the Town Manager administers community policies.

As illustrated in Table 4-26, in 2000 the population of Wickenburg was 5,050. With low density residential growth opportunities continuing to be created in and around Wickenburg, this population is forecast to grow to 13,000 by 2020. As a result of this slow but steady growth, Wickenburg's population will comprise only a modest proportion of Maricopa County's overall population. Similarly, Wickenburg's small labor force is forecast to parallel the Town's population growth by comprising a consistently small share of the region's jobs but is also projected to increase modestly between 2010 and 2020. In 2000, the Town had 4,100 jobs, while 2020 projections anticipate 8,900 jobs within the community. In addition to having a growing population and employment role within the region, Wickenburg's ratio of jobs-per-capita is also forecast to rise from an impressive 0.42 in 1990 to 0.67 in 2020.

Table 4-26: Summary of population and employment estimates for Wickenburg

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Wickenberg	4,515	5,050	6,442	11,022	13,311
As a % of County	0.21%	0.16%	0.16%	0.27%	0.26%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Wickenberg	1,878	4,100	2,623	6,622	8,921
As a % of County	0.20%	0.26%	0.14%	0.31%	0.33%
Jobs per Capita	0.42	0.81	0.41	0.60	0.67
Note: Interim projections for 2010 and 2020					
Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)					

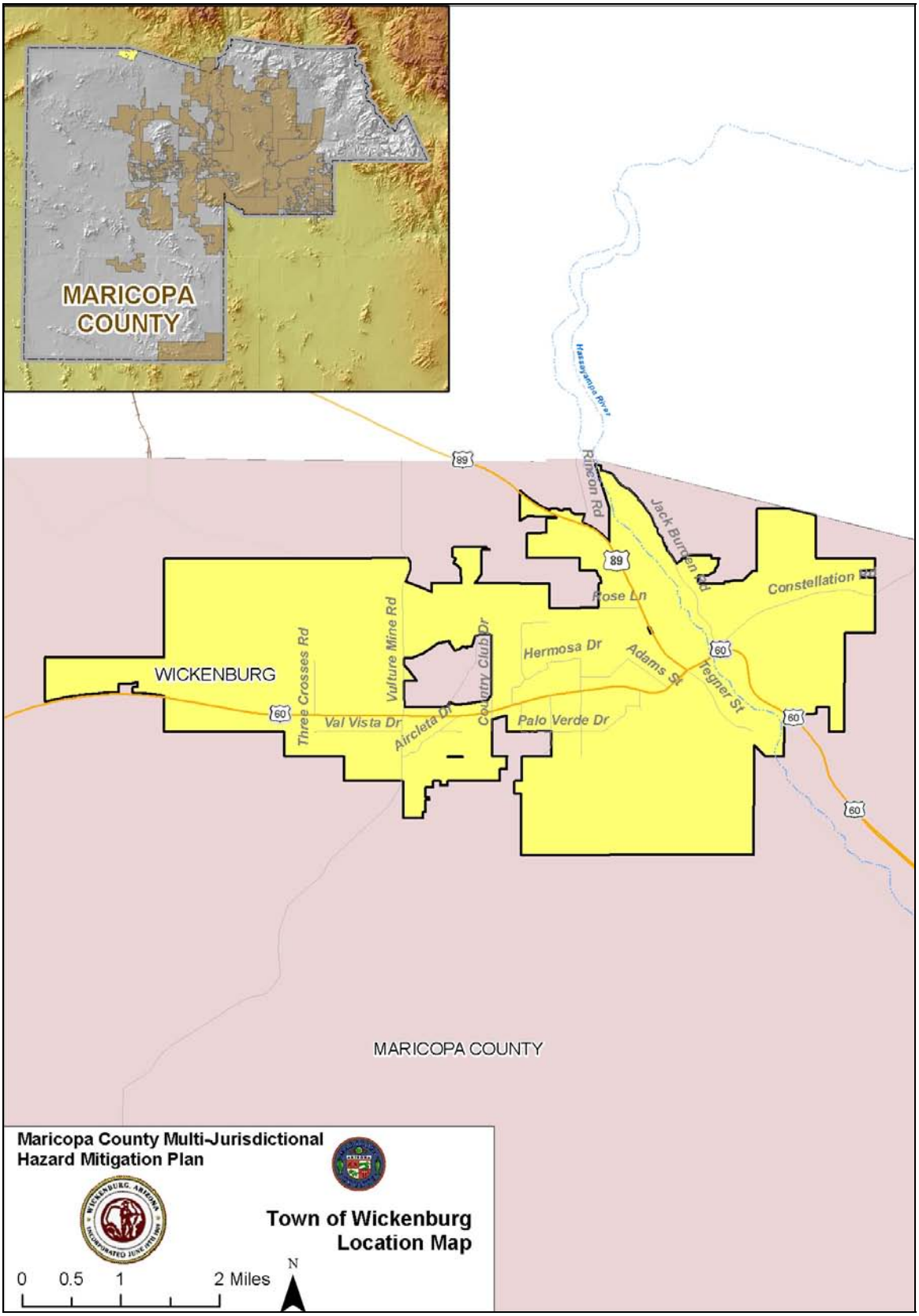


Figure 4-58: Wickenburg location map

Wickenburg's General Plan was adopted in August 2003, and the Land Use Plan is shown as Figure 4-59[30]. Low and medium density residential land uses dominate the Town boundaries, with commercial strips located along the main arteries of US 80, 93, and Tegner Street. The rugged terrain of the current town boundaries is not necessarily conducive to large-scale commercial and industrial growth, however proposed annexations to the west and north may provide the opportunity needed to expand those sectors. Wickenburg currently encompasses an area of 14.9 square miles, but has a planning area that exceeds 1,300 square miles, extending west and north, with half in Yavapai County. Within the current Town limits, the area is over one-third developed. Significant constraints on development, such as steep terrain and natural drainage channels, render another 35% of the Town's area unsuitable for development.

4.3.27 Youngtown

Situated in the west central portion of the greater metropolitan area approximately 15 miles west of downtown Phoenix, the Town of Youngtown lies on the east bank of the Agua Fria River. Located just south of United States Highway 60, the Town of Youngtown is bordered on the west by El Mirage and on the east by the much larger retirement community of Sun City (Unincorporated Maricopa County), as shown in Figure 4-60. In 1954, real estate broker Ben Schleifer and banker Clarence Suggs bought 320 acres of farmland and built the first master-planned, adult community dedicated exclusively to retirees. It was the first town occupied solely by senior citizens and has the distinction of being designated as Chapter 1 by AARP. It is known for its more mature landscaping and lower housing costs. In 1998, age restrictions were removed allowing all ages to enjoy community life in Youngtown.

Youngtown's residents are governed under a Council-Manager form of government, which includes a seven member Town Council consisting of a Mayor and six Council members elected at-large for a term of four years. The Town Council appoints the Town Manager who is in charge of all Town Departments and manages the Town's business.

As illustrated in Table 4-27, in 2000 the population of Youngtown was just over 3,000 residents. However, the Town doubled in size by 2008 and could double again if planned annexations to the south occur. Many of these new residents are expected to be young families, which may alter the traditionally retirement-based population of Youngtown. Future employment figures should rise along with this new population. Youngtown's labor force is forecast to reflect a consistently small proportion of the region's jobs, hovering between 0.10% and 0.16% of Maricopa County employment during the upcoming 20 years. In 1990, the Town had 935 jobs, while 2020 projections anticipate nearly 2,000 jobs within the community. In addition to having a stable population and employment role within the region, Youngtown's ratio of jobs-per-capita is also forecast to drop from 0.37 in 1990 to 0.27 in 2020.

Youngtown is almost entirely a single-family residential community. Several pockets of higher-density residential and neighborhood-level commercial uses also exist in the northern portion of the Town. Youngtown's General Plan was adopted in 2003, and includes the land use map shown in Figure 4-61[31]. The General Plan provides guidance for Town staff, citizens, and others doing business with the Town to help them achieve Young-town's vision for future land use and development. The Plan contains seven elements: Land Use, Circulation and Transportation, Water, Open Space and Recreation, Environmental, Growth Areas and Cost of Development. Together, these elements will provide guidance, in the form of goals, objectives and policies, to help Youngtown staff and appointed and elected officials make decisions about future growth and development in their community.

[30] Town of Wickenburg, http://www.ci.wickenburg.az.us/documents%5CPlanning%20and%20Building%5CGeneral%20Plan/11x17-Land_Use.pdf

[31] Town of Youngtown, http://www.youngtownaz.org/vertical/Sites/%7B464715DD-87E9-4AA9-9EEF-3CDF5B7D33D6%7D/uploads/%7BFFC342FE-B7D1-415F-B73F-18097DF4B2E6%7D.PDF

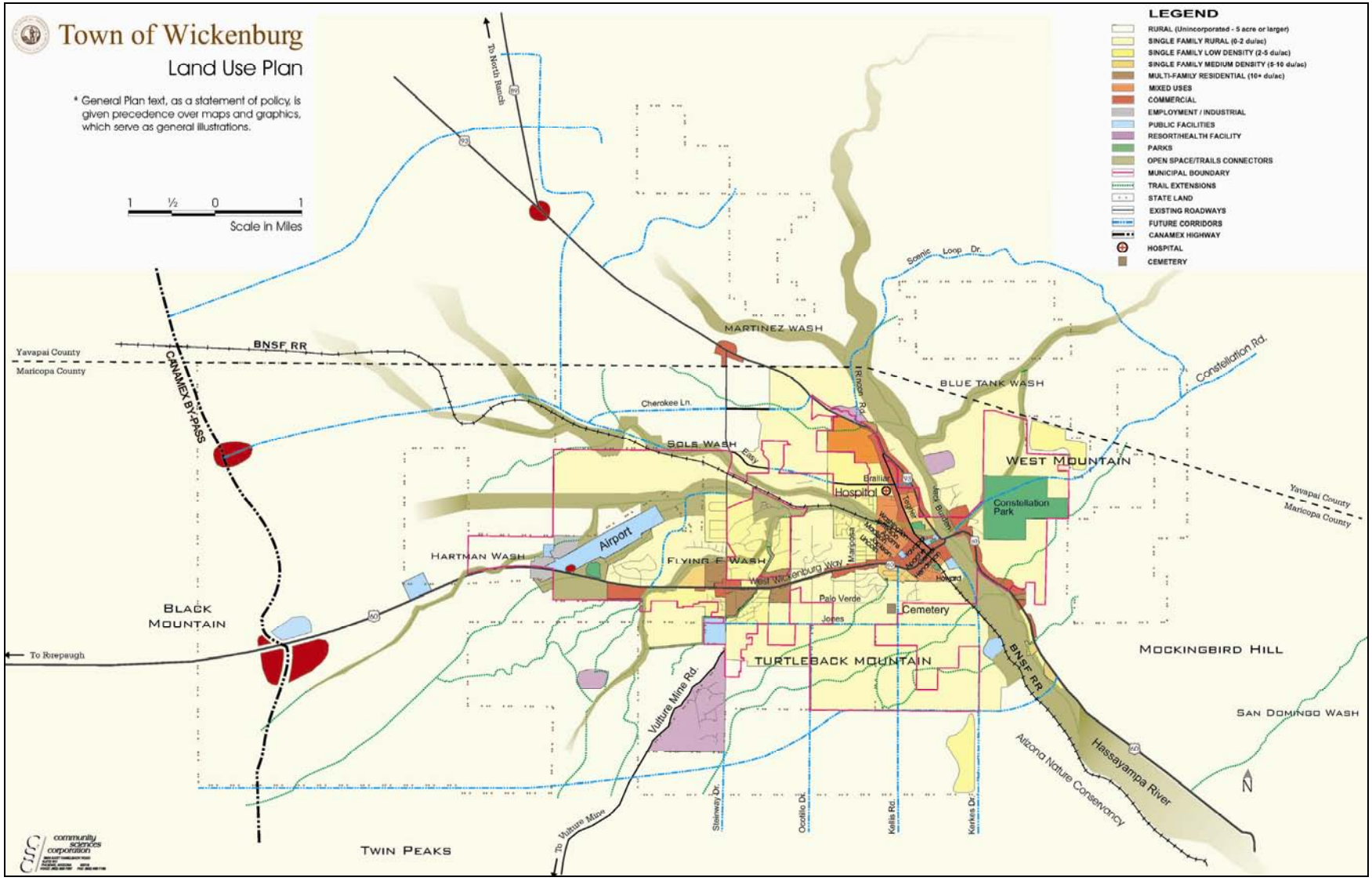


Figure 4-59: Town of Wickenburg land use map

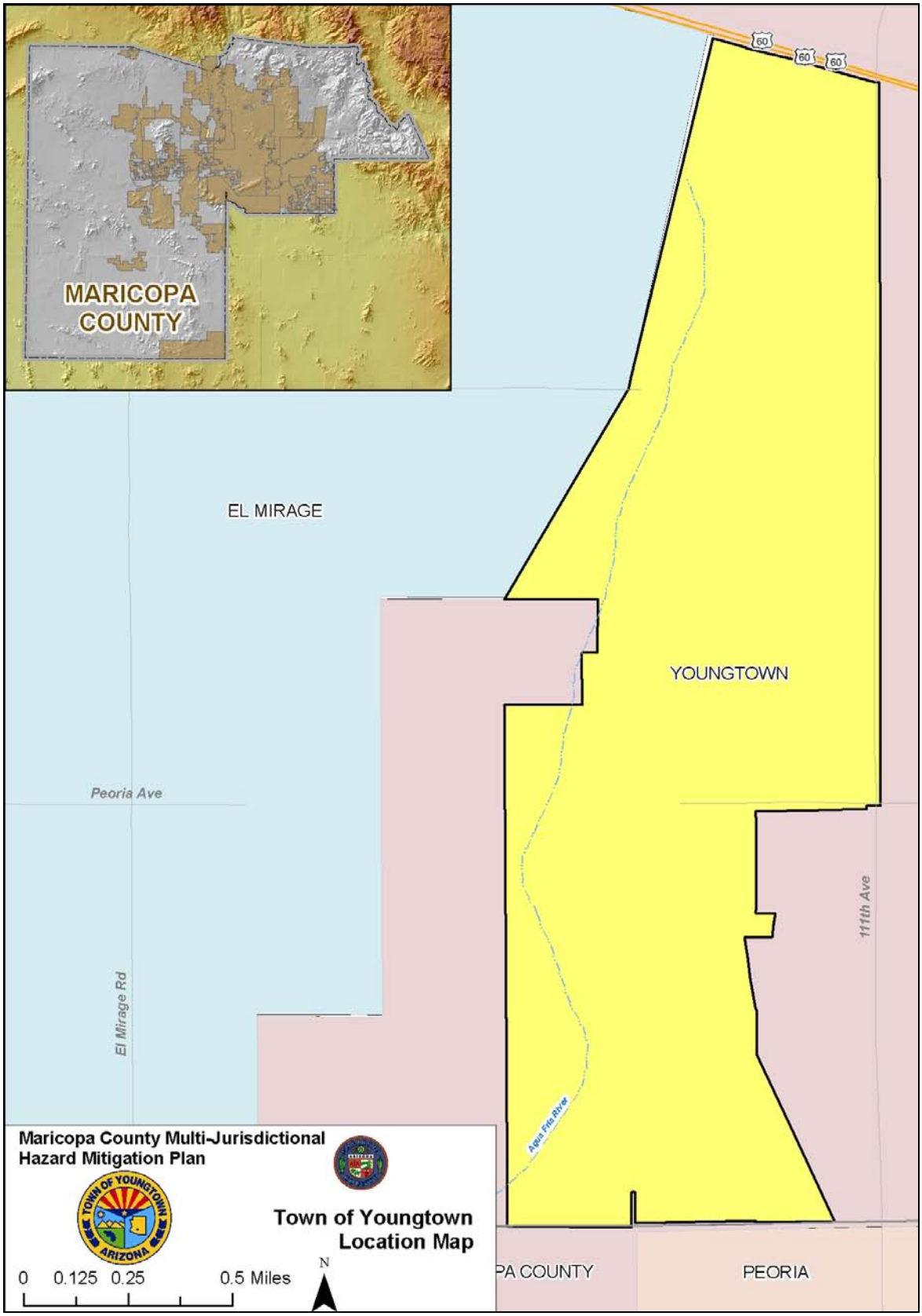


Figure 4-60: Youngtown location map

Table 4-27: Summary of population and employment estimates for Youngtown

Population	**1990**	**2000**	**2008**	**2010**	**2020**
Maricopa County	2,122,101	3,072,149	3,987,942	4,134,400	5,164,100
Youngtown	2,542	3,007	6,522	6,820	7,275
As a % of County	0.12%	0.10%	0.16%	0.16%	0.14%
Employment					
Maricopa County	948,227	1,564,900	1,814,700	2,112,000	2,705,000
Youngtown	935	1,200	1,124	1,667	1,988
As a % of County	0.10%	0.08%	0.06%	0.08%	0.07%
Jobs per Capita	0.37	0.40	0.17	0.24	0.27

Note: Interim projections for 2010 and 2020

Source: Maricopa Association of Governments (2009), U.S. Census Bureau, Arizona Department of Commerce (2009)

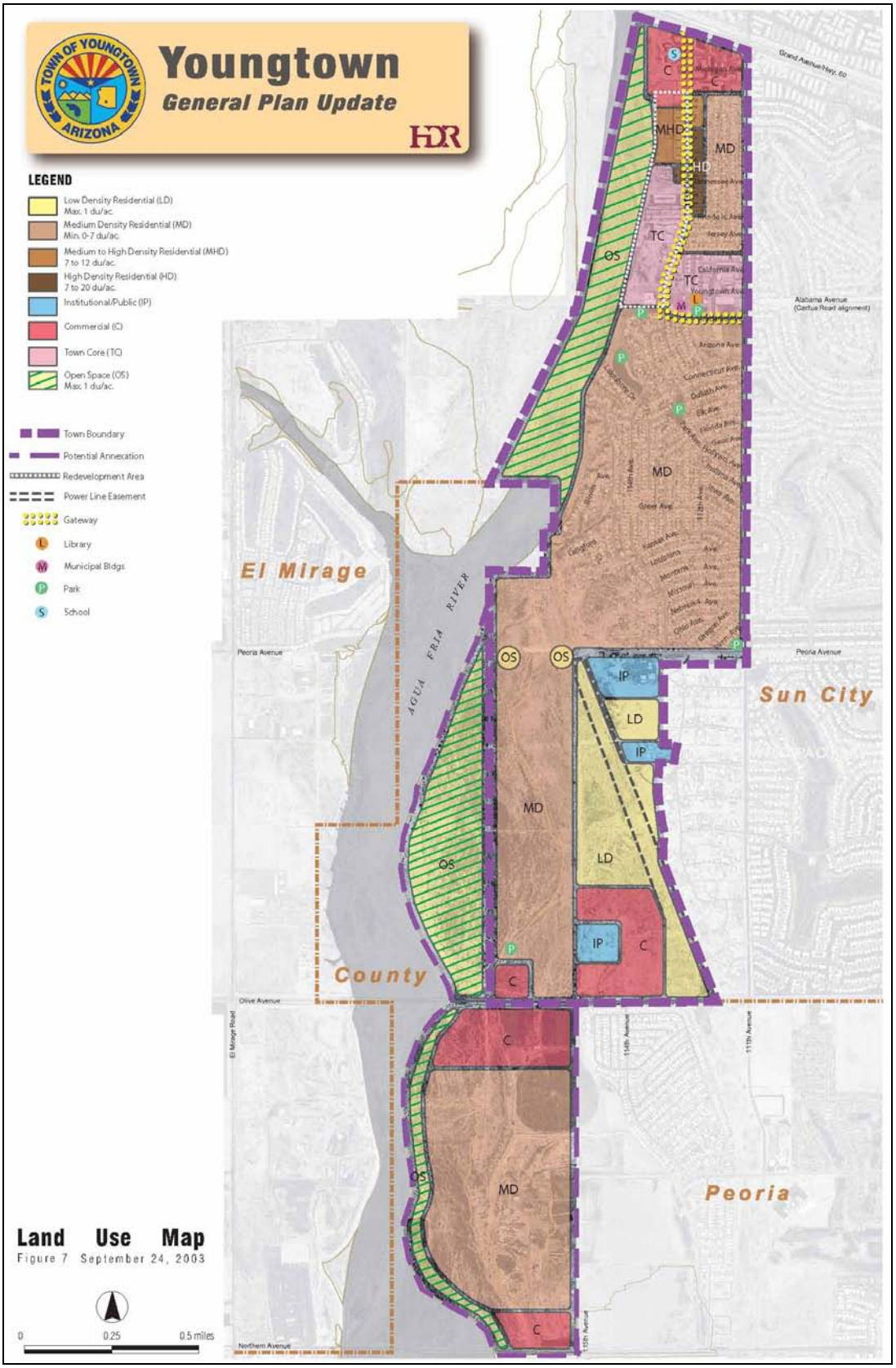


Figure 4-61: Town of Youngtown land use map

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 5: RISK ASSESSMENT

§201.6(c)(2): *[The plan shall include…] (2) A **risk assessment** that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:*

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

One of the key elements to the hazard mitigation planning process is the risk assessment. In performing a risk assessment, a community determines "what" can occur, "when" (how often) it is likely to occur, and "how bad" the effects could be[32]. According to DMA 2000, the primary components of a risk assessment that answer these questions are generally categorized into the following measures:

- ☑ **Hazard Identification and Screening**
- ☑ **Hazard Profiling**
- ☑ **Assessing Vulnerability to Hazards**

The risk assessment for Maricopa County and participating jurisdictions was performed using a county-wide, multi-jurisdictional perspective, with much of the information gathering and development being accomplished by the MJPT. This integrated approach was employed because many hazard events are likely to affect numerous jurisdictions within a consolidated urban area like Maricopa County, and are rarely relegated to a single jurisdictional boundary. The vulnerability analysis was performed in a way such that the results reflect vulnerability at an individual jurisdictional level, and at a countywide level.

5.1 Hazard Identification and Screening

Hazard identification is the process of answering the question; "*What hazards can and do occur in my community or jurisdiction?*" For this update, the list of hazards identified in the 2004 Plan were reviewed by the MJPT with the goal of refining the list to reflect the natural hazards that pose the greatest risk to the jurisdictions represented by this MJHMP. The planning team also chose to focus on natural hazards, with the exception of dam and levee failure, which were considered to be closely tied to natural events and therefore kept. The MJPT also compared and contrasted the 2004 Plan list to the comprehensive hazard list summarized in the 2007 State Plan[33] to ensure compatibility with the State Plan. Table 5-1 summarizes the 2004 Plan and 2007 State Plan hazard lists.

[32] National Fire Protection Association, 2000, *Standard on Disaster/Emergency Management and Business Continuity Programs*, NFPA 1600.

[33] ADEM, 2007, *State of Arizona Multi-Hazard Mitigation Plan*

Table 5-1: Summary of Initial Hazard Identification Lists

2004 Plan Hazard List	2007 State Plan Hazard List
• Dam Failure • Disease • Drought • Earthquake • Extreme Heat • Flood • Hail • Hazardous Material (HAZMAT) Event • Lightning • Severe Winds • Subsidence • Thunderstorm • Tornado • Tropical Cyclone • Wildfire	• Dam Failure • Drought • Earthquake • Fissure • Flooding/Flash Flooding • Hazardous Materials Incidents • Landslides/Mudslides • Monsoon • Subsidence • Thunderstorms/High Winds • Tornadoes/Dust Devils • Tropical Storms/Hurricane • Wildfires • Winter Storms

The review included an initial screening process to evaluate each of the listed hazards based on the following considerations:

- Experiential knowledge on behalf of the MJPT with regard to the relative risk associated with the hazard
- Documented historic context for damages and losses associated with past events (especially events that have occurred during the last plan cycle)
- The ability/desire of MJPT to develop effective mitigation for the hazard under current DMA 2000 criteria
- Compatibility with the state hazard mitigation plan hazards
- Duplication of effects attributed to each hazard

One tool used in the initial screening process was the historic hazard database referenced in 2004 Plan. With this update, the 2004 Plan database was reviewed and revised to separately summarize declared disaster events versus non-declared events. Declared event sources included Maricopa County Department of Emergency Management (MCDEM), Arizona Division of Emergency Management (ADEM), Federal Emergency Management Agency (FEMA), and United States Department of Agriculture (USDA). Non-declared sources included Arizona State Land Department (ASLD), National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC), United States Geological Survey (USGS), and United States Forest Service (USFS). Both data sets were updated with additional hazard events that have occurred over the last plan cycle and were also modified to primarily represent the period of June 1955 to February 2009. Two tables are used in this update to summarize the historic hazard events. Table 5-2 summarizes the federal and state disaster declarations that included Maricopa County. Table 5-3 summarizes all non-declared hazard events that meet the following selection criteria:

- 1 or more fatalities
- 1 or more injuries
- Any dollar amount in property or crop damages
- Significant event, as expressed in historical records or according to defined criteria above

Table 5-2: State and Federally Declared Natural Hazard Events That Included Maricopa County – January 1966 to October 2008

Hazard	No. of Declarations	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	12	0	0	$303,000,000
Dam Failure	0	0	0	$0
Earthquake	0	0	0	$0
Fissure	2	0	0	$2,500
Flooding / Flash Flooding	16	52	115	$594,150,000
Landslide / Mudslide	0	0	0	$0
Levee Failure	0	0	0	$0
Snow Storm	0	0	0	$0
Sleet / Freezing Rain	0	0	0	$0
Subsidence	2	0	0	$4,170,000
Thunderstorm / High Wind	4	0	0	$0
Tornado	0	0	0	$0
Tropical Storm / Hurricane	1	0	0	$375,000,000
Wildfire	18	0	0	$0
Notes: Damage Costs are reported as is and no attempt has been made to adjust costs to current dollar values				

Table 5-3: Maricopa County Historic Hazard Events – June 1955 to September 2008

Hazard	No. of Records	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	0	0	0	$0
Dam Failure	1	0	0	$0
Earthquake	0	0	0	$0
Fissure	0	0	0	$0
Flooding / Flash Flooding	31	9	7	$101,610,500
Landslide / Mudslide	0	0	0	$0
Levee Failure	0	0	0	$0
Snow Storm	4	1	0	$115,000
Sleet / Freezing Rain	0	0	0	$0
Subsidence	0	0	0	$0
Thunderstorm / High Wind	193	6	144	$421,055,000
Tornado	44	0	57	$37,220,900
Tropical Storm / Hurricane	0	0	0	$0
Wildfire	4	0	0	$0
Notes: Damage Costs are reported as is and no attempt has been made to adjust costs to current dollar values				

Detailed historic hazard records are provided in Appendix D.

The culmination of the review and screening process by the MJPT resulted in a revised list of hazards that will be carried forward with this updated mitigation plan. The 2004 Plan hazards selected for removal are listed below and include a brief explanation of the reason for removal:

Disease – there are numerous agencies and programs at the local, state and federal levels to prevent, detect, and respond to disease. Examples include the Centers for Disease Control and Prevention, Arizona Department of Health Services, Maricopa County Department of Public Health, Organization Internationale des Epizooties, USDA Animal and Plant Health Inspection Service, USDA Plant Protection and Quarantine, and Arizona Department of Agriculture. The MJPT chose to focus resources and attention on other hazards and not duplicate existing efforts.

Earthquake – there are no damage causing historic seismic events recorded for Maricopa County, and the entire county is located within a relatively low seismic risk area. The MJPT felt that the perceived low risk did not warrant further consideration.

Hail – the MJPT acknowledges that historic hailstorms (usually associated with thunderstorm events) have caused some damage in the past. However, mitigating hail damage is extremely difficult, if not cost prohibitive, and the MJPT chose to not include the hazard as a line item.

Hazardous Material (HAZMAT) Event – HAZMAT events are usually addressed by Local Emergency Planning Committees (LEPC) and Community Emergency Response Teams (CERT). This hazard is also a human caused event and will not be addressed in this plan.

Lightning – lightning strikes are a regular part of the monsoon season and have resulted in damages, injury, and even fatalities. For wildfire, lighting strikes are often the source of ignition. The MJPT acknowledges that lightning is a very real hazard, however, mitigating against lightning caused damages and/or injury is extremely difficult and further profiling was not deemed as warranted.

Several of the hazards in the 2004 Plan list may be better described as storm events wherein the effects of the storm may pose exposure to multiple hazards. For instance, hazards associated with a ***Thunderstorms*** may include flooding, microburst winds, tornados, and/or hail in a single event. ***Tropical Cyclone*** is another storm event that may include damaging winds and heavy precipitation resulting in flooding. In both of these examples, the true resulting hazards are generally flooding and damaging or severe winds. Accordingly, the MJPT chose to consolidate or eliminate several of the 2004 Plan hazards as follows:

Thunderstorm – damaging elements associated with thunderstorms include very intense bursts of precipitation that may result in flash-floods, micro- and macro-burst winds, hail, lightning, and occasionally tornados. Accordingly, the hazard category of "thunderstorm" will be eliminated as the flooding and severe wind effects are addressed already.

Tropical Cyclone – the damaging elements associated with tropical cyclones are the heavy precipitation that results in flooding and sever winds. As with thunderstorm, these hazards are addressed elsewhere and this category is therefore redundant.

Tornado – damage producing tornadoes are rare in Arizona and are usually associated with thunderstorm events. Additionally, mitigation of damages due to the typical type of tornado that impacts Maricopa County would be similar to those proposed for other severe wind events such as micro-bursts. Accordingly, this hazard is being eliminated as a line item and will be incorporated into the ***Severe Wind*** category.

The MJPT has selected the following list of hazards for profiling and updating based on the above explanations and screening process. Revised and updated definitions for each hazard are provided in Section 5.3 and in Section 8.2:

- **Dam Inundation**
- **Drought**
- **Extreme Heat**
- **Fissure**
- **Flood**
- **Levee Failure**
- **Severe Wind**
- **Subsidence**
- **Wildfire**

5.2 Vulnerability Analysis Methodology

5.2.1 General

The following sections summarize the methodologies used to perform the vulnerability analysis portion of the risk assessment. For this update, the entire vulnerability analysis was either revised or updated to reflect the new hazard categories, the availability of new data, or differing loss estimation methodology. Specific changes are noted below and/or in Section 5.3

For the purposes of this vulnerability analysis, hazard profile maps were developed for Dam Inundation, Fissure, Flood, Levee Failure, Subsidence and Wildfire, to map the geographic variability of the probability and magnitude risk of the hazards as estimated by the planning team. Hazard profile categories of HIGH, LOW, and/or MEDIUM were used and were subjectively assigned based on the factors discussed in Probability and Magnitude sections below. Within the context of the county limits, the other hazards do not exhibit significant geographic variability and will not be categorized as such.

Unless otherwise specified in this Plan, the general cutoff date for new historic or hazard profile data is the end of February 2009.

5.2.2 Calculated Priority Risk Index (CPRI) Evaluation

The first step in the vulnerability analysis (VA) is to assess the perceived overall risk for each of the plan hazards using a tool developed by the State of Arizona called the Calculated Priority Risk Index[34] (CPRI). The CPRI value is obtained by assigning varying degrees of risk to four (4) categories for each hazard, and then calculating an index value based on a weighting scheme. Table 5-4 summarizes the CPRI risk categories and provides guidance regarding the assignment of values and weighting factors for each category. As an example, assume that the project team is assessing the hazard of flooding, and has decided that the following assignments best describe the flooding hazard for their community:

- Probability = Likely
- Magnitude/Severity = Critical
- Warning Time = 12 to 24 hours
- Duration = Less than 6 hours

The CPRI for the flooding hazard would then be:

CPRI = [(3*0.45) + (3*0.30) + (2*0.15) + (1*0.10)]

CPRI = 2.65

[34] ADEM, 2003, *Arizona Model Local Hazard Mitigation Plan*, prepared by JE Fuller/ Hydrology & Geomorphology, Inc.

Table 5-4: Summary of Calculated Priority Risk Index (CPRI) categories and risk levels

CPRI Category	Degree of Risk			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	▪ Extremely rare with no documented history of occurrences or events. ▪ Annual probability of less than 0.001.	1	45%
	Possibly	▪ Rare occurrences with at least one documented or anecdotal historic event. ▪ Annual probability that is between 0.01 and 0.001.	2	
	Likely	▪ Occasional occurrences with at least two or more documented historic events. ▪ Annual probability that is between 0.1 and 0.01.	3	
	Highly Likely	▪ Frequent events with a well documented history of occurrence. ▪ Annual probability that is greater than 0.1.	4	
Magnitude/ Severity	Negligible	▪ Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses are treatable with first aid and there are no deaths. ▪ Negligible quality of life lost. ▪ Shut down of critical facilities for less than 24 hours.	1	30%
	Limited	▪ Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses do not result in permanent disability and there are no deaths. ▪ Moderate quality of life lost. ▪ Shut down of critical facilities for more than 1 day and less than 1 week.	2	
	Critical	▪ Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses result in permanent disability and at least one death. ▪ Shut down of critical facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	▪ Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses result in permanent disability and multiple deaths. ▪ Shut down of critical facilities for more than 1 month.	4	
Warning Time	Less than 6 hours	Self explanatory.	4	15%
	6 to 12 hours	Self explanatory.	3	
	12 to 24 hours	Self explanatory.	2	
	More than 24 hours	Self explanatory.	1	
Duration	Less than 6 hours	Self explanatory.	1	10%
	Less than 24 hours	Self explanatory.	2	
	Less than one week	Self explanatory.	3	
	More than one week	Self explanatory.	4	

5.2.3 Asset Inventory

With this update, a detailed asset inventory was performed to establish a more accurate baseline data-set for assessing the vulnerability of each jurisdiction's assets to the hazards identified in Section 5.1. This effort constitutes a significant change to the base asset data used in the 2004 Plan, and consequently to the entire vulnerability analysis. Details of this change are discussed later in this section.

The 2007 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.

The asset inventory is generally tabularized into ***critical*** and ***non-critical*** categories. ***Critical facilities and infrastructure*** are systems, structures and infrastructure within a community whose incapacity or destruction would:

- Have a debilitating impact on the defense or economic security of that community.
- Significantly hinder a community's ability to recover following a disaster.

Following the criteria set forth by the Critical Infrastructure Assurance Office (CIAO), the State of Arizona has adopted eight general categories[35] that define critical facilities and infrastructure:

1. **Telecommunications Infrastructure:** Telephone, data services, 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, museums, parks, recreational facilities, historic buildings or sites, churches, residential and/or commercial subdivisions, apartment complexes, and so forth, are classified as non-critical facilities and infrastructure, as they are not necessarily "critical" per the definition set forth in Executive Order 13010. They are, however, still considered by the MJPT to be important facilities and critical and non-critical should not be construed to equate to important and non-important. For each asset, attributes such name, description, physical address, geospatial position,

[35] Instituted via Executive Order 13010, which was signed by President Clinton in 1996.

and estimated replacement cost were identified to the greatest extent possible and entered into a GIS geodatabase.

The 2004 Plan used HAZUS[36] data to represent the critical and non-critical facilities for Maricopa County jurisdictions. During the review, the MJPT determined that many of the HAZUS facilities were not geospatially positioned correctly and felt that the dataset did not provide an adequate or accurate depiction of the participating jurisdiction's asset inventories. Accordingly, new asset inventory data was developed for each community using existing GIS data sets, on-line mapping utilities, and manual data acquisition by members of the local planning teams. Table 5-5 summarizes the facility counts by category for each of the participating jurisdictions in this plan.

5.2.4 Loss Estimations

In the original 2004 Plan, losses were estimated by either quantitative or qualitative methods. Quantitative methods included use of the HAZUS®-MH program or a statistical approach that was based on historic data. None of the original computational data was available for this update, nor were any of the statistical calculations. Accordingly, all loss estimates for this Plan update are new and were accomplished using the procedures discussed below.

Economic loss and human exposure estimates for each of the final hazards identified in Section 5.1 begins with an assessment of the potential exposure of critical and non-critical assets and human populations to those hazards. Estimates of exposure to critical and non-critical assets identified by each jurisdiction is accomplished by intersecting the asset inventory with the hazard profiles in Section 5.3 Human or population exposures are estimated by intersecting the same hazards with 2000 Census Data population statistics that have been re-organized into GIS compatible databases and distributed with HAZUS®-MH [37]. Additional exposure estimates for general residential, commercial, and industrial building stock not specifically identified with the asset inventory, are also accomplished using the HAZUS®-MH database, wherein the developers of the HAZUS®-MH database have made attempts to correlate building/structure counts to census block data.

It is duly noted that the HAZUS®-MH data population statistics may not exactly equate to the current population statistics provided in Section 4.2 due to changes in population, GIS positioning anomalies and the way HAZUS®-MH depicts certain census block data. It is also noted that the residential, commercial and industrial building stock estimates for each census block may severely under-predict the actual buildings present due to the substantial growth in the last decade and the general lack of data for some of the more rural communities within the county, and the disparity of the HAZUS®-MH estimates for these categories. However, without a detailed, site specific structure inventory of these types of buildings, the HAZUS®-MH database is still the best available and the results are representative of a general magnitude of population and residential, commercial and industrial facility exposures to the various hazards discussed. Combining the exposure results from the asset inventory and the HAZUS®-MH database provides a fairly comprehensive depiction of the overall exposure of building stock and the two datasets are considered complimentary and not redundant.

[36] U.S. Department of Homeland Security, Federal Emergency Management Agency, HAZUS®-MH.

[37] U.S. Department of Homeland Security, Federal Emergency Management Agency, HAZUS®-MH.

Table 5-5: Summary of Critical and Non-Critical Facility counts by category and jurisdiction

Participating Jurisdiction	Critical Facilities and Infrastructure								Non-Critical Facilities and Infrastructure				
	Telecommunications Infrastructure	Electrical Power Systems	Gas and Oil Facilities	Banking and Finance Institutions	Transportation Networks	Water Supply Systems	Government Services	Emergency Services	Education	Cultural	Business	Residential	Recreational
Avondale						39	2	1	8		8		3
Buckeye		10		3		36	10	7	10	1			
Carefree						1	4	1					
Cave Creek		1				32	4						2
Chandler	16	22			1	57	35	15	57	3		18	2
El Mirage					2	13	3	3	6		7		
Fountain Hills						1	3	2	6			1	2
Fort McDowell Yavapai Nation					1		3	2	1	2	8		1
Gila Bend						2	3	1	1				
Gilbert	18	3		52		14,317 (225)[a]	33	25	77	94	68	179	100
Glendale	3	19	1	42	51	52	41	87	183	108	162	360	96
Goodyear	14	1		14	7	27	10	8	11		1		
Guadalupe							2	1	2				1
Litchfield Park							1		2		1		1
Maricopa County		7			363	4	54	19					
Mesa		12	214		6	136	53	38	123	4		24	3
Paradise Valley	6	1				16	2	7	6	14	13	4	
Peoria					4	43	94	4	35	6		35	4
Phoenix		6	5		1	16	270	101	422	19		66	7
Queen Creek	17			8	10	21	3	6	12	9	11	11	9
Salt River Pima-Maricopa Indian Community	1	1	2		3		3	4	2	1	2		2
Salt River Project	SRP reported a total of 511 assets that are comprised of SRP main buildings/offices, substations, switchyards, receiving stations, and well sites. No further separation of asset categories was necessary.												
Scottsdale		1				1	17	6	54	15		18	2
Surprise		1			2	1	4	8	15	1		4	1
Tempe			1			3	22	5	71	1		6	2
Tolleson						2	2	2	4				
Wickenburg		1	1				2	2	5				
Youngtown							2		1			2	

a – Number of water supply facilities that are not a part of the underground pipe network

Economic losses to structures and facilities are estimated by multiplying the exposed facility replacement cost estimates by an assumed exposure to loss ratio for the hazard. The exposure to loss ratios used in this plan update are summarized by hazard in Section 5.3. It is important to note that the exposure to loss ratios are subjective and the estimates are solely intended to provide an understanding of relative risk from the hazards and potential losses. The reality is that uncertainties are inherent in any loss estimation methodology due to:

- Incomplete scientific knowledge concerning hazards and our ability to predict their effects on the built environment;
- Approximations and simplifications that are necessary for a comprehensive analysis; and,
- Lack of detailed data necessary to implement a viable statistical approach to loss estimations.

Several of the hazards profiled in this Plan update will not include quantitative exposure and loss estimates. The vulnerability of people and assets associated with some hazards are nearly impossible to evaluate given the uncertainty associated with where these hazards will occur as well as the relatively limited focus and extent of damage. Instead, a qualitative review of vulnerability will be discussed to provide insight to the nature of losses that are associated with the hazard. For subsequent updates of this Plan, the data needed to evaluate these unpredictable hazards may become refined such that comprehensive vulnerability statements and thorough loss estimates can be made.

5.2.5 Development Trend Analysis

The 2004 Plan development trend analysis will require updating to reflect growth and changes in Maricopa County over the last planning cycle. The updated analysis will focus on the potential risk associated with projected growth patterns and their intersection with the Plan identified hazards.

5.3 Hazard Risk Profiles

The following sections summarize the risk profiles for each of the Plan hazards identified in Section 5.1. For each hazard, the following elements are addressed to present the overall risk profile:

- **Description**
- **History**
- **Probability and Magnitude**
- **Vulnerability**
  - **CPRI Results**
  - **Loss Estimations**
  - **Development Trend Analysis**
- **Sources**
- **Profile Maps (if applicable)**

Much of the 2004 Plan data has been updated, incorporated and/or revised to reflect current data and MJPT changes, as well as an overall plan format change. County-wide profile maps are provided at the end of the section (if applicable) and jurisdiction specific maps are included in the Executive Plan Summary for that jurisdiction. Also, the maps are not included in the pagination count.

5.3.1 Dam Inundation

Description

There are two primary scenarios of downstream inundation risk associated with dams in Maricopa County: (1) Emergency Spillway Discharges, and (2) Dam Failure. In the 2004 Plan, only dam failure was addressed. For this update, the MJPT wanted to provide a distinction between the downstream inundation risk due to emergency spillway discharges versus a dam failure. Accordingly, vulnerability for each scenario will be assessed separately.

Dams within or impacting Maricopa County can generally be divided into two groups: (1) storage reservoirs designed to permanently impound water and possibly generate power, and (2) single purpose flood retarding structures (FRS) designed to attenuate or reduce flooding by impounding stormwater for relatively short durations of time during flood events. The majority of dams within, or upstream of, Maricopa County are FRS and are typically earthen structures equipped with emergency spillways. The purpose of an emergency spillway is to provide a designed and protected outlet to convey runoff volumes exceeding the dam's storage capacity during extreme or back-to-back storm events. Dam failures may be caused by a variety of reasons including: seismic events, extreme wave

action, leakage and piping, overtopping, material fatigue and spillway erosion. The risk associated with an emergency spillway discharge is different from a dam failure for several reasons:

- First, dams that are properly designed and maintained are considerably less likely to fail and assets located downstream of them are more likely to be impacted by an emergency spillway discharge than by a dam failure.
- Second, the emergency spillway is at a fixed location(s), and therefore, the downstream inundation limits can be more readily predicted as compared to a dam failure, which could occur anywhere along the structure.
- Lastly, the dynamics of the flood wave associated with an emergency spillway discharge are different than that of a dam failure. A dam failure is an uncontrolled release of water impounded behind a dam through a breach in the dam itself, and is usually catastrophically destructive. An emergency spillway discharge usually increases in magnitude gradually, and then decreases gradually as the structure drains.

History

Maricopa County has a limited history of dam failures and emergency spillway discharges that caused damaging inundation of downstream properties. The following are examples from the records available:

- In January-February 1993, a major statewide precipitation event caused major spillway releases from the Salt and Verde River system of dams, with a peak discharge of nearly 124,000 cfs from Granite Reef Dam. The unavoidable releases caused major flooding along the Salt and Gila River all the way to the county line, with over $38 million in public and private damages reported and the evacuation of over 200 families. The flooding also caused the failure of Gillespie Dam[38] and forced peak spillway discharges of 25,600 cfs at Painted Rock Dam in the southwestern part of the county (USACE, 1994).
- In September 1997, Tropical Storm Nora moved through the western portion of Maricopa County dumping record breaking precipitation along the way. The Narrows Dam located just north of Maricopa County on Centennial Wash, began filling in the early part of the storm with flows reaching a depth of over two feet in the emergency spillway before the dam itself failed by breach in two locations. The peak discharge estimated from the dam spillway was 2,610 cfs (FCDMC, 1997).

Probability and Magnitude

The probability and magnitude of emergency spillway and dam failure discharges vary greatly with each dam. Most of the dams located within Maricopa County function as flood retarding structures (FRS) with a normally dry impoundment area. These FRS are typically designed to store, at a minimum, runoff from the one percent probability storm (100-year) in the flood-pool below the crest of the emergency spillway. Many of the FRS have sufficient capacity to store the 0.2 percent probability storm (500-year) or greater, without emergency spillway operation. Depending on the dam hazard classification, the emergency spillways will usually have capacity to pass the entire Inflow Design Flood (IDF) without any overtopping of the dam itself. The IDF is based on the hazard classification of the dam and is usually the probable maximum flood (PMF) or some fraction thereof. Other dams impacting Maricopa County that impound water on a continuous basis (Salt and Verde River systems for example) are typically equipped with primary and secondary spillways that are closely monitored and operated to provide an optimized level of flood protection, freeboard and reservoir storage for power generation, irrigation, and drinking water supplies. Probabilities and magnitudes of spillway discharge from these systems are dependent on several variables such as available reservoir capacity, time of year, and magnitude of storm causing the spillway discharge.

[38] Gillespie Dam was an irrigation diversion structure that was not regulated as a jurisdictional dam by ADWR.

There are two sources of data that publish hazard ratings for dams impacting Maricopa County that are based on either an assessment of the consequence of failure and/or dam safety considerations. The hazard ratings are not tied to probability of occurrence. The first is the Arizona Department of Water Resources (ADWR) and the second is the National Inventory of Dams (NID).

ADWR has regulatory jurisdiction over the non-federal dams impacting the County and is responsible for regulating the safety of these dams, conducting field investigations, and participating in flood mitigation programs with the goal of minimizing the risk for loss of life and property to the citizens of Arizona. ADWR jurisdictional dams are inspected regularly according to downstream hazard potential classification. High hazard dams are inspected annually, significant hazard dams every three years, and low hazard dams every five years. Via these inspections, ADWR identifies safety deficiencies requiring correction and assigns each dam one of five safety ratings (listed in increasing severity): no deficiency, safety deficiency, unsafe non-emergency, unsafe non-emergency elevated risk, or unsafe emergency. Examples of safety deficiencies include: lack of an adequate emergency action plan, inability to safely pass the required IDF, embankment erosion, dam stability, etc. Further descriptions of each safety classification are summarized in Table 5-6.

Table 5-6: Summary of ADWR safety categories

ADWR Safety Rating	Definition
No Deficiency	No safety deficiencies found
Safety Deficiency	One or more conditions at the dam that impair or adversely affects the safe operation of the dam.
Unsafe Non-emergency	Safety deficiencies in a dam or spillway could result in failure of the dam with subsequent loss of human life or significant property damage. Failure is not considered imminent.
Unsafe Non-emergency Elevated Risk	Safety deficiencies in a dam or spillway could result in failure of the dam with subsequent loss of human life or significant property damage. Concern the dam could fail during a 100-yr or smaller flood.
Unsafe Emergency	The dam is in imminent risk of failure.

Source: ADWR, 2009.

The NID database contains information on approximately 77,000 dams in the 50 states and Puerto Rico, with approximately 30 characteristics reported for each dam, such as: name, owner, river, nearest community, length, height, average storage, max storage, hazard rating, Emergency Action Plan (EAP), latitude, and longitude. Dams within the NID database are classified by hazard potential that is based on an assessment of the consequences of failure. Table 5-7 summarizes those classifications and there criteria.

Table 5-7: Summary of NID downstream hazard classifications

Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline Losses
Low	None expected	Low and generally limited to owner
Significant	None expected	Yes
High	Probable. One or more expected	Yes (but not necessary for this classification)

Note: The hazard potential classification is an assessment of the consequences of failure, but not an evaluation of the probability of failure.

Source: NID

The NID database includes dams that are either:

- High or Significant hazard potential class dams, or,
- Low hazard potential class dams that exceed 25 feet in height and 15 acre-feet storage, or,

- Low hazard potential class dams that exceed 50 acre-feet storage and 6 feet height.

There are 52 dams in the NID database that are located in Maricopa County, and 41 of those dams are under ADWR jurisdiction. There are also four more dams located in Pinal County that are owned and operated by the Flood Control District of Maricopa County and have a direct impact on Maricopa County communities. Table 5-8 provides a summary of the hazard and safety classifications by count for both the ADWR and NID databases. The location and hazard classifications for each dam are shown on Maps 1A, 1B, 1C and 2A, 2B, and 2C.

Table 5-8: Summary count of NID and ADWR hazard classification dams

Database Source	High	Significant	Low	Safety Deficiency	Unsafe (any sub-category)
NID	39	8	5	N/A	N/A
ADWR	36	5	4	7	3

NOTES:
- Two of the unsafe dams require rehabilitation or removal and one is designated as non-emergency, elevated risk.
- Four of the High hazard dams are located just east of Maricopa County in Pinal County.

Source: ADWR and NID, 2009

The magnitude of impacts due to emergency spillway flows and/or dam failure are usually depicted by mapping the estimated inundation limits based on an assessment of a combination of flow depth and velocity. These limits are typically a critical part of the emergency action plan. Of the 56 dams considered, 40 have emergency action plans.

The MJPT chose to assign profile categories separately for emergency spillway inundation and dam failure inundation, since the perceived probability and magnitude for each is distinctly different. For inundation resulting from emergency spillway flows, two classes of hazard risk are depicted as follows:

HIGH Hazard = Inundation limits due to full emergency spillway flow

LOW Hazard = All other areas outside the inundation limits

For inundation resulting from a dam failure, three classes of hazard are depicted as follows:

HIGH Hazard = Dam failure inundation limits downstream of any dam classified as "Unsafe" by ADWR.

MEDIUM Hazard = Dam failure inundation limits downstream of any dam classified as "Safety Deficient" by ADWR.

LOW Hazard = All other areas.

Extents of the emergency spillway and dam failure inundation hazard areas are shown on Maps 1A-C and 2A-C, respectively.

Vulnerability – CPRI Results

Dam inundation CPRI results for each community are summarized in Table 5-9.

Table 5-9: Summary of CPRI results by jurisdiction for dam inundation (emergency spillway flow and dam failure)

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Possibly	Limited	6 – 12 hours	< 24 hours	2.15
Buckeye	Unlikely	Critical	<6 hours	<6 hours	2.05
Carefree	Unlikely	Negligible	12-24 hours	<1 week	1.35
Cave Creek	Unlikely	Limited	>24 hours	<24 hours	1.40
Chandler	Unlikely	Limited	>24 hours	<24 hours	1.40
El Mirage	Possibly	Limited	<6 hours	<24 hours	2.30
Fountain Hills	Possibly	Limited	<6 hours	>1 week	2.50
Fort McDowell Yavapai Nation	Unlikely	Negligible	>24 hours	<24 hours	1.10
Gila Bend	Unlikely	Negligible	>24 hours	<6 hours	1.00
Gilbert	Unlikely	Critical	6-12 hours	<1 week	2.10
Glendale	Unlikely	Negligible	<6 hours	<6 hours	1.45
Goodyear	Unlikely	Critical	<6 hours	<24 hours	2.15
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Unlikely	Limited	<6 hours	<24 hours	1.85
Unincorporated Maricopa County	Possibly	Critical	<6 hours	>1 week	2.80
Mesa	Unlikely	Critical	<6 hours	>1 week	2.35
Paradise Valley	Unlikely	Catastrophic	>24 hours	<24 hours	2.00
Peoria	Possibly	Catastrophic	<6 hours	<6 hours	2.80
Phoenix	Unlikely	Critical	12-24 hours	<24 hours	1.85
Queen Creek	Unlikely	Catastrophic	12-24 hours	<24 hours	2.15
Salt River Pima-Maricopa Indian Community	Possibly	Catastrophic	<6 hours	>1 week	3.10
Salt River Project	Unlikely	Catastrophic	<6 hours	<1 week	2.55
Scottsdale	Possibly	Negligible	6-12 hours	<24 hours	1.85
Surprise	Unlikely	Catastrophic	6-12 hours	<6 hours	2.20
Tempe	Unlikely	Catastrophic	6-12 hours	>1 week	2.50
Tolleson	Unlikely	Negligible	>24 hours	<1 week	1.20
Wickenburg	Possibly	Catastrophic	<6 hours	<24 hours	2.90
Youngtown	Likely	Critical	6-12 hours	<24 hours	2.90
				County-wide average CPRI =	**2.04**

Vulnerability – Loss Estimations

The estimation of potential losses due to inundation from either an emergency spillway flow or a dam failure was accomplished by intersecting the human and facility assets with the inundation limits depicted on Maps 1A, 1B, and 1C. Since no common methodology is available for obtaining losses from the exposure values, estimates of the loss-to-exposure ratios were assumed based on the perceived potential for damage. Any storm event, or series of storm events of sufficient magnitude to cause an emergency spillway to operate or cause a dam failure scenario, would have potentially catastrophic consequences in the inundation area. Floodwaves from these type of events travel very fast and possess tremendous destructive energy. Accordingly, an average, event based loss-to-exposure ratio for the inundation areas with a high and medium hazard rating are estimated to be 0.25. Low rated areas are zero.

It should be noted that the MJPT recognizes that probability of an emergency spillway flow or dam failure occurring on multiple (or all) structures at the same time is essentially zero. Accordingly, the loss estimates presented below are intended to serve as a collective evaluation of the potential exposure and losses to high and medium hazard emergency spillway and dam failure inundation events.

Table 5-10 and 5-11 summarize estimations of losses to MJPT identified assets for emergency spillway and dam failure inundation hazards. Tables 5-12 through 5-39 summarize exposure and loss estimates to the HAZUS residential, commercial, and industrial building stock for the emergency spillway and dam failure inundation hazards, as well as Fissure, Flooding, Levee Failure, Subsidence and Wildfire. Table 5-12 summarizes the HAZUS based exposure and losses for the entirety of Maricopa County. Tables 5-13 through 5-39 summarize jurisdiction specific HAZUS data exposure

and loss estimates. Tables 5-40 and 5-41 summarize the estimated population exposed to emergency spillway and dam failure inundation hazards.

In summary, $489.4 million and $3.7 billion in asset related losses are estimated for emergency spillway and dam failure inundations, respectively, for all the participating jurisdictions in Maricopa County and all high and medium hazard categories. An additional $1.5 and $23.8 billion in losses to HAZUS defined residential, commercial, and industrial facilities is estimated for all participating Maricopa County jurisdictions. Regarding human vulnerability, a total population of 53,424 people, or 3.51% of the total 2000 Maricopa County population, is potentially exposed to an emergency spillway inundation event. A total population of 861,534 people, or 56.6% of the total 2000 Maricopa County population, is potentially exposed to a high or medium hazard dam failure inundation event. The potential for deaths and injuries are directly related to the warning time and type of event and are plausible. Given the magnitude of such an event(s), it is realistic to anticipate at least one death and several injuries. There is also a high probability of population displacement for most of the inhabitants within the inundation limits downstream of the dam(s).

Vulnerability – Development Trend Analysis

Most of the dams within Maricopa County serve as flood retarding structures (FRS) and typically sit empty for most of their design life. The flood protection afforded by these structures has encouraged development of lands immediately downstream of the structures. In some cases, the FRS are long linear structures that intercept runoff from multiple washes and have emergency spillways that are not always directed to a regional watercourse. All of the larger dams with some level of permanent reservoir storage direct emergency spillway flows to the regional watercourse they are constructed on. Emergency spillway flows from these structures typically coincide with FEMA regulated 100-year floodplains in the downstream watercourse, and are therefore not as potentially destructive as an emergency spillway flow from some of the FRS structures. A dam failure in any case, would be catastrophic.

The vulnerability analysis indicates that collectively, over half of the county population is situated within the potential downstream inundation limits of a dam failure. Prohibition of development within those limits is not feasible. Instead, public awareness measures such as notices on final plats and public education on dam safety are mitigation efforts employed by local county and city/town officials. Also, Emergency Action Plans (EAPs) that establish notification procedures and thresholds are also prepared for response to potential dam related disaster events.

Sources

Arizona Department of Water Resources, 2009, http://www.azwater.gov/AzDWR/SurfaceWater/DamSafety/default.htm

Arizona Division of Emergency Management, 2009, *State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT*.

Flood Control District of Maricopa County, 1997, *Storm Report, Tropical Storm Nora – September 1997*, prepared by S. D. Waters.

URS, 2004, *Maricopa County Hazard Mitigation Plan*

US Army Corps of Engineers, 1994, *Flood Damage Report, State of Arizona, Floods of 1993*.

US Army Corps of Engineers, National Inventory of Dams, 2009, https://nid.usace.army.mil/

Profile Maps

Maps 1A, 1B, and 1C – Dam Spillway Flood Hazard Map

Maps 2A, 2B, and 2C – Potential Dam Failure Flood Hazard Map

Table 5-10: Summary asset inventory losses due to emergency spillway flooding						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
County-Wide Totals	**5,179**	**360**	**6.95%**	**100.00%**	**$1,993,560**	**$498,390**
Avondale	61	0	0.00%	0.00%	$0	$0
Buckeye	77	1	1.30%	0.28%	$0	$0
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	0	0.00%	0.00%	$0	$0
El Mirage	34	22	64.71%	6.11%	$122,230	$30,558
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	0	0.00%	0.00%	$0	$0
Gila Bend	7	1	14.29%	0.28%	$9,000	$2,250
Gilbert	694	40	5.76%	11.11%	$611,000	$152,750
Glendale	1,205	77	6.39%	21.39%	$244,816	$61,204
Goodyear	93	0	0.00%	0.00%	$0	$0
Guadalupe	6	1	16.67%	0.28%	$800	$200
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	17	3.80%	4.72%	$12,321	$3,080
Mesa	613	37	6.04%	10.28%	$90,824	$22,706
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	33	14.67%	9.17%	$38,761	$9,690
Phoenix	913	8	0.88%	2.22%	$9,731	$2,433
Queen Creek	117	82	70.09%	22.78%	$156,502	$39,126
Salt River Pima-Maricopa Indian Community	21	21	100.00%	5.83%	$509,053	$127,263
Salt River Project [39]	511	8	1.57%	N/A	N/A	N/A
Scottsdale	114	1	0.88%	0.28%	$0	$0
Surprise	37	19	51.35%	5.28%	$188,521	$47,130
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[39] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-11: Summary asset inventory losses due to dam failure flooding						
Community	Total Facilities Reported by Community	Impacted Facilities	Percentage of Total Community Facilities Impacted	Percentage of Total County-wide Facilities Impacted	Estimated Replacement Cost (x $1000)	Estimated Structure Loss (x $1000)
HIGH						
County-Wide Totals	**5,179**	**573**	**11.06%**	**100.00%**	**$2,414,804**	**$603,701**
Avondale	61	0	0.00%	0.00%	$0	$0
Buckeye	77	0	0.00%	0.00%	$0	$0
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	4	1.77%	0.70%	$5,870	$1,468
El Mirage	34	0	0.00%	0.00%	$0	$0
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	10	55.56%	1.75%	$22,630	$5,657
Gila Bend	7	2	28.57%	0.35%	$12,000	$3,000
Gilbert	694	501	72.19%	87.43%	$2,209,020	$552,255
Glendale	1,205	0	0.00%	0.00%	$0	$0
Goodyear	93	0	0.00%	0.00%	$0	$0
Guadalupe	6	0	0.00%	0.00%	$0	$0
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	9	2.01%	1.57%	$49,618	$12,404
Mesa	613	40	6.53%	6.98%	$110,369	$27,592
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	0	0.00%	0.00%	$0	$0
Phoenix	913	0	0.00%	0.00%	$0	$0
Queen Creek	117	6	5.13%	1.05%	$5,243	$1,311
Salt River Pima-Maricopa Indian Community	21	1	4.76%	0.17%	$54	$14
Salt River Project [40]	511	40	7.83%	N/A	N/A	N/A
Scottsdale	114	0	0.00%	0.00%	$0	$0
Surprise	37	0	0.00%	0.00%	$0	$0
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[40] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-11: Summary asset inventory losses due to dam failure flooding						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
MEDIUM						
County-Wide Totals	**5,179**	**2390**	**46.15%**	**100.00%**	**$12,373,888**	**$3,093,472**
Avondale	61	61	100.00%	2.55%	$87,482	$21,871
Buckeye	77	27	35.06%	1.13%	$53,000	$13,250
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	197	87.17%	8.24%	$844,840	$211,210
El Mirage	34	34	100.00%	1.42%	$267,640	$66,910
Fountain Hills	15	4	26.67%	0.17%	$185,500	$46,375
Fort McDowell Yavapai Nation	18	1	5.56%	0.04%	$4,000	$1,000
Gila Bend	7	1	14.29%	0.04%	$9,000	$2,250
Gilbert	694	82	11.82%	3.43%	$360,000	$90,000
Glendale	1,205	531	44.07%	22.22%	$1,886,808	$471,702
Goodyear	93	66	70.97%	2.76%	$90,198	$22,550
Guadalupe	6	2	33.33%	0.08%	$1,100	$275
Litchfield Park	5	1	20.00%	0.04%	$100,000	$25,000
Unincorporated Maricopa County	447	193	43.18%	8.08%	$876,772	$219,193
Mesa	613	155	25.29%	6.49%	$382,677	$95,669
Paradise Valley	69	13	18.84%	0.54%	$61,000	$15,250
Peoria	225	130	57.78%	5.44%	$115,275	$28,819
Phoenix	913	594	65.06%	24.85%	$4,867,484	$1,216,871
Queen Creek	117	92	78.63%	3.85%	$164,070	$41,017
Salt River Pima-Maricopa Indian Community	21	19	90.48%	0.79%	$508,986	$127,247
Salt River Project [41]	511	246	48.14%	N/A	N/A	N/A
Scottsdale	114	49	42.98%	2.05%	$55,000	$13,750
Surprise	37	28	75.68%	1.17%	$285,389	$71,347
Tempe	111	96	86.49%	4.02%	$1,157,300	$289,325
Tolleson	10	8	80.00%	0.33%	$0	$0
Wickenburg	11	1	9.09%	0.04%	$5,000	$1,250
Youngtown	5	5	100.00%	0.21%	$5,367	$1,342

[41] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-12: Summary of Maricopa County HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
Maricopa County HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
County-Wide Totals	**507,215**	**$126,956,339**	**26,647**	**$30,750,493**	**7,397**	**$7,187,748**	**$164,894,580**		
Flooding									
High	13,034	$3,505,566	779	$997,214	241	$266,873	$4,769,654	20%	$953,931
Medium	466,352	$115,034,095	24,305	$27,941,813	6,765	$6,683,366	$149,659,274	5%	$7,482,964
Dam Failure									
High	19,192	$5,243,823	1,138	$813,407	324	$263,799	$6,321,029	25%	$1,580,257
Medium	269,470	$65,736,310	14,407	$18,802,871	3,944	$4,422,934	$88,962,115	25%	$22,240,529
Wildfire									
High	251	$29,815	17	$15,313	3	$2,873	$48,002	20%	$9,600
Medium	107	$20,307	6	$4,137	2	$435	$24,879	5%	$1,244
Spillway									
High	24,111	$5,024,425	976	$906,036	294	$140,952	$6,071,413	25%	$1,517,853
Levee Failure									
High	4,106	$798,599	182	$158,800	67	$125,643	$1,083,042	20%	$216,608
Subsidence									
High	93,741	$21,903,194	3,935	$3,637,480	1,049	$598,084	$26,138,758	%	$0
Fissure									
High	474	$66,149	15	$7,634	6	$2,406	$76,189	%	$0

Maricopa County HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**94.51%**	**93.37%**	**94.14%**	**94.11%**	**94.73%**	**96.70%**
High	02.57%	02.76%	02.93%	03.24%	03.26%	03.71%
Medium	91.94%	90.61%	91.21%	90.87%	91.46%	92.98%
Dam Failure	**56.91%**	**55.91%**	**58.34%**	**63.79%**	**57.70%**	**65.20%**
High	03.78%	04.13%	04.27%	02.65%	04.38%	03.67%
Medium	53.13%	51.78%	54.07%	61.15%	53.32%	61.53%
Wildfire	**0.07%**	**0.04%**	**0.09%**	**0.06%**	**0.06%**	**0.05%**
High	0.05%	0.02%	0.06%	0.05%	0.03%	0.04%
Medium	0.02%	0.02%	0.02%	0.01%	0.03%	0.01%
Spillway	**04.75%**	**03.96%**	**03.66%**	**02.95%**	**03.97%**	**01.96%**
High	04.75%	03.96%	03.66%	02.95%	03.97%	01.96%
Levee Failure	**0.81%**	**0.63%**	**0.68%**	**0.52%**	**0.90%**	**01.75%**
High	0.81%	0.63%	0.68%	0.52%	0.90%	01.75%
Subsidence	**18.48%**	**17.25%**	**14.77%**	**11.83%**	**14.18%**	**08.32%**
High	18.48%	17.25%	14.77%	11.83%	14.18%	08.32%
Fissure	**0.09%**	**0.05%**	**0.06%**	**0.02%**	**0.09%**	**0.03%**
High	0.09%	0.05%	0.06%	0.02%	0.09%	0.03%

Table 5-13: Summary of AVONDALE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
AVONDALE (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**4,580**	**$970,779**	**190**	**$112,339**	**42**	**$27,138**	**$1,110,256**		
Flooding									
High	9	$1,640	2	$2,569	1	$585	$4,794	20%	$959
Medium	4,572	$969,138	188	$109,770	42	$26,554	$1,105,462	5%	$55,273
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	4,577	$970,618	190	$112,338	42	$27,138	$1,110,094	25%	$277,524
Wildfire									
High	0	$31	0	$2	0	$0	$33	20%	$7
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	518	$115,603	18	$10,036	2	$552	$126,191	20%	$25,238
Subsidence									
High	1,133	$284,021	34	$22,976	6	$873	$307,870	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

AVONDALE (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.19%	0.17%	01.18%	02.29%	01.43%	02.15%
Medium	99.81%	99.83%	98.82%	97.71%	98.57%	97.85%
Dam Failure	**99.93%**	**99.98%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	99.93%	99.98%	100.0%	100.0%	100.0%	100.0%
Wildfire	**0.0%**	**0.0%**	**0.01%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.01%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**11.32%**	**11.91%**	**09.52%**	**08.93%**	**05.07%**	**02.03%**
High	11.32%	11.91%	09.52%	08.93%	05.07%	02.03%
Subsidence	**24.74%**	**29.26%**	**17.76%**	**20.45%**	**14.21%**	**03.22%**
High	24.74%	29.26%	17.76%	20.45%	14.21%	03.22%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-14: Summary of BUCKEYE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
BUCKEYE (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**1,609**	**$204,996**	**104**	**$63,794**	**27**	**$8,513**	**$277,303**		
Flooding									
High	67	$4,623	11	$5,741	2	$835	$11,199	20%	$2,240
Medium	1,542	$200,373	93	$57,991	24	$7,679	$266,042	5%	$13,302
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	1,502	$188,721	86	$55,896	22	$6,779	$251,397	25%	$62,849
Wildfire									
High	1	$44	2	$450	0	$0	$494	20%	$99
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	35	$4,984	2	$575	1	$282	$5,841	25%	$1,460
Levee Failure									
High	11	$1,443	1	$725	0	$77	$2,246	20%	$449
Subsidence									
High	116	$12,124	8	$3,285	2	$1,215	$16,625	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

BUCKEYE (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**99.94%**	**99.90%**	**100.0%**	**100.0%**
High	04.14%	02.26%	10.42%	09.0%	08.93%	09.80%
Medium	95.86%	97.74%	89.51%	90.90%	91.07%	90.20%
Dam Failure	**93.36%**	**92.06%**	**82.91%**	**87.62%**	**81.70%**	**79.63%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	93.36%	92.06%	82.91%	87.62%	81.70%	79.63%
Wildfire	**0.06%**	**0.02%**	**01.93%**	**0.71%**	**0.0%**	**0.0%**
High	0.06%	0.02%	01.93%	0.71%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**02.15%**	**02.43%**	**01.95%**	**0.90%**	**02.94%**	**03.31%**
High	02.15%	02.43%	01.95%	0.90%	02.94%	03.31%
Levee Failure	**0.68%**	**0.70%**	**01.02%**	**01.14%**	**0.47%**	**0.91%**
High	0.68%	0.70%	01.02%	01.14%	0.47%	0.91%
Subsidence	**07.20%**	**05.91%**	**07.94%**	**05.15%**	**09.35%**	**14.27%**
High	07.20%	05.91%	07.94%	05.15%	09.35%	14.27%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-15: Summary of CAREFREE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
CAREFREE (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**1,199**	**$364,026**	**48**	**$34,405**	**12**	**$4,672**	**$403,103**		
Flooding									
High	27	$7,646	1	$823	1	$197	$8,667	20%	$1,733
Medium	1,118	$333,498	46	$33,372	11	$4,439	$371,308	5%	$18,565
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	0	$0	0	$0	0	$0	$0	25%	$0
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$56	0	$11	0	$0	$67	20%	$13
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

CAREFREE (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**95.50%**	**93.71%**	**98.80%**	**99.39%**	**97.27%**	**99.23%**
High	02.24%	02.10%	02.34%	02.39%	04.82%	04.22%
Medium	93.26%	91.61%	96.47%	97.0%	92.45%	95.01%
Dam Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.02%**	**0.02%**	**0.02%**	**0.03%**	**0.0%**	**0.0%**
High	0.02%	0.02%	0.02%	0.03%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-16: Summary of CAVE CREEK HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
CAVE CREEK (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**1,279**	**$235,535**	**84**	**$53,609**	**30**	**$12,638**	**$301,783**		
Flooding									
High	89	$17,519	6	$5,265	2	$881	$23,665	20%	$4,733
Medium	1,190	$218,016	78	$48,344	28	$11,757	$278,118	5%	$13,906
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	0	$0	0	$0	0	$0	$0	25%	$0
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	1	$55	$55	5%	$3
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$1	0	$0	0	$0	$1	20%	$0
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

CAVE CREEK (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	06.95%	07.44%	07.15%	09.82%	06.40%	06.97%
Medium	93.05%	92.56%	92.85%	90.18%	93.60%	93.03%
Dam Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**02.45%**	**0.44%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	02.45%	0.44%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-17: Summary of CHANDLER HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
CHANDLER (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**27,825**	**$7,617,113**	**1,393**	**$1,183,011**	**378**	**$341,750**	**$9,141,874**		
Flooding									
High	564	$121,106	14	$8,952	4	$6,706	$136,764	20%	$27,353
Medium	27,260	$7,496,006	1,380	$1,174,058	375	$335,045	$9,005,109	5%	$450,255
Dam Failure									
High	2,056	$582,224	61	$24,960	18	$6,642	$613,825	25%	$153,456
Medium	22,988	$6,328,712	1,156	$953,442	295	$207,184	$7,489,338	25%	$1,872,334
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	1	$213	0	$0	0	$0	$214	5%	$11
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	268	$42,820	20	$20,086	5	$5,419	$68,326	20%	$13,665
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

CHANDLER (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	02.03%	01.59%	01.0%	0.76%	01.01%	01.96%
Medium	97.97%	98.41%	99.0%	99.24%	98.99%	98.04%
Dam Failure	**90.01%**	**90.73%**	**87.30%**	**82.70%**	**82.60%**	**62.57%**
High	07.39%	07.64%	04.35%	02.11%	04.74%	01.94%
Medium	82.62%	83.09%	82.95%	80.59%	77.87%	60.62%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.96%**	**0.56%**	**01.45%**	**01.70%**	**01.26%**	**01.59%**
High	0.96%	0.56%	01.45%	01.70%	01.26%	01.59%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-18: Summary of EL MIRAGE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
EL MIRAGE (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**1,612**	**$237,986**	**59**	**$40,473**	**25**	**$12,048**	**$290,507**		
Flooding									
High	109	$13,720	3	$2,530	2	$975	$17,224	20%	$3,445
Medium	1,504	$224,266	55	$37,943	23	$11,073	$273,282	5%	$13,664
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	1,612	$237,986	59	$40,473	25	$12,048	$290,507	25%	$72,627
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	1,505	$224,397	53	$36,925	22	$10,644	$271,966	25%	$67,991
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	1,612	$237,986	59	$40,473	25	$12,048	$290,507	%	$0
Fissure									
High	0	$7	0	$3	0	$0	$11	%	$0

EL MIRAGE (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	06.73%	05.77%	05.94%	06.25%	07.60%	08.09%
Medium	93.27%	94.23%	94.06%	93.75%	92.40%	91.91%
Dam Failure	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**93.35%**	**94.29%**	**90.26%**	**91.23%**	**88.75%**	**88.35%**
High	93.35%	94.29%	90.26%	91.23%	88.75%	88.35%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Fissure	**0.0%**	**0.0%**	**0.04%**	**0.01%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.04%	0.01%	0.0%	0.0%

Table 5-19: Summary of FOUNTAIN HILLS HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
FOUNTAIN HILLS (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**4,089**	**$1,010,039**	**206**	**$126,112**	**65**	**$18,417**	**$1,154,569**		
Flooding									
High	176	$45,287	8	$4,566	2	$725	$50,579	20%	$10,116
Medium	3,912	$964,477	198	$121,478	62	$17,687	$1,103,642	5%	$55,182
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	392	$98,446	14	$6,417	5	$1,656	$106,518	25%	$26,630
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	1	$154	0	$18	0	$6	$177	5%	$9
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

FOUNTAIN HILLS (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**99.98%**	**99.97%**	**99.98%**	**99.95%**	**99.98%**	**99.97%**
High	04.31%	04.48%	04.02%	03.62%	03.59%	03.94%
Medium	95.66%	95.49%	95.96%	96.33%	96.38%	96.03%
Dam Failure	**09.59%**	**09.75%**	**07.01%**	**05.09%**	**08.02%**	**08.99%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	09.59%	09.75%	07.01%	05.09%	08.02%	08.99%
Wildfire	**0.02%**	**0.02%**	**0.03%**	**0.01%**	**0.09%**	**0.03%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.02%	0.02%	0.03%	0.01%	0.09%	0.03%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-20: Summary of FORT MCDOWELL YAVAPAI NATION HAZUS Building Exposure by hazard									
	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
FORT MCDOWELL YAVAPAI NATION (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**138**	**$30,971**	**5**	**$3,717**	**0**	**$167**	**$34,855**		
Flooding									
High	12	$2,816	1	$595	0	$31	$3,442	20%	$688
Medium	126	$28,153	4	$3,119	0	$137	$31,409	5%	$1,570
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	46	$8,914	1	$361	0	$1	$9,276	25%	$2,319
Wildfire									
High	6	$1,177	0	$0	0	$0	$1,177	20%	$235
Medium	2	$633	0	$83	0	$4	$720	5%	$36
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

FORT MCDOWELL YAVAPAI NATION (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**100.0%**	**99.99%**	**99.87%**	**99.93%**	**99.94%**	**99.95%**
High	08.87%	09.09%	14.75%	16.01%	16.61%	18.30%
Medium	91.13%	90.90%	85.13%	83.91%	83.33%	81.66%
Dam Failure	**33.23%**	**28.78%**	**19.12%**	**09.72%**	**0.33%**	**0.41%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	33.23%	28.78%	19.12%	09.72%	0.33%	0.41%
Wildfire	**06.16%**	**05.84%**	**01.12%**	**02.24%**	**02.57%**	**02.33%**
High	04.39%	03.80%	0.0%	0.0%	0.0%	0.0%
Medium	01.78%	02.04%	01.12%	02.24%	02.57%	02.33%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-21: Summary of GILA BEND HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
GILA BEND (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**605**	**$49,862**	**10**	**$5,431**	**4**	**$1,468**	**$56,761**		
Flooding									
High	165	$12,603	2	$1,630	0	$41	$14,273	20%	$2,855
Medium	440	$37,244	8	$3,802	3	$1,427	$42,473	5%	$2,124
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	1	$46	0	$0	0	$0	$46	25%	$11
Wildfire									
High	1	$26	0	$0	0	$0	$26	20%	$5
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	31	$2,222	2	$726	1	$242	$3,190	20%	$638
Subsidence									
High	547	$40,977	8	$4,604	3	$1,220	$46,802	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

GILA BEND (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**99.89%**	**99.97%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	27.18%	25.27%	20.56%	30.01%	02.55%	02.79%
Medium	72.71%	74.69%	79.44%	69.99%	97.45%	97.21%
Dam Failure	**0.24%**	**0.09%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.24%	0.09%	0.0%	0.0%	0.0%	0.0%
Wildfire	**0.13%**	**0.05%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.13%	0.05%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**05.19%**	**04.46%**	**20.0%**	**13.37%**	**18.45%**	**16.50%**
High	05.19%	04.46%	20.0%	13.37%	18.45%	16.50%
Subsidence	**90.33%**	**82.18%**	**81.90%**	**84.77%**	**75.23%**	**83.14%**
High	90.33%	82.18%	81.90%	84.77%	75.23%	83.14%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-22: Summary of GILBERT HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
GILBERT (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**17,557**	**$4,870,721**	**1085**	**$786,313**	**300**	**$250,127**	**$5,907,161**		
Flooding									
High	482	$127,979	61	$58,092	18	$33,401	$219,473	20%	$43,895
Medium	17,075	$4,742,730	1,024	$728,220	282	$216,726	$5,687,675	5%	$284,384
Dam Failure									
High	14,160	$3,975,513	851	$625,502	227	$188,623	$4,789,638	25%	$1,197,410
Medium	197	$43,807	29	$15,754	11	$7,515	$67,075	25%	$16,769
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	97	$21,868	17	$7,423	5	$4,977	$34,268	25%	$8,567
Levee Failure									
High	106	$39,412	9	$8,674	2	$3,178	$51,264	20%	$10,253
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	3	$717	0	$27	0	$7	$751	%	$0

GILBERT (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	02.75%	02.63%	05.59%	07.39%	06.02%	13.35%
Medium	97.25%	97.37%	94.41%	92.61%	93.98%	86.65%
Dam Failure	**81.77%**	**82.52%**	**81.22%**	**81.55%**	**79.38%**	**78.42%**
High	80.65%	81.62%	78.50%	79.55%	75.61%	75.41%
Medium	01.12%	0.90%	02.72%	02.0%	03.77%	03.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.55%**	**0.45%**	**01.59%**	**0.94%**	**01.62%**	**01.99%**
High	0.55%	0.45%	01.59%	0.94%	01.62%	01.99%
Levee Failure	**0.60%**	**0.81%**	**0.81%**	**01.10%**	**0.74%**	**01.27%**
High	0.60%	0.81%	0.81%	01.10%	0.74%	01.27%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.02%**	**0.01%**	**0.01%**	**0.0%**	**0.01%**	**0.0%**
High	0.02%	0.01%	0.01%	0.0%	0.01%	0.0%

Table 5-23: Summary of GLENDALE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
GLENDALE (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**32,571**	**$8,893,903**	**1,588**	**$1,324,304**	**467**	**$313,585**	**$10,531,793**		
Flooding									
High	467	$112,262	21	$26,128	7	$5,711	$144,102	20%	$28,820
Medium	32,098	$8,779,234	1,565	$1,297,913	460	$307,874	$10,385,022	5%	$519,251
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	13,392	$3,815,400	695	$672,751	174	$83,746	$4,571,897	25%	$1,142,974
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	1,488	$474,122	105	$176,727	25	$11,414	$662,262	25%	$165,566
Levee Failure									
High	4	$753	10	$13,776	7	$14,792	$29,321	20%	$5,864
Subsidence									
High	7,550	$2,076,542	349	$273,397	103	$56,386	$2,406,325	%	$0
Fissure									
High	0	$159	0	$16	0	$84	$259	%	$0

GLENDALE (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**99.98%**	**99.97%**	**99.95%**	**99.98%**	**100.0%**	**100.0%**
High	01.44%	01.26%	01.34%	01.97%	01.41%	01.82%
Medium	98.55%	98.71%	98.61%	98.01%	98.59%	98.18%
Dam Failure	**41.12%**	**42.90%**	**43.78%**	**50.80%**	**37.31%**	**26.71%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	41.12%	42.90%	43.78%	50.80%	37.31%	26.71%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**04.57%**	**05.33%**	**06.62%**	**13.34%**	**05.26%**	**03.64%**
High	04.57%	05.33%	06.62%	13.34%	05.26%	03.64%
Levee Failure	**0.01%**	**0.01%**	**0.62%**	**01.04%**	**01.50%**	**04.72%**
High	0.01%	0.01%	0.62%	01.04%	01.50%	04.72%
Subsidence	**23.18%**	**23.35%**	**21.96%**	**20.64%**	**22.02%**	**17.98%**
High	23.18%	23.35%	21.96%	20.64%	22.02%	17.98%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.03%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.03%

Table 5-24: Summary of GOODYEAR HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
GOODYEAR (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**3,343**	**$826,747**	**219**	**$175,665**	**60**	**$68,724**	**$1,071,137**		
Flooding									
High	102	$28,918	8	$9,061	2	$3,411	$41,390	20%	$8,278
Medium	3,241	$797,804	212	$166,592	58	$65,313	$1,029,709	5%	$51,485
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	2,175	$531,259	151	$139,506	41	$55,972	$726,737	25%	$181,684
Wildfire									
High	0	$4	0	$2	0	$0	$6	20%	$1
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	5	$562	0	$148	0	$138	$849	25%	$212
Levee Failure									
High	15	$1,534	1	$732	1	$143	$2,409	20%	$482
Subsidence									
High	1,355	$341,599	103	$111,463	23	$13,161	$466,224	%	$0
Fissure									
High	0	$38	0	$2	0	$0	$40	%	$0

GOODYEAR (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**99.99%**	**100.0%**	**99.99%**	**99.99%**	**99.99%**	**100.0%**
High	03.05%	03.50%	03.45%	05.16%	02.96%	04.96%
Medium	96.94%	96.50%	96.55%	94.83%	97.03%	95.04%
Dam Failure	**65.06%**	**64.26%**	**69.07%**	**79.42%**	**67.43%**	**81.44%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	65.06%	64.26%	69.07%	79.42%	67.43%	81.44%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.15%**	**0.07%**	**0.19%**	**0.08%**	**0.44%**	**0.20%**
High	0.15%	0.07%	0.19%	0.08%	0.44%	0.20%
Levee Failure	**0.44%**	**0.19%**	**0.61%**	**0.42%**	**0.84%**	**0.21%**
High	0.44%	0.19%	0.61%	0.42%	0.84%	0.21%
Subsidence	**40.54%**	**41.32%**	**47.11%**	**63.45%**	**38.26%**	**19.15%**
High	40.54%	41.32%	47.11%	63.45%	38.26%	19.15%
Fissure	**0.01%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.01%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-25: Summary of GUADALUPE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
GUADALUPE (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**655**	**$102,675**	**25**	**$18,215**	**1**	**$948**	**$121,838**		
Flooding									
High	43	$8,839	1	$806	0	$121	$9,767	20%	$1,953
Medium	613	$93,836	24	$17,408	1	$827	$112,071	5%	$5,604
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	105	$18,398	8	$5,827	0	$661	$24,887	25%	$6,222
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

GUADALUPE (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	06.50%	08.61%	04.74%	04.43%	06.26%	12.76%
Medium	93.50%	91.39%	95.26%	95.57%	93.74%	87.24%
Dam Failure	**15.95%**	**17.92%**	**32.04%**	**31.99%**	**16.03%**	**69.74%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	15.95%	17.92%	32.04%	31.99%	16.03%	69.74%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-26: Summary of LITCHFIELD PARK HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
LITCHFIELD PARK (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**586**	**$196,331**	**44**	**$31,908**	**11**	**$3,426**	**$231,665**		
Flooding									
High	4	$1,665	0	$99	0	$1	$1,765	20%	$353
Medium	582	$194,666	44	$31,808	11	$3,425	$229,900	5%	$11,495
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	586	$196,331	44	$31,908	11	$3,426	$231,665	25%	$57,916
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	586	$196,331	44	$31,908	11	$3,426	$231,665	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

LITCHFIELD PARK (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.68%	0.85%	0.47%	0.31%	0.02%	0.02%
Medium	99.32%	99.15%	99.53%	99.69%	99.98%	99.98%
Dam Failure	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-27: Summary of UNINCORPORATED MARICOPA COUNTY HAZUS Building Exposure by hazard									
	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
UNINCORPORTATED MARICOPA COUNTY (Maricopa County) HAZUS	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**56,609**	**$10,562,895**	**1,817**	**$1,347,631**	**556**	**$286,840**	**$12,197,366**		
Flooding									
High	2,117	$359,716	96	$53,584	44	$20,366	$433,665	20%	$86,733
Medium	53,222	$10,039,063	1,686	$1,260,661	506	$264,750	$11,564,475	5%	$578,224
Dam Failure									
High	1,011	$267,178	106	$52,279	38	$28,866	$348,323	25%	$87,081
Medium	37,536	$6,636,998	894	$664,366	223	$124,537	$7,425,901	25%	$1,856,475
Wildfire									
High	85	$15,356	14	$14,845	3	$2,872	$33,073	20%	$6,615
Medium	90	$16,591	6	$3,926	1	$352	$20,870	5%	$1,043
Spillway									
High	6,101	$942,314	158	$119,690	38	$23,195	$1,085,200	25%	$271,300
Levee Failure									
High	856	$145,590	29	$18,044	12	$8,216	$171,849	20%	$34,370
Subsidence									
High	28,687	$4,932,033	658	$526,229	119	$65,832	$5,524,094	%	$0
Fissure									
High	100	$16,459	8	$3,615	5	$2,114	$22,188	%	$0

UNINCORPORTATED MARICOPA COUNTY (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**97.76%**	**98.45%**	**98.07%**	**97.52%**	**98.80%**	**99.40%**
High	03.74%	03.41%	05.26%	03.98%	07.87%	07.10%
Medium	94.02%	95.04%	92.81%	93.55%	90.93%	92.30%
Dam Failure	**68.09%**	**65.36%**	**55.06%**	**53.18%**	**46.92%**	**53.48%**
High	01.79%	02.53%	05.86%	03.88%	06.79%	10.06%
Medium	66.31%	62.83%	49.20%	49.30%	40.13%	43.42%
Wildfire	**0.31%**	**0.30%**	**01.13%**	**01.39%**	**0.67%**	**01.12%**
High	0.15%	0.15%	0.80%	01.10%	0.45%	01.0%
Medium	0.16%	0.16%	0.33%	0.29%	0.22%	0.12%
Spillway	**10.78%**	**08.92%**	**08.67%**	**08.88%**	**06.77%**	**08.09%**
High	10.78%	08.92%	08.67%	08.88%	06.77%	08.09%
Levee Failure	**01.51%**	**01.38%**	**01.58%**	**01.34%**	**02.24%**	**02.86%**
High	01.51%	01.38%	01.58%	01.34%	02.24%	02.86%
Subsidence	**50.68%**	**46.69%**	**36.22%**	**39.05%**	**21.33%**	**22.95%**
High	50.68%	46.69%	36.22%	39.05%	21.33%	22.95%
Fissure	**0.18%**	**0.16%**	**0.44%**	**0.27%**	**0.86%**	**0.74%**
High	0.18%	0.16%	0.44%	0.27%	0.86%	0.74%

Table 5-28: Summary of MESA HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
MESA (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**70,114**	**$14,672,734**	**2,939**	**$2,716,664**	**855**	**$536,271**	**$17,925,668**		
Flooding									
High	488	$83,382	34	$40,828	6	$4,035	$128,244	20%	$25,649
Medium	67,774	$14,100,820	2,822	$2,636,326	820	$521,179	$17,258,325	5%	$862,916
Dam Failure									
High	1,952	$416,075	118	$109,783	41	$39,316	$565,174	25%	$141,294
Medium	19,323	$3,818,458	715	$789,765	183	$106,105	$4,714,328	25%	$1,178,582
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	3,108	$487,388	148	$190,702	34	$17,213	$695,303	25%	$173,826
Levee Failure									
High	3	$556	5	$4,414	3	$13,774	$18,744	20%	$3,749
Subsidence									
High	4,411	$776,471	184	$97,619	52	$16,753	$890,843	%	$0
Fissure									
High	259	$27,030	3	$2,797	0	$9	$29,836	%	$0

MESA (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**97.36%**	**96.67%**	**97.18%**	**98.55%**	**96.57%**	**97.94%**
High	0.70%	0.57%	01.16%	01.50%	0.70%	0.75%
Medium	96.66%	96.10%	96.02%	97.04%	95.87%	97.19%
Dam Failure	**30.34%**	**28.86%**	**28.32%**	**33.11%**	**26.10%**	**27.12%**
High	02.78%	02.84%	04.01%	04.04%	04.75%	07.33%
Medium	27.56%	26.02%	24.32%	29.07%	21.35%	19.79%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**04.43%**	**03.32%**	**05.03%**	**07.02%**	**03.97%**	**03.21%**
High	04.43%	03.32%	05.03%	07.02%	03.97%	03.21%
Levee Failure	**0.0%**	**0.0%**	**0.16%**	**0.16%**	**0.40%**	**02.57%**
High	0.0%	0.0%	0.16%	0.16%	0.40%	02.57%
Subsidence	**06.29%**	**05.29%**	**06.25%**	**03.59%**	**06.14%**	**03.12%**
High	06.29%	05.29%	06.25%	03.59%	06.14%	03.12%
Fissure	**0.37%**	**0.18%**	**0.11%**	**0.10%**	**0.01%**	**0.0%**
High	0.37%	0.18%	0.11%	0.10%	0.01%	0.0%

Table 5-29: Summary of PARADISE VALLEY HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
PARADISE VALLEY (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**2,401**	**$1,017,857**	**159**	**$96,441**	**31**	**$13,349**	**$1,127,647**		
Flooding									
High	75	$32,664	4	$1,733	2	$503	$34,900	20%	$6,980
Medium	514	$222,395	34	$25,694	7	$3,054	$251,143	5%	$12,557
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	693	$303,196	45	$30,155	16	$9,847	$343,198	25%	$85,800
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	107	$46,915	11	$10,670	2	$383	$57,968	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

PARADISE VALLEY (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**24.56%**	**25.06%**	**23.90%**	**28.44%**	**28.24%**	**26.65%**
High	03.14%	03.21%	02.61%	01.80%	04.91%	03.77%
Medium	21.42%	21.85%	21.29%	26.64%	23.33%	22.88%
Dam Failure	**28.86%**	**29.79%**	**28.21%**	**31.27%**	**51.10%**	**73.77%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	28.86%	29.79%	28.21%	31.27%	51.10%	73.77%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**04.46%**	**04.61%**	**06.97%**	**11.06%**	**05.85%**	**02.87%**
High	04.46%	04.61%	06.97%	11.06%	05.85%	02.87%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-30: Summary of PEORIA (Maricopa County) HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
PEORIA (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**17,798**	**$4,438,043**	**769**	**$604,653**	**257**	**$115,377**	**$5,158,074**		
Flooding									
High	97	$24,281	6	$3,490	6	$3,575	$31,347	20%	$6,269
Medium	17,418	$4,343,796	753	$598,776	252	$111,814	$5,054,386	5%	$252,719
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	12,399	$3,052,813	526	$445,942	153	$56,932	$3,555,686	25%	$888,922
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	4,560	$1,134,538	206	$204,541	63	$20,280	$1,359,358	25%	$339,840
Levee Failure									
High	1,174	$190,464	33	$18,116	10	$2,793	$211,373	20%	$42,275
Subsidence									
High	15,542	$3,859,978	614	$525,202	186	$86,244	$4,471,424	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

PEORIA (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**98.41%**	**98.42%**	**98.80%**	**99.61%**	**100.02%**	**100.01%**
High	0.55%	0.55%	0.82%	0.58%	02.21%	03.10%
Medium	97.86%	97.88%	97.98%	99.03%	97.81%	96.91%
Dam Failure	**69.66%**	**68.79%**	**68.45%**	**73.75%**	**59.40%**	**49.34%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	69.66%	68.79%	68.45%	73.75%	59.40%	49.34%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**25.62%**	**25.56%**	**26.75%**	**33.83%**	**24.50%**	**17.58%**
High	25.62%	25.56%	26.75%	33.83%	24.50%	17.58%
Levee Failure	**06.60%**	**04.29%**	**04.30%**	**03.0%**	**03.74%**	**02.42%**
High	06.60%	04.29%	04.30%	03.0%	03.74%	02.42%
Subsidence	**87.32%**	**86.97%**	**79.80%**	**86.86%**	**72.24%**	**74.75%**
High	87.32%	86.97%	79.80%	86.86%	72.24%	74.75%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-31: Summary of PHOENIX HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
PHOENIX (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**188,432**	**$49,106,193**	**11,334**	**$15,336,943**	**2,975**	**$3,217,141**	**$67,660,277**		
Flooding									
High	4,275	$1,184,608	292	$332,441	90	$132,119	$1,649,168	20%	$329,834
Medium	177,208	$45,396,377	10,672	$14,713,954	2,787	$3,027,354	$63,137,685	5%	$3,156,884
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	102,056	$25,572,247	6,872	$10,446,375	1,858	$2,257,706	$38,276,328	25%	$9,569,082
Wildfire									
High	1	$178	0	$1	0	$0	$179	20%	$36
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	2,012	$576,117	96	$69,643	39	$25,564	$671,324	25%	$167,831
Levee Failure									
High	944	$218,464	43	$55,685	13	$11,271	$285,420	20%	$57,084
Subsidence									
High	18,688	$5,321,319	1,187	$1,020,088	323	$137,314	$6,478,721	%	$0
Fissure									
High	58	$14,562	3	$936	0	$108	$15,605	%	$0

PHOENIX (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**96.31%**	**94.86%**	**96.74%**	**98.11%**	**96.71%**	**98.21%**
High	02.27%	02.41%	02.58%	02.17%	03.03%	04.11%
Medium	94.04%	92.45%	94.16%	95.94%	93.68%	94.10%
Dam Failure	**54.16%**	**52.08%**	**60.63%**	**68.11%**	**62.44%**	**70.18%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	54.16%	52.08%	60.63%	68.11%	62.44%	70.18%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**01.07%**	**01.17%**	**0.85%**	**0.45%**	**01.30%**	**0.79%**
High	01.07%	01.17%	0.85%	0.45%	01.30%	0.79%
Levee Failure	**0.50%**	**0.44%**	**0.38%**	**0.36%**	**0.43%**	**0.35%**
High	0.50%	0.44%	0.38%	0.36%	0.43%	0.35%
Subsidence	**09.92%**	**10.84%**	**10.47%**	**06.65%**	**10.87%**	**04.27%**
High	09.92%	10.84%	10.47%	06.65%	10.87%	04.27%
Fissure	**0.03%**	**0.03%**	**0.02%**	**0.01%**	**0.01%**	**0.0%**
High	0.03%	0.03%	0.02%	0.01%	0.01%	0.0%

Table 5-32: Summary of QUEEN CREEK (Maricopa County) HAZUS Building Exposure by hazard									
	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
QUEEN CREEK (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**897**	**$163,548**	**56**	**$23,825**	**27**	**$10,037**	**$197,411**		
Flooding									
High	75	$12,161	5	$1,623	5	$2,262	$16,046	20%	$3,209
Medium	774	$145,212	49	$21,668	20	$6,702	$173,581	5%	$8,679
Dam Failure									
High	13	$2,833	2	$882	1	$352	$4,067	25%	$1,017
Medium	693	$136,478	49	$20,220	25	$9,541	$166,239	25%	$41,560
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	3	$247	0	$6	0	$0	$253	5%	$13
Spillway									
High	706	$137,971	51	$21,101	25	$9,873	$168,946	25%	$42,236
Levee Failure									
High	9	$2,360	1	$447	1	$481	$3,288	20%	$658
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	49	$5,882	0	$95	1	$83	$6,060	%	$0

QUEEN CREEK (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**94.59%**	**96.22%**	**96.48%**	**97.76%**	**92.85%**	**89.31%**
High	08.35%	07.44%	08.36%	06.81%	19.29%	22.54%
Medium	86.24%	88.79%	88.12%	90.94%	73.57%	66.77%
Dam Failure	**78.78%**	**85.18%**	**92.27%**	**88.57%**	**93.20%**	**98.57%**
High	01.49%	01.73%	03.49%	03.70%	02.58%	03.51%
Medium	77.29%	83.45%	88.77%	84.87%	90.62%	95.06%
Wildfire	**0.29%**	**0.15%**	**0.05%**	**0.02%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.29%	0.15%	0.05%	0.02%	0.0%	0.0%
Spillway	**78.76%**	**84.36%**	**92.26%**	**88.57%**	**92.70%**	**98.36%**
High	78.76%	84.36%	92.26%	88.57%	92.70%	98.36%
Levee Failure	**01.02%**	**01.44%**	**0.98%**	**01.88%**	**02.63%**	**04.79%**
High	01.02%	01.44%	0.98%	01.88%	02.63%	04.79%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**05.44%**	**03.60%**	**0.88%**	**0.40%**	**03.90%**	**0.82%**
High	05.44%	03.60%	0.88%	0.40%	03.90%	0.82%

Table 5-33: Summary of SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY HAZUS Building Exposure by hazard									
	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY (Maricopa County) HAZUS	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**2,474**	**$375,496**	**108**	**$137,169**	**21**	**$56,720**	**$569,385**		
Flooding									
High	60	$15,249	1	$1,623	0	$1,609	$18,482	20%	$3,696
Medium	1,587	$164,091	78	$93,093	8	$10,344	$267,528	5%	$13,376
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	2,188	$343,699	92	$122,366	20	$56,372	$522,438	25%	$130,609
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**66.57%**	**47.76%**	**73.62%**	**69.05%**	**38.62%**	**21.07%**
High	02.43%	04.06%	01.18%	01.18%	01.55%	02.84%
Medium	64.14%	43.70%	72.44%	67.87%	37.07%	18.24%
Dam Failure	**88.45%**	**91.53%**	**85.34%**	**89.21%**	**95.89%**	**99.39%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	88.45%	91.53%	85.34%	89.21%	95.89%	99.39%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-34: Summary of SCOTTSDALE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
SCOTTSDALE (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**37,830**	**$12,332,231**	**2,453**	**$3,369,182**	**616**	**$431,382**	**$16,132,795**		
Flooding									
High	3,041	$1,201,679	173	$339,543	39	$33,550	$1,574,772	20%	$314,954
Medium	20,067	$6,953,353	1,368	$1,696,669	358	$286,435	$8,936,457	5%	$446,823
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	19,639	$6,045,462	1,198	$1,615,333	324	$273,751	$7,934,546	25%	$1,983,636
Wildfire									
High	0	$81	0	$15	0	$1	$97	20%	$19
Medium	4	$1,871	0	$101	0	$17	$1,989	5%	$99
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	129	$29,459	7	$2,355	2	$514	$32,327	20%	$6,465
Subsidence									
High	6,157	$2,340,395	489	$870,339	139	$174,893	$3,385,628	%	$0
Fissure									
High	4	$1,165	0	$132	0	$0	$1,297	%	$0

SCOTTSDALE (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**61.08%**	**66.13%**	**62.82%**	**60.44%**	**64.50%**	**74.18%**
High	08.04%	09.74%	07.04%	10.08%	06.33%	07.78%
Medium	53.04%	56.38%	55.78%	50.36%	58.17%	66.40%
Dam Failure	**51.91%**	**49.02%**	**48.82%**	**47.94%**	**52.69%**	**63.46%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	51.91%	49.02%	48.82%	47.94%	52.69%	63.46%
Wildfire	**0.01%**	**0.02%**	**0.01%**	**0.0%**	**0.02%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.01%	0.02%	0.01%	0.0%	0.02%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.34%**	**0.24%**	**0.28%**	**0.07%**	**0.29%**	**0.12%**
High	0.34%	0.24%	0.28%	0.07%	0.29%	0.12%
Subsidence	**16.27%**	**18.98%**	**19.94%**	**25.83%**	**22.55%**	**40.54%**
High	16.27%	18.98%	19.94%	25.83%	22.55%	40.54%
Fissure	**0.01%**	**0.01%**	**0.01%**	**0.0%**	**0.0%**	**0.0%**
High	0.01%	0.01%	0.01%	0.0%	0.0%	0.0%

Table 5-35: Summary of SURPRISE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
SURPRISE (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**6,640**	**$1,320,656**	**173**	**$91,246**	**58**	**$28,956**	**$1,440,857**		
Flooding									
High	50	$4,545	1	$602	1	$770	$5,918	20%	$1,184
Medium	6,590	$1,316,111	172	$90,644	57	$28,185	$1,434,940	5%	$71,747
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	4,830	$972,197	120	$61,946	44	$23,569	$1,057,712	25%	$264,428
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$2	0	$0	$2	5%	$0
Spillway									
High	4,487	$1,019,651	140	$78,378	42	$17,223	$1,115,252	25%	$278,813
Levee Failure									
High	36	$7,541	0	$147	0	$57	$7,745	20%	$1,549
Subsidence									
High	6,381	$1,280,964	170	$89,464	52	$27,612	$1,398,040	%	$0
Fissure									
High	1	$122	0	$10	0	$2	$134	%	$0

SURPRISE (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.75%	0.34%	0.51%	0.66%	02.17%	02.66%
Medium	99.25%	99.66%	99.49%	99.34%	97.83%	97.34%
Dam Failure	**72.74%**	**73.61%**	**69.22%**	**67.89%**	**74.98%**	**81.40%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	72.74%	73.61%	69.22%	67.89%	74.98%	81.40%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**67.58%**	**77.21%**	**80.89%**	**85.90%**	**72.59%**	**59.48%**
High	67.58%	77.21%	80.89%	85.90%	72.59%	59.48%
Levee Failure	**0.55%**	**0.57%**	**0.08%**	**0.16%**	**0.29%**	**0.20%**
High	0.55%	0.57%	0.08%	0.16%	0.29%	0.20%
Subsidence	**96.10%**	**96.99%**	**98.13%**	**98.05%**	**90.22%**	**95.36%**
High	96.10%	96.99%	98.13%	98.05%	90.22%	95.36%
Fissure	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.02%**	**0.01%**
High	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%

Table 5-36: Summary of TEMPE HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
TEMPE (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**22,824**	**$6,813,557**	**1,594**	**$2,913,669**	**505**	**$1,150,565**	**$10,877,790**		
Flooding									
High	91	$28,062	14	$78,933	3	$5,113	$112,108	20%	$22,422
Medium	22,732	$6,785,368	1,580	$2,834,692	502	$1,145,448	$10,765,509	5%	$538,275
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	20,585	$6,101,113	1,378	$2,492,010	441	$985,241	$9,578,365	25%	$2,394,591
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$905	0	$1,373	$2,278	20%	$456
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

TEMPE (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.40%	0.41%	0.88%	02.71%	0.64%	0.44%
Medium	99.60%	99.59%	99.12%	97.29%	99.36%	99.56%
Dam Failure	**90.19%**	**89.54%**	**86.47%**	**85.53%**	**87.35%**	**85.63%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	90.19%	89.54%	86.47%	85.53%	87.35%	85.63%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.03%**	**0.03%**	**0.06%**	**0.12%**
High	0.0%	0.0%	0.03%	0.03%	0.06%	0.12%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-37: Summary of TOLLESON HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
TOLLESON (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**937**	**$175,940**	**66**	**$72,942**	**47**	**$234,671**	**$483,553**		
Flooding									
High	40	$8,394	3	$6,995	4	$8,084	$23,473	20%	$4,695
Medium	896	$167,546	63	$65,947	44	$226,587	$460,081	5%	$23,004
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	517	$99,576	30	$41,053	19	$82,178	$222,807	25%	$55,702
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	4	$3,888	8	$62,760	$66,647	20%	$13,329
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

TOLLESON (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	04.30%	04.77%	04.76%	09.59%	07.61%	03.44%
Medium	95.70%	95.23%	95.24%	90.41%	92.39%	96.56%
Dam Failure	**55.20%**	**56.60%**	**44.77%**	**56.28%**	**41.03%**	**35.02%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	55.20%	56.60%	44.77%	56.28%	41.03%	35.02%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**05.60%**	**05.33%**	**17.08%**	**26.74%**
High	0.0%	0.0%	05.60%	05.33%	17.08%	26.74%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-38: Summary of WICKENBURG HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
WICKENBURG (Maricopa County) HAZUS Summary	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Building Count**	**Potential Economic Impact**	**Total of All Economic Impact**	**Loss-to-Exposure**	**Total Estimated Loss (x$1000)**
Community-Wide Totals	**1,316**	**$172,575**	**83**	**$52,790**	**15**	**$12,713**	**$238,077**		
Flooding									
High	310	$44,201	11	$8,961	1	$1,267	$54,429	20%	$10,886
Medium	1,006	$128,374	72	$43,829	14	$11,446	$183,648	5%	$9,182
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	272	$35,563	19	$10,784	2	$934	$47,280	25%	$11,820
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	6	$512	0	$183	0	$149	$845	25%	$211
Levee Failure									
High	2	$320	0	$32	0	$4	$357	20%	$71
Subsidence									
High	0	$0	0	$0	0	$0	$0	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

WICKENBURG (Maricopa County) HAZUS Summary	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**	**% Building Count**	**% Potential Economic Impact**
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	23.55%	25.61%	13.46%	16.97%	08.02%	09.97%
Medium	76.45%	74.39%	86.54%	83.03%	91.98%	90.03%
Dam Failure	**20.68%**	**20.61%**	**22.89%**	**20.43%**	**12.33%**	**07.35%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	20.68%	20.61%	22.89%	20.43%	12.33%	07.35%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.49%**	**0.30%**	**0.31%**	**0.35%**	**01.80%**	**01.17%**
High	0.49%	0.30%	0.31%	0.35%	01.80%	01.17%
Levee Failure	**0.15%**	**0.19%**	**0.08%**	**0.06%**	**0.14%**	**0.03%**
High	0.15%	0.19%	0.08%	0.06%	0.14%	0.03%
Subsidence	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-39: Summary of YOUNGTOWN HAZUS Building Exposure by hazard

	RESIDENTIAL		COMMERCIAL		INDUSTRIAL		SUMMARY		
YOUNGTOWN (Maricopa County) HAZUS Summary	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Building Count	Potential Economic Impact	Total of All Economic Impact	Loss-to-Exposure	Total Estimated Loss (x$1000)
Community-Wide Totals	**871**	**$155,538**	**18**	**$9,761**	**3**	**$725**	**$166,023**		
Flooding									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	871	$155,538	18	$9,761	3	$725	$166,023	5%	$8,301
Dam Failure									
High	0	$0	0	$0	0	$0	$0	25%	$0
Medium	871	$155,538	18	$9,761	3	$725	$166,023	25%	$41,506
Wildfire									
High	0	$0	0	$0	0	$0	$0	20%	$0
Medium	0	$0	0	$0	0	$0	$0	5%	$0
Spillway									
High	0	$0	0	$0	0	$0	$0	25%	$0
Levee Failure									
High	0	$0	0	$0	0	$0	$0	20%	$0
Subsidence									
High	871	$155,538	18	$9,761	3	$725	$166,023	%	$0
Fissure									
High	0	$0	0	$0	0	$0	$0	%	$0

YOUNGTOWN (Maricopa County) HAZUS Summary	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact	% Building Count	% Potential Economic Impact
Flooding	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Dam Failure	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Wildfire	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spillway	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Levee Failure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subsidence	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
High	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Fissure	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5-40: Summary of population sectors exposed to emergency spillway inundation

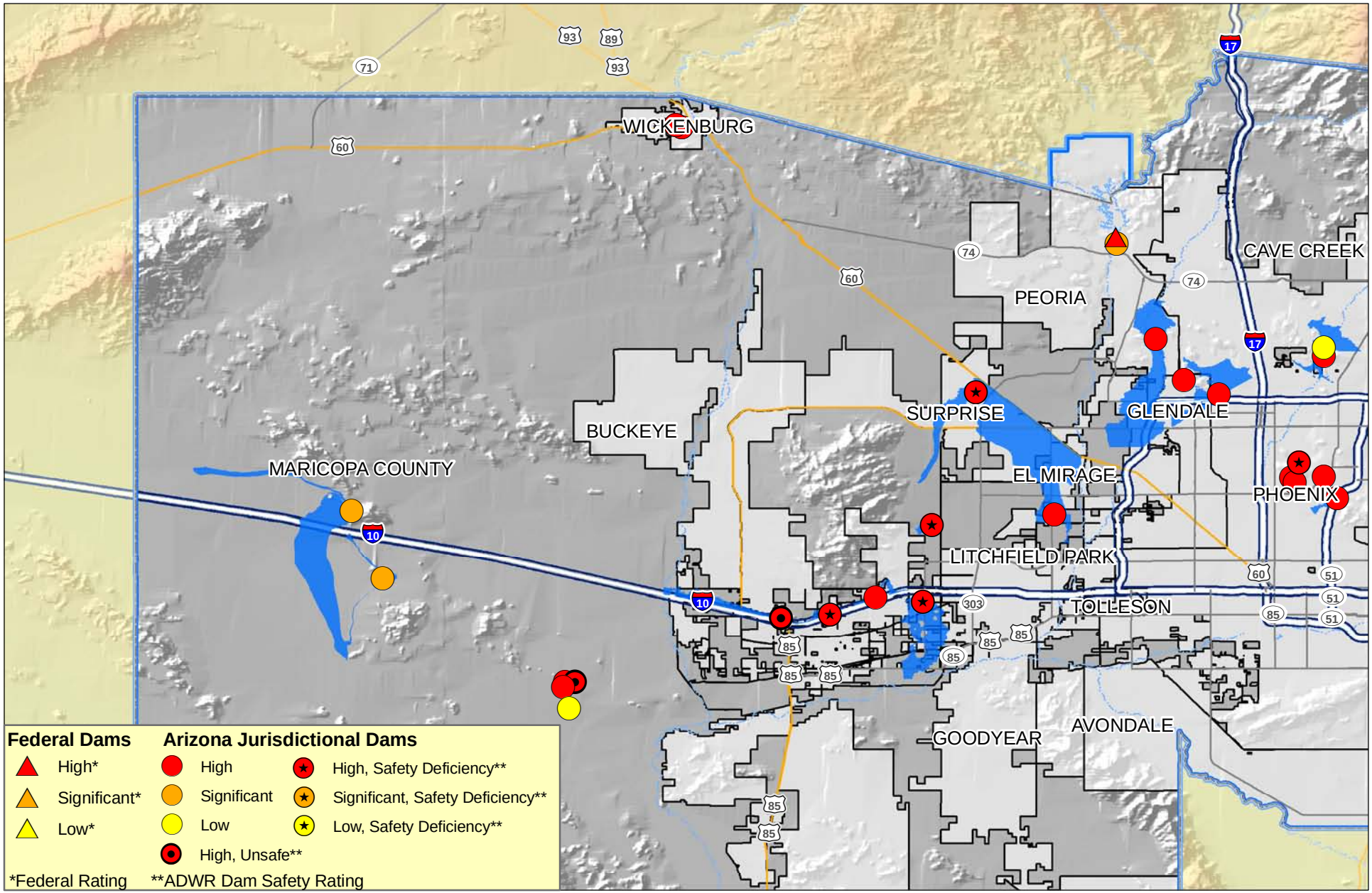
Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
County-Wide Totals	**1,522,083**	**53,424**	**3.51%**	**180,521**	**11,271**	**6.24%**	**100,684**	**2,832**	**2.81%**
Avondale	15,613	0	0.00%	855	0	0.00%	764	0	0.00%
Buckeye	3,906	71	1.81%	342	5	1.35%	344	2	0.49%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	0	0.00%	5,156	0	0.00%	3,029	0	0.00%
El Mirage	3,400	3,365	98.96%	213	211	99.05%	194	193	99.73%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	0	0.00%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	0	0.00%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	163	0.30%	1,834	7	0.39%	883	4	0.41%
Glendale	118,654	5,258	4.43%	9,169	159	1.73%	8,282	109	1.31%
Goodyear	10,967	14	0.12%	921	0	0.02%	309	0	0.03%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	9,853	9.44%	43,659	4,418	10.12%	9,288	1,077	11.59%
Mesa	189,697	5,951	3.14%	25,867	1,462	5.65%	12,410	426	3.43%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	11,470	22.99%	6,555	2,506	38.22%	1,921	400	20.85%
Phoenix	657,658	6,002	0.91%	54,037	311	0.58%	47,321	108	0.23%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	2,320	81.97%	145	113	77.56%	114	87	76.23%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	0	0.00%	15,440	0	0.00%	5,177	0	0.00%
Surprise	13,387	8,948	66.84%	3,460	2,078	60.05%	757	426	56.20%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	9	0.45%	547	3	0.51%	288	1	0.47%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

Table 5-41: Summary of population sectors exposed to dam failure

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
HIGH									
County-Wide Totals	**1,522,083**	**57,873**	**3.80%**	**180,521**	**2,310**	**1.28%**	**100,684**	**1,023**	**1.02%**
Avondale	15,613	0	0.00%	855	0	0.00%	764	0	0.00%
Buckeye	3,906	0	0.00%	342	0	0.00%	344	0	0.00%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	5,980	6.92%	5,156	270	5.23%	3,029	134	4.44%
El Mirage	3,400	0	0.00%	213	0	0.00%	194	0	0.00%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	0	0.00%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	0	0.00%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	44,383	80.84%	1,834	1,429	77.91%	883	723	81.83%
Glendale	118,654	0	0.00%	9,169	0	0.00%	8,282	0	0.00%
Goodyear	10,967	0	0.00%	921	0	0.00%	309	0	0.00%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	2,985	2.86%	43,659	139	0.32%	9,288	24	0.25%
Mesa	189,697	4,484	2.36%	25,867	470	1.82%	12,410	142	1.14%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	0	0.00%	6,555	0	0.00%	1,921	0	0.00%
Phoenix	657,658	0	0.00%	54,037	0	0.00%	47,321	0	0.00%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	41	1.45%	145	2	1.52%	114	1	0.83%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	0	0.00%	15,440	0	0.00%	5,177	0	0.00%
Surprise	13,387	0	0.00%	3,460	0	0.00%	757	0	0.00%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	0	0.00%	547	0	0.00%	288	0	0.00%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

Table 5-41: Summary of population sectors exposed to dam failure

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
MEDIUM									
County-Wide Totals	**1,522,083**	**803,661**	**52.80%**	**180,521**	**106,770**	**59.15%**	**100,684**	**58,035**	**57.64%**
Avondale	15,613	15,609	99.97%	855	855	100.00%	764	764	100.00%
Buckeye	3,906	3,670	93.95%	342	328	95.93%	344	336	97.45%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	73,872	85.48%	5,156	4,135	80.18%	3,029	2,650	87.50%
El Mirage	3,400	3,400	100.00%	213	213	100.00%	194	194	100.00%
Fountain Hills	8,759	898	10.25%	1,750	172	9.86%	387	44	11.43%
Fort McDowell Yavapai Nation	309	103	33.14%	17	0	2.58%	10	1	10.46%
Gila Bend	1,010	1	0.06%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	777	71.21%	48	34	71.16%	140	100	71.59%
Gilbert	54,901	433	0.79%	1,834	20	1.08%	883	10	1.08%
Glendale	118,654	47,363	39.92%	9,169	3,665	39.97%	8,282	2,824	34.10%
Goodyear	10,967	5,774	52.65%	921	707	76.81%	309	201	65.08%
Guadalupe	2,558	393	15.38%	125	18	14.51%	194	31	15.87%
Litchfield Park	1,350	1,350	100.00%	291	291	100.00%	39	39	100.00%
Unincorporated Maricopa County	104,385	64,515	61.80%	43,659	34,308	78.58%	9,288	7,402	79.69%
Mesa	189,697	48,515	25.58%	25,867	7,474	28.90%	12,410	3,431	27.64%
Paradise Valley	5,769	1,923	33.34%	868	188	21.63%	68	15	21.57%
Peoria	49,884	33,516	67.19%	6,555	5,334	81.37%	1,921	1,328	69.16%
Phoenix	657,658	356,803	54.25%	54,037	29,870	55.28%	47,321	27,300	57.69%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	2,287	80.81%	145	110	75.78%	114	85	74.88%
Salt River Pima-Maricopa Indian Community	6,306	5,370	85.16%	1,086	973	89.65%	842	739	87.74%
Scottsdale	92,034	49,862	54.18%	15,440	8,711	56.42%	5,177	2,899	55.99%
Surprise	13,387	10,228	76.40%	3,460	2,463	71.18%	757	578	76.34%
Tempe	80,802	73,172	90.56%	6,138	5,729	93.33%	7,051	6,521	92.49%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	1,700	55.11%	316	176	55.84%	202	112	55.46%
Wickenburg	2,093	453	21.64%	547	106	19.40%	288	59	20.50%
Youngtown	1,675	1,675	100.00%	887	887	100.00%	373	373	100.00%



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

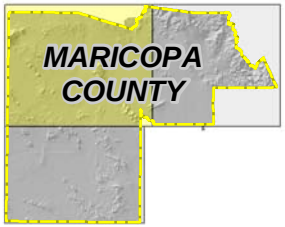
Dam Spillway Flood Hazard Rating

- High

0 40 80 160

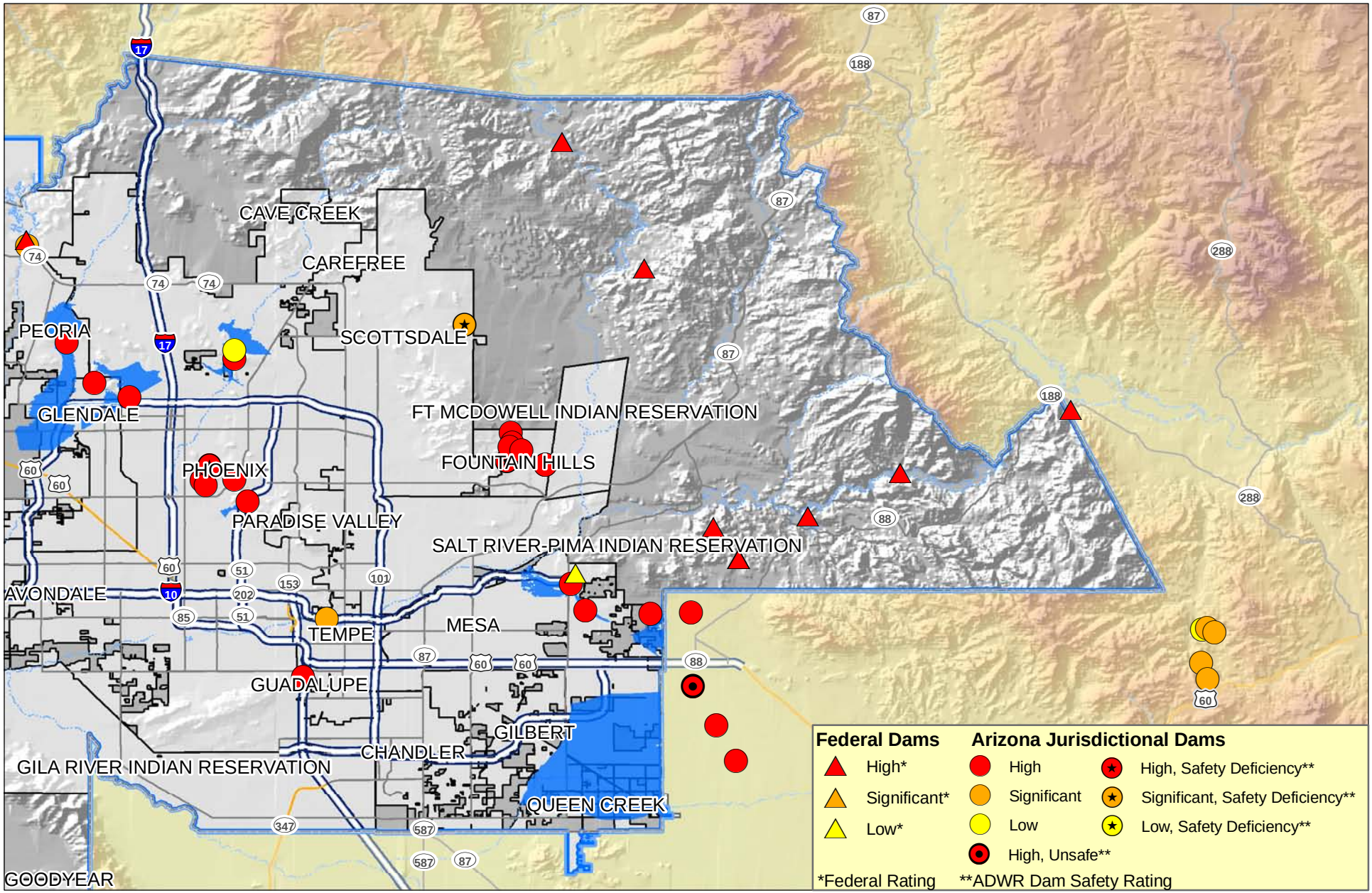
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #1A
Maricopa County
Dam Spillway
Flood Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Dam Spillway Flood Hazard Rating

- High

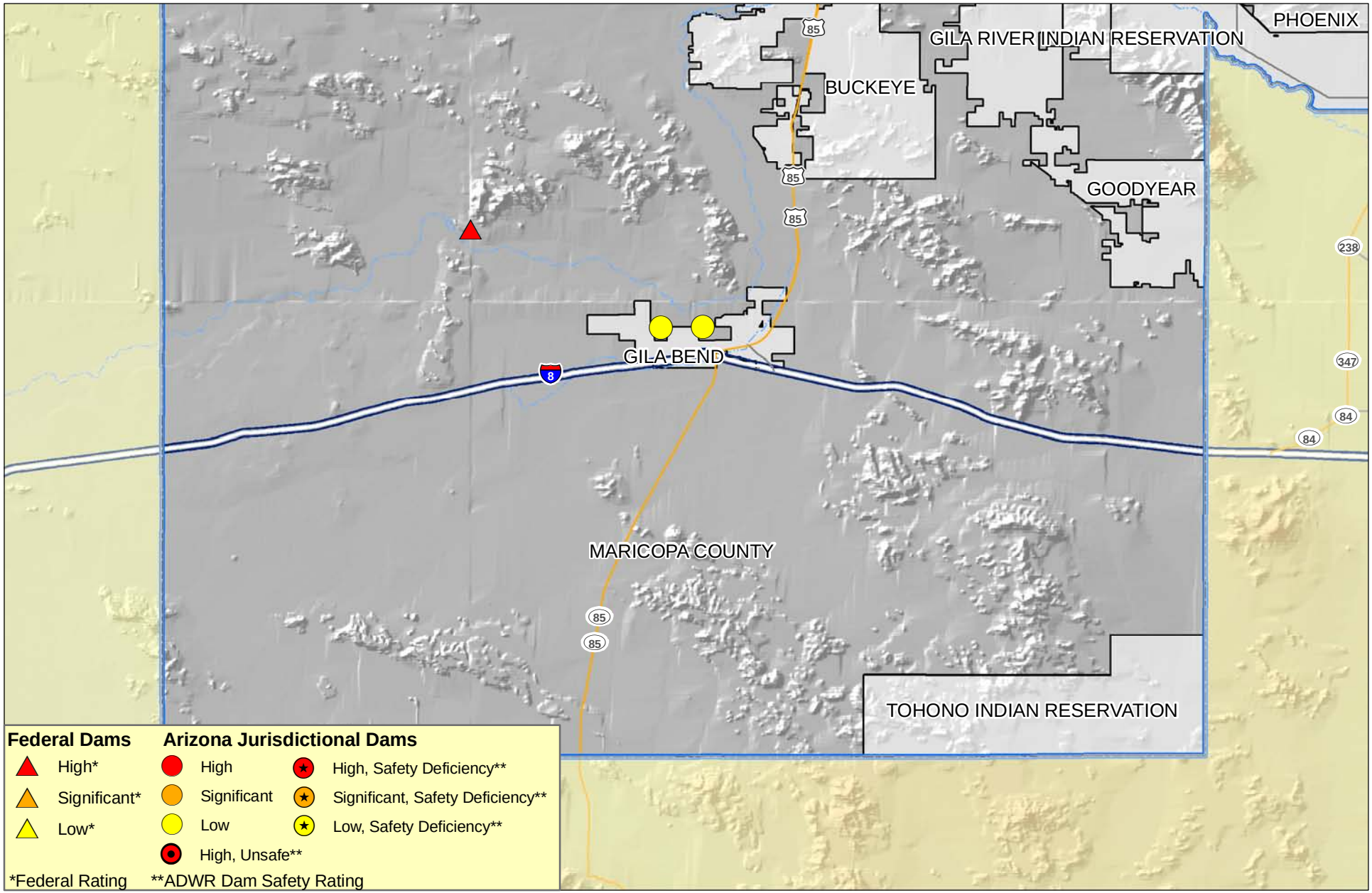
0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009

MARICOPA COUNTY

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #1B
Maricopa County
Dam Spillway
Flood Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

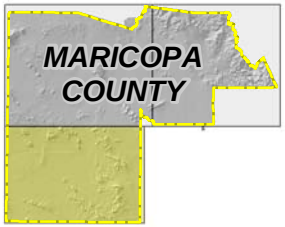
Dam Spillway Flood Hazard Rating

- High

0 40 80 160

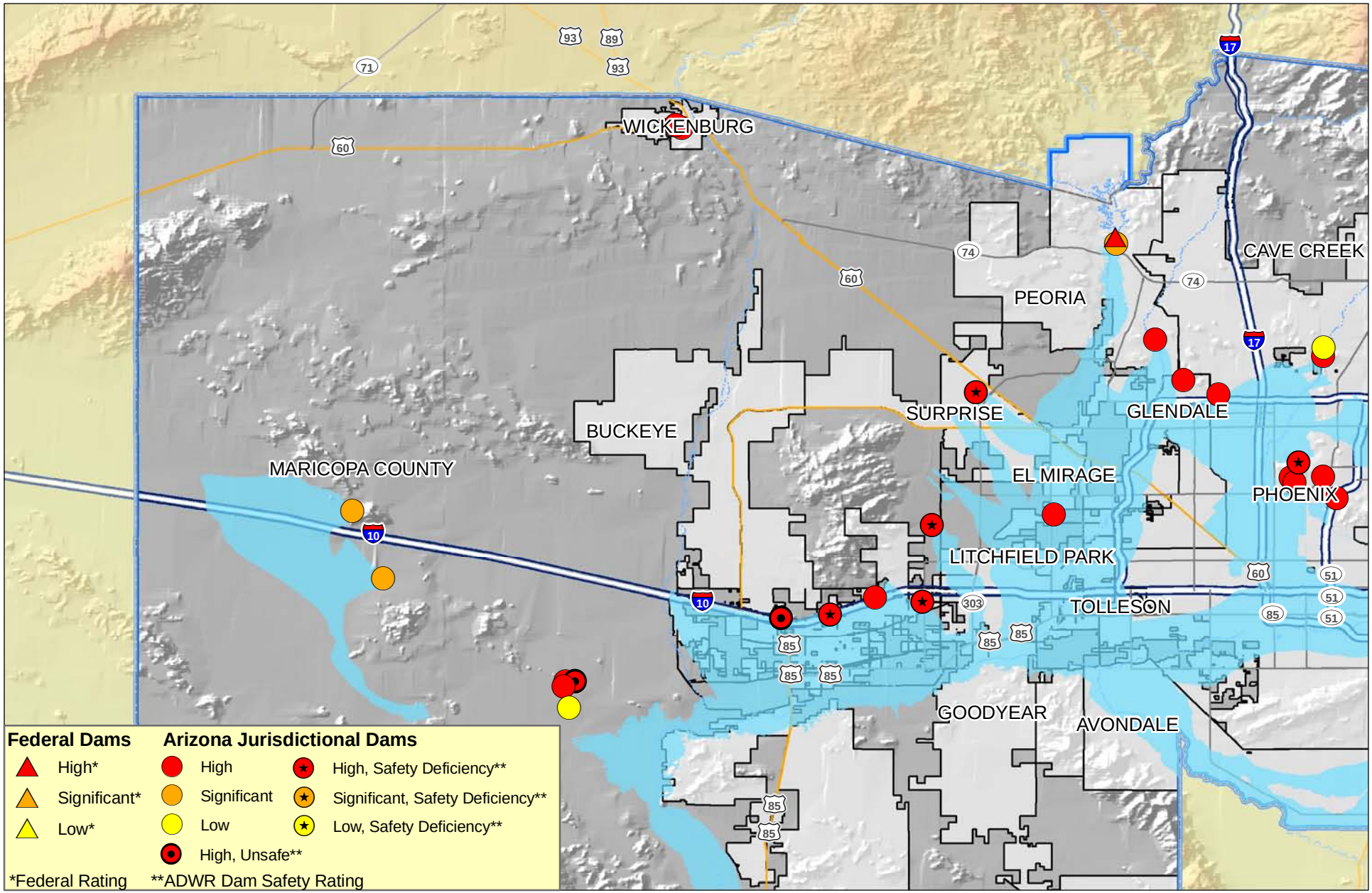
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #1C
Maricopa County
Dam Spillway
Flood Hazard Map
as of May 2009



Legend

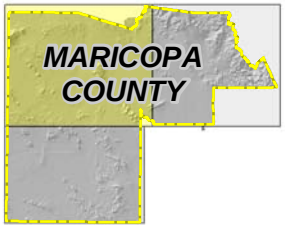
- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Potential Dam Failure Flood Hazard Rating

- High
- Medium

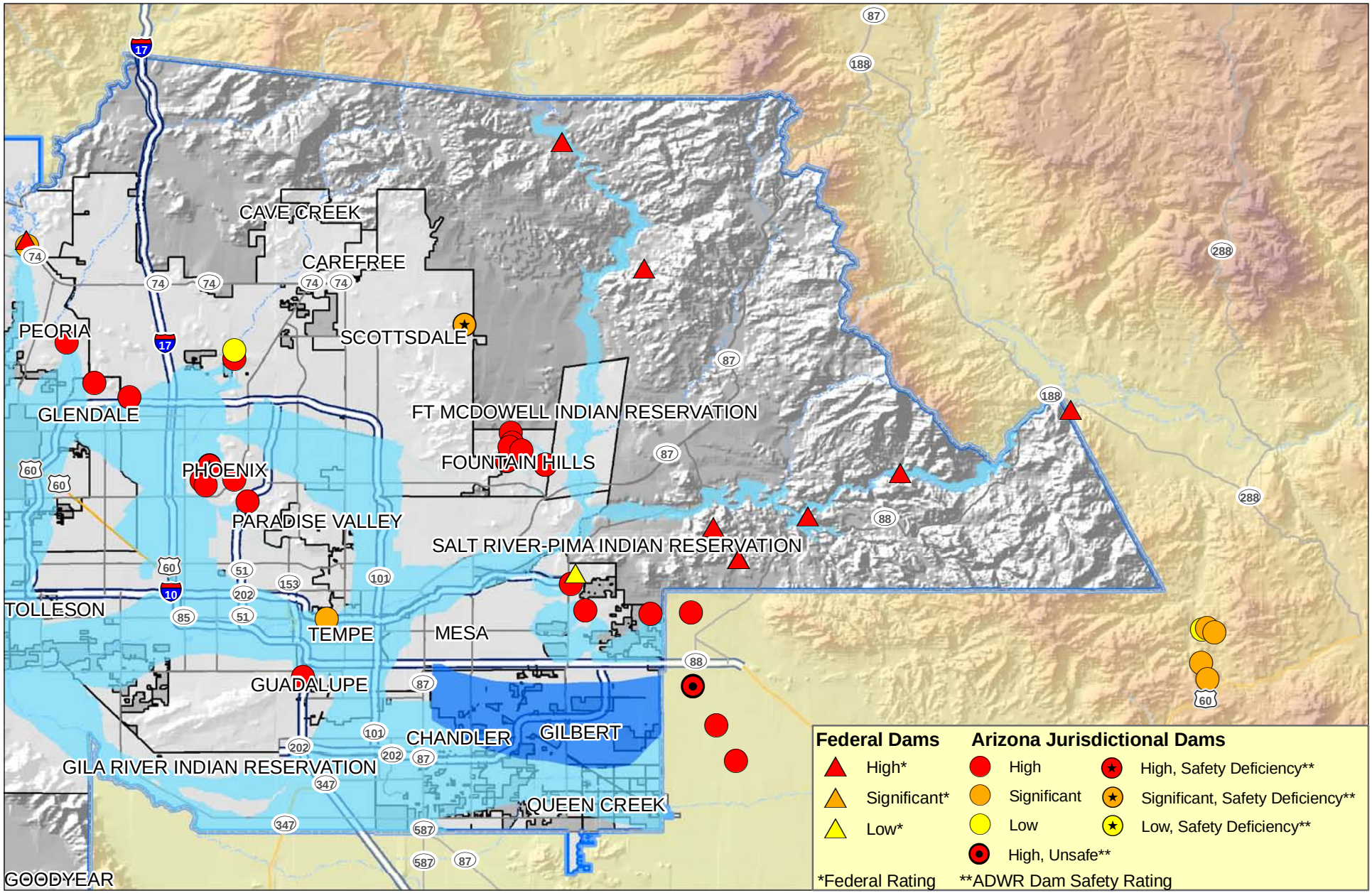
0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #2A
Maricopa County Potential Dam Failure Flood Hazard Map as of May 2009



Legend

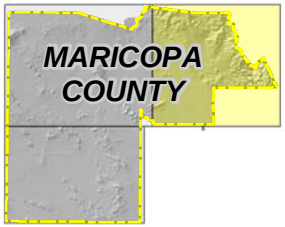
- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Potential Dam Failure Flood Hazard Rating

- High
- Medium

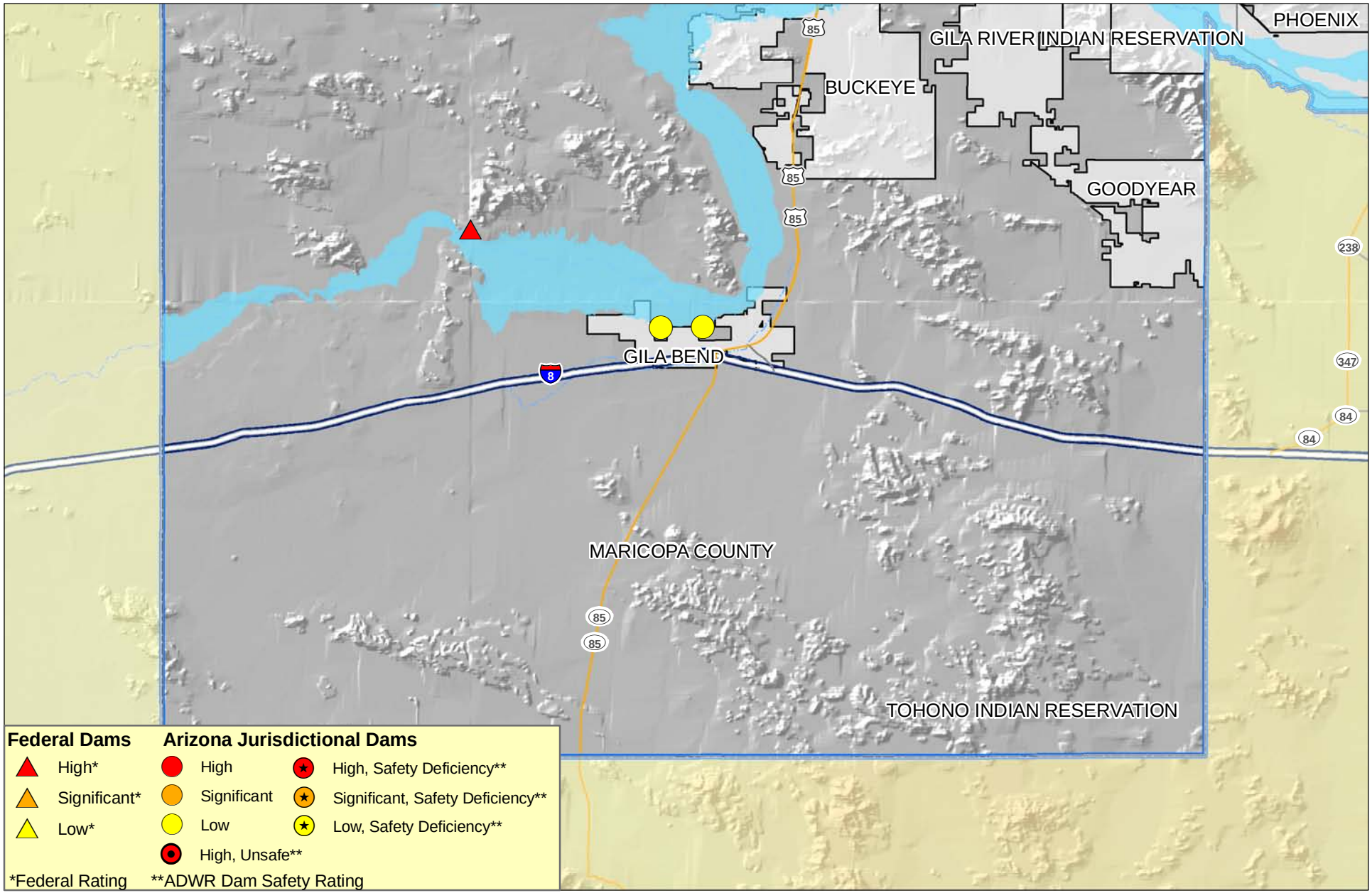
0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #2B
Maricopa County
Potential Dam Failure
Flood Hazard Map
as of May 2009



Legend

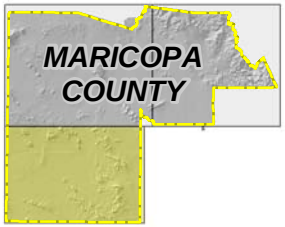
- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Potential Dam Failure Flood Hazard Rating

- High
- Medium

0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #2C
Maricopa County
Potential Dam Failure
Flood Hazard Map
as of May 2009

THIS PAGE INTENTIONALLY LEFT BLANK

5.3.2 Drought

Description

Drought is a normal part of virtually every climate on the planet, including areas of high and low rainfall. It is different from normal aridity, which is a permanent characteristic of the climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity (FEMA, 1997).

Drought is a complex natural hazard which is reflected in the following four definitions commonly used to describe it:

- Meteorological – drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
- Hydrological – drought is related to the effects of precipitation shortfalls on streamflows and reservoir, lake, and groundwater levels.
- Agricultural – drought is defined principally in terms of naturally occurring soil moisture deficiencies relative to water demands of plant life, usually arid crops.
- Socioeconomic – drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. It may also be called a water management drought.

A drought's severity depends on numerous factors, including duration, intensity, and geographic extent as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature, drought is difficult to define in exact terms and also poses difficulties in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts may cause a shortage of water for human and industrial consumption, hydroelectric power, recreation, and navigation. Water quality may also decline and the number and severity of wildfires may increase. Severe droughts may result in the loss of agricultural crops and forest products, undernourished wildlife and livestock, lower land values, and higher unemployment.

History

Arizona has experienced 17 droughts declared as drought disasters/emergencies and 93 drought events (droughts affecting multiple years are recorded as a distinct event for each year affected). Figures 5-1 and 5-2 depict the most recent precipitation data from NCDC regarding average statewide precipitation variances from normal. Between 1849 and 1905, the most prolonged period of drought conditions in 300 years occurred in Arizona (NOAA, 2003). Another prolonged drought occurred during the period of 1941 to 1965, during which time there were no spill releases into the Salt River (ADEM, 2001). The period from 1979-1983 appears to have been anomalously wet, while the rest of the historical records shows that dry conditions are most likely the normal condition for Arizona. Between 1998 and 2007, there have been more months with below normal precipitation than months with above normal precipitation.

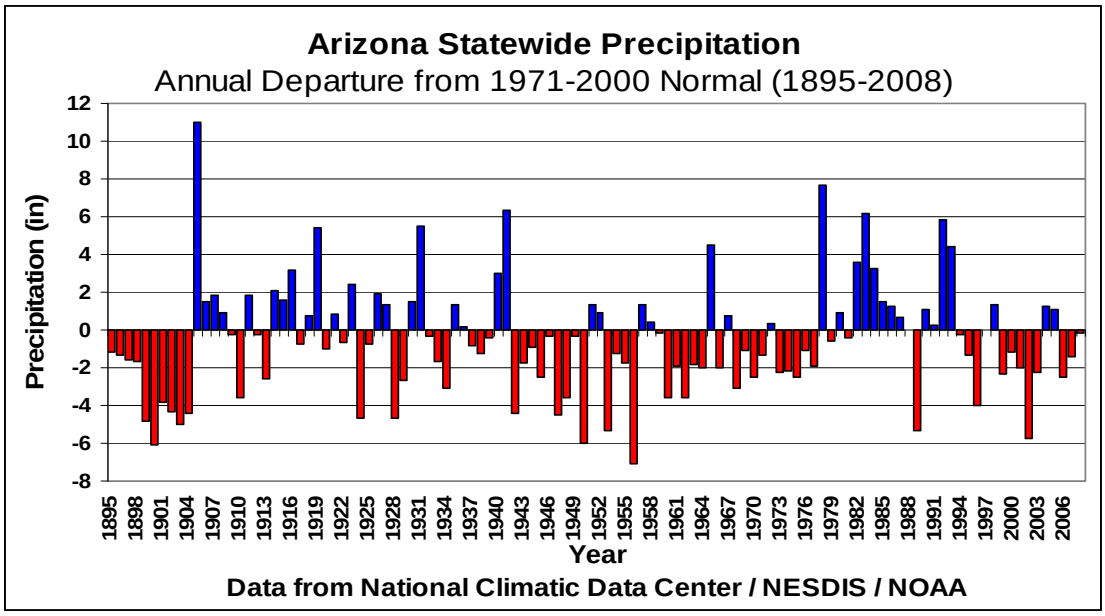


Figure 5-1: Average statewide precipitation variances from a normal based on 1971-2000 period

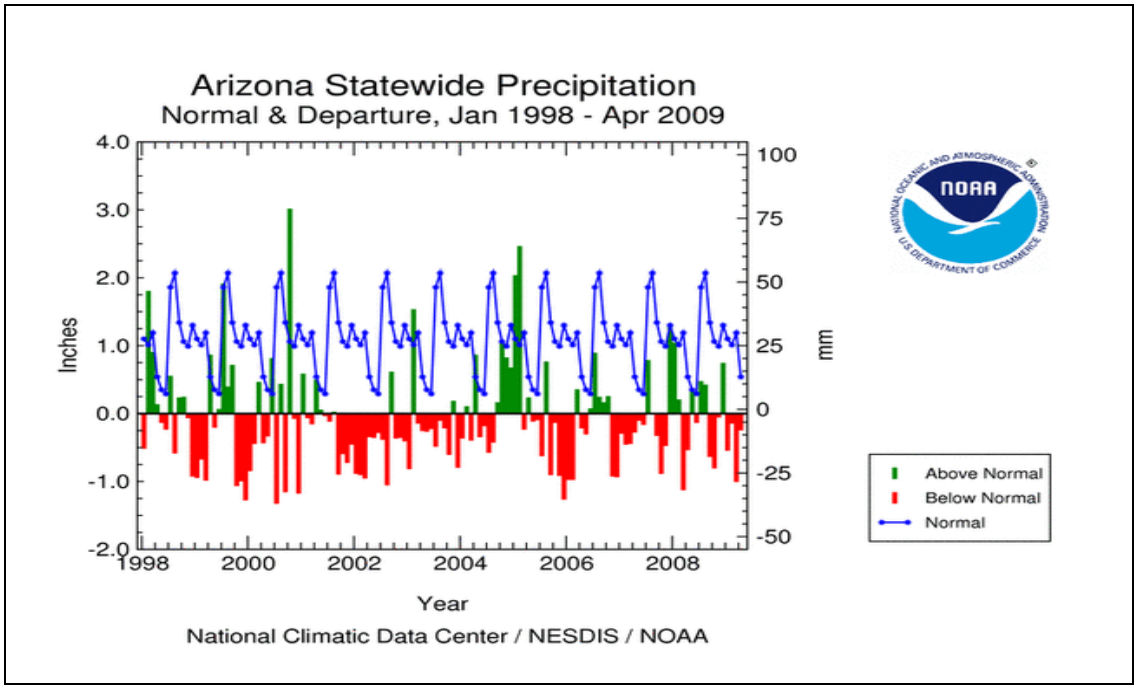


Figure 5-2: Average statewide precipitation variances from a normal based on 1998-2009 period

Maricopa County is currently in what appears to be the possible end of a drought cycle that began in 1995. Drought conditions gradually worsened until 2003, with a brief period of relief occurring during the period of winter 2004 to spring 2005. Each year after has resulted in less than normal precipitation. Other noteworthy dates include 1951 and 1991, which are the only two times in the Salt River Project's 100-year history that it has rationed water.

Compared to some areas of the State, Maricopa County and its surrounding communities are less affected by drought due to the availability of supplies from the Central Arizona Project (CAP), the Salt River Project (SRP), significant investments in recharge systems, and ground water sources (Jacobs and Morehouse, June 11-13, 2003).

Probability and Magnitude

There are no commonly accepted return period or non-exceedance probability for defining the risk from drought (such as the 100-year or 1 percent annual chance of flood). The magnitude of drought is usually measured in time and the severity of the hydrologic deficit. There are several resources available to evaluate drought status and even project very near future expected conditions.

The National Integrated Drought Information System (NIDIS) Act of 2006 (Public Law 109-430) prescribes an interagency approach for drought monitoring, forecasting, and early warning (NIDIS, 2007). The NIDIS maintains the U.S. Drought Portal[42] which is a centralized, web-based access point to several drought related resources including the U.S. Drought Monitor (USDM) and the U.S. Seasonal Drought Outlook (USSDO). The USDM, shown in Figure 5-3, is a weekly map depicting the current status of drought and is developed and maintained by the National Drought Mitigation Center. The USSDO , shown in Figure 5-4, is a six month projection of potential drought conditions developed by the National Weather Service's Climate Prediction Center. The primary indicators for these maps for the Western U.S. are the Palmer Hydrologic Drought Index and the 60-month Palmer Z-index.. The Palmer Drought Severity Index (PSDI) is a commonly used index that measures the severity of drought for agriculture and water resource management. It is calculated from observed temperature and precipitation values and estimates soil moisture. However, the Palmer Index is not considered to be consistent enough to characterize the risk of drought on a nationwide basis (FEMA, 1997) and neither of the Palmer indices are well suited to the dry, mountainous western United States.

In 2003, Governor Janet Napolitano created the Arizona Drought Task Force (ADTF), led by ADWR, which developed a statewide drought plan. The plan includes criteria for determining both short and long-term drought status for each of the 15 major watersheds in the state using assessments that are based on precipitation and stream flow. The plan also provides the framework for an interagency group which reports to the governor on drought status, in addition to local drought impact groups in each county and the State Drought Monitoring Technical Committee. Twice a year this interagency group reports to the governor on the drought status and the potential need for drought declarations. The counties use the monthly drought status reports to implement drought actions within their drought plans. The State Drought Monitoring Technical Committee uses the Standardized Precipitation Index (SPI) for the short-term drought status and a combination of the SPI and streamflow for the long-term drought status. Figures 5-5 and 5-6, present the most current short and long term maps available as of the writing of this plan.

Each of the four maps show general agreement and indicate that portions of Maricopa County currently remain in a drought condition with abnormally dry conditions and no expected improvement or worsening over the next six months.

[42] NIDIS U.S. Drought Portal website is located at: http://www.drought.gov/portal/server.pt/community/drought.gov/202

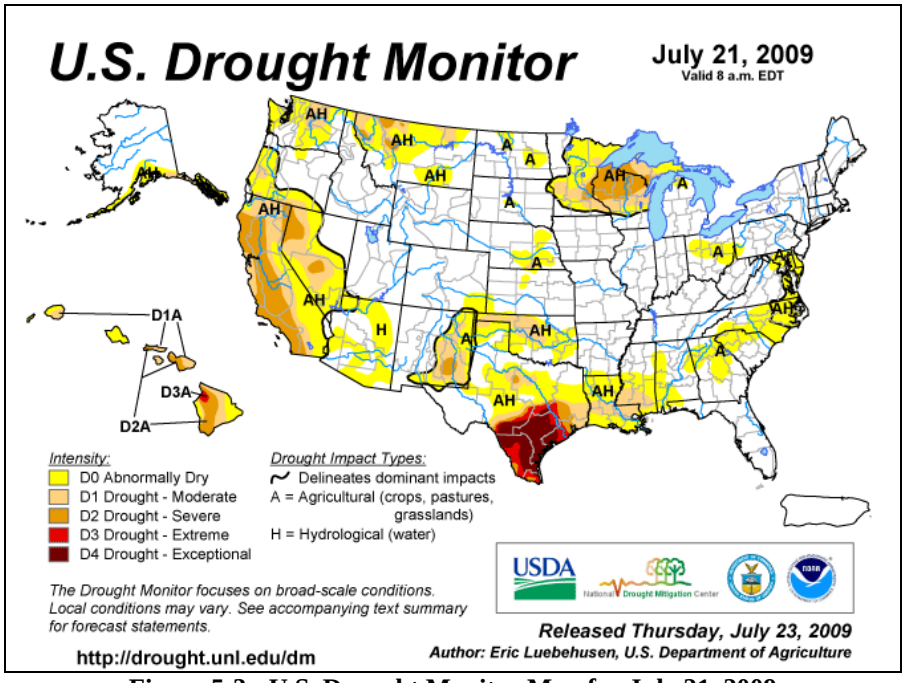


Figure 5-3: U.S. Drought Monitor Map for July 21, 2009

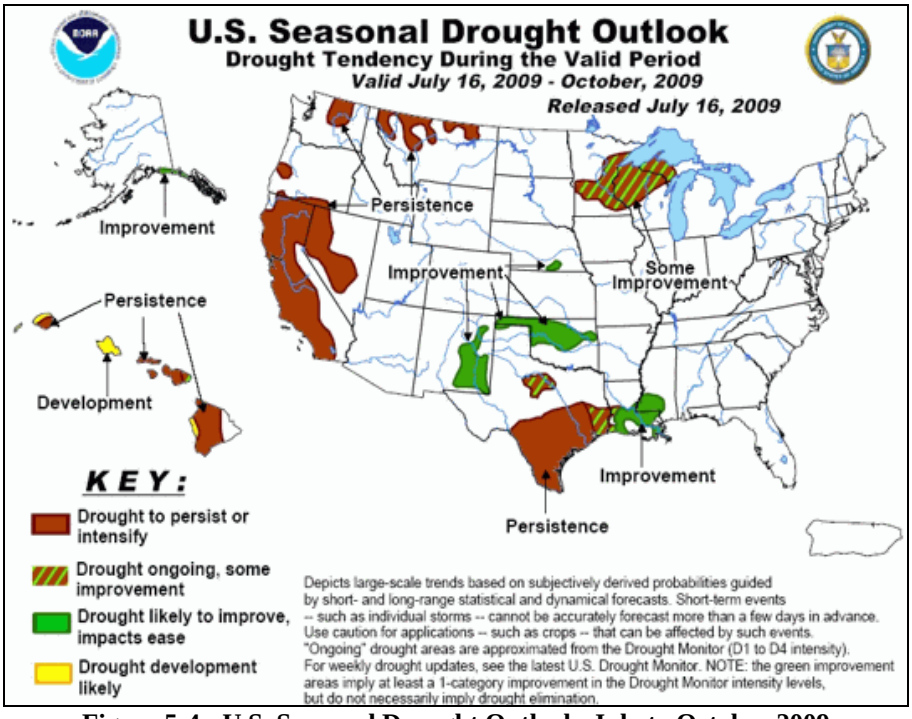


Figure 5-4: U.S. Seasonal Drought Outlook, July to October 2009

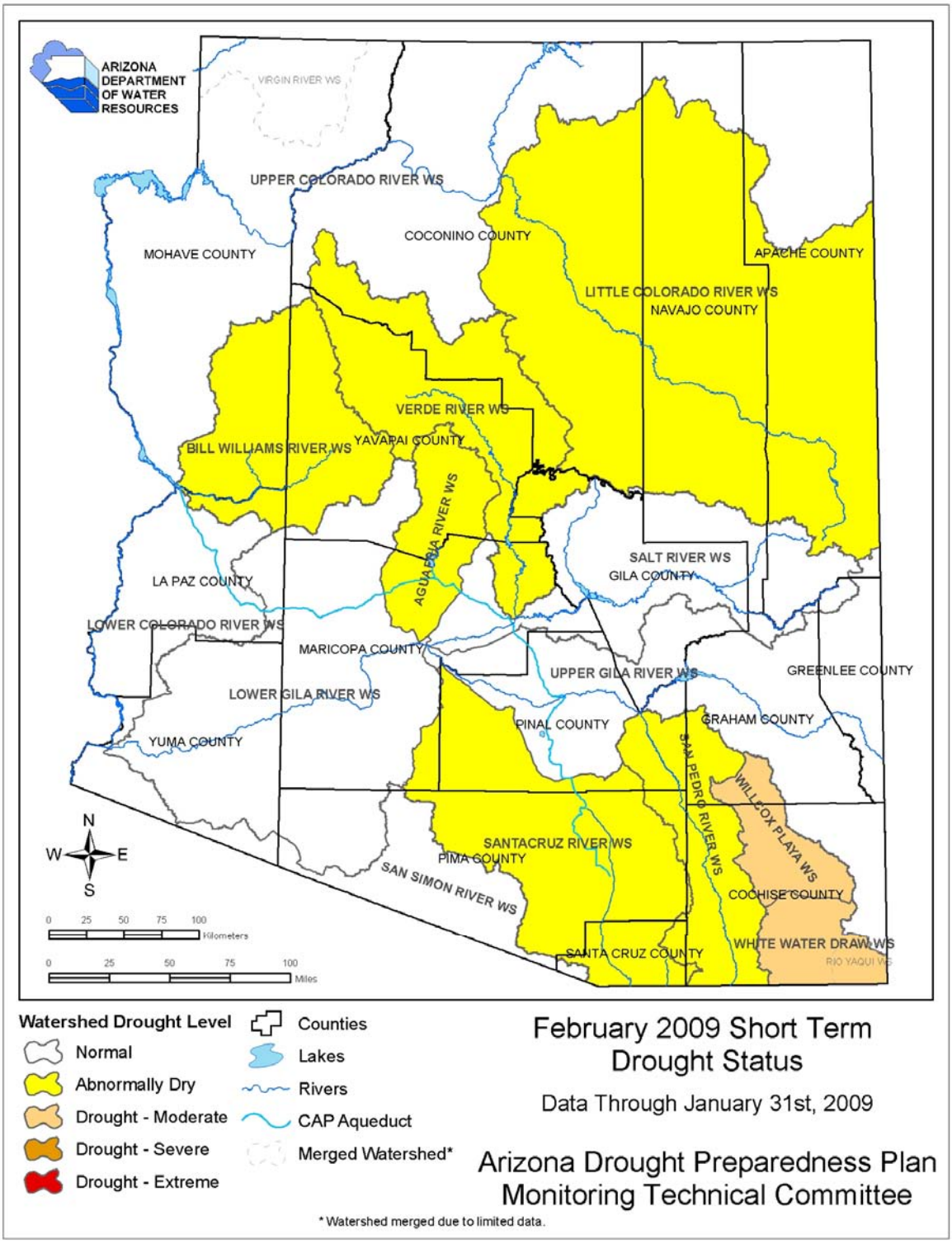


Figure 5-5: Arizona short term drought status map for February 2009

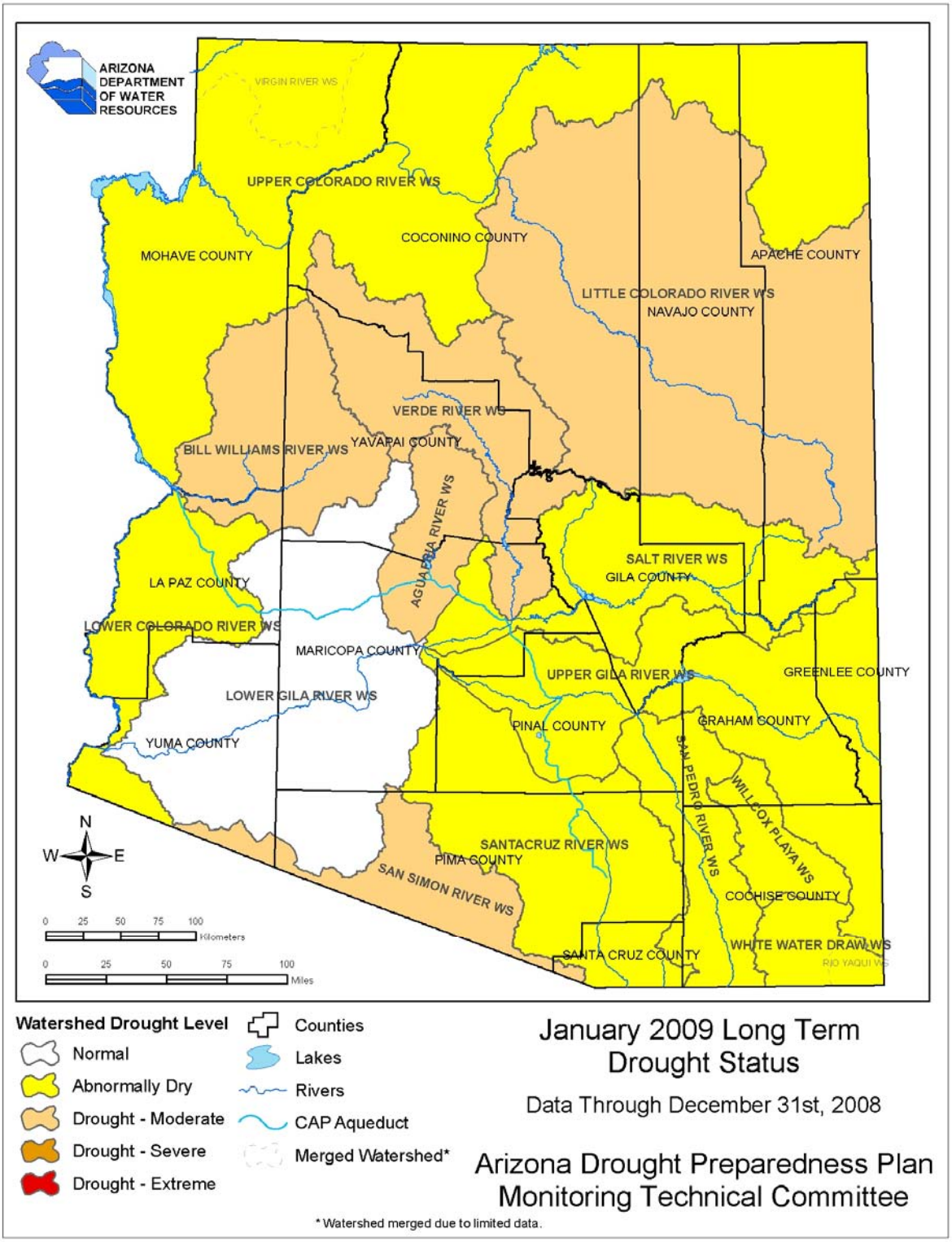


Figure 5-6: Arizona long term drought status map for January 2009

When attempting to evaluate the probability and magnitude of drought in Maricopa County, it is helpful to remember that potable water in Maricopa County is derived from both surface water and groundwater. Surface water to Maricopa County users comes from two sources, the Colorado River, (through the Central Arizona Project (CAP) Canal), and in-state rivers (including streams and lakes). This surface water is a major renewable resource for the county, but can vary dramatically between years, seasons, and locations due to the state's desert climate. In order to lessen the impact of such variations, water storage reservoirs and delivery systems have been constructed throughout the county, the largest of which are located on the Salt River, Verde River, Gila River, and Agua Fria River.

The other major source of water for Maricopa County is groundwater. This water has been pumped out of large subsurface natural reservoirs known as aquifers. While a significant supply of water remains stored in the aquifers, groundwater has historically been pumped out much more rapidly than it can be replenished through natural recharge, and has lead to a condition known as overdraft. In 1980, Arizona implemented the Groundwater Management Code in order to promote conservation and long-range planning of water resources, including reducing reliance on groundwater supplies. Active Management Areas (AMAs) were formed based on groundwater basin areas and Maricopa County is mostly covered under the Phoenix AMA.

Reclaimed water, or effluent, is the only increasing source of water in the county, although it constitutes only a small amount of the overall water used. As the regional population grows; however, increasing amounts of reclaimed water will be available for agricultural, golf course, and landscape irrigation, as well as industrial cooling, and maintenance of wildlife areas.

Vulnerability – CPRI Results

Drought CPRI results for each community are summarized in Table 5-42 below.

Table 5-42: Summary of CPRI results by jurisdiction for drought

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Likely	Limited	>24 hours	>1 week	2.50
Buckeye	Likely	Limited	>24 hours	>1 week	2.50
Carefree	Highly Likely	Limited	12-24 hours	>1 week	2.95
Cave Creek	Highly Likely	Limited	>24 hours	<24 hours	2.75
Chandler	Highly Likely	Limited	>24 hours	>1 week	2.95
El Mirage	Highly Likely	Critical	>24 hours	>1 week	3.25
Fountain Hills	Likely	Limited	>24 hours	>1 week	2.50
Fort McDowell Yavapai Nation	Possibly	Limited	>24 hours	>1 week	2.05
Gila Bend	Unlikely	Negligible	<6 hours	>1 week	1.75
Gilbert	Likely	Limited	>24 hours	>1 week	2.50
Glendale	Likely	Negligible	>24 hours	>1 week	2.20
Goodyear	Highly Likely	Limited	>24 hours	>1 week	2.95
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Possibly	Negligible	>24 hours	>1 week	1.75
Unincorporated Maricopa County	Highly Likely	Negligible	>24 hours	>1 week	2.65
Mesa	Likely	Limited	>24 hours	>1 week	2.50
Paradise Valley	Likely	Limited	>24 hours	<1 week	2.40
Peoria	Highly Likely	Critical	>24 hours	>1 week	3.25
Phoenix	Highly Likely	Critical	>24 hours	>1 week	3.25
Queen Creek	Possibly	Limited	>24 hours	>1 week	2.05
Salt River Pima-Maricopa Indian Community	Likely	Limited	>24 hours	>1 week	2.50
Salt River Project	Highly Likely	Limited	>24 hours	>1 week	2.95
Scottsdale	Possibly	Negligible	>24 hours	>1 week	1.75
Surprise	Possibly	Limited	>24 hours	>1 week	2.05
Tempe	Highly Likely	Limited	>24 hours	>1 week	2.95
Tolleson	Possibly	Critical	>24 hours	>1 week	2.35
Wickenburg	Highly Likely	Critical	>24 hours	>1 week	3.25
Youngtown	Likely	Critical	>24 hours	>1 week	2.80
				County-wide average CPRI =	**2.53**

Vulnerability – Loss Estimations

No standardized methodology exists for estimating losses due to drought and drought does not generally have a direct impact on critical and non-critical facilities and building stock. A direct correlation to loss of human life due to drought is improbable for Maricopa County. Instead, drought vulnerability is primarily measured by its potential impact to certain sectors of the County economy and natural resources include the following:

- Crop and livestock agriculture
- Municipal and industrial water supply
- Recreation/tourism
- Wildlife and wildlife habitat

Sustained drought conditions will also have secondary impacts to other hazards such as fissures, flooding, subsidence and wildfire. Extended drought may weaken and dry the grasses, shrubs, and trees of wildfire areas, making them more susceptible to ignition. Drought also tends to reduce the vegetative cover in watersheds, and hence decrease the interception of rainfall and increase the flooding hazard. Subsidence and fissure conditions are aggravated when lean surface water supplies force the pumping of more groundwater to supply the demand without the benefit of recharge from normal rainfall.

From 1995 to 2006, Maricopa County farmers and ranchers received over $11.4 million in disaster related assistance funding from the U.S Department of Agriculture (USDA) for crop and livestock damages. Over $8.7 million of those funds were received from 1999 to 2003, which corresponds to the most severe period of the current drought cycle. According to the USDA, 35 to 55 percent of the disaster assistance money (USDA, 2004), in the last 10 years (1994-2004) can be attributed to drought related losses. Accordingly, at least $5-6 million of these losses are likely drought related and $4-5 million occurred in the span of 4 years. It is therefore realistic to expect at least $1-2 million in agriculture related drought losses in a given year of severe drought conditions. Other direct costs such as increased pumping costs due to lowering of groundwater levels and costs to expand water infrastructure to compensate for reduced yields or to develop alternative water sources, are a significant factor but very difficult estimate due to a lack of documentation. There are also the intangible costs associated with lost tourism revenues, and impacts to wildlife habitat and animals. Typically, these impacts are translated into the general economy in the form of higher food and agricultural goods prices and increase utility costs.

Vulnerability – Development Trends

Population growth in Maricopa County will also require additional water to meet the thirsty demands of potable, landscape, and industrial uses. All new residential, commercial, and/or industrial developments within the County that are comprised of 6 or more parcels and at least one parcel less than 36 acres in size, are required to demonstrate an Assured and Adequate Water Supply, as administered by ADWR. All water service providers operating within the Phoenix AMA are required to comply with this requirement. The ADTF is also working cooperatively with water providers within the State to develop System Water Plans that are comprised of three components:

- *Water Supply Plan* – describes the service area, transmission facilities, monthly system production data, historic demand for the past five years, and projected demands for the next five, 10 and 20 years.
- *Drought Preparedness Plan* – includes drought and emergency response strategies, a plan of action to respond to water shortage conditions, and provisions to educate and inform the public.
- *Water Conservation Plan* – addresses measures to control lost and unaccounted for water, considers water rate structures that encourage efficient use of water, and plans for public information and education programs on water conservation.

The combination of these requirements will work to ensure that future development in Maricopa County will address of recognize drought.

Sources

Arizona Department of Water Resources, 2009, http://www.azwater.gov/AzDWR/SurfaceWater/DamSafety/default.htm

Arizona Division of Emergency Management, 2001, A*rizona's Plan to Mitigate Hazards – Draft*.

Arizona Division of Emergency Management, 2009, *State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT*.

Federal Emergency Management Agency,1997, *Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy.*

Jacobs, Katharine and Morehouse, Barbara. June 11-13, 2003. "Improved Drought Planning for Arizona," from Conference on Water, Climate, and Uncertainty: Implications for Western Water Law, Policy and Management http://www.water.az.gov/gdtf/content/files/06262003/Improved_Drought_Planning_for_AZ_6-17.pdf

National Integrated Drought Information System, 2007, *National Integrated Drought Information System Implementation Plan*, NOAA.

URS, 2004, *Maricopa County Hazard Mitigation Plan*

U.S. Department of Agriculture, 2004, *News Release No. fs0199.04,* http://www.usda.gov/Newsroom/fs0199.04.html

Profile Maps

No profile maps are provided.

THIS PAGE INTENTIONALLY LEFT BLANK

5.3.3 Extreme Heat

Description

Extreme Heat is the combination of very high temperatures and exceptionally humid conditions that exceed regionally based indices for perceived risk. The major human risks associated with extreme heat are as follows:

- *Heat Cramps:* May occur in people unaccustomed to exercising in the heat and generally ceases to be a problem after acclimatization.
- *Heat Syncope:* This refers to sudden loss of consciousness and is typically associated with people exercising who are not acclimated to warm temperatures. Causes little or no harm to the individual.
- *Heat Exhaustion:* While much less serious than heatstroke, heat exhaustion victims may complain of dizziness, weakness, or fatigue. Body temperatures may be normal or slightly to moderately elevated. The prognosis is usually good with fluid treatment.
- *Heatstroke:* Considered a medical emergency, heatstroke is often fatal. It occurs when the body's responses to heat stress are insufficient to prevent a substantial rise in the body's core temperature. While no standard diagnosis exists, a medical heatstroke condition is usually diagnosed when the body's temperature exceeds 105°F due to environmental temperatures. Rapid cooling is necessary to prevent death, with an average fatality rate of 15 percent even with treatment.

In addition to affecting people, extreme heat places significant stress on plants and animals leading to reduced agricultural yields and increased mortality rates.

History

For the period of 1992 to 2008, there were 537 deaths attributed to excessive natural heat in Maricopa County, with 80 and 85 of those deaths occurring in 2005 and 2006, respectively (Mrela, C.K., 2004 and MCDPH, 2009). The overwhelming majority of those deaths occurred during the hot summer months of June, July and August. Figure 5-7 is an excerpt from the Maricopa County Department of Public Health (MCDPH) report showing the distribution of deaths for 2008.

Probability/Magnitude

There are no recurrence or non-exceedance probabilities developed for extreme heat events in Maricopa County. The National Weather Service (NWS) Warning and Forecast Office (WFO) in Phoenix, with the technical support of the University of Maryland, designed a science-based, customized, extreme heat derivation technique developed specifically for the Phoenix metropolitan region. During Arizona's hottest months, the NWS WFO in Phoenix issues three types of heat-related messages, which are based on four factors – temperature, humidity, amount of cloudiness, and the expected duration of these conditions. The combination of factors that will trigger one of these heat-related messages varies according to the time of year. For example, a combination of factors that would result in an excessive heat warning in early May might not result in one in mid-July. The three NWS WFO products are:

a. *Heat Advisory* – issued when the temperature is forecast to be unusually hot but not life-threatening.

b. *Excessive Heat Watch* – issued when conditions are likely to result in a life-threatening heat emergency within the next 24 to 48 hours.

c. *Excessive Heat Warning* – issued when a life-threatening heat emergency exists or is imminent.

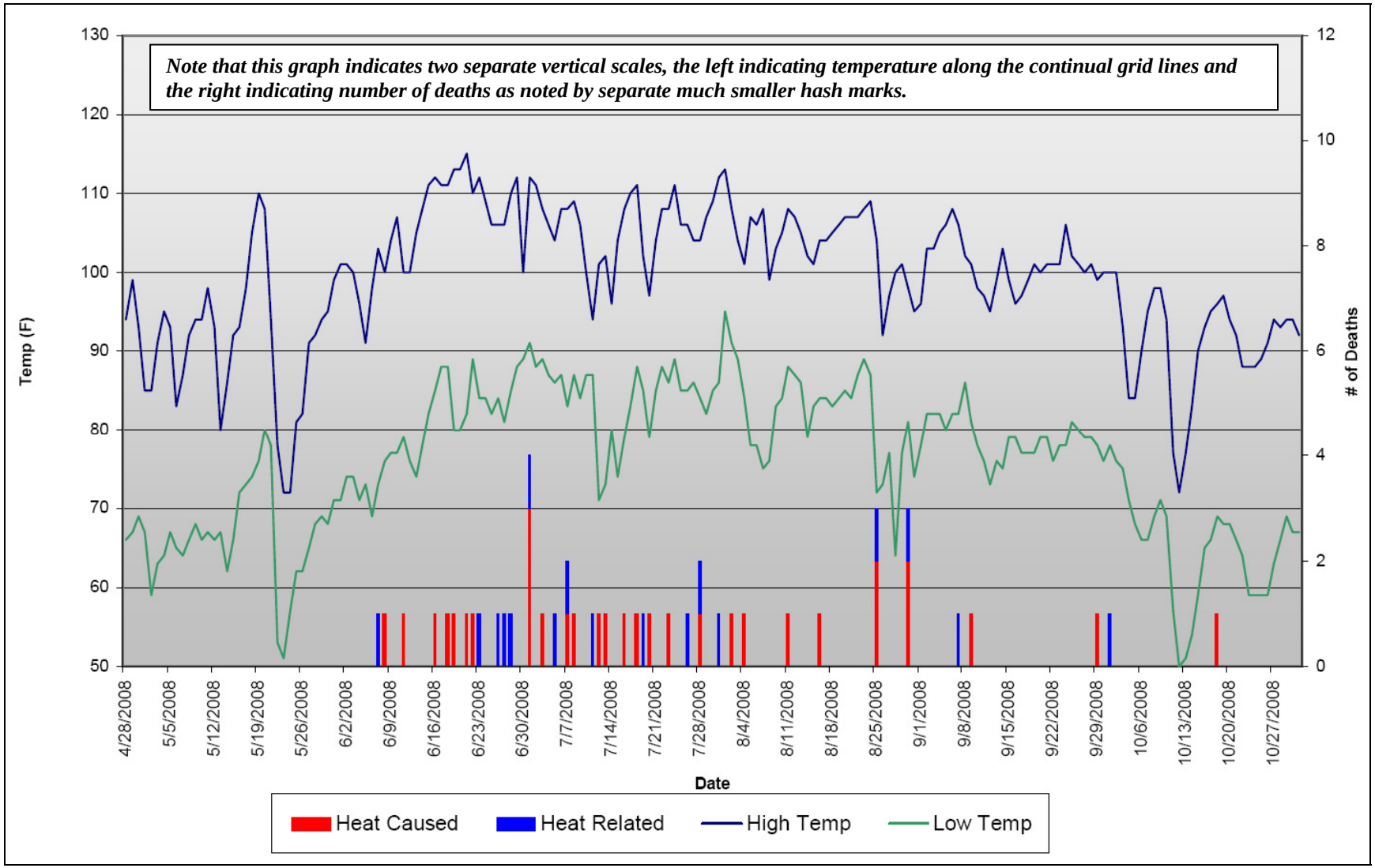


Figure 5-7: 2008 heat caused/related deaths by temperature and date

These products are intended to raise the public's awareness to prevent heat illnesses from occurring. When the NWS WFO Phoenix issues one of its heat products, it should serve as a signal that on that day outdoor activities are not "business as usual.". If significantly hot weather is forecast, the NWS WFO Phoenix will issue an Excessive Heat Watch generally two to three days in advance. An Excessive Heat Watch is a way to give the public and emergency officials a "heads up" that extreme temperatures are expected. If significantly hot temperatures remain in the forecast for today or tomorrow, the Excessive Heat Watch will be upgraded to an Excessive Heat Warning, indicating that extreme heat has either arrived or is expected shortly (NWS-WFO Phoenix, 2009). Figure 5-8 shows a table of maximum and minimum excessive heat threshold values determined for the Phoenix metropolitan area and published by the NWS WFO Phoenix office.

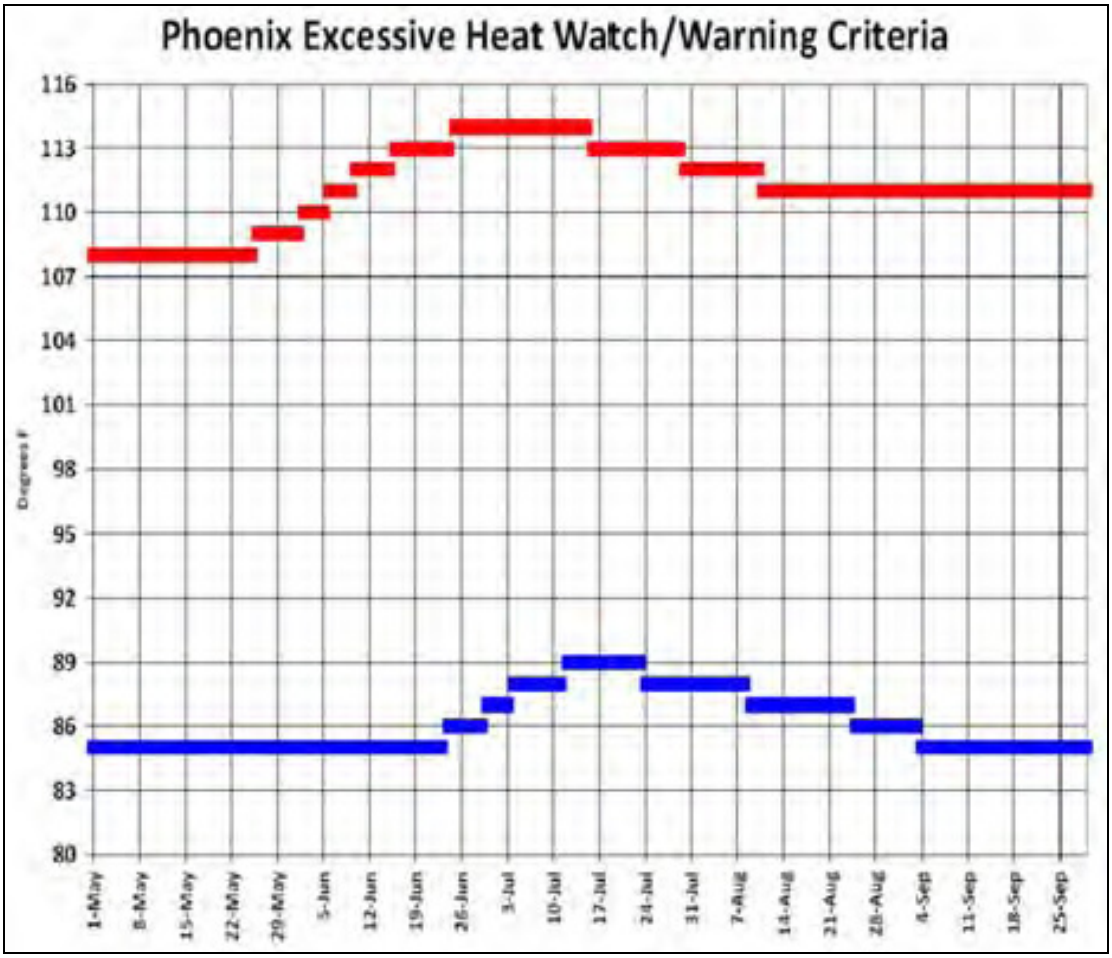
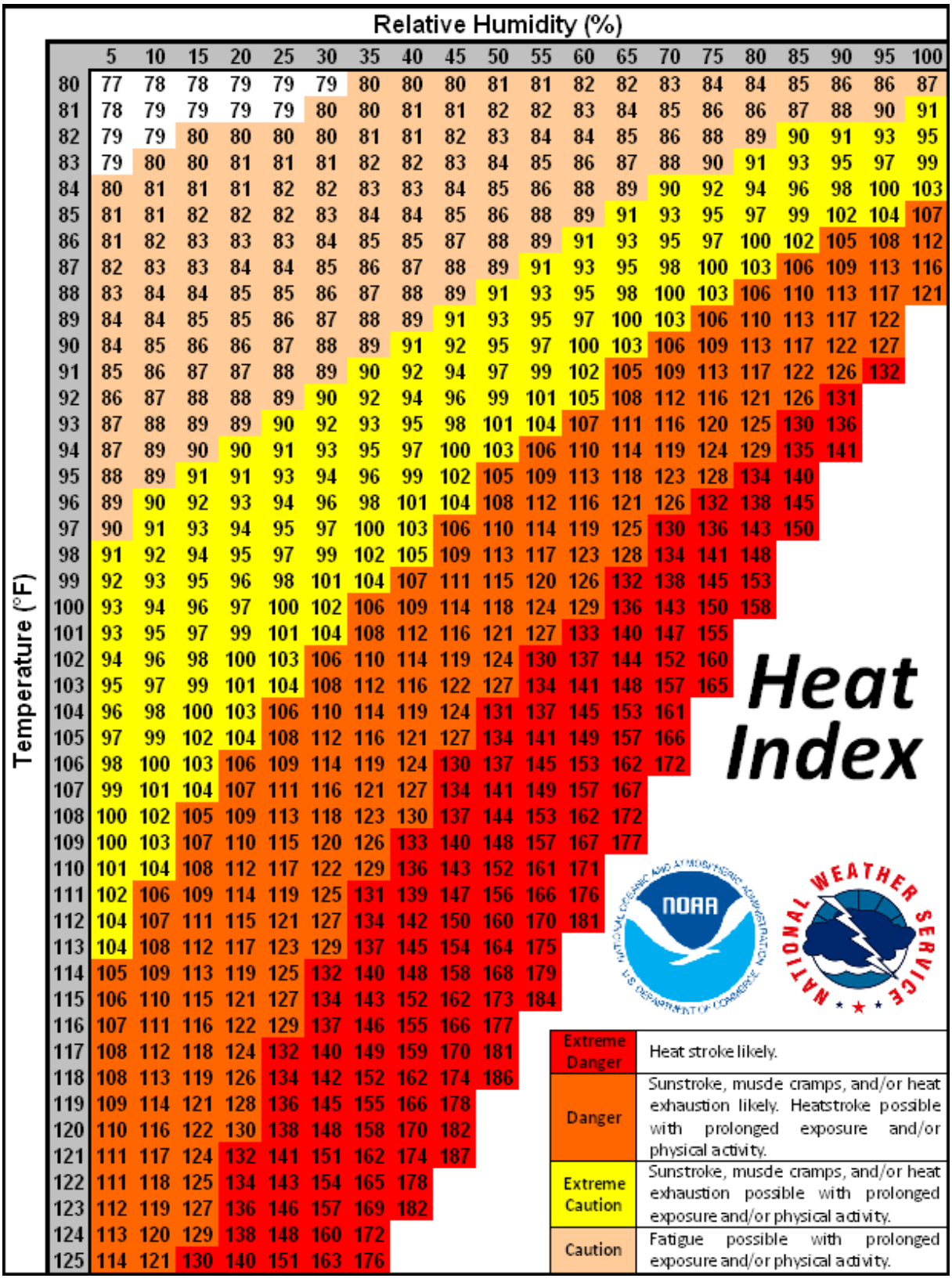


Figure 5-8: Phoenix excessive heat watch/warning criteria

Another indicator of the degree of danger associated with extreme heat is the Heat Index (HI) or the "Apparent Temperature". According the NWS, the HI is an accurate measure of how hot it really feels when the Relative Humidity (RH) is added to the actual air temperature. Figure 5-9 is a quick reference published by the NWS that shows the HI based on current temperature and relative humidity, and levels of danger for HI values.



Temp (°F)	RH 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
80	77	78	78	79	79	79	80	80	80	81	81	82	82	83	84	84	85	86	86	87
81	78	79	79	79	79	80	80	81	81	82	82	83	84	85	86	86	87	88	90	91
82	79	79	80	80	80	80	81	81	82	83	84	84	85	86	88	89	90	91	93	95
83	79	80	80	81	81	81	82	82	83	84	85	86	87	88	90	91	93	95	97	99
84	80	81	81	81	82	82	83	83	84	85	86	88	89	90	92	94	96	98	100	103
85	81	81	82	82	82	83	84	84	85	86	88	89	91	93	95	97	99	102	104	107
86	81	82	83	83	83	84	85	85	87	88	89	91	93	95	97	100	102	105	108	112
87	82	83	83	84	84	85	86	87	88	89	91	93	95	98	100	103	106	109	113	116
88	83	84	84	85	85	86	87	88	89	91	93	95	98	100	103	106	110	113	117	121
89	84	84	85	85	86	87	88	89	91	93	95	97	100	103	106	110	113	117	122	
90	84	85	86	86	87	88	89	91	92	95	97	100	103	106	109	113	117	122	127	
91	85	86	87	87	88	89	90	92	94	97	99	102	105	109	113	117	122	126	132	
92	86	87	88	88	89	90	92	94	96	99	101	105	108	112	116	121	126	131		
93	87	88	89	89	90	92	93	95	98	101	104	107	111	116	120	125	130	136		
94	87	89	90	90	91	93	95	97	100	103	106	110	114	119	124	129	135	141		
95	88	89	91	91	93	94	96	99	102	105	109	113	118	123	128	134	140			
96	89	90	92	93	94	96	98	101	104	108	112	116	121	126	132	138	145			
97	90	91	93	94	95	97	100	103	106	110	114	119	125	130	136	143	150			
98	91	92	94	95	97	99	102	105	109	113	117	123	128	134	141	148				
99	92	93	95	96	98	101	104	107	111	115	120	126	132	138	145	153				
100	93	94	96	97	100	102	106	109	114	118	124	129	136	143	150	158				
101	93	95	97	99	101	104	108	112	116	121	127	133	140	147	155					
102	94	96	98	100	103	106	110	114	119	124	130	137	144	152	160					
103	95	97	99	101	104	108	112	116	122	127	134	141	148	157	165					
104	96	98	100	103	106	110	114	119	124	131	137	145	153	161						
105	97	99	102	104	108	112	116	121	127	134	141	149	157	166						
106	98	100	103	106	109	114	119	124	130	137	145	153	162	172						
107	99	101	104	107	111	116	121	127	134	141	149	157	167							
108	100	102	105	109	113	118	123	130	137	144	153	162	172							
109	100	103	107	110	115	120	126	133	140	148	157	167	177							
110	101	104	108	112	117	122	129	136	143	152	161	171								
111	102	106	109	114	119	125	131	139	147	156	166	176								
112	104	107	111	115	121	127	134	142	150	160	170	181								
113	104	108	112	117	123	129	137	145	154	164	175									
114	105	109	113	119	125	132	140	148	158	168	179									
115	106	110	115	121	127	134	143	152	162	173	184									
116	107	111	116	122	129	137	146	155	166	177										
117	108	112	118	124	132	140	149	159	170	181										
118	108	113	119	126	134	142	152	162	174	186										
119	109	114	121	128	136	145	155	166	178											
120	110	116	122	130	138	148	158	170	182											
121	111	117	124	132	141	151	162	174	187											
122	111	118	125	134	143	154	165	178												
123	112	119	127	136	146	157	169	182												
124	113	120	129	138	148	160	172													
125	114	121	130	140	151	163	176													

Figure 5-9: NWS Heat Index chart

Vulnerability – CPRI Results

Extreme Heat CPRI results for each community are summarized in Table 5-43 below.

Table 5-43: Summary of CPRI results by jurisdiction for extreme heat

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Likely	Critical	>24 hours	>1 week	2.80
Buckeye	Highly Likely	Limited	12-24 hours	>1 week	3.10
Carefree	Highly Likely	Critical	12-24 hours	<6 hours	3.30
Cave Creek	Highly Likely	Limited	12-24 hours	<24 hours	2.90
Chandler	Highly Likely	Critical	>24 hours	<1 week	3.15
El Mirage	Highly Likely	Critical	>24 hours	>1 week	3.25
Fountain Hills	Likely	Limited	12-24 hours	<1 week	2.55
Fort McDowell Yavapai Nation	Likely	Limited	>24 hours	>1 week	2.50
Gila Bend	Possibly	Limited	<6 hours	>1 week	2.50
Gilbert	Highly Likely	Limited	12-24 hours	<1 week	3.00
Glendale	Highly Likely	Critical	12-24 hours	>1 week	3.40
Goodyear	Highly Likely	Limited	>24 hours	<1 week	2.85
Guadalupe	Possibly	Negligible	<6 hours	<24 hours	2.30
Litchfield Park	Highly Likely	Limited	12-24 hours	>1 week	3.10
Unincorporated Maricopa County	Highly Likely	Critical	12-24 hours	<1 week	3.30
Mesa	Likely	Critical	>24 hours	<1 week	2.70
Paradise Valley	Highly Likely	Critical	>24 hours	<1 week	3.15
Peoria	Highly Likely	Critical	>24 hours	>1 week	3.25
Phoenix	Likely	Negligible	<6 hours	<6 hours	2.35
Queen Creek	Likely	Limited	12-24 hours	<1 week	2.55
Salt River Pima-Maricopa Indian Community	Highly Likely	Limited	>24 hours	>1 week	2.95
Salt River Project	Highly Likely	Limited	>24 hours	<1 week	2.85
Scottsdale	Likely	Limited	12-24 hours	<6 hours	2.35
Surprise	Likely	Critical	12-24 hours	<24 hours	2.75
Tempe	Highly Likely	Limited	>24 hours	>1 week	2.95
Tolleson	Likely	Critical	>24 hours	<1 week	2.70
Wickenburg	Highly Likely	Critical	12-24 hours	<1 week	3.30
Youngtown	Highly Likely	Critical	12-24 hours	<1 week	3.30
				County-wide average CPRI =	**2.90**

Vulnerability – Loss Estimations

Losses due to extreme heat primarily occur in the form of death and illness. According to the MCDPH 2009 report, heat death statistics for Maricopa County for the year of 2006, 2007, and 2008 are summarized as follows:

Cases	2006	%	2007	%	2008	%	TOTAL
Total Reported	103	100	129	100	95	100	327
Confirmed	85	83	50	39	48	50.5	183
Ruled Out	18	17	79	61	47	49.5	144
Pending	0	0	0	0	0	0	0

Preliminary epidemiological studies by MCDPH bring to light a number of interesting potential variables at play in heat-caused and heat-related deaths. One noteworthy trend is how the deaths for 2008 track with high overnight temperatures as illustrated in Figure 5-7. Another variable indicating increased vulnerability, is the number of deaths as they relate to age and gender, as shown in Figure 5-10.

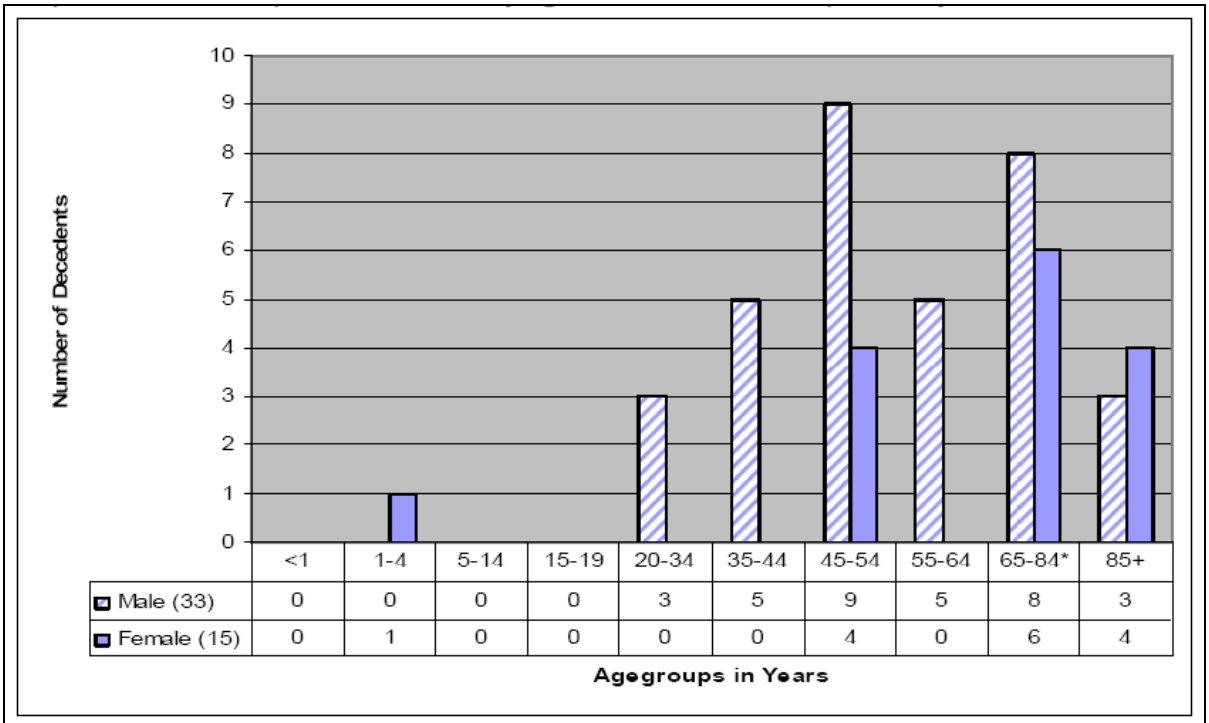


Figure 5-10: Heat caused/related deaths by age and gender for Maricopa County in 2008

There are currently no statistical analyses for projecting heat related deaths in Maricopa County, however, MCDPH continues to track data and monitor the above mentioned trends and other factors to determine if a statistical significance exists. Past history would indicate that multiple deaths due to extreme heat are highly likely.

Vulnerability – Development Trends

In a metropolitan area, paved surfaces typically absorb and retain the heat of the day and then slowly release that heat back into the atmosphere through the night. When large areas are paved, the metropolitan area will develop an "urban heat island" effect, wherein temperatures in the center of the metropolitan area become much warmer than those on the outskirts of the valley due to the storage of heat during the day.

The metropolitan area of Maricopa County has grown dramatically in size over the last two decades, transforming a significant portion of the once natural desert and/or agricultural farm lands, into concrete and asphalt paved streets, roofs, driveways, sidewalks, parking lots, and other hardscapes. The result has been an intensification of the urban heat island effect and a steady increase in the nighttime low temperature. The impacts of this expansion include increased cooling costs and greater demand on power resources. According to the Arizona Republic, the Salt River Project estimates that for every degree increase in temperature, the utility's 610,000 residential customers pay $3.2 million to $3.8 million extra per month in cooling costs, or about $5 to $7 per customer per month (Az Republic, 1998).

Sources

Arizona Department of Health Services, 2004, *Prevention Bulletion*, Volume 18, No. 4, http://www.azdhs.gov/diro/pio/preventionbulletin/july04.pdf

Arizona Division of Emergency Management, 2009, *State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT*.

Arizona Republic, Yozwiak, Steve, 1998, *'Island' Sizzle; Growth May Make Valley An Increasingly Hot Spot*

East Valley Tribune, 2009, http://hosted.ap.org/dynamic/stories/A/AZ_DEHYDRATED_TEEN_AZOL-?SITE=AZMES&SECTION=STATE&TEMPLATE=DEFAULT

Federal Emergency Management Agency,1997, *Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy.*

Maricopa County Department of Public Health, Division of Disease Control, Office of Epidemiology and Data Services, 2009, *Heat Caused and Heat Related Death Occurrences in Maricopa County*, http://www.maricopa.gov/Public_Health/EPI/pdf/heat/2008annualreport.pdf

Mrela, C. K., 2004, *Deaths from Exposure to Excessive Natural Heat Occurring in Arizona, 1992-2002*, Arizona Department of Health Services, http://www.azdhs.gov/plan/report/heat/heat02.pdf

National Weather Service, Warning and Forecast Office – Phoenix, 2009, http://www.wrh.noaa.gov/psr/general/safety/heat/

URS, 2004, *Maricopa County Hazard Mitigation Plan*

Profile Maps

No profile maps are provided.

THIS PAGE INTIENTIONALLY LEFT BLANK

5.3.4 Fissure

Description

Earth fissures are linear cracks, seams, or separations in the ground that extend from the groundwater table and are caused by tensional forces related to differential land subsidence. In many cases, fissures form as a direct result of subsidence caused by groundwater depletion. The surface expression of fissures ranges from less than a yard to several miles long and from less than an inch to tens of feet wide. The longest fissure is in Pinal County, near Picacho, and is over 10 miles long. Earth fissures occur at the edges of basins, usually parallel to mountain fronts, or above local bedrock highs in the subsurface, and typically cut across natural drainage patterns. Fissures can alter flood patterns, break buried pipes and lines, cause infrastructure to collapse, provide a direct conduit to the groundwater table for contaminants, and even pose a life safety hazard for both humans and animals.

History

In Arizona, fissures were first noted near Picacho in 1927. The number of fissures has increased dramatically since the 1950s because of groundwater depletion, first because of agriculture, and later, because of exponential population growth. The risk posed by fissures is also increasing as the population expands into the outlying basin edges and mountain fronts. Several fissure case histories for the Maricopa County area are summarized below.

- San Tan Mountains, Maricopa and Pinal Counties
  - Foothills—undermining at least one home, and crossing several roads; dogs trapped in flash flood flowing through the fissure in 2007
  - Y-crack—crosses the Hunt Highway and San Tan Boulevard east of Sossaman Road; present at least by 1969; catastrophically re-opened from 195th Street and Happy Road to San Tan in 2005 and again in 2007, damaging roads, corrals, fences, driveways, stranding and trapping vehicles, and killing a horse
- Apache Junction/East Mesa, Maricopa County
  - Baseline and Meridian—fissure crosses diagonally under the intersection, fissure zone over one mile long
  - Ironwood and Guadalupe—industrial facilities built on top of several fissures in the area; fissures stop immediately east of subdivision; fissures crossing powerlines
- Mesa, Maricopa County
  - Loop 202 (Red Mountain Freeway)—fissure present at least since 1970s; attempted mitigation during construction cost $200,000
  - Sossamon Road and University Drive—fissure runs diagonally through a subdivision along the entrance; fissure known in 1973 and subsequently backfilled
- Wintersburg, Maricopa County
  - Fissure runs perpendicular to power transmission lines near Palo Verde Nuclear Generating Station; made one road impassable
- Scottsdale, Maricopa County
  - CAP Canal—fissure paralleling the canal opened within a few feet of the lining on the east side in 2003
  - 40th St and Cholla—discovered in 1980s
- Flood retarding structures, Maricopa and Pinal Counties
  - McMicken Dam, White Tank Mountains—dam had to be removed and replaced; cost several million dollars

- Powerline FRS, Apache Junction—fissure just discovered within 1200 feet of the FRS; Flood Control District examining mitigation options

Probability/Magnitude

There are no methods of quantifiably predicting the probability and magnitude of earth fissures. The locations of potential fissures or extension of existing fissures may be predictable in specific areas if enough information about the subsurface material properties and groundwater levels are available. It is a fair assurance that continued groundwater depletion will result in more fissures. The magnitude of existing and new fissures is dependent upon several variables including the depth to groundwater, type and depth of surficial material present, amount and rate of groundwater depletion, groundwater basin depth, depth to bedrock, volume and rate of runoff due to precipitation entering the fissure, and human intervention.

The Arizona Geological Survey has mapped known and suspected fissure lineaments for certain areas of the County, with the latest update of GIS data having a version date of June 22, 2009. In order to estimate the areas of immediate risk, the MJPT chose to use create polygons that represent a 500-foot buffer along the mapped fissures and assign a HIGH hazard risk to areas within the buffered zone. These areas are indicated on Maps 3A, 3B, and 3C.

Vulnerability – CPRI Results

Fissure CPRI results for each community are summarized in Table 5-44 below.

Table 5-44: Summary of CPRI results by jurisdiction for fissure hazard

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Possibly	Negligible	<6 hours	>1 week	2.20
Buckeye	Unlikely	Negligible	>24 hours	<24 hours	1.10
Carefree	Unlikely	Negligible	>24 hours	<6 hours	1.00
Cave Creek	Unlikely	Negligible	>24 hours	<6 hours	1.00
Chandler	Unlikely	Negligible	>24 hours	<6 hours	1.00
El Mirage	Unlikely	Negligible	>24 hours	<24 hours	1.10
Fountain Hills	Possibly	Limited	<6 hours	>1 week	2.50
Fort McDowell Yavapai Nation	Unlikely	Negligible	6-12 hours	<24 hours	1.40
Gila Bend	Unlikely	Negligible	>24 hours	<6 hours	1.00
Gilbert	Likely	Negligible	>24 hours	>1 week	2.20
Glendale	Likely	Negligible	12-24 hours	>1 week	2.35
Goodyear	Unlikely	Negligible	<6 hours	<6 hours	1.45
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Unlikely	Negligible	<6 hours	<6 hours	1.45
Unincorporated Maricopa County	Likely	Limited	<6 hours	>1 week	2.95
Mesa	Highly Likely	Negligible	<6 hours	>1 week	3.10
Paradise Valley	Unlikely	Negligible	<6 hours	<1 week	1.65
Peoria	Possibly	Limited	<6 hours	>1 week	2.50
Phoenix	Unlikely	Negligible	<6 hours	<6 hours	1.45
Queen Creek	Possibly	Negligible	<6 hours	<6 hours	1.90
Salt River Pima-Maricopa Indian Community	Likely	Limited	>24 hours	>1 week	2.50
Salt River Project	Possibly	Negligible	>24 hours	>1 week	1.75
Scottsdale	Possibly	Negligible	<6 hours	<6 hours	1.90
Surprise	Possibly	Limited	<6 hours	<6 hours	2.20
Tempe	Possibly	Limited	>24 hours	>1 week	2.05
Tolleson	Unlikely	Negligible	>24 hours	>1 week	1.30
Wickenburg	Likely	Limited	>24 hours	>1 week	2.50
Youngtown	Unlikely	Limited	>24 hours	>1 week	1.60
				County-wide average CPRI =	**1.81**

Vulnerability – Loss Estimations

The Arizona Land Subsidence Group (ALSG) prepared a white paper in 2007 (ASLG, 2007) that summarizes fissure risk and various case studies. The following table is an excerpt from that report listing various types of damages that either have or could occur as a result of fissures:

Table 1. Hazards Directly Associated with Earth Fissures	
• Cracked or collapsing roads	• Severed or deformed railroad track
• Broken pipes & utility lines	• Damaged well casing or wellhead
• Damaged or breached canals	• Disrupted drainage
• Cracked foundation/separated walls	• Contaminated groundwater aquifer
• Loss of agricultural land	• Sudden discharge of ponded water
• Livestock & wildlife injury or death	• Human injury or death

(After Pewe, 1990; Bell & Price, 1993; and Slaff, 1993)

Historic losses in Maricopa County due to fissures are mostly minor losses associated with damaged utilities, fences and dirt/gravel roads and driveways. The exception was the death of a horse in the Town of Queen Creek's Planning Area when a fissure opened up and engulfed the animal during a July 2007 storm. It is therefore very difficult to estimate economic losses due to a lack of an established methodology. Potential exposure of human and facility assets to high hazard fissure zones will be estimated instead, and no estimation of economic losses will be made. Table 5-45 summarizes the MJPT defined critical and non-critical facilities potentially exposed to a high hazard fissure zone. Table 5-46 summarizes population sectors exposed to the high hazard fissure zones. HAZUS residential, commercial and industrial exposures to high hazard fissure zones are summarized in Tables 5-12 through 5-39.

In summary, $27.4 million in critical and non-critical MJPT identified assets are exposed to high hazard fissure zones County-wide. An additional $76.2 million of HAZUS defined residential, commercial, and industrial facilities for all participating jurisdictions are exposed to a high hazard fissure zone. Regarding human vulnerability, a total population of 834 people, or 0.05% of the total 2000 Maricopa County population, is potentially exposed to a high hazard fissure zone. The potential for death and/or injury is possible, although no occurrences have been documented to-date. Short and long-term displacement are also likely should structures become damaged.

Vulnerability – Development Trends

Earth fissures have been part of the landscape of southern and south central Arizona for at least the past seventy years (ALSG, 2007). As the communities of Maricopa County grow, it is inevitable that expansion into agricultural and undeveloped desert lands will occur, bringing the urban interface into more and more intersection with the geologic hazards related to fissures. The AZGS and State are working to provided better reporting and disclosure of fissure hazards, and county and local officials are becoming more aware of the dangers of not addressing the them with development.

Sources

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

Arizona Geological Survey, 2009, Webpage entitled: Arizona's Earth Fissure Center, http://www.azgs.az.gov/EFC.shtml

Arizona Land Subsidence Group, 2007. Land subsidence and earth fissures in Arizona: Research and informational needs for effective risk management, white paper, Tempe, AZ, . http://www.azgs.az.gov/Earth%20Fissures/CR-07-C.pdf

URS, 2004, Maricopa County Hazard Mitigation Plan

Profile Maps

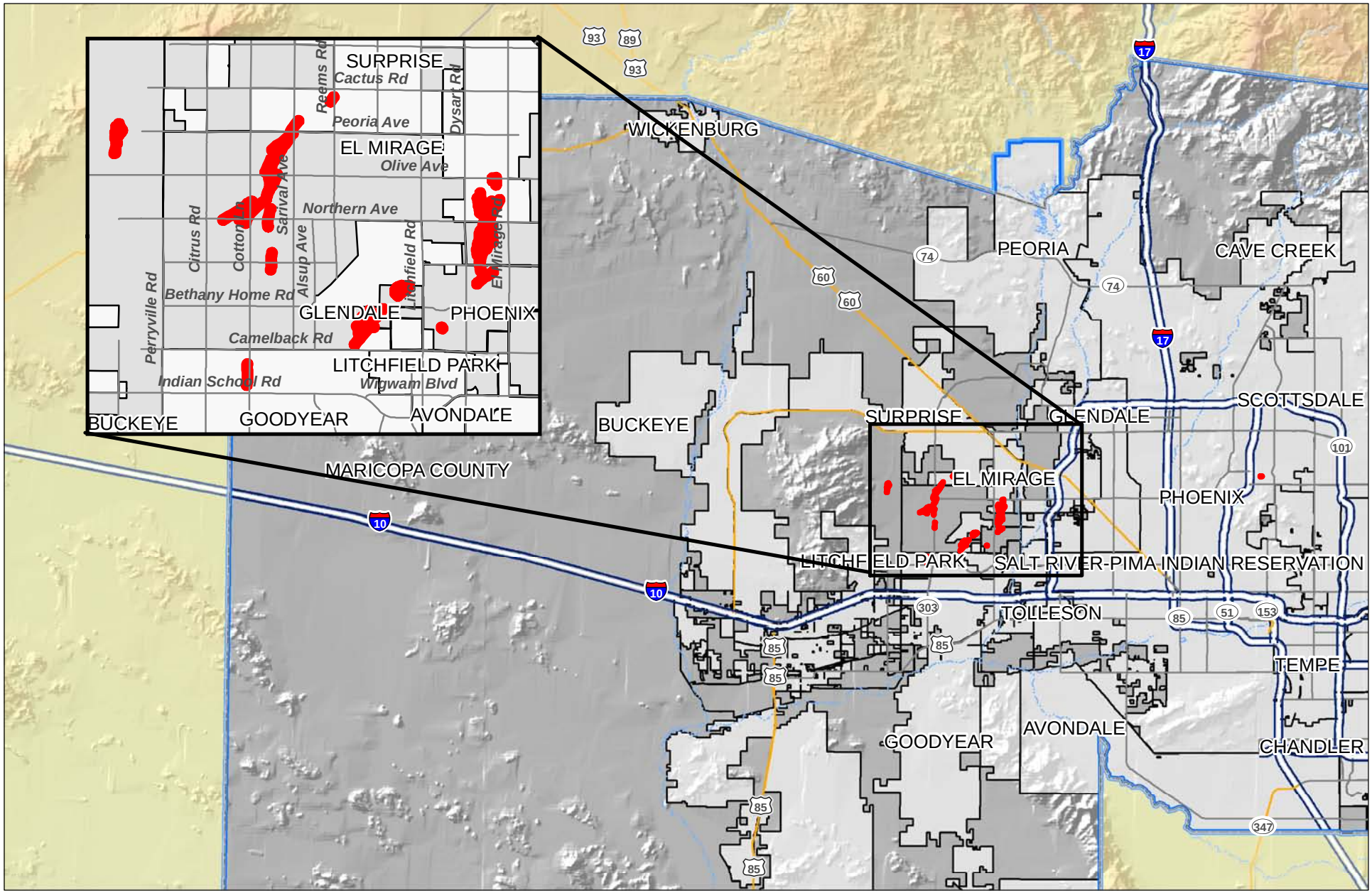
Map 3A, 3B, and 3C – Earth Fissure Hazard Map(s)

Table 5-45: Summary of asset inventory exposure to high hazard fissure zones						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
County-Wide Totals	**5,179**	**9**	**0.17%**	**100.00%**	**$27,436**	**$0**
Avondale	61	0	0.00%	0.00%	$0	None Estimated
Buckeye	77	0	0.00%	0.00%	$0	None Estimated
Carefree	6	0	0.00%	0.00%	$0	None Estimated
Cave Creek	39	0	0.00%	0.00%	$0	None Estimated
Chandler	226	0	0.00%	0.00%	$0	None Estimated
El Mirage	34	0	0.00%	0.00%	$0	None Estimated
Fountain Hills	15	0	0.00%	0.00%	$0	None Estimated
Fort McDowell Yavapai Nation	18	0	0.00%	0.00%	$0	None Estimated
Gila Bend	7	0	0.00%	0.00%	$0	None Estimated
Gilbert	694	1	0.14%	11.11%	$11,000	None Estimated
Glendale	1,205	3	0.25%	33.33%	$11,771	None Estimated
Goodyear	93	0	0.00%	0.00%	$0	None Estimated
Guadalupe	6	0	0.00%	0.00%	$0	None Estimated
Litchfield Park	5	0	0.00%	0.00%	$0	None Estimated
Unincorporated Maricopa County	447	3	0.67%	33.33%	$465	None Estimated
Mesa	613	1	0.16%	11.11%	$200	None Estimated
Paradise Valley	69	0	0.00%	0.00%	$0	None Estimated
Peoria	225	0	0.00%	0.00%	$0	None Estimated
Phoenix	913	0	0.00%	0.00%	$0	None Estimated
Queen Creek	117	1	0.85%	11.11%	$4,000	None Estimated
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	None Estimated
Salt River Project [43]	511	0	0.00%	N/A	N/A	N/A
Scottsdale	114	0	0.00%	0.00%	$0	None Estimated
Surprise	37	0	0.00%	0.00%	$0	None Estimated
Tempe	111	0	0.00%	0.00%	$0	None Estimated
Tolleson	10	0	0.00%	0.00%	$0	None Estimated
Wickenburg	11	0	0.00%	0.00%	$0	None Estimated
Youngtown	5	0	0.00%	0.00%	$0	None Estimated

[43] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-46: Summary of population sectors exposed to high hazard fissure zones

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
County-Wide Totals	**1,522,083**	**834**	**0.05%**	**180,521**	**177**	**0.10%**	**100,684**	**55**	**0.05%**
Avondale	15,613	0	0.00%	855	0	0.00%	764	0	0.00%
Buckeye	3,906	0	0.00%	342	0	0.00%	344	0	0.00%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	0	0.00%	5,156	0	0.00%	3,029	0	0.00%
El Mirage	3,400	0	0.01%	213	0	0.02%	194	0	0.00%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	0	0.00%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	0	0.00%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	11	0.02%	1,834	1	0.04%	883	0	0.01%
Glendale	118,654	2	0.00%	9,169	0	0.00%	8,282	0	0.00%
Goodyear	10,967	1	0.01%	921	0	0.00%	309	0	0.05%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	260	0.25%	43,659	31	0.07%	9,288	12	0.13%
Mesa	189,697	293	0.15%	25,867	120	0.46%	12,410	33	0.26%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	0	0.00%	6,555	0	0.00%	1,921	0	0.00%
Phoenix	657,658	123	0.02%	54,037	14	0.03%	47,321	3	0.01%
Pinal County	6	0	1.74%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	127	4.48%	145	9	6.36%	114	6	5.22%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	14	0.02%	15,440	1	0.01%	5,177	1	0.02%
Surprise	13,387	3	0.02%	3,460	0	0.00%	757	0	0.00%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	0	0.00%	547	0	0.00%	288	0	0.00%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Earth Fissure Hazard Rating

- High

0 40 80 160

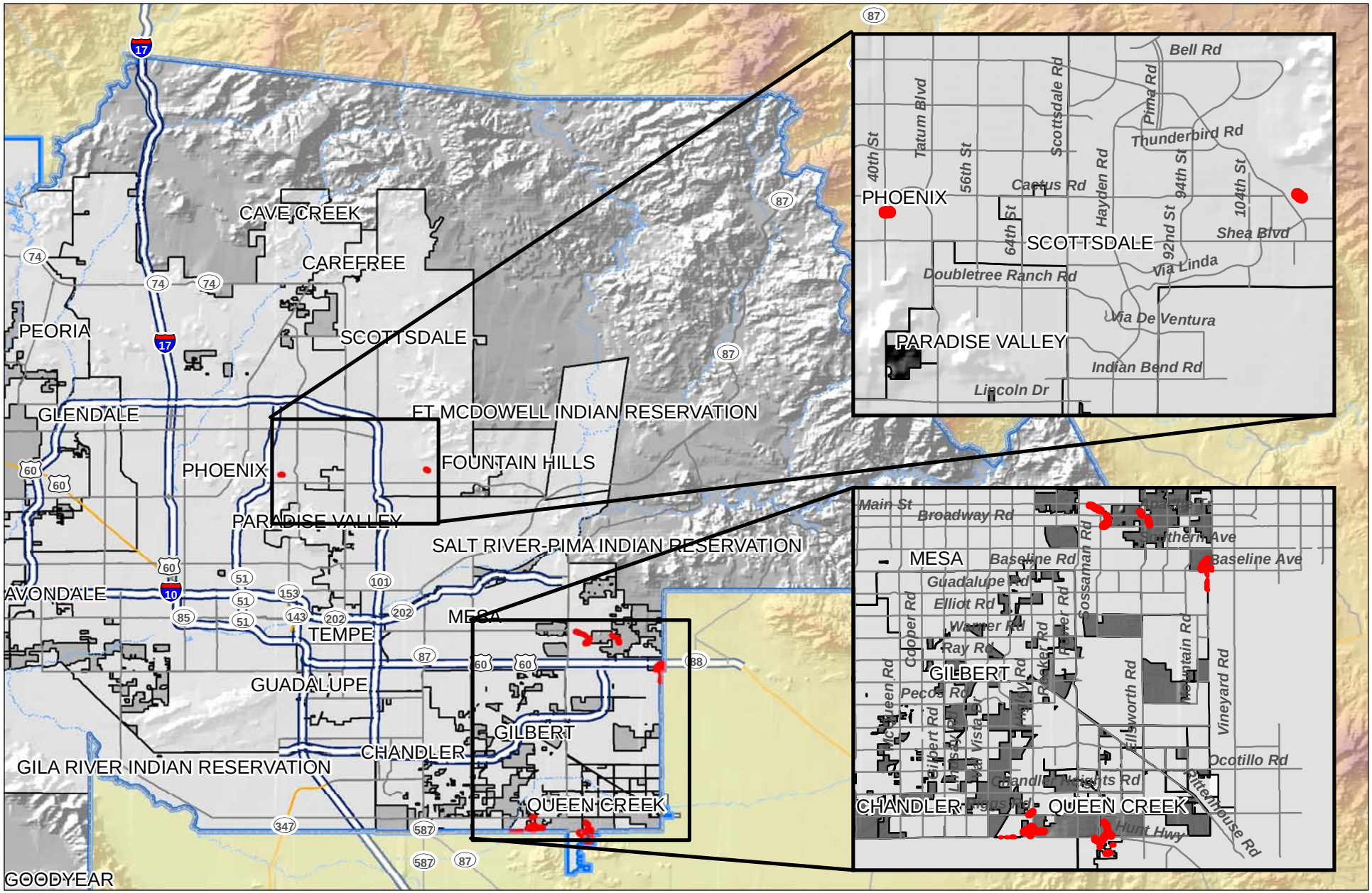
Miles

Source: JE Fuller 2009; ALRIS 2006; FCDMC 2009, AZGS 2008

MARICOPA COUNTY

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #3A
Maricopa County
Earth Fissure
Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Earth Fissure Hazard Rating

- High

0 40 80 160

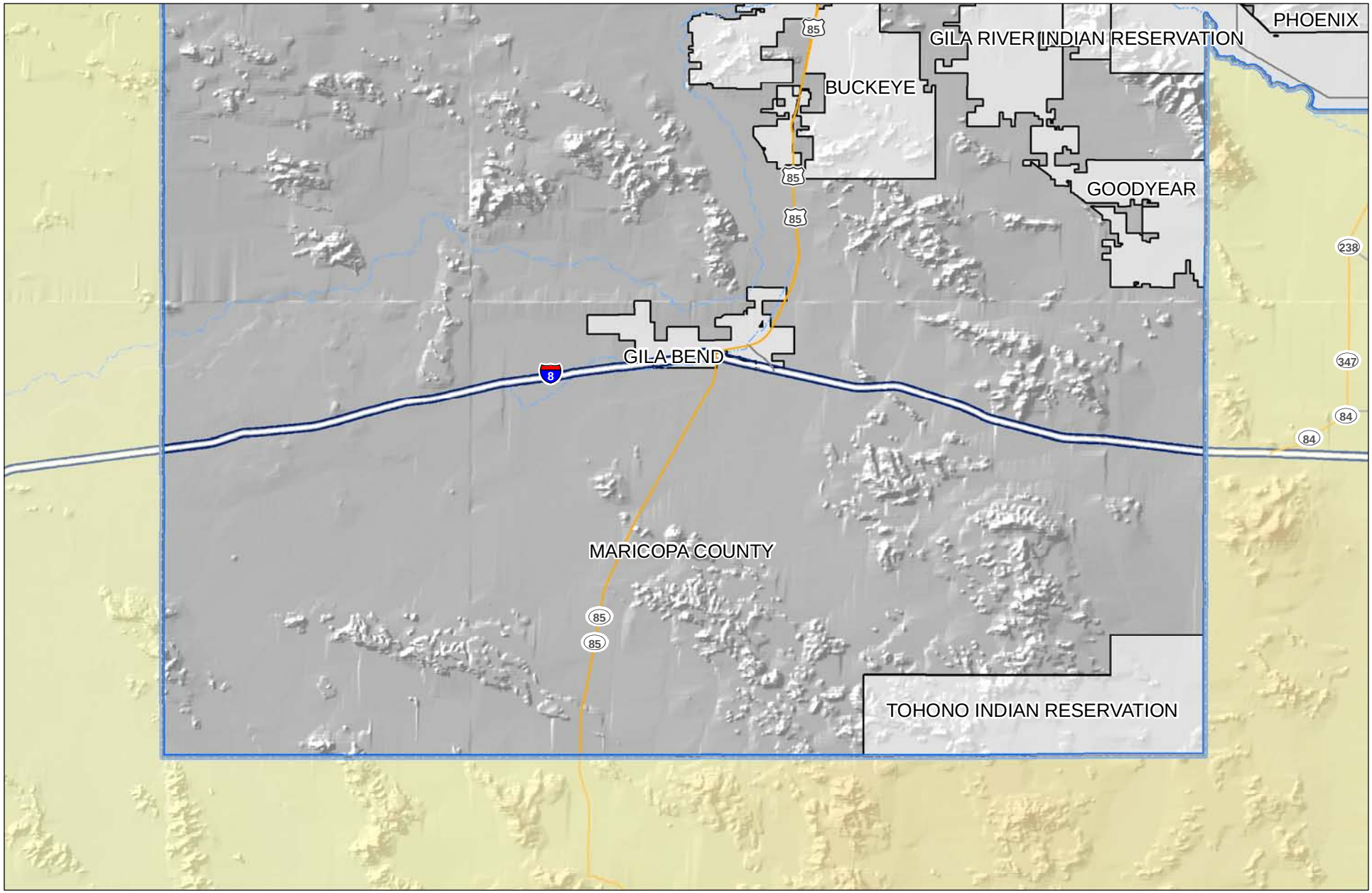
Miles

Source: JE Fuller 2009; ALRIS 2006; FCDMC 2009, AZGS 2008

MARICOPA COUNTY

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #3B
Maricopa County
Earth Fissure
Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

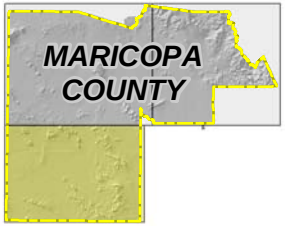
Earth Fissure Hazard Rating

- High

0 40 80 160

Miles

Source: JE Fuller 2009; ALRIS 2006; FCDMC 2009, AZGS 2008



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #3C
Maricopa County
Earth Fissure
Hazard Map
as of May 2009

THIS PAGE INTENTIONALLY LEFT BLANK

5.3.5 Flood / Flash Flood

Description

For the purpose of this Plan, the hazard of flooding addressed in the is section will pertain to floods that result from precipitation/runoff related events. Other flooding due to dam and levee failures are addressed separately. The three seasonal atmospheric events that tend to trigger floods in Maricopa County are:

- *Tropical Storm Remnants*: Some of the worst flooding tends to occur when the remnants of a hurricane that has been downgraded to a tropical storm or tropical depression enter the State. These events occur infrequently and mostly in the early autumn, and usually bring heavy and intense precipitation over large regions causing severe flooding.
- *Winter Rains*: Winter brings the threat of low intensity; but long duration rains covering large areas that cause extensive flooding and erosion, particularly when combined with snowmelt.
- *Summer Monsoons*: A third atmospheric condition that brings flooding to Arizona is the annual summer monsoon. In mid to late summer the monsoon winds bring humid subtropical air into the State. Solar heating triggers afternoon and evening thunderstorms that can produce extremely intense, short duration bursts of rainfall. The thunderstorm rains are mostly translated into runoff and in some instances, the accumulation of runoff occurs very quickly resulting in a rapidly moving flood wave referred to as a flash flood. Flash floods tend to be very localized and cause significant flooding of local watercourses.

Damaging floods in the County can be primarily categorized as either riverine, sheet flow, or local area flows. Riverine flooding occurs along established watercourses when the bankfull capacity of a wash is exceeded by storm runoff and the overbank areas become inundated. There are also areas within the County where the watercourse is broad and generally shallow with ill-defined low flow paths and broad sheet flooding. Local area flooding is often the result of poorly designed or planned development wherein natural flowpaths are altered, blocked or obliterated, and localized ponding and conveyance problems result. Erosion is also often associated with damages due to flooding.

History

Flooding is clearly a major hazard in Maricopa County as shown in Tables 5-2 and 5-3. Maricopa County has been part of 16 presidential disaster declarations for flooding and there have been at least 31 other reported flooding incidents that met the thresholds outlined in Section 5.1. The following incidents represent examples of major flooding that has impacted the County:

- In March 1978, a general winter storm centered over the mountains north and east of Phoenix, 35 miles north at Rock Springs. Extrapolation of intensity-probability data for one measurement of 5.73 inches of precipitation in a 24 hour period equates to a 400 yr. storm. The main source of flooding was due to Verde River with runoff volume exceeding reservoir storage capacity above Bartlett Dam. Flooding also occurred along irrigation canals on north side of the Phoenix metro area, and along tributaries of the Gila River and Queen Creek. There was one death-countywide and $37 million in total damages (USACE, 1978). Presidential Disaster Declaration 550-DR.
- In December 1978, a second major storm for the year hit hard with total precipitation that ranged from less than 1 inch in the northeastern and far southwestern portions of Arizona to nearly 10 inches in the Mazatzal Mountains northeast of Phoenix. A large area of the central mountains received over 5 inches. The main stems of the Gila, Salt, Verde, Agua Fria, Bill Williams, and Little Colorado Rivers, as well as a number of major tributaries, experienced especially large discharges. There were 4 deaths, $16.3 million-public and $5 million-agriculture losses estimated for Maricopa County (USACE, 1979). Presidential Disaster Declaration 570-DR.

- In February 1980, severe flooding in central Arizona set record discharges (later broken in 1993) in the Phoenix metro area on the Salt, Verde, Agua Fria and Gila Rivers, as well as on Oak Creek in north central Arizona. The Phoenix metro area was nearly cut in half with only two bridges remaining open over the Salt River. It took hours for people to move between Phoenix and the East Valley using either the Mill Avenue or Central Avenue bridges. Even the Interstate 10 bridge was closed for fear that it had been damaged. Precipitation during this period at Crown King in the Bradshaw Mountains was 16.63 inches. Three people died statewide and damages were estimated at $63,700,000 for Phoenix Metro Area (USACE, 1980). Presidential Disaster Declaration 614-DR.

- In January and February 1993, flooding damage occurred from winter storms associated with the El Nino phenomenon. These storms flooded watersheds throughout Arizona by dumping excessive rainfall amounts that saturated soils and increased runoff. Warm temperature snowmelt exacerbated the situation over large areas. Erosion caused tremendous damage and some communities along normally dry washes were devastated. Stream flow velocities and runoff volumes exceeded historic highs. Many flood prevention channels and retention reservoirs were filled to capacity and so water was diverted to the emergency spillways or the reservoirs were breached, causing extensive damage in some cases (e.g., Painted Rock Reservoir spillway). The new Mill Avenue Bridge and a large landfill in Mesa were washed away by the raging Salt River. The Gillespie Dam west of Phoenix was damaged as high water spread throughout low-lying areas. Many roads were closed and motorists were stranded by flooded dips and washes. Phoenix alone sustained at least $4.2 million in damages from this prolonged period of heavy rains. County-wide, $38 million in property and agricultural losses were estimated (USACE, 1993). Presidential Disaster Declaration 977-DR.

- In 1997, flooding from the remnants of Hurricane Nora resulted in the breaching of Narrows Dam. The calculated 24-hour, 100-year rainfall amount in NW Maricopa County was exceeded at six ALERT measuring sites led to flash flooding in portions of NW Maricopa County. Two earthen dams gave way in Aguila and caused widespread flooding. One dike was located seven miles east of Aguila and the second in the center of the Martori Farms complex. Half of the cotton crop was lost at Martori Farms, as well as 300 to 500 acres of melons. Up to five feet of water filled Aqguila. About 40 people were evacuated from the hardest hit area of the town. Water flowing down the Sols Wash was so high that the Sols Wash Bridge in Wickenburg was closed for more than two hours. There was some flooding below Sols Wash in the streets around Coffinger Park. Several houses in the area were also flooded. Highway 71 west of Wickenburg and Highway 95 north were closed due to high water from the storm.

- In October 2000, a large low pressure area dumped four to six inches of rain over parts of eastern LaPaz and western Maricopa County. This caused flash flooding in the upper part of the Centennial Wash between the Harcuvar and Harquahala mountain ranges. The heavy runoff flowed into the town of Wenden where water ran over the highway 60 bridge. At its peak the wash was about 3/8ths of a mile wide and 12 feet deep. The resulting high water surged through the town of Wenden, with at least 400 residents evacuated. There was extensive damage to the town and for many miles downstream. The reported flow was in excess of 20,000 cfs. When the flood hit Wenden, it inundated some mobile homes, causing them to lift off their foundations and float down the wash. An estimated 125 mobile homes were affected. One migrant worker was killed when flood waters swept through the town during the early morning hours. Additional heavy rainfall hit this area several days later and complicated relief efforts for many of the homeless. A spotter in Wickenburg reported that route 93 was closed north of Wickenburg due to high water. Sols wash was out of its banks and flooded Coffinger Park as well as nearby homes. The Vulture Mine road was closed and motorists had to be rescued. Flood water produced considerable damage to melon and cotton crops in northwest Maricopa County. The roads around Aguila were closed for several hours. A total of $10.2 million in structure and crop damages was estimated (NCDC, 2008). Presidential Disaster Declaration 1347-DR.

- In late July – early August, 2005, one of the heaviest rainfall events of the 2005 season struck the greater Phoenix metropolitan. Almost 3 inches of rain fell at many locations in the metro, causing

roofs to collapse and streets to flood quickly. Up to 120 residents at the Crystal Creek Apartments in Phoenix were evacuated after 83 apartment units were damaged by flood waters. Additional roof damage was reported at the Scottsdale Community College, and Osco Drug store in Mesa, and a Frys grocery store in Tempe. In the Wickenburg area, very heavy rainfall caused flooding of low spots and washes. The peak flow in Hartman Wash was reported as 1,200 cfs. Major damage occurred at Bear Cat Manufacturing where a large robotic welding building was destroyed by the flood. Losses were estimated at over $4 million (NCDC, 2009).

- In July 2007, very heavy rainfall accompanied thunderstorms over much of Maricopa County. Strong and gusty winds were also reported with some of the more intense storms. The storm closed roads in north Scottsdale and at least 6 water rescues were reported. Several automatic gauges reported between 1.5 and 2.0 inch per hour rainfall rates. Floodwaters caused $2 million in damages at Desert Sun Elementary School in North Scottsdale.

Numerous other flood related incidents are summarized in the historic hazard database provided in Appendix D.

Probability and Magnitude

For the purposes of this Plan, the probability and magnitude of flood hazard for Maricopa County jurisdictions are based on the 1 percent probability floodplains delineated on FEMA Flood Insurance Rate Maps (FIRMs), plus any provisional floodplain delineations used for in-house purposes by participating jurisdictions. FEMA and participating agencies and departments of Maricopa County jurisdictions have recently completed a map modification program to update the FIRMs for the County into a digital FIRM (DFIRM) format. Those maps became effective in 2005 and are the basis for flood hazard depictions in this Plan. Floodplain limits and GIS base files were provided by the FCDMC.

Two designations of flood hazard are used, with HIGH hazard areas being any "A" zone and MEDIUM flood hazard being either all "Shaded X" zones. All "A" zones (e.g. – A, A1-99, AE, AH, AO, etc.) represent areas with a one percent (1%) probability of being flooded at a depth of one-foot or greater in any given year. All "Shaded X" zones represent areas with a 0.2 percent (0.2%) probability of being flooded at a depth of one-foot or greater in any given year. These two storms are often referred to as the 100-year and 500-year storm, respectively.

Maps 4A, 4B, and 4C present the high flood hazard areas for Maricopa County. When viewing the maps, the following should be note:

- Neither the Fort McDowell Yavapai Nation or the Salt River Pima-Maricopa Indian Community participate in the National Flood Insurance Program (NFIP). Consequently, neither Tribe has FEMA mapped floodplains for their reservation boundaries except for Sycamore Creek and the Verde and Salt Rivers. The Local Planning Team for each Tribe met and discussed identifying supplemental delineations of on reservation floodplains, and the results are indicated on the hazard profile maps.
- With the 2005 DFIRM update, a decision was made county-wide to map most of the non Zone A areas as Shaded Zone X without the benefit of supporting hydrologic and hydraulic analysis. Obvious mountain and steep hillslope areas were excluded. For the sake of map clarity, only the high flood hazard areas are shown.

Vulnerability – CPRI Results

Flooding CPRI results for each community are summarized in Table 5-47 below.

Table 5-47: Summary of CPRI results by jurisdiction for flooding hazard

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Likely	Limited	12-24 hours	<24 hours	2.45
Buckeye	Possibly	Critical	<6 hours	<24 hours	2.60
Carefree	Highly Likely	Limited	12-24 hours	<24 hours	2.90
Cave Creek	Highly Likely	Limited	6-12 hours	<6 hours	2.95
Chandler	Likely	Negligible	>24 hours	<24 hours	2.00
El Mirage	Highly Likely	Critical	12-24 hours	<24 hours	3.20
Fountain Hills	Possibly	Critical	6-12 hours	<1 week	2.55
Fort McDowell Yavapai Nation	Possibly	Limited	6-12 hours	<24 hours	2.15
Gila Bend	Possibly	Limited	<6 hours	<24 hours	2.30
Gilbert	Highly Likely	Limited	<6 hours	<24 hours	3.20
Glendale	Likely	Limited	12-24 hours	>1 week	2.65
Goodyear	Highly Likely	Limited	6-12 hours	<24 hours	3.05
Guadalupe	Possibly	Limited	<6 hours	<6 hours	2.20
Litchfield Park	Likely	Limited	12-24 hours	<24 hours	2.45
Unincorporated Maricopa County	Highly Likely	Critical	<6 hours	<24 hours	3.50
Mesa	Highly Likely	Limited	6-12 hours	<1 week	3.15
Paradise Valley	Possibly	Critical	12-24 hours	<24 hours	2.30
Peoria	Highly Likely	Critical	<6 hours	<24 hours	3.50
Phoenix	Likely	Limited	12-24 hours	<24 hours	2.45
Queen Creek	Highly Likely	Limited	6-12 hours	<24 hours	3.05
Salt River Pima-Maricopa Indian Community	Highly Likely	Critical	<6 hours	<1 week	3.60
Salt River Project	Highly Likely	Limited	6-12 hours	<6 hours	2.95
Scottsdale	Likely	Limited	<6 hours	<6 hours	2.65
Surprise	Highly Likely	Limited	<6 hours	<6 hours	3.10
Tempe	Highly Likely	Critical	6-12 hours	<1 week	3.45
Tolleson	Likely	Limited	12-24 hours	<24 hours	2.45
Wickenburg	Highly Likely	Catastrophic	<6 hours	<24 hours	3.80
Youngtown	Highly Likely	Catastrophic	<6 hours	<24 hours	3.80
				County-wide average CPRI =	**2.87**

Vulnerability – Loss Estimations

The estimation of potential exposure to high and medium flood hazards was accomplished by intersecting the human and facility assets with the flood hazard limits depicted on Maps 4A, 4B, and 4C. Loss estimates to all facilities located within the high and medium flood hazard areas were made based on the loss estimation tables published by FEMA (FEMA, 2001). Most of the assets located within high hazard flood areas will be subject to three feet or less of flooding. Using the FEMA tables, it is assumed that all structural assets located within the high hazard areas will have a loss-to-exposure ratio of 0.20 (or 20%). A loss to exposure ratio of 0.05 (5%) is assumed for assets located in the medium hazard areas. Table 5-48 summarizes the MJPT identified critical and non-critical facilities potentially exposed to high and medium flood hazards, and the corresponding estimates of losses. Table 5-49 summarizes population sectors exposed to the high and medium flood hazards. HAZUS residential, commercial and industrial exposures and loss estimates to high and medium flood hazards are summarized in Tables 5-12 through 5-39.

Table 5-48: Summary of asset inventory exposure to high and medium hazard flooding and corresponding loss estimates						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
HIGH						
County-Wide Totals	**5,179**	**230**	**4.44%**	**100.00%**	**$778,617**	**$155,723**
Avondale	61	5	8.20%	2.17%	$2,044	$409
Buckeye	77	5	6.49%	2.17%	$17,000	$3,400
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	3	7.69%	1.30%	$1,000	$200
Chandler	226	9	3.98%	3.91%	$17,400	$3,480
El Mirage	34	1	2.94%	0.43%	$27,500	$5,500
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	2	11.11%	0.87%	$10,000	$2,000
Gila Bend	7	0	0.00%	0.00%	$0	$0
Gilbert	694	21	3.03%	9.13%	$26,000	$5,200
Glendale	1,205	30	2.49%	13.04%	$51,680	$10,336
Goodyear	93	5	5.38%	2.17%	$13,150	$2,630
Guadalupe	6	2	33.33%	0.87%	$2,100	$420
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	111	24.83%	48.26%	$508,981	$101,796
Mesa	613	2	0.33%	0.87%	$1,200	$240
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	4	1.78%	1.74%	$4,800	$960
Phoenix	913	14	1.53%	6.09%	$74,221	$14,844
Queen Creek	117	8	6.84%	3.48%	$21,540	$4,308
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	$0
Salt River Project [44]	511	36	7.04%	N/A	N/A	N/A
Scottsdale	114	8	7.02%	3.48%	$0	$0
Surprise	37	0	0.00%	0.00%	$0	$0
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[44] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-48: Summary of asset inventory exposure to high and medium hazard flooding and corresponding loss estimates						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
MEDIUM						
County-Wide Totals	**5,179**	**4,745**	**91.62%**	**100.00%**	**$23,671,878**	**$1,183,594**
Avondale	61	56	91.80%	1.18%	$85,438	$4,272
Buckeye	77	68	88.31%	1.43%	$145,500	$7,275
Carefree	6	6	100.00%	0.13%	$9,000	$450
Cave Creek	39	34	87.18%	0.72%	$58,745	$2,937
Chandler	226	217	96.02%	4.57%	$923,216	$46,161
El Mirage	34	32	94.12%	0.67%	$220,140	$11,007
Fountain Hills	15	15	100.00%	0.32%	$411,000	$20,550
Fort McDowell Yavapai Nation	18	16	88.89%	0.34%	$222,630	$11,131
Gila Bend	7	7	100.00%	0.15%	$36,000	$1,800
Gilbert	694	673	96.97%	14.18%	$3,311,369	$165,568
Glendale	1,205	1,169	97.01%	24.64%	$4,029,507	$201,475
Goodyear	93	88	94.62%	1.85%	$147,848	$7,392
Guadalupe	6	4	66.67%	0.08%	$2,700	$135
Litchfield Park	5	5	100.00%	0.11%	$118,900	$5,945
Unincorporated Maricopa County	447	325	72.71%	6.85%	$1,628,007	$81,400
Mesa	613	562	91.68%	11.84%	$2,003,698	$100,185
Paradise Valley	69	26	37.68%	0.55%	$61,000	$3,050
Peoria	225	201	89.33%	4.24%	$278,918	$13,946
Phoenix	913	888	97.26%	18.71%	$7,539,077	$376,954
Queen Creek	117	101	86.32%	2.13%	$154,798	$7,740
Salt River Pima-Maricopa Indian Community	21	21	100.00%	0.44%	$509,053	$25,453
Salt River Project [45]	511	438	85.71%	N/A	N/A	N/A
Scottsdale	114	57	50.00%	1.20%	$5,000	$250
Surprise	37	37	100.00%	0.78%	$362,429	$18,121
Tempe	111	111	100.00%	2.34%	$1,373,300	$68,665
Tolleson	10	10	100.00%	0.21%	$0	$0
Wickenburg	11	11	100.00%	0.23%	$29,239	$1,462
Youngtown	5	5	100.00%	0.11%	$5,367	$268

[45] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-49: Summary of population sectors exposed to high and medium hazard flooding

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
HIGH									
County-Wide Totals	**1,522,083**	**36,084**	**2.37%**	**180,521**	**3,681**	**2.04%**	**100,684**	**2,261**	**2.25%**
Avondale	15,613	22	0.14%	855	2	0.18%	764	1	0.12%
Buckeye	3,906	84	2.16%	342	6	1.62%	344	4	1.30%
Carefree	1,375	36	2.62%	455	12	2.63%	57	1	2.30%
Cave Creek	2,002	137	6.82%	246	16	6.64%	95	5	5.54%
Chandler	86,421	2,171	2.51%	5,156	82	1.59%	3,029	123	4.05%
El Mirage	3,400	32	0.94%	213	1	0.65%	194	1	0.41%
Fountain Hills	8,759	369	4.21%	1,750	76	4.32%	387	18	4.59%
Fort McDowell Yavapai Nation	309	25	7.97%	17	3	14.79%	10	1	5.48%
Gila Bend	1,010	246	24.34%	81	21	25.60%	117	28	23.99%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	1,608	2.93%	1,834	44	2.40%	883	33	3.68%
Glendale	118,654	1,644	1.39%	9,169	163	1.78%	8,282	160	1.94%
Goodyear	10,967	618	5.64%	921	33	3.63%	309	18	5.82%
Guadalupe	2,558	150	5.86%	125	4	3.09%	194	11	5.87%
Litchfield Park	1,350	6	0.45%	291	2	0.53%	39	0	0.48%
Unincorporated Maricopa County	104,385	4,678	4.48%	43,659	702	1.61%	9,288	274	2.95%
Mesa	189,697	1,026	0.54%	25,867	168	0.65%	12,410	84	0.67%
Paradise Valley	5,769	188	3.26%	868	19	2.23%	68	1	1.65%
Peoria	49,884	297	0.60%	6,555	29	0.44%	1,921	5	0.29%
Phoenix	657,658	13,873	2.11%	54,037	1,060	1.96%	47,321	990	2.09%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	224	7.93%	145	20	13.84%	114	9	7.74%
Salt River Pima-Maricopa Indian Community	6,306	213	3.38%	1,086	40	3.66%	842	25	2.94%
Scottsdale	92,034	7,421	8.06%	15,440	1,023	6.63%	5,177	369	7.12%
Surprise	13,387	113	0.85%	3,460	23	0.66%	757	8	1.09%
Tempe	80,802	306	0.38%	6,138	18	0.29%	7,051	15	0.21%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	182	5.91%	316	20	6.39%	202	13	6.39%
Wickenburg	2,093	412	19.70%	547	95	17.39%	288	64	22.27%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

Table 5-49: Summary of population sectors exposed to high and medium hazard flooding

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
MEDIUM									
County-Wide Totals	**1,522,083**	**1,412,257**	**92.78%**	**180,521**	**164,793**	**91.29%**	**100,684**	**93,125**	**92.49%**
Avondale	15,613	15,591	99.86%	855	854	99.82%	764	763	99.88%
Buckeye	3,906	3,822	97.84%	342	337	98.38%	344	340	98.70%
Carefree	1,375	1,226	89.18%	455	418	91.91%	57	51	90.20%
Cave Creek	2,002	1,865	93.18%	246	229	93.36%	95	90	94.46%
Chandler	86,421	84,249	97.49%	5,156	5,074	98.41%	3,029	2,906	95.95%
El Mirage	3,400	3,368	99.06%	213	212	99.35%	194	193	99.59%
Fountain Hills	8,759	8,389	95.77%	1,750	1,674	95.66%	387	370	95.39%
Fort McDowell Yavapai Nation	309	285	92.02%	17	15	85.16%	10	10	94.50%
Gila Bend	1,010	764	75.61%	81	60	74.40%	117	89	76.01%
Gila River Indian Community	1,091	1,060	97.17%	48	48	100.00%	140	140	100.00%
Gilbert	54,901	53,293	97.07%	1,834	1,790	97.60%	883	850	96.31%
Glendale	118,654	116,995	98.60%	9,169	9,004	98.21%	8,282	8,122	98.06%
Goodyear	10,967	10,348	94.36%	921	887	96.37%	309	291	94.17%
Guadalupe	2,558	2,408	94.14%	125	121	96.91%	194	183	94.13%
Litchfield Park	1,350	1,344	99.55%	291	289	99.47%	39	39	99.52%
Unincorporated Maricopa County	104,385	97,716	93.61%	43,659	42,507	97.36%	9,288	8,804	94.79%
Mesa	189,697	182,878	96.41%	25,867	25,231	97.54%	12,410	12,118	97.64%
Paradise Valley	5,769	1,362	23.62%	868	139	15.98%	68	13	19.40%
Peoria	49,884	48,854	97.94%	6,555	6,500	99.16%	1,921	1,898	98.81%
Phoenix	657,658	619,867	94.25%	54,037	50,324	93.13%	47,321	44,528	94.10%
Pinal County	6	6	100.00%	0	0	100.00%	0	0	100.00%
Queen Creek	2,831	2,452	86.62%	145	112	77.24%	114	97	85.24%
Salt River Pima-Maricopa Indian Community	6,306	3,820	60.58%	1,086	503	46.31%	842	457	54.28%
Scottsdale	92,034	50,114	54.45%	15,440	7,259	47.01%	5,177	2,176	42.04%
Surprise	13,387	13,273	99.15%	3,460	3,437	99.34%	757	749	98.91%
Tempe	80,802	80,494	99.62%	6,138	6,121	99.71%	7,051	7,036	99.79%
Tohono O'odham Nation	156	156	100.00%	11	11	100.00%	26	26	100.00%
Tolleson	3,085	2,903	94.09%	316	296	93.61%	202	189	93.61%
Wickenburg	2,093	1,681	80.30%	547	452	82.61%	288	224	77.73%
Youngtown	1,675	1,675	100.00%	887	887	100.00%	373	373	100.00%

In summary, $155.7 million and $1.2 billion in asset related losses are estimated for high and medium flood hazards, for all the participating jurisdictions in Maricopa County. An additional $0.9 and $7.5 billion in high and medium flood losses to HAZUS defined residential, commercial, and industrial facilities is estimated for all participating Maricopa County jurisdictions. Regarding human vulnerability, a total population of 36,084 people, or 2.37% of the total 2000 Maricopa County population, is potentially exposed to a high hazard flood event. A total population of 1,412,257 people, or 92.8% of the total 2000 Maricopa County population, is potentially exposed to a medium hazard flood event. Based on the historic record, multiple deaths and injuries are plausible and a substantial portion of the exposed population is subject to displacement depending on the event magnitude.

It is duly noted that the loss and exposure numbers presented above represent a comprehensive evaluation of the County as a whole. It is unlikely that a storm event would occur that would flood all of the delineated high and medium flood hazard areas at the same time. Accordingly, actual event based losses and exposure are likely to be only a fraction of those summarized above.

Vulnerability – Repetitive Loss Properties

Repetitive Loss (RL) properties are those NFIP-insured properties that since 1978, have experience multiple flood losses. FEMA tracks RL properties and in particular to identify Severe RL (SRL) properties. RL properties demonstrate a track record of flooding repeated flooding for a certain location and are one element of the vulnerability analysis. RL properties are also important to the NFIP, since structures that flood frequently put a strain on the National Flood Insurance Fund. FEMA records dated October 31, 2007 (provided by ADWR) indicate that there are 164 identified RL properties in Maricopa County, with a total of over $4.4 million in associated building and contents value payments. Table 5-50 summarizes the RL property characteristics by jurisdiction.

Table 5-50: Summary of RL property statistics for Maricopa County jurisdictions

Jurisdiction	No. of Properties	No. of Properties Mitigated	Total Payments
Avondale	1	0	$9,865
Buckeye	7	0	$182,818
Glendale	3	3	$74,392
Goodyear	1	0	$210,035
Unincorporated Maricopa County	37	7	$1,261,865
Mesa	3	1	$113,498
Paradise Valley	2	0	$31,795
Peoria	2	0	$43,849
Phoenix	59	43	$1,316,725
Scottsdale	5	5	$54,198
Tempe	2	2	$110,570
Tolleson	39	0	$93,2095
Wickenburg	3	0	$75,682

Vulnerability – Development Trends

For most Maricopa County jurisdictions, adequate planning and regulatory tools are in place to regulate future development. The FCDMC is very proactive in delineating floodplains ahead of development in the less populated areas of the County, and works cooperatively with all incorporated jurisdictions to update and refine existing floodplain mapping as needed.

Sources

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

URS, 2004, Maricopa County Hazard Mitigation Plan.

U.S. Army Corps of Engineers, Los Angeles District, 1978, Flood Damage Report, 28 February-6 March 1978 on the storm and floods in Maricopa County, Arizona, FCDMC Library #802.024.

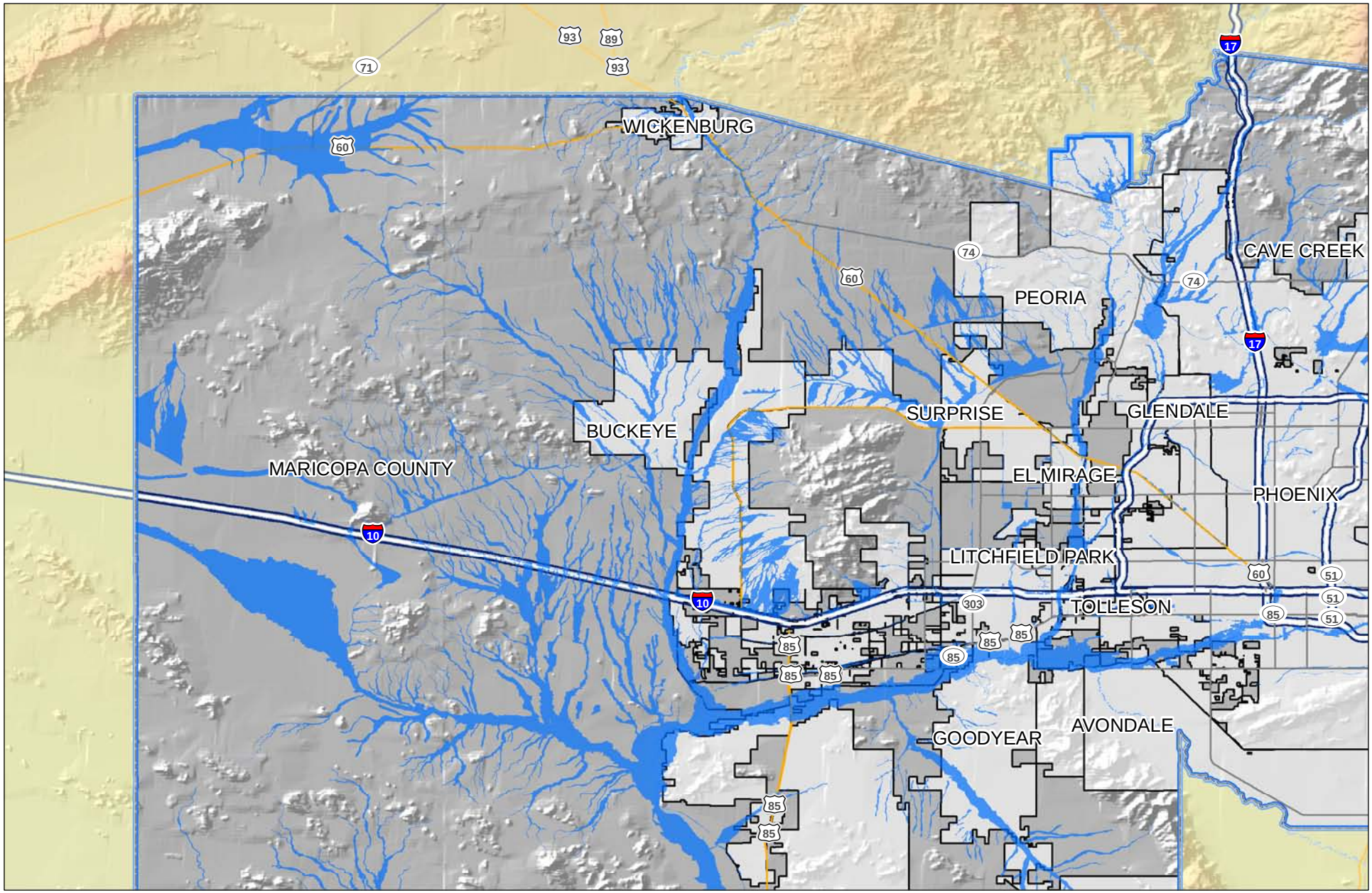
U.S. Army Corps of Engineers, Los Angeles District, 1979, Flood Damage Report, Phoenix Metropolitan Area, December 1978 Flood, FCDMC Library #802.027.

U.S. Army Corps of Engineers, Los Angeles District, 1980, Phoenix Flood Damage Survey, FCDMC Library #802.029.

U.S. Army Corps of Engineers, Los Angeles District, 1994, Flood Damage Report, State of Arizona, Floods of 1993.

Profile Maps

Maps 4A, 4B, and 4C – Flood Hazard Map



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

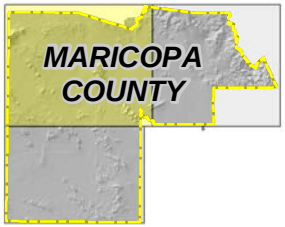
Flood Hazard Rating

- High

0 40 80 160

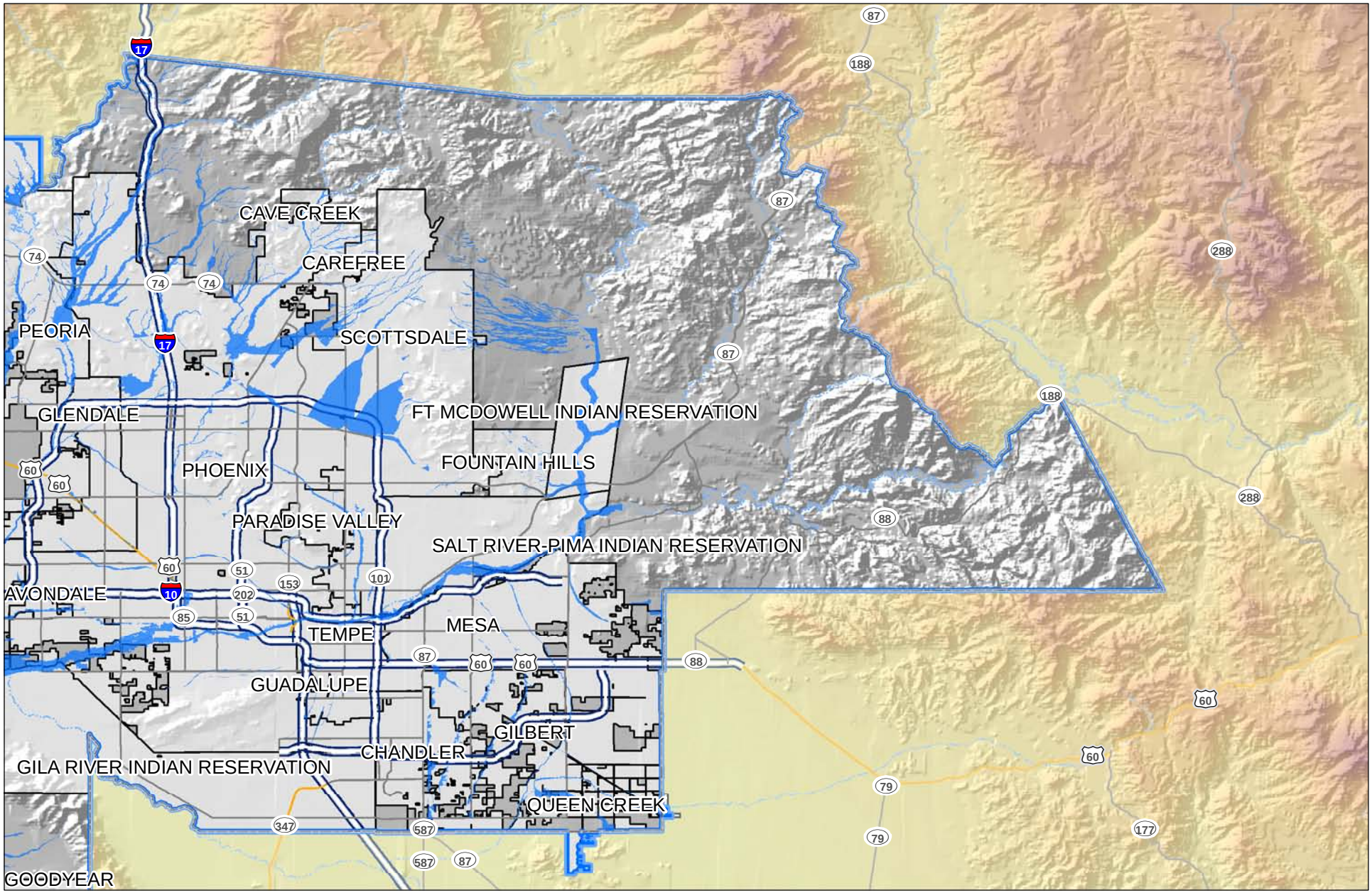
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #4A
Maricopa County
Flood Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Flood Hazard Rating

- High

0 40 80 160

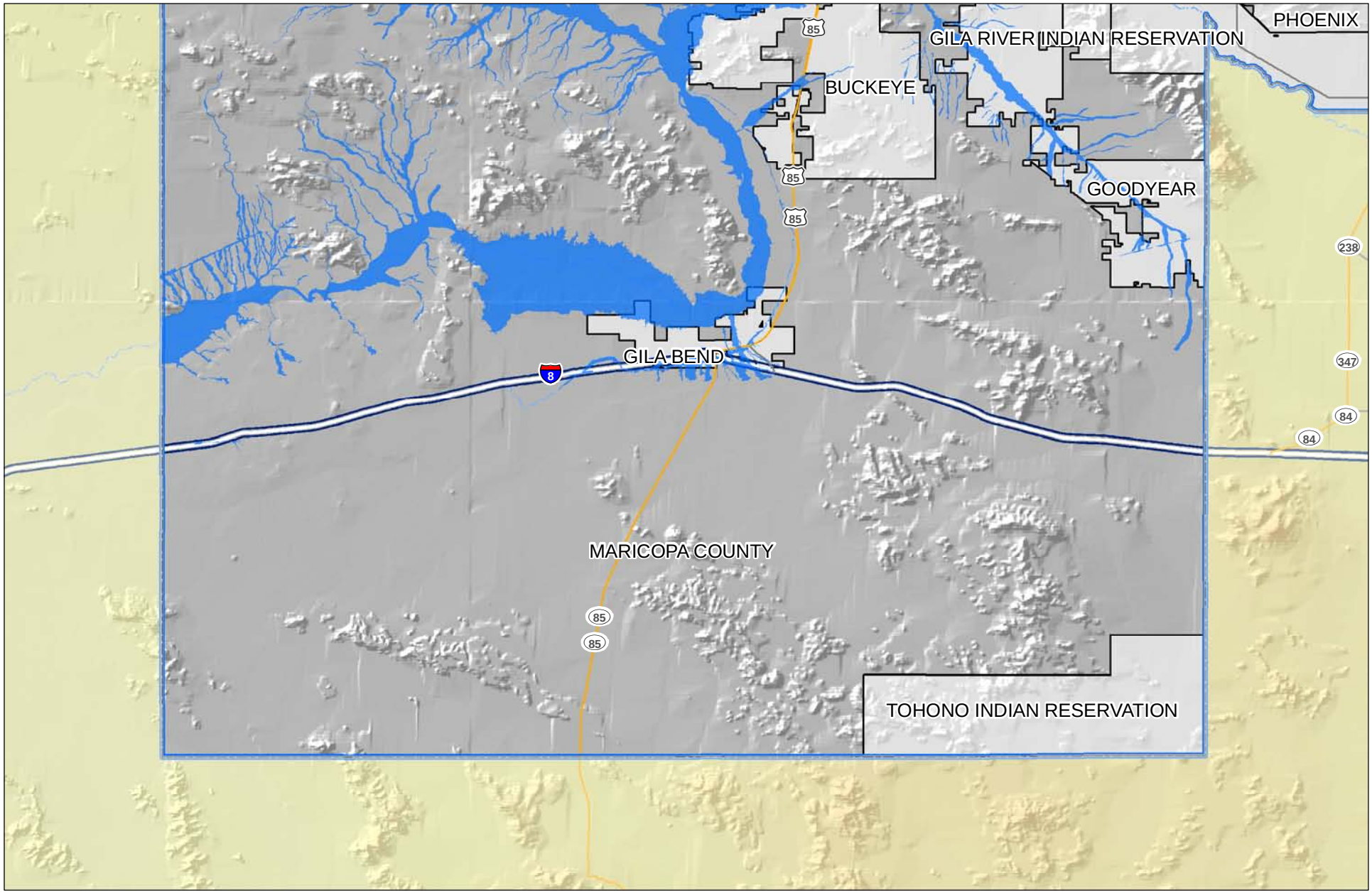
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009

MARICOPA COUNTY

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #4B
Maricopa County
Flood Hazard Map
as of May 2009



Legend

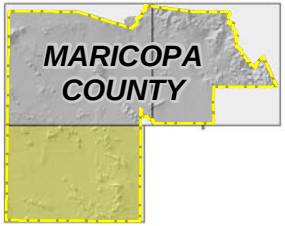
- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Flood Hazard Rating

- High

0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #4C
Maricopa County
Flood Hazard Map
as of May 2009

5.3.6 Levee Failure

Description

FEMA defines levees as man-made structures, usually earthen embankments, that are designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding (FEMA, 2009). National flood policy now recognizes the term "levee" to mean only those structures which were designed and constructed according to sound engineering practices, have up to date inspection records and current maintenance plans, and have been certified as to their technical soundness by a professional engineer. FEMA has classified all other structures that impound, divert, and/or otherwise impede the flow of runoff as "non-levee embankments". In Maricopa County, these might be comprised of features such as roadway and railway embankments, canals, irrigation ditches and drains, and agricultural dikes.

Currently there is no State or Federal Levee Safety Program and no official levee inventory. It is anticipated that FEMA will institute a National Levee Safety Program in the near future. Many levees and non-levee embankments cut across drainage features, impounding water on their upstream side as a result of storm events. FEMA urges communities to recognize that all areas downstream of levees and embankments are at some risk of flooding. There are no guarantees that a levee or embankment will not fail or breach if a large quantity of water collects upstream.

Mechanisms for levee failure are similar to those for dam failure. Failure by overtopping could occur due to an inadequate design capacity, sediment deposition and vegetation growth in the channel, subsidence, and/or a runoff that exceeds the design recurrence interval of the levee. Failure by piping could be due to embankment cracking, fissures, animal boroughs, embankment settling, or vegetal root penetrations.

History

Levees (certified or not) have been used in Maricopa County for over a hundred years to protect communities and agricultural assets, as well as to facilitate the delivery and removal of irrigation water. These levees range from simple earthen embankments pushed up by small equipment to large cement stabilized aggregate embankments lining both sides of a river. The structural integrity of levees with regard to flood protection and policy has been discussed at a national level since the early 1980s but was elevated to a high priority after the collapse and breach of New Orleans' levees after Hurricane Katrina in 2005.

There are no documented failures of certified levees within Maricopa County, nor are there any documented records of non-levee embankment failures.

Probability and Magnitude

There are no established probability or magnitude criteria regarding levee failure due to variability in levee design and maintenance. For flood protection credit under the NFIP, FEMA has established certain design criteria that are based on the 1 percent (100-year) storm event. Federally constructed levees are usually designed for larger, more infrequent events that equate to 250 to 500 year events. All of the FEMA certified levees within Maricopa County are designed to safely convey the 100-year event, with a factor of safety provided by a minimum additional freeboard of 3 feet.

In the latest DFIRM data for Maricopa County, FEMA has re-established new flood hazard zones downstream of non-levee embankments and a shaded Zone X for all others. For this Plan cycle, The MJPT chose to map the new hazard areas downstream of non-levee embankments as a HIGH hazard. All other areas are defined as LOW.

Vulnerability – CPRI Results

Levee Failure CPRI results for each community are summarized in Table 5-47 below.

Table 5-51: Summary of CPRI results by jurisdiction for levee failure

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Possibly	Negligible	<6 hours	<24 hours	2.00
Buckeye	Unlikely	Negligible	<6 hours	<6 hours	1.45
Carefree	Unlikely	Negligible	>24 hours	<6 hours	1.00
Cave Creek	Unlikely	Negligible	<6 hours	<6 hours	1.45
Chandler	Unlikely	Negligible	>24 hours	<6 hours	1.00
El Mirage	Unlikely	Negligible	>24 hours	<6 hours	1.00
Fountain Hills	Unlikely	Negligible	<6 hours	<24 hours	1.55
Fort McDowell Yavapai Nation	Unlikely	Negligible	<6 hours	<24 hours	1.55
Gila Bend	Unlikely	Negligible	<6 hours	<24 hours	1.55
Gilbert	Possibly	Limited	<6 hours	<1 week	2.40
Glendale	Unlikely	Negligible	<6 hours	<24 hours	1.55
Goodyear	Unlikely	Negligible	<6 hours	<6 hours	1.45
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Unlikely	Negligible	<6 hours	<6 hours	1.45
Unincorporated Maricopa County	Likely	Limited	<6 hours	<1 week	2.85
Mesa	Unlikely	Limited	<6 hours	<1 week	1.95
Paradise Valley	Possibly	Limited	<6 hours	<24 hours	2.30
Peoria	Possibly	Limited	<6 hours	<24 hours	2.15
Phoenix	Unlikely	Critical	6-12 hours	<6 hours	2.00
Queen Creek	Possibly	Negligible	<6 hours	<24 hours	1.85
Salt River Pima-Maricopa Indian Community	Possibly	Critical	<6 hours	<24 hours	2.60
Salt River Project	Unlikely	Negligible	6-12 hours	<24 hours	1.40
Scottsdale	Unlikely	Negligible	<6 hours	<6 hours	1.45
Surprise	Unlikely	Negligible	<6 hours	<24 hours	1.55
Tempe	Possibly	Limited	<6 hours	<1 week	2.40
Tolleson	Unlikely	Negligible	>24 hours	<1 week	1.20
Wickenburg	Possibly	Limited	<6 hours	<6 hours	2.20
Youngtown	Unlikely	Critical	<6 hours	<6 hours	2.45
				County-wide average CPRI =	**1.79**

Vulnerability – Loss Estimations

The estimation of potential exposure to high hazard levee failure areas was accomplished by intersecting the human and facility assets with the levee failure hazard limits depicted on Maps 5A, 5B, and 5C. Loss estimates to all facilities located within the high hazard levee failure areas were made based on a loss-to-exposure ratio of 0.20 (or 20%), assuming that flood damages would be similar to those expected for 100-year flood. Table 5-52 summarizes the MJPT identified critical and non-critical facilities potentially exposed to high hazard levee failure areas, and the corresponding estimates of losses. Table 5-53 summarizes population sectors exposed to the high hazard levee failure areas. HAZUS residential, commercial and industrial exposures and loss estimates to high hazard levee failure areas are summarized in Tables 5-12 through 5-39.

In summary, $23.0 million in asset related losses are estimated for high hazard levee failures, for all the participating jurisdictions in Maricopa County. An additional $217 million in high hazard levee failure losses to HAZUS defined residential, commercial, and industrial facilities is estimated for all participating Maricopa County jurisdictions. Regarding human vulnerability, a total population of 10,562 people, or 0.69% of the total 2000 Maricopa County population, is potentially exposed to a high hazard levee failure event. Should a levee structure fail suddenly, it is plausible that death and injury might occur. It can also be expected that a substantial portion of the exposed population is subject to displacement depending on the event magnitude.

Table 5-52: Summary of asset inventory exposure to high hazard levee failure areas and corresponding loss estimates						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
County-Wide Totals	**5,179**	**58**	**1.12%**	**100.00%**	**$115,097**	**$23,019**
Avondale	61	12	19.67%	20.69%	$6,095	$1,219
Buckeye	77	1	1.30%	1.72%	$0	$0
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	13	5.75%	22.41%	$7,017	$1,403
El Mirage	34	0	0.00%	0.00%	$0	$0
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	0	0.00%	0.00%	$0	$0
Gila Bend	7	0	0.00%	0.00%	$0	$0
Gilbert	694	3	0.43%	5.17%	$2,500	$500
Glendale	1,205	1	0.08%	1.72%	$0	$0
Goodyear	93	1	1.08%	1.72%	$1,500	$300
Guadalupe	6	0	0.00%	0.00%	$0	$0
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	9	2.01%	15.52%	$46,666	$9,333
Mesa	613	2	0.33%	3.45%	$6,179	$1,236
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	4	1.78%	6.90%	$551	$110
Phoenix	913	7	0.77%	12.07%	$35,138	$7,028
Queen Creek	117	4	3.42%	6.90%	$9,450	$1,890
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	$0
Salt River Project [46]	511	4	0.78%	N/A	N/A	N/A
Scottsdale	114	1	0.88%	1.72%	$0	$0
Surprise	37	0	0.00%	0.00%	$0	$0
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[46] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-53: Summary of population sectors exposed to high hazard levee failure areas

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
County-Wide Totals	**1,522,083**	**10,562**	**0.69%**	**180,521**	**1,615**	**0.89%**	**100,684**	**728**	**0.72%**
Avondale	15,613	1,630	10.44%	855	60	7.03%	764	34	4.43%
Buckeye	3,906	19	0.48%	342	1	0.34%	344	1	0.18%
Carefree	1,375	0	0.02%	455	0	0.02%	57	0	0.03%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	992	1.15%	5,156	58	1.12%	3,029	112	3.68%
El Mirage	3,400	0	0.00%	213	0	0.00%	194	0	0.00%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	0	0.00%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	30	2.93%	81	2	2.48%	117	3	2.16%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	294	0.54%	1,834	16	0.86%	883	7	0.85%
Glendale	118,654	9	0.01%	9,169	0	0.00%	8,282	1	0.01%
Goodyear	10,967	37	0.34%	921	2	0.19%	309	2	0.57%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	1,685	1.61%	43,659	736	1.68%	9,288	199	2.14%
Mesa	189,697	4	0.00%	25,867	0	0.00%	12,410	0	0.00%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	2,898	5.81%	6,555	539	8.22%	1,921	273	14.19%
Phoenix	657,658	2,565	0.39%	54,037	119	0.22%	47,321	73	0.15%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	19	0.67%	145	0	0.09%	114	0	0.14%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	314	0.34%	15,440	57	0.37%	5,177	22	0.42%
Surprise	13,387	63	0.47%	3,460	24	0.71%	757	3	0.36%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	3	0.16%	547	1	0.11%	288	0	0.15%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

It is duly noted that the loss and exposure numbers presented above represent a comprehensive evaluation of the County as a whole. It is unlikely that a storm event would occur that would fail all of the levees at the same time. Accordingly, actual event based losses and exposure are likely to be only a fraction of those summarized above.

Vulnerability – Development Trend Analysis

With the new focus on residual downstream risk for the land-side of levees and a general refocusing of national levee regulation and policy, it is likely that new and old developments in these areas will need to be revisited to determine if additional measures are necessary for adequate flood protection. Many structures located downstream of non-levee embankments are being re-mapped into Special Flood Hazard Zones. New developments should be evaluated to determine if sufficient protection is proposed to mitigate damages should the upstream structure fail.

Sources

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

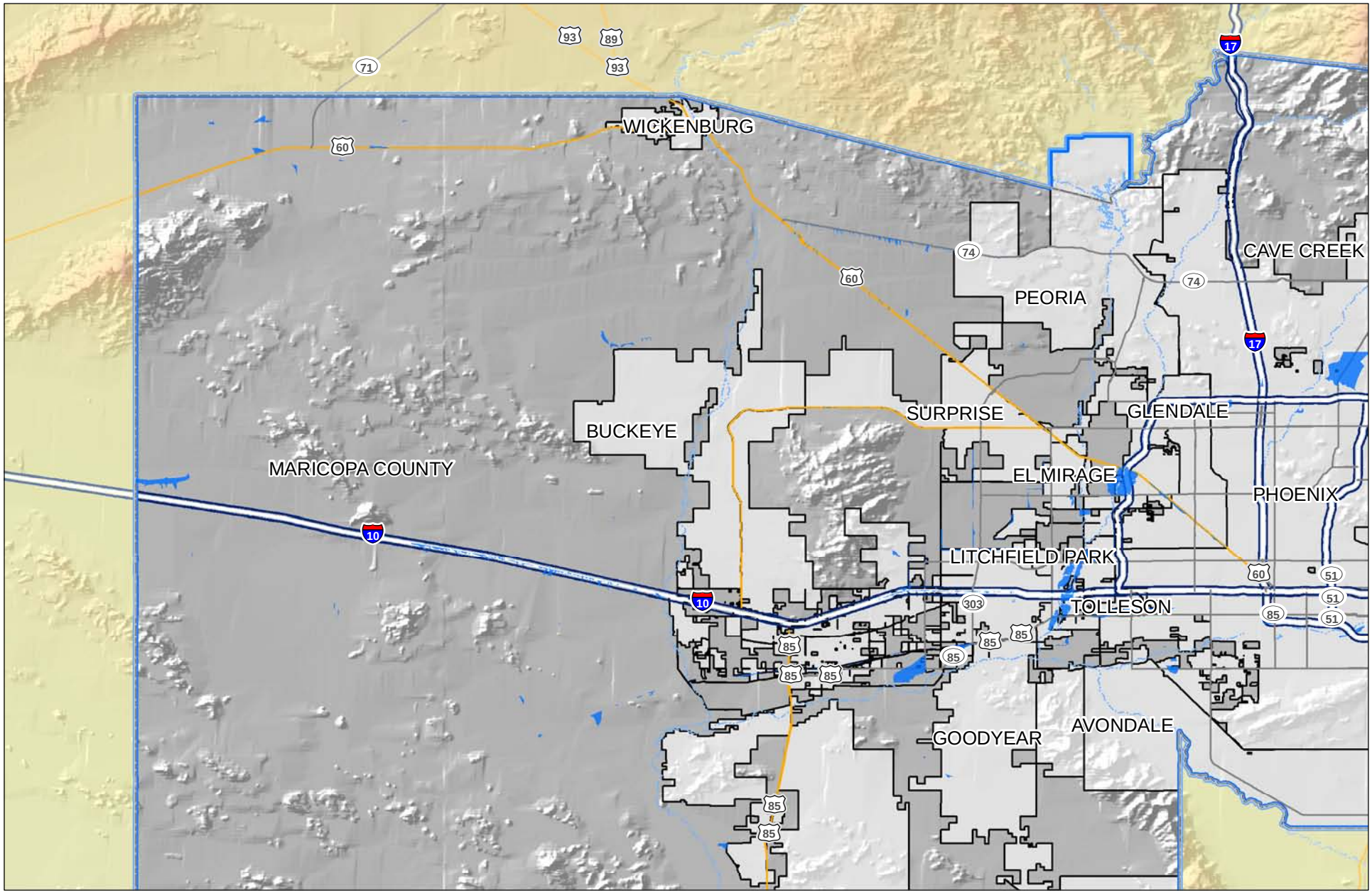
FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

FEMA, 2009, Web page at URL: http://www.fema.gov/plan/prevent/fhm/lv_intro.shtm#3

URS, 2004, Maricopa County Hazard Mitigation Plan.

Profile Maps

Maps 5A, 5B, and 5C – Potential Levee Failure Flood Hazard Map(s)



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

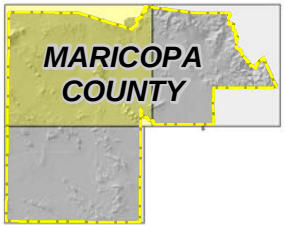
Potential Levee Failure Flood Hazard Rating

- High

0 40 80 160

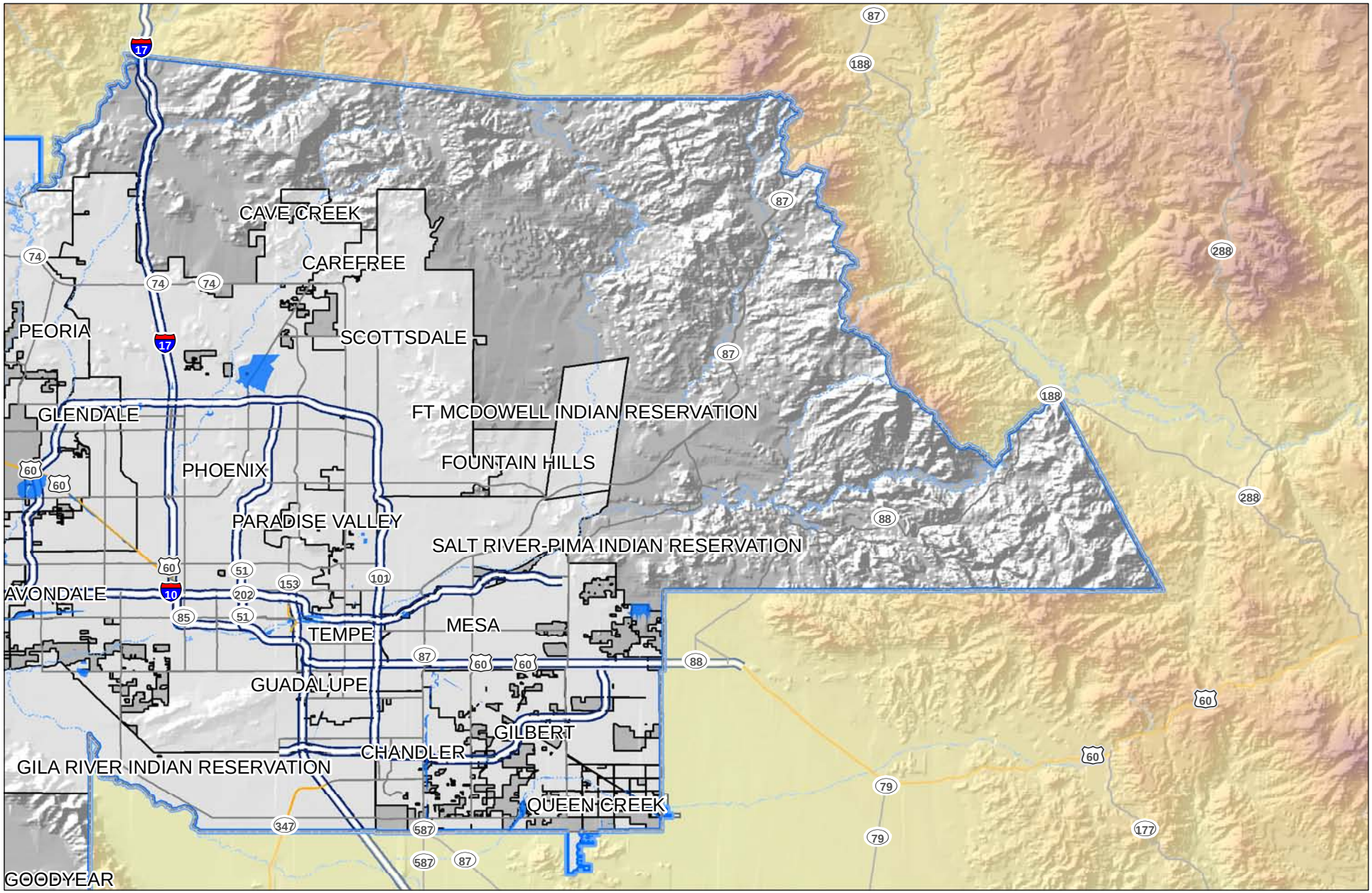
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #5A
Maricopa County
Potential Levee Failure
Flood Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

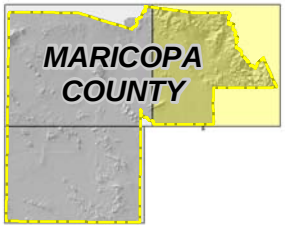
Potential Levee Failure Flood Hazard Rating

- High

0 40 80 160

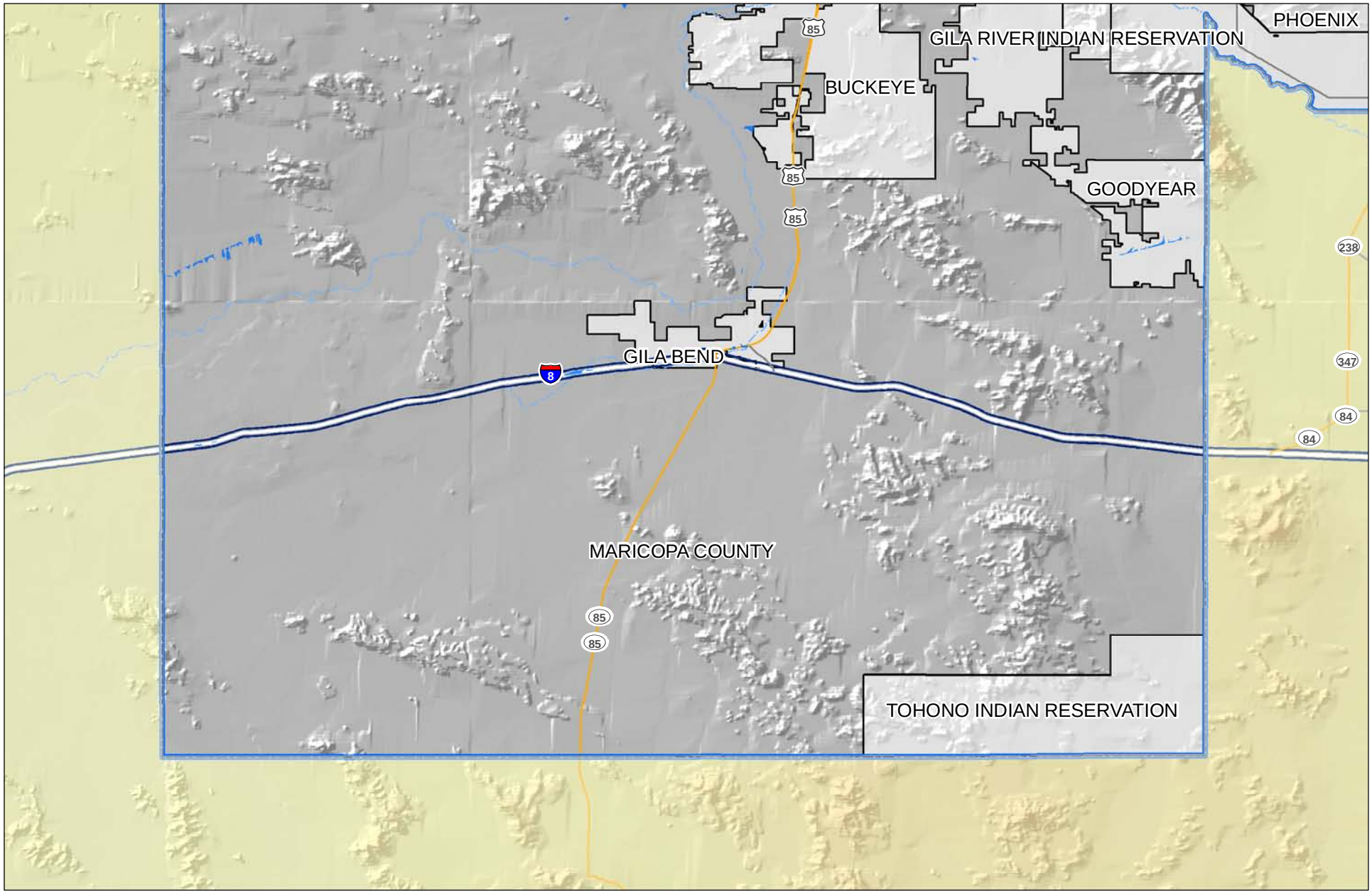
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #5B
Maricopa County
Potential Levee Failure
Flood Hazard Map
as of May 2009



Legend

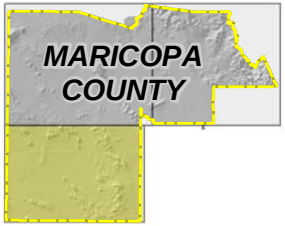
- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Potential Levee Failure Flood Hazard Rating

- High

0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #5C
Maricopa County
Potential Levee Failure
Flood Hazard Map
as of May 2009

THIS PAGE INTENTIONALLY LEFT BLANK

5.3.7 Severe Wind

Description

The hazard of Severe Wind encompasses all climatic events that produce damaging winds. For Maricopa County, Severe Winds usually result from either extreme pressure gradients that usually occur in the spring and early summer months, or from thunderstorms. Thunderstorms can occur year-round and are usually associated with cold fronts in the winter, monsoon activity in the summer, and tropical storms in the late summer or early fall.

Three types of damaging wind related features typically accompany a thunderstorm; 1) downbursts, 2) straight line winds, and infrequently, 3) tornadoes.

Downbursts are columns of air moving rapidly downward through a thunderstorm. When the air reaches the ground, it spreads out in all directions, creating horizontal wind gusts of 80 mph or higher. Downburst winds have been measured as high as 140 mph. Some of the air curls back upward with the potential to generate a new thunderstorm cell. Downbursts are called macrobursts when the diameter is greater than 2.5 miles, and microbursts when the diameter is 2.5 miles or less. They can be either dry or wet downbursts, where the wet downburst contains precipitation that continues all the way down to the ground, while the precipitation in a dry downburst evaporates on the way to the ground, decreasing the air temperature and increasing the air speed. In a microburst the wind speeds are highest near the location where the downdraft reached the surface, and are reduced as they move outward due to the friction of objects at the surface. Typical damage from downbursts includes uprooted trees, downed power lines, mobile homes knocked off their foundations, block walls and fences blown down, and porches and awnings blown off homes.

Straight line winds are developed similar to downbursts, but are usually sustained for greater periods as a thunderstorms reaches the mature stage, traveling parallel to the ground surface at speeds of 75 mph or higher. These winds are frequently responsible for generating dust storms and sand storms, reducing visibility and creating hazardous driving conditions.

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most funnel clouds do not touch the ground, but when the lower tip of the funnel cloud touches the earth, it becomes a tornado and can cause extensive damage. For Maricopa County, tornadoes are the least common severe wind to accompany a thunderstorm.

History

According to Tables 5-2 and 5-3, Maricopa County has been included in 4 state and/or federal disaster declarations involving thunderstorms. There are also and additional 193 thunderstorm/high wind events and 44 tornadoes with a combined loss of approximately $460 million to structures and agriculture, 6 deaths, and over 200 injuries. The following are examples of documented past events:

- In January 1993, a category F2 tornado moved through Scottsdale damaging 18 homes, 4 with major damage, and damaging many trees and signs. The most damage occurred when the tornado moved east from 59th and Clinton to 72nd and Cholla. Controllers from the nearby Scottsdale Airport watched this tornado move through this, north Scottsdale residential area. Damages were estimated to exceed $5 million (NCDC, 2009).
- In August 1993, strong winds from nearby thunderstorms exceeded 50 mph in many areas of the Valley. Homes and businesses sustained damage, trees were uprooted and power lines were downed. Arizona Public Service reported 10,000 customers without power. An 8-year-old boy in Avondale was severely injured just after 1800 MST when a window burst and glass cut his jugular vein. The roof of a convenience store was blown off, as well as some damage to a church and an elementary school. A 1-mile section of a 69,000-volt power line near Perryville was knocked down. High winds blew tree limbs onto power poles and took shingles off several homes. Damages were estimated to exceed $5 million (NCDC, 2009).

- In September 1994, micro burst struck a school building at the Littleton Elementary School in the community of Cashion, two miles SW of Tolleson. The roof was torn from about eight classrooms with one teacher and eight children being injured. A National Weather Service Storm Survey Team estimated winds of 100 mph. A teacher reported the ground covered with hail, some golf ball-size. A weather spotter at 75th Avenue and Camelback Road reported 1.25 hail. A mile long stretch of power poles were downed near 107th Avenue and Interstate 10. Damage to the school was estimated in excess of $500,000 and stormwide estimates exceeded $5 million (NCDC, 2009).
- In September 1996, a massive thunderstorm move through western half of the Phoenix Metropolitan Area, with nearly every West Valley community reporting some damage. The hardest hit areas were in northwest Phoenix, Glendale, and Peoria. Other towns that sustained damage were Sun City, Surprise, El Mirage, Tolleson, Avondale, Goodyear, and Buckeye. Approximately 400 power poles were knocked down throughout these towns, 100 owned by SRP and 300 owned by APS. There were from 70,000 to 75,000 homeowner claims for about $100 million in damage (NCDC, 2009).
- In August 2001, a large thunderstorm complex developed over northwest Maricopa County and moved to the south and southwest. The thunderstorm induced gust front, at times over 60 miles long, west to east, caused widespread electric power outages in the Gila Bend area south to Ajo in west Pima County. In the immediate Gila Bend area, thirty-eight 230kv poles downed, and thirty-nine 69kv poles were downed. A substation was damaged as well as telephone lines. The reported wind gust of 66 knots was recorded at the Gila Bend municipal airport at 0245. As the gust front moved further to the south and southwest, a total of 140 power poles were blown over as reported by the Arizona Public Service. Electric power services were disrupted up to 5 days. State PCA No. 22001 (ADEM, 2009).
- In July 2006, several cities throughout the central portion of Maricopa County had major wind damage as a series of thunderstorms and microbursts moved across the area. According to SRP, an estimated 65 power poles were blown down, in parts of Scottsdale, Tempe and Mesa. At one point, about 20,000 customers were without power. APS reported about 8,000 customers were without power. At Phoenix Sky Harbor Airport, the official peak wind gust was 59 mph. However, winds at Williams Gateway Airport gusted to 86 mph and flipped a small twin-engine plane atop another aircraft. In Mesa, 35 schools reported damages due to the storm. Stormwide losses were estimated to exceed $150 million.
- In August 2008, Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County with wind gusts estimated to exceed .85 mph. In Tempe, an 18 year-old man was injured by a falling tree. Winds on the ASU campus were measured at 69 mph and severely damaged the indoor football practice facility. at 16th St and Thomas. Widespread damage occurred to homes, businesses and windows were knocked out in at least one Phoenix high-rise. Numerous power poles were downed, and many trees uprooted. Some damage also occurred at the Arizona State Capitol in Phoenix. Trees were uprooted at 48th street and McDowell and nearby homes were damaged. Microburst winds hit Chandler airport and flipped at least two planes. Over $26 million in losses were reported Valley-wide (NCDC, 2009).

Probability and Magnitude

For thunderstorms, the probability of a severe thunderstorm occurring with high velocity winds increases as the average duration and number of thunderstorm events increases. According to NCDC, 288 separate thunderstorm event damage reports have been filed for Maricopa County over the past 30 years (NCDC, 2009), yielding an average of 10 damaging or potentially damaging thunderstorm events per year. Reported damages for the same period were approximately $420 million, or $14 million per year.

The NWS issues a severe thunderstorm watch when conditions are favorable for the development of severe thunderstorms. The local NWS office considers a thunderstorm severe if it produces hail at least 3/4-inch in diameter, wind of 58 mph or higher, or tornadoes. When a watch is

issued for a region, residents are encouraged to continue normal activities but should remain alert for signs of approaching storms, and continue to listen for weather forecasts and statements from the local NWS office. When a severe thunderstorm has been detected by weather radar or one has been reported by trained storm spotters, the local NWS office will issue a severe thunderstorm warning. A severe thunderstorm warning is an urgent message to the affected counties that a severe thunderstorm is imminent. The warning time provided by a severe thunderstorm watch may be on the order of hours, while a severe thunderstorm warning typically provides an hour or less warning time. All of the 288 storms that are documented over the last 30 years would qualify as a severe thunderstorm.

The probability of tornadoes occurring is much less frequent than thunderstorms. For the same 30-year period, the NCDC reports only 24 tornadoes, which averages to less than one tornado per year. Reported damages associated with those tornadoes add up to $6.4 million or less than $270,000 per event.

Tornado damage severity is measured by the Fujita Tornado Scale, which assigns a numerical value of 0 to 5 based on wind speeds, as shown in Table 5-54, with the letter F preceding the number (e.g., FO, F1, F2). Most tornadoes last less than 30 minutes, but some last for over an hour. The path of a tornado can range from a few hundred feet to miles. The width of a tornado may range from tens of yards to more than a quarter of a mile.

Table 5-54: Fujita Tornado Scale

Category	Wind Speed	Description of Damage
F0	40-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158-206 mph	Severe damage. Roofs and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	261-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

Source: FEMA, 1997.

Of the 24 recorded tornadoes, 15 were category F0, 8 were category F1, and 1 was category F2. According the NCDC, there has been only one F3 tornado recorded in the history of Maricopa County, and that was August 4, 1957.

Vulnerability – CPRI Results

Severe Wind CPRI results for each community are summarized in Table 5-55 below.

Table 5-55: Summary of CPRI results by jurisdiction for severe wind

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Likely	Limited	<6 hours	<6 hours	2.65
Buckeye	Highly Likely	Critical	<6 hours	<6 hours	3.40
Carefree	Highly Likely	Limited	12-24 hours	<1 week	3.00
Cave Creek	Highly Likely	Limited	12-24 hours	<6 hours	2.80
Chandler	Highly Likely	Negligible	6-12 hours	<6 hours	2.65
El Mirage	Highly Likely	Critical	>24 hours	<1 week	3.15
Fountain Hills	Likely	Critical	6-12 hours	<1 week	3.00
Fort McDowell Yavapai Nation	Highly Likely	Limited	12-24 hours	<6 hours	2.80
Gila Bend	Possibly	Limited	<6 hours	<24 hours	2.30
Gilbert	Highly Likely	Limited	<6 hours	<24 hours	3.20
Glendale	Highly Likely	Limited	<6 hours	<6 hours	3.10

Table 5-55: Summary of CPRI results by jurisdiction for severe wind					
Participating Jurisdiction	**Probability**	**Magnitude/ Severity**	**Warning Time**	**Duration**	**CPRI Score**
Goodyear	Highly Likely	Negligible	12-24 hours	<24 hours	2.60
Guadalupe	Possibly	Limited	<6 hours	<24 hours	2.30
Litchfield Park	Highly Likely	Limited	<6 hours	<24 hours	3.20
Unincorporated Maricopa County	Highly Likely	Critical	<6 hours	<6 hours	3.40
Mesa	Highly Likely	Limited	<6 hours	<1 week	3.30
Paradise Valley	Highly Likely	Limited	6-12 hours	<24 hours	3.05
Peoria	Highly Likely	Critical	<6 hours	<24 hours	3.50
Phoenix	Likely	Limited	<6 hours	<6 hours	2.65
Queen Creek	Likely	Limited	<6 hours	<6 hours	2.65
Salt River Pima-Maricopa Indian Community	Highly Likely	Critical	6-12 hours	<1 week	3.45
Salt River Project	Highly Likely	Critical	<6 hours	<6 hours	3.40
Scottsdale	Likely	Limited	12-24 hours	<6 hours	2.35
Surprise	Highly Likely	Limited	<6 hours	<6 hours	3.10
Tempe	Highly Likely	Critical	<6 hours	<24 hours	3.50
Tolleson	Likely	Limited	12-24 hours	<24 hours	2.45
Wickenburg	Highly Likely	Critical	<6 hours	<6 hours	3.40
Youngtown	Highly Likely	Critical	<6 hours	<24 hours	3.50
				County-wide average CPRI =	**2.99**

Vulnerability – Loss Estimations

Exposure to severe wind events is generally the same across the County, although communities situated close to the mountains like Carefree, Cave Creek, and Fountain Hills , may not be as susceptible to tornadoes as other communities within the County. Based on the historic record over the last 30 years, it is feasible to expect average annual losses of $15 million (county-wide) It is difficult to estimate losses for individual jurisdictions within the County due to the lack of discrete data.

Vulnerability – Development Trend Analysis

Future development will expand the exposure of life and property to the damaging effects of severe wind events. Enforcement and/or implementation of modern building codes to regulate new developments is probably the best way to mitigate against losses.

Sources

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

Federal Emergency Management Agency,1997, Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy.

FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

URS, 2004, Maricopa County Hazard Mitigation Plan.

U.S. Dept of Commerce, National Climatic Data Center, 2009, Storm Events Database, accessed via the following URL: http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

Profile Maps

No profile maps provided.

5.3.8 Subsidence

Description

Subsidence occurs when the original land surface elevation drops due to changes in the subsurface. Causes of subsidence include, but are not limited to, removal of fluids (water, oil, gas, etc.), mine collapse, and hydrocompaction. Of these causes, hydrocompaction and mine collapse tend to be localized events, while fluid removal may occur either locally or regionally. The main cause for subsidence in Maricopa County is excessive groundwater withdrawal, wherein the volume of water withdrawn exceeds the natural recharge. Once an area has subsided, it is likely the ground elevation will not rise again due to consolidation of the soils, even if the pumped groundwater is replaced.

Subsidence causes regional drainage patterns to change. Impacts include unexpected flooding, storm drain backwater, reversal of channel drainage patterns, and damages to infrastructure both in the subsurface (water and electric lines, well casings, etc.) and surface (roads, canals, drainages, surveyed benchmarks, etc.). Subsidence also causes fissures, which are discussed in Section 5.3.4.

Land-use areas that are predominantly agricultural tend to experience the most intense subsidence due to groundwater based irrigation practices. Subsidence is not, however, restricted to only rural areas since exponential population growth also places great demands on groundwater.

History

Active subsidence has been occurring in certain areas of Maricopa County for over 60 years and is primarily due to groundwater overdraft. By 1980 ground-water levels had declined at least 100 feet county-wide and between 300 and 500 feet in some areas (Carpenter, 1999). These groundwater declines have resulted in areas of significant subsidence, as summarized in the following examples:

- Luke Air Force Base – by 1992, ground-water level declines of more than 300 feet generated land subsidence of as much as 18 feet about 20 miles west of Phoenix on and near Luke Air Force Base (Carpenter, 1999).
- Queen Creek – by 1977, an area of almost 230 square miles had subsided more than 3 feet(Carpenter, 1999).
- Harquahala Plain – subsidence of about 0.6 feet occurred in response to about 300 feet of water-level decline(Carpenter, 1999).
- East Mesa/Apache Junction – a total of 5.2 feet of subsidence was measured along the CAP near the Superstition Freeway, for the period of 1971 to 2001 (AMEC, 2006).
- Paradise Valley – between 1965 and 1982, over 5 feet subsidence occurred (Carpenter, 1999).
- Scottsdale/CAP – canal subsided about 1 foot since construction (Carpenter, 1999).

The following are two examples of documented damages that are directly attributable to subsidence:

- Dysart Drain Flow Reversal – Subsidence near Luke Air Force Base led to flow reversal in a portion of the Dysart Drain, which is an engineered flood conveyance channel. In 1992, surface runoff from four inches of precipitation caused the sluggish Dysart Drain to spill over flooding the base runways, damaging more than 100 homes, and forcing the base to close for 3 days. Total damage was on the order of $3 million (ALSG, 2007).
- Central Arizona Project Canal Repair – sections of the CAP canal in Scottsdale traverse an area that has subsided up to 1.5 feet over a 20-year period, threatening the canal's maximum flow capacity. In response, CAP raised the canal lining 3 feet over a one-mile segment of affected area at a cost of $350,000. A second and much larger subsidence area was later identified near the Scottsdale Airpark. Plans for raising the canal lining will cost an estimated $820,000. Recently, a third subsidence area has been identified east of the Scottsdale Airpark in the Scottsdale West World area which will likely require further repair (ALSG, 2007).

Land subsidence has been detected over the years using surveying techniques such as differential leveling and high accuracy Global Positioning System (GPS) surveying. In the early 1990's, scientists began to use a satellite based technology called Synthetic Aperture Radar (SAR) and interferometric processing (InSAR) to detect land surface elevation changes. InSAR has been developed into a highly reliable land subsidence monitoring technique that has been utilized by ADWR since 2002. ADWR has identified numerous subsidence features around the State and continues to monitor the extent and rates of these features on an annual basis (ADWR, 2009). In Maricopa County, ADWR monitors 7 geographical areas using InSAR and is developing data for an eighth.

Probability and Magnitude

There are no statistical probability estimates for subsidence. The magnitudes of severity depend on geography, with estimates summarized in the previous section above. The MJPT reviewed and chose to use the zones currently being monitored by ADWR to depict the subsidence hazard for the County. Areas defined by ADWR as active subsidence areas were mapped as HIGH hazard zones and all other areas were assigned a LOW hazard. The high hazard subsidence zones are presented on Maps 6A, 6B, and 6C.

Vulnerability – CPRI Results

Subsidence CPRI results for each community are summarized in Table 5-56 below.

Table 5-56: Summary of CPRI results by jurisdiction for subsidence

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Possibly	Limited	<6 hours	<6 hours	2.50
Buckeye	Unlikely	Negligible	>24 hours	<6 hours	1.00
Carefree	Unlikely	Negligible	>24 hours	<6 hours	1.00
Cave Creek	Unlikely	Negligible	>24 hours	<6 hours	1.0
Chandler	Unlikely	Negligible	>24 hours	<6 hours	1.00
El Mirage	Possibly	Limited	>24 hours	<6 hours	1.75
Fountain Hills	Possibly	Limited	<6 hours	>1 week	2.50
Fort McDowell Yavapai Nation	Unlikely	Negligible	>24 hours	>1 week	1.30
Gila Bend	Unlikely	Negligible	>24 hours	<6 hours	1.00
Gilbert	Highly Likely	Limited	>24 hours	<1 week	2.85
Glendale	Possibly	Limited	>24 hours	>1 week	2.05
Goodyear	Unlikely	Negligible	<6 hours	<6 hours	1.45
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Unlikely	Negligible	<6 hours	<6 hours	1.45
Unincorporated Maricopa County	Highly Likely	Limited	>24 hours	>1 week	2.95
Mesa	Highly Likely	Limited	< 6 hours	>1 week	2.95
Paradise Valley	Unlikely	Negligible	<6 hours	<1 week	1.65
Peoria	Unlikely	Limited	<6 hours	<6 hours	1.75
Phoenix	Unlikely	Negligible	<6 hours	>6 hours	1.45
Queen Creek	Possibly	Negligible	<6 hours	<6 hours	1.90
Salt River Pima-Maricopa Indian Community	Possibly	Critical	<6 hours	>1 week	2.80
Salt River Project	Unlikely	Negligible	>24 hours	>1 week	1.30
Scottsdale	Unlikely	Negligible	<6 hours	<6 hours	1.45
Surprise	Possibly	Limited	>24 hours	>1 week	2.05
Tempe	Possibly	Limited	<6 hours	>1 week	2.50
Tolleson	Unlikely	Negligible	>24 hours	<1 week	1.20
Wickenburg	Highly Likely	Limited	>24 hours	>1 week	2.95
Youngtown	Highly Likely	Negligible	<6 hours	>1 week	2.65
				County-wide average CPRI =	**1.85**

Vulnerability – Loss Estimations

The estimation of potential exposure to high hazard subsidence areas was accomplished by intersecting the human and facility assets with the subsidence high hazard limits depicted on Maps 6A, 6B, and 6C. No losses are estimated for facilities located within the high hazard subsidence areas due to lack of appropriate loss-to-exposure data. Table 5-57 summarizes the MJPT identified critical and non-critical facilities potentially exposed to high hazard subsidence areas. Table 5-58 summarizes

population sectors exposed to the high hazard subsidence areas. HAZUS residential, commercial and industrial exposures to high hazard subsidence areas are summarized in Tables 5-12 through 5-39.

In summary, 839 MJPT identified critical and non-critical facilities with a total replacement cost of $2.72 billion, for all the participating jurisdictions in Maricopa County, are exposed to high hazard subsidence areas. An additional $26.14 billion in HAZUS defined residential, commercial, and industrial facilities is exposed to high hazard subsidence areas. for all participating Maricopa County jurisdictions. Regarding human vulnerability, a total population of 227,120 people, or 14.92% of the total 2000 Maricopa County population, is potentially exposed to a high hazard subsidence area. It is unlikely that death and injury might be the direct result of subsidence, however, secondary impacts such as fissures and flooding due to slope reversal, may.

Vulnerability – Development Trend Analysis

As ADWR continues its mapping and tracking programs, more data will become available for use in regulating future development. Public awareness of the hazard is one a key element to any effective mitigation measure, as well as the need to slow the depletion of groundwater sources. New regional drainage features and structures should always refer to the maps in this plan to determine the need for special design considerations that address subsidence.

Sources

AMEC Earth & Environmental, Inc., 2006, Earth Fissure Risk Zone Investigation Report, Powerline and Vineyard Flood Retarding Structures, Pinal County, AZ, prepared for FCDMC under Contract FCD 2004C503, Work Assignments 1&2.

Arizona Department of Water Resources, 2009, land subsidence website at: http://www.azwater.gov/DWR/Content/Find_by_Program/Hydrology/land-subsidence-in-arizona.htm

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

Arizona Land Subsidence Group, 2007. Land subsidence and earth fissures in Arizona: Research and informational needs for effective risk management, white paper, Tempe, AZ, . http://www.azgs.az.gov/Earth%20Fissures/CR-07-C.pdf

Carpenter, M.C., 1999, Land subsidence in the United States, South-Central Arizona: Earth fissures and subsidence complicate development of desert water resources, [Galloway, D., Jones, D.R., and Ingebritson, S.E., editors], USGS Circular 1182.

FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

URS, 2004, Maricopa County Hazard Mitigation Plan.

Profile Maps

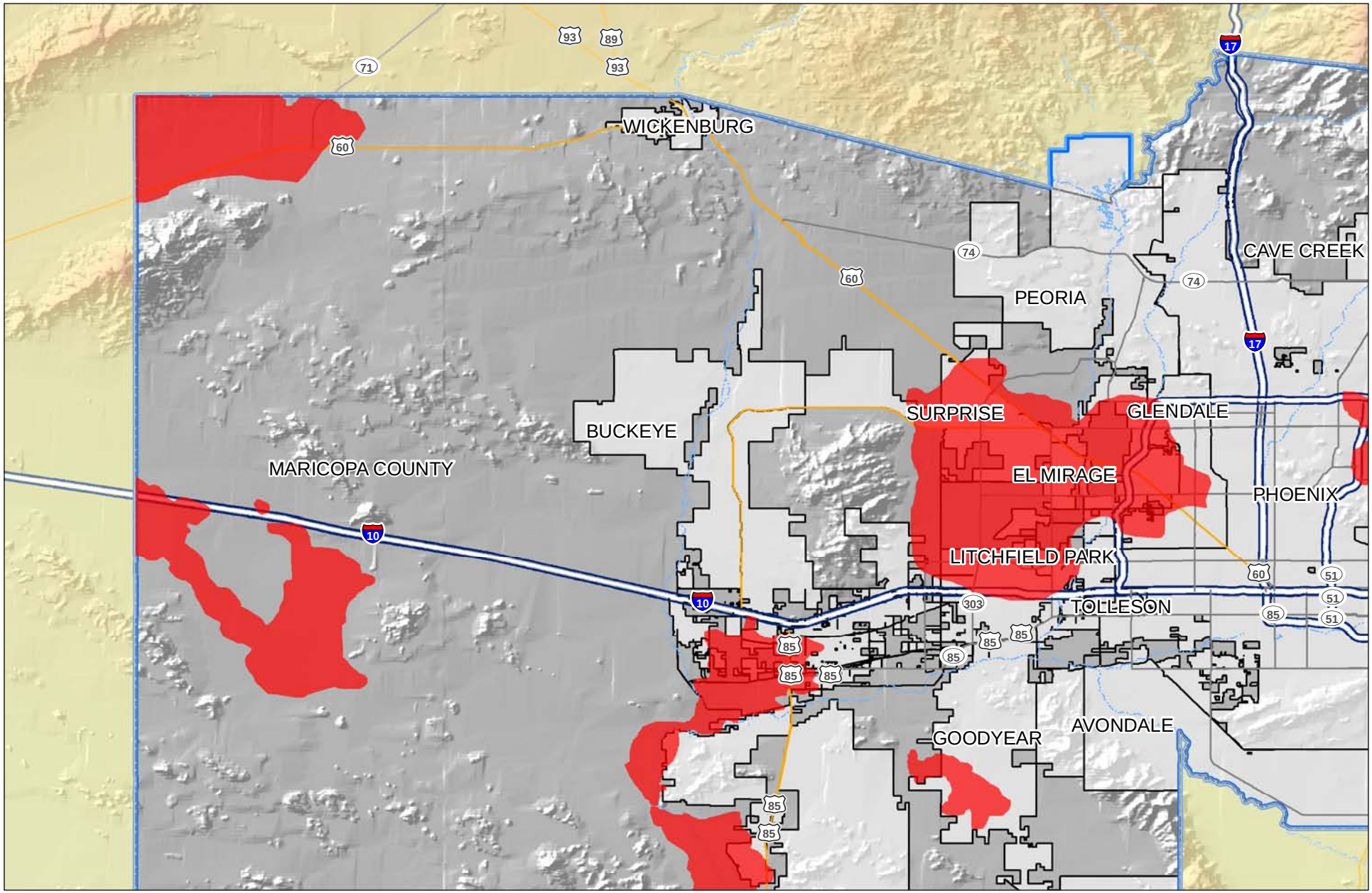
Maps 6A, 6B, and 6C – Subsidence Hazard Map(s)

Table 5-57: Summary of asset inventory exposure to high hazard subsidence areas						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
County-Wide Totals	**5,179**	**839**	**16.20%**	**100.00%**	**$2,720,988**	**None Estimated**
Avondale	61	15	24.59%	1.79%	$16,561	None Estimated
Buckeye	77	6	7.79%	0.72%	$12,000	None Estimated
Carefree	6	0	0.00%	0.00%	$0	None Estimated
Cave Creek	39	0	0.00%	0.00%	$0	None Estimated
Chandler	226	0	0.00%	0.00%	$0	None Estimated
El Mirage	34	33	97.06%	3.93%	$240,140	None Estimated
Fountain Hills	15	0	0.00%	0.00%	$0	None Estimated
Fort McDowell Yavapai Nation	18	7	38.89%	0.83%	$206,000	None Estimated
Gila Bend	7	0	0.00%	0.00%	$0	None Estimated
Gilbert	694	5	0.72%	0.60%	$25,000	None Estimated
Glendale	1,205	328	27.22%	39.09%	$992,635	None Estimated
Goodyear	93	27	29.03%	3.22%	$43,136	None Estimated
Guadalupe	6	1	16.67%	0.12%	$1,300	None Estimated
Litchfield Park	5	2	40.00%	0.24%	$102,100	None Estimated
Unincorporated Maricopa County	447	105	23.49%	12.51%	$216,789	None Estimated
Mesa	613	26	4.24%	3.10%	$101,080	None Estimated
Paradise Valley	69	0	0.00%	0.00%	$0	None Estimated
Peoria	225	153	68.00%	18.24%	$139,141	None Estimated
Phoenix	913	63	6.90%	7.51%	$256,410	None Estimated
Queen Creek	117	7	5.98%	0.83%	$900	None Estimated
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	None Estimated
Salt River Project [47]	511	39	7.63%	N/A	N/A	N/A
Scottsdale	114	19	16.67%	2.26%	$0	None Estimated
Surprise	37	37	100.00%	4.41%	$362,429	None Estimated
Tempe	111	0	0.00%	0.00%	$0	None Estimated
Tolleson	10	0	0.00%	0.00%	$0	None Estimated
Wickenburg	11	0	0.00%	0.00%	$0	None Estimated
Youngtown	5	5	100.00%	0.60%	$5,367	None Estimated

[47] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-58: Summary of population sectors exposed to high hazard subsidence areas

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
County-Wide Totals	**1,522,083**	**227,120**	**14.92%**	**180,521**	**49,249**	**27.28%**	**100,684**	**13,690**	**13.60%**
Avondale	15,613	3,373	21.60%	855	79	9.23%	764	12	1.60%
Buckeye	3,906	242	6.20%	342	10	2.84%	344	8	2.20%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	0	0.00%	5,156	0	0.00%	3,029	0	0.00%
El Mirage	3,400	3,400	100.00%	213	213	100.00%	194	194	100.00%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	0	0.00%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	859	85.02%	81	67	82.34%	117	98	84.23%
Gila River Indian Community	1,091	0	0.00%	48	0	0.00%	140	0	0.00%
Gilbert	54,901	0	0.00%	1,834	0	0.00%	883	0	0.00%
Glendale	118,654	27,192	22.92%	9,169	2,163	23.59%	8,282	1,687	20.37%
Goodyear	10,967	2,864	26.12%	921	545	59.22%	309	87	28.14%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	1,350	100.00%	291	291	100.00%	39	39	100.00%
Unincorporated Maricopa County	104,385	47,913	45.90%	43,659	26,945	61.72%	9,288	5,606	60.36%
Mesa	189,697	8,535	4.50%	25,867	1,420	5.49%	12,410	369	2.98%
Paradise Valley	5,769	334	5.79%	868	30	3.45%	68	4	6.15%
Peoria	49,884	44,101	88.41%	6,555	5,990	91.37%	1,921	1,836	95.58%
Phoenix	657,658	55,084	8.38%	54,037	5,479	10.14%	47,321	1,889	3.99%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	0	0.00%	145	0	0.00%	114	0	0.00%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	17,373	18.88%	15,440	1,862	12.06%	5,177	763	14.74%
Surprise	13,387	12,826	95.81%	3,460	3,268	94.44%	757	724	95.57%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	0	0.00%	547	0	0.00%	288	0	0.00%
Youngtown	1,675	1,675	100.00%	887	887	100.00%	373	373	100.00%



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

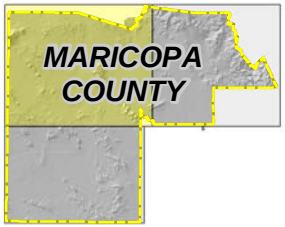
Subsidence Hazard Rating

- High

0 40 80 160

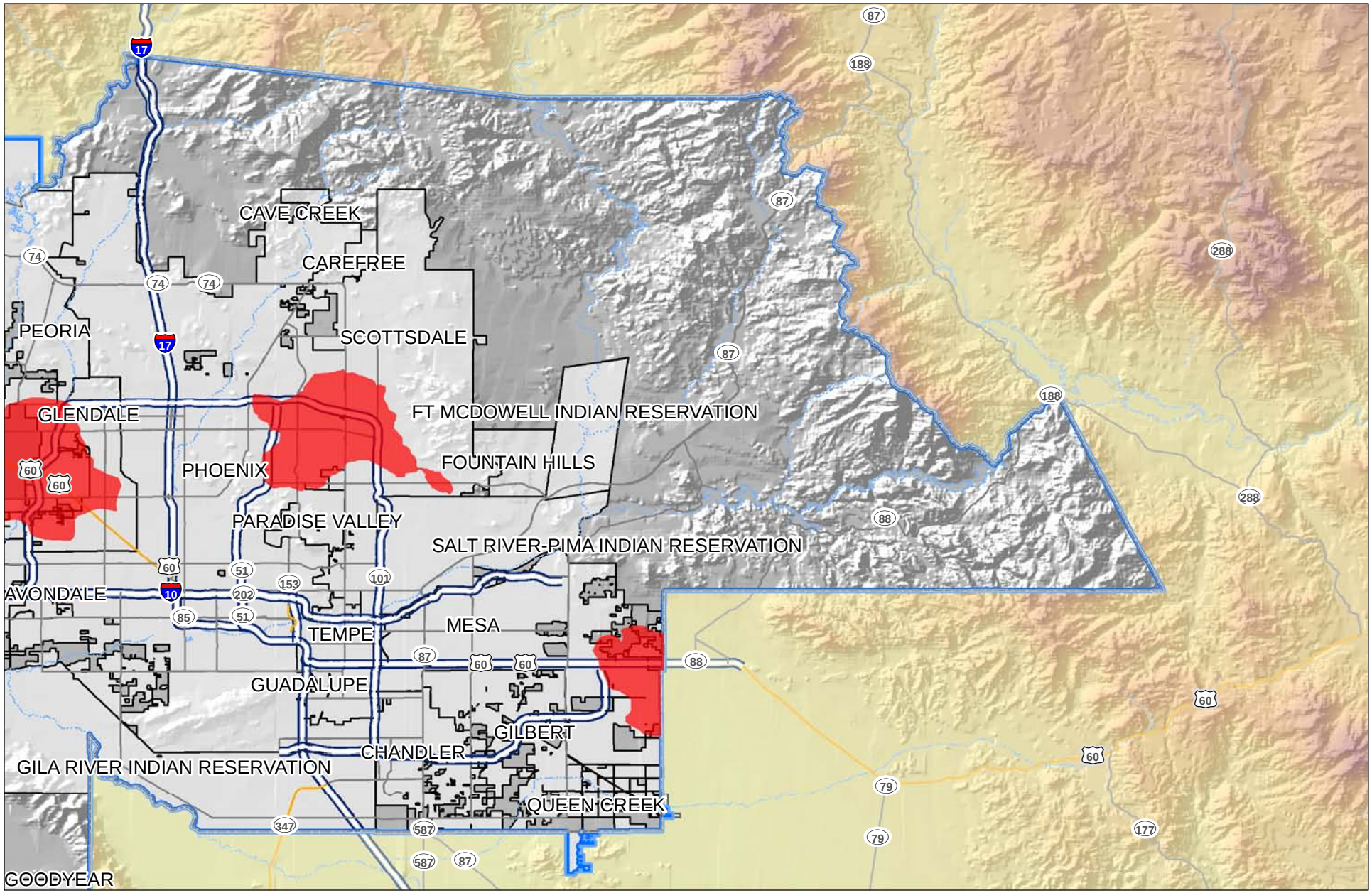
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; ADWR 2008



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #6A
Maricopa County Subsidence Hazard Map as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

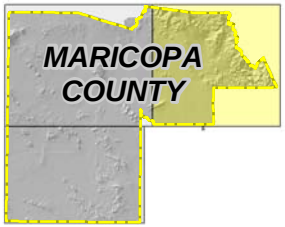
Subsidence Hazard Rating

- High

0 40 80 160

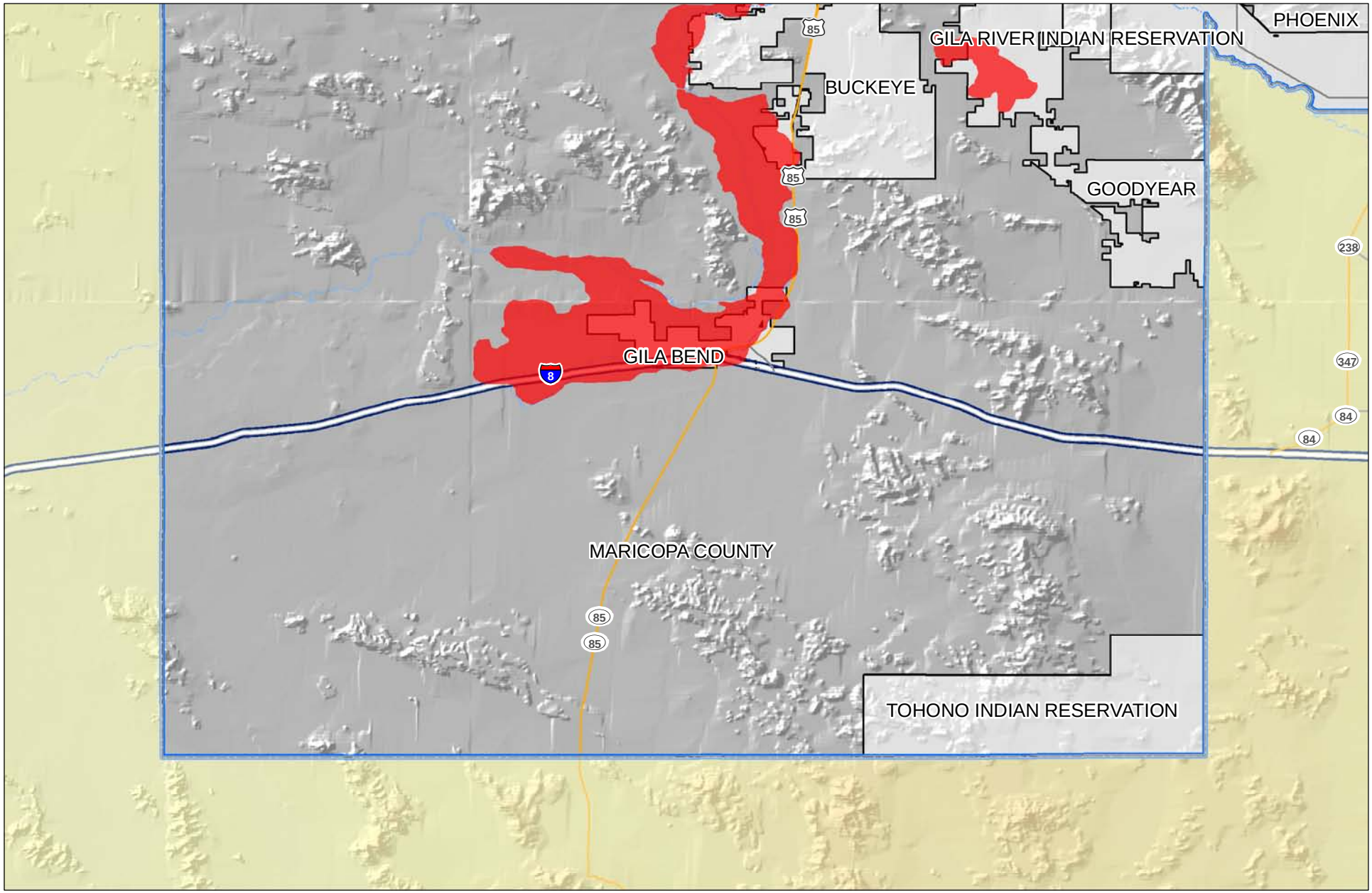
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; ADWR 2008



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #6B
Maricopa County Subsidence Hazard Map as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

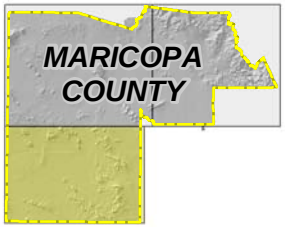
Subsidence Hazard Rating

- High

0 40 80 160

Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; ADWR 2008



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #6C
Maricopa County Subsidence Hazard Map as of May 2009

THIS PAGE INTENTIONALLY LEFT BLANK

5.3.9 Wildfire

Description

A wildfire is an uncontrolled fire spreading through wildland vegetative fuels and/or urban interface areas where fuels may include structures. They often begin unnoticed, spread quickly, and are usually signaled by dense smoke that may fill the area for miles around. Wildfires can be human-caused through acts such as arson or campfires, or can be caused by natural events such as lightning. If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives, resources, and destroy improved properties.

The indirect effects of wildfires can also be catastrophic. In addition to stripping the land of vegetation and destroying forest resources and personal property, large, intense fires can harm the soil, waterways and the land itself. Soil exposed to intense heat may temporarily lose its capability to absorb moisture and support life. Exposed soils in denuded watersheds erode quickly and are easily transported to rivers and streams thereby enhancing flood potential, harming aquatic life and degrading water quality. Lands stripped of vegetation are also subject to increased landslide hazards.

History

The Sonoran desert vegetation typically found in Maricopa County is less dense than other areas of the state. That fact, combined with relative density of urban area, makes wildfire risk within the County relatively low when compared to the more densely forested areas of the state. There is still wildfire risk to Maricopa County as demonstrated by the following past historic events:

- In March 2004, The Citris Fire located west of Gila Bend burned over 5,700 acres along the Gila River included State, Private and Federal lands.
- In June 2005, lightning touched off the Cave Creek Complex Fire in the northern part of Maricopa County about 5 miles northeast of Carefree. The fire had threatened 440 homes in the Tonto Hills and Camp Creek areas, as well as major power lines serving Phoenix. There were damages reported to 11 residences and 3 out-buildings in Camp Creek (USFS, 2009).
- In June 2008, lightning touched off the Ethan Brush Fire in the heavily vegetated Gila River bed south of Laveen. Approximately 50 residents of 18 homes were evacuated overnight and allowed to return the their undamaged homes the next day. The fire ultimately consumed about 7,000 acres (Az Republic, 2008).
- In August 2008, the Robins Butte fire burned about 500 acres of the Gila River bottom located four miles west of State Route 85, south of Palo Verde Road, and near Buckeye (Az Republic, 2008).

Probability and Magnitude

The probability and magnitude of wildfire incidents for Maricopa County are influenced by numerous factors including vegetation densities, previous burn history, hydrologic conditions, climatic conditions such as temperature, humidity, and wind, ignition source (human or natural), topographic aspect and slope, and remoteness of area.

Wildfire hazard areas have been identified by the State of Arizona as a part of the 2003/04 Arizona Wildland Urban Interface Assessment (AWUIA) project (Fisher, 2004). The increasing growth of Arizona's rural populations, urban sprawl, and increasing wildland fuel loads ads to create a mix of situations that is known as the wildland urban interface (WUI). The purpose of the AWUIA was to attempt to conduct an analysis on a statewide basis using a common spatial model, for validation of those communities listed in the federal register as WUI, and further identify possible other communities at risk. The AWUIA approach used four main data layers:

- TOPO – aspect and slope derived from 30 meter Digital Elevation Model data from USGS.
- RISK – historical fire density using point data from fire record years 1986–1996 from all wildland agencies.

- HAZARD – fuels, natural fire regimes and condition class.
- HOUSE – houses and/or structures

A value rating of 1-15 was used for all layers.

Two separate results were developed. The first coverage used an applied weighting scheme that combined each of the four data layers to develop a ranking model for identifying WUI communities at greatest risk. The second coverage, referred to as the "Land Hazard", also applied a weighting scheme that combined only the TOPO, RISK, and HAZARD layers, as follows:

LAND HAZARD = (HAZARD*70%)+(RISK*20%)+(TOPO*10%)

Weighing percentages were determined through discussion with the Arizona Interagency Coordinating Group. The "Land Hazard" layer produced from this model is based on a 250-meter raster grid (some data originated at 1,000-meter). The resultant raster values range from 1-15 and were classified into three groups to depict wildfire hazard without the influence of structures: HIGH (values of 10-15), MEDIUM (values of 7-9), and LOW (values of 1-6).

Additional modifications were made to the map to accurately reflect the wildfire hazard posed by the dense the vegetation found along the Gila River and floodplain, as well as other waterways with extraordinarily high density vegetation. Recent aerial photography was used to modify the coverages as needed. The resulting wildfire hazard areas are presented on Maps 7A, 7B, and 7C will be used quantitatively for the vulnerability assessment. The AWUIA also identified the following 5 WUI communities as at risk in Maricopa County:

- St. Johns – Moderate risk
- Buckeye Valley – Moderate risk
- Gila Bend – Moderate risk
- New River – Moderate risk
- Sunflower – Low risk

Vulnerability – CPRI Results

Wildfire CPRI results for each community are summarized in Table 5-59 below.

Table 5-59: Summary of CPRI results by jurisdiction for wildfire

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Avondale	Likely	Limited	<6 hours	<1 week	2.85
Buckeye	Likely	Limited	<6 hours	<24 hours	2.75
Carefree	Highly Likely	Critical	6-12 hours	>1 week	3.55
Cave Creek	Likely	Critical	<6 hours	<1 week	3.15
Chandler	Possibly	Negligible	<6 hours	<6 hours	1.90
El Mirage	Possibly	Limited	6-12 hours	<6 hours	2.05
Fountain Hills	Likely	Critical	<6 hours	<1 week	3.15
Fort McDowell Yavapai Nation	Possibly	Limited	<6 hours	<1 week	2.40
Gila Bend	Unlikely	Negligible	<6 hours	<6 hours	1.45
Gilbert	Unlikely	Negligible	<6 hours	<6 hours	1.45
Glendale	Possibly	Negligible	<6 hours	<24 hours	1.80
Goodyear	Likely	Negligible	<6 hours	<24 hours	2.45
Guadalupe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Litchfield Park	Possibly	Limited	<6 hours	<24 hours	3.20
Unincorporated Maricopa County	Highly Likely	Critical	<6 hours	>1 week	3.70
Mesa	Unlikely	Negligible	<6 hours	<6 hours	1.45
Paradise Valley	Possibly	Critical	>24 hours	<1 week	2.25
Peoria	Likely	Critical	<6 hours	<6 hours	2.95
Phoenix	Unlikely	Negligible	<6 hours	<6 hours	1.45
Queen Creek	Possibly	Limited	<6 hours	>1 week	2.50
Salt River Pima-Maricopa Indian Community	Likely	Critical	<6 hours	<1 week	3.25
Salt River Project	Likely	Critical	<6 hours	<1 week	3.15

Table 5-59: Summary of CPRI results by jurisdiction for wildfire					
Participating Jurisdiction	**Probability**	**Magnitude/ Severity**	**Warning Time**	**Duration**	**CPRI Score**
Scottsdale	Likely	Limited	<6 hours	<24 hours	2.75
Surprise	Possibly	Limited	<6 hours	<24 hours	2.30
Tempe	Unlikely	Negligible	<6 hours	<6 hours	1.45
Tolleson	Unlikely	Negligible	>24 hours	<6 hours	1.00
Wickenburg	Highly Likely	Critical	<6 hours	<1 week	3.60
Youngtown	Possibly	Critical	<6 hours	<1 week	2.70
				County-wide average CPRI =	**2.43**

Vulnerability – Loss Estimations

The estimation of potential exposure to high and medium wildfire hazards was accomplished by intersecting the human and facility assets with the wildfire hazard limits depicted on Maps 7A, 7B, and 7C. Loss to exposure ratios of 0.20 (20%) and 0.05 (5%) were assumed to estimate losses for all facilities located within the high and medium wildfire hazard areas, respectively. Table 5-60 summarizes the MJPT identified critical and non-critical facilities potentially exposed to high and medium wildfire hazards, and the corresponding estimates of losses. Table 5-61 summarizes population sectors exposed to the high and medium wildfire hazards. HAZUS residential, commercial and industrial exposures and loss estimates to high and medium flood hazards are summarized in Tables 5-12 through 5-39.

In summary, $3.8 million and $10,000 in asset related losses are estimated for high and medium wildfire hazards, for all the participating jurisdictions in Maricopa County. An additional $9.6 and $1.2 million in high and medium hazard wildfire losses to HAZUS defined residential, commercial, and industrial facilities, is estimated for all participating Maricopa County jurisdictions. Regarding human vulnerability, a total population of 571 and 222 people, or 0.04% and 0.01% of the total 2000 Maricopa County population, is potentially exposed to a high and medium hazard wildfire event, respectively. Typically, deaths and injuries not related to firefighting activities are rare. However, it is feasible to assume that at least one death and/or injury may be plausible. There is also a high probability of population displacement during a wildfire event, and especially in the urban wildland interface areas.

It is duly noted that the loss and exposure numbers presented above represent a comprehensive evaluation of the County as a whole. It is unlikely that a storm event would occur that would flood all of the delineated high and medium flood hazard areas at the same time. Accordingly, actual event based losses and exposure are likely to be only a fraction of those summarized above.

Vulnerability – Development Trend Analysis

By its very definition, the WUI represents the fringe of urban development at it intersects with the natural environment. As communities push further out, more WUI is created. The County is currently working on developing a Community Wildfire Protection Plan in cooperation with other jurisdictions throughout the County. This document will ultimately establish a baseline for effective mitigation against wildfire damages in the WUI of Maricopa County.

Table 5-60: Summary of asset inventory exposure to high and medium wildfire hazard and corresponding loss estimates						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
HIGH						
County-Wide Totals	**5,179**	**6**	**0.12%**	**100.00%**	**$19,207**	**$3,841**
Avondale	61	0	0.00%	0.00%	$0	$0
Buckeye	77	0	0.00%	0.00%	$0	$0
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	0	0.00%	0.00%	$0	$0
El Mirage	34	0	0.00%	0.00%	$0	$0
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	0	0.00%	0.00%	$0	$0
Gila Bend	7	0	0.00%	0.00%	$0	$0
Gilbert	694	0	0.00%	0.00%	$0	$0
Glendale	1,205	0	0.00%	0.00%	$0	$0
Goodyear	93	2	2.15%	33.33%	$1,750	$350
Guadalupe	6	0	0.00%	0.00%	$0	$0
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	2	0.45%	33.33%	$14,457	$2,891
Mesa	613	2	0.33%	33.33%	$3,000	$600
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	0	0.00%	0.00%	$0	$0
Phoenix	913	0	0.00%	0.00%	$0	$0
Queen Creek	117	0	0.00%	0.00%	$0	$0
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	$0
Salt River Project [48]	511	0	0.00%	N/A	N/A	N/A
Scottsdale	114	0	0.00%	0.00%	$0	$0
Surprise	37	0	0.00%	0.00%	$0	$0
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[48] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-60: Summary of asset inventory exposure to high and medium wildfire hazard and corresponding loss estimates						
Community	**Total Facilities Reported by Community**	**Impacted Facilities**	**Percentage of Total Community Facilities Impacted**	**Percentage of Total County-wide Facilities Impacted**	**Estimated Replacement Cost (x $1000)**	**Estimated Structure Loss (x $1000)**
MEDIUM						
County-Wide Totals	**5,179**	**2**	**0.04%**	**100.00%**	**$204**	**$10**
Avondale	61	0	0.00%	0.00%	$0	$0
Buckeye	77	0	0.00%	0.00%	$0	$0
Carefree	6	0	0.00%	0.00%	$0	$0
Cave Creek	39	0	0.00%	0.00%	$0	$0
Chandler	226	0	0.00%	0.00%	$0	$0
El Mirage	34	0	0.00%	0.00%	$0	$0
Fountain Hills	15	0	0.00%	0.00%	$0	$0
Fort McDowell Yavapai Nation	18	0	0.00%	0.00%	$0	$0
Gila Bend	7	0	0.00%	0.00%	$0	$0
Gilbert	694	0	0.00%	0.00%	$0	$0
Glendale	1,205	0	0.00%	0.00%	$0	$0
Goodyear	93	0	0.00%	0.00%	$0	$0
Guadalupe	6	0	0.00%	0.00%	$0	$0
Litchfield Park	5	0	0.00%	0.00%	$0	$0
Unincorporated Maricopa County	447	2	0.45%	100.00%	$204	$10
Mesa	613	0	0.00%	0.00%	$0	$0
Paradise Valley	69	0	0.00%	0.00%	$0	$0
Peoria	225	0	0.00%	0.00%	$0	$0
Phoenix	913	0	0.00%	0.00%	$0	$0
Queen Creek	117	0	0.00%	0.00%	$0	$0
Salt River Pima-Maricopa Indian Community	21	0	0.00%	0.00%	$0	$0
Salt River Project [49]	511	0	0.00%	N/A	N/A	N/A
Scottsdale	114	0	0.00%	0.00%	$0	$0
Surprise	37	0	0.00%	0.00%	$0	$0
Tempe	111	0	0.00%	0.00%	$0	$0
Tolleson	10	0	0.00%	0.00%	$0	$0
Wickenburg	11	0	0.00%	0.00%	$0	$0
Youngtown	5	0	0.00%	0.00%	$0	$0

[49] Facility count for Salt River Project is not included in overall County-Wide totals and all data was provided by SRP.

Table 5-61: Summary of population sectors exposed to high and medium wildfire hazard

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
HIGH									
County-Wide Totals	**1,522,083**	**571**	**0.04%**	**180,521**	**30**	**0.02%**	**100,684**	**63**	**0.06%**
Avondale	15,613	1	0.00%	855	0	0.01%	764	0	0.00%
Buckeye	3,906	1	0.04%	342	0	0.04%	344	0	0.07%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	0	0.00%	5,156	0	0.00%	3,029	0	0.00%
El Mirage	3,400	0	0.00%	213	0	0.00%	194	0	0.00%
Fountain Hills	8,759	0	0.00%	1,750	0	0.00%	387	0	0.00%
Fort McDowell Yavapai Nation	309	16	5.08%	17	0	0.00%	10	0	0.00%
Gila Bend	1,010	0	0.03%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	428	39.23%	48	19	40.09%	140	53	38.07%
Gilbert	54,901	0	0.00%	1,834	0	0.00%	883	0	0.00%
Glendale	118,654	0	0.00%	9,169	0	0.00%	8,282	0	0.00%
Goodyear	10,967	0	0.00%	921	0	0.00%	309	0	0.00%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	123	0.12%	43,659	10	0.02%	9,288	9	0.10%
Mesa	189,697	0	0.00%	25,867	0	0.00%	12,410	0	0.00%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	0	0.00%	6,555	0	0.00%	1,921	0	0.00%
Phoenix	657,658	2	0.00%	54,037	0	0.00%	47,321	0	0.00%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	0	0.00%	145	0	0.00%	114	0	0.00%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	0	0.00%	15,440	0	0.00%	5,177	0	0.00%
Surprise	13,387	0	0.00%	3,460	0	0.00%	757	0	0.00%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	0	0.00%	547	0	0.00%	288	0	0.00%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

Table 5-61: Summary of population sectors exposed to high and medium wildfire hazard

Community	Total Population	Population Exposed	Percent of Population Exposed	Total Population Over 65	Population Over 65 Exposed	Percent of Population Over 65 Exposed	Total Incomes Under $20K	Incomes Under $20K Exposed	Percent of Incomes Under $20K Exposed
MEDIUM									
County-Wide Totals	**1,522,083**	**222**	**0.01%**	**180,521**	**40**	**0.02%**	**100,684**	**23**	**0.02%**
Avondale	15,613	0	0.00%	855	0	0.00%	764	0	0.00%
Buckeye	3,906	0	0.00%	342	0	0.00%	344	0	0.00%
Carefree	1,375	0	0.00%	455	0	0.00%	57	0	0.00%
Cave Creek	2,002	0	0.00%	246	0	0.00%	95	0	0.00%
Chandler	86,421	4	0.00%	5,156	0	0.00%	3,029	0	0.01%
El Mirage	3,400	0	0.00%	213	0	0.00%	194	0	0.00%
Fountain Hills	8,759	1	0.01%	1,750	0	0.01%	387	0	0.00%
Fort McDowell Yavapai Nation	309	5	1.53%	17	1	4.54%	10	0	0.85%
Gila Bend	1,010	0	0.00%	81	0	0.00%	117	0	0.00%
Gila River Indian Community	1,091	26	2.42%	48	1	1.26%	140	3	2.02%
Gilbert	54,901	0	0.00%	1,834	0	0.00%	883	0	0.00%
Glendale	118,654	0	0.00%	9,169	0	0.00%	8,282	0	0.00%
Goodyear	10,967	0	0.00%	921	0	0.00%	309	0	0.00%
Guadalupe	2,558	0	0.00%	125	0	0.00%	194	0	0.00%
Litchfield Park	1,350	0	0.00%	291	0	0.00%	39	0	0.00%
Unincorporated Maricopa County	104,385	171	0.16%	43,659	36	0.08%	9,288	18	0.20%
Mesa	189,697	0	0.00%	25,867	0	0.00%	12,410	0	0.00%
Paradise Valley	5,769	0	0.00%	868	0	0.00%	68	0	0.00%
Peoria	49,884	0	0.00%	6,555	0	0.00%	1,921	0	0.00%
Phoenix	657,658	0	0.00%	54,037	0	0.00%	47,321	0	0.00%
Pinal County	6	0	0.00%	0	0	0.00%	0	0	0.00%
Queen Creek	2,831	8	0.29%	145	0	0.15%	114	1	1.06%
Salt River Pima-Maricopa Indian Community	6,306	0	0.00%	1,086	0	0.00%	842	0	0.00%
Scottsdale	92,034	8	0.01%	15,440	1	0.01%	5,177	0	0.00%
Surprise	13,387	0	0.00%	3,460	0	0.00%	757	0	0.00%
Tempe	80,802	0	0.00%	6,138	0	0.00%	7,051	0	0.00%
Tohono O'odham Nation	156	0	0.00%	11	0	0.00%	26	0	0.00%
Tolleson	3,085	0	0.00%	316	0	0.00%	202	0	0.00%
Wickenburg	2,093	0	0.00%	547	0	0.00%	288	0	0.00%
Youngtown	1,675	0	0.00%	887	0	0.00%	373	0	0.00%

Sources

Arizona Division of Emergency Management, 2009, State of Arizona Multi-Hazard Mitigation Plan, 2010 Update, DRAFT.

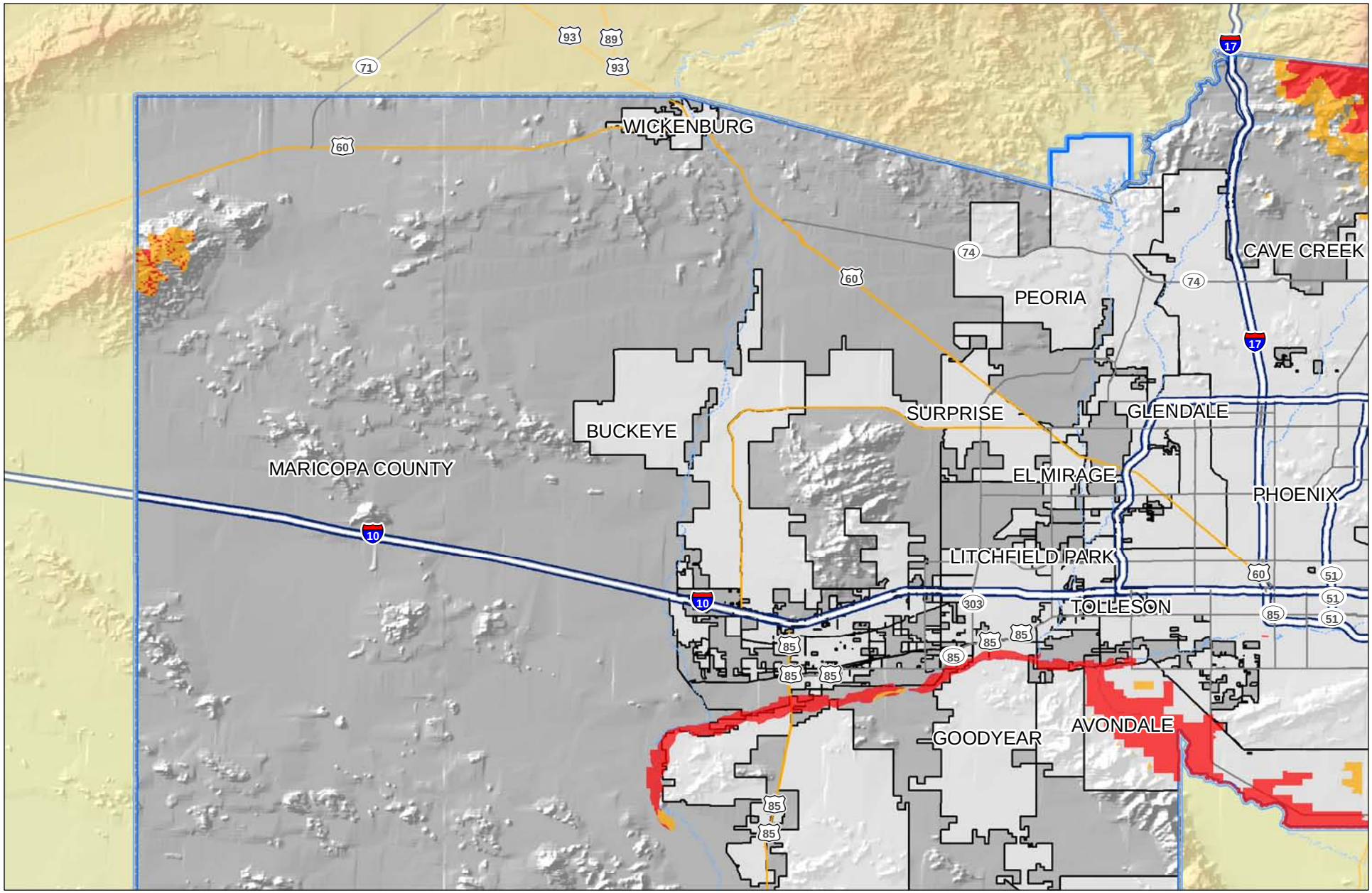
FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

Fisher, M., 2004, Arizona Wildland Urban Interface Assessment, 2003, prepared for the Arizona Interagency Coordination Group. http://www.azsf.az.gov/UserFiles/PDF/Arizona%20Wildland%20Urban%20Interface%20Assessment%2005MAR04.pdf

URS, 2004, Maricopa County Hazard Mitigation Plan.

Profile Maps

Maps 7A, 7B, and 7C – Wildfire Hazard Map(s)



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

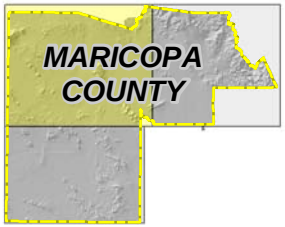
Wildfire Hazard Rating

- High
- Medium

Note: The Arizona Wildland Urban Interface Assessment March 2004 uses four main data layer comprised of Risk, Topography and House/Structure Density to determine the wildfire hazard areas.

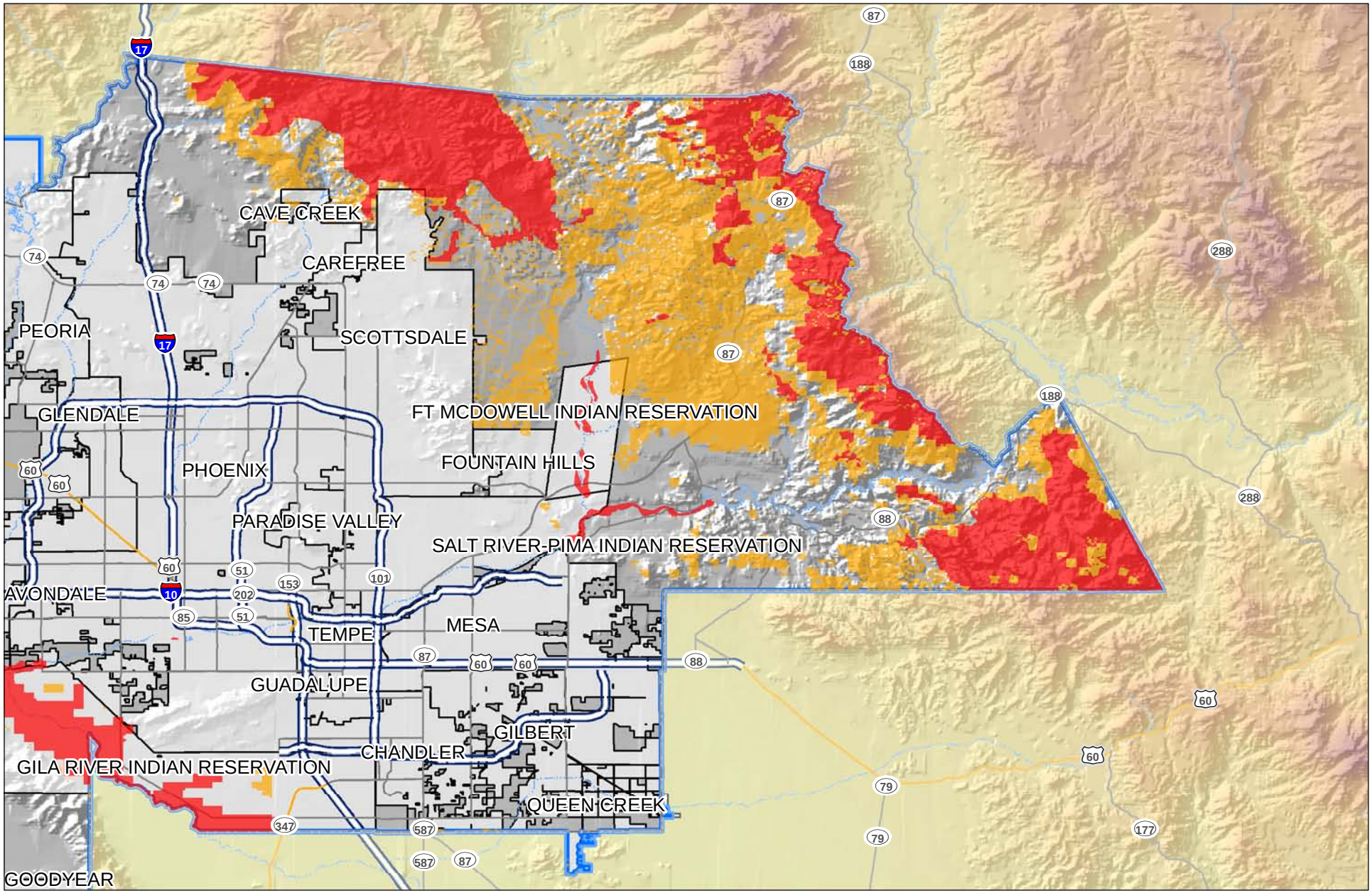
0 40 80 160
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009 Arizona Wildland Urban Interface Assessment, March 2004



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #7A
Maricopa County
Wildfire Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Wildfire Hazard Rating

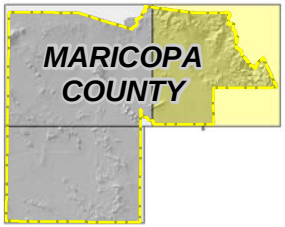
- High
- Medium

Note: The Arizona Wildland Urban Interface Assessment March 2004 uses four main data layer comprised of Risk, Topography and House/Structure Density to determine the wildfire hazard areas.

0 40 80 160

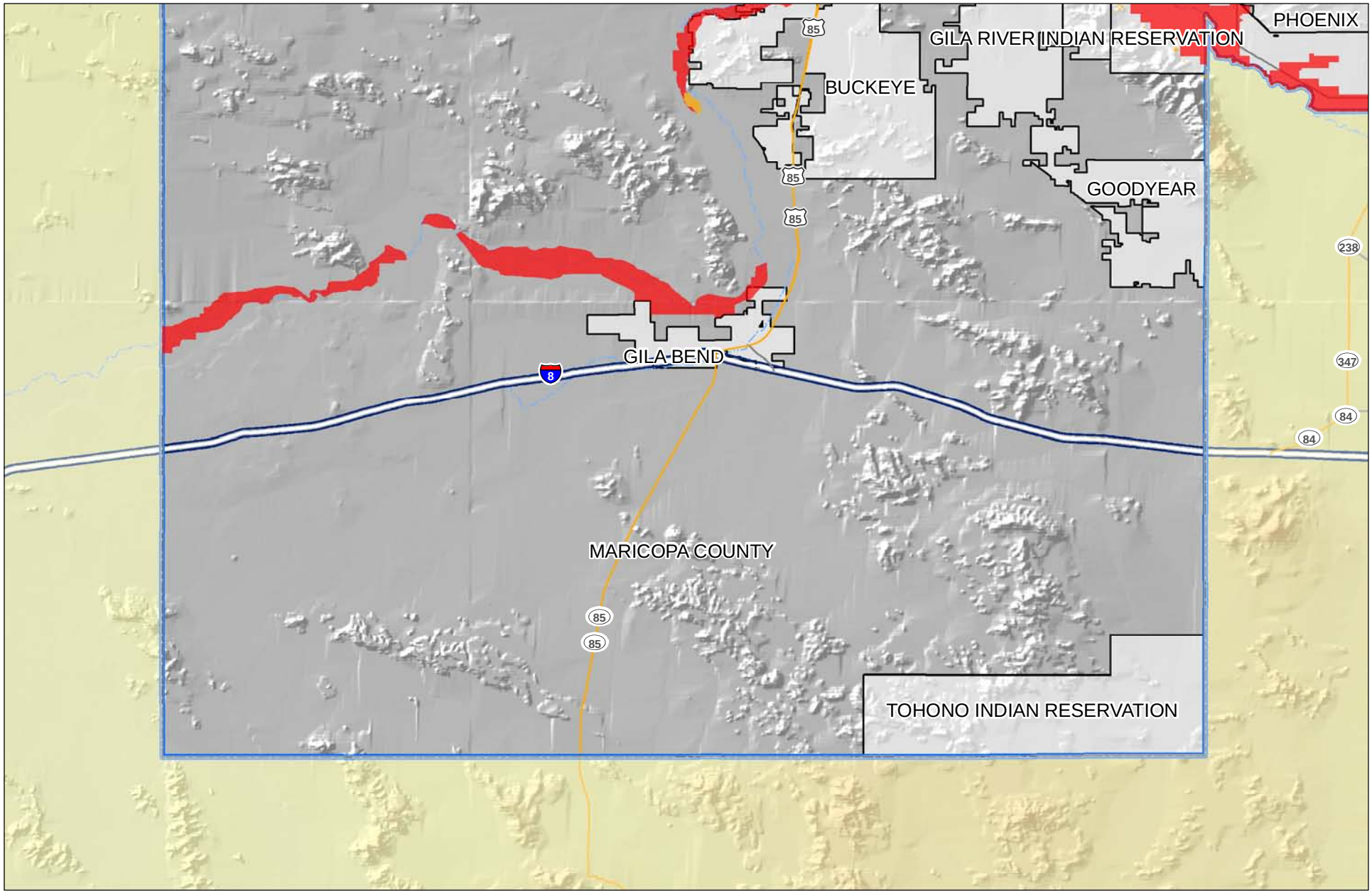
Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009 Arizona Wildland Urban Interface Assessment, March 2004



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #7B
Maricopa County
Wildfire Hazard Map
as of May 2009



Legend

- Maricopa County
- Mitigation Plan Extent
- Major Streams
- Canals Washes

Wildfire Hazard Rating

- High
- Medium

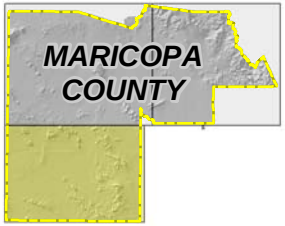
Note: The Arizona Wildland Urban Interface Assessment March 2004 uses four main data layer comprised of Risk, Topography and House/Structure Density to determine the wildfire hazard areas.

N

0 40 80 160

Miles

Source: JE Fuller 2009; FEMA 2008; ALRIS 2006; FCDMC 2009 Arizona Wildland Urban Interface Assessment, March 2004



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #7C
Maricopa County
Wildfire Hazard Map
as of May 2009

5.4 Risk Assessment Summary

The jurisdictional variability of risk associated with each hazard assessed in Section 5.3 is demonstrated by the various CPRI and loss estimation results. Accordingly, each jurisdiction has varying levels of need regarding the hazards to be mitigated, and may not consider all of the hazards as posing a great risk to their individual communities. Table 5-62 summarizes the hazards selected for mitigation by each jurisdiction and will be the basis for each jurisdictions mitigation strategy.

Table 5-62: Summary of hazards to be mitigated by each participating jurisdiction

Jurisdiction	Dam Inundation	Drought	Extreme Heat	Fissure	Flood	Levee Failure	Severe Wind	Subsidence	Wildfire
Avondale		x	x		x		x	x	x
Buckeye					x		x		x
Carefree		x			x				x
Cave Creek		x	x		x				x
Chandler		x	x		x		x		
El Mirage		x	x		x		x		
Fountain Hills		x	x		x		x		x
Fort McDowell Yavapai Nation		x	x		x		x		x
Gila Bend		x			x				
Gilbert			x		x		x		
Glendale					x		x		
Goodyear			x		x				
Guadalupe		x	x		x		x		
Litchfield Park			x		x		x		
Unincorporated Maricopa County	x			x	x	x	x		x
Mesa	x				x		x		
Paradise Valley		x	x		x		x	x	x
Peoria	x	x			x	x			x
Phoenix	x	x	x		x		x		
Queen Creek	x				x		x		x
Salt River Pima-Maricopa Indian Community					x				x
Salt River Project			x		x		x		x
Scottsdale					x				x
Surprise					x				x
Tempe		x	x		x				
Tolleson					x		x		
Wickenburg					x				
Youngtown					x		x		

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 6: MITIGATION STRATEGY

> ***§201.6(c)(3):*** *[The plan shall include…] (3) A **mitigation strategy** that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:*
> *(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*
> *(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*
> *(iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*
> *(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

The mitigation strategy provides the "what, when, and how" of actions that will reduce or possibly remove the community's exposure to hazard risks. According to DMA 2000, the primary components of the mitigation strategy are generally categorized into the following:

- ☑ **Goals and Objectives**
- ☑ **Capability Assessment**
- ☑ **Mitigation Actions/Projects and Implementation Strategy**

The entire 2004 Plan mitigation strategy was reviewed and updated by the MJPT, including a major re-organization of the mitigation strategy elements into this multi-jurisdictional plan format. Specifics of the changes and updates are discussed in the subsections below.

6.1 Hazard Mitigation Goals and Objectives

The 2004 Plan goals and objectives were developed using the 2004 State Plan[50] goals and objectives as a starting point. Each jurisdiction then edited and modified those goals and objectives to fit the mitigation planning vision for their community. An assessment of those goals and objectives by the MJPT and the LPT for each jurisdiction was made with consideration of the following[51]:

- Do the goals and objectives identified in the 2004 Plan reflect the updated risk assessment?
- Did the goals and objectives identified in the 2004 Plan lead to mitigation projects and/or changes an policy that helped the jurisdiction(s) to reduce vulnerability?
- Do the goals and objectives identified in the 2004 Plan support any changes in mitigation priorities?
- Are the goals and objectives identified in the 2004 Plan reflective of current State goals?

After much discussion and comparison of the 2004 Plan goals and objectives to the 2007 State Plan, the MJPT chose to completely drop the current list of goals and objectives in favor of preparing a multi-jurisdictional template of goals and objectives that are closely based on the 2007 State Plan. Reasons for the change included:

- The 2004 Plan goals and objectives were overly complicated and even confusing in some instances.
- Many of the 2004 Plan goals and objectives dealt with human-caused hazards which are no longer part of this plan.

[50] State of Arizona, 2004, *State of Arizona All Hazard Mitigation Plan*, prepared by URS.

[51] FEMA, 2008, *Local Multi-Hazard Mitigation Planning Guidance*

- The 2007 State Plan goals and objectives were much simpler and better captured the overall planning vision of the MJPT.
- Having a simpler, common set of goals and objectives for the multi-jurisdictional plan will make future assessment of the progress and achievements easier.

The result of the discussions resulted in establishing one goal and four clear objectives that will be used by all participating jurisdictions, 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.

6.2 Capability Assessment

While not required by DMA 2000, an important component of the Mitigation Strategy is a review of each participating jurisdiction's resources in order to identify, evaluate, and enhance the capacity of local resources to mitigate the effects of hazards. The capability assessment is comprised of several components:

- ✓ Legal and Regulatory Review – a review of the legal and regulatory capabilities, including ordinances, codes, plans, manuals, guidelines, and technical reports that address hazard mitigation activities.
- ✓ Technical Staff and Personnel – this assessment evaluated and describes the administrative and technical capacity of the jurisdiction's staff and personnel resources.
- ✓ Fiscal Capability – this element summarizes each jurisdiction's fiscal capability to provide the financial resources to implement the mitigation strategy.
- ✓ National Flood Insurance Program (NFIP) Participation – the NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments, but the program is promoted by FEMA as a basic first step for implementing and sustaining an effective flood hazard mitigation program, and is a key indicator for measuring local capability as part of this assessment.
- ✓ Prior Mitigation Actions – the final part of the capability assessment is a summary review of prior mitigation actions and/or projects that have been completed over the last five or so years.

For this update, the MJPT reviewed the information provided in Section 8 of the 2004 Plan, and specifically Tables 8.1 – 8.4. The MJPT chose to keep the format of Tables 8.2 and 8.3 for reporting the staff/personnel and fiscal resources. Table 8.1 was modified to not only report on the regulatory capabilities, but also to summarize the codes, plans, and studies/reports used by a jurisdiction. Table 8.4 was considered to be confusing and not beneficial, and was dropped from the plan.

6.2.1 Jurisdictional Capabilities

Tables 6-1-1 through 6-1-28 summarize the legal and regulatory mitigation capability for teach jurisdiction. Information provided includes a brief listing of current codes, mitigation relevant ordinances, plans, and studies/reports. Tables 6-2-1 through 6-2-28 summarize the staff and personnel resources employed by each jurisdiction that serve as a resource for hazard mitigation. Tables 6-3-1 through 6-3-28 summarize the fiscal capability and budgetary tools available to each participating jurisdiction. Each of these three tables are listed below by jurisdiction.

Table 6-1-1: Summary of legal and regulatory capabilities for Avondale

Regulatory Tools for Hazard Mitigation	Description	Responsible Department/Agency
CODES	• 2006 International Building Code • 2006 International Residential Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2006 International Energy Conservation Code • 2005 National Electrical Code • 2003 International Fire Code	• Building Official • Code Enforcement • Fire Marshal
ORDINANCES	• City of Avondale Ordinances (as Adopted) & Weed Abatement Ordinance/Planning • International Property Maintenance Code (IPMC) - 302.4 • Subdivision/Zoning Ordinance • Zoning Ordinance and Subdivision Regulations 2006 – Chapter 5 Planned Area Development District	• Code Enforcement • Planning & Zoning
PLANS, MANUALS, and/or GUIDELINES	• General Plan/City Ordinance • Capital Improvement Project Plan • Development Guidelines and Policies • City Emergency Operations Plan • Pandemic Preparedness and Response Plan • Flood Control and Response Plan (McMicken Dam) • Nation Response Framework • State and Local Mitigation Plan (as adopted)	• Planning & Zoning • Building Official • Fire • Code Enforcement • Safety/Risk
STUDIES	• Maricopa County Mass Evacuation Planning Group	• Fire

Table 6-2-1: Summary of technical staff and personnel capabilities for Avondale		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Ken Sowers-Chief Building Official
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Sue McDermott-City Engineer
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Sue McDermott-City Engineer
Floodplain Manager	☑	Sue McDermott-City Engineer
Surveyors		
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Ken Sowers-Chief Building Official
Personnel skilled in GIS and/or HAZUS	☑	Marilyn Derosa-GIS
Scientists familiar with the hazards of the community		
Emergency manager	☑	Art Snapp-Fire
Grant writer(s)	☑	Janeen Gaskins-Grants Supervisor
Others		

Table 6-3-1: Summary of fiscal capabilities for Avondale		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-2: Summary of legal and regulatory capabilities for Buckeye		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Residential Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2005 National Electrical Code • 2006 International Fuel Gas Code • 2006 International Energy Conversation Code • 2006 International Property Maintenance Code • 2006 International Existing Building Code • 2006 International Fire Code	• Fire Department – Building Safety Division
ORDINANCES	• Zoning Ordinance • 2009 Water Conservation Ordinance	• Community Development • Water Resources
PLANS, MANUALS, and/or GUIDELINES	• 2004 Town of Buckeye Hazard Mitigation Plan (currently being updated) • 2007 Town of Buckeye General Plan Update • 2007 Airport Master Plan • Development Code Update (currently being updated) • 2005 Parks, Trails, and Open Space Master Plan • 2008 Trails Master Plan • Site Plan Review Requirements • Capital Improvements Plan	• Community Development • Community Services • Fire • Public Works
STUDIES	• Part 150 Noise Compatibility Study • 2008 ADOT Hazardous Materials Study • MAG Regional Transportation Study • Impact Fee Study (currently being updated) • MAG Commuter Rail Study – Yuma West corridor (currently in progress) • Water / Wastewater Master Plan (currently in progress) • Transportation Master Plan (currently in progress) • Drainage Master Plan (currently in progress) • Downtown Storm Drain Improvement Plan (currently in progress)	• Community Services • Engineering Services • Public Works • Water Resources

Table 6-2-2: Summary of technical staff and personnel capabilities for Buckeye		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning, Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering, Engineers – Architecture, Architects
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineering, Water Services Dept, Development Services Dept
Floodplain Manager	☑	Street, Transportation Dept
Surveyors	☑	Street, Public Works, Water Services Dept
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Neighborhood Services Dept, Human Services, Emergency Management, Development Services, Fire Dept, Police Dept, Public Works, Streets, Engineering, Architecture, Water Services Dept
Personnel skilled in GIS and/or HAZUS	☑	ITD, Fire Dept, Police Dept
Scientists familiar with the hazards of the community	☑	Police Dept, Water Services Dept, Fire Dept
Emergency manager	☑	Fire Dept, Fire Chief
Grant writer(s)	☑	Every Dept
Others		

Table 6-3-2: Summary of fiscal capabilities for Buckeye		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-3: Summary of legal and regulatory capabilities for Carefree		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2003 International Building Code • 2002 National Electrical Code • 2003 International Mechanical Code • 1994 International Plumbing Code • 2003 International Residential Code	• Building Department (all)
ORDINANCES	• Abatement Ordinance Town Code 6-1 2006 • Adult Oriented Business Town Zoning Ordinance 2006 • Dark Sky Ordinance Town Building Code 2003 • Noise Ordinance Town Code 6-2(P-23) 2006 • Town Zoning Ordinance 2003	• Zoning Administrator • Town Marshal • Town Council
REGULATIONS	• Zoning and Planning Addressing Regulations • Flood Control District • Dust Abatement Regulations • Town Subdivision Regulations	• Zoning Administrator
PLANS, MANUALS, and/or GUIDELINES	• Town Plan for Area Land Use In 2002 General Plan • 2008 Town Transportation Plan • Comprehensive Planning Amendments • Guidelines included in 2002 General Plan • Planning and Development included in 2002General Plan and 2006 Carefree Zoning Ordinances • Development Master Plan Guidelines included in Carefree 2002 General Plan • Area Drainage Master Plan completed via 2004 Maricopa County Flood Control District • Watercourse Master Plan completed via 2004 Maricopa County Flood Control District	• Zoning Administrator • Town Hydrologist • Town Engineer
STUDIES	• Dam Safety Studies / Emergency Action Plans 2006 • Area Drainage Master Studies • Corridor Studies 2007 Traffic Study • Emergency Routes Evaluation 2008	• Zoning Administrator • Town Hydrologist • Town Engineer

Table 6-2-3: Summary of technical staff and personnel capabilities for Carefree		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Development - Planners Environmental Services – Inspectors
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Planning and Development - Planners Environmental Services – Inspectors
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Development - Planners Emergency Management - Planners
Floodplain Manager		None on Staff
Surveyors	☑	Planning and Development - Planners Transportation – Engineer Patrick Neal Emergency Management – Planners
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Planning and Development – GIS Staff Emergency Management – GIS Staff Sheriff's Office – Marshal Elections – Town Clerk/GIS Staff Environmental Services – GIS Staff Air Quality – GIS Staff
Personnel skilled in GIS and/or HAZUS	☑	Contract On Staff – Hydrologist Erich Korsten
Scientists familiar with the hazards of the community	☑	Emergency Management - Director/Marshal/Planners
Emergency manager	☑	Emergency Management - Marshal Fire Department – Grant writer Water Department - Manager
Grant writer(s)	☑	Planning and Development - Planners Environmental Services – Inspectors
Others		

Table 6-3-3: Summary of fiscal capabilities for Carefree		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-4: Summary of legal and regulatory capabilities for Cave Creek		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2003 International Building Code • 2003 International Residential Code • 1994 International Plumbing Code w/ state amendments • 2003 International Mechanical Code • 2003 International Fire Code • 2002 National Electric Code	• Chief Building Official
ORDINANCES	• 2007 Cave Creek Zoning Ordinance • 2004 Cave Creek Sub-Division Ordinance • 2005 Town of Cave Creek General Plan • 2007 Town of Cave Creek Town Core and Implementation Plan	• Planning and Zoning Administrator
PLANS, MANUALS, and/or GUIDELINES	• 2008 Town of Cave Creek DMP Flood Response Plan • 2008 Town of Cave Creek Master Drainage Plan • 2005 Town of Cave Creek Multi-Hazard Mitigation Plan (currently being updated) • 2007 Town of Cave Creek Emergency Operations Plan • 2008 Town of Cave Creek Drought Plan • 2008 Town of Cave Creek Master Water Plan • 2008 Town of Cave Creek Water Emergency Operations Plan • 2007 Town of Cave Creek Sewer Master Plan	• Maricopa County Flood Control • Town of Cave Creek Engineer • Town Marshal • Town Utilities Manager
STUDIES	• 2006 Water Acquisition feasibility Study • 1998 Transportation Study Plan • 2004 Development Fee Study • 2009 Water Rate study • 2009 Sewage Rate Study	• Town Engineer • Town Manager • Town Council

Table 6-2-4: Summary of technical staff and personnel capabilities for Cave Creek		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Zoning Staff. Town Engineer. Town Manager. Town of Cave Creek Building Official.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Town of Cave Creek Building Official. Town Engineer. Town Utilities Manager.
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Zoning Staff. Town Engineer. Town Manager. Town of Cave Creek Building Official.
Floodplain Manager	☑	Town of Cave Creek Engineer
Surveyors		Out Sourced
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Town Marshal Town Engineer Utilities Manager
Personnel skilled in GIS and/or HAZUS	☑	Town Planning Staff Assistant Utilities Manager
Scientists familiar with the hazards of the community	☑	Town Engineer Town Utilities Manager
Emergency manager	☑	Town Marshal District Fire Chief
Grant writer(s)	☑	Staff
Others		

Table 6-3-4: Summary of fiscal capabilities for Cave Creek		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-5: Summary of legal and regulatory capabilities for Chandler		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Plumbing Code • 2006 International Mechanical Code • 2006 International Fire Code • 2006 International Residential Code • 2006 National Electric Code • Chandler Code of Ordinances (Municode.com)	• Planning & Development Services • Fire Department • City Clerk
ORDINANCES	• Chandler Code of Ordinances (Municode.com): Flood Plain Administration Ord. No. 2970/3311 Weed Abatement Ord No. 3879 Land Use Zoning Ord. No. 3063	• Planning and Development Services • Public Works
PLANS, MANUALS, and/or GUIDELINES	• Engineering Standard Details and Specification • Technical Design Manuals • Stormwater Prevention Plan • Flood Control District Floodplain Maps • Stormwater Master Plan	• Planning and Development Services • Public Works
STUDIES	• Chandler\Gilbert Floodplain Delineation Study Ph 1 Eastern Canal • Chandler\Gilbert Floodplain Delineation Study Ph 2 Consolidated Canal • Chandler\Gilbert Floodplain Delineation Study Ph 3 Union Pacific RR and Arizona Av • Higley Area Drainage Master Plan	• Public Works • Maricopa County Flood Control District

Table 6-2-5: Summary of technical staff and personnel capabilities for Chandler		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning & Development – Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Public Works & Planning and Development – Engineers
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning & Development, Public Works, Municipal Utilities – planners and engineers
Floodplain Manager	☑	Public Works
Surveyors		Public Works
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Fire Department
Personnel skilled in GIS and/or HAZUS	☑	Information technology, Public Works, Planning & Development, Fire, Police
Scientists familiar with the hazards of the community	☑	Municipal Utilities, Public Works
Emergency manager	☑	Fire Department
Grant writer(s)	☑	All Departments
Others		

Table 6-3-5: Summary of fiscal capabilities for Chandler		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-6: Summary of legal and regulatory capabilities for El Mirage		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• El Mirage City Code • 2006 International Building Code • 2006 International Fire Code • 2005 National Electric Code • 1997 Dangerous Building Code • 2006 International Fuel Gas Code • 2006 International Energy Conservation Code • 1997 Uniform Administrative Code	• City Clerk • Building Department • Fire Department • City Clerk

ORDINANCES	• Chapter 19 - Off Site Construction
	• Chapter 30.28 - Emergency purchases
	• Chapter 30.65-30.70 - Civil Preparedness and Disaster
	• Chapter 33 - City Court
	• Chapter 34 - Police and Fire Department
	• Chapter 50 - Water Supply System
	• Chapter 51 - Sewers
	• Chapter 52 - Sanitation
	• Chapter 53 - Storm Water Quality Protection
	• Chapter 90 - Nuisance and Neighborhood Preservation
	• Chapter 94 - Air Pollution Regulations; Dust Control
	• Chapter 96 - International Fire Code and Alarm Systems
	• Chapter 150 - Building Code – 2006; International Plumbing Code – 2006; National Electrical Code – 2005; International Mechanical Code – 2006; Dangerous Building Code – 1997; Mobile and Manufactured Housing Standards; International Energy Conservation Code – 2006; International Fuel Gas Code – 2006; Uniform Administrative Code- 1997.
	• Chapter 153 - Floodplain Management
	• Chapter 154 - Zoning Code
	  ◦ Section 21-5-13 Floodway overlay
	  ◦ Section 21-5-14 Floodplain overlay
	  ◦ Section 21-5-15 Airfield Impact overlay
	• Chapter 155 - Subdivisions
		• Engineering
		• Finance
		• City Manager
		• Municipal Judge
		• Police Department
		• Public Works
		• Code Compliance
		• Fire Department

PLANS, MANUALS, and/or GUIDELINES	• 2003 General Plan • 2008 Emergency action Plan for El Mirage Employees • El Mirage Emergency Operations Plan • Engineering General Notes & Guidelines • Maricopa Association of Governments (MAG) Standards • District Flood Control Standard	• Planning Department • Human Resources • Fire Department • Engineering • Maricopa Association of Governments • Maricopa County Flood Control

Table 6-1-6: Summary of legal and regulatory capabilities for El Mirage		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• Flood Insurance Study by Flood Control District of Maricopa County • Floodplain Study by Flood Control District of Maricopa County • Dam Safety Study by Flood Control District of Maricopa County	• Maricopa County

Table 6-2-6: Summary of technical staff and personnel capabilities for El Mirage		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Community Development Director, City Engineer, City Planner
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	City Engineer, Engineering Technicians, Building Official
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	City Engineer, Building Official, Fire Chief
Floodplain Manager	☑	City Engineer
Surveyors	☑	City Engineering & Public Works staff
Staff with education or expertise to assess the community's vulnerability to hazards	☑	City Engineer, Building Official, Fire Chief,
Personnel skilled in GIS and/or HAZUS	☑	City GIS Technician, Information Technology Director
Scientists familiar with the hazards of the community		
Emergency manager	☑	Fire Chief, Police Chief
Grant writer(s)	☑	City Grants Coordinator
Others		

Table 6-3-6: Summary of fiscal capabilities for El Mirage		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-7: Summary of legal and regulatory capabilities for Fort McDowell Yavapai Nation		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
TRIBAL CODES	• 2000 International Building Code • 2000 National Electrical Code • 2000 International Mechanical Code • 2000 International Plumbing Code • 2000 International Fire Code	• Planning/Development Dept. • Fire Department
TRIBAL ORDINANCES	• Floodplain Management • Hazard Abatement • Subdivision • Noise	• Planning/Development Dept. • Emergency Manager. • License & Property Use Dept. • Environmental Department.
TRIBAL REGULATIONS	• Wildfire Prevention • Addressing • Drainage/Stormwater • Site Plan Reviews • Land Use Restrictions	• Fire Department • Planning/Development Dept. • License & Property Use Dept
PLANS, MANUALS, GUIDELINES, and/or STUDIES	All, as required by Tribal Council. (SEE TRIBAL ANNEX)	Community and Economic Development Division. (SEE TRIBAL ANNEX)

Table 6-2-7: Summary of technical staff and personnel capabilities for Fort McDowell Yavapai Nation		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Development - Planners/ Planning and Building - Committee Environmental Services - Inspectors/Analysts General Managers office – General Manager Land Use - Manager Housing - Manager
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Planning and Development - Building Inspectors Flood Control - Engineers Transportation - Engineers/Consultants Environmental Services - Air/Water Quality Testers /Analysts
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Development - Planners Emergency Management - Fire Chief, Police Chief, Environmental Director, Public Works Director
Floodplain Manager	☑	Planning and Development – Director and Engineers
Surveyors		
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Planning and Development – Planners, Engineers Transportation – Engineers, Police Chief, Fire Chief, Emergency Manager Emergency Management – Police Chief, Fire Chief, Emergency Manager, Planners
Personnel skilled in GIS and/or HAZUS	☑	Planning and Development –Staff Emergency Management –Staff Police Department–Staff Fire Department - Staff Environmental Services –Staff
Scientists familiar with the hazards of the community		

Table 6-2-7: Summary of technical staff and personnel capabilities for Fort McDowell Yavapai Nation		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Emergency manager	☑	Emergency Management - General Manager, Fire Chief
Grant writer(s)	☑	All Departments – Grants and Contracts Administrator
Others		

Table 6-3-7: Summary of fiscal capabilities for Fort McDowell Yavapai Nation		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Accessible but historically not obtained
Capital Improvements Project funding	Yes	Tribal Capital Improvement Programs funded by tribal enterprise revenue
Authority to levy taxes for specific purposes	Yes	Eligible to impose direct assessments for use of tribal lands
Fees for water, sewer, gas, or electric service	Yes	Eligible to assess Water, Sewer, Solid Waste, and Transfer station fees.
Impact fees for homebuyers or new developments/homes	Yes	Limited Use
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other: Grants, Inter-governmental Agreements and Specific Planning and Project Grants	Yes	Eligible for federal, state, tribal directed grants and IGA's

Table 6-1-8: Summary of legal and regulatory capabilities for Fountain Hills		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 IBC, IRC, IPC, IMC, IECC, IFC. 2005 NEC. 97 UCADB	• Building Safety • Fire Department
ORDINANCES	• Amendments to the IBC,IRC,IFC • Including fire sprinklers in all structures	• Building Safety • Fire Department
PLANS, MANUALS, and/or GUIDELINES	• 2002 General Plan • 2006 Stormwater Management Plan • 1996 – Fountain Hills Area Drainage Master Plan • 1997 - Fountain Hills Area Drainage Master Plan, Emergency Access Plan and Routes Evaluation • 2001 - Emergency Action Plan for Golden Eagle Park Dam Modifications • Check lists and minimum mandatory submital documents and specifications	• Planning and Zoning • Public Works
STUDIES	• 1994 - Fountain Hills North Floodplain Delineation Study • 1994 - Fountain Hills South Floodplain Delineation Study • 1996 - Fountain Hills Retardation Structure Emergency Action Plan • 1997 - Town of Fountain Hills, Dam Break Analysis for Golden Eagle Park Dam, Hesperus Wash Dam, Aspen Dam, North Heights Dam, Sun Ridge Canyon Dam • ISO rating for building safety	• Public Works • Building Safety

Table 6-2-8: Summary of technical staff and personnel capabilities for Fountain Hills		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Public Works/Town Engineer/Randy Harrel, PE
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Public Works/Town Engineer/Randy Harrel, PE
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Public Works/Director/Tom Ward Public Works/Town Engineer/Randy Harrel, PE
Floodplain Manager	☑	Public Works/Town Engineer/ Randy Harrel, PE
Surveyors		None
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Public Works/Director/Tom Ward
Personnel skilled in GIS and/or HAZUS	☑	CAD Services/GIS Tech/Ken Valverde
Scientists familiar with the hazards of the community		None
Emergency manager	☑	Scott LaGreca/Fire Chief Public Works/ Director/ Tom Ward
Grant writer(s)	☑	Scott LaGreca/Fire Chief Public Works/Town Engineer/ Randy Harrel, PE
Others		None

Table 6-3-8: Summary of fiscal capabilities for Fountain Hills		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	No	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	Requires citizen vote
Fees for water, sewer, gas, or electric service	No	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	Requires citizen vote
Incur debt through special tax bonds	Yes	Requires citizen vote
Other	Yes	Local Sales Tax

Table 6-1-9: Summary of legal and regulatory capabilities for Gila Bend		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• International Building Code	• Community Development Services • Public Works & Engineering
ORDINANCES	• Flood Plain Management Ordinance • Subdivision/Zoning Ordinance	• Community Development Services • Public Works & Engineering
PLANS, MANUALS, and/or GUIDELINES	• General Plan • CIP Plan	• Community Development Services • Public Works & Engineering
STUDIES	• Water, streets, sewer studies • Maps (FEMA, Effective date of September 2005)	• Community Development Services • Public Works & Engineering • Flood Control District of Maricopa County

Table 6-2-9: Summary of technical staff and personnel capabilities for Gila Bend		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Town Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure		Contract personnel
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards		Contract personnel
Floodplain Manager		Managed by FCDMC
Surveyors		Contract personnel
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Public Works Director Fire Chief EMS
Personnel skilled in GIS and/or HAZUS		Contract personnel
Scientists familiar with the hazards of the community		Contract personnel
Emergency manager	☑	Public Works Director
Grant writer(s)		Contract personnel
Others		

Table 6-3-9: Summary of fiscal capabilities for Gila Bend		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	Water, trash and sewer fees
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other	Yes	WIFA, Rural Development

Table 6-1-10: Summary of legal and regulatory capabilities for Gilbert		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 1996 Code Town of Gilbert, Arizona • 2006 International Fire Code • 2006 International Building Code • 2006 International Residential Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2006 International Fuel Gas Code • 2006 International Energy Conservation Code • 2005 National Electrical Code • The Arizonans with Disabilities Act & Implementing Rules	• Developmental Services • Fire Department

ORDINANCES	• 2005 Town of Gilbert Land Development Code
	• 1987 The Flood Damage Prevention Ordinance of the Town of Gilbert, Arizona.
	  • Regulations for Construction and Alteration of Land in Special Flood Hazard Areas in the Town.
	  • Providing for Repeal of Conflicting Ordinances
	  • Providing for Severability
	  • Providing for Penalties
	  • Declaring an Emergency
	• Flood Plain Management Ordinance is Chapter 34 of Town Code
		• Development Services

PLANS, MANUALS, and/or GUIDELINES	• 2006 Town of Gilbert Storm Water Management Program • 2009 Area Drainage Master Plan (currently underway/managed by Maricopa Flood Control District) • 2003 Gilbert Water Supply Reduction Management Plan • 2005-2011 Capital Improvement Plan • 2005/2007 Town of Gilbert Emergency Operation Plan • 2001 General Plan Town of Gilbert • 2005 Town of Gilbert Multi-Hazard Mitigation Plan (currently being updated) • 2005 Town of Gilbert Land Development Code • 2005 Town of Gilbert Public Works and Engineering Standards and Details. • Article 2 – Drainage Engineering	• Public Works • Fire Department • Development Services • Management Office

Table 6-1-10: Summary of legal and regulatory capabilities for Gilbert		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• 2005 Chandler/Gilbert Floodplain Delineation Study Phase 1 "Eastern Canal Watershed" Revised 2007. • 2008 Chandler/Gilbert Floodplain Delineation Study Phase 2 "Consolidated Canal Watershed". • 2009 Chandler/Gilbert Floodplain Delineation Study Phase 3 "UPRR/Arizona Avenue Watershed". • 2005 Flood Insurance Study for "Maricopa County, Arizona and Unincorporated Areas" Volumes 1 thru 17. • FEMA DFIRM Maps (FEMA, Effective date of September 2005) • Fissure/Subsidence Study - Chandler Heights Study Area (Includes Gilbert Area) 2007/2008. Per Ariz. Rev. Stat. § 27-152.01(3) September 21, 2006	• Public Works • Development Services

Table 6-2-10: Summary of technical staff and personnel capabilities for Gilbert		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Development Services Department - Planner, Business Development Manager, Business Development Specialists
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Development Services Department - Construction practices – Inspection & Compliance Services Manager, Building Inspection Administrator, Senior Building Inspectors, Inspector II's, Inspector I's, Fire Inspectors, Permitting & Plan Review Manager, Senior Building Plans Examiners, Building Plans Examiner. Infrastructure – Town Engineer, Engineering/Traffic/Planning Administrator, Engineering/Planning Inspection Administrator, Traffic Engineering Inspector II's, Public Works Department – Infrastructure - Utility Field Supervisors, Senior Utility Workers, Utility Workers, Instrumentation Technician, Water Treatment Plant Mechanic, Well Technician, Lift Station Technicians, and Instrumentation Technicians
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Development Services - Associate Engineer Public Works Department - Public Works Director Fire Department - Emergency Management Coordinator
Floodplain Manager	☑	Public Works Department - Public Works Director
Surveyors		

Table 6-2-10: Summary of technical staff and personnel capabilities for Gilbert		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Gilbert Fire Department - Emergency Management Coordinator Gilbert Public Works Department - Public Works Director
Personnel skilled in GIS and/or HAZUS	☑	Support Services Department - GIS Technician I and II GIS Database Analysis, GIS Administrator
Scientists familiar with the hazards of the community	☑	Public Works Department - Water Quality Supervisor/Chemist
Emergency manager	☑	Fire Department - Emergency Management Coordinator
Grant writer(s)	☑	Fire Department - Emergency Management Coordinator, Police Department - Police Plan and Research Coordinator
Others		

Table 6-3-10: Summary of fiscal capabilities for Gilbert		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	Gas and electric are private/public utilities
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-11: Summary of legal and regulatory capabilities for Glendale		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Residential Code • International Building Code • International Mechanical Code, Uniform Plumbing Code • Existing Building Code • 2005 National Electrical Code • Americans with Disabilities Act • Accessibility Guidelines and the City Code	• Building Safety • Engineering
ORDINANCES	• City of Glendale Zoning Ordinance and associated PAD and PRD documents, Landscape Ordinance • Flood Plain Ordinance • Grating and Drainage Ordinance • Sub-Division Ordinance	• Building Safety • Engineering • Planning
PLANS, MANUALS, and/or GUIDELINES	• City Department SOP's • City of Glendale Emergency Operations Plan • Multi-Jurisdictional Mitigation Plan • General Plan 2025 • North Valley Specific Area Plan • Glendale Centerline • Western Area Plan • West Glendale Avenue Development Plan • Commercial and Industrial Design Guidelines • Residential Design & Development Manual • Adopted State Erosion Standard • Engineer Design and Construction Standards • Middle New River Master Plan	• Emergency Management • Engineering • Planning
STUDIES	• 2003 Maricopa County Transportation Study • 2001 COG Transportation Plan • Storm Water Master Plan Update	• Transportation • Planning

Table 6-2-11: Summary of technical staff and personnel capabilities for Glendale		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning, Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering, Engineers – Architecture, Architects Building Safety-Structural Engineers and Architects
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineering, Utilities Dept., Building Safety
Floodplain Manager	☑	Engineering Dept.
Surveyors		Street, Public Works, Utilities Dept.
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Neighborhood Services Dept, Human Services, Emergency Management, Building Safety, Fire Dept, Police Dept, Public Works, Streets, Engineering, Architecture, Utilities Dept.
Personnel skilled in GIS and/or HAZUS	☑	IT Department, Fire Dept, Police Dept
Scientists familiar with the hazards of the community	☑	Police Dept, Utilities Dept., Fire Dept
Emergency manager	☑	City Manager's Office, Emergency Manager
Grant writer(s)	☑	All Depts
Others		

Table 6-3-11: Summary of fiscal capabilities for Glendale		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Community Partnerships
Capital Improvements Project funding	Yes	Finance Department/Management and Budget
Authority to levy taxes for specific purposes	Yes	Function of Legislation (see COG website-Appendix 18 FAQ under levy taxes)
Fees for water, sewer, gas, or electric service	Yes	Utility Department
Impact fees for homebuyers or new developments/homes	Yes	Public Works Administration
Incur debt through general obligation bonds	Yes	Management and Budget
Incur debt through special tax bonds	Yes	Management and Budget
Other		

Table 6-1-12: Summary of legal and regulatory capabilities for Goodyear		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• International Building Code, 2006 • International Residential Code, 2006 • International Mechanical Code, 2006 • International Property Maintenance Code, 2006 • International Energy Conservation Code, 2006 • NFPA 70, The National Electrical Code including Annex A – G, 2006 • NFPA 99, Health Care Facilities, 2006 • ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities, 2006	• Fire Building and Life Safety
ORDINANCES	• Flood Damage Prevention Ordinance, 2005 • Zoning Ordinance, 2009 • Subdivision Regulations, 2008 • Engineering Design Standards and Policies Manual, 2007	• Engineering
PLANS, MANUALS, and/or GUIDELINES	• General Plan, 2003 • General Plan Amendments, 2004 through 2009 • Design Guidelines, 2008 • City Center Specific Plan, 2009 • Storm Water Management Plan – Amended, 2006	• Community Development
STUDIES	• Sonoran Valley Planning Area document, 2007 • White Tank Area Drainage Master Plan, 2003 • Waterman Wash Floodplain Delineation Study, 2006 • Rainbow Valley Area Drainage Master Plan, in progress	• Community Development

Table 6-2-12: Summary of technical staff and personnel capabilities for Goodyear		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Community Development – Director Engineering – City Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Community Development - Director Fire Department - Chief Building Official Engineering – City Engineer
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Fire Department - Chief Community Development - Director Fire Department – Chief Building Official Engineering – City Engineer Contract out as needed

Table 6-2-12: Summary of technical staff and personnel capabilities for Goodyear		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Floodplain Manager	☑	Engineering – City Engineer
Surveyors		Contract out as needed
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Fire Department - Chief Community Development - Director Fire Department – Chief Building Official Engineering – City Engineer Contract out as needed
Personnel skilled in GIS and/or HAZUS	☑	Engineering – City Engineer Engineering – GIS Coordinator Contract out as needed
Scientists familiar with the hazards of the community		Contract out as needed
Emergency manager	☑	Fire Department - Chief
Grant writer(s)	☑	City Administration – Grants Administrator
Others		

Table 6-3-12: Summary of fiscal capabilities for Goodyear		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Water, sewer, and building rehabilitation projects
Capital Improvements Project funding	Yes	Annual CIP Budget Five-year CIP IGAs with FCDMC, MCDOT
Authority to levy taxes for specific purposes	Yes	Improvement Districts Community Facilities Districts
Fees for water, sewer, gas, or electric service	Yes	Adopted water and sewer connection fees and utility usage fees
Impact fees for homebuyers or new developments/homes	Yes	Adopted impact fees for water, sewer, reclaimed water, water resources, library, parks and recreation, fire, police, public works, general government, arterial streets, and regional transportation
Incur debt through general obligation bonds	Yes	Sell G.O. Bonds
Incur debt through special tax bonds	Yes	Sell Revenue Bonds, Improvement District Bonds, and Community Faculties Bonds
Cooperative Agreement Grants and Specific Planning and Project Grants	Yes	FEMA, NRCS, State Land, etc.

Table 6-1-13: Summary of legal and regulatory capabilities for Guadalupe		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 1997 Uniform Building Code • 1994 Plumbing Code • 1997 Mechanical Code • 1997 Fire Code • 1998 Town Code of Guadalupe	• Town Council • Town Inspector • Town Fire Department
ORDINANCES	• 1993 Town of Guadalupe Planning & Zoning Ordinance • 1999 Town of Guadalupe Subdivision Regulations	• Town Council • Town Manager
PLANS, MANUALS, and/or GUIDELINES	• 2009 Town of Guadalupe Multi-Hazard Mitigation Plan (in process) • 2010 Town of Guadalupe 5 year Consolidated Plan (in process) • 2007 Town of Guadalupe Emergency Operation Plan • 1991 Capital Improvement Program • 2010 Guadalupe Master Plan	• Community Development Director • Town Manager
STUDIES	• 2009 Town of Guadalupe Environmental Study • 2009 Town of Guadalupe Flood Plain Housing Study • 2008 ADOT Guadalupe Rd. Pedestrian Bridge & Pathway from South Mountain Park to Tempe City Line	• Town Manager • Community Development Director • Town Engineer

Table 6-2-13: Summary of technical staff and personnel capabilities for Guadalupe		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Town Manager
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure		Consultant (TriCore Engineering)
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Guadalupe Fire Department
Floodplain Manager		Consultant (TriCore Engineering)
Surveyors		Consultant (TriCore Engineering)
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Town Manager
Personnel skilled in GIS and/or HAZUS	☑	Guadalupe Fire Department
Scientists familiar with the hazards of the community		NA
Emergency manager	☑	Town Mayor
Grant writer(s)	☑	Community Development, Guadalupe Fire Department
Others		

Table 6-3-13: Summary of fiscal capabilities for Guadalupe		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Don't Know	
Fees for water, sewer, gas, or electric service	Yes	Water
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	No	
Incur debt through special tax bonds	No	
Other	No	

Table 6-1-14: Summary of legal and regulatory capabilities for Litchfield Park		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Residential Code • 2006 International Plumbing Code • 2006 International Mechanical Code • 2003 International Fire Code • 2005 National Electric Code • 2006 International Energy Conservation Code • 2006 International Fuel Gas Code • 2008 Litchfield Park City Code update as needed	• Building Department • City Clerk/ City Council
ORDINANCES	• City of Litchfield Park Zoning Code Ordinances • Weed Abatement Ordinance • Public Nuisance Ordinance • Property Maintenance Ordinance • Hazardous Material Storage and Disposal Ordinance	• Planning & Zoning
PLANS, MANUALS, and/or GUIDELINES	• Handbook for Arizona Communities, Floodplain Management • Storm Water Management Plan • 2008 Emergency Management Response Guidebook • 2009 Litchfield Park General Plan	• Planning & Zoning • City Manager's Office, Emergency Management
STUDIES	• 2009 Flood Emergency Action Plan Exercise	• City Manager's Office, Emergency Management

Table 6-2-14: Summary of technical staff and personnel capabilities for Litchfield Park		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning, Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering, Engineers, Building, Building Inspectors
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineers
Floodplain Manager	☑	Engineering, Engineers
Surveyors		Contract Surveyors
Staff with education or expertise to assess the community's vulnerability to hazards		Contract Staff through MCSO and Rural Metro Fire
Personnel skilled in GIS and/or HAZUS		Contract Emergency Services
Scientists familiar with the hazards of the community		Contract Emergency Services
Emergency manager	☑	City manager, Assistant City Manager
Grant writer(s)	☑	All Departments, Individuals within each Dept.
Others		

Table 6-3-14: Summary of fiscal capabilities for Litchfield Park		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	No	No area of the City meets the basic requirements due to income.
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	Requires a vote of the people.
Fees for water, sewer, gas, or electric service	No	All of these services are privately owned.
Impact fees for homebuyers or new developments/homes	Yes	We have chosen not to require impact fees of developers/builders.
Incur debt through general obligation bonds	Yes	This would be hard for us at this time because we do not have a bond rating.
Incur debt through special tax bonds	Yes	
Other	No	

Table 6-1-15: Summary of legal and regulatory capabilities for Unincorporated Maricopa County		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2005 National Electrical Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2006 International Residential Code	• Planning and Development
ORDINANCES	• Abatement Ordinance (P-11) • Adult Oriented Business (P-10) • Dark Sky Ordinance • Military Airport Zoning Ordinance (P-16) • Noise Ordinance (P-23) • Zoning Ordinance (P-18)	• Planning and Development
REGULATIONS	• Addressing Regulations • Drainage Regulations • Dust Abatement Regulations • Subdivision Regulations • HUD Consolidated Planning Regulations • Floodplain Regulations	• Planning and Development • Air Quality • Transportation • Community Development • Flood Control District
PLANS, MANUALS, and/or GUIDELINES	• Area Land Use Plan • Comprehensive Plan • Transportation Plan • Scenic Corridors • Comprehensive Planning Amendments Guidelines • Development Master Plan Guidelines • Area Drainage Master Plan • Watercourse Master Plan • Flood Response Plan/Emergency Actions	• Planning and Development • Transportation • Environmental Services • Flood Control District
STUDIES	• Flood Insurance Studies • Floodplain Delineation Studies • Dam Safety Studies • Area Drainage Master Studies • Corridor Studies • Emergency Routes/Mass Evacuation • Fissure / Subsidence Risk Studies • Air Quality Planning Area Maps	• Planning and Development • Environmental Services • Flood Control District • Transportation • Emergency Management • AZ Geological Survey • Air Quality

Table 6-2-15: Summary of technical staff and personnel capabilities for Unincorporated Maricopa County		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Development - Planners Flood Control District – Engineers/Planners Transportation – Engineers/Planners Environmental Services – Inspectors
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Planning and Development - Planners Flood Control District – Engineers/Inspectors Transportation – Engineers/Surveyors Environmental Services – Inspectors Air Quality - Inspectors
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Development - Planners Flood Control District - Engineers Transportation – Engineers/Planners Emergency Management - Planners
Floodplain Manager	☑	Flood Control District – Engineers
Surveyors	☑	Flood Control District – Surveyors Transportation – Surveyors
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Planning and Development - Planners Flood Control District - Engineers Transportation - Engineers Emergency Management – Planners
Personnel skilled in GIS and/or HAZUS	☑	Planning and Development – GIS Staff Flood Control District – GIS Staff Transportation – GIS Staff Emergency Management – GIS Staff Assessor's Office – GIS Staff Sheriff's Office – GIS Staff Elections – GIS Staff Environmental Services – GIS Staff Air Quality – GIS Staff
Scientists familiar with the hazards of the community	☑	Flood Control District - Hydrologist
Emergency manager	☑	Emergency Management - Director/Planners
Grant writer(s)	☑	Emergency Management - Planner Parks –Grant writer Sheriff's Office – Grant writer Community Development – Grant writer Human Services – Grant writer Transportation - Grant writer/Fed. Aid Coordinator Flood Control District – CIP Manager
Others		

Table 6-3-15: Summary of fiscal capabilities for Unincorporated Maricopa County		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	No	A Five-year Consolidated Plan is prepared with the public adoption of an Annual Action Plan.
Capital Improvements Project funding	Yes	• FCD's CIP • County General Fund CIP • Transportation Improvement Program • Regional Transportation Plan
Authority to levy taxes for specific purposes	Yes	Improvement District, Direct Assessment Special District
Fees for water, sewer, gas, or electric service	No	Solid Waste only: Transfer station and waste tire collection fees.
Impact fees for homebuyers or new developments/homes	Yes	Limited Use
Incur debt through general obligation bonds	Yes	Lease Revenue Bonds
Incur debt through special tax bonds	Yes	
Other: Cooperative Agreement Grants and Specific Planning and Project Grants	Yes	FEMA, NRCS, State Land, etc.

Table 6-1-16: Summary of legal and regulatory capabilities for Mesa		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Fire Code • 2007 National Electric Safety Code	• City of Mesa Development & Sustainability Dept • Fire Department
ORDINANCES	• City of Mesa Charter and Ordinances 2009 • Maricopa County Flood Control Standards and Requirements	• Mesa City Council • City of Mesa Engineering (Flood Plain Mgr)
PLANS, MANUALS, and/or GUIDELINES	• City of Mesa Overhead Construction Manual • City of Mesa Detailed Electrical Standards • 2009 City of Mesa Engineering and Design Standards	• City of Mesa Utilities Energy Div (Electric) • City of Mesa Engineering
STUDIES	• City of Mesa Electrical Load Studies • City of Mesa Storm Drain Master Plan 2009 • City of Mesa Water System Master Plan 2009 • City of Mesa Wastewater Master Plan 2009 • City of Mesa Gas Master Plan 2005	• City of Mesa Utilities Energy Div (Electric) • City of Mesa Engineering • City of Mesa Utilities Water Div (Water) • City of Mesa Utilities Water Div (Wastewater) • City of Mesa Utilities Energy Div (Gas)

Table 6-2-16: Summary of technical staff and personnel capabilities for Mesa		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	City of Mesa Development Services
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	City of Mesa Engineering
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Assistant City Engineer City of Mesa
Floodplain Manager	☑	Engineering City of Mesa
Surveyors	☑	Engineering City of Mesa
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Wastewater Supervisor City of Mesa
Personnel skilled in GIS and/or HAZUS	☑	City of Mesa GIS Supervisor City of Mesa GIS Manager City of Mesa GIS Specialist
Scientists familiar with the hazards of the community		N/A

Table 6-2-16: Summary of technical staff and personnel capabilities for Mesa		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Emergency manager	☑	Emergency Management Coordinator Deputy Chief Emergency Management
Grant writer(s)	☑	City of Mesa Grant Coordinators Office
Others		

Table 6-3-16: Summary of fiscal capabilities for Mesa		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	May be done in conjunction with Flood Plain Master Plans
Capital Improvements Project funding	Yes	May include funding for new or existing city infrastructure.
Authority to levy taxes for specific purposes	Yes	Through City Council approval
Fees for water, sewer, gas, or electric service	Yes	As necessary , through city council approval
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	CIP Bonds, strom drains, electrical, parks, streets, fire, police, utilities.
Incur debt through special tax bonds	Yes	Urban Area Security Initiative , Proposition 202 (Gaming)
Other	No	

Table 6-1-17: Summary of legal and regulatory capabilities for Paradise Valley		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Residential Code • 2006 International Plumbing Code • 2006 International Gas Code • 2006 International Mechanical Code • 2006 International Fire Code • 2005 National Electric Code • Town Code of the Town of Paradise Valley	• Building Safety Division • Planning Division
ORDINANCES	• Floodplain Administration Ordinance (Town Code Article 5-11) • Weed Abatement Ordinance (Town Code Article 8-1-12) • Zoning Ordinance (Town Code Article I thru Article XXV) • Hillside Ordinance (Town Code Article XXII)	• Engineering Department • Planning Division
PLANS, MANUALS, and/or GUIDELINES	• Paradise Valley General Plan 2003 • Town of Paradise Valley Storm Drainage Manual (3/12/87) • Capital Improvement Project Program	• Engineering Department • Planning Division
STUDIES	• Federal Insurance Rate Map 9/30/05	• Engineering Department

Table 6-2-17: Summary of technical staff and personnel capabilities for Paradise Valley		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning & Building Department – Director Engineering Department – Town Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering Department – Town Engineer Building Safety Division – Building Safety Manager
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning & Building Department – Director
Floodplain Manager	☑	Engineering Department – Town Engineer
Surveyors		None
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Building Safety Division – Building Safety Manager
Personnel skilled in GIS and/or HAZUS	☑	Information Technology Department – IT Manager
Scientists familiar with the hazards of the community		None
Emergency manager	☑	Building Safety Division – Building Safety Manager

Table 6-2-17: Summary of technical staff and personnel capabilities for Paradise Valley		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Grant writer(s)	☑	Planning & Building Department – Director Planning & Building Department – Senior Planner
Others		

Table 6-3-17: Summary of fiscal capabilities for Paradise Valley		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Technically eligible but PV has no Section 8 housing or "moderate income" persons.
Capital Improvements Project funding	Yes	Capital Projects Accumulation Fund with voter approval.
Authority to levy taxes for specific purposes	Yes	Property Tax with voter approval.
Fees for water, sewer, gas, or electric service	Yes	No utilities but bill residents on Scottsdale Sewer. PV sets the rates.
Impact fees for homebuyers or new developments/homes	Yes	Pursuant to ARS approval process.
Incur debt through general obligation bonds	Yes	With voter approval.
Incur debt through special tax bonds	Yes	PV can sell bonds issued by Municipal Property Corporation.
Other		Expenditures are subject to state imposed expenditure limitation law.

Table 6-1-18: Summary of legal and regulatory capabilities for Peoria		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2006 International Residential Code • 2006 International Fire Code • 2006 International Mechanical Code • 2006 International Property Maintenance Code • 2005 National Electrical Code • 2006 International Plumbing Code • 2006 International Fuel Gas Code	• Planning & Community Development • Engineering • Fire • Emergency Management
ORDINANCES	• Zoning Ordinance	• Planning & Community Development • Emergency Management
PLANS, MANUALS, and/or GUIDELINES		•
STUDIES		•

Table 6-2-18: Summary of technical staff and personnel capabilities for Peoria		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning, Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering, Engineers – Architecture, Architects
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineering, Water Services Dept, Development Services Dept
Floodplain Manager	☑	Street, Transportation Dept
Surveyors		Water Services Dept & Engineering Contract Services
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Neighborhood Services Dept, Human Services, Emergency Management, Development Services, Fire Dept, Police Dept, Public Works, Streets, Engineering, Architecture, Water Services Dept
Personnel skilled in GIS and/or HAZUS	☑	ITD, Fire Dept, Police Dept
Scientists familiar with the hazards of the community		Police Dept, Water Services Dept, Fire Dept
Emergency manager	☑	City Manager's Office, Emergency Manager
Grant writer(s)	☑	Every Dept is responsible
Others		

Table 6-3-18: Summary of fiscal capabilities for Peoria		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-19: Summary of legal and regulatory capabilities for Phoenix		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 Phoenix Building Construction Code with July 2, 2008 and April 1, 2009 Amendments • 2006 Phoenix Building Code • 2006 Phoenix Residential Code • 2006 Phoenix Existing Building Code • 2006 Phoenix Energy Conservation Code • 2006 Phoenix Mechanical Code • 2006 Phoenix Fuel Gas Code • 2006 Phoenix Fire Code • 2006 Phoenix Performance Code • 2006 Uniform Plumbing Code with Phoenix Amendments • Phoenix Zoning Code • Aviation Department Rules and Regulations	• Development Services • Fire • Planning • Aviation
ORDINANCES	• Phoenix Code of Ordinances	• Law
PLANS, MANUALS, and/or GUIDELINES	• 2001 Phoenix General Plan (beginning revision) • 2009 City of Phoenix Major Emergency Response and Recovery Plan • 2009 Maricopa County Regional Multi-Hazard Mitigation Plan (currently being updated) • 2004 Water Services Department Design Standards Manual for Water And Wastewater Systems • 2004 Street Transportation Department Storm Water Policies and Standards • 2009 Water Services Department Storm Water Policies and Procedures • Third-party Plan Review Policies and Standards • 2008 Aviation Department Multi-Sector General Permit Stormwater Pollution Prevention Plan • Aviation Department Wildlife Management Plan • Aviation Department Standard Operating Procedures • Metro Phoenix Area Drainage Master Plan • Hohokam Area Drainage Master Plan	• Planning • Emergency Management • Water Services • Street Transportation • Development Services • Aviation

Table 6-1-19: Summary of legal and regulatory capabilities for Phoenix		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• FEMA DFIRM Maps • Dam Safety Studies and Emergency Action Plans • 7R/25L Runway Safety Area Environmental Assessment – Conditional Letter of Map Revision • Flood Insurance Studies (FIS) • Levee Studies	• Street Transportation • Aviation

Table 6-2-19: Summary of technical staff and personnel capabilities for Phoenix		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning Dept. – Principal Planner, Planner III, Village Planner & Planner II Water Services – Superintendents, 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	☑	Street Transportation Dept. - Civil Engineers Water Services – Superintendents, Civil Engineers, Project Coordinators, Principal Engineering Technicians
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning Dept. – Principal Planner, Planner III, Village Planner & Planner II Water Services – Superintendents, Civil Engineers, Principal Engineering Technician, Hydrologist
Floodplain Manager	☑	Street Transportation Dept. - Civil Engineer III
Surveyors	☑	Street Transportation Dept. – Survey Teams
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Water Services – Environmental Programs Coordinator, Civil Engineers, Water Quality Inspectors
Personnel skilled in GIS and/or HAZUS	☑	Information Technology Services – Info Tech Analyst/Programmers and Info Tech Specialists Fire Dept. – Fire Protection Engineer Planning Dept. – Senior GIS Technician Police Dept. – Senior User Technology Specialist Street Transportation Dept. - Info Tech Analyst/ Programmer II and Senior GIS Technician Water Services Dept. – GIS and Senior GIS Technicians
Scientists familiar with the hazards of the community	☑	Aviation Department – Environmental Quality Specialist City Managers/Office of Environmental Programs – Environmental Quality Specialists Personnel Department – Industrial Hygienists Water Services – Chemists, Environmental Quality Specialist, Laboratory Technician, Environmental Programs Coordinator
Emergency manager	☑	City Manager's Office - Emergency Management Coordinator

Table 6-2-19: Summary of technical staff and personnel capabilities for Phoenix		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Grant writer(s)	☑	Aviation Department – Planner II Fire Dept. – Volunteer Coordinator and Fire Captains Planning Dept. – Principal Planner, Planner III, Village Planner & Planner II Police Dept. – Police Research Analysts Public Transit Dept
Others		

Table 6-3-19: Summary of fiscal capabilities for Phoenix		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Housing, Neighborhood Services, and Water Services projects
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	Water, Sewer, and Solid Waste Fees
Impact fees for homebuyers or new developments/homes	Yes	For new developments inside impact fee areas-zones only. The Impact Fees are charged to new developments.
Incur debt through general obligation bonds	Yes	This excludes the Water Services and Aviation Departments
Incur debt through special tax bonds	Yes	Excise (sales) taxes
Other	Yes	FAA and Arizona Dept of Transportation grants to the Aviation Department Water resources fees, Environmental fees, Improvement Districts

Table 6-1-20: Summary of legal and regulatory capabilities for Queen Creek		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• Town Code of the Town of Queen Creek • 2006 International Building Code • 2006 International Residential Code • 2006 Uniform Plumbing Code • 2006 International Mechanical Code • 2006 International Fire Code • 2006 International Property Maintenance Code • 2006 International Existing Building Code • 2006 International Energy Conservation Code • 2006 International Urban-Wildland Interface Code • 2005 National Electrical Code	• Community Development • Fire Department • Town Clerk
ORDINANCES	• Abatement Ordinance • Adult Oriented Business • Dark Sky Ordinance • Military Airport Zoning Ordinance • Noise Ordinance • Zoning Ordinance	• Community Development
PLANS, MANUALS, and/or GUIDELINES	• Addressing Regulations • Drainage Regulations • Dust Abatement Regulations • Subdivision Regulations • HUD Consolidated Planning Regulations • Floodplain Regulations	• Community Development • Public Works • Flood Control District
STUDIES	• Town of Queen Creek General Plan 2008 • Area Land Use Plan • Comprehensive Plans: Planning & Development • Transportation Plan • Desert Foothills Plan • Comprehensive Planning Amendments Guidelines • Development Master Plan Guidelines • Area Drainage Master Plan • Watercourse Master Plan	• Community Development • Public Works • Flood Control District

Table 6-2-20: Summary of technical staff and personnel capabilities for Queen Creek		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Community Development – Planners/Engineers Public Works – Engineers

Table 6-2-20: Summary of technical staff and personnel capabilities for Queen Creek		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Community Development – Planners/Engineers/Inspectors Fire – Fire Inspector/Plans Examiner Public Works – Engineers/Inspectors
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Community Development – Planners/Engineers Fire Department – Emergency Mgnt. Coordinator Public Works – Engineers/Inspectors
Floodplain Manager	☑	Public Works – Engineers/Inspectors
Surveyors		N/A
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Community Development – Planners/Engineers Fire Department – Emergency Mgnt. Coordinator Public Works – Engineers/Inspectors
Personnel skilled in GIS and/or HAZUS	☑	Information & Marketing – GIS Staff
Scientists familiar with the hazards of the community		N/A
Emergency manager	☑	Town Manager – Director Fire Department – Emergency Mgnt. Coordinator
Grant writer(s)	☑	Information & Marketing – Grant writer Fire Department – Emergency Mgnt. Coordinator Parks – Grant writers Public Works – Engineers/Project Managers
Others		

Table 6-3-20: Summary of fiscal capabilities for Queen Creek		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	A Five-year Consolidated Plan is prepared with the public adoption of annual application submittals.
Capital Improvements Project funding	Yes	Town CIP
Authority to levy taxes for specific purposes	Yes	• Fire/EMS/Law Enforcement Property Tax • Improvement Districts • Direct Assessment Special District
Fees for water, sewer, gas, or electric service	Yes	Water and sewer service
Impact fees for homebuyers or new developments/homes	Yes	• Wastewater • Parks, Trails, & Open Space • Town Buildings and Vehicles • Transportation • Library • Public Safety • Fire
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other - Cooperative Agreement Grants and Specific Planning and Project Grants	Yes	

Table 6-1-21: Summary of legal and regulatory capabilities for Salt River Pima-Maricopa Indian Community		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
TRIBAL CODES	• 2003 International Building Codes • 2003 International Fire Codes	• Engineering Construction Services • Fire Department
TRIBAL ORDINANCES	• Salt River Pima-Maricopa Indian Community Ordinance • 1981 Zoning Ordinance	• SRPMIC Administration • Tribal Council • Community Development
TRIBAL REGULATIONS	• Emergency Operations Plan • Tribal Emergency Response Commission Guid • 2006 General Use Plan	• Fire Department • Tribal Emergency Response Commission • Community Development
PLANS, MANUALS, GUIDELINES, and/or STUDIES	SEE TRIBAL ANNEX	(SEE TRIBAL ANNEX)

Table 6-2-21: Summary of technical staff and personnel capabilities for Salt River Pima-Maricopa Indian Community		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Engineering and Construction Services (ECS), Community Development Department (CDD)
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	ECS, Fire Department
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	ECS, Environment Protection of Natural Resources(EPRN), CDD, Public Works
Floodplain Manager	☑	Streets, Transportation
Surveyors	☑	Public Works, ECS
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Police, Fire, Emergency Management, ECS, CDD
Personnel skilled in GIS and/or HAZUS	☑	ECS, CDD
Scientists familiar with the hazards of the community	☑	Public Works, CDD, EPRN
Emergency manager	☑	Fire Department
Grant writer(s)	☑	Grants and Contracts
Others		

Table 6-3-21: Summary of fiscal capabilities for Salt River Pima-Maricopa Indian Community		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-22: Summary of legal and regulatory capabilities for Salt River Project		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• North American Electric Reliability Council (NERC) Standard FAC-003-01 – Transmission Vegetation Management • 2007 National Electric Safety Code (NESC): Part two (deals with overhead electric lines). Section 1 and Section 12. • American National Standards Institute (ANSI standards) • American Society for Testing and Materials (ASTM standards) • Occupational Safety & Health Administration (OSHA standards) • Meet all Municipal Codes	• Maintenance Services, Line Clearing • Engineering & Construction Services • System Operations • Power Generation • Electric System Operations & Maintenance • Risk Management • Facility Services • Water Delivery • Water Engineering & Transmission
ORDINANCES	• Meet Maricopa Association of Governments (MAG) specifications	• Engineering & Construction Services • Water Delivery • Water Engineering & Transmission
PLANS, MANUALS, and/or GUIDELINES	• 2009 SRP Crisis Management Plan • 2009 SRP Business Continuity Coordination Plan • 2009 Emergency Restoration Plan, Electric System Line Maintenance • 2009 Storm Operations Manual • 2009 SRP Emergency Reservoir Operating Procedures • 2004 Maricopa County Hazard Mitigation Plan (currently being Updated) • 2009 Business Continuity Plan #2410 – Reactive Maintenance (Transmission/Distribution) • 2009 Business Continuity Plan #2415 – Line Clearing • 1997 Water Control Manual Modified Roosevelt Dam (Theodore Roosevelt Dam), Salt and Gila Rivers, Arizona – US Army Corps of Engineers, Los Angeles District • SRP Business Impact Analysis (BIA) Program. (portfolio of approximately 70+ BIAs for risk mitigation planning at SRP). • SRP Line Design Standards, Policies and Procedures • SRP Electrical Clearance Standards – based on NESC • Guidelines for Electric System Planning • Electric System Engineering Equipment Ratings • Distribution Operation Center Operating Procedures	• Risk Management • Business Continuity & Emergency Management • Water Engineering & Transmission • Water Resource Operations • Electric System Line Maintenance • Electric System Operations & Maintenance • Engineering & Construction Services • System Operations • Water Delivery

Table 6-1-22: Summary of legal and regulatory capabilities for Salt River Project		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• Water resources planning and management at the Salt River Project, Arizona, USA – Daniel H. Phillips & Yvonne Reinink & Timothy E. Skarupa & Charles E. Ester III & Jon A. Skindlov, Irrigation and Drainage Systems, Springer Netherlands, On line First, April 29, 2009 • Electric Power Research Institute (EPRI) studies on a variety of topics • Power Systems Engineering Research Center (PSerc) studies on various topics • Annual Distribution Planning and Operating Studies • Annual Electric System Plan	• Water Resource Operations • Engineering & Construction Services • System Operations • Electric System Operations & Maintenance

Table 6-2-22: Summary of technical staff and personnel capabilities for Salt River Project		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	• SRP Land Acquisitions Dept • SRP Property Management Dept • Line Asset Management Dept – 3 Right of Way Technicians and 1 Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	• SRP Manager, Electric System Engineering, Policies Procedures and Standards Dept • Line Asset Management Dept – 3-5 Inspectors • Line Maintenance Engineering Dept – 5 Engineers
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	• 1 Superintendent of Water Transmission & Communications • 3 Staff Scientists/Meteorologists – Water Resource Operations Dept • 1 Staff Senior Engineer (PE) – Water Resource Operations Dept • 2 Staff Senior Hydrologists – Water Resource Operations Dept • Line Asset Management Dept – 3-5 Inspectors • Line Maintenance Engineering Dept – 5 Engineers
Floodplain Manager		N/A
Surveyors	☑	• SRP Survey Department
Staff with education or expertise to assess the community's vulnerability to hazards	☑	• 1 Manager – Line Clearing Dept • 2 Utility Forester/Certified Arborists – Line Clearing Dept • SRP Business Continuity & Emergency Management Dept • Line Asset Management Dept – 3-5 Inspectors • Line Maintenance Engineering Dept – 5 Engineers
Personnel skilled in GIS and/or HAZUS	☑	• GIS Services Dept – 14 GIS Analysts • Cartographics & GIS Services Dept • Line Maintenance Engineering – 3 GIS/Design Technicians
Scientists familiar with the hazards of the community	☑	• Siting and Studies Dept - 5 Environmental Scientists • Environmental Compliance Dept – 7 Scientists • Laboratory & Field Services Dept – 6 Scientists
Emergency manager	☑	• Business Continuity & Emergency Management Dept - 1 Staff, Certified Emergency Manager (CEM) • Business Continuity & Emergency Management Dept - 2 Staff Certified Business Continuity Professionals (CBCP) • Water Resource Operations Dept – Manager • Electric System Line Maintenance Dept – 3 Managers

Table 6-2-22: Summary of technical staff and personnel capabilities for Salt River Project		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Grant writer(s)		N/A
Others		• Distribution Planning Department – 5 Engineers, 3 Technicians. • Distribution Operations Technical Support – 5 Operations Specialists

Table 6-3-22: Summary of fiscal capabilities for Salt River Project		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	n/a	
Capital Improvements Project funding	Yes	1. Structural Upgrade Initiative (SUI). Systematically harden 69kV assets from severe wind including upgrading to steel and adding heavy-duty steel poles to vulnerable line segments. Approx. $3 million per year 2. Wood Pole Asset Management Project (WPAMP). Inspect, treat, reinforce and replace wood poles throughout the distribution and transmission systems. Approx. $3.5 million per year 3. Capitalized Maintenance. To replace transmission structures system-wide between WPAMP cycles as needed. Approx. $0.5 million per year. 4. Storm Damage. Replace storm damaged structures with current designs, often an upgrade from the existing. 5. Various Capital Improvement and Load Growth initiatives as contained in the Electric System
Authority to levy taxes for specific purposes	No	
Fees for water, sewer, gas, or electric service	Yes	SRP Performs regular maintenance tasks on existing structures to preserve strength, functionality and public safety.
Impact fees for homebuyers or new developments/homes	n/a	
Incur debt through general obligation bonds	n/a	
Incur debt through special tax bonds	n/a	
Other	Yes	SRP Mobile Substation fleet

Table 6-1-23: Summary of legal and regulatory capabilities for Scottsdale		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Fire Code • 2006 International Building Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2005 National Electric Code • 2006 International Energy Conservation Code • International Residential Code • Public Nuisance and Property Maintenance Code • Uniform Code for the Abatement of Dangerous Buildings • Uniform Housing Code	• Fire Department • Public Works • Water Resources • Planning, Neighborhood and Transportation • Economic Vitality
ORDINANCES	• Zoning Ordinance • Floodplain and Stormwater Ordinance • Dust Control • Environmentally Sensitive Lands Ordinance • Foothills Overlay Zoning District • Hillside Zoning District • Historic Preservation • Subdivision Ordinance	• Economic Vitality • Planning, Neighborhood and Transportation • Public Works and Water Resources
PLANS, MANUALS, and/or GUIDELINES	• Cityshape 2020 • Scottsdale General Plan 2001 • Scottsdale Visioning • Green Building Program • Transportation/Mobility Plans • Streetscapes • Area Plans • Neighborhood Planning • Downtown Plan • Citywide Design Guidelines • Desert Areas • Historic Preservation	• Planning, Neighborhood and Transportation • Transportation and Streets • Community Services • Economic Vitality
STUDIES		• Planning, Neighborhood and Transportation • Transportation and Streets • Community Services • Economic Vitality

Table 6-2-23: Summary of technical staff and personnel capabilities for Scottsdale		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning & Development – Planners Flood Control Planner Wastewater Planners
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Chief Engineer and General Manager, Water Services, Development Services
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineering, Water Services, Development Services
Floodplain Manager	☑	Stormwater Management – Planners
Surveyors	☑	Streets and Transportation Department
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Neighborhood Services, Human Services, Emergency Management, Development Services, Fire Department, Police Department, Public Works, Streets, Engineering, Architecture, Water Services
Personnel skilled in GIS and/or HAZUS	☑	IT Department, Fire Department, Police Department
Scientists familiar with the hazards of the community	☑	Police Department, Water Services, Fire Department
Emergency manager	☑	City Manager's Office Emergency Management – Homeland Security Division
Grant writer(s)	☑	Every Department
Others		

Table 6-3-23: Summary of fiscal capabilities for Scottsdale		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-24: Summary of legal and regulatory capabilities for Surprise		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• International Series of Codes: • 2006 Building, Plumbing, Electrical • 2006 Fire	• Community Development • Fire
ORDINANCES	• COS Municipal Codes: Land Development Chapter 101, • COS Municipal Codes: Buildings Chapter 105 • COS Municipal Codes: Storm Water Management Chapter 117 • COS Municipal Codes: Unified Development Code Chapter 122	• Community Development • City Administration • Public Works
REGULATIONS	• Addressing Regulations • Drainage Regulations • Dust Control Regulations • Subdivision Regulations	• Community Development • Public Works • City Administration
PLANS, MANUALS, and/or GUIDELINES	• General Plan 2030 • Area Land Use Plan • Development Master Plan Guidelines • Area Drainage Master Plan	• Community Development • Public Works
STUDIES	• Flood Insurance Studies • Floodplain Delineation Studies • Area Drainage Master Studies • Transportation Studies • Martin Acres Flood Control Study	• Community Development • Public Works

Table 6-2-24: Summary of technical staff and personnel capabilities for Surprise		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Development – Planners Public Works – Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Public Works - Engineers
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Development – Planners Public Works - Engineers
Floodplain Manager	☑	Contract with Flood Control District – Engineers Public Works – CFM Staff
Surveyors	☑	GIS – GIS Staff
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Planning and Development - Planners Public Works – Staff Police Dept – Staff Fire Dept - Staff

Table 6-2-24: Summary of technical staff and personnel capabilities for Surprise		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Personnel skilled in GIS and/or HAZUS	☑	GIS – GIS Staff
Scientists familiar with the hazards of the community		None
Emergency manager	☑	Fire Chief - Coordinator
Grant writer(s)	☑	Parks – Staff Police – Staff Public Works – Staff Fire Dept – Staff
Others		

Table 6-3-24: Summary of fiscal capabilities for Surprise		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Don't Know	A Five-year Consolidated Plan is prepared with the public adoption of an Annual Action Plan.
Capital Improvements Project funding	Yes	City General Fund CIP, Regional Transportation Plan
Authority to levy taxes for specific purposes	Yes	City Council
Fees for water, sewer, gas, or electric service	Yes	Solid Waste, Water, Sewer
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	Yes	City Council
Incur debt through special tax bonds	Yes	City Council
Other	Yes	FEMA, NRCS, State Land, etc.

Table 6-1-25: Summary of legal and regulatory capabilities for Tempe		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building code and International Fire Code	• Fire Department
ORDINANCES	• Weed Abatement Ordinance	• Public Works • Development Services
PLANS, MANUALS, and/or GUIDELINES	• Tempe Emergency Operations Plan Revised October 2008 • Capital Improvement Plan, 2009-10, including Storm Drain Modifications • Economic Development Plan • General Plan	• Fire Department • Financial Services • Community Development • Development Services
STUDIES	• Floodplain Delineation Study	• Public Works

Table 6-2-25: Summary of technical staff and personnel capabilities for Tempe		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Public Works/Engineering, Planning
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Public Works/Engineering Community Development/Building Safety
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Public Works/Engineering Water Utilities Department
Floodplain Manager	☑	Public Works/Engineering
Surveyors	☑	Public Works/Engineering Water Utilities Department
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Fire Department, Police Department, Community Development, Public Works/Engineering, Streets Water Utilities Department
Personnel skilled in GIS and/or HAZUS	☑	Public Works/Engineering, Field Operations Information Technology Department Fire Department Police Department Water Utilities Department
Scientists familiar with the hazards of the community		
Emergency manager	☑	Fire Department
Grant writer(s)	☑	All City Departments
Others		

Table 6-3-25: Summary of fiscal capabilities for Tempe		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	Can only occur through City Council and city vote.
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Other		

Table 6-1-26: Summary of legal and regulatory capabilities for Tolleson		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Fire Code • 2006 National Fire Code & Standards • 2006 International Building Code • 2006 International Mechanical Code • 2006 International Electrical Code • 2005 National Electrical Code • Tolleson City Code • 2006 International Residential Code • 2006 International Plumbing Code • 2006 International Property Maintenance Code • 2005 International Administrative Electrical Code • 2006 International Fuel Gas Code	• Fire Department • Building Department • City Clerk's Office • Engineering Department
ORDINANCES	• 463 N.S. Amending the Tolleson City Code Chapter 7 Relating to fire codes • 2009 Tolleson City Ordinances • 2008 Dust and Airborne Particulate Control • 2009 Zoning Code • 2007 Strom Water Runoff Pollution/Prevention	• Fire Department • Building Department
PLANS, MANUALS, and/or GUIDELINES	• Fire Protection Handbook, 18th edition • ANSI/IIAR 2-1999, Equipment Design, and Installation of Ammonia Mechanical Refrigerating Systems • Fire Department Plan Review Guidelines as adopted by Ordinance 463 N.S. • 2005 Tolleson General Plan • 2008 City of Tolleson Codes	• Fire Department • Building Department • City Clerk's Office • City Council / Staff
STUDIES	•	• All City Departments

Table 6-2-26: Summary of technical staff and personnel capabilities for Tolleson		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	City Manager's Office, City Planner, Engineering
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering, Building Departments
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning, Engineering, Fire Department, Police Department, Public Works
Floodplain Manager	☑	City Manager's Office
Surveyors	☑	Street, Public Works, Engineering
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Street Department, Public Works
Personnel skilled in GIS and/or HAZUS	☑	Neighborhood Services, Emergency Services, Development Services, Fire Department, Police Department, Public Works, Engineering, Streets
Scientists familiar with the hazards of the community		Police Department, Water Services, Fire Department
Emergency manager	☑	City Manager's Office
Grant writer(s)	☑	Each Individual City Department
Others		

Table 6-3-26: Summary of fiscal capabilities for Tolleson		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	Yes	
Impact fees for homebuyers or new developments/homes	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Don't Know	
Other		

Table 6-1-27: Summary of legal and regulatory capabilities for Wickenburg		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code • 2005 National Electrical Code • 2006 International Mechanical Code • 2006 International Plumbing Code • 2006 International Residential Code	• Community Development • Public Works
ORDINANCES	• Dark Sky Ordinance • Noise Ordinance (P-23) • Zoning Ordinance (P-18)	• Community Development • Public Works • Manager's Office
PLANS, MANUALS, and/or GUIDELINES	• Addressing Regulations • Drainage Regulations • Dust Abatement Regulations • Subdivision Regulations	• Community Development • Public Works • Manager's Office
STUDIES	• Area Land Use Plan • Flood Response Plan • Development Master Plan Guidelines • Area Drainage Master Plan • Watercourse Master Plan	• Community Development • Public Works

Table 6-2-27: Summary of technical staff and personnel capabilities for Wickenburg		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Planning and Development – Planners Public Works – Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure		Contract
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Planning and Development - Planners Emergency Management - Planners
Floodplain Manager		Contract with Flood Control District – Engineers
Surveyors		Contract
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Planning and Development - Planners Public Works – Staff Police Dept – Staff Fire Dept - Staff Emergency Management – Coordinator
Personnel skilled in GIS and/or HAZUS	☑	Planning and Development – GIS Staff
Scientists familiar with the hazards of the community		None
Emergency manager	☑	Emergency Management - Coordinator

Table 6-2-27: Summary of technical staff and personnel capabilities for Wickenburg		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Grant writer(s)	☑	Emergency Management - Coordinator Parks –Grant writer Police – Grant writer Public Works – Grant writer Fire Dept – Grant writer
Others		

Table 6-3-27: Summary of fiscal capabilities for Wickenburg		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	No	A Five-year Consolidated Plan is prepared with the public adoption of an Annual Action Plan.
Capital Improvements Project funding	Yes	Town General Fund CIP Regional Transportation Plan
Authority to levy taxes for specific purposes	Yes	Town Council
Fees for water, sewer, gas, or electric service	Yes	Solid Waste, Water, Sewer, Electric
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	Yes	Town Council
Incur debt through special tax bonds	Yes	Town Council
Other: Cooperative Agreement Grants and Specific Planning and Project Grants	Yes	FEMA, NRCS, State Land, etc.

Table 6-1-28: Summary of legal and regulatory capabilities for Youngtown		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2006 International Building Code. • 2006 International Residential Code. • 2006 International Plumbing Code. • 2006 International Mechanical Code. • 2006 International Fire Code. • 1999 National Electric Code. • Town Code of the Town of Youngtown • Plans to adopt 2009 version of codes in January 2010. • Town adopted various local zoning and building codes.	• Building Safety Division • Code Compliance Division • Public Works Department
ORDINANCES	• 2008 Town of Youngtown Planning & Zoning Ordinance. • Town of Youngtown Floodplain Ordinance. • Various Town of Youngtown Weed & Debris Abatement ordinances. • 2008 Town of Youngtown Subdivision Zoning Regulations • Floodplain Management Ordinances adopted. • Debris Ordinances adopted.	• Public Works Department • Town Clerk's Office
PLANS, MANUALS, and/or GUIDELINES	• 2005 General Plan and Comprehensive Plan adopted. • 2005 Town of Youngtown Emergency Operations Plan (currently being updated). • Community Wildfire Protection Plan (Adopted by SCFD).	• Public Works Department • Police Department • Fire Department (Town is a member of Sun City Fire District)
STUDIES	• 2008 Flood Insurance Studies • 2007 Floodplain Delineation Studies	• Public Works Department

Table 6-2-28: Summary of technical staff and personnel capabilities for Youngtown		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Town Engineer.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Town Engineer, and Building Inspector/Plans Reviewer.
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Town Engineer.
Floodplain Manager	☑	Primary Responsibility: FCDMC; Secondary Responsibility: Public Works Manager.
Surveyors	☑	Town Engineer's Staff.
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Town Engineer; Public Works/Emergency Services Manager; Police Chief; various Staff Members.
Personnel skilled in GIS and/or HAZUS		
Scientists familiar with the hazards of the community		
Emergency manager	☑	Public Works Manager/Emergency Services Manager; Police Chief.
Grant writer(s)	☑	Town Engineer; Public Works Manager; Police Chief; various Staff Members.
Others		

Table 6-3-28: Summary of fiscal capabilities for Youngtown		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Member of MCCD/CDAC Small Cities.
Capital Improvements Project funding	Yes	Local Funds.
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric service	No	Utilities, including water/sewer owned by private providers.
Impact fees for homebuyers or new developments/homes	Yes	Most of Youngtown already built out; very little new growth possible.
Incur debt through general obligation bonds	Yes	Unlikely, however, since water/sewer not owned by Town. Also, Town does not have primary property tax.
Incur debt through special tax bonds	Yes	Unlikely, however, since water/sewer not owned by Town. Also, Town does not have primary property tax.
Other		

6.2.2 Previous Mitigation Activities

During the last planning cycle many mitigation activities have been accomplished by the jurisdictions within Maricopa County. Table 6-4 provides an updated summary, by jurisdiction, of recent mitigation activities performed over the last planning cycle or generally within the last five years. Table 6-5 summarizes projects funded through federal hazard mitigation grant money such as FMA, HMGP or PDM.

SRP provided the following text description and overall summary of past mitigation activities, categorized by hazard, in lieu of line item activities for Table 6-4:

Severe Wind - For the Transmission System, SRP generally addresses strong wind and mitigates its negative effects within elements of its design process. Over the last decade the severity of wind that the structures are designed to withstand has increased. Structures that were in place before the time of the increased design criteria are also mitigated. Regularly spaced structures designed and practically tested to sectionalize localized pole failures have been installed throughout the transmission system. This has effectively contained the adverse effects of severe winds experienced during summer wind events referred to as micro bursts. More frequent use of structures more resilient to wind have also been installed in other key areas throughout the system including near electric substations, multi-line corridors with a higher density of structures and on lines serving reliability critical customers. Throughout the remainder of the system, aging structures are evaluated and ranked for replacement for several criteria including its calculated strength at various wind speeds. All wood poles are field inspected on a periodic basis for wood health, strength and general condition; with unhealthy structures budgeted and scheduled for replacement. Unhealthy structures would have been at more risk to severe wind than healthy structures.

For the Distribution System, distribution design does account for wind loading during the design process. All wood poles are field inspected on a periodic basis for wood health, strength and general condition; with unhealthy structures budgeted and scheduled for replacement. Unhealthy structures would have been at more risk to severe wind than healthy structures. In a significant effort to mitigate a multitude of possible hazards, it is important to note that over 70% of SRP's distribution system is underground and therefore not as susceptible to severe wind.

Wildfire - Line Clearing has a preventative maintenance program that clears vegetation from transmission and distribution lines. Lines are patrolled regularly and vegetation cleared to ensure vegetation does not encroach on the lines. For transmission, in addition to clearing for vertical clearance, our line clearing program also clears lower growing dense vegetation (smaller trees and brush), called "fuel clearing", in an effort to reduce the fire/smoke in the event of a wildfire to better protect the lines.

Extreme Heat - As it relates to the Distribution System, SRP has designed a looped system with multiple ties. This mitigation concept allows flexibility to re-arrange circuits prior to summer to balance loads (called summer switching), also allows dynamic operation of the distribution system to establish alternate paths in case of outages or other unforeseen events common to extreme heat situations. Mobile substations can be deployed in advance to cover and mitigate any anticipated capacity deficiencies or after-the-fact in the case of substation transformer failure. Having mobile substation capabilities mitigates chances of escalating outages.

SRP utilizes 69/12kV transformer emergency ratings. Utilizing the emergency rating typically allows loading the unit 25% higher than nominal and provides flexibility to cover for peak loads and outages, mitigating negative side effects. Outages are mitigated through continued maintenance programs. Ongoing line clearing and line patrol programs ensure necessary electrical clearance underneath and next to our lines, thus mitigating a variety of negative consequences of vegetation interfering with electrical lines. SRP also continues significant investments in capital upgrade programs. Ongoing programs such as cable replacement, feeder getaway upgrades, pad-mounted transformer replacements, #2 and 4/0 loop splits have resulted in a more modern, robust electric system.

Flooding - During the floods of 1993, local response efforts statewide were hindered by poor coordination among agencies and by lack of information about the flooding threat. As a result, state, federal and local agencies formed a Multi-Agency Task Force to address these issues. In 1997, the U.S. Army Corps of Engineers and ADWR sponsored the design and construction of the Arizona Statewide Flood Warning System (AFWS) to: 1) improve collection of real-time precipitation and river stage data; 2) strengthen or establish communication links among the agencies for better data sharing; and, 3) expand data coverage through installation of additional rain and river stage gages. The AFWS has been operating for 10 years, with a continuing increase in the network of gages. Data are available to emergency response managers (and also the public) statewide via the internet (www.afws.org) and dedicated base stations. Data are transmitted to and from a three-hub computer network located at the Phoenix, Tucson and Flagstaff NWS offices. SRP's continuing involvement with the Multi-Agency Taskforce on Flood Warning continues to be a benchmark mitigation program. The task force meets bi-monthly at SRP facilities. SRP operates and maintains the AFWS under an agreement with ADWR.

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Avondale	Elm Lane Storm Runoff Diversion	Reroute storm runoff from flooding three homes at the south end of Elm Street in Old Avondale.	$200,000	50-50 cost share between City funds and Flood Control District of Maricopa County funds	City of Avondale - Public Works Dept.	April 2009
Carefree	Carefree Fire Station No. 1	Construction of new Town fire station to provide protection to the citizens of Carefree in the event of fires, wild fires and medical emergencies. This was in place of a pre existing contract with a outside private company.	$5,000,000	General Fund	Town Administrator	Nov. 2007
Carefree	Carefree Fire Truck and Eq.	Purchase of new fire truck and equipment to supplement implementation of new station.	$400,000	General Fund	Town Administrator	2006
Carefree	Chlorine Abatement	Remove and replace hazardous water treatment chemicals with less reactive and safer solid chlorine. This abated hazardous storage sites and reduced chemical storage of any type.	$9,000	UCFD	Carefree Water Dept.	2006
Carefree	Dream Street Wash	The Dream Street wash was channelized and bridged to provide a controlled flow during flash floods and for preparation of 100 year flood events.	$950,000	CIP & General funds	Town Engineer	2007
Carefree	Fire Department Contract	Direct contract with Rural Metro to provide service to the Town of Carefree, It's citizens and visitors and to man the new station and equip.	$1.2 Mill. Annually	General Fund	Town Administrator	2007
Carefree	Fire Hydrant Project	Construction of fire hydrants and replacing supply piping to provide better water supply in case of emergency need such as structure or wild fires in areas that did not previously have the infrastructure.	$1.5 million	CIP & General funds	Town Administrator	on going
Carefree	Water Site Elimination	Some sites were eliminated to reduce targets and provide better service to the community via larger storage systems and better pumping facilities.	$5,000	UCFD	Carefree Water Dept.	2008
Carefree	Water Site Security	Fence, barrier and alarm systems for remote water facility sites.	$25,000	UCFD	Carefree Water Dept.	2006
Carefree	Water storage construction	Construction of new water storage facility. 150,000 gallon concrete lifetime storage tank to provide water to our citizens and to assist with adequate back up supplies when combined with existing facilities	$220,000	CIP & General funds	Town Administrator	2008
Cave Creek	Commissioning of New Fire Station	Rural Metro Fire took over an existing building within the jurisdiction to decrease response times to fire and emergencies.	$100,000	Rural Metro Fire Department	Rural Metro Fire Department	01/2007
Cave Creek	Drainage Master Plan	Review of all washes and flood plain delineations within town boundaries and the	$200,000	Maricopa County flood Control. Town General fund $200000	Town Engineer	12/2008
Cave Creek	Flood Response Plan	Study to determine the Town's flood prone locations, and to develop ways to mitigate severe flooding at grade crossings. Emergency Response Plan to respond to sever weather conditions resulting in or likely to result in flash flooding.	$50,000	Maricopa County flood Control. Town General fund $200000	Town Engineer	02/2007

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Cave Creek	Water Storage Tanks	Increase the Town's Water Storage Capacity to sustain the Town's water supply during drought periods as well as sustain water pressure in the event of fire and the need to utilize fire hydrants.	$20,000,000	General Fund	Utilities Department	05/2008
Chandler	Chandler\Gilbert Floodplain Delineation Study - Phase 1 Eastern Canal	This study is a re-study of approximately 11 linear miles along the Eastern Canal/RWCD Extension Canal between Baseline Rd and Riggs Rd.	N/A	Flood Control District of Maricopa County (FCDMC)	Public Works Department	on-going
Chandler	Chandler\Gilbert Floodplain Delineation Study - Phase 2 Consolidated Canal	This study is an update of the floodplain/floodway delineation performed along the Consolidated Canal.	N/A	Flood Control District of Maricopa County (FCDMC)	Public Works Department	on-going
Chandler	Chandler\Gilbert Floodplain Delineation Study - Phase 3 Union Pacific RR and Arizona Av	This study is an update of the floodplain/floodway delineation performed along the Union Pacific Railroads and portions of Arizona Ave.	N/A	Flood Control District of Maricopa County (FCDMC)	Public Works Department	on-going
Chandler	Floodplain Use Permits	On-Going approvals for floodplain use permits processed by FCDMC.	N/A	N/A	Public Works Department	on-going
Chandler	Letter of Map Revision (LOMR)	On-Going Letter of Map Revisions processed by FCDMC.	N/A	N/A	Public Works Department	on-going
Chandler	Queen Creek Basin	A 70 acre retention basin at the southeast corner of McQueen Rd and Queen Creek Rd. This retention basin is part of the recommended regional drainage plan identified in the Higley Area Drainage Master Plan. It is designed to retain 204 acre-feet of storm water runoff from the 100-year storm identified in the Higley Area Drainage Master Plan.	1500000	Flood Control District of Maricopa County (FCDMC)	Public Works Department	Oct 2009
El Mirage	El Mirage Market Place	This site development was constructed at the southwest corner of Cactus and El Mirage to bring the location into a LOMAR.	$22,565	General Engineering	Public Works Department	Feb 2009
El Mirage	Mirage Oasis	This site development was constructed at the southeast corner of Greenway and Dysart to bring the location into a LOMAR.	$44,580	Huval Engineering	Public Works Department	Oct 2008
El Mirage	Thompson Ranch South Parcel	This project was to channel and direct the Thompson Ranch Subdivision stormwater run-off through the low outfall location at the BNSF crossing.	$585,000	Thompson Ranch Dev	Public Works Department	Sept 2008
El Mirage	Vulcan Levee Phase One	This project was to channel and place a Levee from the Lizard Run Wash out fall into the Agua Fria River south past the Thompson Ranch Subdivision.	$2,323,000	Vulcan Materials	Public Works Department	May 2009
Fort McDowell Yavapai Nation	Building Code Adoptions and Revisions	Tribal government reviewed and adopted updated construction codes and standards to improve building safety during high wind and other weather events.	$60,000 to date	Tribal General Revenue	Community and Economic Development Division.	Annual Recurring

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Fort McDowell Yavapai Nation	Hazard Mitigation Identification Project	All department directors are responsible for reporting conditions that pose a potential hazard to the community to the emergency manager for mitigation analysis and possible corrective action.	$12,000 annually	Tribal General Revenue	Department Heads	Annual recurring
Fort McDowell Yavapai Nation	Mitigation Public Education	The Emergency manager and the Health Director provided numerous articles related to public safety and community health activities that could be undertaken by citizens to reduce the threat of wildfire and infectious disease spread for publication in the community newspaper and on the local web site.	$2,000 annually	Tribal General Revenue	Fire Department Emergency Manager.	Annual Recurring
Fort McDowell Yavapai Nation	Negative pressure room addition	Wassaja Memorial Health Center has designed and is building a negative pressure intake room ta accept patients possibly contaminated through exposure to hazardous materials. Completion date is early 2010.	$10,000 to date	Tribal General Revenue	Health Clinic Director	2009/2010
Fort McDowell Yavapai Nation	River Restoration/Flood Control	Yavapai Materials gravel operation and the FMYN Environmental Department designed and implemented a restoration and flood control project on the Verde River to channel high runoff through a deepened channel and divert to a man-made lake to preserve wildland habitat and prevent flooding of the mining operation.	$50,000 to date	Tribal General Revenue	Environmental manager	Annual Recurring
Fort McDowell Yavapai Nation	Waste Transfer Station	Public works department designed and built a waste transfer station to collect and sort household waste prior to delivery to landfill to prevent seepage to groundwater and isolate hazardous waste for proper disposal.	$750,000	Tribal General Revenue	Public works manager	2009/2010
Fountain Hills	Annual Wash Hazard Removal Program	Remove fire hazard and drainage problems for Town owned washes	$120,000	Town General Fund	Public Works Department	Annual/ ongoing
Fountain Hills	Golden Eagle Park Dam Modifications	The dam was raised, an auxiliary spillway was added and the emergency spillway width was increased to prevent a catastrophic flood	$525,000	Maricopa County FCD &Town CIP	Public Works Department	June 2005
Fountain Hills	Saguaro Blvd Drainage Modifications	Added catch basins and Culvert extensions to mitigate large street drainage flows	$160,000	Maricopa County FCD &Town CIP	Public Works Department	January 2003
Gila Bend	Neighborhood Improvement	Constructed curb, gutter and sidewalk to better facilitate stormwater management	$200,000	HURF	Public Works Department	2004
Gilbert	Germann Rd ridge over EMF	Bridge constructed on Germann Road over the East Maricopa Floodway.	$6,500,000	Town of Gilbert CIP	Public Works Department	January 2005
Gilbert	Higley Rd Bridge over EMF	Bridge constructed on Higley Road over the East Maricopa Floodway.	$5,750,000	Town of Gilbert CIP	Public Works Department	September 2009
Gilbert	Higley Rd Bridge over QC Wash	Bridge constructed on Higley Rd over the Queen Creek Wash as a component to the Queen Creek Rd Channelization Project	$1,100,000	Town of Gilbert CIP	Public Works Department	April 2007
Gilbert	Higley Rd Bridge over Sonoqui	Bridge constructed on Higley Rd over the Sonoqui Wash as a component to the Sonoqui Wash Channelization Project	$2,000,000	Town of Gilbert CIP	Public Works Department	July 2007
Gilbert	Pecos Rd Bridge over EMF	Bridge constructed on Pecos Road over the East Maricopa Floodway.	$5,250,000	Town of Gilbert CIP	Public Works Department	January 2005

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Gilbert	Private stormwater retention/conveyance	The Town of Gilbert has a Specific Storm Water Retention Policy found in the Public Works and Engineering Standards and Details. This policy states that, " all new developments shall provide retention for the run-off generated by the fifty-year, twenty-four-hour storm (3-inches). The area to be considered as generating runoff to be retained shall be the development itself and one-half of the right-of-way of the adjacent street(s)." As a result, a lot of stormwater retention/conveyance facilities have been put in the Town of Gilbert as part of the development process with private money.	Totals Unknown	Private Funds	Public Works Department	ongoing
Gilbert	Queen Creek Wash Channelization Project	The Town of Gilbert proposed improvements to Queen Creek Wash from Recker Road to Higley Road, including replacing the existing wash with a natural desert vegetated channel with a 100-year capacity. Improvements were previously made to the wash upstream of Recker Road, and improvements were designed and constructed for the reach of the wash downstream of Higley Road as part of the District's East Maricopa Floodway Basin projects. The Town is the lead agency for all design and construction related tasks and will own, operate and maintain the completed project.	$890,000	34% FCD ($302,600.00) 66% Developer ($587,400.00)	Public Works Department	July 2006
Gilbert	Sonoqui Wash Channelization Project	In conjunction with the towns of Gilbert and Queen Creek, the Flood Control District designed a multi-use conveyance channel capable of carrying a 100-year flood event within the channel of the Sonoqui Wash from Queen Creek Wash (west of Higley Road) to Chandler Heights Road. The channel is approximately 3.5 miles long and about 140 feet to 200 feet in width; it reduces and conveys the previous one-half-mile to three-quarter-mile wide floodplain. Most of the land required for this channel was dedicated by the adjacent developers. The project incorporated the construction of five major crossings, including bridges at Higley Road and Power Road constructed by the Town of Gilbert and Maricopa County Department of Transportation, respectively	$10,155,577	50% FCD 30% Town of Queen Creek 20% Town of Gilbert CIP ($2,313,556.18)	Public Works Department	March 2008
Glendale	Barcelona Primary School	Retention basins were installed on the upstream side of Grand Avenue in conjunction with the school improvements to contain flooding caused by the elevated roadway and adjacent railroad tracks. Installation of the basins has allowed the floodplain to be contained within the roadway and decreased the ponding depth from 2 feet to 1 foot.	$90,000	School District	Alhambra Elementary School District No. 68	August 2002

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Glendale	Bethany Home Outfall Channel	This project consisted of constructing a linear park/channel on the upstream side of the Grand Canal to convey the 100-year storm to the Agua Fria Freeway outfall channel. There is still one section to be completed, but when construction is done 745 structures within the City of Glendale and City of Phoenix will be removed from the floodplain.	$27,000,00	Flood Control/ADOT	Flood Control District of Maricopa County	June 2007
Glendale	Community Emergency Notification System (CENS)	Goal #3-2004 Mitigation Plan-Action 3.A.1 Develop the Dialogical Communicator System, a reverse 911 system that provides directional calling through the connection of the GIS System.	$160,000	HLS Grant (Plant CML-Vendor)	Phoenix Fire Dept-Maricopa Regional 911 System	February 10, 2009
Glendale	Grand Avenue at 43rd Ave and 51st Ave	Retention basins were installed on the upstream side of Grand Avenue in conjunction with intersection improvements to contain flooding caused by the elevated roadway and adjacent railroad tracks. Installation of the basins has allowed the floodplain to be contained within the roadway and decreased the ponding depth from 2 feet to 1 foot.	$20,000,000* (Entire Project Cost - Drainage Improvement Costs Unknown)	ADOT	ADOT	June 2006
Glendale	Grand Avenue at 59th Avenue	A storm drain and pumping system were installed with intersection improvements to drain ponded runoff to an upstream retention basin allowing the floodplain to be contained within the roadway and the ponding depth to be decreased from 2 feet to 1 foot.	$29,000,000* (Entire Project Cost - Drainage Improvement Costs Unknown)	ADOT	ADOT	July 2006
Glendale	Peoria subdivision bank stabilization	Approximately 3600 linear feet of gabion mattresses were installed along the New River to protect a new subdivision from the 100-year storm.	$900,000	Private Developer	Western Real Estate Investors Inc.	December 2006
Glendale	Reserve at Eagle Heights Bank Stabilization	Approximately 1500 linear feet of gabion mattresses were installed along the New River to protect a new subdivision from the 100-year storm.	$375,000	Private Developer	Western Pacific 75th Avenue LLC	June 2007
Glendale	Storm Ready	Storm Ready is a nationwide community preparedness program, sponsored by the NWS that recognizes communities who develop plans to handle all types of severe weather, from wind storms to extreme heat, as well as alert and educate citizens of potentially hazardous weather conditions.	$100,000	EMA Budget	Office of Emergency Management	August 26, 2008
Goodyear	Bullard Wash Channelization Project, Camelback Road to Indian School Road	Bullard Wash, a major regional drainageway, was channelized to mitigate the impacts of flooding through the City. The channel was sized to convey the 100-year storm and protect residential development.	$2,000,000	Private Developer	Engineering Department	June 2006
Goodyear	Bullard Wash Channelization Project, Thomas Road alignment to Virginia Street	Bullard Wash, a major regional drainageway, was channelized to mitigate the impacts of flooding through the City. The channel was sized to convey the 100-year storm and protect residential.	$1,200,000	Private Developer	Engineering Department	December 2004
Goodyear	Bullard Wash Channelization Project, Virginia Street to I-10	Bullard Wash, a major regional drainageway, was channelized to mitigate the impacts of flooding through the City. The channel was sized to convey the 100-year storm and protect residential and commercial development.	$4,000,000	Improvement District	Engineering Department	June 2009

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Goodyear	Bullard Wash Channelization Project, Yuma Road to Lower Buckeye Road alignment	Bullard Wash, a major regional drainageway, was channelized to mitigate the impacts of flooding through the City. The channel was sized to convey the 100-year storm and protect residential and commercial development, the Phoenix-Goodyear Airport, and the Goodyear Ballpark and Development Complexes.	$400,000	City CIP	Engineering Department	January 2009
Goodyear	Cotton Lane Bridge across the Gila River	Cotton Lane is a major arterial road that provides north-south access across the City. The Cotton Lane Bridge provided all-weather access across the Gila River in a 100-year storm. This bridge provided a third option in the City for crossing the Gila River.	$30,000,000	City CIP, MCDOT CIP, and Private Developers	Engineering Department	January 2008
Goodyear	McDowell Road Bridge across Bullard Wash	McDowell Road is a major arterial street that provides primary east-west access across the City. The McDowell Bridge provided all-weather access across Bullard Wash in a 100-year storm.	$3,500,000	Improvement District	Engineering Department	March 2009
Goodyear	Monte Vista Avenue Bridge across Bullard Wash	Monte Vista Avenue is a major collector road that provides east-west access between residential and commercial areas. The Monte Vista Avenue Bridge provided all-weather access across Bullard Wash in a 100-year storm.	$3,000,000	Improvement District	Engineering Department	March 2009
Goodyear	Van Buren Street Bridge across Bullard Wash	Van Buren Street is an arterial street that provides primary east-west access across the City. The Van Buren Street Bridge provided all-weather access across Bullard Wash in a 100-year storm.	$2,500,000	City CIP	Engineering Department	January 2008
Goodyear	Virginia Street Box Culvert across Bullard Wash	Virginia Avenue is a collector road that provides east-west access between residential areas. The Virginia Street Box Culvert provided all-weather access across Bullard Wash in a 100-year storm.	$800,000	Private Developer	Engineering Department	December 2004
Guadalupe	CDBG PROJECT - 2005	Building of curb/gutter and side walk in Sende Vista to mitigate street flooding and direct runoff towards flood control facilities.	190,000.00	CDBG FUNDING	Community Development	December 2005
Guadalupe	CDBG PROJECT - 2006	Building of curb/gutter and side walk in Sende Vista to mitigate street flooding and direct runoff towards flood control facilities.	200,000.00	CDBG FUNDING	Community Development	December 2006
Guadalupe	CDBG PROJECT - 2007	Building of curb/gutter and side walk in Sende Vista to mitigate street flooding and direct runoff towards flood control facilities.	281,740.28	CDBG FUNDING	Community Development	December 2007
Guadalupe	CDBG PROJECT - 2008	Building of curb/gutter and side walk in Sende Vista to mitigate street flooding and direct runoff towards flood control facilities.	73,729.00	CDBG FUNDING	Community Development	December 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Litchfield Park	Litchfield Park Drainage System-Ancora Drain Phase III	The Ancora Drain project was one phase of an overall storm drain project that was designed to solve a flooding problem that was occurring in a residential portion of Litchfield Park. The project called for an extension of the drain system from Ancora Circle South to the intersection of Desert Avenue and Dorado Circle. The project increased the drain inlet capacity of the storm drain system from 20 cfs to 80 cfs. The work completed the Ancora Storm Drain system and enabled 27 homes to avoid being flooded. The completed project provided enough relief that it was able to move the previously impacted homes out of the 100 year flood plain.	$160,000	FEMA HMGP(884-3) $120,000 City General Fund $40,000	Litchfield Park, City Manager Contract Engineer: Banicki Engineering Construction Contractor: Pierson Construction Corp.	1996
Litchfield Park	Storm Drain Project phase 1	Storm drains were installed on Old Litchfield Road south from Sagebrush St. to Villa Nueva. This allowed storm run-off to be taken underground to a spill way avoiding potential flooding of residential neighborhoods.	$1.2 million	City Budget,	City Manager; Public Works, Brown Engineering and Banicki Construction	2000
Litchfield Park	Storm Drain Project Phase 2	Storm drains were installed on Neolin Ave. from Wigwam Blvd.south to Sagebrush St. and on Old Litchfield Rd. south to Sagebrush st. This allowed storm watew run-off to go underground to avoid potential flooding of residential neighborhoods.	$1.2 million	City Budget	City manager, Public Works/Planning, Brown Engineering, Banicki Construction	2004
Maricopa County	67th Avenue at the Salt River Flooding Gates	Permanent gates installed to prevent citizens from crossing the flood prone waterway.	$40,000	MCDOT Operating budget (HURF)	Transportation	July 2008
Maricopa County	Alma School Road North Bridge over the Salt River Scour Protection	River scour was endangering the stability of the structure and this project provides protection from future flood events	$1,200,000	MCDOT TIP (HURF)	Transportation	October 2005
Maricopa County	Alma School Road South Bridge over the Salt River Scour Protection	River scour was endangering the stability of the structure and this project provides protection from future flood events	$1,000,000	MCDOT TIP (HURF)	Transportation	July 2009
Maricopa County	Cotton Lane Bridge over the Gila River	New bridge providing additional access across a flood prone waterway.	$50,000,000	MCDOT TIP (HURF); Developer contributions and City of Goodyear CIP	Transportation	August 2008
Maricopa County	Dam Safety Program	The District's Dam Safety Activities, Structures Assessments and Repairs, and Dam Rehabilitation Programs provide annual maintenance, assessment, repairs, and rehabilitation of its 22 dams and various Flood retarding Structures to ensure the safety of Maricopa County residents	N/A	Dept. Budget	Flood Control District	Ongoing

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Maricopa County	Flood Control Projects FY08	The District continues to work towards the completion of flood control projects to reduce the potential for flooding in Maricopa County under its Capital Improvements Program (CIP).	$55,000,000	Dept. Budget	Flood Control District	Ongoing
Maricopa County	Floodplain Delineation Studies	The District conducts new floodplain delineation studies identifying flood hazards and restudying existing flooplain areas, to get ahead of development, develop alternatives for structural flood controls, develop Area Drainage Master Plans and Watercourse Master Plans, establish regulatory requirements for new development, and identify mitigation opportunities. From FY06 through FY09 26 studies were completed on 890 stream miles.	$20,000,000	Dept. Budget	Flood Control District	Ongoing
Maricopa County	Floodplain Regulations	The District administers the Floodplain regulations for Maricopa County in the unincorporated areas and 12 communities, ensuring that new development is protected from flooding and that adverse impacts are minimized through use limitations on floodways and other high hazard floodplains.	N/A	Dept. Budget	Flood Control District	Ongoing
Maricopa County	FPAP	Under the countywide Floodprone Properties Acquisition Program, 23 properties were acquired for structure demolition or relocation; 3 additional properties were protected by a floodwall.	$7,654,931	Dept. Budget	Flood Control District	Ongoing
Maricopa County	Old Stage Road at New River Concrete Ford	Flood gates were replaced with an all weather ford structure that allows local citizens access through a flood prone waterway.	$200,000	MCDOT Operating budget (HURF)	Transportation	September 2008
Maricopa County	Public Awareness	Increase public awareness about hazards through various media - mailings, public meetings, home shows, television commercials, internet, etc.	$5,000	Dept. Budget	Emergency Management and Flood Control District	Ongoing
Maricopa County	Storm Ready Community Recognition	Recognized by the National Weather Service in 2005 and again in 2008. In order for a community to be recognized a community must complete a set of rigorous warning criteria. One criteria is to promote the importance of public readiness through community seminars.	$2,000	Dept. Budget	Emergency Management	November 2005
Maricopa County	Storm Ready Community Recognition	Renewal of the Storm Ready Community Designation	$2,000	Dept. Budget	Emergency Management	November 2008
Maricopa County	Weather Radios	Distributed one NOAA Weather Radio All Hazards receivers to every public school in Maricopa County.	$10,000	Dept. Budget	Emergency Management	November 2007

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Mesa	Flood Control	City Engineering is partnering on a project with Maricopa County in east Mesa/unincorporated area near Siphon Draw Basin, with creating a large water retention basin. Finally, Engineering is developing a Storm Water Master Plan to identify areas throughout the city where water run-off during storms has or may create problems. Once the Plan is complete (July 09) the city will seek Bond funding to make suggested mitigations.	undetermined	Bonds	City of Mesa Engineering	
Mesa	Replace Power Poles along University	Since the beginning of February a CIP project to replace all wooden power poles with steel and concrete poles as well as increasing the cable size from 795 to 1152 MCM. Along University Dr between Extension Rd (800 west) and Stapley Dr (1200 east) The cost of the project is approx $2.0 million. all poles have been replaced, approx 2.5 miles.	$2,000,000	Capital Improvement Bonds	Utilities (Energy Division)	July 2009
Paradise Valley	Community Emergency Notification Systems (CENS)	The CENS was created as a method to notify citizens within a specifiable area of a local hazard. It was recently upgraded to a reverse 911 system.	$160,000	Homeland Security Grant Fund	Maricopa Region 911 Office	February 2009
Paradise Valley	Doubletree Ranch Road Flood Control and Road Improvement Project	The installation of (2) 10' x 6' box culverts was done under Doubletree Ranch Road to handle the storm water from the Phoenix Mountain Preserve.	$11,000,000	Town of Paradise Valley Capital Projects Accumulation Fund & Maricopa County Flood Control District	Engineering Department	January 2005
Paradise Valley	Utility Pole Under Grounding Project	In reaction to the downing of multiple power lines and power poles during wind events, the under grounding of all electric utility was undertaken.	$40,000,000	Town of Paradise Valley Capital Projects Accumulation Fund (55%) & Arizona Public Service (45%)	Engineering Department	89% complete - 4 of 36 districts remaining
Paradise Valley	Wash Maintenance Inspection Project	To minimize the adverse effects of flooding during storm events the Town has a perpetual program of inspecting major washes every year and minor washes every other year. Property owners are notification if routine maintenance has been performed.	$100,000	Town of Paradise General Fund	Public Works Department until 2009, then Planning & Building Department	Perpetual Project
Phoenix	10th Street Wash Storm Drain Project	10th Street Wash Storm Drain Project replaced an open channel between Alice Ave and the Arizona Canal Diversion Channel with underground storm drain pipes. Goals/Objectives 5.B.3 and 5.D.2	$5,443,068	CIP/BOND & FCDMC (50/50)	FCDMC	Jun 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	23rd Ave WWTP-Security Upgrades	Installation of fencing, card readers, cameras and conversion to one ton chlorine gas containers. Goal 11, Objective 11.A	$10,200,000	CIP WS90200034	Water Services Department	July 2006
Phoenix	24th Ave/Camelback Road Detention basin and Storm Drain Project	24th Ave/Camelback Road Detention basin and Storm Drain Project purchased 28 homes and constructed a detention basin. Goals/Objectives 5.B.3 and 5.D.2	$11,098,757	CIP/BOND & FCDMC (75/25)	Street Transportation Department	Nov 2008
Phoenix	24th St WTP-Security Upgrades	Installation of fencing, card readers, cameras, and other security facilities at the plant. Goal 11, Objective 11.A	$8,600,000	CIP WS85290019	Water Services Department	July 2008
Phoenix	26th Ave/Verde Lane Detention Basin and Storm Drain Project	26th Ave/Verde Lane Detention basin and Storm Drain Project purchased 26 homes and constructed a detention basin. Goals/Objectives 5.B.3 and 5.D.2	$8,770,505	CIP/BOND & FCDMC (50/50)	Street Transportation Department	Jun 2007
Phoenix	64th Street Security Improvements	Upgrade the existing wall and gates at the reservoir site to provide additional security measures. Goal/Objective 11	$3,000,000	CIP WS85800005	Water Services Department	Ongoing
Phoenix	91st Ave WWTP-Security Upgrades	Installation of fencing, card readers, cameras, and conversion to one ton chlorine gas containers. Goal 11, Objective 11.A	$9,200,000	CIP WS90100073	Water Services Department	Feb 2009
Phoenix	9th Avenue Storm Drain Project	9th Ave Storm Drain Project constructed storm drain pipes between West Park Dam principal outlet to the Arizona Canal Diversion Channel. Goals/Objectives 5.B.3 and 5.D.2	$4,499,925	CIP/BOND & FCDMC (50/50)	Street Transportation Department	Dec 2008
Phoenix	Arizona Water and Wastewater Agency Response Network (AZWARN)	Development of statewide water and wastewater emergency response network. Goal/Objective 11.A	$5,000	Operating Funds	Water Services Department	March 2008
Phoenix	Bethany Home Road Outfall Channel (BHOC) - Reach B	Bethany Home Road Outfall Channel, Reach B project purchased demolished approximately 72 floodprone properties and constructed a multi-use detention basin. This meandering multi-use detention basin is also used as a park feature, which runs along the Grand Canal between 67th Ave and 73 Ave. Goals/Objectives 5.B.3 and 5.D.2	$20,588,967	CIP/BOND, FCDMC & Glendale (25/50/25)	FCDMC	Aug 2007
Phoenix	Clean Air Act - Risk Management Plan - General Duty Clause	Staff conducted facility assessments to identify storage or use of hazardous materials that may be released beyond the property boundary and impact the public. The volume of hazardous materials was reduced at one facility, materials were moved at another facility, and a management plan will be conducted at another facility. Goal/Objective 10.A.1 and 10.C.2		Operating Funds	Aviation Department	April 2009
Phoenix	Critical RCEP Improvements at Remote Facilities	This project is the implementation of the first year of critical improvements identified in the Lift Station and Odor Control Station RCEP study. It includes upgrades at 9 lift stations to correct regulatory deficiencies. Goal 10, Objective 10.C	$597,500	CIP WS90400054	Water Services Department	May 2009 (Design)
Phoenix	Customer Service Yard Security Improvements	Upgrade the existing wall and gates at customer service area yard #1 and #4 and install a fire life safety system at area yard #4. Goal/Objective 11	$650,000	CIP WS85800009	Water Services Department	Ongoing

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Customer Services Pay station-Security Upgrades	Installation of cameras, bullet proof glass, etc. Goal 11, Objective 11.A	$1,000,000	CIP WS85700049	Water Services Department	July 2006
Phoenix	Dam Safety Program	Between 2004 and 2009, three separate Dam Safety related projects have been completed. These projects primarily dealt with Jurisdictional and non-jurisdictional dams within the City of Phoenix boundary. Goals/Objectives 5.C.1, 5.C.2, and 5.C.3	$3,088,269	CIP/BOND & FCDMC (50/50)	Street Transportation Department	June 2006 - June 2009
Phoenix	Deer Valley WTP-Security Upgrades	Installation of fencing, card readers, cameras, and other security facilities at the plant. Goal 11, Objective 11.A	$1,500,000	CIP WS85260020	Water Services Department	December 2008
Phoenix	Elevation Certificate Program	Various-Between 2004 and 2009, numerous elevation certificate projects have been completed. These projects help reduce or eliminate flood insurance requirements for structures located within the Special Flood Hazard Area (SFHA). Goals/Objectives 5.B.1 and 5.B.3	$435,399	CIP/BOND	Street Transportation Department	FY 2004-FY2009
Phoenix	Environmentally Preferable Purchase Program	Coordinated with Finance Department on five environmental standard and special terms and conditions for contracts. Coordinated for environmental language to be added to contracts. This was approved by City Council Resolution 20519 in 2007. Goal/Objective 10.A.2		Operating Funds	City Manager/ Office of Environmental Programs	2005-2007
Phoenix	Environmentally Preferable Purchase Program	Developed EPP training module for P2 University. Goal/Objective 10.A.2		Operating Funds	City Manager/ Office of Environmental Programs	2005
Phoenix	Environmentally Preferable Purchase Program	Product Evaluation Teams demonstrate green products in six categories. Goal/Objective 10.A.2		Operating Funds	City Manager/ Office of Environmental Programs	2007
Phoenix	Environmentally Preferable Purchase Program	Collaborated with ASU on green (EPP) purchasing. Goal/Objective 10.B.1		Operating Funds	City Manager/ Office of Environmental Programs	2008
Phoenix	Hazardous Waste Management	Staff were trained on safe handling of hazardous wastes including: recordkeeping and inspections for universal waste, batteries, PCB ballasts, mercury containing equipment, and hazardous waste accumulation areas. Goal/Objective 10.C.1		Operating Funds	Aviation Department	June 2008
Phoenix	Lake Pleasant WTP DBO	Installation of fencing, card readers, cameras, and other security facilities with the construction of the new plant. Goal 11, Objective 11.A	$218,000,000	CIP WS85350004	Water Services Department	July 2007

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Laveen Area Conveyance Channel (LACC) Project	Laveen Area Conveyance Channel is a 5.8 miles long, approximately 200' wide meandering multi-use flood control facility. It provides protection from flooding to the South Phoenix/Laveen area between 43rd Ave and the Salt river. The flood control facility, which is jointly used as a park feature runs along Baseline Road alignment and confluences with the Salt River west of 75th Ave. Goals/Objectives 5.B.3 and 5.D.2	$20,759,394	CIP/BOND & FCDMC (50/50)	FCDMC	Jul 2007
Phoenix	Lift Station 42 Security Upgrades	Installed new gates, anti-climb appurtenances, entry control systems, intrusion detection systems and electronic surveillance equipment. Goal 11, Objective 11.A	$627,500	CIP WS90400040	Water Services Department	July 2009
Phoenix	Lift Station 43 Security Upgrades	Installed new gates, anti-climb appurtenances, entry control systems, intrusion detection systems and electronic surveillance equipment. Goal 11, Objective 11.A	$981,000	CIP WS90400041	Water Services Department	January 2009
Phoenix	Lift Station 44 Security Upgrades	Designed a new gate, access control system, and anti-climb appurtenances. Goal 11, Objective 11.A	$400,000	CIP WS90NA0484	Water Services Department	December 2008 (Design)
Phoenix	Lift Station 46 Security Upgrades	Installed new gates, anti-climb appurtenances, entry control systems, intrusion detection systems and electronic surveillance equipment. Goal 11, Objective 11.A	$393,000	CIP WS90400043	Water Services Department	June 2009
Phoenix	Lift Station 47 Security Upgrades	Installed new anti-climb appurtenances. Goal 11, Objective 11.A	$18,100	CIP WS90400044	Water Services Department	November 2008
Phoenix	Lift Station 51 Structural Repairs	This relatively new pump station experienced severe settlements due to existing soil conditions adjacent to the canal. This project provided necessary repairs and replacement of backfill to prevent future settlements. Goal/Objective 9	$1,600,000	CIP WS90400022	Water Services Department	6/1/2009
Phoenix	Lift Station 53 Security Upgrades	Designed a new gate, anti-climb appurtenances, and intrusion detection systems. Goal 11, Objective 11.A	$70,600	CIP WS90400046	Water Services Department	December 2008 (Design)
Phoenix	Lift Station 55 Security Upgrades	Designed a new gate, access control system, and anti-climb appurtenances. Goal 11, Objective 11.A	$205,000	CIP WS90NA0486	Water Services Department	December 2008 (Design)
Phoenix	Lift Station 56 Security Upgrades	Designed a new access control system and new anti-climb appurtenances. Goal 11, Objective 11.A	$150,000	CIP WS90NA0485	Water Services Department	December 2008 (Design)
Phoenix	Lift Station 57 Security Upgrades	Designed a new gate, anti-climb appurtenances, and intrusion detection systems. Goal 11, Objective 11.A	$65,000	CIP WS90400047	Water Services Department	November 2008
Phoenix	Lift Station 61 Security Upgrades	Installed new anti-climb appurtenances. Goal 11, Objective 11.A	$17,700	CIP WS90400048	Water Services Department	November 2008
Phoenix	Lift Station 62 Security Upgrades	Installed new anti-climb appurtenances. Goal 11, Objective 11.A	$5,500	CIP WS90400049	Water Services Department	November 2008
Phoenix	Lift Station 64 Security Upgrades	Installed new gates, anti-climb appurtenances, entry control systems, intrusion detection systems and electronic surveillance equipment. Goal 11, Objective 11.A	$855,000	CIP WS90400042	Water Services Department	January 2009

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Lift Station Security Improvements	Provided design for various security improvements at 12 wastewater lift stations. Improvements were constructed under separate project numbers. In addition, provided security improvement guidelines and standard specifications for remote facilities. Goal 11, Objective 11.A	$1,050,000	CIP WS90800003	Water Services Department	May 2009
Phoenix	Local Drainage Program	Various-Between 2004 and 2009, numerous local drainage projects have been completed. These projects reduce and/or eliminate localized drainage problems. Goal/Objective 5.D.2	$15,154,444	CIP/BOND	Street Transportation Department	FY 2004-FY2009
Phoenix	Low Flow Channel Construction and Maintenance	Low Flow Channel was reconstructed to maintain flows and provide connectivity from I-10 to SR143, minimize and avoid wildlife attractants and assist with channel flow. Goal/Objective 5.D.2		CIP	Aviation Department	June 2007
Phoenix	Pollution Prevention Program	Petroleum based products identified for substitution; aqueous-based parts washers first effort. Mercury containing products identified for substitution; lamps and thermometers eliminated. Goal/Objective 10.A.1		Operating Funds	City Manager/ Office of Environmental Programs	2005
Phoenix	Pollution Prevention Program	Chlorine packaging in water treatment plant operations reduced from tanker to cylinder size. Goal/Objective 10.A.1		Operating Funds	City Manager/ Office of Environmental Programs	2007
Phoenix	Pollution Prevention Program	Explosive potential products identified for substitution or elimination per CAA 112r. Goal/Objective 10.A.1		Operating Funds	City Manager/ Office of Environmental Programs	2008
Phoenix	Pollution Prevention Program	Sustainable Cities Network initiated for cities to review and comment on best practices. Goal/Objective 10.B.1		Operating Funds	City Manager/ Office of Environmental Programs	2009
Phoenix	Pollution Prevention Program	Train approximately 500 employees each year on hazardous materials. Goal/Objective 10.C.1		Operating Funds	City Manager/ Office of Environmental Programs	2004-2009
Phoenix	Pollution Prevention Program	Conduct approximately 100 assessments at City departments each year for compliance and P2 opportunities. Goal/Objective 10.C.2		Operating Funds	City Manager/ Office of Environmental Programs	2004-2009
Phoenix	Real Time Water Quality Monitoring	Installation of monitoring equipment at raw water and in water distribution system. Goal/Objective 10	$3,000,000	CIP WS85800007	Water Services Department	ongoing

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Regulatory Compliance Excellence Program	Installation of various improvements at 88 water remote facilities to ensure compliance with current safety regulations. This project will primarily improve health and safety of City staff and prevent/minimize damage in case of an emergency or problem involving one of these chemicals used at water remote facilities. Goal/Objective 10	$750,000	CIP WS85010029	Water Services Department	January 2009
Phoenix	Remote Sites Security Study	Conducted a system wide vulnerability analysis of wastewater remote facilities to determine appropriate measures for securing the facilities. The study also prioritized the facilities based on criticality and location and provided a phased plan for implementing the recommended improvements. Goal 11, Objective 11.A	$647,000	CIP WS85800005	Water Services Department	October 2006
Phoenix	Repetitive Loss Program	26th Ave/Verde Lane project has purchased and demolished five repetitive loss properties. This activity was performed as a part of the detention basin project. Five (5) properties were eliminated from the RL list provided by FEMA. Goal/Objective 5.D.1	$809,178	CIP/BOND & FCDMC (50/50)	Street Transportation Department	Jan 2006
Phoenix	Sanitary Sewer Flow monitoring and Inflow/Infiltration Pilot Study	Inspection of sanitary sewer system to find sources infiltration and inflow (I/I) into the system. Determine methods to reduce I/I which can cause local surcharging, overflows, damage pipes, and also reduce peak wet weather flows to treatment plant. Perform pilot project to plug holes in manhole covers to determine effectiveness in reducing inflow from this source. Goal/Objective 7	$7,200,000	CIP WS90500159	Water Services Department	Feb 2010
Phoenix	Sanitary Sewer Relief & Replacement Program - Project #3 - 52nd Street - Cholla St South to the Indian Bend Wash	This project involved the installation of approximately 2,000 linear feet of 42-inch diameter sewer line along 52nd Street from Cholla Road to the Indian Bend Wash. The new sewer line replaced an existing overcapacity 27-inch sewer line in 52nd Street. The existing 27-inch line was removed and the new 42-inch line was installed in the same location. The main project was to replace existing Sanitary Sewers with sewers of larger diameter, but as an ancillary project, we re-graded a drainage channel (on the southern edge of the project boundary) to drain stormwater out of a cul-de-sac on 52nd St, and into the Indian Bend Wash. Previously the cul de sac would flood in wet weather and encroach on adjacent homes. Goal/Objective 7	$1,500,000	CIP WS90500164	Water Services Department	Jan 2006
Phoenix	Security Improvements - Remote Facilities	Installed new walls, gates, entry control systems, intrusion detection systems and electronic surveillance equipment at 2 lift stations. Goal 11, Objective 11.A	$1,311,600	CIP WS90800002	Water Services Department	October 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Spill Prevention Controls and Countermeasures Plans - Wastewater Remote Facilities	Prepare Spill Prevention Controls and Countermeasures Plans for all the Lift Stations Remote facilities. Goal/Objective 10	$50,000	CIP WS90700043	Water Services Department	Dec 2005
Phoenix	Spill Prevention Controls and Countermeasures Plans - Water Remote Facilities	Prepare Spill Prevention Controls and Countermeasures Plans for all the Booster Stations Remote facilities. Goal/Objective 10	$50,000	CIP WS85700074	Water Services Department	12/1/2005
Phoenix	Storm Water Pollution Prevention Plans and Spill Prevention, Control and Countermeasures Plans	Prepare Storm Water Pollution Prevention Plans, Storm Water Management Plans and Spill Prevention Control and Countermeasures Plans for water and wastewater treatment facilities. Goal/Objective 10	$100,000	Operating Funds	Water Services Department	June 2009
Phoenix	Summer Respite Program	The City of Phoenix Human Services Department provides services and respite to the homeless at the Campus Day Resource Center. City staff continues to provide training and information regarding heat assistance to faith-based community partners. The partners provide hydration stations, heat refuge, and wellness checks for the elderly and/or disabled individuals. The City of Phoenix coordinates with St. Mary's Food Bank to serve as the water collection and distribution point during summer months. The Public Information Office coordinates with Maricopa County to provide education and media response. Information regarding the collection of summer respite items is publicized on the "on-hold" message on the City phone system, news releases on the City web page, articles in the employee newsletter, and in the City water bill Notes. Goal/Objective 7.A.1 Educate the public on the dangers of severe weather through various media, web links and outreach programs	N/A	N/A	Human Services, Public Information Office, Emergency Management, Maricopa County, and faith-based organizations	Annual continuing effort
Phoenix	Tres Rios Full Scale	The Tres Rios project includes 4.5 miles of flood control levees to be constructed from 105th Ave to the Aqua Fria River on the north bank of the Salt river. The second phase of the levee from 115th Ave to 123rd Ave. was completed. Goal/Objective 5	$5,500,000	CIP WS90140006	Water Services Department	11/1/2008
Phoenix	Union Hills WTP-Security Upgrades	Installation of fencing, card readers, cameras, and conversion to one ton chlorine gas containers. Goal 11, Objective 11.A	$7,200,000	CIP WS85320011 and WS85320013	Water Services Department	June 2009
Phoenix	Val Vista WTP-Security Upgrades	Installation of fencing, card readers, cameras, and conversion to one ton chlorine gas containers. Goal 11, Objective 11.A	$10,500,000	CIP WS85230021 and WS85230028	Water Services Department	November 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Phoenix	Wastewater Collection Lift Station and Odor Control Station Regulatory Compliance and Excellence Program (RCEP) Study	Conducted a system wide study of 35 wastewater collection lift stations and odor control facilities to determine compliance with environmental, health, and safety codes, regulations, and standards. Additionally, the study provided recommendations for implementation of best practices (the Excellence portion of the study) in the delivery, handling, and storage of chemicals at each site. The final deliverable included a phased Capital Improvement Program to complete all compliance issues in two-years and all excellence recommendations in 8 years. Goal 10, Objective 10.C	$187,000	CIP WS90400026	Water Services Department	September 2007
Phoenix	Water Distribution System and Wastewater Collection System Hardening	This project provided for hardening of the electrical units through installation of heat wrap tape and insulation at water remote facilities. Goal/Objective 7	$1,242,438	Water Services	Water Services Department	June 2009
Phoenix	Water Resources Plan and Groundwater Management Plan	The Water Services Department has developed two key plans that address drought-related shortages, and is finalizing a third. The 2005 Water Resources Plan (WRP) considers the implications of varying shortage scenarios due to long-term drought in our source watersheds. This plan also considers various growth levels to reflect a range of water demands. The WRP presents 12 key strategies for further strengthening the City's water supply portfolio to better withstand severe long-term drought. The second plan, a "Groundwater Management Plan" identifies options and costs for expanding our well network to assist in meeting demands during shortage. A third plan, a "Demand Management Plan" is seeking to ensure that: 1) water uses become more efficient over time to reduce drought vulnerability; 2) demands can successfully curtailed with as few impacts as possible to the economy and lifestyles; and 3) water saved by customers can be preserved to the highest degree possible for use during times of shortage. Goal/Objective 8.A	$1,500,000	Water Overhead	Water Services	March, 2006 (WRP) and January 20090 (GWMP, Phase I)]
Phoenix	Well Construction and Improvements	As part of the effort to implement the Water Resources Plan and the Groundwater Management Plan, the City has embarked on a program to install new wells and rehabilitate others to increase our capability of supplying water during shortages. An Aquifer Storage and Recovery (ASR) well was recently completed as the first of what may be several similar wells. An ASR well allows for the underground storage of excess water supplies when available, and also allows the same well to "recover" the water during shortages. Goal/Objective 8.B	$10,000,000	Water CIP	Water Services	March, 2009
Queen Creek	Box Culvert: Crismon and Ocotillo Roads	Replaced a single culvert with 6 culverts to control local flooding. The project cost was shared between the developers of the Nauvoo Station and Crismon Heights developments.	Unknown	Development community	Community Development Department	2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Queen Creek	Box Culvert: Ocotillo Road and Railroad Crossing	Replaced a single culvert with 6 culverts to control local flooding. The project cost was shared between the Town of Queen Creek and the developer of the Nauvoo Station development.	$479,750 (Town share=$268,935)	Town CIP and development community	Public Works Department	December 2007
Queen Creek	Channelization: Crismon Road at Queen Creek Road	Channelized sheet flows to box culvert.	Unknown	Development community	Community Development Department	2008
Queen Creek	Channelization: Queen Creek Road at Langley Gateway	Channelized sheet flows to box culvert.	Unknown	Development community	Community Development Department	2008
Queen Creek	Ellsworth Loop Road: New Ellsworth Loop Road Bridge over Queen Creek Wash	Constructed new 6 lane bridge over Queen Creek Wash.	$5,000,000	Improvement District	Transportation Department	October 2007
Queen Creek	Ellsworth Loop Road: New Ellsworth Loop Road Underpass	Constructed new 6 lane underpass under railroad tracks.	$20,000,000	Improvement District	Transportation Department	June 2008
Queen Creek	New Chandler Heights Road Bridge over Sonqui Wash	Constructed new 4 lane bridge to replace dip crossing.	$225,000 (Town share)	MCDOT and Town CIP	Public Works Department	April 2008
Queen Creek	New Power Road Bridge over Queen Creek Wash	Constructed new 6 lane bridge to replace existing 2 lane bridge.	$200,000 (Town share)	MCDOT and Town CIP	Public Works Department	July 2004
Queen Creek	New Sossaman Road Bridge over Queen Creek Wash	Constructed new 4 lane bridge to replace dip crossing with culverts.	$1,500,000	FCDMC, MCDOT, and Town CIP	Public Works Department	March 2005
Queen Creek	Queen Creek Wash Channelization Project: Power Road to Hawes Road	The reach of Queen Creek Wash through the Town of Queen Creek was channelized to mitigate the impacts of flooding through the Town. The channel was sized to convey the 100-year storm and effectively removed 19 homes from the flood hazard area. Habitat removed during project construction was mitigated in 2 new locations.	$4,500,000	FCDMC and Town CIP	Public Works Department	September 2006
Queen Creek	Santo Vallarta Channelization	Channelized sheet flows within the Santo Vallarta development from the San Tan Mountains.	Unknown	Development community	Community Development Department	2008
Queen Creek	Sonoqui Wash Channelization Project: Higley Road to Chandler Heights Road	The reach of Sonoqui Wash through the Towns of Gilbert and Queen Creek was channelized to mitigate the impacts of flooding through the towns. The channel was sized to convey the 100-year storm and effectively removed 11 homes from the flood hazard area. Habitat removed during project construction was mitigated off site.	$4,800,000	FCDMC, Town CIP, and Town of Gilbert	Public Works Department	February 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Scottsdale	Floodplain Acquisition Program	Develop a floodplain acquisition program for major wash corridors north of the CAP canal to ensure an effective and efficient drainage network is maintained and/or is provided as future development occurs.	$2,366,600	Bond 2000	Stormwater Management Division	December 2009
Scottsdale	Granite Reef Watershed	To provide 100 year flood protection and to eliminate the existing FEMA A zone designation which carries a mandated need for flood insurance for the moderately priced homes in the Granite Reef Wash corridor south of Thomas Road and to improve drainage conditions for locations between Osborn and Thomas Road to approximately a 10-year level of protection.	$42,504,100	Bond 2000, General Fund, FCD Contribution, Contributions	Stormwater Management Division	June 2011
Scottsdale	McDowell Drive Corridor Drainage Improvements	The goal of the project is to eliminate flooding up to the 10-year event for this established neighborhood. The total watershed area is approximately 0.9 square miles.	$3,759,624	Bond 2000	Stormwater Management Division	September 2008
Scottsdale	Neighborhood Stormwater Management Improvements	Provide as-needed drainage improvements, which address localized drainage and flooding problems.	$3,993,500	General Fund, In-Lieu Fees	Stormwater Management Division	June 2006
Scottsdale	North Scottsdale Road Corridor Drainage Project	The goal of the project is to eliminate flooding up to the 10-year event for this highly developed residential and commercial area and to protect Scottsdale Road from off-site flows.	$9,895,100	Bond 2000, General Fund, FCD Contribution	Stormwater Management Division	September 2008
Scottsdale	Pima Road Drainage System	Design and construct open channel and storm drain improvements, in conjunction with major roadway improvements, to collect and route stormwater flows in the Pima Road corridor southerly to the intersection with the "new" Union Hills Drive. Flows will then be routed westerly to the planned Loop 101 detention basin.	$6,398,800	Bond 2000, General Fund	Stormwater Management Division	Feburary 2010
Scottsdale	South Scottsdale Road Drainage Corridor	Construction of a storm drain and lateral connections to alleviate street flooding in Scottsdale Road and provide localized drainage improvements in neighborhoods along the west side of the corridor.	$2,967,200	Bond 2000	Stormwater Management Division	July 2009
Scottsdale	Upper Camelback Wash Watershed	The goal of this project is to, as much as feasible, reduce flooding for this major wash corridor. The benefiting area is highly developed with a mix of single-family, multi-family and commercial properties. The total watershed area north of Shea Boulevard is approximately 2.6 square miles.	$15,745,000	Bond 2000, General Fund, FCD Contribution	Stormwater Management Division	April 2012
Scottsdale	Wet Crossing Replacement Study	The city has 70 wet wash crossings on arterial roadways north of the CAP. Although current design standards call for dry crossings for arterial roadways, there is no program to replace existing wet crossings in our current CIP. This project involves hiring a consultant to develop a cost estimate and proposed schedule for replacement of these 70 crossings.	$120,000	General Fund	Stormwater Management Division	June 2008

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions

Jurisdiction	Project Name	Project Description	Project Cost	Funding Source	Responsible Department	Completion Date
Tempe	Bridge Maintenance	On-going preventative maintenance/inspection program to ensure safety and structural integrity of all bridges in Tempe - funds are used to make required repairs	300,000/Year	CIP	Public Works Department	ongoing
Tempe	Chlorine conversion	Conversion from chlorine gas to sodium hypochlorite for disinfection at water treatment plants. Reduce risk from terrorist act.	$9,000,000	CIP	Water Utility Department	ongoing
Tempe	Fire Admin Security	Bollards and security cameras.	$114,000	SHSGP grant	Fire	May 2009
Tempe	Overhead Utility Undergrounding project	This project is to bury overhead power lines from the Rio Salado to Tempe St. Lukes hospital, to strengthen/harden the power supply to the hospital in case of emergency.	total project cost estimated at $4.5M - approximately $1.5M expended to date.	CIP	Public Works Department	ongoing
Tempe	Rio Salado Channelization	As part of the construction of Tempe Town Lake, the river bed was channelized…	can provide	CIP	Public Works Department	mid 90's but can get date
Tempe	Storm Drain Improvements	Annual program to identify projects to mitigate flooding situations on arterial streets, residential areas, etc. Recent projects include the intersection of Broadway Rd. and McClintock Dr., and a section of neighborhood near Rural Rd. and Guadalupe Rd.	approx. $300,000/yr.-$1.4M over 5 years	CIP	Public Works Department	ongoing
Tempe	Water Utility Dept. Security Improvements	Numerous enhancements to the physical security provisions at the water treatment plants	$3,500,000	CIP	Water Utility Department	ongoing
Tolleson	Up-dating of codes	Up-dated the city code, residential code, plumbing code, zoning codes, city ordinances, storm water runoff pollution/prevention, and the general plan.	N/A	N/A	All city department and staff	2006 - 2009
Wickenburg	Floodway Property Buy-Out	Town purchased one parcel near Hassaympa River and Jack Burden Road	$70,000	FEMA	Public Works	December 2007
Wickenburg	Storm Ready	Recognized by the National Weather Service in 2005 and again in 2008. In order for a community to be recognized a community must complete a set of rigorous warning criteria. One criteria is to promote the importance of public readiness through community seminars.	$5,000 staff time	County	Emergency Management	November 2007
Wickenburg	Weather Radios	Distributed one NOAA Weather Radio All Hazards receivers to every public school in Maricopa County.	Grant - $50,000	County	Police Department	November 2007

Table 6-4: Summary of previous mitigation activities for Maricopa County jurisdictions						
Jurisdiction	**Project Name**	**Project Description**	**Project Cost**	**Funding Source**	**Responsible Department**	**Completion Date**
Youngtown	Connecticut Avenue Stormwater Mitigation Project	Stormwater collected into the alley just north of Connecticut Avenue and east of 112th Drive, overwhelming the drain capacity and thereby flooding homes along Connecticut Avenue south of the alleyway. The Town of Youngtown removed approximately five-inches of a rise just west of drain and created a water channel to relieve pressure on drain to remove water. Town also reworked outlet at 114th Avenue, providing even more relief. Due to layout of overall area, problem was not completely removed, but remediated approximately 65 percent of pre-project levels.	$35,000	Town CIP and HURF funds.	Public Works Department	March 2009

Table 6-5: Summary of previous projects in Maricopa County receiving federal mitigation grant funding								
Applicant	**Project Title**	**Project Type**	**Year Begun**	**Year Ended**	**Total Cost**	**75% Fed Cost**	**25% Non-Fed Cost**	**Program**
UNKNOWN	Allenville Relocation	Relocation	1979	1982	$3,800,000.00	$2,850,000.00	$950,000.00	ADEM/HUD
City of Litchfield Park	884-3, Litchfield Park Drainage System	Correction of storm drainage problems	1995	1996	$160,000.00	$120,000.00	$40,000.00	HMGP
Town of Fountain Hills	977-04, Saguaro Catch Basins	Correction of storm drainage problems	1995	2000	$28,600.00	$21,450.00	$7,150.00	HMGP
Maricopa County DOT	977-07, Union Hills Bridge @ New River	Four lane bridge at New River	1996	1997	$1,800,000.00	$1,350,000.00	$450,000.00	HMGP
City of Phoenix Water Dept.	977-08, 91st Avenue WWTP	Erosion control	1997	2000	$2,500,000.00	$1,875,000.00	$625,000.00	HMGP
Maricopa County FCD	1347-5, Aquila Acquisition	Acquisition	2001	2008	$732,975.00	$549,731.25	$183,243.75	HMGP
Maricopa County	1347-5-4R MCFCD	Acquisition and Demolition	2001	2005	$977,300.00	$732,975.00	$244,325.00	HMGP
Maricopa County	1422-2-4P Maricopa	Mitigation Plan	2002	2004	$106,806.00	$80,104.50	$26,701.50	HMGP

6.2.3 National Flood Insurance Program Participation

Participation in the NFIP is a key element of any community's local floodplain management and flood mitigation strategy. Maricopa County and all 24 incorporated jurisdictions participate in the NFIP at varying levels. The Fort McDowell Yavapai Nation and Salt River Pima-Maricopa Indian Community do not currently participate in the NFIP. Salt River Project is not organized like a municipality and does not regulate development, and therefore is not a participant in the NFIP either.

Joining the NFIP requires the adoption of a floodplain management ordinance that requires jurisdictions to follow established minimum standards set forth by FEMA and the State of Arizona, when developing in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new floodplain development will not aggravate existing flood problems or increase damage to other properties. Maricopa County and some other communities, have adopted standards that are more stringent than the federal minimum to ensure better flood mitigation practices. As a participant in the NFIP, communities also benefit 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 about the likelihood of flooding in their community. Table 6-6 summarizes the NFIP status and statistics for each of the jurisdictions participating in this Plan.

Table 6-6: Summary of NFIP status and statistics for Maricopa County and participating jurisdictions

Jurisdiction	Community ID	NFIP Entry Date	Current Effective Map Date	Number of Policies	Amount of Coverage (x $1,000)	Floodplain Management Role
Maricopa County	040037	7/2/1979	9/30/2005	2,274	$505,030	Provides floodplain management for the Unincorporated County and the City/Towns noted below.
Avondale	040038	6/15/1979	9/30/2005	48	$12,143	Provides in-house floodplain management
Buckeye	040039	2/15/1980	9/30/2005	40	$8,132	Floodplain management provided by the Flood Control District of Maricopa County
Carefree	040126	7/2/1979	9/30/2005	16	$5,106	Floodplain management provided by the Flood Control District of Maricopa County
Cave Creek	040129	6/9/1988	9/30/2005	98	$25,737	Floodplain management provided by the Flood Control District of Maricopa County
Chandler	040040	7/16/1980	9/30/2005	246	$55,745	Floodplain management provided by the Flood Control District of Maricopa County
El Mirage	040041	12/1/1978	9/30/2005	13	$4,000	Floodplain management provided by the Flood Control District of Maricopa County
Fountain Hills	040135	2/10/1994	9/30/2005	31	$8,081	Provides in-house floodplain management
Gila Bend	040043	12/4/1979	9/30/2005	13	$1,751	Floodplain management provided by the Flood Control District of Maricopa County
Gilbert	040044	1/16/1980	9/30/2005	265	$85,712	Provides in-house floodplain management
Glendale	040045	4/16/1979	9/30/2005	139	$37,074	Provides in-house floodplain management

Table 6-6: Summary of NFIP status and statistics for Maricopa County and participating jurisdictions

Jurisdiction	Community ID	NFIP Entry Date	Current Effective Map Date	Number of Policies	Amount of Coverage (x $1,000)	Floodplain Management Role
Goodyear	040046	7/16/1979	9/30/2005	83	$22,091	Provides in-house floodplain management
Guadalupe	040111	4/1/1994	9/30/2005	2	$113	Floodplain management provided by the Flood Control District of Maricopa County
Litchfield Park	040128	8/19/1988	9/30/2005	7	$2,210	Floodplain management provided by the Flood Control District of Maricopa County
Mesa	040048	5/15/1980	9/30/2005	316	$78,331	Floodplain management provided by the Flood Control District of Maricopa County
Paradise Valley	040049	5/1/1980	9/30/2005	96	$33,947	Provides in-house floodplain management
Peoria	040050	11/17/1978	9/30/2005	229	$65,028	Provides in-house floodplain management
Phoenix	040051	12/4/1979	9/30/2005	5,231	$1,093,805	Provides in-house floodplain management
Queen Creek	040132	7/22/1992	9/30/2005	32	$8,668	Floodplain management provided by the Flood Control District of Maricopa County
Scottsdale	045012	9/21/1973	9/30/2005	8,358	$2,076,400	Provides in-house floodplain management
Surprise	040053	12/15/1978	9/30/2005	124	$36,590	Floodplain management provided by the Flood Control District of Maricopa County
Tempe	040054	8/15/1980	9/30/2005	189	$44,823	Provides in-house floodplain management
Tolleson	040055	1/16/1980	9/30/2005	53	$12,403	Floodplain management provided by the Flood Control District of Maricopa County
Wickenburg	040056	1/5/1978	9/30/2005	81	$14,540	Provides in-house floodplain management
Youngtown	040057	11/15/1978	9/30/2005	5	$846	Provides in-house floodplain management
Fort McDowell Yavapai Nation	Not a participant in the NFIP					
Salt River Pima-Maricopa Indian Community	Not a participant in the NFIP					

6.3 Mitigation Actions/Projects and Implementation Strategy

Mitigation actions/projects (A/P) are those activities identified by a jurisdiction, that when implemented, will have the effect of reducing the community's exposure and risk to the particular hazard or hazards being mitigated. The implementation strategy addresses the "*how, when, and by whom?*" questions related to implementing an identified A/P.

The update process for defining the new list of mitigation A/Ps for the Plan was accomplished in three steps. First, an assessment of the actions and projects specified in Section 8 of the 2004 Plan was performed, wherein each jurisdiction reviewed and evaluated their jurisdiction specific list. Second, a new list of A/Ps for the Plan was developed by combining the carry forward results from the assessment with new A/Ps. Third, an implementation strategy for the combined list of A/Ps was formulated. Details of each step and the results of the process are summarized in the following sections.

6.3.1 Previous Mitigation Actions/Projects Assessment

The MJPT and LPT for each jurisdiction reviewed and assessed the actions and projects listed in Table 8-8 of their 2004 Plan (except SRP). The assessment included evaluating and classifying each of the previously identified A/Ps based on the following criteria:

STATUS		***DISPOSITION***	
Classification	Explanation Requirement:	Classification	Explanation Requirement:
"***No Action***"	Reason for no progress	***"Keep"***	None required
"***In Progress***"	What progress has been made	***"Revise"***	Revised components
"***Complete***"	Date of completion and final cost of project (if applicable)	***"Delete"***	Reason(s) for exclusion.

Any A/P with a disposition classification of "Keep" or "Revise" was carried forward to become part of the new A/P list for the Plan. All A/Ps identified for deletion were removed and are not included in this updated plan. The results of the assessment for each of the 2004 Plan A/Ps is summarized by jurisdiction in Tables 6-7-1 through 6-7-27.

Table 6-7-1: Summary of Avondale assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
3B3	Water/Wastewater Department Security	Enter into a contract for a full assessment of the water/ wastewater departments for security of systems.	• City Manager, Public Works Director • N/A • N/A	In progress	Keep	Contractor has completed COOP for water dept. training is on going
3B2	Citywide Security Review	Complete citywide security review.	• City Manager, Public Works Director, Fire Dept., Police Dept. • N/A • N/A	In progress	Keep	City SOP/EOP under review and being updated
2A5	ICS Training	Complete mid to upper management training for ICS and other related training.	• Fire Chief, City Manager • N/A • N/A	In progress	Keep	Safety/risk tracking NIMS and ICS training for management
2A4	Site Safety Partnering	Partner with Phoenix International Raceway and other stakeholders in matters of site safety.	• Fire Chief • N/A • N/A	In progress	Keep	TLO will update the TVA for PIR
2A6	School Safety	Partner with public school systems to update school safety.	• Fire Chief • N/A • N/A	No action	Keep	Staffing shortages, will try in the fall
2B1	Emergency Alerts	Enhance the City of Avondale's capabilities to alert its citizens in time of emergency (English and Spanish).	• Fire Chief/Emergency Manager, City Manager • N/A • N/A	No action	Keep	No funding
3B5	EOC Upgrade	Upgrade the current EOC and recommend the construction of a new and more secure facility.	• Fire Chief/Emergency Manager, City Manager, City Engineer • N/A • N/A	No action	Keep	No funding

Table 6-7-1: Summary of Avondale assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
8A4	PPE Equipment	Provide PPE for chemical and biological agent protection to all members of the department.	• Police Chief, Fire Chief • N/A • N/A	Complete	Delete	6-15-09 $15.500 grant funded
8A5	CERT Training	Provide CERT training to all citizens and city groups upon request.	• Fire Chief • N/A • N/A	In progress	Keep	On going
B2	Grant Funding for Safety	Seek grants and other funding to promote the safety of Avondale and its citizens.	• Fire Chief • N/A • N/A	In progress	Keep	Ongoing process
3B4	Hire Emergency Planner	Hire a full time civilian emergency planner/manager (FY 04/05).	• Fire Chief • N/A • N/A	No action	Delete	No funding/hiring freeze

Table 6-7-2: Summary of Buckeye assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.C.1	Fire Code Official	Hire fire code enforcement officials/inspectors	• Fire Chief, Town Engineer • N/A • N/A	Complete	Delete	July 2007: Hired Fire Prevention Specialist to conduct code enforcement and review all fire plans and inspectors.
2.C.2	Life Safety	Conduct annual life safety inspections	• Fire Chief • N/A • N/A	In progress	Revise	Initiated by fire inspector with ongoing training to the fire crews.

Table 6-7-2: Summary of Buckeye assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4.C.1	Town Communication	Communicate Town needs better at the County and State level	• Fire Chief (Emergency Manager) • N/A • N/A	Complete	Keep	Public Safety Executive Partnership.
4.A.1	Hazard Mitigation Planning	Continue to support the Hazard Mitigation Plan by making sure the Town is represented on related committees.	• Fire Chief (Emergency Manager) • N/A • N/A	In progress	Keep	Currently in revision.
5.B.3	Storm Protection	Implement storm deployment protection procedures (local)	• Fire Chief (Emergency Manager) • N/A • N/A	In progress	Keep	Standard Operating Procedures development. Implementation and execution of CERT and Teen CERT program.
6.A.1	Fire Breaks	Meet with flood control and state land to develop cut fire breaks at key locations in the Gila River	• Town Engineer, FCDMC • N/A • N/A	In progress	Keep	Working in conjunction with the Maricopa County on CWPP Plans.
5.B.2	Drainage Improvements	Provide/improve water drainage systems.	• Public Works Director • N/A • N/A	In progress	Keep	Working in conjunction with the Maricopa County on CWPP Plans.
11.A.3	Enforce Codes	Enforce fire codes, require compliance	• Fire Chief (Emergency Manager) • N/A • N/A	In progress	Keep	Continue and update versions of code compliance.
8.A.1	Water Conservation	Develop water conservation plan.	• Town Manager, Town Engineer • N/A • N/A	In progress	Keep	Critical Resource Planning.

Table 6-7-3: Summary of Carefree assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.B.1	Drainage Master Plan	Develop a Drainage Master Plan that will identify potential drainage hazards, solutions, budgets and prioritization.	• Zoning Director, Town Council • N/A • N/A	In Progress	Keep	Drainage Master Plan Developed in General Plan as well as Maricopa County Flood Control District 2007 Flood Response Plan. Cost is not determined as planning is ongoing use staff hours and resources.
4.A.3	Culvert/Bridge Construction	Encourage bridge or culvert construction where roads are in locations susceptible to flooding.	• Town Manager, Contractor • N/A • N/A	In Progress	Keep	Dream Street Bridge completed 2007 at cost of $950,000.00. Other construction and crossing projects ongoing as time and budget permits.
3.B.1	Evacuation Strategy	Further develop a Mass Evacuation strategy for the Town of Carefree.	• Town Marshall, Sherriff's Office • N/A • N/A	Completed	Keep	Evacuation Strategy determined in Cooperation with MCSO and Carefree Fire (Rural Metro) for both specific and mass evacuation. Cost of flan was not determined as it drew on staff hours and resources. Plan is subject to ongoing revision

Table 6-7-4: Summary of Cave Creek assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
3.B.1	Evacuation Strategy	Coordinate with Maricopa County Department of Emergency Management to develop a Mass Evacuation strategy for Cave Creek.	• Emergency Management, Rural Metro, MCSO, Marshal • N/A • N/A	Complete 08/2007 $6200	Delete	Updated Town of Cave Creek Emergency Operations Plan. Subscribed to CodeRed Mass Notification System.
3.B.2	Evacuation Plan	Coordinate with Maricopa County Department of Emergency Management to develop a Mass Evacuation plan for Cave Creek.	• Emergency Management, Marshal • N/A • N/A	Complete 08/2007	Delete	Included in the updated Emergency Operations Plan, August 2007

Table 6-7-4: Summary of Cave Creek assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
6.B.1	Subdivision Fire Access	Ensure that subdivision regulations for new subdivisions ensure adequate access for fire trucks.	• Planning and Zoning Director, Engineering • N/A • N/A	Complete	Delete	All new subdivisions must meet all Engineering and all subdivision ordinances, which require Emergency Vehicle / Fire Department Access as per National Standards as developed by the IFC.
7.A.2	Enforce Building Codes	Ensure building codes for construction are enforced to prevent roof damage from high winds.	• Planning and Zoning Director, Engineering Director (PW) • Marshal • N/A • N/A	Complete	Keep	All Building permits are required to be inspected by our Building Safety Staff and meet all IBC Standards
8.B.2	Water Infrastructure Investigation	Investigate the possibility of adding a water facility and infrastructure on the west side of Cave Creek.	• Engineering Director, Utilities Manager • N/A • N/A	Complete 5/2008 $4 Million	Keep.	Over 3.5 Million Gallons of Water Storage was added, as well as new pumping stations on the west side of town.
5.A.1	Drainage Master Plan	Work with The Flood Control District of Maricopa County (FCDMC) on Drainage Master Plan for Cave Creek to evaluate and mitigate flood hazards in the Town (FCDMC).	• Planning and Zoning Director, Town Engineer • N/A • N/A	Complete 12/08	Delete	Drainage Master Plan as well as a Flood Response Plan were completed
1.B.1	Review Building Codes	Review existing building codes to determine if they adequately protect new development in hazard areas. Where feasible and necessary, modify codes to help mitigate hazards imposed on such development within the limits of state statutes, while also respecting private property rights.	• Planning and Zoning, Building Official • N/A • N/A	Complete	Delete	Building Codes are continuously reviewed for updates, and modifications where required.
5.A.3	Bridge/Culvert Construction	Encourage bridge or culvert construction for major arterial road in locations susceptible to flooding.	• Planning Director, Town Engineer, Town Manager • N/A • N/A	Complete 07/07	Delete	A feasibility study was included in the Drainage Master Plan, on adding an all weather crossings at certain problematic crossings. The residents affected most were surveyed and chose to NOT add all weather crossings

Table 6-7-4: Summary of Cave Creek assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.C.2	Fire Inspections	Town Fire Marshal routinely inspects commercial structures	• Rural Metro Fire Department • N/A • N/A	Complete Annual	Keep	All Commercial structures located within the town boundaries are inspected on an annual basis.
1.A.1	Review General Plan	Review the existing Cave Creek general plan and zoning ordinance to determine how these documents help limit development in hazard areas. Modify with additional guidelines, regulations, and land use techniques as necessary within the limits of state statutes, while also respecting private property rights.	• Planning Director • N/A • N/A	In Progress	Keep	The Town's General Plan is a living document and reviewed on a regular basis.

Table 6-7-5: Summary of Chandler assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.2	Maintain General Plan Safety Elements	Maintain the currency of the safety element of the Chandler General Plan, and monitor its effectiveness at preventing and mitigating hazards.	• City Manager, City Council, Planning Director • N/A • N/A	Complete	Keep	The City of Chandler General Plan will be reviewed and updated on a regular basis to assure that it continues to meet the needs of the City.
1.D.3	Safe Industry Development	Seek to develop industry that is safety compliant and sited in suitable locations; avoid over-saturation of hazardous materials industries.	• Fire Chief, Emergency Manager, Planning Director • N/A • N/A	Complete	Delete	The mitigation strategy will no longer include HAZMAT or other human-caused hazards.
2.A.1	Make HMP Available to Public	Promote availability of the City of Chandler Hazard Mitigation Plans (HMGP) in an understandable format to civic and private groups.	• Fire Chief • N/A • N/A	Complete	Keep	The City will continue to promote the HMGP to civic and private groups.

Table 6-7-5: Summary of Chandler assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
7.A.2	Enforce Building Codes	Continue to ensure through proper planning, zoning and building codes that all safety measures are in place for new building construction and placement.	• City Manager, City Council, Planning Director • N/A • N/A	Complete	Keep	The City will continue to update codes to the newest versions, and add amendments to the codes where appropriate to ensure the safety of new building construction.
8.A.1	Drought Management Plan	In October of 2003, the City of Chandler adopted a Drought Management Plan. This plan has been implemented to reduce the impacts of potential drought.	• Water Resources Manager, Fire Chief, Emergency Manager • N/A • N/A	Complete	Keep	Although the plan was written in 2003, it continues to meet the needs of the City, and will be updated as appropriate in the future.
8.B.1	Maintain Water Portfolio	Continue to maintain a diverse water portfolio. Minimize any reductions to existing supplies by protecting and secure existing water rights, completing Indian water rights settlements, and meeting environmental requirements of water resources. Maximize the use of existing assets to ensure adequate water supply is available through groundwater wells, surface water diversions, use of recharged water, and encouraging the use of reclaimed water for appropriate purposes. Seek and utilize alternative water supplies (CAP excess water, reclaimed water, saline/brackish groundwater, support the Arizona Water Bank) to increase resource reliability and mitigate drought severity.	• Water Resources Manager, Fire Chief, Emergency Manager • N/A • N/A	Complete	Keep	Maintaining a diverse City water portfolio is vital to ensure adequate water is available as the City continues to grow, and to be able to mitigate the severity of a drought.
11.A.1	Maintain HMIS and HMMP	All facilities located within the City of Chandler utilizing hazardous chemicals are required to submit an electronic Hazardous Materials Inventory Statement (HMIS) or Hazardous Materials Management Plan (HMMP). These are evaluated and placed into three different Permit categories. All industry will also comply with all current adopted fire codes.	• Fire Chief, Emergency Manager • N/A • N/A	Complete	Delete	The mitigation strategy will no longer include HAZMAT or other human-caused hazards.

Table 6-7-5: Summary of Chandler assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
11.F.1	ECS Electronic Reporting	Chandler Fire Department is partnering with the State of Arizona and Environmental Compliance Solutions (ECS) to enhance the electronic reporting system the State is currently using. This enhancement is a link between the State and ECS software (which is internet and CD based) that once the information is completed in the Software all the Industries (who are using the ECS Software) would need to do is click the submit button to the State. This would automatically send the Tier II report to the State of Arizona.	• Fire Chief, Emergency Manager • N/A • N/A	Complete	Delete	The mitigation strategy will no longer include HAZMAT or other human-caused hazards.
12.A.2	Human-Caused Incident Plan	Create and maintain an internal document that gives direction to all city personnel in case of a human-caused incident.	• Fire Chief, Emergency Manager • N/A • N/A	Complete	Delete	The mitigation strategy will no longer include HAZMAT or other human-caused hazards.
12.B.3	Vulnerability Assessment	Each Lead City Department will rank the vulnerability of existing assets, with assistance from the Emergency Management Workgroup, and implement protection plans with the highest vulnerability being implemented first.	• Fire Chief, Emergency Manager, City Manager • N/A • N/A	In Progress	Keep	Two Fire Department members have been assigned to complete Threat Vulnerability Assessments (TVA's) for buildings/assets located within the City in conjunction with the Emergency Management Workgroup. This will be an on-going project with higher vulnerability buildings/assets being completed first.

Table 6-7-6: Summary of El Mirage assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation

Table 6-7-6: Summary of El Mirage assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Adopt Zoning Ordinance	Adopt zoning ordinances prohibiting new development in 100-year flood plain.	• Planning/Zoning Department, Public Works, City Council • N/A • N/A	Complete	Revise	Change the text to reflect an annual review
1.B.2	Develop Building Codes	Develop building codes to manage new and existing assets from flooding.	• Public Works • N/A • N/A	Complete 10/07	Revise	Change the text to reflect an annual review and update as needed
3.A.1	Multi-Agency Coordination	Participate in multi-agency coordination efforts to ensure cooperative plans.	• City Emergency Manager • N/A • N/A	In progress	Keep	Ongoing process. El Mirage is an active participant in the Maricopa County Hazard Mitigation planning
4.B.1	Multi-Agency Planning	Take active role in multi-agency plan and actions for flood mitigation (pro-active).	• City Emergency Manager, Public Works • N/A • N/A	Complete	Keep	Review annually
4.A.1	Protection Device Plan	Develop plan to install man-made protection devices where needed.	• City Emergency Manager, Public Works, City Engineer • N/A • N/A	Complete	Revise	Revise to focus the action on flood
7.B.1	First Responder Training	Train First Responders and other select city staff in hazard materials mitigation.	• City Emergency Manager, Emergency Services • N/A • N/A	Complete	Keep	Annual refresher training is conducted
7.B.2	HAZMAT Training	Train with and support other local agencies in higher level of HAZMAT. Mitigation.	• City Emergency Manager, Emergency Services • N/A • N/A	In Progress	Delete	This and 7.B.1 are duplicating each other.

Table 6-7-6: Summary of El Mirage assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.A.2	Obtain Weather Equipment	Obtain equipment needed for weather watching, forecasting and reporting.	• City Emergency Manager, Emergency Services • N/A • N/A	Complete	Delete	Weather station equipment has been installed in fire station 121.
5.A.1	Staff Education	Educate staff on latest information on accurate prediction and warnings for severe weather.	• City Emergency Manager • N/A • N/A	Complete	Delete	Staff received training
5.D.1	Problem Identification	Coordinate efforts with other local agencies to I.D. problem areas and plans for mitigation.	• City Engineer, City Emergency Manager, Emergency Services, Public Works • N/A • N/A	In Progress	Keep	Review as needed

Table 6-7-7: Summary of Fort McDowell Yavapai Nation assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1A1	Floodplain Management	Prohibit building in flood plain and river.	• Economic Development Division • $15,000 annual staff time • N/A	In progress	Keep	Ongoing program with tribal restrictions on floodplain development. Work to date has been funded using FMYN general revenue funds.
1A2	Flood Management Coordination	Pursue relationship with Maricopa County Flood Control District to improve flood management program.	• Economic Development Division • N/A • N/A	No action	Delete	Flood control is managed by U.S. Corp of Engineers and Tribal laws.

Table 6-7-7: Summary of Fort McDowell Yavapai Nation assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1B1	Development in Hazard Areas	Review existing building codes, modify or adopt codes to prevent development in hazard areas.	• License and Property Use Department • $5,000 annual staff time • N/A	In progress	Keep	Existing tribal ordinances prohibit development in hazard areas. Work to date has been funded using FMYN general revenue funds.
1C1	Comprehensive Plans, Zoning and Building Codes	Identify and mitigate hazards associated with new and existing developments through plan reviews to ensure plan/code compliance.	• Planning and Development Department • $20,000 annual staff time • N/A	In progress	Keep	All proposed development is reviewed by Planning Advisory Board and building officials. Work to date has been funded using FMYN general revenue funds.
2A1	Funding Mitigation Actions	Pro-actively pursue pre-disaster and hazard mitigation grants.	• Economic Development Division • $10,000 annual staff time • N/A	In progress	Keep	Grant administrator advises department heads of available grants, and assists with grant proposals. Work to date has been funded using FMYN general revenue funds.
2B2 2B3	Mitigation Public Education	Publish suggested mitigation actions through print media and community website.	• Events/Media Relations Department • $2,000 annual staff time • N/A	In progress	Keep	Mitigation suggestions are routinely published in the monthly tribal newspaper. Work to date has been funded using FMYN general revenue funds.
3A1 3A2	River Restoration	Continue restoration projects along river. Limit development along river.	• Environmental Department • $50,000 to date • N/A	In progress	Keep	Bald eagle nesting sites and wetlands habitat are monitored by the tribal environmental department. Work to date has been funded using FMYN general revenue funds.

Table 6-7-7: Summary of Fort McDowell Yavapai Nation assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4A1 4A2	High-Risk Area Access	Create access, and map the access to high-risk areas. Provide weed abatement services in high risk areas.	• Public Works Department • $ 45,000 annually • N/A	In progress	Keep	Maps are updated when new roads are built, or development requires improved access. Weed abatement is provided annually by public works department. Work to date has been funded using FMYN general revenue funds and County DOT funding.
5A2	Severe Weather	Ensure building codes are enforced to prevent damage from high winds.	• Planning and Development Department • $40,000 annual staff time • N/A	In progress	Keep	Currently utilizing the 2000 International Building Code. Work to date has been funded using FMYN general revenue funds.
5B1	Infrastructure Protection	Periodic assessments of infrastructure to strengthen infrastructure against affects of severe weather.	• Economic Development Division • N/A • N/A	No action	Delete	Managed by public utility companies.
6A3	Public Health Nuisance	Facilitate abatement, prevention and investigation of public health nuisance conditions, illegal dumping activities and the storage and handling of potentially infections material and locations.	• Environmental Department • $15,000 annual staff time • N/A	In progress	Keep	Illegal dumping is monitored by environmental and public works departments. Infectious waste is managed by health department and fire department. Work to date has been funded using FMYN general revenue funds and bond funds including $750,000 for a waste transfer station.
6B1	Infestation and Disease	Coordinate training, planning, and communications to provide the community with information to combat the affects of infestations and diseases.	• Health Department • $12,000 annual staff time • N/A	In progress	Keep	Information is distributed to the public through the tribal website and monthly newspaper. Work to date has been funded using FMYN general revenue funds and Indian Health Services funding.

Table 6-7-7: Summary of Fort McDowell Yavapai Nation assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
7A1 7C1	TERC	Continue to ensure the involvement of industry, fire, law enforcement and other key players in the Tribal Emergency Response Committee (TERC).	• Emergency Management • N/A • N/A	No action	Delete	TERC has been inactive for an extended period.
7A2 7B1 7B2 7D1 7D2	Hazardous Materials Management	Train first responders to Operational level. Develop emergency plans for facilities handling hazmat. Provide emergency response guidebooks to fire and law enforcement personnel. Follow MCDOT/ADOT guidelines.	• Fire Department • $15,000 annual staff time • N/A	In progress	Keep	All fire department first responders are currently trained to operations level. Guidebooks are up-to-date. Other programs are ongoing. Work to date has been funded using FMYN general revenue funds.
8A1 8A2 8A3	Human Caused Hazards	Promote WMD training for all employees. Support Urban Area Security Initiative. Promote and expand programs aimed at family preparedness.	• Emergency Management • N/A • N/A	No action	Delete	WMD training is a low priority based on short staff and other priorities.
8B2	CBRN Emergency Response	Encourage Ft. McDowell Public Health to develop and exercise their capabilities to respond to and support a chemical, biological or radiological event.	• Emergency Management • $5,000 to date • N/A	No action	Revise	Response plans are being incorporated into the tribal emergency response plan.
8B1 8B3	Asset Protection	Lead Community Departments will be responsible for creating plans to protect existing assets within their area of responsibility.	• Fire Chief-Emergency Manager, Other Departments • $30,000 staff time to date • N/A	In progress	Keep	Program is on-going. Assett protection plans are included as annexes to tribal emergency operations plan. Work to date has been funded using FMYN general revenue funds.

Table 6-7-8: Summary of Fountain Hills assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.2	Review General Plan and Ordinances	Establish periodic monitoring and review of the Town General plan and zoning ordinances to determine effectiveness at preventing and mitigating hazards. Based on the results, amend as necessary.	• Planning Department, Planning Commission, Town Council • N/A • N/A	In Progress	Keep	This is an ongoing annual project
4.A.2	Channel and Storm Drain Development	The Town will continue development of channels and storm drains, similar to those built over the years in the Town for flood protection.	• Public Works Director • N/A • N/A	In Progress	Keep	This is an ongoing annual project
5.B.1	Brush Removal	Establish standards for the clearing of brush on town owned lands that are subject to wildfires.	• Public Works Director • N/A • N/A	Complete	Keep	N/A
6.A.3	Enforce Building Codes	Ensure building codes for construction are strengthened to prevent roof damage from high winds.	• Chief Building Official, Building and Safety Department • N/A • N/A	Complete	Keep	N/A
8.A.1	Risk Management Planning	Continue to ensure the involvement of industry, fire, law enforcement and other key players in the Town's Risk Management Plan and an Emergency Response Plan for each of the 18 pump stations.	• Sanitary District General Manager • N/A • N/A	Complete	Delete	The Town has completed the project over the last planning cycle.

Table 6-7-9: Summary of Gila Bend assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.2	Review General Plan and Zoning Ordinance	Establish periodic monitoring and review of the Town's general plan and zoning ordinance to determine effectiveness at preventing and mitigating hazards. Based on the results, amend as necessary.	• Planning Commission, Town Council • N/A • N/A	No action	Keep	
5.A.3	Construction Compliance	Ensure enough compliance inspectors are available to ensure construction compliance.	• Public Works Department, Town Council • N/A • N/A	No action	Keep	
5.B.2	APS Coordination	Coordinate with Arizona Public Service to promote metal power utility poles used in new transmission line construction and used as replacements for existing wooden poles when indicated or install the lines underground.	• Local Utility Co (APS) • N/A • N/A	No action	Keep	
7.A.1	HAZMAT Training	Ensure all volunteer Fire Department responders are trained at a hazmat awareness level.	• Town Volunteer Fire Department • N/A • N/A	No action	Delete	HAZMAT is no longer one of the hazards in the plan.
8.C.1	Limit Development near Luke Air Force Base	Provide Town leadership role in support of efforts to limit development in the departure and approach corridors for Luke Air Force Base.	• USAF, Planning Commission, Town Council • N/A • N/A	No action	Delete	Not considered a mitigation action of natural hazards.

Table 6-7-10: Summary of Gilbert assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Master Planning	Through proactive adoption of applicable master plans, land uses and developmental agreements	• Planning Department, Planning Commission, Town Council • N/A • N/A	In Progress	Keep	The Town currently uses 2006 International Codes. Future plan is to review and adopt 2010 codes in Jan 2010 that become effective July 2010. Update should reflect Development Services as Lead Agency, proposed costs is staff time and proposed completion date is Jan 2010.
2.B.2	Mitigation Brochure	Develop a mitigation brochure with information that is vital to the those needs in the community	• Managers Office, Public Works Department, Maricopa County, Local Business Groups, Local Utility Service Providers • N/A • N/A	No Action	Delete	Due to budget constraints this has been and will remain difficult to develop. However, a Mitigation page will be developed for the website highlighting relevant information. In addition we can make use of the FCD brochure that includes specific Gilbert information.
3.A.4	Mitigation Links on Town Website	Website links form Town of Gilbert Home page to Maricopa County mitigation sites	• Technology Services • N/A • N/A	In Progress	Keep	Facilitate the development of a town webpage that will provide relevant mitigation information to the community. Update should reflect Emergency Management as Lead Agency with cost being staff time and a completion date of June 2010.

Table 6-7-10: Summary of Gilbert assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4.A.2	East Valley Mitigation Stakeholders	Establish an East Valley group of stakeholders to address improvements in mitigation areas specific to the needs of the East Valley Community	• Manager Office, Emergency Management (Local), Local Business Groups, Local Utility Service Providers • N/A • N/A	In Progress	Keep	We have worked closely with Maricopa County Flood Control District on numerous mitigation projects specific to East Valley. East Valley Emergency Manager (including utilities) meets bi-monthly to discuss East Valley Emergency Mgt topics. Update should reflect ongoing meetings with East Valley stakeholders to address any potential needs or improvement in mitigation. Lead agency being only Emergency Management and costs being staff time.
7.B.1	Infrastructure Redundancies	System redundancies to critical infrastructure	• Public Works, Fire & Police, Local Utility Services • N/A • N/A	No Action	Delete	The team found the action to be too vague, unfamiliar to current staff and not implemented and chose to delete it.
8.A.1	Water Supply Reduction	Implement the appropriate stage of the water supply reduction Management Plan as adopted (May 2003)	• Managers Office, Town Staff • N/A • N/A	In Progress	Keep	This plan was developed and adopted in 2003. The plan has been and will continue to be used as appropriate during drought conditions to mitigate drought impact on public water supply. Update should reflect a continued and ongoing use of Water Conservation Plan, Public Works as Lead Agency with proposed costs being only staff time.

Table 6-7-11: Summary of Glendale assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
3.A.1	Reverse 9-1-1	Continue to work on developing the Dialogical Communicator System, a reverse 9-1-1 system that provides directional calling through the connection of the GIS system.	• Fire Dept. Chief, Police Dept. Chief, Deputy City Manager for Public Works • N/A • N/A	Complete	Delete	Project completion date was February 10, 2009. The project cost was $160,000.
3.B.1	Evacuation Strategy	Develop a mass evacuation strategy for the City of Glendale.	• Fire Dept. Chief, Police Dept. Chief • N/A • N/A	Complete	Delete	The City of Glendale's mass evacuation strategy is in line with Maricopa County's Evacuation Strategy. Phase I of this plan was completed in July 2004 and Phase II was completed in December 2006.
10.A.1	Industry, Fire, Law Enforcement Involvement	Continue to ensure the involvement of industry, fire, law enforcement and other key players in the City of Glendale.	• Fire Dept. Chief, Police Dept. Chief, Deputy City Manager for Public Works • N/A • N/A	No Specific Action	Delete	Undetermined outcome, no specific output

Table 6-7-12: Summary of Goodyear assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.A.1	Review Codes and Ordinances	Review existing codes and ordinances to determine how these documents help limit development in hazardous areas.	• Community Development Director, Fire Chief • Staff time • July 2007	Complete	Delete	Codes have been updated to 2006 series of international codes.

Table 6-7-12: Summary of Goodyear assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
2.A.2	Explore Funding Sources	Explore variety of funding sources.	• Fire Chief/Emergency Manager, Grant Administrator • Staff time • N/A	Complete	Delete	Staff position and internal operating procedures have been implemented.
2.A.3	Promote Mitigation Programs	Promote and share mitigation programs with state, county, local jurisdictions, and private, civic, and non-profit organizations.	• Fire Chief/Emergency Manager • Staff time • N/A	In progress	Keep	On-going coordination process with agencies and organizations continues.
3.A.2	Secure City Water	Secure and protect the city water supply from outside, outsource contamination: a) Install supervisory control valves and data acquisition system. b) Install valve locks. c) Site specific physical infrastructure security measures.	• Fire Chief/Emergency Manager, Public Works Director • Staff time • N/A	In progress	Keep	a) SCADA project under construction; scheduled completion in fourth quarter 2009. Future phases will be constructed based as funds become available. b) Valve locks are planned for a new water transmission line anticipated to be installed in 2009-2010. c) Perimeter wall improvements were competed at several sites in 2009. Enhanced security measures will be installed at other sites in the future as funds become available.
3.A.7	Storm Water Management	Storm water management program.	• Fire Chief/Emergency Manager, Public Works Director, City Engineer • Staff time • September 2008	Complete	Delete	Storm Water Management Plan was adopted in 2003 and amended in 2006. Annual Reports are submitted to ADEQ every September.
5.A.2	Public Outreach in the Urban Interface	Distribute information to persons applying for building permits in urban interface areas.	• Fire Chief/Emergency Manager, Community Development Director • Staff time • 2005	Complete	Delete	Information is distributed to builders with the issuance of building permits and through regularly held developer advisory forums. Proposed development plans are sent to Maricopa County and adjacent municipalities for comments and coordination.

Table 6-7-12: Summary of Goodyear assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.A.4	Public Outreach in City Newsletter	Provide information in city newsletter.	• City PIO, Fire Chief/Emergency Manager • Staff time • N/A	Complete	Delete	Staff position and internal operating procedures have been implemented.
6.A.2	Public Outreach on City Web Page	Provide information on what is needed in the event of an emergency, through the city web page, newsletters, and other media outlets.	• City PIO, Fire Chief/Emergency Manager • Staff time • N/A	Complete	Delete	Internal operating procedures for dissemination have been implemented.
6.C.1	Emergency Notification System	Develop a City wide emergency notification system.	• City PIO, Fire Chief/Emergency Manager • Staff time • 2005	Complete	Delete	Currently have CENS available to make notifications.

Table 6-7-13: Summary of Guadalupe assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
2.B.2	Stormwater Education Implementation	Implement the education and mitigation actions as outlined in the Town's Stormwater Management Plan.	• Town Engineer/Town Council • N/A • N/A	In progress	Revised	New Town Engineer on board. Project would need to be revised to complete it.
4.A.1	Stormwater Management Plan Notification	The Town will continue working on a cooperative effort to notify developers of the Town's Stormwater Management Plan and floodplain regulations early on in the development process.	• Town Manager, Town Engineer, Town Inspector • N/A • N/A	Completed	Deleted	Completed for 2009

Table 6-7-13: Summary of Guadalupe assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.2	Review General Plan and Ordinance	Establish periodic monitoring and review of the Town of Guadalupe's general plan and zoning ordinance to determine effectiveness at preventing and mitigating hazards. Based on the results, amend as necessary.	• Town Inspector • N/A • N/A	In progress	Revised	Town Inspector reviews every six month to ensure compliance.
8.A.1	HAZMAT Training	Increased training of hazardous material team members and first responders.	• Fire Department • N/A • N/A	Completed	Deleted	Firemen are trained annually. Completed for 2009.

Table 6-7-14: Summary of Litchfield Park assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Building prohibited map	Define area on map to prohibit building, require specific sign-off by Luke AFB for all plans in the area.	• City Manager • N/A • N/A	Complete	Keep	Litchfield Park boundaries are set and we have no room to grow.
2.B.1	Regional Organization Memberships	Encourage City staff to become members of regional organizations to share in regional efforts and solutions to local and regional problems.	• City Manager • N/A • N/A	In Progress	Keep	This is always a process we wish to follow to remain current in our information.
5.A.1	Storm drain system	Develop and maintain a proper storm drain system to accommodate storm run-off.	• Engineering Dept • N/A • N/A	In Progress	Keep	Storm Drain plan is almost complete. There have been three phases completed and there remains one more phase. The engineering Dept is now the lead dept.
5.A.2	Tree pruning	Keep street trees properly pruned.	• Public Works • N/A • N/A	In Progress	Keep	This is an annual process that is a part of maintenance for our trees that will never end.
7.C	Hazardous material replacement products	Develop a policy to replace the use of hazardous materials with other products as soon as a safe, reliable source is available and proven to be as effective.	• Public Works/Planning • N/A • N/A	In Progress	Keep	This is an ongoing process that we are constantly reviewing. Public Works and Planning Dept. is now the lead dept.

Table 6-7-15: Summary of Unincorporated Maricopa County assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1	Floodprone Properties Acquisition Policy	FCDMC staff will implement the recently adopted Floodprone Properties Acquisition Policy that defines existing programs for acquisition and relocation especially in situations where a few structures need to be removed from the floodway and floodplain. Floodproofing is included in this policy.	• Flood Control District • Project Dependent • Ongoing	In progress	Keep	Number of properties selected for acquisition, relocation and floodproofing.
2	Area Drainage Master Plans	The FCDMC will continue working with County Planning and Development on a cooperative effort to notify developers of Area Drainage Master Plans (ADMP's) and floodplain regulations early on in the development process.	• Flood Control District • Staff Time • Ongoing	In progress	Revise	The FCDMC will continue working with County Planning and Development on a cooperative effort to notify developers of Area Drainage Master Plans (ADMP's), Watercourse Master Plans and floodplain regulations early on in the development process.
3	ITS	Develop and install Intelligent Transportation System (ITS)	• Transportation • $1 million • November 2009	Completed in 2008	Delete	Not related to natural hazard mitigation
4	Database	Develop and maintain a database of schools, hospitals and other key facilities within a one-mile radius of HAZMAT facilities and make that database available to responders to incidents at those facilities.	• Emergency Management • $15,000 • November 2009	Completed in 2006	Delete	Not related to natural hazard mitigation
5	Prevent Child Drowning	Promote child drowning prevention programs throughout the County.	• Emergency Management • $5,000 • November 2009	No Action	Delete	Not related to natural hazard mitigation. Activities conducted by public safety agencies.

Table 6-7-15: Summary of Unincorporated Maricopa County assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
6	Building Codes	Review existing building codes to determine if they adequately protect new development in hazard areas. Where feasible and necessary, modify codes to help mitigate hazards imposed on such development within the limits of state statutes, while also respecting private property rights.	• Planning and Development • $5,000 + staff time • November 2009	In Progress	Keep	Building codes regarding military base hazard mitigation is complete other codes are on-going.
7	Bridge and Box culverts Inspection Program	Maricopa County Department of Transportation will inspect and monitor all structures (bridges and box culverts) under their control on a semi-annual basis.	• Transportation • $150,000 • November 2009	In Progress	Keep	1068 Number of inspections conducted since 2004.
8	Research Microburst	Pursue partnerships with the National Weather Service and State Universities to research the prediction of microburst.	• Emergency Management • $50,000 • December 2009	No action	Delete	No action due to unavailable funding. Delete: Not related to hazard mitigation

Table 6-7-15: Summary of Unincorporated Maricopa County assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
9	Environmental and Epidemiological Surveillance Activities	Conduct and enhance environmental and epidemiological surveillance activities in those areas identified as being of high public health importance and related to environmental factors such as; air quality, drinking water/public water systems and water/wastewater treatment plant operations, food safety and protection and vector control activities. Surveillance activities must include the identification of vulnerabilities and environmental factors that may contribute to the transmission of the communicable diseases associated with the operation and presence of these facilities in Maricopa County, as well as the implementation of preventative action which may be applied to reduce or eliminate the potential for transmission of communicable illnesses. Develop and improve the system of coordination and communication of these findings, trends and observations with other federal, state and local agencies that have similar or related interest.	• Public Health • $100,000 • November 2009	In progress	Delete	Recommend deletion due to this item is not related to natural hazard mitigation. This item is covered under public health management practices and policies.
10	Luke AFB	Provide County leadership role in support of efforts to limit development in the departure and approach corridors for Luke Air Force Base.	• Emergency Management • $100,000 • November 2009	No Action	Delete	Emergency management has not had the resources to take a primary role. Recommend deletion due to this item is covered under the County's strategic priorities.

Table 6-7-15: Summary of Unincorporated Maricopa County assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
11	GIS Data and Information	Through the Maricopa County Regional Leadership program, establish Maricopa County as a central source for regional geographic information system data and information.	• Assessor's Office • $500,000 • November 2009	Complete	Delete	Action accomplished and this item is covered under the County's strategic priorities.
12	Bridge/Culvert Construction	Encourage bridge or culvert construction where roads are in locations susceptible to flooding.	• Transportation • $ 7M • November 2009	In Progress	Keep	Number of projects completed = 10
13	CERT Teams	Provide program direction in support and development of Community Emergency Response Teams (CERT) teams.	• Emergency Management • $100,000 • November 2009	In Progress	Delete	17 teams have been formed since 2004. Delete: Not related to natural hazard mitigation

Table 6-7-16: Summary of Mesa assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Update General Plan	Update the City of Mesa General Plan every five years	• Planning, City Council • N/A • March 2009	Completed	Delete	Project is reviewed annually and revised every 10 years. (Due March 2011).
3.A.1	Fund storm/sewer projects	Continue to design, prioritize and fund storm sewer projects as needed in the City of Mesa.	• Development & Sustainability Div, City Manager, City Council • ??? Million + • N/A	In Progress	Delete	Several storm drain projects in N/E & S/E Mesa are in various stages of design and construction. No longer an action item.

Table 6-7-16: Summary of Mesa assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.A.1	Maintain certification	Emergency Management Division will work to maintain our certification as a "Storm-ready Community".	• Fire Department, Developmental Services, General Services • N/A • May 2009	In Progress	Delete	Conducted a Storm Watcher class and will seek to host at least one annually. Determined to be more preparedness and response.
6.A.3	Water resource portfolio	Continue to develop and protect a diverse water resources portfolio.	• Water Resources Dept • N/A • N/A	In Progress	Delete	Department has been reorganized, A Water Resources Director has been placed to manage both potable and wastewater.
7.A.2	Immunizations	City of Mesa Fire Department will continue to provide immunizations.	• Fire Department • $20,000 • August 2009	In Progress	Delete	The City is committed to continue providing immunizations to citizens and first responders. No longer a primary hazard.
7.A.3	Test drinking water	City of Mesa Water Department will continue to test and treat drinking water.	• Water Resources • >$70,000 • N/A	In Progress	Delete	Drinking water is tested on an annual and continuous basis. Not really mitigation, so will be dropped
7.B.1	Surveillance	Increase surveillance at water treatment facility.	• Utilities, Police, Fire • >$1,000,000.00 • August 2008	In Progress	Delete	Surveillance equipment and monitors were installed after the Threat, Vulnerability Assessments were complete at the water treatments sites. Relates more to human-caused hazards and will be dropped
9.A.2	Mitigate terrorism	City of Mesa Emergency Management will continue to work with partners on the County, State, and Federal level to mitigate the effects of terrorism in the City of Mesa.	• Fire, Police • N/A • N/A	In Progress	Delete	Seek funding sources to continue Target Hardening projects. Relates more to human-caused hazards and will be dropped
9.B.3	Identify at-risk assets	Identify funding and secure assets most at risk.	• Fire, Police, City Manager, City Council • N/A • N/A	In Progress	Delete	Over the past 5 yrs several million dollars have been spent on target hardening and site security. This effort will continue through Homeland security funding. Relates more to human-caused hazards and will be dropped

Table 6-7-16: Summary of Mesa assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
8.A.1	Training	Increased training of hazardous material team members, Bomb Technicians, SWAT Team and all first responders.	• Fire, police • >1,000,000 • N/A	In Progress	Delete	100 + first responders have been certified and completed continuing education over the past 60 months. More response and preparedness so will be dropped.

Table 6-7-17: Summary of Paradise Valley assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.B.1	Building Codes	Adopt the most current International Building Codes for use by the Town.	• Town Council, Town Planning, Community Development • N/A • N/A	Complete	Keep	2006 editions of the International Building Codes were effective on July 1, 2007. Building Codes are updated every three years so the 2009 codes will be adopted in 2010.
1.A.1	General Plan	Update the Town's General Plan to include goals and policies to limit development in identified hazard areas.	• Town Council, Town Planning, Community Development • N/A • N/A	Complete	Delete	The General Plan, in the Zoning Ordinance, has been updated in 2005 to limit develop in identified hazard areas.
1.A.2	Zoning Ordinance	Update the Zoning Ordinance with provisions to regulate and restrict development in identified hazard areas.	• Town Council, Town Planning, Community Development, Engineering Department • N/A • N/A	Complete	Delete	The Zoning Ordinance has been updated in 2005 to limit develop in identified hazard areas.
4.A.5	Maintain Washes	Public Works Department to ensure that washes are maintained in a debris free condition through a regular inspection program.	• Public Works Department • N/A • N/A	In Progress	Revise	A perpetual item that has been assumed by the Building Safety Department.

Table 6-7-17: Summary of Paradise Valley assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4.B.1	Channelization	Engineering Department - Continued development of designated floodplain channelization.	• Engineering Department • N/A • N/A	No action	Delete	The Town Engineer has determined that there is no need for any channelization.
6.A.1	Underground Utilities	Engineering Department – Continue the under grounding project for existing utilities on major roads thereby eliminating utility poles.	• Town Council, Engineering Department, Neighborhoods, Utility Department, Contractor • N/A • N/A	In Progress	Keep	Project is 86% complete.
5.A.1	Inspect Washes	Public Works Department – Conduct regular inspections of washes and take corrective action by enforcing existing ordinances to prevent a corridor for wildfires.	• Public Works, Rural Metro Fire Department • N/A • N/A	In Progress	Revise	A perpetual item that has been assumed by the Building Safety Department.
8.A.1	Emergency Operations Plan	Police Department, Emergency Management Unit – Ensure the Emergency Operations Plan is current.	• Town Council, Police Department • N/A • N/A	Complete	Revise	The Emergency Manager position has been transferred from the Police Department to the Building Safety Department.
2.A.1	Educate Public	Educate and inform residents, businesses and visitors by conduct a media campaign, via local newspaper and the Town Reporter to publicize ways to mitigate disasters including steps that they can protect themselves.	• Police Department • N/A • N/A	In Progress	Revise	The Public Education function has been transferred from the Police Department to the Building Safety Department.

Table 6-7-17: Summary of Paradise Valley assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
2.B.1	Communications	All Departments - Maintain effective communications with state, county and local government agencies by the various Town departments within their respective responsibility.	• Town Manager, Management Department, Engineering Department, Community Development, Public Works, Police Department • N/A • N/A	In Progress	Keep	A perpetual item that requires consistent participation.

Table 6-7-18: Summary of Peoria assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1D1	GIS Mapping	Include all identified hazardous conditions in GIS mapping to include floodways, high wind areas, subsidence areas, hazardous materials, etc.	• IT, Engineering Department • N/A • N/A	In progress	Keep	GIS staff will continue to updates maps
4B3	Local Training	Train key city staff on appropriate actions and measures.	• Safety Coordinator, Emergency Coordinator • N/A • N/A	In progress	Keep	EM staff will continue to train City employees as required
3A3	Regional Training	Participate in regional training opportunities as well as Emergency Operations Command exercises within City to prepare for emergencies.	• T Safety Coordinator, Emergency Coordinator • N/A • N/A	In progress	Keep	As available the City staff will participate in regional exercises

Table 6-7-18: Summary of Peoria assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
9A1	Fire Dept. Training	All Fire Department personnel should be trained at Operations level, currently command staff are trained at Operations – rest of personnel are trained at awareness level. Plan to provide additional levels of training by 2005	• Fire Chief, Training Officer • N/A • N/A	In progress	Keep	Due to staffing changes this is an ongoing issues
9A1	Police Dept. Training	Police Department personnel should be trained at Operations level, currently command staff are trained at Operations – rest of personnel are trained at awareness level. Plan to provide additional levels of training by 2005	• Fire Chief, Training Officer • N/A • N/A	In progress	Keep	Due to staffing changes this is an ongoing issues
10B2	Security Plans	Develop security plans for key assets and infrastructure	• Utilities and Public Works Department, Emergency Management Coordinator, Police Department • N/A • N/A	Complete	Delete	TLO's have completed security plans for key sites
5C1	Development Control	Control development in flood areas	• Engineering Department • N/A • N/A	In progress	Keep	Performed as a regular part of the development review process
6C2	Flood-Proof Measures	Encourage flood-proof measures through building design	• Community Development • N/A • N/A	In progress	Keep	Performed as a regular part of the development review process
8A3	PSAs	Maintain Public Service Announcements (PSAs) broadcast on Channel 11. Fliers produced and distributed to residents.	• Public Information Manager • N/A • N/A	In progress	Keep	PSAs are aired on a regular basis

Table 6-7-18: Summary of Peoria assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
	Drought	Research identified data limitations effecting the relative vulnerability of assets from drought	• GIS, Water Resources Division • N/A • N/A	In progress	Keep	Work with city and county departments to determine affects to the city of an extended drought
2A2	Mitigation Brochure	City Public Information Office to develop mitigation brochure and to coordinate Speakers Bureau.	• Public Information Officer • N/A • N/A	No Action	Delete	PIO was unaware of this action was not ready to move forward.

Table 6-7-19: Summary of Phoenix assessment of previous plan cycle mitigation actions/projects

Action Item	Name	Description	• **Lead Dept/Function** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Revise General Plan	Revise and ratify the General Plan by the voters every 10 years	• **Lead:** Planning Dept. • **Cost:** General Fund • **Date:** 2010	In Progress Due 2010	Keep	Planning every ten years revises the General Plan based on State Statutes. The Planning Commission recommends and the City Council approves the updated General Plan. The General Plan Map is a guide to identify where future build-out areas might or might not occur.
1.A.2	Update General Plan	Update the General Plan (every ten years) annually, particularly the Safety Element	• **Lead:** Planning Dept • **Cost:** General Fund • **Date:** 2010	In Progress	Delete	Planning every ten years revises the General Plan based on State Statutes…. Same as 1.A.1

Table 6-7-19: Summary of Phoenix assessment of previous plan cycle mitigation actions/projects

Action Item	Name	Description	• Lead Dept/Function • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.B.1	Update Building Codes	Update and adopt a revised building code	• **Lead:** Development Services Dept. (DSD) • **Cost:** General Fund • **Date:** 2006 & 2008	Complete	Keep	2006 Phoenix Building Construction Code, Building Code, Residential Code, Existing Building Code, Energy Conservation Code, Mechanical Code, Uniform Plumbing Code and 2008 National Electrical Code were all adopted. DSD has the responsibility to revise, update, and adopt the building codes. The Planning Department plays an advisory role only.
1.C.1	Zoning Compliance	Continue to insure that zoning stipulations are met before construction permits are issued and that zoning is compatible with the General Plan	• **Lead:** Development Services Dept. (DSD)/Review • **Secondary:** Planning Dept/Advise & provide re-zoning hearings & ZA hearings • **Cost:** General Fund • **Date:** Ongoing	In Progress	Keep	This is a dynamic ongoing process that changes with each permit review. The permit reviews are made by DSD's staff following the zoning ordinance as a rule book & will not issue a permit unless all zoning stipulations are met prior to construction (if any stips). Planning staff at the zoning counter help customers with zoning & General Plan information; set up appointments for re-zoning hearings and zoning adjustment (ZA)/use permit hearings. The re-zoning & ZA hearings are adjudicated by an impartial contract officer hired by the Planning Dept. Contract Officers can add stipulations if the case is approved. The Planning Commission & City Council review & approve the hearing officer findings (both can add stipulations), & the Board of Adjustment reviews the appeals & can overturn the findings.

Table 6-7-19: Summary of Phoenix assessment of previous plan cycle mitigation actions/projects

Action Item	Name	Description	• Lead Dept/Function • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.D.1	Open Space	Continue to include in the General Plan policies that protect the natural flow regimes of washes and designate areas for Open Space. Continue to identify flood-prone areas that are potentially hazardous on the General Plan Map as Preserves or Open Space.	• **Lead:** Parks & Recreation • **Secondary** Planning • **Cost:** General Fund • **Date:** 2010	In Progress	Revise	The General Plan's Open Space Element provides policies and recommendations to preserve lands with greater than 10% slope, promote natural drainage areas and native vegetation by maintaining the natural flow regimes, and limit commercial activities to only the authorized use by the Parks & Recreation Board in these preserve areas. It also promotes adjacent land management strategies by allowing homeowners to clear brush that could create a fire hazard on their lands (using fire-breaks at least 10 feet wide). Parks and Recreation along with other departments coordinate a strategy for future land acquisitions to hold lands as open space and/or as park areas. The General Plan Map is a guide to identify where future build-out areas might or might not occur.
1.D.2	Setbacks and Buffers	Continue to apply zoning rules that require setbacks and buffers. The Planning Commission will add stipulations to mitigate specific conditions on each rezoning, or zoning adjustment hearing	• **Lead:** Development Services Dept./Review • **Secondary:** Planning/Advise & provide re-zoning hearings and ZA hearings • **Cost:** General Fund • **Date:** Ongoing	In Progress	Revise	This is a dynamic ongoing process that changes with each permit review. ….Same as 1.C.1

Table 6-7-19: Summary of Phoenix assessment of previous plan cycle mitigation actions/projects

Action Item	Name	Description	• Lead Dept/Function • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.E.1	Data Sharing and Communications	Coordinate data sharing and development communication within City departments	• **Lead:** Development Services • **Secondary:** Planning • **Cost:** General Fund • **Date:** 2010	In Progress	Keep	Data Limitations: 1) When land already has the proper zoning entitlements, Planning does not always know immediately when and where developments may occur because a given development did not go through the re-zoning or ZA process. Action Item: 2) Planning & DSD made some recent changes in reporting Preliminary Permits directly to GIS staff in Planning. Planning GIS staff: (as of January 1, 2009), now add all the new prelim data to a shape file for the purpose of tracking potential future developments geo-spatially.
2.A.1	Public Involvement	Solicit public input on the General Plan during public meetings.	• **Lead:** Planning Dept. • **Cost:** General Fund • **Date:** 2009 through 2010	In Progress	Keep	Several public meetings soliciting input will be conducted in 2009. Planning submits a draft of the General Plan to Village Planning Committees (VPCs) for comment and/or approval in 2009. VPCs have "advisory" powers of approval, not final approval.
2.A.2	Publish General Plan	Publish the Safety Element along with the text of the whole General Plan on the web.	• **Lead:** Planning • **Cost:** General Fund • **Date:** Was on-line throughout the past 10 year period. New plan will be published in 2010	In Progress	Revise	The General Plan Safety Element is readily available in pdf format along with all of the other chapters in the General Plan. The Safety Element addresses Soil and Geologic Hazards, Fire Hazards and other man-made hazards.

Table 6-7-19: Summary of Phoenix assessment of previous plan cycle mitigation actions/projects

Action Item	Name	Description	• **Lead Dept/Function** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
9.A.1	General Plan Development Guidelines	Continue to insure the General Plan precludes development from geologically hazardous areas has policies that address developments on or down-gradient of geologically hazardous or flood-prone areas	• **Lead:** Planning • **Cost:** General Fund • **Date:** 2010	In Progress	Revise	The General Plan's Safety Element provides policies to protect the community from soil contamination, failure erosion and geologic instability. The General Plan's Natural Resources Conservation Element provided policies that address the protection from flooding & erosion, natural vegetation preservation and other wildlife issues.

Table 6-7-20: Summary of Queen Creek assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.B.1	Sonoqui Wash FDS	Sonoqui Wash Floodplain Delineation Study – Determine the extent of the floodplain and submit to FEMA for review.	• FCDMC, Public Works • N/A • N/A	In Progress	Revise	FCDMC has completed the Floodplain Delineation Study for the main portion of the Sonoqui Wash. Revise description to address study for the Sonoqui Wash East Branch.
7.B.3	Overhead Utility Structures	Overhead Utility Structures – Underground existing overhead utility structures to protect assets from damage caused by felled structures and wires.	• Public Works, Local Utility Service • N/A • N/A	In Progress	Revise	A number of projects have been completed since 2004. Revise description to reflect identified projects.
5.A.1	Sonoqui Wash HMP	Extend Sonoqui Wash Hydraulic Master Plan into Pinal County to the headwaters of the drainage basin.	• Pinal County, Public Works, FCDMC • N/A • N/A	In Progress	Keep	Smaller design projects have been completed to address local flooding issues but a complete HMP has not been undertaken.
5.A.4	Channels and Basins	Projects to develop channels and retention basins along Queen Creek Wash and Sonoqui Wash.	• Public Works, FCDMC • N/A • N/A	In Progress	Revise	A number of channelization projects have been completed since 2004. Revise description to reflect identified projects.

Table 6-7-20: Summary of Queen Creek assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4.A.1	GIS	Develop Geographical Information System (GIS)	• Community Development, Public Works, Parks and Recreation Department • N/A • N/A	Complete	Delete	Basic GIS system is operational with two administrators assigned.
3.B.1	Town EOP	Continue to develop Town Emergency Operations Procedures	• MCDEM, Town Council, Public Works, Community Development, Administrative Department • N/A • N/A	Complete	Delete	Town EOP was updated and approved in September 2007.

Table 6-7-21: Summary of Salt River Pima-Maricopa Indian Community assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	General Plan	Community Development Department to update general plan	• Community Development, Tribal Council • N/A • N/A	Complete	Delete	General plan was updated and adopted by Tribal Council in December of 2006. Funding for the update was provided through SRPMIC general fund dollars.

Table 6-7-21: Summary of Salt River Pima-Maricopa Indian Community assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
2.A.1	Public Campaign	Community Relations to work on public campaign	• Emergency Manager • N/A • Ongoing	In progress	Keep	Public campaign has been put in place and will be an ongoing project. Efforts include numerous newspaper articles, website developed, presentations to Tribal Council, emergency preparedness brochures mailed to every home in the Community. Work to date has been funded using SRPMIC general fund dollars.
2.B.1	Neighborhood Outreach	Fire and Police to work with neighbors through meetings (quarterly)	• Fire Chief, Police Chief • N/A • Ongoing	In progress	Keep	Emergency Manager has presented emergency preparedness presentation at numerous neighborhood meetings, senior citizen meetings. This effort will continue and will be an ongoing effort. Work to date has been funded using SRPMIC general fund dollars.
3.A.1	TERC Training	Hold Tribal Emergency Response Commission (TERC) training regarding hazard mitigation principles	• Fire Chief, Police Chief • N/A • N/A	Complete	Delete	Tribal Emergency Response Commission is meeting on a regular basis and Mitigation actions are incorporated into the meetings. Work to date has been funded using SRPMIC general fund dollars.
3.B.1	Hazard Mitigation Plans	Emergency manager to develop hazard mitigation plans	• Fire Chief, Tribal Council • N/A • N/A	In progress	Delete	With a full time emergency manager now in place in the Community, coordination with local, regional, state, and federal agencies is taking place on a daily basis. SRPMIC is represented at all emergency management meetings in our region. These mitigation efforts will continue and are now part of the Community's Emergency Management Program. Work to date has been funded using SRPMIC general fund dollars.

Table 6-7-21: Summary of Salt River Pima-Maricopa Indian Community assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.A.1	Plan Development	Community Development Department, Engineering and Construction Services, and Public Works to develop plan	• Fire Chief, Tribal Council • N/A • N/A	No action	Delete	Staff and resources are not available at this time to commit to this project, and with the recent economic impact to our Community, this lack of resources will remain for some time.
7.D.1	Building Surveys	Engineering and Construction Services and Community Development Department to survey buildings and develop list	• Fire Chief, Tribal Council, ECS Director, Community Development, Public Works • N/A • N/A	No action	Delete	Staff and resources are not available at this time to commit to this project, and with the recent economic impact to our Community, this lack of resources will remain for some time
9.A.1	Public Health Plan	Public Health and Cultural and Environmental to develop a plan	• Fire Chief, Tribal Council, Public Health Director, Cultural Director • $20,000 • N/A	Complete	Delete	A Pandemic Emergency Response Plan was completed in 2008. Work to date has been funded using SRPMIC general fund dollars.
10.A.1	Hazardous Materials Survey	Fire Department to develop a hazardous materials survey	• Fire Chief • N/A • January 2010	In progress	Keep	Building surveys are being completed by fire department. Emergency Management is meeting with fire department to increase the efficiency of Tier ll reporting. This project will enhance our knowledge and record keeping as it relates the hazardous chemicals that are stored in our Community. Work to date has been funded using SRPMIC general fund dollars.
11.A.1	Emergency Plan	TERC and the Emergency Manager will work on a comprehensive list to be used in preparation of a plan	• Fire Chief • N/A • N/A	Complete	Delete	Emergency Operations Plan was updated in 2008. A detailed list is not needed at this time for this plan. This may be considered in the future if additional staff resources change are available for this effort. Work to date has been funded using SRPMIC general fund dollars.

Table 6-7-22: Summary of Scottsdale assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Review Ordinances	Continue to review plans and ordinances	• Planning and Development • N/A • Continuous	In Progress	Keep	This is a continuous process where ordinances are reviewed and revised in applicable.
1.B.1	Review Codes	Review codes and procedures	• Planning and Development • N/A • Continuous	In Progress	Keep	This is a continuous process where coded are reviewed and revised in applicable.
2.A.1	City Council Support	City Council will support actions that will reduce the possibility of damage and losses due to floods.	• City Council, Planning and Development, Water Resources Manager • N/A • N/A	In Progress	Keep	N/A
2.B.1	Planning	Work with current planning department and builders	• Planning and Development, Local Builders • N/A • N/A	In Progress	Keep	
3.A.1	Drought Management	Implement Council-adopted drought management plan as required.	• City Council, Water Resources Manager • N/A • N/A	Complete	Delete	This was accomplished through the City Major Emergency Operations Plan and the City's Continuity of Operations Plan
3.B.1	Drought Impacts	Incorporate drought-related impact on facilities into existing emergency response plan.	• City Council, Water Resources Manager • N/A • N/A	Complete	Delete	This was accomplished through the City Major Emergency Operations Plan and the City's Continuity of Operations Plan
3.C.1	Arizona Drought Task Force	Participate in Governor's Arizona Drought Task Force to insure that impacts on City of Scottsdale are considered.	• City Council, Water Resources Manager • N/A • N/A	In Progress	Keep	This is a continuous process.

Table 6-7-22: Summary of Scottsdale assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
3.C.2	Coordination	Coordinate with Water Resources Department to implement drought management plan as appropriate.	• City Council, Water Resources Manager • N/A • N/A	Complete	Delete	This was accomplished through the City Major Emergency Operations Plan and the City's Continuity of Operations Plan
3.C.3	Water Conservation	Continue participation in ongoing joint water conservation information programs.	• City Council, Water Resources Manager • N/A • N/A	In Progress	Keep	This is a continuous process.
3.D.1	Survey Assets	Conduct survey of City assets and property to determine vulnerability in case of water supply shortage. Modify City emergency management and drought management plans as necessary.	• City Council, City Manager, Water Resources Manager • N/A • N/A	Complete	Delete	This was accomplished through the City Major Emergency Operations Plan and the City's Continuity of Operations Plan

Table 6-7-23: Summary of Surprise assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
2.A.1	PDM Funding	Seek availability of funding sources for pre-disaster mitigation and hazard mitigation	• Finance Department, Public Works Department, Emergency Management, City Council • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*
5.A.2	Flood Facilities	Develop program and coordinate actions with FCDMC to access, mitigate, upgrade and redesign flood facilities.	• Public Works Department, Local Utilities • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*

Table 6-7-23: Summary of Surprise assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
5.A.5	Infrastructure Construction Program	Develop program that identifies bridge and culvert construction in flood susceptible areas	• Public Works • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*
1.A.1	Development Guidelines	Access and update guidelines that limit development in hazard areas	• Planning Department/Commission, City Council • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*
3.A.2	Reverse 911 System	Develop and implement reverse 911 system within the city	• Emergency Services, City Council • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*
7.B.1	Severe Weather Vulnerabilities	Develop a program to perform periodic assessments that identifies vulnerabilities to severe weather within the city	• Emergency Services, Public Works, Planning Department • N/A • N/A	*(None Provided)*	*(None Provided)*	*(None Provided)*

Table 6-7-24: Summary of Tempe assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1A1	General Plan	Maintain City General Plan	• City Manager • N/A • N/A	Complete	Delete	The General Plan is continually reviewed as a regular process.
2A1	Public Education	Continue with Public Education programs through Project Impact	• Fire Chief • N/A • N/A	Complete	Delete	Project Impact was completed in 2004.

Table 6-7-24: Summary of Tempe assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
2C3	CERT Program	Maintain CERT Program	• Fire Chief • N/A • N/A	In Progress	Keep	Ongoing program with over 200 people trained.
2D1	Publicize State Programs	Seek Funding to publicize State Programs	• Fire Chief • N/A • N/A	Complete	Delete	Accomplished with Project Impact
2E1	City Codes	Maintain existing City Codes	• City Manager, All City Departments • N/A • N/A	Complete	Delete	City Codes are continually reviewed as a regular process.
3A1	Workshop Funding	Seek funds for workshops and conferences	• Fire Chief • N/A • N/A	In Progress	Keep	Will continue to seek funding as available.
5A1	Flood Control	Maintain existing Flood Control systems	• Public Works, Water Utilities • N/A • N/A	In Progress	Keep	City of Tempe Public Works and Water Utilities continually seek to improve storm runoff capabilities. City code requires through Development Services on-site storm water retention.

Table 6-7-24: Summary of Tempe assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
7A1	Drought Management Plan	The City of Tempe Water Utilities Department has a comprehensive set of planning documents that outline future water systems operations, including specific drought contingency plans and water system operations during drought cycles. Planning documents include the 1997 Tempe Water Resources Plan (updated in 2002), the 1999 Tempe Integrated Water System Master Plan, and the 2002 Drought Management Strategy Plan. Tempe has implemented a number of measures from these plans to diversity the City's water resources and to lessen the impact of drought on our community. Tempe will continue to develop additional groundwater storage and recovery programs to significantly reduce potential drought impacts. These efforts include storing, CAP water and reclaimed water in aquifers for future recovery (over 85,000 acre-feet stored since the mid-1990s), and capital improvement projects to add new municipal wells and increase recovery well pumping capacity.	• Water Utilities • N/A • N/A	In Progress	Keep	Tempe recognizes that our region is experiencing drought conditions. Tempe actively promotes drought management plans with partnerships with other municipalities and agencies.
8A1	Emergency Management Plan	Maintain Emergency Management Plan	• Fire Chief • N/A • N/A	In progress	Keep	The City Emergency Management Plan is revised at least once every two years, most recently in October 2008 to ensure NIMS compliance.
9B1	Maintain HAZMAT	Maintain HAZMAT	• Fire Chief • N/A • N/A	In progress	Keep	The Hazardous Materials Response Team is an ongoing program.
9F1	Maintain Cameo and ECS	Maintain Cameo and ECS	• Fire Chief • N/A • N/A	In progress	Keep	CAMEO and ESS are integral components of emergency response and emergency management.

Table 6-7-25: Summary of Tolleson assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1.B.3	Education Public Officials	Educate public officials on the need of mitigation plan.	• Fire Chief • N/A • N/A	In Progress	Keep	This is a continuous process to keep all old and new officials aware of any changes.
5.D.1	Flood Control	Installing more drains, require more retention areas, and elevate property.	• Building Department Director, Planning Director • N/A • N/A	In Progress	Keep	Continuous with any new developments and building coming into the city.
2.E.1	Building Codes	Review existing building codes to determine if they adequately protect new development in hazard areas.	• Building Department Director • N/A • N/A	In Progress	Keep	Continuous with the any new developments and building coming into the city.

Table 6-7-26: Summary of Wickenburg assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
1	By Pass	Encourage ADOT and MCFCD to work with the Town to design the proposed bypass around downtown Wickenburg with the dual purpose of efficiently moving traffic and protecting the adjacent neighborhoods from the 100 year flood events on the Hassayampa River and Sols Wash.	• Planning and Zoning • $15 million • Dec 2009	In progress	Revise	Sols Wash was completed in March 2009.
2	Neighborhood Maintenance Ordinance	Develop and recommend adoption of a neighborhood maintenance ordinance to mitigate fire hazards in residential areas.	• Planning and Zoning • $5,000 + staff time • July 2010	In Progress	Keep	
3	Setback Ordinance	Develop and recommend adoption of a code that will require a minimum setback from regulatory floodways and washes.	• Planning and Zoning • $5,000 + staff time • December 2010	In progress	Keep	

Table 6-7-26: Summary of Wickenburg assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
4	Public Education	Develop a section of the Town's webpage to address hazard mitigation measures that may be employed by home and business owners	• Emergency Management • $10,000 + staff time • Dec 2014	In Progress	Keep	
5	Camera Security	Investigate the possibility of installing cameras at the Town's well sites, waste water treatment plants and other critical infrastructure elements.	Police $50,000 December 2014	In progress	Delete	No funding available. Project not related to natural hazard mitigation.

Table 6-7-27: Summary of Youngtown assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
7.D.3	WMD Awareness Training	Train all Public Works and Law Enforcement in First Responder Weapons of Mass Destruction (WMD) awareness	• Town Manager • N/A • N/A	In Progress	Keep	All personnel were trained in NIMS 700 & 800 & ICA 100 & 200. Additionally supervisors and managers are being trained in ICA 300 and 400 as appropriate to position. New hires are trained after initial training or during FTO. Training updated during in-service as needed.
7.D.4	1st Responder Equipment	Provide Police and Public Works with 1st Responder protective equipment.	• Council • N/A • N/A	Complete	Delete	Purchased with funds from DHS grant to City of Glendale for West Valley agencies. Action item complete, but equipment will be replaced/upgraded as necessary.
8.C.1	Development Guidelines	Provide Town leadership role in support of efforts to limit development in the departure and approach corridors for Luke Air Force base.	• Council, Mayor • N/A • N/A	Complete	Keep	Council and management have made numerous policy statements in support of these efforts. Mayor, Town Manager and other management personnel sit as members of various committees.

Table 6-7-27: Summary of Youngtown assessment of previous plan cycle mitigation actions/projects

ID	Name	Description	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
1.A.1	Master Plan	Adopt the new Master Plan. Modify with additional guidelines, regulations, and land use techniques as necessary within the limits of state statutes, while also respecting private property rights.	• Mayor Council • N/A • N/A	Complete	Keep	New master plan adopted, but will be revised from time to time as needed.
3.B.2	Shelter-in-Place Educational Program	Develop a Shelter-in-Place Educational program	• Town Administration • Police Staff • Emergency Manager	No Action	Keep	No action taken. Program will be developed as part of emergency operations plan.
5.C.2	Website Development	Promote the availability of information from county webpage.	• Town Manager • IT Consultant • Cost estimate $6,000	In Progress	Keep	Link will be included on Home Page of new Town website now under development and scheduled to be on-line by second-quarter of FY2010.
5.C.1	Weather Radios	Encourage the use of weather radios, especially in schools, rest homes, convalescent homes, retirement centers and other locations where people congregate to inform them of the approach of severe weather.	• Town Manager • Emergency Manager • Code Compliance	No Action	Keep	Will be included in upcoming article in Youngtown Village Reporter on various emergency operations plans being implemented in Town.
6.A.1	Xeriscaping	Mandate, where Appropriate, the use of xeriscaping or desert landscaping in all Town projects.	• Town Council • N/A • N/A	Complete	Delete	Mandate not enacted, however Town recommends low/no-water landscaping in Building Safety and Code Compliance brochures.

6.3.2 New Mitigation Actions / Projects and Implementation Strategy

Upon completion of the assessment summarized in Section 6.3.1, each jurisdiction's LPT met and developed new A/Ps using the goals and objectives, results of the vulnerability analysis and capability assessment, and the planning team's institutional knowledge of hazard mitigation needs in the community. The A/Ps can be generally classified as either structural or non-structural. Structural A/Ps typify a traditional "bricks and mortar" approach where physical improvements are provided to effect the mitigation goals. Examples may include channels, culverts, bridges, detention basins, dams, emergency structures, and structural augmentations of existing facilities. Non-structural A/Ps deal more with policy, ordinance, regulation and administrative actions or changes, buy-out programs, and legislative actions. For each A/P, the following elements were identified:

- **ID No.** – a unique alpha-numeric identification number for the A/P.
- **Description** – a brief description of the A/P including a supporting statement that tells the "what" and "why" reason for the A/P.
- **Hazard(s) Mitigated** – a list of the hazard or hazards mitigated by action.
- **Community Assets Mitigated** – a brief descriptor to qualify the type of assets (existing, new, or both) that the proposed mitigation A/P addresses.
- **Estimated Costs** – concept level cost estimates that may be a dollar amount or estimated as staff time.

Once the full list of A/Ps was completed to the satisfaction of the LPT, the team then set to work developing the implementation strategy for those A/Ps. The implementation strategy addresses the *"priority, how, when, and by whom?"* questions related to the execution and completion of an identified A/P. Specific elements identified as a part of the implementation strategy included:

- **Priority Ranking** – each A/P was assigned a priority ranking of either "High", "Medium", or "Low". The assignments were subjectively made using a simple process that assessed how well the A/P satisfied the following considerations:
  - A favorable benefit versus cost evaluation, wherein the perceived direct and indirect benefits outweighed the project cost.
  - A direct beneficial impact on the ability to protect life and/or property from natural hazards.
  - A mitigation solution with a long-term effectiveness
- **Planning Mechanism(s) for Implementation** – where applicable, a list of current planning mechanisms or processes under which the A/P will be implemented. Examples could include CIPs, General Plans, Area Drainage Master Plans, etc.
- **Anticipated Completion Date** – a realistic and general timeframe for completing the A/P. Examples may include a specific target date, a timeframe contingent upon other processes, or recurring timeframes.
- **Primary Agency and Job Title Responsible for Implementation** – this would be the agency, department, office, or other entity and corresponding job title that will have responsibility for the A/P and its implementation.
- **Funding Source** – the source or sources of anticipated funding for the A/P.

Tables 6-8-1 through 6-8-28 summarize the updated mitigation A/P and implementation strategy for each participating Plan jurisdiction. Projects listed in *italics font* are recognized as being more response and recovery oriented, but are considered to be a significant part of the overall hazard management goals of the community.

Table 6-8-1: Summary of mitigation actions and projects and implementation strategy for Avondale

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)
6	Enhance the Community Center's abilities to serve as cooling station during times of extreme heat.	Extreme Heat	New	$150,000	High	Engineering review/plans approval	2011	Emergency Manager / Building Official / Social Services	General Funds, Grants
1	Review building permits for compliance with Floodplain Ordinance and NFIP regulations.	Flood	Both	Staff time	Medium	Staff Training Floodplain Regulations	Annual-Ongoing	Planning/City Planner	General Fund Permit Fees
2	Partner with Phoenix International Raceway and other stakeholders in matters of site safety of open air seating . to mitigate potential damages or failures due to microburst winds.	Severe wind	Both	$100,000	Medium	Engineering review, plans approval	2013	Planning/planner-Engineering/City Engineer-Fire Marshal/Inspector	Public/private-Grants
3	*Enhance the City of Avondale's capabilities to alert its citizens in time of emergency via radio, internet and texting (English and Spanish) to mitigate losses to human life during a natural disaster.*	*All Hazards*	*New*	*$140,000*	*Medium*	*Staff training, I.T. support/public outreach*	*2012*	*Emergency Manager/I.T. Public info officer.*	*General funds, Grants*
4	*Upgrade the current EOC and recommend the construction of a new and more secure facility.*	*All Hazards*	*Both*	*$250,000*	*Medium*	*Current standards (NFPA) plans review*	*2014*	*Emergency Manager/I.T. Fire Marshal, Police/ Field Ops*	*General Funds , Grants.*
5	*Provide CERT training to all citizens and city groups upon request.*	*Extreme Heat, Severe Wind, Drought, Flood, Wildfire.*	*Both*	*Staff time*	*Low*	*Staff Training, Community volunteers*	*2011*	*Emergency Manager, Public educator.*	*Ongoing grant funding.*
7	Partner with Maricopa County Flood Control to provide channelization of the Agua Fria and Gila rivers.	Flooding	New	Unknown	Low	Planning, City Engineer/ Floodplain Regulations	2016	Planner/Emergency Manager. FCDMC	Grants

Table 6-8-2: Summary of mitigation actions and projects and implementation strategy for Buckeye

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Water resource Director /Damon DeQuenne/ Floodplain Administrator	General Fund Permit Fees
7	Meet with flood control and state land to develop cut Wildfire breaks at key locations in the Gila River	Wildfire/Flood	Both	Staff time	High	Participation into Maricopa County Wild land urban interface planning project/ Create West valley interface task force. Work with MCDEM and county flood control in establishing program development	On going/ Implement into Wildfire Department 5 year Strategic Planning	Fire Department / Fire Chief	General fund
10	Develop water conservation plan.	Flood/Drought	Both	Staff time	High	Create and establish plan with adoption of Town Ordinances. Meet the guidelines of Arizona Dept of Water Resources	Submitted for initial start of 1-1-20010	Water Resource Department Director/ Damon DeQuenne	Enterprise funds

Table 6-8-2: Summary of mitigation actions and projects and implementation strategy for Buckeye

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)
2	Conduct annual life safety inspections	Wildfire	New	Staff time	Medium	Formal induction into Wildfire Department Strategic Plan/ Formalization of Wildfire Prevention Division/ Community Development and Code Enforcement enacted as new division under Wildfire Department	On going with formalization approved with Town staff and council	Wildfire Department/ Wildfire Chief	General Fund
4	Enhance communication of Town needs at the County and State level	Flood/ Wildfire / Severe Wind	New	Staff time	Medium	Establish Liaison positions from town to State legislature, State Fusion Centers, MCDEM, Water fusion group, MAG and other multi jurisdictional task force work groups	On going with Staff and Council approval, subject to local strategic planning groups	Town wide with department head approvals/Supported by Mayor and Town Managers	General Fund
5	Continue to support the Hazard Mitigation Plan by making sure the Town is represented on related committees.	Flood/ Wildfire / Severe Wind	New	Staff time	Medium	Establish Liaison positions from town to State legislature, State Fusion Centers, MCDEM, Water fusion group, MAG and other multi jurisdictional task force work groups	On going with Staff and Council approval, subject to local strategic planning groups	Town wide with department head approvals/Supported by Mayor and Town Managers	General Fund

Table 6-8-2: Summary of mitigation actions and projects and implementation strategy for Buckeye

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)
6	Implement Sever Wind deployment protection procedures (local)	Severe Wind/Flood	Both	Staff time and use of volunteers	Medium	Establish Public Safety Executive Partnership with Pubic Works, Wildfire, and Police. Incorporate CERT program for the Town and implement SOP for operational guidelines	On going with PSEP group formalized/ CERT implementation by 1-1-2010	Police Chief/ Fire Chief/ Pubic Works Director/Water Resource Director/ Assistant Town Manager	General Fund/ UASI and SHSGP funding via ADHS/DHS
8	Provide/improve water drainage systems.	Flood	Both	Staff time	Medium	Implemented into General plan in association with Maricopa County Flood control	Part of 5 year master plan with 2011 goal	Public works/ Scott Lowe	CIP monies
9	Enforce Fire codes, require compliance	Wildfire	Both	Staff time/ new position ($50,000)	Medium	Established adoption of International Fire Code 2006, employ additional Fire Prevention Specialist	Adopt into 5 year Fire Department Strategic Plan along with Fee Code study	Fire Department / Fire Chief	General fund/permit fees
11	Participate with Maricopa County and other jurisdictions in the development of a Community Wildfire Protection Plan (CWPP)	Wildfire	Both	Staff time	Medium	Participate in multijurisdictional wildfire protection planning program	2010	Fire Department / Fire Chief	General fund

Table 6-8-3: Summary of mitigation actions and projects and implementation strategy for Carefree

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 Damage	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Floodplain Administrator Mike Tibbett / Chief Building Inspector	General Fund, Permit Fees
2	Develop a Drainage Master Plan that will identify potential drainage hazards, solutions, budgets and prioritization.	Flood	Both	Staff Time	High	Staff Conferences. Study Drainage issues. Make recommendation for projects. Implement projects as funded	Annual – Ongoing	MichaelTibbett / Chief Building Inspector Erich Korsten / Hydrologist and Engineer Patrick Neal / ROW Engineer	General Fund, Permit Fees, Grants if Available
7	Continue development of water storage, treatment and delivery systems to provide adequate water during times of drought	Drought	Both	Specific project dependant	High	Carefree Water Company and Governing Board	Annual – Ongoing	Stan Francom Director of Carefree Water Company	Water Co. Budget and available grants
3	Encourage bridge or culvert construction where roads are in locations susceptible to flooding.	Flood	Both	Staff Time and studies unless actual project developed and then cost are to be determined per project.	Medium	Staff Conferences. Study Drainage issues. Make recommendation for projects. Implement projects as funded	Annual – Ongoing	MichaelTibbett / Chief Building Inspector Erich Korsten / Hydrologist and Engineer Patrick Neal / ROW Engineer	General Fund, Permit Fees, Grants if Available

Table 6-8-3: Summary of mitigation actions and projects and implementation strategy for Carefree

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)**
4	*Further develop a Mass Evacuation strategy for the Town of Carefree.*	*Fire or other Natural Disaster*	*Both*	*Staff Time*	*Medium*	*Staff / Agency Conferences*	*Annual – Ongoing*	*Carefree Emergency Manager / Cave Creek Emergency Manager Fire Chief American Red Cross*	*General Fund*
5	Site and install additional signage for wash crossings as well as sand bags to warn and discourage vehicular movements through these areas during flooding events	Flood	Both	$20,000.00	Medium	Marshal's Office and Public Works	Less than five years with in funding	Marshal and Director of Public Works	General Fund
6	Perform brush cutting and median maintenance with Town right-of-way to mitigate fuel sources for wildfire.	Wildfire	Both	$10,000.00	Medium	Public works	Annual – Ongoing	Public Works	General Fund, Streets Budget

Table 6-8-4: Summary of mitigation actions and projects and implementation strategy for Cave Creek

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	Both	Staff time	High	Staff Training, Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Floodplain Administrator	General Fund, Permit Fees
3	Investigate the possibility of adding a water facility and infrastructure on the west side of Cave Creek.	Drought	Both	$27 million	High	Land is Acquired. Design, Build, Fund project.	2011	Cave Creek Utilities Manager	General Fund, GRANT FUNDING
6	Develop and Implement A Community Wildfire Protection Plan	Wildfire	Both	Staff time, RMFD time, County Emergency Mgmt Time	High	Development of A Community Wildfire Prevention Program.	Ongoing, within 24 months goal.	Maricopa County Emergency Management, Town Marshal	General Fund, Seek Grants
2	Ensure building codes for construction are enforced to prevent roof damage from high winds.	Severe Wind	Both	Staff time	Medium	Continuing education of Building Safety staff. Stringent enforcement of Building Codes	Annual Ongoing	Cave Creek Building Official	General Fund, Permit fees
4	Town Fire Marshal routinely inspects commercial structures	Fire	Both	RMFD time	Medium	Continued Site Inspections via RMFD	Annual Ongoing	RMFD Building Official	General Fund
7	Public Information Campaign to help educate the general public on ways to remain safe during periods of extreme heat	Extreme Heat	Both	Staff time	Medium	Public Information Campaign, utilizing government mailings, website and print media	Ongoing	Town Marshal	General Fund

Table 6-8-4: Summary of mitigation actions and projects and implementation strategy for Cave Creek

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)
5	Review the existing Cave Creek general plan and zoning ordinance to determine how these documents help limit development in hazard areas. Modify with additional guidelines, regulations, and land use techniques as necessary within the limits of state statutes, while also respecting private property rights.	Flooding	Both	Staff Time	Low	Continuing Review of existing Zoning Ordinances.	Annual Ongoing	Town Zoning Administrator, Town Engineer, FCDMC	General Fund

Table 6-8-5: Summary of mitigation actions and projects and implementation strategy for Chandler

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Public Works/ City Engineer	General Fund
2	Maintain the currency of the safety element of the Chandler General Plan, and monitor its effectiveness at preventing and mitigating hazards.	Drought Extreme Heat Flood Severe Wind	Both	Staff time	High	Review and Update of the General Plan on a regular basis	Annual Ongoing	Planning/ Planning Director	General Fund
3	Promote availability of the City of Chandler Hazard Mitigation Plans (HMGP) in an understandable format to civic and private groups.	Drought Extreme Heat Flood Severe Wind	Both	Staff time	High	City Emergency Management Group (EMG) to review progress bi-annually	Annual Ongoing	Fire Department/ Asst. Chief	General Fund
4	Continue to ensure through proper planning, zoning and building codes that all safety measures are in place for new building construction and placement.	Flood Severe Wind	New	Staff time	High	Continue to update codes to the newest versions, and add amendments where appropriate	Annual Ongoing	Planning/ Planning Director	General Fund

Table 6-8-5: Summary of mitigation actions and projects and implementation strategy for Chandler

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)
6	Continue to maintain a diverse water portfolio. Minimize any reductions to existing supplies by protecting and secure existing water rights, completing Indian water rights settlements, and meeting environmental requirements of water resources. Maximize the use of existing assets to ensure adequate water supply is available through groundwater wells, surface water diversions, use of recharged water, and encouraging the use of reclaimed water for appropriate purposes. Seek and utilize alternative water supplies (CAP excess water, reclaimed water, saline/brackish groundwater, support the Arizona Water Bank) to increase resource reliability and mitigate drought severity. Continue to implement the City's Drought Plan.	Drought	Both	Staff time	High	Continue to maintain a diverse City water portfolio by reviewing and updating on a regular basis	Annual Ongoing	Municipal Utilities, Public Works/municipal Utilities Director	Enterprise Fund. Impact Fees
7	Each Lead City Department will rank the vulnerability of existing assets, with assistance from the Emergency Management Workgroup, and implement protection plans with the highest vulnerability being implemented first.	Drought Extreme Heat Flood Severe Wind	Both	Staff time	High	Emergency Management Group (EMG) to develop process, and timeline. Monitor progress	Annual Ongoing	Fire Department/ Asst. Chief	General Fund
5	Continue to ensure that the City of Chandler Drought Management Plan is updated to meet the needs of the City to mitigate drought severity.	Drought	Both	Staff time	Medium	Continue to review and update the plan as appropriate	Annual Ongoing	Municipal Utilities/ Municipal Utilities Director	Enterprise Fund

Table 6-8-6: Summary of mitigation actions and projects and implementation strategy for El Mirage

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	City Engineer Maricopa County Flood Control	General Fund, Permit Fees
2	Review zoning ordinances prohibiting new development in 100-year flood plain on an annual basis.	Flood	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	City Engineer Maricopa County Flood Control	General Fund, Permit Fees
5	Take active role in multi-agency plan and actions for flood mitigation (pro-active).	Flood	Both	Staff time	High	Candidate Assessment Report Meetings	On going	City Engineer Maricopa County Flood Control	General Fund
6	Develop plan to install man-made flood protection devices where needed.	Flood	Both	Staff time	High	Consultants, City Engineer, Maricopa County Flood Control	On going	City Engineer Maricopa County Flood Control	General Fund, Impact Fees Grants
6a	Install box culvert at the Cactus Rd & El Mirage Rd Crossing and perform channelization in the Lower El Mirage Wash	Flood	Both	$6 million	High	Consultants, City Engineer, Maricopa County Flood Control	July 2013	City Engineer Maricopa County Flood Control	General Fund, Impact Fees Grants
9b	Recharge of groundwater with CAP water to ensure the community water supply in the event of a drought.	Drought	Both	$950,000	High	Coordinate water allocation with CAP	Annual	Water Superintendent	Enterprise Fund
3	Review annually and update existing building codes to manage new and existing assets from flooding.	Flood	New	$5,000	Medium	Review of code changes annually and on the ICC code revision cycle	On going	Building Official City Engineer City Planner Maricopa County Flood Control	General Fund
4	Participate in multi-agency coordination efforts to ensure cooperative plans.	Multi-Hazard	Both	Staff time	Medium	Local, County, State Emergency Planning Meetings	On going	Fire Chief	General Fund

Table 6-8-6: Summary of mitigation actions and projects and implementation strategy for El Mirage

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)
7	*Train First Responders and other select city staff in hazard materials mitigation.*	*HAZMAT*	*Existing*	*Staff time*	*Medium*	*Initial and Annual refresher training*	*On going*	*Fire Chief*	*General Fund*
8	Coordinate efforts with other local agencies to I.D. problem areas and plans for mitigation.	Multi hazard	Both	Staff time	Medium	Local, County, State Emergency Planning Meetings	On going	Fire Chief	General Fund
9c	Interconnect water system with other water purveyors to ensure the community water supply in the event of a drought.	Drought	Both	$2,400	Med	Coordinate with other water purveyors	July 2013	Water Superintendent	Enterprise fund
9a	Develop a conservation education program to ensure the community water supply in the event of a drought.	Drought	Both	$2,000	Low	Design and produce printed materials in English & Spanish	Annual	Water Regulator Coordinator	Enterprise Fund
10	*Educate the public on actions to take and resources available to address community needs following a severe wind event.*	*Severe Wind*	*Existing*	*$2,000*	*Low*	*Design and produce printed materials in English & Spanish*	*Annual*	*Fire Chief*	*General Fund, Grants*
11	Educate the public on actions and resources to protect residents that do not have adequate ways to cool their homes in the event of an Extreme Heat Event	Excessive Heat	Existing	$2,000	Low	Design and produce printed materials in English & Spanish	Annual	Fire Chief	General Fund, Grants

Table 6-8-7: Summary of mitigation actions and projects and implementation strategy for Fort McDowell Yavapai Nation

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	Prohibit building in flood plain and river area to maintain channel and protect riparian area .	Flood damage to structures, business and wildlife habitat.	Both	Staff time for plan review. $15,000 annually	High	Staff training and cooperation with Army Corp of Engineers and County Flood Control District.	Annual / recurring	Community and Economic Development Division / Planning manager.	Tribal General Revenue Funds
9	Facilitate abatement, prevention and investigation of public health nuisance conditions, illegal dumping activities and the storage and handling of potentially infections material and locations.	Groundwater contamination / spread if infectious diseases.	Both	$750,000	High	Waste transfer station is under development.	2010	Community and Economic Development Division / Public Works Manager	Tribal General Revenue and Bond Funds
4	Pro-actively pursue pre-disaster and hazard mitigation grants to supplement tribal expenses associated with mitigation activities.	All hazards mitigated with grant funds obtained.	Both	Determined by required matching funds. $10,000 annually	Medium	Contract and Grants Administrator oversight.	Annual / Recurring	All Department Directors.	Matching funds from tribal general revenue funds.
5	Publish suggested mitigation actions through print media and community website to reduce potential for wildfire and heat related medical emergencies .	Wildfire and threat to population from drought/extreme heat.	Both	Staff time. $2,000 Annually	Medium	Timely information distributed through newspaper and local website.	Annual / Recurring	Fire Department / Emergency Manager	Tribal General Revenue Funds
6	Continue restoration projects along river and limit development along river to protect wetlands, threatened species habitat and protect business from flooding.	Flooding of gravel and concrete business. Natural resource/wetlands habitat destruction.	Existing	Staff time and enterprise equipment and labor. $50,000 Annually	Medium	Projects are a cooperative effort of tribal environmental department, U.S.EPA, and others.	Annual / Recurring	Environmental Department / Environmental manager	Tribal General Revenue Funds
7	Create access, and map the access to high-risk areas. Provide weed abatement services in high risk areas to reduce risk of wildland fire.	Large area wildland fire damage to environment.	Existing	Staff time and $30,000 annually	Medium	Cooperative effort by MCDOT, Tribal Public Works Department, and Fire Department.	Annual / Recurring	MCDOT and FMYN Public Works Department / Public Works Manager	MCDOT and Tribal General Revenue Funds

Table 6-8-7: Summary of mitigation actions and projects and implementation strategy for Fort McDowell Yavapai Nation

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)
10	Coordinate training, planning, and communications to provide the community with information to combat the affects of infestations and diseases.	Spread of infectious disease and pandemic.	Both	Staff time for medical clinic personnel and newspaper staff. $12,000 annually	Medium	Articles written by medical staff, distributed by newspaper and local internet site.	Annual / Recurring	Health Center/ Medical Director	Tribal General Revenue / Indian Health Service
11	*Train first responders to Operational level. Develop emergency plans for facilities handling hazmat. Provide emergency response guidebooks to fire and law enforcement personnel. Follow MCDOT/ADOT guidelines.*	*Spread of hazardous materials into groundwater. Control of airborne hazardous vapors to populated areas.*	*Both*	*Staff time for plan development and first responder training. $15,000 annually*	*Medium*	*All firefighters will maintain operations level response training. ERG's have been distributed. MCDOT/ADOT policies are tribal guidelines.*	*Annual / Recurring*	*Fire Department / Fire Chief*	*Tribal General Revenue Funds*
12	*Encourage Ft. McDowell Public Health to develop and exercise their capabilities to respond to and support a chemical, biological or radiological event.*	*Contamination of emergency medical personnel, vehicles, and facilities.*	*Both*	*$10,000*	*Medium*	*Contamination / isolation room is currently being built at the tribal clinic.*	*2010*	*Health Center/ Medical Director*	*Indian Health Service*
13	Lead Community Departments will be responsible for creating plans to protect existing assets within their area of responsibility.	All that apply to each department	Both	$12,000 annually	Medium	Plan development and protection programs are ongoing within each department	Annual / Recurring	Tribal departments/ Department Directors through the Emergency Manager.	Tribal General Revenue Funds and Grants
2	Review existing building codes, modify or adopt codes to prevent development in hazard areas.	Structure damage from severe winds and flooding.	New	Staff time. $5,000 annually	Low	Staff training	Annual / Recurring	Community and Economic Development Division / Planning Project Manager	Tribal General Revenue Funds

Table 6-8-7: Summary of mitigation actions and projects and implementation strategy for Fort McDowell Yavapai Nation

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)
3	Identify and mitigate hazards associated with new and existing developments through plan reviews to ensure plan/code compliance.	Structure damage from flooding, wildfire and severe winds.	Both	Staff time $20,000 annually	Low	Plan reviews by staff and on-site inspections.	Annual / Recurring	Community and Economic Development Division / License and Property Use Manager	Tribal General Revenue Funds
8	Ensure building codes are enforced to prevent damage from high winds.	Damage to homes and tribal businesses.	Both	Staff time 40,000 annually	Low	Building plan reviews and on-site inspections by staff.	Annual / Recurring	Community and Economic Development Division / Chief Building Inspector	Tribal General Revenue Funds

Table 6-8-8: Summary of mitigation actions and projects and implementation strategy for Fountain Hills

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	Both	Staff time	High	Staff Training, Floodplain Regulations	Annual-Ongoing	Public Works Dept/ Town Engineer - Floodplain Administrator	Town Budget, Permit Fees
2	Maintain washes in Town by removing excessive brush and trim trees to reduce the threat of wildfire	Wildfire	Both	$120,000/ yr	High	Staff Review	Annual-ongoing	Open space and landscape Specialist	Town Budget
6	Ashbrook Wash Improvements to include larger culverts, grading, vegetation reduction	Flood	Existing	$1.5 M	High	Staff, Flood Control Dist Grant application	2014	Public Works Director, Town Engineer	Flood Control Dist. Grant
3	Enforce Building Codes to prevent roof damage from high winds.	Severe Winds	Both	Staff Time	Medium	Staff Training Building Codes	Annual-ongoing	Town Building Official	Permit Fees
4	Review General Plan and Ordinances for mitigating hazards.	Flood, Severe Wind, Drought, Extreme Heat	Both	Staff Time	Medium	Staff review and training	Annual-ongoing	EM Director, Public Works Director	Town Budget
5	Channel and Storm Drain Development	Flood	Both	Staff Time	Medium	Staff review	Annual-ongoing	Public Works Director, Town Engineer	Town Budget

Table 6-8-9: Summary of mitigation actions and projects and implementation strategy for Gila Bend

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	Both	Staff time	High	Staff Training, Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Floodplain Administrator	General Fund Permit Fees
2	Pursue a mutual aid compact with county and state agencies to assist the Town with hazard mitigation.	Flood, Severe Winds, Wildfire	Both	Staff Time	Medium	None	Annual-Ongoing	Town Administration / Town Manager	N/A
3	Develop a public awareness campaign to educate Town residents about natural hazards impacting the community	Flood, Severe Winds, Wildfire	Both	$1,000	Medium	None	FY 2011	Town Emergency Manager	General Fund
4	Develop and construct measures to mitigate flooding along Sand Tank and Scott Avenue Washes	Flood	Both	$5 million	High	Town CIP and FCDMC CIP	FY 2014	Public Works / Director FCDMC	FCDMC Funds Grant Funds

Table 6-8-10: Summary of mitigation actions and projects and implementation strategy for Gilbert

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Floodplain Administrator	General Fund Permit Fees
2	Proactive adoption of applicable master plans, land uses and developmental agreements.	Flood	New	Staff Time	High	Coordination with County Flood Control & Chapter 34 of Town Code	Ongoing	Associate Engineer/Permit & Plans Review Manager	General Fund
5	Implement the appropriate stage of the water supply reduction Management Plan as adopted (May 2003) to reduce water use.	Heat	Both	Staff Time	High	Coordination with Salt River Project, the Arizona Project, & AZ Department of Water Resources.	Ongoing	Water Resource Coordinator & Town Manager	General Fund
6.	Gilbert will continue to participate in the Community Rating System (CRS) program and get credit for the various activities that assist property owners in receiving reduced insurance premiums.	Flood	Both	Staff Time	High	Coordination with Flood Control District of Maricopa County	Ongoing	Floodplain Administrator	General Fund
8.	Work closely with FCDMC – Dam Safety to stay abreast of current mitigation efforts and timelines at Powerline FRS (a category 1 rating).	Flood	Both	Staff Time	High	Coordination with Flood Control District -Dam Safety	Ongoing	Floodplain Administrator/ Emergency Management Coordinator	General Fund
3	Provide pertinent weather and hazard mitigation information to the public by providing local weather service and Maricopa County Hazard Mitigation links from Town of Gilbert Home page.	Heat/Flood/ Wind	Both	Staff Time	Medium	Work with webmaster identify links	December 2010	Emergency Management Coordinator	General Fund
4	Establish an East Valley group of stakeholders to address improvements in mitigation areas specific to the needs of the East Valley Community.	Heat/Flood/ Wind	Both	Staff Time	Medium	Work with East Valley Emergency Managers	Ongoing	Emergency Management Coordinator	General Fund
7.	Promote the use of weather radios, especially in schools, hospitals and other locations where people congregate to inform them of the approach of severe weather.	Heat/Flood/ Wind	Both	Staff Time	Medium	Website, media newsletter, and outreach	Ongoing	Emergency Management Coordinator	General Fund

Table 6-8-11: Summary of mitigation actions and projects and implementation strategy for Glendale

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	Both	Staff time	High	Staff Training Floodplain Regulations Building Code Regulations	Annual-Ongoing	Building Safety/Engineering	General Fund, Permit Fees
2	Storm Drain Project-Northern Ave. 47th Ave-63rd Ave. Co-locating water main	Flood	Existing	15 million 3.5 million	High	Construction Projects already in progress	12/2010	Engineering/Utilities Utilities	CIP/MC Flood Control District CIP
3	Storm Drain Project-67th Ave, Frier Drive to Orangewood Ave. This project addresses localized flooding hazards.	Flood	Existing	$350,000 for construction and $30,000 to $35,000 for Construction Administration.	High	Waiting for approval		Engineering	mitigation grant application has been submitted
4	In partnership with The Salvation Army, provide respite care and dehydration stations. This effort mitigates loss of life during extreme temperature.	Extreme Heat	Existing	Staff time	High	Facilities Staff	On-going	Emergency Management	Donations

Table 6-8-12: Summary of mitigation actions and projects and implementation strategy for Goodyear

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	City Engineer, Community Development Director	General Fund Fees
3	Secure and protect the city water supply from outside, outsource contamination: a) Install supervisory control valves and data acquisition system. b) Install valve locks. c) Site specific physical infrastructure security measures.	Contamination of city water supply	Both	$415,000	High	Staff Training Project design coordination	Q4, 2009	Fire Chief/Emergency Manager, Public Works Director	General Fund CIP
2	Promote and share mitigation programs with state, county, local jurisdictions, and private, civic, and non-profit organizations.	Multi-Hazards	Both	Staff time	Medium	Inter-agency coordination Staff Training	Annual-Ongoing	Fire Chief/Emergency Manager	General Fund Grants
4	Determine the feasibility of hydration station and refuge in the city.	Extreme Heat	Both	Staff time/ Volunteers	Medium	Staff training Project manager Inter agency coord.	Q4, 2010	Fire Chief/Emergency Manager	General Grants

Table 6-8-13: Summary of mitigation actions and projects and implementation strategy for Guadalupe

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Town Manager/Town Inspector	General Fund Permit Fees
2	Implement the education and mitigation actions as outlined in the Town's Stormwater Management Plan.	Flood	Both	Staff time	Medium	Staff Training Stormwater General plan	Annual-Ongoing	Town Manager	General Fund
3	Establish periodic monitoring and review of the Town of Guadalupe's general plan and zoning ordinance to determine effectiveness at preventing and mitigating hazards. Based on the results, amend as necessary.	Multi-Hazard	Both	Staff time	Medium	Review G.P./Zoning with Town Manager and Town Inspector bi-yearly	Annual - Ongoing	Town Inspector	General Fund Permit Fees

Table 6-8-14: Summary of mitigation actions and projects and implementation strategy for Litchfield Park

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	Both	Staff time	High	Staff Training, Floodplain Regulations	Annual-Ongoing	Planning Dept. /Floodplain Administrator	General Fund, Permit Fees
2	Review plan for final phase of City Flood control project in preparation to go out for bids.	Flood	Both	To be determined	High	Staff review, Engineering review, Bid process	Within five years	Planning and Engineering Dept/ Chief Engineer	Grant, General Fund
3	Review hazard Mitigation Plan for areas that can be updated in accordance with current warning measures that are now available through the national Weather Bureau and the Maricopa County Emergency Services.	Extreme Heat	NA	Staff time	High	Staff Training	Annual-Ongoing	Community Services/Emergency Management Coordinator	General Fund

Table 6-8-14: Summary of mitigation actions and projects and implementation strategy for Litchfield Park

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)
5	Encourage City staff to become members of regional organizations to share in regional efforts and solutions to local and regional problems.	General Hazard Mitigation	Both	Staff Time	High	Staff Training	Annual - Ongoing	Community Services/ Emergency Management Coordinator	General Fund
6	Develop a policy to replace the use of hazardous materials with other products as soon as a safe, reliable source is available and proven to be as effective.	HAZMAT	Both	Staff Time	High	Staff Training	Ongoing	Public Works/ Operations Coordinator	General Fund
4	Review building permits for compliance with International Building Code for structure compliance to endure severe winds and electrical strikes.	Severe Winds, Lightning Strike	Both	Staff Time	Medium	Staff Training, Building regulations	Annual- Ongoing	Planning Dept/Building Code Enforcement Officer	General Plan

Table 6-8-15: Summary of mitigation actions and projects and implementation strategy for Unincorporated Maricopa County

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)
4	Inspect and monitor all structures (bridges and box culverts) under their control on a semi-annual basis.	Flood	Both	$150,000	High	Transportation Plan	On-going	MCDOT / Engineers	HURF
5	Encourage bridge or culvert construction where roads are in locations susceptible to flooding.	Flood	New	$7 million	High	Transportation Plan	On-going	MCDOT / Senior Planner	HURF

Table 6-8-15: Summary of mitigation actions and projects and implementation strategy for Unincorporated Maricopa County

6	Review building permits to ensure that unincorporated Maricopa County residents and the 12 communities for which the District performs floodplain management duties are safe from flooding by meeting the NFIP requirements for development within a Special Flood Hazard Area through enforcement of Floodplain Regulations.	Flood	Both	Staff Time	High	Floodplain Regulations	On-going	FCDMC / Floodplain Administrator	Flood Control Secondary Property Tax
7	Develop a Community Wildfire Protection Plan to identify actions that will reduce the risk of wildfires to communities within wildland-urban interface zones.	Wildfire	Both	$150,000	High	Community Wildfire Protection Plan	November 2010	Emergency Management / Director	State Forestry Grant
8	Complete and start Area Drainage Master Studies/Plans to identify flooding hazards and mitigation solutions.	Flood	Both	Project-Dependent	High	Comprehensive Plan	On-Going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
9	Complete and start delineations/re-delineations to identify flooding hazards.	Flood	Both	Project-Dependent	High	Comprehensive Plan	On-Going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
10	Operate and maintain flood control structures operated and maintained by FCDMC in order to prevent structural failure and to maintain their primary function.	Flood / Dam and Levee Failure	Both	Project-Dependent	High	Comprehensive Plan	On-Going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
12	Update the Flood Control District of Maricopa County 2009 Comprehensive Floodplain Management Plan and Program to set the framework in mitigating flood hazards.	Flood	Both	Staff Time	High	Comprehensive Plan	FY 2013	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
13	Cloud Rd. & Sossaman Rd. Basin and Outlet. Construct a flood control basin and outlet to mitigate flooding hazard to existing homes.	Flood	Existing	$4,000,000 (concept-level est.)	High	5-yr CIP	Funding-dependent (Target: 2012)	FCDMC / CE&GM in partnership with the Town of Queen Creek	Flood Control Secondary Property Tax
14	Sonoqui Wash Channelization (Main Branch). Channelize an existing wash to contain flood flows, protecting existing homes.	Flood	Existing	$4,000,000 (concept-level est.)	High	5-yr CIP	Funding-dependent (Target: 2012)	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
15	Oak Street Basin and Storm Drain. Construct a basin and storm drain to mitigate flooding hazards to existing and future homes.	Flood	Both	$4,000,000 (concept-level est.)	High	5-yr CIP	Funding-dependent (Target: 2012)	FCDMC / CE&GM in partnership with the City of Mesa	Flood Control Secondary Property Tax

Table 6-8-15: Summary of mitigation actions and projects and implementation strategy for Unincorporated Maricopa County

16	Ellsworth Rd. & McKellips Rd. Basin and Storm Drain. Construct a basin and storm drain to mitigate flooding hazards to existing and future homes.	Flood	Both	$4,000,000 (concept-level est.)	High	5-yr CIP	Funding-dependent (Target: 2013)	FCDMC / CE&GM in partnership with the City of Mesa	Flood Control Secondary Property Tax
17	Arcadia Area Drainage Improvements (Phase I). Construct flood control infrastructure to mitigate flooding hazards to existing homes.	Flood	Existing	$4,000,000 (concept-level est.)	High	5-yr CIP	Funding-dependent (Target: 2014)	FCDMC / CE&GM in partnership with the City of Phoenix	Flood Control Secondary Property Tax
19	Flood Control Capital Improvement Program. Construct facilities to mitigate flooding hazards to residents of Maricopa County.	Flood	Both	$60M / yr.	High	5-yr CIP	Ongoing	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
20	Design and construct new bridge and scour protection at Gilbert Road over the Salt River.	Flood	Existing	$15M	High	5-yr CIP	June 2012	MCDOT / Engineer	HURF
21	Design and construct scour protection for existing bridge over the Gila River on Old U.S. Highway 80.	Flood	Existing	$1M	High	5-yr CIP	Jan 2011	MCDOT / Engineer	HURF
1	Floodprone Properties Assistance Program. Acquire property and relocate residents from flood hazard areas, or protect homes from flooding hazards through floodproofing.	Flood	Both	Project dependent	Medium	Floodprone Properties Assistance Program	On-going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
2	Continue working with County Planning and Development on a cooperative effort to notify developers of Area Drainage Master Plans (ADMP's) and floodplain regulations early on in the development process.	Flood	New	Staff Time	Medium	Area Drainage Master Plan	On-going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
3	Review existing building codes to determine if they adequately protect new development in hazard areas. Where feasible and necessary, modify codes to help mitigate hazards imposed on such development within the limits of state statutes, while also respecting private property rights.	Flood Severe Wind	New	Staff time	Medium	Building Codes	On-going	Planning and Development, Development Services / Senior Planner	Permit Fees
11	Continue public education program to assist residents in recognizing potential flooding and erosion hazards and inform them on how to reduce risk to life and property.	Flood	Both	Staff Time	Medium	Comprehensive Plan	On-Going	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax

Table 6-8-15: Summary of mitigation actions and projects and implementation strategy for Unincorporated Maricopa County									
18	Gila River Bank Stabilization (Citrus Rd. to Perryville Rd.). Construct bank protection along the north bank of the Gila River to contain flooding hazards and limit river migration to protect existing infrastructure and homes.	Flood	Both	$4,000,000 (concept-level est.)	Medium	5-yr CIP	Funding-dependent (Target: 2013)	FCDMC / Chief Engineer & GM	Flood Control Secondary Property Tax
22	Work with federal and state agencies, and local coalitions to elevate awareness of fissure risk zones and the problems fissures may cause.	Fissure	Both	Staff Time	Medium	None	Ongoing	Planning and Development Services / Senior Planner	General Fund

Table 6-8-16: Summary of mitigation actions and projects and implementation strategy for Mesa

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	Broadway Rd Storm Drain Project, 76th to 84th St (partnering with MCFCD)	Flood	Both	$3.5 million	High	Strom Drain Master Plan	Aug 2012	City Engineering/ Floodplain Administrator	Bonds
2	Completion of the City of Mesa Storm Drain Master Planning document	Flood	Both	$600,000	High	Storm Drain Master Plan	June 2009	City Engineering	Bonds
3	Construct two potable water wells to supplement the City water supply	Drought	Both	$20 million	High	Water Distribution Master Plan	July 2014	City Engineering	Bonds
4	Maintain continuous water supply by continuing to install water distribution systems throughout the City of Mesa	Drought	Both	$10 million annually	High	Water Distribution System Master Plan	Ongoing	City of Mesa Water Resources Division, Engineering	Bond funds Impact Fees
5	CAP, reservoir, pump and future treatment plant at Elliot and Ellsworth	Drought	Both	$100 million	High	Water Distribution System Master Plan	July 2014	Engineering	Bonds
6	Identify and construct the first phase recommended by the Va Shly'Ay Akimel Salt River Ecosystem Restoration Project in partnership with SRPMIC and Army Corp of Engineers	Flood (Erosion)	Both	Unknown	High	City of Mesa Master Plan	July 2014, 1st construction phase	Engineering	Bonds, grants

Table 6-8-16: Summary of mitigation actions and projects and implementation strategy for Mesa

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)
7	Replace power poles between Country Club and Extension along University with 69 KV steel and concrete poles (phase 2)	Severe Wind	Both	$4.0 million	High	City of Mesa Electric Master Plan	July 2010	Engineering	Bonds
8	Review building permits for compliance with Floodplain Ordinance and NFIP regulations.	Flood	Both	Staff time	High	City of Mesa Master Plan,	Annual-Ongoing	Engineering Dept / Floodplain Administrator	General Fund, Permit Fees

Table 6-8-17: Summary of mitigation actions and projects and implementation strategy for Paradise Valley

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 permit applications for compliance with Floodplain Ordinance and NFIP regulations.	Flood	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Engineering Department	General Fund, Permit Fees
4	Continue the under grounding project for existing utilities on major roads thereby eliminating utility poles.	Severe Wind	Both	$3,800,000	High	Capital Improvement Program	2014	Engineering Department	Capital Improvement Fund
2	Adopt the 2009 International Codes (Building, Residential, Mechanical, Plumbing & Electrical) for use by the Town.	Severe Wind Subsidence	New	Staff time & $2,000 for books	Medium	Staff & Contractor Training	July 1, 2010	Building Safety Division	General Fund, Permit Fees
3	Conduct regular inspections of washes to ensure that they are maintained in a debris free condition.	Flood	Both	Staff time	Medium	Not Applicable	Annual-Ongoing	Building Safety & Public Works Departments	General Fund
5	Conduct regular inspections of washes and take corrective action by enforcing existing ordinances to prevent a corridor for wildfires.	Wildfire	Both	Staff time	Medium	Not Applicable	Annual-Ongoing	Building Safety & Public Works Departments	General Fund
6	*Update the current Emergency Operations Plan.*	*Drought Extreme Heat Flood Severe Wind Subsidence Wildfire*	*Both*	*Staff time*	*Medium*	*Not Applicable*	*Ongoing*	*Building Safety Division, Emergency Management Unit*	*General Fund*
8	Maintain effective communications with state, county and local government agencies by the various Town departments within their respective responsibility.	Drought Extreme Heat Flood Severe Wind Subsidence Wildfire	Both	Staff time	Medium	Not Applicable	Ongoing	All Departments	General Fund
7	Educate and inform residents, businesses and visitors by conducting a media campaign, via local newspaper to publicize ways to mitigate disasters including steps that they can protect themselves.	Drought Extreme Heat Flood Severe Wind Subsidence Wildfire	Both	Staff time	Low	Not Applicable	Annual-Ongoing	Building Safety Department	General Fund

Table 6-8-18: Summary of mitigation actions and projects and implementation strategy for Peoria

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Planning and zoning Administrator	General Fund Permit Fees
2	Work with the Maricopa County Flood Control District to determine potential effects of a flash flood or flood affecting the city. Also provide sandbags and sand as required.	Dam Failure	Both	Staff time	High	Staff training	Ongoing	Emergency Manager	General funds
3	Assist with the revision of a water conservation plan for mitigating the impact of a drought on the public water supply.	Drought	Both	Staff time	High	Staff training	Ongoing	Emergency Manager	General funds
4	Work with the Maricopa County Flood Control District to determine potential effects of a flash flood or flood affecting the city. Also provide sandbags and sand as required.	Flooding	Both	Staff time	High	Staff training	Ongoing	EM, GIS, Public Works, Fire & Police Department	General funds
5	Work with the Maricopa County Flood Control District to determine potential effects of a levee failure.	Levee Failure	Both	Staff time	High	Staff training	Ongoing	EM, GIS, Public Works, Fire & Police Department	General funds
6	Encourage a fire buffer along wild land-urban interface areas.	Wildfire	New	Staff time	High	Staff training	Annual	EM, GIS, Public Works, Fire & Police Department	General funds
7	Include all identified hazardous conditions in GIS mapping to include floodways, high wind areas, subsidence areas, hazardous materials, etc.	All	Both	Staff time	High	Staff training	Ongoing	GIS	General funds
8	*Train key city staff on appropriate actions based on the Emergency Operations Plan.*	*All*	*New*	*Staff time*	*High*	*Staff training*	*Ongoing*	*Emergency Management*	*General funds*
9	*Participate in regional training opportunities as well as Emergency Operations Command exercises within City to prepare for emergencies.*	*All*	*Both*	*Staff time*	*High*	*Staff training*	*Ongoing*	*Emergency Management*	*General funds*

Table 6-8-18: Summary of mitigation actions and projects and implementation strategy for Peoria

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)
10	*All Fire Department personnel should be trained at Operations level, currently command staff are trained at Operations – rest of personnel are trained at awareness level. Plan to provide additional levels of training by 2005*	*All*	*Existing*	*Staff time*	*High*	*Staff training*	*On going*	*Fire Chief*	*General funds*
11	*Police Department personnel should be trained at Operations level, currently command staff are trained at Operations – rest of personnel are trained at awareness level. Plan to provide additional levels of training by 2005*	*All*	*Existing*	*Staff time*	*High*	*Staff training*	*On going*	*Police Chief*	*General funds*
12	Control development in flood areas	Flood	Existing	Staff time	High	Staff training	On going	Planning and zoning	General funds
13	Encourage flood-proof measures through building design	Flood	Existing	Staff time	High	Staff training	On going	Community Development	General funds
14	Maintain Public Service Announcements (PSAs) broadcast on Channel 11. Fliers produced and distributed to residents.	All	Existing	Staff time	High	Staff training	On going	Communications and Public Affairs	General funds
15	Research identified data limitations effecting the relative vulnerability of assets from drought	Drought	Existing	Staff time	High	Staff training	On going	Emergency Management	General funds

Table 6-8-19: Summary of 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	Both	Staff time	High	Staff training; Floodplain Regulations; NFIP regulations	Annual - ongoing	Street Transportation / Floodplain Manager	General Fund
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 Failure	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	Both	Variable	High	5 Year CIP	Ongoing	Street Transportation Department/ Deputy Street Transportation Director	2006 Bond Program; future grant funds
4	Coordinate data sharing and development communication within City departments through documentation in GIS	Flood; Extreme Heat	New	Staff time	High	GIS	Annual - ongoing	Planning Department / Planning Researcher	General Fund
5	Summer Respite Program to network with faith-based organizations to provide heat relief with hydration, respite efforts, and wellness checks for the affected population as needed	Excessive Heat	N/A - people	Donations totaling $70,000 annually	High	Heat Relief Network meetings (occur prior to the summer months)	Annual - ongoing	Human Services / Deputy Human Services Director	Corporate, community, and faith-based contributions
6	Revise 2002 Drought Response Plan and Ordinance	Drought*	Both	Staff time	High	Drought Response Plan and Ordinance	March 2010	Water Services / Principal Water Resources Planner	Water Fund
7	Develop and execute a water use curtailment outreach program	Drought*	Both	Staff time	High	Water Services staff	Dec 2012	Water Services / Principal Water Resources Planner	Water Fund
8	Revise and ratify the General Plan every ten years	Flood	Both	Staff time	Medium	State statute; Smart Growth requirement	2010	Planning / Planning Manager	General Fund

Table 6-8-19: Summary of 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)
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	Development Services / 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	Development Services / Deputy Director	Permit fees

*Drought conditions will not always necessitate customer water use curtailment as ample stored water may be available. Curtailment actions would only be implemented due to actual or impending water shortages.

Table 6-8-20: Summary of mitigation actions and projects and implementation strategy for Queen Creek

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Town/ Community Development Dept/Floodplain Administrator	General Fund Permit Fees
2	Sonoqui Wash East Branch Floodplain Delineation Study – Determine the extent of the floodplain and submit to FEMA for review.	Flood	Both	Staff time	High	Sonoqui Wash Floodplain Delineation Study	2011	FCDMC/ Floodplain Mgmt and Services Division/ Floodplain Administrator	N/A
6	Construct Box Culvert at Sonoqui Wash East Branch: Ellsworth and Riggs Roads	Flood	Both	$750,000	High	CIP	Fall 2010	Town/Public Works CIP Division/CIP Project Manager	MCDOT IGA RRSCM Fund General Fund Developer Contributions

Table 6-8-20: Summary of mitigation actions and projects and implementation strategy for Queen Creek

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)
7	Construct Box Culvert at Sonoqui Wash: Ellsworth and Empire Roads	Flood	Both	$3,500,000	High	CIP	Fall 2010	Town/Public Works CIP Division/CIP Project Manager	MCDOT IGA RRSCM Fund General Fund Developer Contributions
8	Sonoqui Wash Channelization Project: Phase IIA Chandler Heights Road to Ellsworth Road	Flood	Both	$17.7 mil.	High	CIP	Fall 2010	FCDMC	FCDMC IGA
9	Sonoqui Wash Channelization Project: Phase III Riggs Road to Empire Road	Flood	Both	$15 mil.	High	FCDMC CIP	2012	FCDMC	FCDMC
11	New Riggs Road Bridge over Sonoqui Wash	Flood	Both	$4,000,000	High	MCDOT CIP	Mid-2011	MCDOT	MCDOT
3	Review Queen Creek Wash Drainage Master Plan from Ellsworth Road to Rittenhouse Road	Flood	Both	Staff time	Medium	Queen Creek Wash Drainage Master Plan	2013	Town/ Community Development Dept./Floodplain Administrator	General Fund
5	Design and construction of the Cloud Road & Sossaman Road Drainage Basin	Flood	Both	$6,500,000	Medium	CIP	Design: Fall 2010 Construction: TBD	Town/Public Works CIP Division/CIP Manager	General Fund FCDMC IGA
12	New Ocotillo Road Bridge over Queen Creek Wash between Power and Recker Roads	Flood	Both	$2,500,000	Medium	CIP	2012	Town/Public Works CIP Division/CIP Project Manager	General Fund LTAF Gilbert IGA
13	Conduct small area drainage master plan for the San Tan Foothills Area	Flood	Both	$75,000	Medium	CIP	2013	Town/ Community Development Dept/Floodplain Administrator	General Fund Grant
14	Install water level sensors at dip crossings of the Sonoqui Wash at Sossaman and Power Roads	Flood	Both	$100,000	Medium	CIP	2013	Town/Public Works CIP Division/CIP Project Manager	General Fund Grant

Table 6-8-20: Summary of mitigation actions and projects and implementation strategy for Queen Creek

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	Underground 12Kv lines on all four legs of the Ocotillo and Hawes Roads intersection	Severe Wind	Existing	$400,000	Medium	N/A	2013	Town/Public Works CIP Division/CIP Project Manager	SRP Aesthetic Funds
4	Extend the Sonoqui Wash Hydraulic Master Plan into Pinal County to the headwaters of the drainage basin.	Flood	Both	Staff time	Low	Sonoqui Wash Hydraulic Master Plan for Maricopa County	2014	Pinal County/ Floodplain Administrator	General Fund
10	Sonoqui Wash Channelization Project: Phase IIB Ellsworth Road to Crismon Road	Flood	Both	$14.5 mil	Low	CIP	2014	Town/Public Works CIP Division/CIP Project Manager	General Fund
16	Construct fire breaks around the north face of the San Tan Mountains to prevent entry into the Box Canyon Area	Wildfire	Both	$700,000	Low	CIP	2014	Town/Fire Dept/Public Safety Manager	Emergency Services Fund

Table 6-8-21: Summary of mitigation actions and projects and implementation strategy for Salt River Pima-Maricopa Indian Community

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)**
3	Fire Department to develop a hazardous materials survey to identify hazardous chemicals being stored in the flood zones. This would allow us to ensure that they are properly stored and secured for floods that may impact the facility where they are stored.	Flood	New	N/A	High	Tribal Emergency Response Commission	April 2010	Fire Department	N/A
1	*Community Relations in coordination with Emergency Management to conduct public outreach/education on all hazards emergency preparedness for Community members. Community members that are educated on what to do in a disaster will reduce the loss of life and property in a disaster*.	*All natural hazards*	*Existing*	*$10,000*	*Medium*	*Tribal Emergency Response Commission*	*Ongoing*	*Emergency Management*	*Grants, SRPMIC operating budget*
2	Conduct study to determine how to environmental and efficiently reduce the fire load in the river/preserve area to minimize the impact of a wildfire in this area. Current area is overgrown and has high potential for fire that would expand to populated areas.	Wildland fire	New	$100,000	Medium	Fire Department strategic plan, Tribal Emergency Response Commission	January 2012	Fire Department	BIA Forestry, grants

Table 6-8-22: Summary of mitigation actions and projects and implementation strategy for Salt River Project

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	Continue electric system design as a looped system with multiple ties which is done to allow flexibility to re-arrange circuits prior to summer to balance loads commonly seen during extreme heat conditions.	Extreme Heat	Both	Staff Time (O&M)	High	- Annual Distribution Planning and Operations Studies - 2009 Electric System Plan (FY 2009/2010 – 2014/2015)	Ongoing	- System Operations - Engineering & Construction Svcs - Electric System Operations & Maint	Annual Operating Budget
3	Cable replacement program, feeder getaway upgrades, pad-mounted transformer replacement program, #2 and 4/0 loop splits; to mitigate outages during peak load times during extreme heat conditions.	Extreme Heat	Both	Staff Time (O&M)	High	2009 Electric System Plan (FY 2009/2010 – 2014/2015)	Ongoing	- System Operations - Engineering & Construction Svcs - Electric System Operations & Maint	Annual Operating Budget
4	SRP continuously monitors weather, runoff and reservoir conditions on the Salt and Verde watersheds as they affect reservoir operations and maintains a high level of preparedness of its reservoir emergency operations staff. In addition, SRP is actively involved with the Multi-Agency Taskforce on Flood Warning and operates the Arizona Statewide Flood Warning System under contract with the ADWR. The purpose of the flood warning system is to reduce the loss of life and property and manage water resources efficiently by providing appropriate information via a high-speed data collection and dissemination network to local entities and Federal Agencies, and further enhance the system to complement our mission to save lives and protect property.	Flood	Both	Staff Time (O&M)	High	General Plan	Ongoing	- Water Information Technology Services (WITS) operates the Arizona Statewide Flood Warning System	Annual Operating Budget
5	SRP maintains a variety of mitigation programs on the Transmission and Distribution system to mitigate the effects and susceptibility to severe wind events such as; pole inspection program, pole replacement program, pole reinforcement program and stopper-pole program. (The SRP distribution system is 80% underground and, by design, thus mitigates a multitude of possible hazards).	Severe Wind	Both	Staff Time (O&M)	High	2009 Electric System Plan (FY 2009/2010 – 2014/2015)	Ongoing	- System Operations - Engineering & Construction Svcs - Electric System Operations & Maint	Annual Operating Budget

Table 6-8-22: Summary of mitigation actions and projects and implementation strategy for Salt River Project

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)
6	SRP Line Clearing maintains an ongoing preventative maintenance program that clears vegetation from transmission and distribution lines which are regularly patrolled and cleared of vegetation to prevent encroachment upon lines, thus mitigating a variety of hazards associated with vegetation interfering with electrical lines. This program also clears lower growing dense vegetation (smaller trees and brush) called "fuel clearing" to reduce fire/smoke in the event of a wildfire.	Wildfire	Both	Staff Time (O&M)	High	2009 Electric System Plan (FY 2009/2010 – 2014/2015)	Ongoing	- System Operations - Engineering & Construction Svcs - Electric System Operations & Maint	Annual Operating Budget
2	Maintain fleet of mobile substations to deploy in advance to cover and mitigate any anticipated capacity deficiencies, thus mitigating chances of escalating outages.	Extreme Heat	Both	Staff Time (O&M)	Medium	- Annual Distribution Planning and Operations Studies - 2009 Electric System Plan (FY 2009/2010 – 2014/2015)	Ongoing	- Transportation Services - Electric System Operations & Maint	Annual Operating Budget

Table 6-8-23: Summary of mitigation actions and projects and implementation strategy for Scottsdale

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Public Works	General Fund Permit Fees
2	Maintain a Drought Management Plan in conjunction with SRP & APS to lessen the impact of drought.	Drought	Both	Staff Time	High	Training / Implementation	Ongoing	Public Workers & Water Resources	General Fund
3	UPPER CAMELBACK WASH WATERSHED Construct open channel and culverts to safely convey stormwater in the vicinity of 92nd St from Shea to Sweetwater Rds.	Flood	Both	6,442,200	High	Funding	06/30/2010	Public Works	Capital Improvement / General Fund
4	GRANITE REEF WATERSHED Construct a large storm drain down south Pima Road to the Salt River to collect stormwater and remove the flood zone from approximately 1000 structures.	Flood	Both	4,580,600	High	Funding	02/28/2011	Public Works	Capital Improvement / General Fund
5	PIMA ROAD DRAINAGE SYSTEM Collect neighborhood and roadway flows as part of north Pima Road roadway improvements and channelize it around existing development	Flood	Both	$4,962,925	High	Funding	06/30/2010	Public Works	Capital Improvement / General Fund
6	AUTOMATED FLOOD WARNING SYSTEM - NORTH AREA Collects real time rainfall and runoff data to notify emergency services and for road closures.	Flood	New	194,400	High	Funding	06/30/2011	Public Works	General Fund
7	Encourage Fire buffer zones along wild land urban interface areas to mitigate damages due to wildfire	Wildfires	Both	Staff Time	High	Training / Education	Ongoing	Fire Department	General Fund
8	*Perform Hazardous Material Response Team & Fire Code Inspection on Occupancies with Hazardous Materials to ensure safe storage and use of those HAZMATS*	*All Hazards*	*Both*	*Staff Time / Equipment*	*Medium*	*Training / Equipment*	*Ongoing*	*Fire Department*	*General Fund*

Table 6-8-23: Summary of mitigation actions and projects and implementation strategy for Scottsdale

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)
9	Develop partnerships to locate and operate hydration stations during extreme heat events to reduce the risk to Scottsdale citizens	Extreme Heat	Both	Staff Time	Medium	Partnerships	Ongoing	Human Services	General Fund / Donations
10	*Continue expanding our ESS software system to track resources in the event of an incident/ event.*	*All Hazard*	*Both*	*Staff Time*	*Medium*	*Training*	*Annual - Ongoing*	*Fire Department*	*General Fund*
11	*Maintain and continue expanding our community emergency response team training.*	*All Hazard*	*Both*	*Staff Time*	*Medium*	*Training*	*Ongoing*	*Fire Department*	*General Fund*

Table 6-8-24: Summary of mitigation actions and projects and implementation strategy for Surprise

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	Reduce the impact of flooding in Section 10 (Martin Acres) area of City of Surprise. Construct a new conveyance channel from south of U.S. 60 to provide drainage away from Martin Acres.	Flood	Both	$4,571,000	High	Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /City of Surprise Floodplain Administrator	G.O. Bonds Impact Fees
2	Reduce the risk of fires to communities within wildland-interface zones by participating in the development of a community wildfire protection plan.	Wildfire	Both	Staff Time	High	Community Wildfire Protection Plan Planning Process	November 2010	MCDEM, Surprise Fire Department	State Forestry Grant
4	Develop program and coordinate actions with FCDMC to access, mitigate, upgrade and redesign flood facilities.	Flood	Both	Staff Time	High	Studies & Regulations	Ongoing	FCDMC / Surprise Floodplain Administrator, Engineers	General Fund

Table 6-8-24: Summary of mitigation actions and projects and implementation strategy for Surprise

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)
5	Develop program that identifies bridge and culvert construction in flood susceptible areas	Flood	Both	Staff Time	High	Studies & Regulations	Ongoing	Surprise Floodplain Administrator, Engineers	General Fund
3	Seek availability of funding sources for pre-disaster mitigation and hazard mitigation	All	Both	Staff Time	Medium	Grant Policy	Ongoing	City grant writers	General Fund

Table 6-8-25: Summary of mitigation actions and projects and implementation strategy for Tempe

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	Both	$10,000 Staff time/Annual Expense	High	Staff Training, Floodplain Regulations, Review of permits	Annual-Ongoing	Public Works/City Engineer	Permit Fees
4	Complete Tempe Royal Palms Sub-division 12 storm drainage system modifications	Flood	Existing	$500,000	High	Staff oversight and contractors for work.	July 1, 2010	Public Works/City Engineer	Capital Improvement Project Bond Funds

Table 6-8-25: Summary of mitigation actions and projects and implementation strategy for Tempe

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)
5	The City of Tempe Water Utilities Department has a comprehensive set of planning documents that outline future water systems operations, including specific drought contingency plans and water system operations during drought cycles. Planning documents include the 1997 Tempe Water Resources Plan (updated in 2002), the 1999 Tempe Integrated Water System Master Plan, and the 2002 Drought Management Strategy Plan. Tempe has implemented a number of measures from these plans to diversity the City's water resources and to lessen the impact of drought on our community. Tempe will continue to develop additional groundwater storage and recovery programs to significantly reduce potential drought impacts. These efforts include storing, CAP water and reclaimed water in aquifers for future recovery (over 85,000 acre-feet stored since the mid-1990s), and capital improvement projects to add new municipal wells and increase recovery well pumping capacity.	Drought	Both	$25,000 Staff Time/ Annual Expense	High	Staff Training and time to maintain/update plans	Annual-Ongoing	Water Utilities/Water Utilities Manager	Enterprise Fund
6	*Maintain Emergency Management Plan*	*All hazards*	*Both*	*$2,500 Staff Time*	*High*	*Annual Review of Plan to ensure compliance with NIMS and make any needed revisions*	*Annual-Ongoing*	*Fire Department/ Special Operations Deputy Chief*	*General Fund*
7	*Maintain Hazardous Materials Response Team and First Responder Training and conduct Fire Code Inspections on Occupancies with hazardous materials*	*Hazardous Materials*	*Both*	*$87,000 Staff Time/Equipment*	*High*	*Provide inspections and weekly training*	*Annual-Ongoing*	*Fire Department/ Special Operations Deputy Chief and Fire Marshal*	*General Fund*
9	Maintain levee protection with Maricopa County Flood Control District in Salt River	Flood	Both	$20,000 Staff Time	High	Develop and review projects on as needed basis	Annual-Ongoing	Public Works/City Engineer	General Fund

Table 6-8-25: Summary of mitigation actions and projects and implementation strategy for Tempe

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)
10	Miscellaneous Flood Control and Storm Drainage Projects	Flood	Both	$300,000 Staff Time and Project Costs	High	Areas are continually evaluated and projects are developed to mitigate storm drainage problems	Annual-Ongoing	Public Works/City Engineer	Capital Improvement Projects, Bond Funds
2	*Maintain CERT Program*	*All hazards*	*Existing*	*$5,000 Staff Time/ Annual Expense*	*Medium*	*Quarterly Training for existing members and new member classes two times per year*	*Annual-Ongoing*	*Fire Department/ Special Operations Deputy Chief*	*Grant funds and General Fund*
8	*Maintain Cameo and ESS*	*All hazards*	*Both*	*$3,000 Staff Time*	*Medium*	*Ensure that GIS is integrated with CAMEO and ESS reflects available resources*	*Annual-Ongoing*	*Fire Department/ Special Operations Deputy Chief*	*General Fund*
11	Participate with outside agencies to distribute bottled water and provide education about hazards associated with extreme heat	Extreme Heat	Non-Structural	$1,000 of Staff Time	Medium	Partnering with the Community Action Network and Salvation Army Programs	Annual-Ongoing	Water Utilites Dept. and Fire Dept./WUD Mgr and Fire Chief	General Fund, Donations
3	*Seek funds for workshops and conferences, including National Incident Management System and Arizona Emergency Management Association Conferences*	*All hazards*	*Both*	*$2,500 Staff Time/Annual Expense*	*Low*	*Attend annual training classes and conferences*	*Annual-Ongoing*	*Fire Department/Fire Chief*	*General Fund*

Table 6-8-26: Summary of mitigation actions and projects and implementation strategy for Tolleson

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Floodplain Administrator	General Fund Permit Fees
5	Installing more storm drains and retention areas to reduce impact of flooding on the community. Goes along with new and better codes.	Flood	Both	Unknown. Depends on site	High	Flood plan Regulations, Drainage knowledge	On-going	Engineer, Building Director	General Fund, Bonds, Grants, Permit Fees
2	Provide sand and bags at different locations around the city for citizens to pick up.	Flood	Both	Staff Time Sand at app $100 per ton	Medium	Staff Time	Periodical On-going	Public Works Director	General Fund
4	Educate public officials on the need of the mitigation plan.	All Hazards	Both	Staff Time	Medium	Staff Time, Class Space, Individual availability	On-going	Fire Chief, Division Fire Chief	N/A
3	Continue to review plans and update codes and ordinances within the city limits.	Flood and Severe Wind	Both	Staff Time	Low	Research and planning	Periodical On-going	Building Dept. City Senior Staff	General Fund

Table 6-8-27: Summary of mitigation actions and projects and implementation strategy for Wickenburg

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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	FCDMC / Floodplain Mgmt and Services Division /Floodplain Administrator	General Fund Permit Fees
2	Remove vegetation in washes that bisect streets within town limits to reduce wildfire hazard and improve stormwater conveyance capacities.	Flood Wildfire	Existing	$50,000	Medium	CWPP	Annual-Ongoing	Public Works / Director	General Fund

Table 6-8-28: Summary of mitigation actions and projects and implementation strategy for Youngtown

Town of Youngtown: Mitigation Action/Project					Town of Youngtown: 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	Both	Staff time	High	Staff Training Floodplain Regulations	Annual-Ongoing	Public Works Department / Building Inspector/Plans Reviewer	General Fund, Permit Fees
2	*Train all Public Works and Law Enforcement in First Responder Awareness: Weapons of Mass Destruction (WMD).*	*Terrorism; Wildfire*	*Both*	*Staff time*	*High*	*NIMS Training ICS 100 & 200 and NIMS 700 & 800 for all staff members; additionally ICS 300 for supervisory personnel and ICS 400 for all management-level employees*	*Annual-Ongoing*	*Public Works Department / Emergency Services Manager; Police Department / Police Chief*	*General Fund, Permit Fees*

Table 6-8-28: Summary of mitigation actions and projects and implementation strategy for Youngtown

Town of Youngtown: Mitigation Action/Project					Town of Youngtown: 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)
3	Provide Town leadership role in support of efforts to limit development in the departure and approach corridors for Luke Air Force base.	Wildfire, Transportation Accident	Both	Staff time	High	Regional planning committees, including MAG, Westcorp and ad-hoc groups	On-going	Town Management / Mayor, Town Manager and Public Works Manager	General Fund
6	Promote the availability of information from county webpage.	Multi-Purpose	Both	Staff time	High	Write-up in *Youngtown Village Reporter* and link on Town website	Initially NLT December 31, 2009; thereafter on-going	Emergency Services Manager / Town Webmaster	General Fund
4	Adopt the new Master Plan. Modify with additional guidelines, regulations, and land use techniques as necessary within the limits of state statutes, while also respecting private property rights.	Flood, Severe Wind	New	$2,500, plus Staff time	Medium	Regional planning committees, including MAG, Westcorp and ad-hoc groups	June 30, 2011	Public Works Department / Building Inspector/Plans Reviewer & Code Compliance Officer & Public Works Manager	General Fund, Grants
5	Develop a Shelter-in-Place Educational program.	Multi-Purpose	Both	Less than $1,000, plus Staff time	Medium	Review similar programs in other communities; work program to meet local needs	Initially NLT March 31, 2010; thereafter on-going as needed	Youngtown Police Services / Police Chief	General Fund, Grants
7	Encourage the use of weather radios, especially in schools, rest homes, convalescent homes, retirement centers and other locations where people congregate to inform them of the approach of severe weather.	Flood, Severe Wind	Both	Staff time	Low	Write-up in *Youngtown Village Reporter* and link on Town website	Initially NLT December 31, 2009; thereafter on-going	Emergency Services Manager / Town Webmaster	General Fund

SECTION 7: PLAN MAINTENANCE PROCEDURES

> ***§201.6(c)(4):*** *[The plan shall include…] (4) A* ***plan maintenance process*** *that includes:*
> *(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*
> *(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*
> *(iii) Discussion on how the community will continue public participation in the plan maintenance process.*
>
> ***§201.6(d)(3):*** *Plans must be reviewed, revised if appropriate, and resubmitted for approval within five years in order to continue to be eligible for HMGP project grant funding.*

According to the DMA 2000 requirements, each plan must define and document processes or mechanisms for maintaining and updating the hazard mitigation plan within the established five-year planning cycle. Elements of this plan maintenance section include:

- ☑ **Monitoring and Evaluating the Plan**
- ☑ **Updating the Plan**
- ☑ **Implementing the Plan by Incorporation into Other Agency or Jurisdictional Planning Mechanisms**
- ☑ **Continued Public Participation**

Maricopa County recognizes that this hazard mitigation plan is intended to be a "living" document with regularly scheduled monitoring, evaluation, and updating.

Section 9 of the 2004 Plan outlined specific steps for plan maintenance. A poll of the MJPT indicated that very little, if any, formal review or maintenance occurred over the past five years. The 2004 Plan was used by several municipalities for the development of grant applications, and was therefore indirectly reviewed on occasion. Reasons for the lack of review included:

- The plan maintenance requirements were not effectively communicated when changes in personnel occurred.
- A general lack of understanding regarding the importance and requirements of the maintenance element.
- A three year period of extremely rapid growth and the lack of resources or time to perform the plan maintenance tasks.

Recognizing the need for improvement, the MJPT discussed ways to make sure that the Plan review and maintenance process will occur over the next five years. The results of those discussions are outlined in the following sections and the plan maintenance strategy.

7.1 Monitoring and Evaluation

The MJPT has established the following monitoring and evaluation procedures:

- **Schedule** – The Plan shall be reviewed on at least an annual basis or following a major disaster. MCDEM will take the lead to reconvene the MJPT on or around the anniversary of the Plan (November) and will work out a suitable reporting format with ADEM. ADEM has also committed to help with reminders to MCDEM as a double accountability. Copies of the annual review report will also be included in Appendix E.
- **Review Content** – One month prior to the MJPT review meeting, a reminder questionnaire will be distributed to each jurisdictions' PPOC, with the following questions:
  - ***Hazard Identification:*** *Have the risks and hazards changed?*
  - ***Goals and objectives:*** *Are the goals and objectives still able to address current and expected conditions?*

- ***Mitigation Projects and Actions:*** *Has the project been completed? If not complete but started, what percent of the project has been completed? How much money has been expended on incomplete projects? Did the project require additional funds over the expected amount or were the costs less than expected?*

During the annual meeting, each PPOC will have the opportunity to provide a report to the group of his/her review of the Plan. The report will include their responses to the above questions and any other items specific to their community. Documentation of the annual meeting will include notes on the results of the meeting as well as more specific information on the reasoning behind proposed changes to the Plan.

A formal presentation of the review material will be presented to a jurisdiction's council or board only if a major update to the Plan is proposed prior to the next five year update, or if changes to the mitigation A/Ps are desired to be acknowledged by the State and FEMA.

7.2 Plan Update

According to DMA 2000, the Plan require updating and re-approval from FEMA every five years. The plan update will adhere to that set schedule using the following procedure:

- ✓ One year prior to the plan expiration date, the MJPT will re-convene to review and assess the materials accumulated in Appendix E.
- ✓ The MJPT will update and/or revise the appropriate or affected portions of the plan and produce a revised plan document.
- ✓ The revised plan document will be presented before the respective councils and boards for an official concurrence/adoption of the changes.
- ✓ The revised plan will be submitted to ADEM and FEMA for review, comment and approval.

7.3 Incorporation Into Existing Planning Mechanisms

Incorporation of the Plan into other planning mechanisms, either by content or reference, enhances a community's ability to perform natural hazard mitigation by expanding the scope of the Plan's influence. Over the past planning cycle, the success of incorporating the 2004 Plan elements into other planning programs has varied from jurisdiction to jurisdiction. Typical ways of incorporation included:

- Use of, or reference to, Plan elements in updates to general and comprehensive planning documents.
- Addition of defined mitigation A/Ps to capital improvement programming.
- Inclusion of Plan elements into development planning and practices.
- Resource for developing and/or updating emergency operations plans.

Many of these incorporation and implementation examples are included in Tables 6-4 and 6-7-1 through 6-7-27.

The Plan will continue to function as a standalone document subject to its own review and revision schedule presented in Sections 7.1 and 7.2. The Plan will also serve as a reference for other mitigation and land planning needs of the participating jurisdictions. On a county-wide basis, the Plan will be referenced in the development of a community wildfire protection plan for Maricopa County, and will be referred to in Chapter 4 (Flooding in Maricopa County) of the 2009 Comprehensive Plan.[52] Whenever possible, each jurisdiction will endeavor to incorporate the risk assessment results and mitigation actions and projects identified in the Plan, into existing and future planning mechanisms. At a minimum, each of the responsible agencies/departments noted in Tables 6-1-1 through 6-1-28 will review and reference the Plan and revise and/or update the legal and regulatory planning documents, manuals, codes, and ordinances summarized in Tables 6-1-1 through 6-1-28, as appropriate. Specific incorporation of the Plan risk assessment elements into the natural resources and safety elements of the jurisdictions' general plans and development review processes, adding or revising building codes, adding or changing zoning and subdivision ordinances, and incorporating mitigation goals and strategies into general and/or comprehensive plans, will help to ensure hazard mitigated future development. In addition,

[52] The language primarily references the historic flood events and number of critical facilities exposed to flooding.

an implementation strategy outlining assignments of responsibility and completion schedules for specific actions/projects proposed in this plan are summarized in Tables 6-8-1 through 6-8-28.

7.4 Continued Public Involvement

Maricopa County is committed to keeping the public informed about the hazard mitigation planning efforts, actions and projects. In order to accomplish this, the MJPT shall pursue the following opportunities for public involvement and dissemination of information whenever possible and appropriate:

- ✓ Provide a permanent webpage on the County's website, that will house a digital copy of the Plan and document future planning activities. Contact information for the County PPOC will be posted as well.
- ✓ Participate in annual events such as the County fair and other public events.
- ✓ Perform public outreach and mitigation training meetings for targeted populations known to be in higher risk hazard areas (i.e. – floodplain residents).

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 8: PLAN TOOLS

8.1 Acronyms

A/P.....Mitigation Action/Project
ADEM .....Arizona Division of Emergency Management
ADEQ .....Arizona Department of Environmental Quality
ADWR .....Arizona Department of Water Resources
AGFD .....Arizona Game and Fish Department
ARS .....Arizona Revised Statutes
ASCE .....American Society of Civil Engineers
ASERC .....Arizona State Emergency Response Commission
ASLD .....Arizona State Land Department
ASU .....Arizona State University
AZDEQ .....Arizona Department of Environmental Quality
AZGS .....Arizona Geological Survey
BLM .....Bureau of Land Management
CAP .....Central Arizona Project
CAP .....Community Assistance Program
CFR .....Code of Federal Regulations
CRS .....Community Rating System
CWPP .....Community Wildfire Protection Plan
DEMA .....Arizona Department of Emergency and Military Affairs
DFIRM .....Digital Flood Insurance Rate
DMA 2000 .....Disaster Mitigation Act of 2000
DOT .....Department of Transportation
EHS .....Extremely Hazardous Substance
EPA .....Environmental Protection Agency
EPCRA .....Emergency Planning and Community Right to Know Act
FCDMC.....Flood Control District of Maricopa County
FEMA .....Federal Emergency Management Agency
FMA .....Flood Mitigation Assistance Grant Program
GIS .....Geographic Information System
HAZMAT .....Hazardous Material
HAZUS-99 .....Hazards United States1999
HAZUS-MH .....Hazards United States Multi-Hazard
IFCI .....International Fire Code Institute
LEPC .....Local Emergency Planning Committee
MCDEM .....Maricopa County Department of Emergency Management
MCDOT .....Maricopa County Department of Transporation
MJHMP .....Multi-Jurisdictional Hazard Mitigation Plan
MMI .....Modified Mercalli Intensity
NCDC .....National Climate Data Center
NDMC .....National Drought Mitigation Center
NESDIS .....National Environmental Satellite, Data and Information Service
NFIP .....National Flood Insurance Program
NFPA .....National Fire Protection Association
NHC .....National Hurricane Center
NIBS .....National Institute of Building Services
NID .....National Inventory of Dams
NIST .....National Institute of Standards and Technology
NSF .....National Science Foundation
NOAA .....National Oceanic and Atmospheric Administration
NRC .....National Response Center
NWS .....National Weather Service

PSDI .....Palmer Drought Severity Index
RL .....Repetitive Loss
SARA .....Superfund Amendments and Reauthorization Act
SRLP .....Severe Repetitive Loss Properties
SRL .....Severe Repetitive Loss
SRP .....Salt River Project
UBC .....Uniform Building Code
USACE .....United States Army Corps of Engineers
USDA .....United States Department of Agriculture
USFS .....United States Forest Service
USGS .....United States Geological Survey
VA .....Vulnerability Analysis
WUI .....Wildland Urban Interface

8.2 Definitions

The following terms and definitions are provided for reference and are taken from the 2007 State Plan with a few minor modifications.

ARIZONA HAZARDS

Dam Failure
A dam failure is a catastrophic type of failure characterized by the sudden, rapid and uncontrolled release of impounded water. Dam failures are typically due to either overtopping or piping and can result from a variety of causes including natural events such as floods, landslides or earthquakes, deterioration of foundation or compositional materials, penetration by vegetative roots or animal burrows, fissures or improper design and construction. Such a failure presents a significant potential for a disaster as significant loss of life and property would be expected in addition to the possible loss of power and water resources.

Drought
A drought is a deficiency of precipitation over on extended period of time, resulting in water shortage for some activity, group or environmental sector. "Severe" to "extreme" drought conditions endanger livestock and crops, significantly reduce surface and ground water supplies, increase the potential risk for wildland fires, increase the potential for dust storms, and cause significant economic loss. Humid areas are more vulnerable than arid areas. Drought may not be constant or predictable and does not begin or end on any schedule. Short term droughts are less impacting due to the reliance on irrigation and groundwater in arid environments.

Earthquake
An earthquake is a naturally-induced shaking of the ground, caused by the fracture and sliding of rock within the Earth's crust. The magnitude is determined by the dimensions of the rupturing fracture (fault) and the amount of displacement that takes place. The larger the fault surface and displacement, the greater the energy. In addition to deforming the rock near the fault, this energy produces the shaking and a variety of seismic waves that radiate throughout the Earth. Earthquake magnitude is measured using the Richter Scale and earthquake intensity is measured using the Modified Mercalli Intensity Scale.

Fissure
Earth fissures are tension cracks that open as the result of subsidence due to severe overdrafts (i.e., pumping) of groundwater, and occur about the margins of alluvial basins, near exposed or shallow buried bedrock, or over zones of differential land subsidence. As the ground slowly settles, cracks form at depth and propagate towards the surface, hundreds of feet above. Individual fissures range in length from hundreds of feet to several miles, and from less than an inch to several feet wide. Rainstorms can erode fissure walls rapidly causing them to widen and lengthen suddenly and dangerously, forming gullies five to 15- feet wide and tens of feet deep.

Flooding

Flooding is an overflowing of water onto normally dry land and is one of the most significant and costly of natural disasters. Flooding tends to occur in Arizona during anomalous years of prolonged, regional rainfall (typical of an El Nino year), and is typified by increased humidity and high summer temperatures.

Flash flooding is caused excessive rain falling in a small area in a short time and is a critical hazard in Arizona. Flash floods are usually associated with summer monsoon thunderstorms or the remnants of a tropical storm. Several factors contribute to flash flooding: rainfall intensity and duration, topography, soil conditions, and ground cover. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area and can occur within a few minutes or hours of excessive rainfall, or a quick release from a dam or levee failure. Thunderstorms produce flash flooding, often far from the actual storm and at night when natural warnings may not be noticed.

Landslide / Mudslide

Landslides like avalanches are massive downward and outward movements of slope-forming materials. The term landslide is restricted to movement of rock and soil and includes a broad range of velocities. Slow movements, although rarely a threat to life, can destroy buildings or break buried utility lines. A landslide occurs when a portion of a hill slope becomes too weak to support its own weight. The weakness is generally initiated when rainfall or some other source of water increases the water content of the slope, reducing the shear strength of the materials. A mud slide is a type of landslide referred to as a flow. Flows are landslides that behave like fluids: mud flows involve wet mud and debris.

Levee Failure / Breach

Levee failures are typically due to either overtopping or erosive piping and can result from a variety of causes including natural events such as floods, hurricane/tropical storms, or earthquakes, deterioration of foundation or compositional materials, penetration by vegetative roots or animal burrows, fissures, or improper design, construction and maintenance. A levee breach is the opening formed by the erosion of levee material and can form suddenly or gradually depending on the hydraulic conditions at the time of failure and the type of material comprising the levee.

Severe Wind

Thunderstorms are characterized as violent storms that typically are associated with high winds, dust storms, heavy rainfall, hail, lightning strikes, and/or tornadoes. The unpredictability of thunderstorms, particularly their formation and rapid movement to new locations heightens the possibility of floods. Thunderstorms, dust/sand storms and the like are most prevalent in Arizona during the monsoon season, which is a seasonal shift in the winds that causes an increase in humidity capable of fueling thunderstorms. The monsoon season in Arizona typically is from late-June or early-July through mid-September.

Tornadoes are violently rotating columns of air extending from a thunderstorm to the ground. The most violent tornadoes are capable of tremendous destruction with wind speeds in excess of 250 mph. Damage paths can exceed a mile wide and 50 miles long. The damage from tornadoes is due to high winds. The Fujita Scale of Tornado Intensity measures tornado / high wind intensity and damage.

Tropical Storms are storms in which the maximum sustained surface wind ranges from 39-73 mph. Tropical storms are associated with heavy rain and high winds. High intensity rainfall in short periods is typical. A tropical storm is classified as a hurricane when its sustained winds reach or exceed 74 mph. These storms are medium to large in size and are capable of producing dangerous winds, torrential rains, and flooding, all of which may result in tremendous property damage and loss of life, primarily in coastal populated areas. The effects are typically most dangerous before a hurricane makes landfall, when most damage occurs. However, Arizona has experienced a number of tropical storms that caused extensive flooding and wind damage.

Subsidence

Land subsidence in Arizona is primarily attributed to substantial groundwater withdrawal from aquifers in sedimentary basins. As the water is removed, the sedimentary layers consolidate resulting in a general lowering of the corresponding ground surface. Subsidence frequently results in regional bowl-shaped depressions, with loss of elevation greatest in the center and decreasing towards the perimeter. Subsidence can measurably change or reverse basin gradients causing expensive localized flooding and adverse impacts or even rupture to long-baseline infrastructure such as canals, sewer systems, gas lines and roads. Earth fissures are the most spectacular and destructive manifestation of subsidence-related phenomena.

Wildfire
Wildfire is a rapid, persistent chemical reaction that releases heat and light, especially the exothermic combination of a combustible substance with oxygen. Wildfires present a significant potential for disaster in the southwest, a region of relatively high temperatures, low humidity, low precipitation, and during the spring moderately strong daytime winds. Combine these severe burning conditions with people or lightning and the stage is set for the occurrence of large, destructive wildfires.

Winter Storm
Winter storms bring heavy snowfall and frequently have freezing rain and sleet. Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Freezing rain begins as snow at higher altitudes and melts completely on its way down while passing through a layer of air above freezing temperature, then encounters a layer below freezing at lower level to become supercooled, freezing upon impact of any object it then encounters. Because freezing rain hits the ground as a rain droplet, it conforms to the shape of the ground, making one thick layer of ice. Snow is generally formed directly from the freezing of airborne water vapor into ice crystals that often agglomerates into snowflakes. Average annual snowfall in Arizona varies with geographic location and elevation, and can range from trace amounts to hundreds of inches. Severe snow storms can affect transportation, emergency services, utilities, agriculture and basic necessities supply to isolated communities. In extreme cases, snowloads can cause significant structural damage to under-designed buildings.

GENERAL PLAN TERMS

Asset
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.

Building
A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.

Critical Facilities and Infrastructure
Systems or facilities whose incapacity or destruction would have a debilitating impact on the defense or economic security of the nation. The Critical Infrastructure Assurance Office (CIAO) defines eight categories of critical infrastructure, as follows:

Telecommunications infrastructure: Telephone, data services, and Internet communications, which have become essential to continuity of business, industry, government, and military operations.

Electrical power systems: Generation stations and transmission and distribution networks that create and supply electricity to end-users.

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.

Banking and finance institutions: Banks, financial service companies, payment systems, investment companies, and securities/commodities exchanges.

Transportation networks: Highways, railroads, ports and inland waterways, pipelines, and airports and airways that facilitate the efficient movement of goods and people.

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.

Government services: Capabilities at the federal, state, and local levels of government required to meet the needs for essential services to the public.

Emergency services: Medical, police, fire, and rescue systems.

Disaster Mitigation Act of 2000 (DMA2K)
A law signed by the President on October 30, 2000 that encourages and rewards local and state pre-disaster planning, promotes sustainability as a strategy for disaster resistance, and is intended to integrate state and local planning with the aim of strengthening statewide mitigation planning.

Emergency Preparedness and Response (EPR) Directorate
One of five major Department of Homeland Security Directorates which builds upon the formerly independent Federal Emergency Management Agency (FEMA). EPR is responsible for preparing for natural and human-caused disasters through a comprehensive, risk-based emergency management program of preparedness, prevention, response, and recovery. This work incorporates the concept of disaster-resistant communities, including providing federal support for local governments that promote structures and communities that reduce the chances of being hit by disasters.

Emergency Response Plan
A document that contains information on the actions that may be taken by a governmental jurisdiction to protect people and property before, during, and after a disaster.

Federal Emergency Management Agency (FEMA)
Formerly independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery. As of March 2003, FEMA is a part of the Department of Homeland Security's Emergency Preparedness and Response (EPR) Directorate.

Flood Insurance Rate Map (FIRM)
Map of a community, prepared by FEMA that shows the special flood hazard areas and the risk premium zones applicable to the community.

Frequency
A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1% chance – its probability – of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.

Geographic Information Systems (GIS)
A computer software application that relates physical features on the earth to a database to be used for mapping and analysis.

Hazard
A source of potential danger or adverse condition. Hazards include both natural and human-caused events. A natural event is a hazard when it has the potential to harm people or property and may include events such as floods, earthquakes, tornadoes, tsunami, coastal storms, landslides, and wildfires that strike populated areas. Human-caused hazard events originate from human activity and may include technological hazards and terrorism. Technological hazards arise from human activities and are assumed to be accidental and/or have unintended consequences (e.g., manufacture, storage and use of hazardous materials). While no single definition of terrorism exists, the Code of Federal Regulations defines terrorism as "…unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."

Hazard Event
A specific occurrence of a particular type of hazard.

Hazard Identification
The process of identifying hazards that threaten an area.

Hazard Mitigation
Cost effective measures taken to reduce or eliminate long-term risk associated with hazards and their effects.

Hazard Profile
A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent.

HAZUS
A GIS-based nationally standardized earthquake, flood and high wind event loss estimation tool developed by FEMA.

Mitigate
To cause to become less harsh or hostile; to make less severe or painful. Mitigation activities are actions taken to eliminate or reduce the probability of the event, or reduce its severity of consequences, either prior to or following a disaster/emergency.

Mitigation Plan
A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in a defined geographic area, including a description of actions to minimize future vulnerability to hazards.

100-Hundred Year Floodplain
Also referred to as the Base Flood Elevation (BFE) and Special Flood Hazard Area (SFHA). An area within a floodplain having a 1% or greater chance of flood occurrence in any given year.

Planning
The act or process of making or carrying out plans; the establishment of goals, policies, and procedures for a social or economic unit.

Probability
A statistical measure of the likelihood that a hazard event will occur.

Promulgation
To make public and put into action the Hazard Mitigation Plan via formal adoption and/or approval by the governing body of the respective community or jurisdiction (i.e. – Town or City Council, County Board of Directors, etc.).

Q3 Data
The Q3 Flood Data product is a digital representation of certain features of FEMA's Flood Insurance Rate Map (FIRM) product, intended for use with desktop mapping and Geographic Information Systems technology. The digital Q3 Flood Data are created by scanning the effective FIRM paper maps and digitizing selected features and lines. The digital Q3 Flood Data are designed to serve FEMA's needs for disaster response activities, National Flood Insurance Program activities, risk assessment, and floodplain management.

Repetitive Loss Property
A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least $1,000 each have been paid within any 10 year period since 1978.

Risk
The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage beyond a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Substantial Damage
Damage of any origin sustained by a structure in a Special Flood Hazard Area whereby the cost of restoring the structure to its before-damaged condition would equal or exceeds 50% of the market value of the structure before the damage.

Vulnerability
Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power–if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Vulnerability Analysis
The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability analysis should address impacts of hazard events on the existing and future built environment.

Vulnerable Populations
Any segment of the population that is more vulnerable to the effects of hazards because of things such as lack of mobility, sensitivity to environmental factors, or physical abilities. These populations can include, but are not limited to, senior citizens and school children.

Goals
General guidelines that explain what you want to achieve. Goals are usually broad statements with long-term perspective.

Objectives
Defined strategies or implementation steps intended to attain the identified goals. Objectives are specific, measurable, and have a defined time horizon.

Actions/Projects
Specific actions or projects that help achieve goals and objectives.

Implementation Strategy
A comprehensive strategy that describes how the mitigation actions will be implemented.

GENERAL HAZARD TERMS

Fujita Scale of Tornado Intensity
Rates tornadoes with numeric values from F0 to F5 based on tornado winds peed and damage sustained. An F0 indicates minimal damage such as broken tree limbs or signs, while an F5 indicates severe damage sustained.

Liquefaction
The phenomenon that occurs when ground shaking (earthquake) causes loose soils to lose strength and act like viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.

Modified Mercalli Intensity Scale
The Modified Mercalli Intensity Scale is commonly used in the United States by seismologists seeking information on the severity of earthquake effects. Intensity ratings are expressed as Roman numerals between I at the low end and XII at the high end. The Intensity Scale differs from the Richter Magnitude Scale in that the effects of any one earthquake vary greatly from place to place, so there may be many Intensity values (e.g.: IV, VII) measured from one earthquake. Each earthquake, on the other hand, should have just one Magnitude, although the several methods of estimating it will yield slightly different values (e.g.: 6.1, 6.3).

Monsoon
A monsoon is any wind that reverses its direction seasonally. In the Southwestern U.S., for most of the year the winds blow from the west/northwest. Arizona is located on the fringe of the Mexican Monsoon which during the summer months turns the winds to a more south/southeast direction and brings moisture from the Pacific Ocean, Gulf of California, and Gulf of Mexico. This moisture often leads to thunderstorms in the higher mountains and Mogollon Rim, with air cooled from these storms often moving from the high country to the deserts, leading to further thunderstorm activity in the desert. A common misuse of the term monsoon is to refer to individual thunderstorms as monsoons.

Richter Magnitude Scale
A logarithmic scale devised by seismologist C.F. Richter in 1935 to express the total amount of energy released by an earthquake. While the scale has no upper limit, values are typically between 1 and 9, and each increase of 1 represents a 32-fold increase in released energy.

Appendix A

Official Resolution of Adoption

Appendix B

Planning Process Documentation

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		AVONDALE		
Art Snapp	City of Avondale	Fire Rescue	Division Chief	Team Lead
Dan Davis	City of Avondale	Parks, Rec and Library	Department Head	Team Member
Ken Sowers	City of Avondale	Building	Chief Building Offical	Team Member
Sue McDermott	City of Avondale	Engineering	City Engineer	Team Member
Janet Stewart	City of Avondale	Field Operations	Department Head	Team Member
Kevin Artz	City of Avondale	Finance and Budget	Department Head	Team Member
Kenin Hinderleider	City of Avondale	I.T.	Department Head	Team Member
Wayne Janis	City of Avondale	Water Resources	Department Head	Team Member
Allen Iampaglia	City of Avondale	Risk Management	Department Head	Team Member
Brian Berndt	City of Avondale	Development Services	Director	Team Member
Tracy Stevens	City of Avondale	Development Services	Planning Manager	Team Member
Janeen Gaskins	City of Avondale	City Managers Office	Grants Manager	Team Member
Pier Simeri	City of Avondale	Community Relations/Public Affairs	PIO Director	Team Member
Roger Parker	City of Avondale	Fire Rescue	Fire Marshal	Team Member
Gina Montes	City of Avondale	Neighborhood/Family Services	Department Head	Team Member
Nancy Gardner	City of Avondale	Police	Lt-SWAT	Team Member
		BUCKEYE		
Dewey Horton	Buckeye Fire Department	Fire/ Emergency Services	Assistant Chief	Lead POC for Town of buckeye
Carl Johnson	Buckeye Police Department	Police/ Emergency Services	Sergeant	Assist with assesments
Damon DeQuenne	Town of Buckeye	Public Works/ Emergency Services	Director	Assist with assesments
		CAREFREE		
Patrick Farmer	Town of Carefree	Town Administration	Town Marshal	Emergency Management Coordinator and Town Marshal
Gary Neiss	Town of Carefree	Marshal's Office	Town Administrator	EM Committee and Town Administrator
Janeen Dutcher	Town of Carefree	Town Administration	Administrative Assistant	EM Committee and Administrative Assistant
Stan Francom	Town of Carefree	Water Services and Public Works	Director	EM Committee and Director of Water Services And Public Works
John Kraetz	Rural Metro	Carefree Fire Station	Fire Chief	EM Committee and Fire Chief Carefree Fire Station (Rural Metro)
		CAVE CREEK		
Adam Stein	Town of Cave Creek	Marshal's Office	Town Marshal	Primary Community Point of Contact, MJPT participant, local team organizer.
Carrie Dyrek	Town of Cave Creek	Town Clerk	Town Clerk	Local Team
Mike Rigney	Town of Cave Creek	Utilities	Asst. Utilities Manager	Local Team
Wayne Anderson	Town of Cave Creek	Engineering	Town Engineer	Local Team
Ian Cordwell	Town of Cave Creek	Planning and Zoning	Planning and Zoning Administrator	Local Team
Michael Baxley	Town of Cave Creek	Building Safety	Building Official	Local team
Usama Abujbarah	Town of Cave Creek	Administration	Town Manager	local Team
John Kraetz	Rural Metro Fire Department	Fire Department	District Chief	Local Team

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		CHANDLER		
Jeff Clark	City of Chandler	Fire	Fire Chief	Fire Department Senior Management
Marc Walker	City of Chandler	Fire	Assistant Fire Chief	Chair for City Emergency Management Group
Tom Carlson	City of Chandler	Fire	Assistant Fire Chief	Fire Department Senior Management
Rob McLeod	City of Chandler	Fire	Battalion Chief	City Emergency Management Group
Bob Mulvey	City of Chandler	Municipal Utilities	Asst. Municipal Utilities Director	City Emergency Management Group
Brian Bosshardt	City of Chandler	City Managers Office	Organizational Dev. Admin.	City Emergency Management Group
Carla Boatner	City of Chandler	City Magistrate	Court Administrator	City Emergency Management Group
Connie Reynolds	City of Chandler	Risk Management	Occupational Health Nurse	City Emergency Management Group
Craig Younger	City of Chandler	Communications and Public Affairs	Public Information Officer	City Emergency Management Group
Dan Cook	City of Chandler	Public Works	Deputy Director	City Emergency Management Group
Dave Bigos	City of Chandler	Mayor and City Council	Mayor and Council Assistant	City Emergency Management Group
Ed Krupinski	City of Chandler	Risk Management	Safety Administrator	City Emergency Management Group
Gary Hargis	City of Chandler	Parks and Facilities	Planner/Scheduler	City Emergency Management Group
Jim Weiss	City of Chandler	Environmental Management	Environmental Prog. Manager	City Emergency Management Group
Judy Mandt	City of Chandler	Police	Planning and Research Analyst	City Emergency Management Group
Konrad Schuknecht	City of Chandler	Community Services	Parks Insp. & Emer. Oprs Plan.	City Emergency Management Group
Mike Smith	City of Chandler	Environmental Management	Environmental Prog. Specialist	City Emergency Management Group
Mitch Robinson	City of Chandler	Information Technology	Security Administrator	City Emergency Management Group
Paul Meissner	City of Chandler	Law	Assistant City Attorney	City Emergency Management Group
Robert Combs	City of Chandler	Purchasing	Purchasing/Materials Mananger	City Emergency Management Group
Rudy Hansen	City of Chandler	Municipal Utilities	Security Coordinator	City Emergency Management Group
Shawn Hawkins	City of Chandler	Police	Police Lieutenant	City Emergency Management Group
Tiffany Anderson	City of Chandler	Police	Planning and Research Analyst	City Emergency Management Group
William Robinson	City of Chandler	Central Supply	Supply Supervisor	City Emergency Management Group
Boyd Dunn	City of Chandler	City Council	Mayor	City of Chandler Jurisdiction Council
Bob Caccamo	City of Chandler	City Council	Vice Mayor	City of Chandler Jurisdiction Council
Trinity Donovan	City of Chandler	City Council	Council Member	City of Chandler Jurisdiction Council
Rick Heumann	City of Chandler	City Council	Council Member	City of Chandler Jurisdiction Council
Matt Orlando	City of Chandler	City Council	Council Member	City of Chandler Jurisdiction Council
Jack Sellers	City of Chandler	City Council	Council Member	City of Chandler Jurisdiction Council
Jeff Weninger	City of Chandler	City Council	Council Member	City of Chandler Jurisdiction Council
		EL MIRAGE		
Darrell Rezendes	City of El Mirage	Fire Department	Fire Chief	Project Manager
Howard Munding	City of El Mirage	Fire Department	Assistant Fire Chief	Facilitator
Mark Smith	City of El Mirage	Community Development	Senior Planner	Team Member
William Louis	City of El Mirage	Police Department	Assistant Police Chief	Team Member
Robert Senita	City of El Mirage	Public Works Department	Operations Superintendent	Team Member

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY				
Tim Murphy	FCDMC	Floodplain Delineaiton Branch	Branch Manager	Team Member - Floodplain delineations information. levee data
Michael Gease	FCDMC	Floodplain Management Services	Floodplain Planning Specialist	Team Memeber - Floodplain management, NFIP, CRS
Lee Jimenez	FCDMC	Floodplain Management Services	Floodplain Representative	Team Memeber - Floodplain management
Steve Waters	FCDMC	Flood Warning Branch	Branch Manager	Team Member - Flood warning, ALERT data, EAP
Jen Pokorski	FCDMC	Planning and Project Management	Project Manager	Team Member - Planning and projects
Tom Renckly	FCDMC	Structures Management Branch	Branch Manager	Team Member - Dam safety and management
Bill Jenkins	FCDMC	Structures Management Branch	Project Manager	Team Member - Dam safety and management
FOUNTAIN HILLS				
Scott LaGreca	Fountain Hills Fire Department		Fire Chief	Leader of Planning Team
Randy Roberts	Fountain Hills Fire Department		Assistant Chief	Liaison to Town Officials
Tom Ward	Town of Fountain Hills	Public Works	Public Works Director	Represent Public Works' role in mitigation
Julie Ghetti	Town of Fountain Hills	Administration	Deputy Town Manager	Provide finance and planning direction/ represent Town Administration
Kevin Hennis	Fountain Hills Fire Department		Fire Captain	Provide input and support to the Team
John Kleinheinz	Maricopa County Sherrif's Office		Captain	Provide Law Enforcement input
Pat Lay	Fountain Hills Fire Department		Firefighter	Provide input and support to the Team
FORT MCDOWELL YAVAPAI NATION				
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	Risk Assessment and Program Manager
Jesse Delmar	Fort McDowell Yavapai Nation	Police Department	Police Chief	Assist program manager with risk assessments
Jim Alevras	Fort McDowell Yavapai Nation	Public Works	Public Works Manager	Manage on-site mitigation projects
Mark Frank	Fort McDowell Yavapai Nation	Environmental Departrment	Acting Director	Evaluate environmental impact of mitigation projects
Alfonso Rodriguez	Fort McDowell Yavapai Nation	Community/Economic Development	Division Director	Prioritize mitigation projects
Joe Kanovich	Fort McDowell Yavapai Nation	Planning and Development	Infrastructure Coordinator	Liaison with jurisdictions impacted by mitigation projects
Albert Parra	Fort McDowell Yavapai Nation	Finance Department	Chief Financial Officer	Provide Funding for mitigation projects
Clinton Pattea	Fort McDowell Yavapai Nation	Tribal Council	President	Elected official representing government
Bernadine Burnette	Fort McDowell Yavapai Nation	Tribal Council	Vice president	Elected official representing government
Pamela Mott	Fort McDowell Yavapai Nation	Tribal Council	Treasurer	Elected official representing government
Paul Russell	Fort McDowell Yavapai Nation	Tribal Council	Member	Elected official representing government
Ruben Balderas	Fort McDowell Yavapai Nation	Tribal Council	Member	Elected official representing government
GILA BEND				
Harry Parsi	Town of Gila Bend	Public Works Department	Director	CPOC and team lead
Rick Buss	Town of Gila Bend	Administration	Town Manager	Assist in preparing all elements of the plan
GILBERT				
Sheri Gibbons	Gilbert Fire Department	Emergency Management	Emergency Management Coordiantor	Facilitator
Lonnie Frost	Public Works Department		Director Public Works	
Kathy Rall	Public Works Department	Water Department	Water Resource Manager	

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		GLENDALE		
Debra Sheff	City of Glendale	Emergency Management	Operations & Training Officer	Point of Contact/Facilitator and Local Planning Team Coordinator
Rob Gunter	City of Glendale	Emergency Management	Homeland Security Director	Emergency Management Director
Peter Kulikowski	City of Glendale	Planning	Associate Planner	Planning Department Representative
Jessica Eastman	City of Glendale	Planning	Planning Technician	Planning Department Representative
Jon Froke	City of Glendale	Planning	Planning Director	Planning Director
Chris DeChant	City of Glendale	Fire Department	Asst. Fire Chief	Fire Department Representative
Chris Ochs	City of Glendale	Utilities	Deputy Utility Director	Deputy Utility Director
Delvin Fung	City of Glendale	Information Technology	Sr. GIS Analyst	GIS Analyst
Christina Montoya	City of Glendale	Information Technology	Systems Administrator	IT Representative
Kerri Logan	City of Glendale	Transportation	Sr. Management Assistant	Transportation Representative
Mike Conlin	City of Glendale	Engineering	GIS Coordinator	GIS Coordinator
Greg Rodzenko	City of Glendale	Engineering	Asst. City Engineer	Engineering Representative
Larry Broyles	City of Glendale	Engineering	City Engineer	City Engineer
Stuart Kent	City of Glendale	Field Operations	Field Operations Director	Field Operations Director
Michelle Woytenko	City of Glendale	Field Operations	Deputy Field Operations Dir.	Deputy Field Operations Dir.
Frank Lomeli	City of Glendale	Field Operations	Deputy Field Operations Dir.	Deputy Field Operations Dir.
Christina Betz	City of Glendale	Field Operations	Landfill Superintendent	Field Operations Representative
Justine Cornelius	City of Glendale	Building Safety	Building Safety Manager	Building Safety Representative
Matt Lively	City of Glendale	Police Department	Commander	Police Representative
Bryan Hill	City of Glendale	Police Department	Police Crime/Statistics Analyst	GIS Representative
Ken Reedy	City of Glendale	Public Works	Deputy City Manager	Sr. City Representative
Julie Frisoni	City of Glendale		Asst Deputy City Manager	Asst. Deputy City Manager
Kim Larson	City of Glendale	Marketing & Communications	Coordinator	Marketing & Communications Representative
Matt Cohrs	City of Glendale	Community Partnerships	Neighborhood Partnerships Administrator	Community Partnerships Representative
		GOODYEAR		
Othell Newbill	City of Goodyear	Fire	Emergency Manager	Primary POC
Chri Nadeau	City of Goodyear	Police	Telecommunications Manager	Police representative
Ron Sievwright	City of Goodyear	Public Works	Streets Superintendant	Public Works representative - asset inventory
Bill Bishop	City of Goodyear	Fire	BC, Training	Fire Dept representative
Darrin Green	City of Goodyear	Fire	Captain, Training, TLO	Fire Dept representative
Jeff Thomas	City of Goodyear			
David Ramirez	City of Goodyear	Engineering	City Engineer	Engineering representative - mitigation strategy and capability assessment

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
GUADALUPE				
Fransico Montiel - Mayor	Policy Group	Council	Mayor and Council	Policy Group
Rose Mary Arellano - Town Manager	Emergency Services Coordinator	Operations	Town Manager	Emergency Services Coordinator
Gino Turrubiartes	Community Development	Community Development	Director	Planning Group
Jim Ricker	Building and Safety	Building and Safety	Building Inspector	Planning Group
Wayne Clemens	Fire Department	Fire Department	Interim Fire Chief	Emergency Services Coordinator
Loren Gaitan	MSSO	Sherriff	Deputy Officer	Emergency Services Coordinator
Loren Gaitan	MSSO	Sherriff	Deputy Officer	Planning Group
Rose Mary Arellano - Town Manager	Public Works/Town Clerk	Public Works	Town Manager	Planning Group
Rose Mary Arellano - Town Manager	Human Resources	Operations	Town Manager/Town Clerk	Planning Group
Mark Johnston	I.T.	Finance Department	Finance Director	Logistics Group
Gino Turrubiartes	Community Development	Community Development	Director	Logistics Group
Mark Johnston	Finance Department	Finance Department	Finance Director	Finance
LITCHFIELD PARK				
Sonny Culbreth	City of Litchfield Park	City Manager; Community Services	Asst. City M, Community & Recreation Services Directoranager	Emergency Management Coordinator
Chuck Ransom	City of Litchfield Park	Building/Public Works	Building Official/Director of Field Operations	Support, road closures, resourse provider
John Rae	City of Litchfield Park	Building/Safety	Building and Safety inspector	Support,safety inspections
Ben Ronquillo	City of Litchfield Park	Finance	Director of Finance	Budget management, grant requests, Emergency expendenture tracking
MARICOPA COUNTY DEPARTMENT OF EMERGENCY MANAGEMENT				
Cristina Herrera	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Project Coordinator/Provide direction and approve final updated plan draft.
Julie Syrmopoulos	Maricopa County	Regional Development Services	Public Relations Director	Team Member/Coordinate public involvement/public comment/public outreach
Pete Weaver	Maricopa County	Department of Emergency Management	Director	Team Member/Plan promulgation
Meredith Bond	Maricopa County	Department of Emergency Management	Office Assistant	Team Member/Provide administrative support
Glen Floe	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Team Member/Provide assistance with cities and towns.
Jim Begansky	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Team Member/Provide assistance with cities and towns.
Richard Langevin	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Team Member/Provide assistance with cities and towns.
John Padilla	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Team Member/Provide assistance with cities and towns.
Jennifer Hamilton	Maricopa County	Department of Emergency Management	Emerg Srvs Planner	Team Member/Provide assistance with cities and towns.
Marcos Coria	Maricopa County	Department of Emergency Management	GIS Programmer	GIS data support
MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION				
John J. Rose	Maricopa County/Public Works	MCDOT/PM & Construction/Survey	Transportation Survey Chief/Emergency Management Representative	Leader/Coordinate activities for MCDOT
Mitch Wagner	Maricopa County/Public Works	MCDOT/Planning/Transportation system Planning	Planner	Team member/Meeting participant
John Morast	Maricopa County/Public Works	MCDOT/Operations	Division Manager	Team Member/Maintenance expert
Kevin Kottmer	Maricopa County/Public Works	MCDOT/PM & Construction/Construction Management	Civil Engineering Technician	Team Member/FEMA trained participant
Andrzej Wojakiewicz	Maricopa County/Public Works	MCDOT/Engineering/Bridge	Bridge Engineer	Team Member/Structures Expert
Wayne Butch	Maricopa County/Public Works	MCDOT/Engineering/Utilities	Utilities Head	Team Member/Utilities Expert
David Fritz	Maricopa County/Public Works	MCDOT/Engineering/In-House Design	Design Engineer	Team Member/Road Design Expert

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		MESA		
Richard Ochoa	Energy Resources	Gas Division	Emergency Management Liaison from Mesa Utilities	Provide expertise to the Mitigation Planning Team as it relates to the Natural Gas resources
Kelly Jensen	Engineering	Design and Construction projects	Assistant City Engineer	Provide general guidance to the team including construction and development projects
Fred Rustam	Engineering	Design projects	Deputy City Engineer	Provide guidance to the team relating to flood plain, subsidencs and fissures.
Richard Bradford	Water Resources Dept	Wastewater	Assistant Director Wastewater	Provide general information to Emergency management as it relates to wasterwater treatment.
Paul Calebaugh	Information Technology (ITD)	Emergency Management rep liaison to Information Technology Div.	Project Manager III, Business Continuity Planner for ITD	Provide general information to Emergency management as it relates to the ITD
Tony Bianchi	ITD	GIS	GIS Supervisor	Provides mapping and other related information to Emerg Mngmt
Susan Miller	Water Resources Dept	Water	Assistant Water Resources Director	Provide input to the committee relating to water quality and quantity for the City of Mesa
Michael Kennedy	Water Resources Dept	Water	Water Treatment Superintendent	Responsible for water quality via CAP, Val Vista water treatment facilities
Larry Culp	Energy Resources	Gas Division	Gas Division Supervisor	Provide guidance and general information relating to the City of Mesa Gas Div
Scott Swain	Energy Resources	Electric Div	Electric Division Supervisor	Provide guidance and general information relating to the City of Mesa Electric Div
Ronnie Lopez	Water Resources Dept	Wastewater	Water Reclaimation Superintendant	Provide general information to the group as it relates to wastewater.
Gil Damiani	Fire Dept	Emergency Management	City of Mesa Emergency Management Coordinator	Chair person and group facilitator
Jeff Rush	Information Technology Division	GIS Director	GIS Diresdtor	Provide guidance as it relates to GIS
		PARADISE VALLEY		
Jim Bacon	Town of Paradise Valley	Administration	Town Manager	Overall responsibility.
John Bennett	Town of Paradise Valley	Police Department	Chief of Police	Responsible for emergency preparation and response as well as the security of public buildings. The Police Department will notify town government and staff of a hazard.
Andrew Cooper	Town of Paradise Valley	Public Works	Public Works Director	Responsible for repair to public buildings and infrastructure after an identified hazard. Also responsible for maintenance of the town fleet.
Bill Mead	Town of Paradise Valley	Engineering	Town Engineer	Responsible for identifying damage to public infrastructure and restricting construction on hillsides and in washes. Also responsible to maintain Flood Plain maps.
Carl Hollish	Town of Paradise Valley	Management Svcs	Information Technology	Responsible for maintaining communications and GIS systems.
Robert Lee	Town of Paradise Valley	Planning & Building	Building Safety Mgr	Responsible for identifying damage to public buildings and routine inspections of washes.
		PEORIA		
Larry Rooney	City of Peoria	Fire Department	Deputy Fire Chief	advisor
Sandy Teetsel	City of Peoria	IT	Chief Technology Officer	advisor
Sherine Zaya	City of Peoria	Public Information Office	Public Information Officer	advisor
Walt Begley	City of Peoria	Public Works Department	Facilities Manager	advisor
Tim Smothers	City of Peoria	IT	GIS Supervisor	advisor
Bill Mattingley	City of Peoria	Public Works Department	Public Works Director	advisor
Stephen Bontrager	City of Peoria	Utilities Department	Utilities Director	advisor
Cathy Weistling	City of Peoria	Utilities Department	Management Analyst	advisor
Glenn Jones	City of Peoria	Fire Department	Emergency Preparedness Coord	advisor
David Barnett	City of Peoria	IT	Sr. IT Technician	advisor
Hope Bratton	City of Peoria	Fire Department	Administrative Assistant	advisor
Mike Fusco	City of Peoria	Safety	safety and training officer	advisor

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		PHOENIX		
Candace Huff	City of Phoenix	Aviation/Design & Construction Services Division	Special Projects Administrator	Aviation Design & Construction Liaison
Bobbie Reid	City of Phoenix	Aviation/Facilities and Services Division	Aviation Superintendent	Aviation Facilities Liaison
Jeff Barton	City of Phoenix	Budget & Research/Program Budgeting and Research Division	Deputy Budget & Research Director	Budgetary Liaison
Aaron Cook	City of Phoenix	City Auditor's Office	Internal Auditor III	Department Liaison
Lance Turcato	City of Phoenix	City Auditor's Office	Deputy City Auditor	Department Liaison
Gary Minton	City of Phoenix	City Clerk's Office/Records Management Division	Deputy City Clerk	Records and Electronic Media Liaison
Michael DeBenedetto	City of Phoenix	City Manager's Office/Office of Emergency Management	Emergency Management Coordinator	City Point of Contact
Jeri Todd	City of Phoenix	City Manager's Office/Office of Emergency Management	Administrative Assistant II	
Liz Paulus	City of Phoenix	City Manager's Office/Office of Environmental Programs	Environmental Programs Specialist	Environmental Liaison
Tom Buschatzke	City of Phoenix	City Manager's Office/Water Strategy	Water Resources Management Advisor	Water Resource Liaison
Mary Magewick	City of Phoenix	Community and Economic Development/Management Services Division	Management Assistant II	Department Liaison
Margo Dorrough	City of Phoenix	Community and Economic Development	Administrative Assistant II	Department Liaison
Derek Horn	City of Phoenix	Development Services/Administration	Assistant Development Services Director	Building Code/Damage Assessment Liaison
Mo Glancy	City of Phoenix	Development Services/Commercial Services	Deputy Development Services Director	Building Code/Damage Assessment Liaison
Tauny Woo	City of Phoenix	Engineering and Architectural Services	City Engineer	Engineering and Architectural Liaison
Felissa Washington-Smith	City of Phoenix	Engineering and Architectural Services/Administrative Services	Administrative Assistant III	Engineering and Architectural Liaison
Colleen Nathans	City of Phoenix	Finance/Risk Management	Assistant Risk Management Administrator	Risk Management Liaison
Richard Beardsley	City of Phoenix	Housing/Administration	Deputy Housing Director	Department Liaison
Steve MacFarlane	City of Phoenix	Human Services/Management Services	HSD Planning Supervisor	Department Liaison
Randell Smith	City of Phoenix	Information Technology/Enterprise Technical Services	Chief Information Security Officer	Information Technology Liaison
Elaine Cardwell	City of Phoenix	Law Department/Management Services	Chief Counsel	Legal Counsel
Denton Casey (Alternate)	City of Phoenix	Law Department/Civil Division	Assistant City Attorney IV	Legal Counsel
Diana Noli Hill	City of Phoenix	Municipal Court/Civil Division	Municipal Court Administrator	Department Liaison
Doug Pilcher	City of Phoenix	Municipal Court/Administration	Executive Court Administrator	Department Liaison
Jason Harrell (Alternate)	City of Phoenix	Municipal Court/Management Services	Management Assistant II	Department Liaison
Danielle Taddy	City of Phoenix	Parks and Recreation/Specialized Maintenance and Aquatics	Special Operations Supervisor	Department Liaison
Boyd Winfrey	City of Phoenix	Parks and Recreation/ Development Planning Division	Principal Landscape Architect	Open Space Liaison
Lori Steward	City of Phoenix	Human Resources Department (formerly Personnel Department)	Labor Relations Administrator	Department Liaison
Max Enterline	City of Phoenix	Planning Department/Administration	Planner II	Planning/Zoning Liaison
Charlie Brueggeman	City of Phoenix	Police Department/ Administrative Support	Project Manager	Police Facilities Liaison
Susan Robustelli	City of Phoenix	Public Transit/Operations	Management Assistant II	Department Liaison
Christine Smith	City of Phoenix	Public Works/Downtown Facilities Management	Deputy Public Works Director	Public Works and City Facilities Liaison
Wylie Bearup	City of Phoenix	Street Transportation	Street Transportation Director	Street Transportation and Dam Liaison
Sandra Remy (Alternate)	City of Phoenix	Street Transportation	Management Services Administrator	Street Transportation and Dam Liaison
Robert Hollander	City of Phoenix	Water Services/Compliance Regulatory and Affairs	Compliance Regulatory and Affairs Administrator	Department Liaison
Steve Rossi	City of Phoenix	Water Services/Water Conservation Office	Principal Planner	Drought Management Liaison

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan
List of Local Planning Team Members

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		QUEEN CREEK		
Joe LaFortune	Town of Queen Creek	Fire Department	Public Safety Division Manager	Primary Coordinator; Provide infromation for fire and law enforcement related facilities and infrastructure.
Shawny Ekadis	Town of Queen Creek	Information and Marketing Department	GIS Manager	GIS mapping of critical and non-critical facilities and infrastructure
Dick Schaner	Town of Queen Creek	Transportation Department	Director	Provide infromation for transportation related facilities and infrastructure information
Jim Leubner	Town of Queen Creek	Community Development Department	Engineering Division Manager	Provide infromation for engineering related infrastructure, flood control plans, and geological conditions.
		SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY		
Cliff Puckett	Salt River Indian Community (SRPMIC)	Emergency Management	Emergency Manager	Team Leader and facilitator
David Bunce	SRPMIC	Fire	Fire Chief	Team member
Greg Anderson	SRPMIC	Police	Police Captain	Team member
Todd Auger	SRPMIC	Engineering/Construction Services	Director	Team member
Jim Dorre	SRPMIC	Public Works	Director	Team member
Gene Andreas	SRPMIC	Public Works	Division Manager	Team member
Stacey Gubser	SRPMIC	Community Development	Director	Team member
		SALT RIVER PROJECT		
Patrick O'Toole	Salt River Project	Business Continuity & Emergency Management	Principal Analyst	CPOC
Ed Copp	Salt River Project	Business Continuity & Emergency Management	Manager	Resource
Tim Skarupa	Salt River Project	Water Resource Operations	Senior Hydrologist	Resource
Yvonne Reinink	Salt River Project	Water Resource Operations	Senior Engineer	Resource
Herjinder Hawkins	Salt River Project	Maintenance Engineering	Manager - Distribution Design	Resource
Karen Powell	Salt River Project	Line Clearing	Manager	Resource
Wayne Wisdom	Salt River Project	Electric System Operations	Manager	Resource
		SCOTTSDALE		
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	CPOC
Melanie Gibson	City of Scottsdale	Municipal Services	Project Management Assistant	Resource
Brian Hancock	City of Scottsdale	Planning and Development Services	GIS Analyst	Resource
Kerry Swick	City of Scottsdale	Fire Department	Battalion Chief	Resource
Bill Erickson	City of Scottsdale	Municipal Services	Senior Storm Water Planner	Resource
		SURPRISE		
Kevin Pool	City of Surprise	Fire Department	Assistant Fire Chief	Local team facilitator
Forrest Fielder	City of Surprise	Planning Department	Building Official	Building Official/Planning Department Representative
Robert Maki	City of Surprise	Public Works Department	City Engineer	City Engineer/planned projects
Lloyd Abrams	City of Surprise	IT/GIS Department	GIS Manager	GIS/I.T. support
		TEMPE		
Tom Abbott	City of Tempe	Fire	Deputy Chief	Coordinator
Ray Hardy	City of Tempe	Police	Commander	Police Liaison
John Osgood	City of Tempe	Public Works	Department Director	Public Works Liaison
Oliver Ncube	City of Tempe	Water Utilities	Assistant Director	Water Utilities Liaison
Cliff Jones	City of Tempe	Fire	Fire Chief	Emergency Manager
		TOLLESON		
John Paul Lopez	City Of Tolleson	City Management	Deputy City Manager	Resource
Stephen Holliday	City Of Tolleson	IT	Department Manager	Resource
Wendy Jackson	City Of Tolleson	Human Resource	Department Manager	Resource
Steve Baumgardt	City Of Tolleson	Finance	Department Manager	Resource
Mario Rochin	City Of Tolleson	Building Department	Department Manager	Resource
Wayne Booher	City Of Tolleson	Police Department	Commander	Resource
Joy McClain	City Of Tolleson	Community Services	Department Manager	Resource
Jason Earp	City Of Tolleson	Public Works	Department Manager	Resource
Bob Hansen	City Of Tolleson	Fire Department	Division Chief	City Lead

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Planning Team Role / Description of Duties
		WICKENBURG		
Ronnie Miller	Town of Wickenburg	Police	Operations Director	Primary Community Point of Contact, MJPT participant, local team organizer.
Steve Boyle	Town of Wickenburg	Planning and Zoning	Manager	Team member/mitigation plan advisor
		YOUNGTOWN		
Mark Hannah	Town of Youngtown	Public Works	Manager	PPOC, Emergency Services Manager / Risk Manager
Kimberly Johnson	Town of Youngtown	Police	Chief	Resource
Duren Roberton	Town of Youngtown	Police	Lieutenant	Resource
Daniel Delgado	Town of Youngtown	Public Works	Lead Technician	Resource
Lloyce Robinson	Town of Youngtown	Administrative	Town Manager	Managerial Support

Hazard Mitigation Planning Team Meeting Schedule

Meeting No. 1
January 15, 2009 Flood Control District of Maricopa County
Start: 9 a.m. 2801 W. Durango Street
End: 11 a.m. Phoenix, AZ Adobe Conference Room

Meeting No. 2
February 12, 2009 Maricopa County Department of Transportation
Start: 9 a.m. 2901 W. Durango Street
End: 11 a.m. Phoenix, AZ Apache Conference Room

Meeting No. 3
March 19, 2009 Maricopa County Planning and Development
Start: 9 a.m. 501 N. 44th Street
End: 11 a.m. Phoenix, AZ Gold Conference Room

Meeting No. 4
April 16, 2009 Flood Control District of Maricopa County
Start: 9 a.m. 2801 W. Durango Street Operations Building
End: 11 a.m. Phoenix, AZ Dreamy Draw Conference Room

Meeting No. 5
May 14, 2009 Maricopa County Department of Transportation
Start: 9 a.m. 2901 W. Durango Street
End: 11 a.m. Phoenix, AZ Apache Conference Room

Meeting No. 6
June 25, 2009 Maricopa County Department of Transportation
Start: 9 a.m. 2901 W. Durango Street
End: 11 a.m. Phoenix, AZ Apache Conference Room

Meeting No. 7
July 16, 2009 Flood Control District of Maricopa County
Start: 9 a.m. 2801 W. Durango Street
End: 11 a.m. Phoenix, AZ Adobe Conference Room

Revised 01/22/09

Maricopa County Department of Emergency Management
2035 N. 5 2nd Street, Phoenix, AZ 85008
(602)273-1411

In 2003 and 2004, Maricopa County, two Indian Tribes, and all incorporated cities and towns in Maricopa County, participated in a multi-jurisdictional mitigation planning effort that resulted in the development of a multi-jurisdictional hazard mitigation plan with separate annexes that covered each participating jurisdiction. The Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2004 Plan) and all of the separate annex plans received official FEMA approval on November 29, 2004. The 2004 Plan was designed to meet the federal regulations set forth by the Disaster Mitigation Act of 2000 (DMA2K), which requires all local, county, tribal and state governments to develop a multi-hazard mitigation plan for their respective jurisdictions in order to be eligible to receive certain hazard mitigation and public assistance funds. The 2004 Plan is nearing the end of the 5-year planning cycle and is set to expire in November 2009.

The Maricopa County Department of Emergency Management (MCDEM) has applied for and received a planning grant to fund a multi-jurisdictional effort to review, update and consolidate the 2004 Plan, with resubmittal to FEMA prior to its expiration in November 2009. MCDEM has retained JE Fuller/Hydrology & Geomorphology, Inc. (JEF) to assist and guide the county, cities, towns and tribes through the update process and to prepare the new multi-jurisdictional multi-hazard mitigation plan (MJMHMP). The planning effort will also include the necessary planning efforts to provide Tribal Plans for the Fort McDowell Yavapai Nation and the Salt River Pima-Maricopa Indian Community should they choose to participate again.

PLANNING TEAM FORMULATION

The first step in this planning effort will be to reconstitute the Maricopa County Multi-Jurisdictional Planning Team (MJPT), which originally was comprised of one or more lead contacts for each participating jurisdiction. For this update planning process, there will be two primary levels of responsibility regarding the planning process. The first is the primary point of contact (PPOC) for the overall planning effort and the second is the community point of contact or contacts (CPOCs). Ms. Cristina Herrera of MCDEM will assume the PPOC role and will also serve as one of the CPOCs for the Unincorporated Maricopa County. The following guidelines are offered to assist each community in selecting one or more CPOCs and to aid the understanding of their role and what is expected of them in the planning process.

PPOC – throughout the planning process, the responsibilities of the PPOC will be:

- Contact, coordinate and organize the MJPT.
- Coordinate and follow-up with county representatives and incorporated communities regarding attendance and participation
- Organize and arrange for planning team meeting locations and facilities

CPOC – It is understood that it will likely not be possible for all interested parties from each jurisdiction to attend every MJPT meeting. Accordingly, each jurisdiction is requested to identify at least one and preferably two representatives to serve as the CPOCs. More are welcome if the jurisdiction chooses. The responsibilities of these individuals will be:

- Attend EVERY planning team meeting or make sure their community is represented otherwise. Each meeting will build on information discussed at the last meeting and complete attendance is crucial.
- Convey information received at the MJPT meetings to a jurisdiction-level Local Planning Team (LPT) and vice-versa.
- Ensure that all requested homework is completed fully and returned to JEF on a timely basis.
- Arrange for official adoption of plan document, when appropriate.

The roster of the LPT is left to the discretion of each jurisdiction. Because the focus is on mitigation planning, it is important that the LPT be comprised of individuals that serve a planning and project management role, as well as those involved in public safety and emergency management. The following is a recommended list of potential/typical departments and divisions that should be encouraged to attend:

- Public Works
- Development Services
- Planning and Zoning
- Flood Control Districts (county)
- Emergency Services (Fire, Police, Emergency Management)
- Building Safety
- County and City Engineers
- Floodplain/Stormwater Management

Please begin the process of identifying your CPOCs and LPT members as soon as possible.

MJPT MEETING SCHEDULE

In order to meet the goal of having an approved plan by November 2009, MCDEM and JEF have pre-arranged a calendar for all MJPT meetings. Our initial meeting is scheduled for 9:00am to 11:00am on January 15, 2009 and will be held in the Adobe Conference Room at the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona. The enclosed sheet summarizes the remaining scheduled MJPT meeting dates, times and locations for the duration of the planning effort.

We are looking forward to working through this process with each of your communities and will be following up with you in the next few weeks to confirm your participation in the planning effort. Should you have any questions prior to that time, please feel free to contact either MCDEM or JEF as follows:

PPOC:	**Mitigation Planning Consultant:**
Cristina Herrera Maricopa County Department of Emergency Management 2035 North 52nd Street Phoenix, AZ 85008 Office: 602-273-1411 Fax: 602-275-1638 Pager: 602-201-1478 Email: cristinaherrera@mail.maricopa.gov	W. Scott Ogden, P.E., CFM JE Fuller/ Hydrology & Geomorphology, Inc. 8400 South Kyrene Road, Suite 201 Tempe, AZ 85284 Office: 480-222-5717 Fax: 480-839-2193 Cell: 480-299-3394 Email: scott@jefuller.com

Memorandum JE Fuller/ Hydrology & Geomorphology, Inc.

MEETING DATE: January 15, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Flood Control District of Maricopa County
2801 W. Durango St., Phoenix, AZ
Adobe Conference Room

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES: Brian Berndt – City of Avondale
Ed Copp – SRP
Gil Damiani – City of Mesa
Mike DeBenedetto – City of Phoenix
Karl Emberg – Paradise Valley PD
Pat Fannon – Town of Carefree
Michael Gease – FCDMC
Sheri Gibbons – Town of Gilbert
Cristina Herrera – MCDEM
Matt Holm – MC Planning/Development
Lee Jimenez – FCDMC
Glen Jones – City of Peoria
Joe La Fortune – Town of Queen Creek
Dave McGhan – APS
Alfred Medina – Town of Guadalupe FD
Ronny Miller – Wickenberg PD
Howard Munding – Town of El Mirage FD
Tim Murphy – FCDMC
Rodney Phelps – Gila River Indian Community
Jen Pokorski – FCDMC
Cliff Puckett – Salt River Indian Community
Duren Robertson – Town of Youngtown
Sharon Sanders – MC Community Development
Jim Shank - Town of Buckeye
Debra Sheff – City of Glendale
Art Snapp – City of Avondale
Ken Sowers – City of Avondale
Adam Stein – Town of Cave Creek
Tracy Stevent – City of Avondale
Jeri Todd - City of Phoenix
Steve Waters – FCDMC

Sue Wood – ADEM

Consultants:
Mike Kellogg – JEF
W. Scott Ogden – JEF

AGENDA

1. **GREETING**
2. **MITIGATION PLANNING OVERVIEW**
3. **INTRODUCTIONS**
4. **PROJECT SCHEDULE**
5. **PLANNING TEAM ROLES**
6. **MEETING ENDING**
    a. **Review of action items**

DISCUSSION

Agenda Item 1:

- C. Herrera opened the meeting, welcomed the participants, said a few words on behalf of MCDEM and turned the meeting over to S. Ogden of JEF.

Agenda Item 2:

- S. Ogden presented an overview / review of the mitigation process and purpose for preparing a mitigation plan. He also discussed the update process.

Agenda Item 3:

- Each participant introduced his or herself and described their perceived role on the planning team.
- Gila River Indian Community, APS, and SRP will participate in the planning process as needed and available, but will not be signatories to the plan.

Agenda Item 4:

- S. Ogden presented the project schedule and planned meeting dates and locations for discussion.
- The meeting attendees chose to shift the March 12th meeting to March 19th. All other meeting dates will remain the same.
- S. Ogden reiterated that the plan must be updated and approved at FEMA by November 29, 2009 in order for the county and incorporated jurisdictions to remain eligible.

Agenda Item 5:

- S. Ogden presented an overview of the levels of planning team involvement and roles. Three levels were identified:
    - Primary Point of Contact (PPOC)

  - Community Point of Contact (CPOC)
  - The PPOC and CPOC(s) will comprise the multi-jurisdictional planning team (MJPT).
  - Local Planning Team (LPT)
- Each of the planning team roles and responsibilities were discussed. Each CPOC was tasked with beginning the process of assembling a LPT. Communities represented by individuals that are not planning to serve as the CPOC were encouraged to get that person defined and updated by the next meeting.
- It was noted that the following jurisdictions were not represented at the meeting:
  - City of Chandler
  - Town of Fountain Hills
  - Town of Gila Bend
  - City of Goodyear
  - Town of Litchfield Park
  - City of Scottsdale
  - Town of Surprise
  - City of Tempe
  - City of Tolleson
  - Fort McDowell Apache Tribe
- Participation at the MJPT meetings is mandatory and non-participation may result in a community being dropped from the plan.
- S. Ogden and C. Herrera chose to end the meeting and begin with planning elements at the February meeting to allow the missing jurisdictions another opportunity to participate.

Agenda Item 6:

- Next meeting set for February 12, 2009 from 9am to 11am at MCDOT Apache Room (2901 W. Durango St).

ACTION ITEMS:

1. JEF to provide list of attendees and PowerPoint presentation to all attendees
2. Defined CPOC's are to begin assembling their respective LPT
3. Communities without the defined CPOC are to assign a person to that role ASAP.
4. All are to review the future meeting dates and respond to S. Ogden or C. Herrera with any major conflicts.

State and Federally Declared Events That Included Maricopa County January 1966 to October 2008				
	No. of	Recorded Losses		
Hazard	Declarations	Fatalities	Injuries	Damage Costs ($)
Drought	12	0	0	$303,000,000
Dam Failure	0	0	0	$0
Earthquake	0	0	0	$0
Fissure	0	0	0	$0
Flooding / Flash Flooding	16	52	115	$594,150,000
Hazardous Materials Incident	4	0	0	$0
Landslide / Mudslide	0	0	0	$0
Levee Failure	0	0	0	$0
Snow Storm	0	0	0	$0
Sleet / Freezing Rain	0	0	0	$0
Subsidence	0	0	0	$0
Thunderstorm / High Wind	4	0	0	$0
Tornadoe / Dust Devil	0	0	0	$0
Tropical Storm / Huricane	1	0	0	$375,000,000
Wildfire	18	0	0	$0

Notes:
- Damage Costs are reported as is and no attempt has been made to adjust costs to current dollar values

Maricopa County Historic Hazard Events June 1955 to September 2008				
	No. of	Recorded Losses		
Hazard	Records	Fatalities	Injuries	Damage Costs ($)
Drought	**0**	**0**	**0**	**$0**
Dam Failure	**0**	**0**	**0**	**$0**
Earthquake	**0**	**0**	**0**	**$0**
Fissure	**0**	**0**	**0**	**$0**
Flooding / Flash Flooding	**31**	**9**	**7**	**$101,610,500**
Landslide / Mudslide	**0**	**0**	**0**	**$0**
Levee Failure	**0**	**0**	**0**	**$0**
Snow Storm	**4**	**1**	**0**	**$115,000**
Sleet / Freezing Rain	**0**	**0**	**0**	**$0**
Subsidence	**0**	**0**	**0**	**$0**
Thunderstorm / High Wind	**193**	**6**	**144**	**$421,055,000**
Tornado	**0**	**0**	**0**	**$0**
Tropical Storm / Huricane	**0**	**0**	**0**	**$0**
Wildfire	**0**	**0**	**0**	**$0**

Notes:
- No attempt has been made to adjust Damage Costs to current dollar values

Memorandum **JE Fuller/ Hydrology & Geomorphology, Inc.**

MEETING DATE: January 29, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Maricopa Department of Emergency Management
2035 N. 52nd Street, Phoenix, AZ

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES: Tom Abbott – City of Tempe
Jim Begansky - MCDEM
Glen Floe – MCDEM
Bob Hansen – City of Tolleson
Cristina Herrera – MCDEM
Jason Howard – Maricopa Association of Governments
Lorenzo Jones – City of Scottsdale
Warren Leek – MCDEM
Othell Newbill – City of Goodyear
Kevin Pool – City of Surprise
John Rose – MCDOT
Gino Turrubiartes – Town of Guadalupe
Mitch Wagner – MCDOT
Ken Waters – National Weather Service

Consultants:
Mike Kellogg – JEF
W. Scott Ogden – JEF

AGENDA

1. **GREETING**
2. **MITIGATION PLANNING OVERVIEW**
3. **INTRODUCTIONS**
4. **PROJECT SCHEDULE**
5. **PLANNING TEAM ROLES**
6. **MEETING ENDING**
    a. **Review of action items**

DISCUSSION

Agenda Item 1:

- S. Ogden of JEF opened the meeting and explained that this was a make-up meeting offered for those communities that were unable to participate in the January 15th meeting.
- The material to be presented is identical to that presented at the January 15th meeting.

Agenda Item 2:

- S. Ogden presented an overview / review of the mitigation process and purpose for preparing a mitigation plan. He also discussed the update process.

Agenda Item 3:

- Each participant introduced his or herself and described their perceived role on the planning team.
- The National Weather Service and MAG will participate in the planning process as needed and available, but will not be signatories to the plan.

Agenda Item 4:

- S. Ogden presented the project schedule and planned meeting dates and locations for discussion.
- There was some concern raised by L. Jones about a possible conflict with the Coyote Crisis Planning Conference and the Feb 12th meeting. C. Herrera will send out a poll of the MJPT to see if there is enough conflicts to warrant rescheduling the meeting.
- S. Ogden reiterated that the plan must be updated and approved at FEMA by November 29, 2009 in order for the county and incorporated jurisdictions to remain eligible.

Agenda Item 5:

- S. Ogden presented an overview of the levels of planning team involvement and roles. Three levels were identified:
    - Primary Point of Contact (PPOC)
    - Community Point of Contact (CPOC)
    - The PPOC and CPOC(s) will comprise the multi-jurisdictional planning team (MJPT).
    - Local Planning Team (LPT)
- Each of the planning team roles and responsibilities were discussed. Each CPOC was tasked with beginning the process of assembling a LPT. Communities represented by individuals that are not planning to serve as the CPOC were encouraged to get that person defined and updated by the next meeting.
- It was noted that the following jurisdictions were still not represented at either the January 15th or this meeting:
    - City of Chandler (the representative from Chandler has made other arrangements to receive the introductory materials).
    - Town of Fountain Hills

  - Town of Gila Bend
  - Town of Litchfield Park
  - Fort McDowell Apache Tribe
- Participation at the MJPT meetings is mandatory and non-participation may result in a community being dropped from the plan.
- S. Ogden ended the meeting and summarized action items for the next meeting. and begin with planning elements at the February meeting to allow the missing jurisdictions another opportunity to participate.

Agenda Item 6:

- Next meeting set for February 12, 2009 from 9am to 11am at MCDOT Apache Room (2901 W. Durango St).

ACTION ITEMS:

1. JEF to provide list of attendees and PowerPoint presentation to all attendees
2. Defined CPOC's are to begin assembling their respective LPT
3. Communities without the defined CPOC are to assign a person to that role ASAP.
4. All are to review the future meeting dates and respond to S. Ogden or C. Herrera with any major conflicts.
5. C. Herrera will take a poll of MJPT members to see if enough conflict exists with the Coyote Crisis Planning Conference to warrant changing the Feb 12th meeting date.

Memorandum JE Fuller/ Hydrology & Geomorphology, Inc.

MEETING DATE: February 11, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: JE Fuller/ Hydrology & Geomorphology, Inc.
8400 S. Kyrene Road, Suite 201
Tempe, AZ 85284

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES: Tom Christmas – Fort McDowell Yavapai Nation
Cristina Herrera – MCDEM
John Rae – Town of Litchfield Park
Randy Roberts – Town of Fountain Hills
Marc Walker – City of Chandler

Consultants:
W. Scott Ogden – JEF

AGENDA

1. **GREETING**
2. **MITIGATION PLANNING OVERVIEW**
3. **INTRODUCTIONS**
4. **PROJECT SCHEDULE**
5. **PLANNING TEAM ROLES**
6. **MEETING ENDING**
    a. **Review of action items**

DISCUSSION

Agenda Item 1:

- S. Ogden of JEF opened the meeting and explained that this was a make-up meeting offered for those communities that were unable to participate in the January 15th meeting.
- The material to be presented is identical to that presented at the January 15th meeting.

Agenda Item 2:

- S. Ogden presented an overview / review of the mitigation process and purpose for preparing a mitigation plan. He also discussed the update process.

- T. Christmas encouraged HMP newcomers that the process was not overwhelming and relatively easy to get through.

Agenda Item 3:

- Each participant introduced his or herself and described their perceived role on the planning team.

Agenda Item 4:

- S. Ogden presented the project schedule and planned meeting dates and locations for discussion.
- S. Ogden reiterated that the plan must be updated and approved at FEMA by November 29, 2009 in order for the county and incorporated jurisdictions to remain eligible.
- The plan adoption process was discussed and S. Ogden explained how the process would occur.
    - The plan would be developed to a final draft stage and then submitted to ADEM and FEMA for review. Submittal target is first week of August.
    - Once FEMA was satisfied with the document, they would then issue a letter to each community effectively stating that the MCMJMHMP is approvable pending adoption. The iteration time will probably be 1-2 months.
    - Each jurisdiction will then take the plan before their council/board and obtain an official resolution of adoption and forward that resolution to ADEM and FEMA, and copy C. Herrera and JEF.
    - FEMA will establish the "official" plan approval date as the date when they receive the first resolution to establish the point at which the 5-year plan cycle begins.
    - Each jurisdiction will be officially approved only after they have submitted their respective resolution of adoption.
    - S. Ogden pointed out that this process will allow for an official approval of the multi-jurisdictional plan without having to wait on any particular community that may be lagging the rest.

Agenda Item 5:

- S. Ogden presented an overview of the levels of planning team involvement and roles. Three levels were identified:
    - Primary Point of Contact (PPOC)
    - Community Point of Contact (CPOC)
    - The PPOC and CPOC(s) will comprise the multi-jurisdictional planning team (MJPT).
    - Local Planning Team (LPT)
- Each of the planning team roles and responsibilities were discussed. Each CPOC was tasked with beginning the process of assembling a LPT. Communities represented by individuals that are not planning to serve as the CPOC were encouraged to get that person defined and updated by the next meeting.

- S. Ogden will provide an Excel worksheet to each CPOC for them to list the LPT members and their respective roles and duties.
- It was noted that the following jurisdictions were still not represented at either the January 15th , January 29th, or this meeting:
    - Town of Gila Bend (expected to be at the Feb 12th meeting.)
- Participation at the MJPT meetings is mandatory and non-participation may result in a community being dropped from the plan.
- S. Ogden ended the meeting and summarized action items for the next meeting. and begin with planning elements at the February meeting to allow the missing jurisdictions another opportunity to participate.

Agenda Item 6:

- Next meeting set for February 12, 2009 from 9am to 11am at MCDOT Apache Room (2901 W. Durango St).

ACTION ITEMS:

1. JEF to provide list of attendees, meeting notes and PowerPoint presentation to all attendees
2. Defined CPOC's are to begin assembling their respective LPT.
3. JEF will develop and provide a template spreadsheet for listing the LPT members and their respective role and duties.
4. All are to review the future meeting dates and respond to S. Ogden or C. Herrera with any major conflicts.

Memorandum JE Fuller/ Hydrology & Geomorphology, Inc.

MEETING DATE: February 12, 2009

MEETING TIME: 9:00AM – 11:15AM

MEETING LOCATION: Maricopa County Department of Transportation
2901 W. Durango St., Phoenix, AZ
Apache Conference Room

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Jim Begansky	Maricopa County
Meredith Bond	Maricopa County
Tom Christmas	Fort McDowell Yavapai Nation
Ed Copp	Salt River Project
Gil Damiani	City of Mesa
Karl Emberg	Town of Paradise Valley
Devlin Fung	City of Glendale
Pat Farmer	Town of Carefree
Michael K .Gease	Flood Control District of Maricopa County
Sheri Gibbons	Town of Gilbert
Cristina Herrera	Maricopa County
Matt Holm	Maricopa County
Dewey Horton	Town of Buckeye
Lee Jimenez	Flood Control District of Maricopa County
Glenn Jones	City of Peoria
Lorenzo Jones	City of Scottsdale
Joe LaFortune	Town of Queen Creek
Pam Lansberry	APS
Bob Lee	Town of Paradise Valley
Bob Marshall	City of Goodyear
Tim Murphy	Flood Control District of Maricopa County
Chris Ochs	City of Glendale
Harry Parsi	Town of Gila Bend
Michael Paz	Motorola
Kevin Pool	City of Surprise
Cliff Puckett	Salt River Pima-Maricopa Indian Community
John Rae	City of Litchfield Park
Darrell Rezendes	Town of El Mirage
Randy Roberts	Fountain Hills
John J. Rose	Maricopa County Department of Transportation
Mike Sabatini	Maricopa County
Debra Sheff	City of Glendale
Adam Stein	Town of Cave Creek
Jeri Todd	City of Phoenix
Gino Turrubiartes	Town of Guadalupe

Bruce Van Scyoc	City of Surprise
Marc Walker	City of Chandler
Steve Waters	Flood Control District of Maricopa County
Ken Waters	National Weather Service
Sue Wood	Arizona Division of Emergency Management
Consultants:	
Mike Kellogg	JE Fuller/ Hydrology & Geomorphology, Inc.
W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **INTRODUCTIONS / MISC**
2. **PROMULGATION SCHEDULE**
3. **PURLIC INVOLVEMENT**
4. **HAZARD IDENTIFICATION/PROFILING**
5. **HOMEWORK ASSIGNMENTS**

DISCUSSION

Agenda Item 1:

- S. Ogden opened the meeting, welcomed the participants, and proceeded with asking all participants to introduce themselves and state their perceived role in the project.
- NOTE – The following jurisdictions were not represented at the meeting:
    - Tolleson
    - Wickenburg
    - Youngtown

Agenda Item 2:

- S. Ogden presented an overview of the promulgation schedule and emphasized the role each jurisdiction would play in the plan update process.
- S. Ogden reiterated that the plan must be updated and approved at FEMA by November 29, 2009 in order for the county and incorporated jurisdictions to remain eligible.
- S. Ogden reiterated the overall project schedule which included:
    - Draft Plan submitted to the entire project team by July 1, 2009
    - Two-week review period for all team members to submit comments
    - Final Draft Plan completed by August 1, 2009
    - Final Draft Plan submitted to ADEM and FEMA for review within the first week of August
    - Anticipated 1- to 2-month FEMA review period
    - Anticipated FEMA “approval pending adoption” letter by October 1, 2009
    - All jurisdictions to submit official resolution of adoption of the plan before November 29, 2009.
    - Official FEMA approval date of the plan will begin upon FEMA receipt of the first jurisdiction resolution letter.

Agenda Item 3:

- S. Ogden presented information on the FEMA requirements for public involvement in the plan.
- The MJPT discussed various methodologies that could be employed by each jurisdiction to satisfy the requirement. Ideas discussed included conducting public meetings on a regional basis or prior to regular council workshops on a community basis, preparing public notices and publishing them in the local newspaper, and presenting the plan information to the councils and boards during regular work-sessions. The pros and cons of each option were discussed. Regional public presentations were used during the 2004 planning effort and the efforts were very poorly attended. Public notices on websites and in newspapers were deemed to be a more efficient way of getting the word out.
- C. Herrera noted that the County has a posting on their website that includes a brief description of the DMA2K planning and update process, the MJPT meeting schedule, and the current 2004 Plan. The posting will be maintained throughout the planning process and the draft plan will also be posted for comment once it is available.
- Each jurisdiction agreed to place a brief notification excerpt of the plan update on their individual website with a link to the county website which contains the details of the plan and a digital copy of the existing plan.
- Each jurisdiction will place a public notification of the plan update in their local newspaper and their community section of the Arizona Republic (if applicable). A template for the notification will be drafted by MCDEM / JEF and distributed for use by the jurisdictions.

Agenda Item 4:

- S. Ogden introduced the Risk Assessment component of the plan update. Specifically hazard identification and hazard profiling.
- The list of ADEM approved natural hazards was presented and discussed. S. Ogden noted that the state no longer includes any human-caused hazards since DMA2K related funding is not available for mitigation of human-caused hazards. The MJPT discussed the idea and agreed to focus on natural hazards only for this update.
- A productive group discussion of the natural hazards ensued which resulted in the following hazards unanimously being dropped from the list:
    - Snow Storm
    - Earthquake
    - Sleet and Freezing Rain

  Extreme Heat was unanimously decided to be added to the hazards list. The MJPT also discussed combining the Tropical Storm/Hurricane hazard with the Flooding/Flash Flooding category, since most damages from a tropical storm in Maricopa County are flood related.
- S. Ogden stressed that FEMA will require at least one mitigation action/project to be developed for each hazard listed in the plan and that each community may decide which hazards they would like to consider.

- S. Ogden introduced the calculated priority risk index (CPRI) and how it will be used in the plan update process. Each category was discussed and a hard copy handout listing the criteria for each category was distributed.
- S. Ogden showed a blank CPRI spreadsheet and demonstrated how each jurisdiction is to populate the sheet with their specific information. Each jurisdiction representative was informed that a digital copy of the spreadsheet would be sent to them to complete and return to JEF.

Agenda Item 5:

- Homework assignments include:
    - Complete and return the LPT list using the template file provided by JEF
    - Review historic hazard event database and provide additional records to JEF.
    - Complete and return the CPRI worksheet
    - Check calendars for major conflicts with projected schedule
    - Coordinate website linking with Maricopa County website posting
    - Prepare and submit public notice to the local newspaper using the template document to be provided by MCDEM / JEF.
- Next meeting set for March 19, 2009 from 9am to 11am at the Maricopa County Planning & Development office (501 N. 44th Street, Phoenix).

ACTION ITEMS:

1. Each jurisdiction will place a brief description of the plan update on their website with a link to the county MCDEM website
2. C. Herrera will forward the contact information for the county public relations representative (Julie Syrmopoulos) to each team member.
3. MCDEM / JEF will draft a template public notice and distribute it to the MJPT for publication in their local newspaper and their community section of the Arizona Republic (if applicable).
4. S. Ogden will send the historic hazard event database to the MJPT for review. Additional records shall be provided to JEF for insertion if available.
5. S. Ogden will send a digital copy of the CPRI spreadsheet to each jurisdiction with instruction to complete and return.
6. All are to review the future meeting dates and respond to S. Ogden or C. Herrera with any major conflicts.
7. S. Ogden will forward a Local Planning Team template document for listing each member of a jurisdiction's LPT, to be completed and returned.

Memorandum JE Fuller/ Hydrology & Geomorphology, Inc.

MEETING DATE: March 19, 2009

MEETING TIME: 9:00AM – 11:15AM

MEETING LOCATION: Maricopa County Planning and Development
501 N. 44th Street
Phoenix, AZ

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Jim Begansky	Maricopa County
Meredith Bond	Maricopa County
Tom Christmas	Fort McDowell Yavapai Nation
Gil Damiani	City of Mesa
Mike DeBenedetto	City of Phoenix
Pat Farmer	Town of Carefree
Michael K .Gease	Flood Control District of Maricopa County
Sheri Gibbons	Town of Gilbert
Bob Hansen	City of Tolleson
Cristina Herrera	Maricopa County
Dewey Horton	Town of Buckeye
Lee Jimenez	Flood Control District of Maricopa County
Glenn Jones	City of Peoria
Lorenzo Jones	City of Scottsdale
Joe LaFortune	Town of Queen Creek
Scott LaGreca	Town of Fountain Hills
Richard Langevin	Maricopa County
Bob Lee	Town of Paradise Valley
Howard Munding	Town of El Mirage
Othell Newbill	City of Goodyear
Chris Ochs	City of Glendale
Patrick O'Toole	Salt River Project
Harry Parsi	Town of Gila Bend
Kevin Pool	City of Surprise
Cliff Puckett	Salt River Pima-Maricopa Indian Community
Debra Sheff	City of Glendale
Art Snapp	City of Avondale
Adam Stein	Town of Cave Creek
Jeri Todd	City of Phoenix
Mitch Wagner	Maricopa County
Marc Walker	City of Chandler
Ken Waters	National Weather Service

Steve Waters	Flood Control District of Maricopa County
Sue Wood	Arizona Division of Emergency Management
Consultants:	
Mike Kellogg	JE Fuller/ Hydrology & Geomorphology, Inc.
W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **PROJECT STATUS REVIEW**
2. **PROMULGATION SCHEDULE REVIEW**
3. **CPRI REVIEW – FINAL HAZARD LIST**
4. **ASSET INVENTORY INTRODUCTION**
5. **OTHER DATA NEEDS**

DISCUSSION

Agenda Item 1:

- C. Herrera opened the meeting by thanking all participants for their attendance. She then turned the meeting mover to S. Ogden.
- NOTE – The following jurisdictions were not represented at the meeting:
    - Gila River Indian Community
    - Guadalupe
    - Litchfield Park
    - Wickenburg
    - Youngtown
- S. Ogden discussed the status of the public involvement template documents. The documents will be ready for distribution to the participating jurisdictions within the next two weeks. He commended those jurisdictions who have already posted a notice of the Plan Update on their website.
- S. Ogden discussed the status of the local planning team lists (previous homework assignment). As of the date of this meeting the following jurisdictions had not submitted their local planning lists:
    - Carefree
    - Gila Bend
    - Guadalupe
    - Litchfield Park
    - Wickenburg
    - Youngtown
- S. Ogden discussed the status of the CPRI evaluations. As of the date of this meeting the following jurisdictions had not submitted their CPRI evaluations:
    - Gila Bend
    - Litchfield Park
    - Wickenburg
    - Youngtown

Agenda Item 2:

- S. Ogden reviewed the key milestone dates for the project. Those discussed included:
    - Step 1
        - A full draft of the Plan to be submitted to the Multi-Jurisdiction Planned Team (MJPT) by July 1.
        - MJPT two-week review period.
        - Final draft of the Plan to be completed by August 1.
    - Step 2
        - Submit draft Plan to ADEM and FEMA within the first week of August
        - Expected 1-2 month FEMA review period.
    - Step 3
        - Anticipated receipt of FEMA "approvable pending adoption" letter by October 1.
    - Step 4
        - Jurisdictions will promulgate and submit official resolution of adoption to ADEM and FEMA.
    - Step 5
        - FEMA will set the "official" plan approval date to the date of the first resolution received.
- S. Odgen discussion potential Plan document formats. The potential formats included:
    - Plan Format 1 – This format is a true multi-jurisdictional plan and will include all jurisdictional information in one document that may possibly spread across two volumes. Under this format, each Tribe will have a separate Annex to provide the additional material required for a Tribal Plan. This format will include a 5-10 page Executive Summary for each jurisdiction that summarizes the critical elements of the plan for that jurisdiction and could be used to distribute to city councils, boards, etc.
    - Plan Format 2 – This format will include a primary volume containing information pertinent to all jurisdictions with separate Annex volumes for each jurisdiction.
    - Several members of the MJPT requested one-week to discuss the Plan format options with their local planning team. S. Ogden agreed to a one-week time frame.
    - The MJPT decided in general to adopt the Plan Format 1 as it will best represent a true Multi-Jurisdictional Plan, will be more efficient and will best demonstrate the spirit of multi-jurisdictional cooperation. This decision was made pending any serious objections by those communities doing further checking.

Agenda Item 3:

- S. Ogden distributed a CPRI summary table listing each jurisdiction's CPRI worksheet results (except those not reporting). The table also listed the average CPRI

score for each hazard included in the CPRI worksheet. The two lowest hazard averages were *Landslide/Mudslide* and *Levee Failure*.

- S. Ogden led a discussion to review and revise the hazard categories based on the CPRI results.
    - The hazard of *Landslide/Mudslide* was discussed and the MJPT was questioned as to what communities had a serious desire to provide mitigation for this hazard. MCDOT and Paradise Valley were the only communities to respond and most of the concern was due to slides that resulted from wildfire or minor rockslides. After further discussion, the MJPT chose to drop *Landslide/Mudslide* from the list.
    - A proposal to merge the *Thunderstorm/High Wind* and *Tornado* categories into a new category titled *Severe Wind Event* was discussed. The reasoning is that the damaging element for both *Thunderstorm/High Wind* and *Tornado* is the severe wind as well as any reasonable mitigation strategies. The thunderstorm component of hail was discussed and it was decided by the MJPT that the hazard was not significant enough to warrant further consideration. The MJPT agreed to the merging.

Agenda Item 4:

- S. Ogden presented a discussion on the asset inventory part of the Vulnerability Analysis component of the Plan, including a definition for critical facilities and infrastructure and a list of general categories. A memorandum providing detailed guidance for developing the asset inventory was distributed.
- S. Ogden presented the database format in which the asset inventory information is to be organized.
- The following were discussed in detail:
    - Critical Facilities – the definition of Critical Facilities was given and discussed.
        - Each jurisdiction was instructed to use the definition in determining whether an asset is assigned a Critical or Non-Critical classification.
        - Critical Facility general categories were listed and discussed.
    - Non-Critical Facilities – this category is to be used for all assets not assigned a Critical Facility classification.
        - Non-Critical Facility general categories were listed and discussed.
- S. Ogden discussed and presented examples of the "starter" dataset of assets that will be provided to each jurisdiction by JEF. These "starter" datasets were derived from a database file provided to JEF by the Maricopa Association of Governments (MAG).
- S. Ogden informed the MJPT that the "starter" set will be distributed to each jurisdiction within three business days following the meeting. Each jurisdiction was instructed to review complete, and/or modify the "starter" asset dataset to reflect the assets they wish to have included in the Vulnerability Analysis component of the Plan.
- Several members of the MJPT expressed concern about sharing information on critical facilities within their jurisdictions due to restrictions placed on dissemination

of asset inventory data by state and federal agencies. A statewide critical infrastructure information system is currently being housed at the Arizona Counter Terrorism Information Center (ACTIC) in Phoenix. Communities participating with ACTIC are leery of violating security agreements by providing data to JEF for the vulnerability analysis. MCDEM assured the MJPT that JEF signed a non-disclosure agreement as a part of their contract.

- M. Benedetto will schedule a meeting with ACTIC to discuss the concerns and S. Ogden agreed to attend and present the need for the data on behalf of the MJPT.

Agenda Item 5:

- S. Ogden discussed two other data sets needed from each community:
    - City Boundaries – each community needs to provide JEF with the most current municipal boundary. Preferred format would be as GIS shapefiles. JEF will prepare check plots for verification by each community that does not send shapefiles.
    - Future Critical Facilities – each community shall provide information regarding planned future critical facilities on a 5-year horizon.

ACTION ITEMS:

1. MJPT to discuss Plan Format needs with local planning team as needed and report back to S. Ogden no later than March 27th.
2. S. Ogden will distribute an email with a list of the MJPT selected hazards and will request each jurisdiction to provide a return email listing the hazards that the community will develop mitigation actions/projects for. The return list is due by April 3, 2009.
3. M. Benedetto will schedule a meeting with ACTIC to discuss the asset inventory concerns and S. Ogden will attend and present the need for the data on behalf of the MJPT.
4. S. Ogden will distribute the "starter" asset inventory dataset to each jurisdiction within three business days of the March 19 meeting. Each jurisdiction shall review, complete, and/or modify the list and provide to JEF by April 14th, 2009.
5. Each jurisdiction (except the county) will provide JEF with the most current municipal boundary. Preferred format would be GIS shapefiles. JEF will prepare check plots for verification by each community that does not send shapefiles.
6. Each community shall provide information regarding planned future critical facilities that are intended for construction in the next 5-years. Information can be a written summary or provided in manner similar to the asset inventory data.

Next Meeting

April 16, 2009
9am to 11am
Flood Control District of Maricopa County
Operations Building – Dreamy Draw Conference Room
2801 W. Durango, Phoenix

Memorandum JE Fuller/ Hydrology & Geomorphology, Inc.

MEETING DATE: April 16, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Flood Control District of Maricopa County
2801 W. Durango Street
Phoenix, AZ 85009

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Meredith Bond	Maricopa County
Tom Christmas	Fort McDowell Yavapai Nation
Sonny Culbreth	City of Litchfield Park
Gil Damiani	City of Mesa
Mike DeBenedetto	City of Phoenix
Pat Farmer	Town of Carefree
Mike Fusco	City of Peoria
Michael K .Gease	Flood Control District of Maricopa County
Bob Hansen	City of Tolleson
Cristina Herrera	Maricopa County
Dewey Horton	Town of Buckeye
Glenn Jones	City of Peoria
Lorenzo Jones	City of Scottsdale
Bob Lee	Town of Paradise Valley
Warren Leek	Maricopa County
Ronnie Miller	Town of Wickenburg
Tim Murphy	Flood Control District of Maricopa County
Chris Ochs	City of Glendale
Patrick O'Toole	Salt River Project
Harry Parsi	Town of Gila Bend
Cliff Puckett	Salt River Pima-Maricopa Indian Community
Darrell Rezendes	Town of El Mirage
Randy Roberts	Town of Fountain Hills
John J. Rose	Maricopa County Department of Transportation
Debra Sheff	City of Glendale
Art Snapp	City of Avondale
Adam Stein	Town of Cave Creek
Julie Syrmopoulos	Maricopa County
Jeri Todd	City of Phoenix
Mitch Wagner	Maricopa County
Marc Walker	City of Chandler
Ken Waters	National Weather Service
Tom Abbott	City of Tempe
Meredith Bond	Maricopa County

Consultants:

Mike Kellogg	JE Fuller/ Hydrology & Geomorphology, Inc.
W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **HOMEWORK STATUS**
2. **HAZARD PROFILE MAPPING DATA**
3. **CAPABILITY ASSESSMENT REVIEW/UPDATE**
4. **PLAN MAINTENANCE PROCEDURES REVIEW/UPDATE**

DISCUSSION

Agenda Item 1:

- Public Involvement: First Phase: S. Ogden reviewed the public notification methodologies that were decided by the MJPT in previous meetings. Template documents were distributed to the MJPT on 4/13/09 with instructions for each jurisdiction to:
    - Place a notice of the MJHMP Update on their website with a link to the county website.
    - Publish a notice of the MJHMP Update in their local newspaper.
- S. Ogden informed the MJPT that each jurisdiction needs to send him the following regarding their public notification:
    - Link to their website posting
    - Copy of the newspaper article or scanned files of the banner page and page on which the notice appears.
- S. Ogden provided a printed status update sheet that listed each jurisdiction's status for submittal/completion of the following:
    - PI website posting
    - PI newspaper notice
    - Receipt of CPRI files
    - Local team list
    - Mitigation hazard list
    - Jurisdictional Boundary confirmation
    - Logo
    - Asset inventory information
- S. Ogden discussed each item and the importance of meeting the data submittal deadlines.

Agenda Item 2:

- S. Ogden presented the data that will be used in the Vulnerability Assessment component of the plan update. The hazard classification distribution (High, Medium, or Low) for each dataset was presented and discussed. The following hazard datasets were presented:

- Dam Failure
- Drought
- Extreme Heat
- Fissure
- Flooding
- Levee Failure
- Subsidence
- Severe Wind
- Wildfire

Agenda Item 3:

- S. Ogden outlined the five primary purposes of the Capability Assessment component of the plan update:
  - Identify legal and regulatory capabilities of each jurisdiction.
  - Identify administrative and technical resources of each jurisdiction.
  - Identify community fiscal capabilities.
  - Assess mitigation capability of each jurisdiction's departments.
  - Summarize past mitigation activities and projects with the five-year period since the plan adoption.
- S. Ogden proposed that the Table 8.1 in the current plan be revised to a new format that was presented at the meeting. The MJPT concurred with the proposed change.
- S. Ogden proposed that Table 8.4 in the current plan be dropped from the updated plan. The MJPT concurred with dropping Table 8.4 from the updated plan.
- S. Ogden requested each Jurisdiction provide updated information for Tables 8.1 through 8.3 in the current plan. The updated information will be incorporated into the updated plan.
- S. Ogden requested that each jurisdiction provide/list the major mitigation activities/projects that were performed over the last planning cycle (5 years). JEF will provide a template document for use by the MJPT.

Agenda Item 4:

- S. Ogden reviewed the maintenance requirements as outlined in the current plan (Section 9.1) which include:
  - Annual review of the plan by each Jurisdiction
  - Preparation of annual summary review memorandums
- S. Ogden reviewed the required plan procedures as outlined in Section 9.2 of the current plan.
  - The MJPT was asked to self-evaluate their compliance of Section 9.2 since the plan adoption.
- S. Ogden reviewed the required plan procedures as outlined in Section 9.3 of the current plan.
  - The MJPT was asked to self-evaluate their compliance of Section 9.3 since the plan adoption.

- C. Herrera proposed that the updated plan include language that states each Jurisdiction will present the updated plan to their local Board of Supervisors or other governing body only if a major update to the Plan is proposed.
- C. Herrera proposed that the MJPT convene every November to review the plan. MCDEM will take the lead in re-convening the MJPT for the annual review and will work with ADEM on the format for review results to be submitted to ADEM.

ACTION ITEMS:

1. Each Jurisdiction was asked to complete their public involvement component of the plan. They were asked to send S. Ogden the following:
    a. Link to their jurisdiction website posting of the plan update
    b. Copy of the newspaper article or other source used for the public notice of the plan update.
2. Each Jurisdiction was asked to review the information in Tables 8.1 to 8.3 in the current plan and submit revised information to S. Ogden.
3. C. Herrera will submit a write-up outlining the revised plan maintenance discussion that will compose Section 9.2 in the updated Plan.
4. S. Ogden will drop Table 8.4 for the updated plan.
5. Each Jurisdiction must submit their completed Asset Inventory sheets to S. Ogden by April 27th.
6. Each Jurisdiction must submit their revised Capability Assessment (Section 8) tables to S. Ogden by May 14th.
7. Each Jurisdiction must submit their list of mitigation activities that have occurred since the plan adoption by May 14th.

Next Meeting

May 14, 2009
9am to 11am
Maricopa County Department of Transportation
Apache Conference Room
2901 W. Durango, Phoenix

Memorandum *JE Fuller/ Hydrology & Geomorphology, Inc.*

MEETING DATE: May 14, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Maricopa County Dept. of Transportation
2901 W. Durango Street
Phoenix, AZ 85009

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Jim Begansky	Maricopa County
Tom Christmas	Fort McDowell Yavapai Nation
Sonny Culbreth	City of Litchfield Park
Gil Damiani	City of Mesa
Mike DeBenedetto	City of Phoenix
Pat Farmer	Town of Carefree
Sheri Gibbons	Town of Gilbert
Mark Hannah	Town of Youngtown
Bob Hansen	City of Tolleson
Cristina Herrera	Maricopa County
Dewey Horton	Town of Buckeye
Lee Jimenez	Flood Control District of Maricopa County
Glenn Jones	City of Peoria
Lorenzo Jones	City of Scottsdale
Joe LaFortune	Town of Queen Creek
Bob Lee	Town of Paradise Valley
Ronnie Miller	Town of Wickenburg
Howard Munding	Town of El Mirage
Tim Murphy	Flood Control District of Maricopa County
Othell Newbill	City of Goodyear
Patrick O'Toole	Salt River Project
Harry Parsi	Town of Gila Bend
Kevin Pool	City of Surprise
Cliff Puckett	Salt River Pima-Maricopa Indian Community
Randy Roberts	Town of Fountain Hills
Renelle Schaffer	General public
Debra Sheff	City of Glendale
Art Snapp	City of Avondale
Adam Stein	Town of Cave Creek
Mitch Wagner	Maricopa County
Marc Walker	City of Chandler
Steve Waters	Flood Control District of Maricopa County
Ken Waters	National Weather Service

Consultants:

Meeting Notes – Maricopa County MJPT Meeting No. 5
JEFuller, Inc.
5/14/2009

Mike Kellogg JE Fuller/ Hydrology & Geomorphology, Inc.
W. Scott Ogden JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **PROJECT STATUS REVIEW**
2. **REVIEW MITIGATION GRANT DATABASE**
3. **GOALS AND OBJECTIVES UPDATE**
4. **EXISTING ACTION/PROJECT ASSESSMENT**
5. **HOMEWORK ASSIGNMENTS**

DISCUSSION

Agenda Item 1:

- S. Ogden reviewed the overall status of the project and the individual project tasks. The following table reflects the status of each project task per jurisdiction at the time of the meeting. The following project tasks were discussed:
    - Public Involvement
        - Website posting
        - Newspaper notice/article
    - Calculated priority risk index (CPRI)
    - Local team list
    - Mitigation hazard list
    - Jurisdictional boundary confirmation
    - Jurisdiction logo submittal
    - Asset inventory
    - Capability assessment
    - Prior mitigation activity

Agenda Item 2:

- S. Ogden distributed a hard copy handout listing the historic mitigation grant projects within Maricopa County as recorded in the Arizona Division of Emergency Management database.
- S. Ogden asked each jurisdiction to review the list and to provide additional information if one of their past projects was included in the list. The additional information requested was a brief write-up on the project's "what" (description of project details) and "why" (reason for project), plus any other missing information.

Jurisdiction	PI Website Posting DUE 5/31/09	PI Newspaper Notice/Article DUE 5/31/09	CPRI DUE 4/27/09	Local Team List DUE 4/27/09	Mitigation Hazard List DUE 4/27/09	Jurisdictional Boundary Confirmation DUE 4/27/09	Logo DUE 4/27/09	Asset Inventory DUE 4/27/09	Capability Assessment DUE 5/14/09	Prior Mitigation Activity DUE 5/14/09
MARICOPA COUNTY (UNINC)	Received	Partially Complete	Received	Received	Received	Received	Received	Received	Received	Partially Complete
AVONDALE	Not Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
BUCKEYE	Received	Received	Received	Received	Not Received	Received	Received	Not Received	Not Received	Not Received
CAREFREE	Received	Received	Received	Received	Not Received	Received	Received	Received	Not Received	Not Received
CAVE CREEK	Received	Received	Received	Received	Not Received	Received	Received	Received	Not Received	Not Received
CHANDLER	Received	Not Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received
EL MIRAGE	Received	Received	Received	Received	Not Received	Not Received	Received	Received	Not Received	Received
FOUNTAIN HILLS	Received	Received	Received	Received	Not Received	Received	Received	Received	Not Received	Not Received
GILA BEND	Not Received	Not Received	Received	Received	Not Received	Received	Received	Received	Not Received	Not Received
GILBERT	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
GLENDALE	Received	Not Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received
GOODYEAR	Not Received	Not Received	Received	Received	Received	Not Received	Received	Partially Complete	Not Received	Not Received
GUADALUPE	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received
LITCHFIELD PARK	Received	Not Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received
MESA	Received	Partially Complete	Received	Received	Received	Received	Received	Received	Not Received	Not Received
PARADISE VALLEY	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received
PEORIA	Received	Received	Received	Received	Not Received	Not Received	Received	Partially Complete	Not Received	Not Received
PHOENIX	Received	Partially Complete	Received	Received	Received	Received	Received	Received	Partially Complete	Partially Complete
QUEEN CREEK	Not Received	Not Received	Received	Received	Not Received	Received	Received	Partially Complete	Not Received	Not Received
SCOTTSDALE	Received	Partially Complete	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received

Jurisdiction	PI Website Posting DUE 5/31/09	PI Newspaper Notice/Article DUE 5/31/09	CPRI DUE 4/27/09	Local Team List DUE 4/27/09	Mitigation Hazard List DUE 4/27/09	Jurisdictional Boundary Confirmation DUE 4/27/09	Logo DUE 4/27/09	Asset Inventory DUE 4/27/09	Capability Assessment DUE 5/14/09	Prior Mitigation Activity DUE 5/14/09
SURPRISE	Not Received	Received	Received	Received	Not Received	Not Received	Received	Not Received	Not Received	Not Received
TEMPE	Received	Not Received	Received	Received	Not Received	Received	Received	Received	Received	Received
TOLLESON	Not Received	Not Received	Received	Received	Not Received	Received	Received	Not Received	Not Received	Not Received
WICKENBURG	Not Received	Not Received	Received	Received	Received	Not Received	Received	Received	Not Received	Not Received
YOUNGTOWN	Not Received	Not Received	Received	Received	Not Received	Received	Received	Received	Not Received	Not Received
FT McDOWELL YAVAPAI NATION	Not Received	Partially Complete	Received	Received	Received	Received	Received	Received	Not Received	Not Received
SALT RIVER PIMA-MARICOPA IC	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
SALT RIVER PROJECT	Received	N/A	Received	Received	Received	Received	Received	N/A	Not Received	Not Received

Agenda Item 3:

- S. Ogden discussed the Goals and Objectives (G&O) component of the Plan Update and reviewed the DMA2000 requirements. Criteria for the update and evaluation used by the MJPT included consideration of the G&Os:
  - Past effectiveness of addressing the mitigation needs of the community
  - Relevance to current mitigation needs
  - Conformance to State G&Os
- All participants were directed to Section 8 of their current plans to review the G&Os currently compiled. Handouts of the G&Os documented for Unincorporated Maricopa County were also distributed for those who forgot their plans, since most of the G&Os were similar across all plans. A copy of the State's G&Os was also distributed for reference.

- S. Ogden led a MJPT team group discussion on the process of updating the G&Os for the Plan Update. The following are highlights of those discussions:
    - Many of the communities felt that the current G&Os were cumbersome, overly detailed, and even confusing.
    - The number of G&Os made the annual reviews very time consuming.
    - Some team members expressed a desire to simplify the G&Os as much as possible and liked the simplicity of the State's G&Os.
- S. Ogden offered the following options for updating the G&O list:
    - Option 1: Leave the Goals and Objectives section of the current plan as-is.
    - Option 2: Revise the current Goals and Objectives section of the current plan with updated language.
    - Option 3: Adopt a slightly modified version of the State G&Os as a base set for the updated multi-jurisdictional plan and then have each community add or augment as they deemed fit.
    - Option 4: Develop all new G&Os through a carding session.
- The MJPT unanimously decided to go with Option 3.
  S. Ogden assigned each jurisdiction to review their current plan's G&Os to see if they wanted to keep anything not adequately addressed by the base set of G&Os, develop any supplemental G&Os, and respond with their final list of G&Os to S. Ogden.

Agenda Item 4:

- S. Ogden discussed the Mitigation Actions and Projects (A/Ps) section of the Plan Update. Specifically, the MJPT will go through three steps of updating the section. Those steps include:
    - Step 1 - Review and evaluate the mitigation A/Ps as listed in the current plan.
    - Step 2 - Identify any new mitigation A/Ps to be included in the updated plan (to be discussed in detail at the next meeting).
    - Step 3 - Rank the updated mitigation A/Ps for the updated plan (to be discussed in detail at the next meeting).
- The mitigation A/Ps to be reviewed are included in Table 8.8 of the current plan, and S. Ogden presented and explained a template document and process for use in assessing the existing mitigation A/Ps listed therein. For each mitigation action the jurisdiction shall provide an assessment of the project status and disposition as follows:
    - For status, each A/P shall be evaluated and assigned one of the following descriptors: No Action, In Progress, or Complete
    - For disposition, the descriptors will be either Keep, Revise, or Delete
    - A brief explanation for each descriptor assignment shall be made to provide the background for the decision.

Agenda Item 5: HOMEWORK ASSIGNMENTS

- Each jurisdiction is to review their current plan's G&Os to see if they want to keep anything not adequately addressed by the base set of G&Os, develop any supplemental G&Os, and respond with their final list of G&Os to S. Ogden (DUE BY JUNE 25TH).
- Review and evaluate the current plan's mitigation A/P list in Table 8-8, using the criteria discussed in the meeting and the worksheet to be distributed by S. Ogden to each jurisdiction (DUE BY JUNE 25TH).
- Complete and return the mitigation actions and project table that will be distributed.

Next Meeting

June 25, 2009
9am to 11am
Flood Control District of Maricopa County
Operations Building – Dreamy Draw Conference Room
2801 W. Durango, Phoenix

Memorandum *JE Fuller/ Hydrology & Geomorphology, Inc.*

MEETING DATE: June 25, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Flood Control District of Maricopa County
Operations Building – Dreamy Draw Conference Room
2801 W. Durango Street
Phoenix, AZ 85009

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Jim Begansky	Maricopa County
Tom Christmas	Fort McDowell Yavapai Nation
Sonny Culbreth	City of Litchfield Park
Gil Damiani	City of Mesa
Mike DeBenedetto	City of Phoenix
Pat Farmer	Town of Carefree
Michael K .Gease	Flood Control District of Maricopa County
Sheri Gibbons	Town of Gilbert
Mark Hannah	Town of Youngtown
Bob Hansen	City of Tolleson
Jennifer Henry	Maricopa County
Cristina Herrera	Maricopa County
Dewey Horton	Town of Buckeye
Lee Jimenez	Flood Control District of Maricopa County
Glenn Jones	City of Peoria
Lorenzo Jones	City of Scottsdale
Joe LaFortune	Town of Queen Creek
Richard Langevin	Maricopa County
Bob Lee	Town of Paradise Valley
Howard Munding	Town of El Mirage
Tim Murphy	Flood Control District of Maricopa County
Patrick O'Toole	Salt River Project
John Padilla	Maricopa County
Harry Parsi	Town of Gila Bend
Cliff Puckett	Salt River Pima-Maricopa Indian Community
Randy Roberts	Town of Fountain Hills
Debra Sheff	City of Glendale
Art Snapp	City of Avondale
Adam Stein	Town of Cave Creek
Jeri Todd	City of Phoenix
Mitch Wagner	Maricopa County

Marc Walker	City of Chandler
Steve Waters	Flood Control District of Maricopa County
Ken Waters	National Weather Service

Consultants:

Mike Kellogg	JE Fuller/ Hydrology & Geomorphology, Inc.
W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **WELCOME TO PETE WEAVER – MCDEM DIRECTOR**
2. **STATUS REVIEW**
3. **VULNERABILITY ANALYSIS RESULTS**
4. **NEW MITIGATION ACTIONS/PROJECTS**
5. **IMPLEMENTATION STRATEGY**
6. **HOMEWORK ASSIGNMENTS**

DISCUSSION

Agenda Item 1:

- S. Ogden introduced Pete Weaver, the new Director of Maricopa County Division of Emergency Management.
- Pete Weaver addressed the MJPT and informed them of the upcoming County Wildfire Protection Program (CWPP)

Agenda Item 2:

- S. Ogden distributed the following hard copy handouts:
  - Homework Status Worksheet
  - Preliminary results of the Vulnerability Analysis (VA) including a general summary of community asset exposure and loss estimates, population exposure and risk estimates, and detailed building exposure and loss estimates by jurisdiction.
  - Template example of the Mitigation Actions and Projects table that will be included in the plan document.
- S. Ogden reviewed the overall status of the project and the individual project tasks. The following table reflects the status of each project task per jurisdiction at the time of the meeting. The following project tasks were discussed:

  - Public Involvement
    - Website posting
    - Newspaper notice/article
  - Calculated priority risk index (CPRI)
  - Local team list
  - Mitigation hazard list
  - Jurisdictional boundary confirmation
  - Jurisdiction logo submittal
  - Asset inventory
  - Capability assessment

- Prior mitigation activity
- Goals and objectives confirmation
- Example mitigation actions/projects assessment
- New Mitigation actions/projects and implementation strategy

Jurisdiction	PI Website Posting DUE 5/31/09	PI Newspaper Notice/Article DUE 5/31/09	CPRI DUE 4/27/09	Local Team List DUE 4/27/09	Mitigation Hazard List DUE 4/27/09	Jurisdictional Boundary Confirmation DUE 4/27/09	Logo DUE 4/27/09	Asset Inventory DUE 4/27/09	Capability Assessment DUE 5/14/09	Prior Mitigation Activity DUE 5/14/09	Goals & Objectives Confirmation DUE 6/25/09	Ex Mitigation Actions/Projects Assessment DUE 6/25/09	New Mitigation A/P and Implementation Strategy DUE 7/16/09
MARICOPA COUNTY (UNINC)	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
AVONDALE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
BUCKEYE	Received	Received	Received	Received	Received	Received	Received	Received	Partially Complete	Partially Complete	OK As-is	Received	Not Received
CAREFREE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
CAVE CREEK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received
CHANDLER	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
EL MIRAGE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
FOUNTAIN HILLS	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	OK As-is	Partially Complete	Not Received
GILA BEND	Not Received	Not Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	OK As-is	Not Received	Not Received
GILBERT	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
GLENDALE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
GOODYEAR	Received	Not Received	Received	Received	Received	Received	Received	Past Deadline	Not Received	Not Received	Not Received	Not Received	Not Received
GUADALUPE	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received	Received	Not Received
LITCHFIELD PARK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received
MESA	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
PARADISE VALLEY	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
PEORIA	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received	Not Received	Not Received
PHOENIX	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
QUEEN CREEK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Not Received	Not Received
SCOTTSDALE	Received	Received	Received	Received	Received	Received	Received	Past Deadline	Received	Received	OK As-is	Received	Not Received
SURPRISE	Not Received	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Not Received	Not Received	Not Received
TEMPE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received

Jurisdiction	PI Website Posting DUE 5/31/09	PI Newspaper Notice/Article DUE 5/31/09	CPRI DUE 4/27/09	Local Team List DUE 4/27/09	Mitigation Hazard List DUE 4/27/09	Jurisdictional Boundary Confirmation DUE 4/27/09	Logo DUE 4/27/09	Asset Inventory DUE 4/27/09	Capability Assessment DUE 5/14/09	Prior Mitigation Activity DUE 5/14/09	Goals & Objectives Confirmation DUE 6/25/09	Ex Mitigation Actions/Projects Assessment DUE 6/25/09	New Mitigation A/P and Implementation Strategy DUE 7/16/09
TOLLESON	Received	Received	Received	Received	Not Received	Received	Received	Past Deadline	Received	Not Received	Not Received	Not Received	Not Received
WICKENBURG	Not Received	Not Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Not Received
YOUNGTOWN	Partially Complete	Received	Received	Received	Not Received	Received	Received	Received	Not Received	Received	Not Received	Received	Not Received
FT McDOWELL YAVAPAI NATION	Partially Complete	Received	Received	Received	Received	Received	Received	Received	Received	Not Received	OK As-is	Received	Not Received
SALT RIVER PIMA-MARICOPA IC	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
SALT RIVER PROJECT	Received	N/A	Received	Received	Received	Received	Received	N/A	Received	Received	OK As-is	N/A	Not Received

- Several Jurisdictions expressed concerns regarding the Goals and Objectives (G&O) language that was discussed at the May 14, 2009 meeting. S. Ogden led a MJPT team group discussion to revise the G&O language.
- The MJPT unanimously decided to revise Objective 1 in the G&O statement to the following: *Reduce or eliminate risks that threaten life and property in the incorporated, unincorporated, and Tribal jurisdictions within Maricopa County.*

Agenda Item 3:

- S. Ogden reviewed the preliminary VA result tables with MJPT team and explained the computational methodology and summarized results in detail.
- Each jurisdiction was asked to take the VA summary tables back to their local teams, review the results, and respond with any questions or concerns.
- The Town of Gilbert (Gilbert) had expressed concern regarding the results of the preliminary VA that was presented at the May 14, 2009 meeting. Gilbert had included a comprehensive inventory of their water/wastewater piping system in their asset inventory dataset. As a result, Gilbert's assets made up more than 70% of the total assets for all jurisdictions within the county. At the June 25 meeting, Gilbert and several other jurisdictions expressed concerns that the Gilbert asset information was skewing the summary results. The MJPT discussed the issue and unanimously decided that Gilbert's water/wastewater piping system information would be excluded from the county-wide VA summary tables, but would be included in Gilbert individual VA summary tables.

Agenda Item 4:

- S. Ogden reviewed the 3-Step Mitigation Actions/Projects (A/Ps) update process that was introduced at the May 14, 2009 meeting. The steps include:
    - Step 1 - Review and evaluate the mitigation A/Ps as listed in the current plan (discussed during the May 14, 2009 meeting).
    - Step 2 - Identify any new mitigation A/Ps to be included in the updated plan.
    - Step 3 - Rank the updated mitigation A/Ps for the updated plan.
- S. Ogden discussed Step 2 in detail with MJPT. S. Ogden discussed the following mitigation measure categories and gave examples for each:
    - Prevention
        - Land development regulations
        - Open space preservation
        - Planning and zoning ordinances
        - Storm water management plans
        - CIP
    - Property protection
        - Acquisition
        - Relocation
        - Rebuilding
        - Floodproofing
    - Public education/awareness

        - Inform people about hazards and how to reduce damages/injury
        - Directed toward property owners, businesses, and visitors
    - Natural resource protection
        - Erosion and sediment control
        - Wetlands protection
        - Public open space expansion
        - Environmental restoration
    - Emergency services
        - Protection of warning capability
        - Protection of critical facilities
        - Protection of infrastructure for emergency response
    - Structural projects
        - Reservoirs
        - Levees and floodwalls
        - Diversions
        - Channel construction and modifications
        - Storm sewers
- S. Ogden reviewed the Mitigation A/Ps table template handout with the MJPT. The template handout included two example mitigation A/Ps. S. Ogden asked each jurisdiction to complete the table with the mitigation A/Ps from their existing plans and any new mitigation A/Ps that they would like to include in the plan update.
- S. Ogden provided the following additional guidelines for completing the mitigation A/Ps tables:
    - Each jurisdiction must have at least one A/P for each hazard they identified in their community
    - Be specific with the project descriptions
    - Include any A/Ps in which they indent to seek grand funding
    - Tell the "what" and "why" in the project descriptions
    - Must have at least one mitigation A/P that addresses compliance with the NFIP

Agenda Item 5: HOMEWORK ASSIGNMENTS

- Each jurisdiction is to review and complete any past assignments shown as *Not Received* or *Partially Complete* in the assignment table.
- Each jurisdiction is to identify any NEW mitigation A/Ps and accompanying mitigation strategies for their communities.
- Each jurisdiction is to complete the mitigation A/Ps table that will be distributed to them by S. Ogden following the June 25, 2009 meeting.

Next Meeting

July 16, 2009
9am to 11am
Flood Control District of Maricopa County
Adobe Conference Room
2801 W. Durango, Phoenix

Memorandum *JE Fuller/ Hydrology & Geomorphology, Inc.*

MEETING DATE: July 16, 2009

MEETING TIME: 9:00AM – 11:00AM

MEETING LOCATION: Flood Control District of Maricopa County
Operations Building – Dreamy Draw Conference Room
2801 W. Durango Street
Phoenix, AZ 85009

DISTRIBUTION: Meeting Attendees

FROM: W. Scott Ogden, P.E. - JEF

RE: Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2009 Update

ATTENDEES:

Tom Abbott	City of Tempe
Tom Christmas	Fort McDowell Yavapai Nation
Ed Copp	Salt River Project
Sonny Culbreth	City of Litchfield Park
Gil Damiani	City of Mesa
Mike DeBenedetto	City of Phoenix
Pat Farmer	Town of Carefree
Mark Hannah	Town of Youngtown
Bob Hansen	City of Tolleson
Jennifer Henry	Maricopa County
Cristina Herrera	Maricopa County Department of Emergency Management
Dewey Horton	Town of Buckeye
Lee Jimenez	Flood Control District of Maricopa County
Glenn Jones	City of Peoria
Joe LaFortune	Town of Queen Creek
Richard Langevin	Maricopa County
Russ Loumav	Town of Paradise Valley
Ronnie Miller	Town of Wickenburg
Tim Murphy	Flood Control District of Maricopa County
John Padilla	Maricopa County
Harry Parsi	Town of Gila Bend
Cliff Puckett	Salt River Pima-Maricopa Indian Community
David Ramirez	Town of Goodyear
Randy Roberts	Town of Fountain Hills
John Rose	Maricopa County Department of Transportation
Debra Sheff	City of Glendale
Art Snapp	City of Avondale
Adam Stein	Town of Cave Creek
Kerry Swick	City of Scottsdale
Julie Syrmopoulus	Maricopa County Department of Emergency Management
Jeri Todd	City of Phoenix
Mitch Wagner	Maricopa County Department of Transportation

Marc Walker	City of Chandler
Steve Waters	Flood Control District of Maricopa County
Ken Waters	National Weather Service

Consultants:

W. Scott Ogden	JE Fuller/ Hydrology & Geomorphology, Inc.

AGENDA

1. **STATUS REVIEW**
2. **PROJECT SCHEDULE**
3. **PHASE 2 PUBLIC INVOLVEMENT**
4. **RESOLUTION OF ADOPTION TEMPLATE**
5. **HOMEWORK ASSIGNMENTS**
6. **CLOSING THOUGHTS**

DISCUSSION

Agenda Item 1:

- S. Ogden distributed an updated copy of Homework Status Sheet and discussed the outstanding items. A copy of the status sheet is shown below.
- S.Ogden stressed that the last two columns were critical to those communities receiving FEMA approval and must be provided.
- A new deadline of Wednesday, July 22 was given to complete all homework. Failure to meet this deadline will jeopardize the community's continued participation.

Agenda Item 2:

- S. Ogden distributed a gant chart timeline showing the planning elements remaining and milestones. The following is a summary:
    - Draft Plan will be sent to the MJPT and ADEM for review on Aug 1st.
    - MJPT and ADEM will complete review in 4 weeks. The legal review should occur during this period as well. The majority of the MJPT felt that the legal review would be fine at this time and should not have to be revisited. S. Ogden encouraged the MJPT to remind legal staff that this is an update to an already established document.
    - JEF will address all comments and prepare a final draft for submittal to FEMA. Target submittal date is Sept 15th.
    - FEMA review is estimated at 6 weeks.
    - JEF will respond to FEMA comments and anticipates receiving the "approvable pending adoption" letter by mid Nov.
    - Each jurisdiction will then promulgate (get official adoption through a resolution) and send the resolutions to FEMA and ADEM, copying MCDEM and JEF.

Jurisdiction	PI Website Posting DUE 5/31/09	PI Newspaper Notice/Article DUE 5/31/09	CPRI DUE 4/27/09	Local Team List DUE 4/27/09	Mitigation Hazard List DUE 4/27/09	Jurisdictional Boundary Confirmation DUE 4/27/09	Logo DUE 4/27/09	Asset Inventory DUE 4/27/09	Capability Assessment DUE 5/14/09	Prior Mitigation Activity DUE 5/14/09	Goals & Objectives Confirmation DUE 6/25/09	Ex Mitigation Actions/Projects Assessment DUE 6/25/09	New Mitigation A/P and Implementation Strategy DUE 7/16/09
MARICOPA COUNTY (UNINC)	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
AVONDALE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
BUCKEYE	Received	Received	Received	Received	Received	Received	Received	Received	Partially Complete	Partially Complete	OK As-is	Received	Received
CAREFREE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
CAVE CREEK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
CHANDLER	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
EL MIRAGE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
FOUNTAIN HILLS	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
GILA BEND	N/A	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	OK As-is	Not Received	Not Received
GILBERT	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
GLENDALE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
GOODYEAR	Received	Past Deadline	Received	Received	Received	Received	Received	Past Deadline	Not Received	Not Received	Default OK As-is	Not Received	Not Received
GUADALUPE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Not Received
LITCHFIELD PARK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Partially Complete
MESA	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
PARADISE VALLEY	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
PEORIA	Received	Received	Received	Received	Received	Received	Received	Received	Partially Complete	Not Received	OK As-is	Received	Received
PHOENIX	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
QUEEN CREEK	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Not Received	Not Received
SCOTTSDALE	Received	Received	Received	Received	Received	Received	Received	Past Deadline	Received	Received	OK As-is	Received	Not Received
SURPRISE	Past Deadline	Received	Received	Received	Received	Received	Received	Received	Not Received	Not Received	Default OK As-is	Not Received	Not Received
TEMPE	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
TOLLESON	Received	Received	Received	Received	Received	Received	Received	Past Deadline	Received	Received	OK As-is	Received	Received
WICKENBURG	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received
YOUNGTOWN	Past Deadline	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
FT McDOWELL YAVAPAI NATION	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
SALT RIVER PIMA-MARICOPA IC	Received	Received	Received	Received	Received	Received	Received	Received	Received	Received	OK As-is	Received	Received
SALT RIVER PROJECT	Received	N/A	Received	Received	Received	Received	Received	N/A	Received	Received	OK As-is	N/A	Received

Agenda Item 3:

- S. Ogden reviewed the public involvement requirements with focus on the period of comment after the draft is prepared and prior to promulgation.
- The MJPT discussed the options available and concluded that an updated post would be made to each jurisdiction's website informing the public that the draft was completed and available for comment. The actual draft would reside on the County's permanent website. Each community would also follow normal open meeting laws during the resolution adoption period as well.
- JEF will deliver revised language for use on the websites and the target date for the repost is on or around Sept 15th.

Agenda Item 4:

- S. Ogden distributed a draft template resolution for use by each community in adopting the Plan. The MJPT read through the draft and made a few edits.
- The final template shall be used as basis for each community, however, all resolutions do not have to be identical.

Agenda Item 5: HOMEWORK ASSIGNMENTS

- Complete past assignments ASAP. Final deadline of July 22nd.
- Review draft and make arrangements for legal review within the 4 week period.
- Perform Phase 2 notice on or around Sept 15th. JEF will distribute language for the websites
- Begin to plan for resolution adoption by initiating discussions with board and council members.

Agenda Item 6:

- J. Syrmopoulus made some closing remarks on behalf of MCDEM and gave details regarding the upcoming Community Wildfire Protection Plan. She encouraged everyone to stay involved.

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
* Sheri Gibbons	Gilbert TOWN OF ~~Fire~~	Fire	EMERGENCY Manager	480 503 6333	480 325 5425	sheri@ci.gilbert.az.us
Lee Jimenez	FCD	FMS	Floodplain Rep.	602.372.0582	602.793.6671	LEEJIMENEZ@MAIL.MARICOPA.GOV
DAVE McGHAN	APS	Cust Accts Mgr	Tech Acct Rep	602 371-7755	602 290-6925	david.mcghan@aps.com
Matt Holm	MC Planning/Dev.		Principal Planner	602-506-7162		MATTHEMOL@mail.maricopa.gov
TRACY STEVENS	City of Avondale	Planning	Pln Mgr	623 333 4012	623-640-0504	tstevens@avondale.org
Jen Pokorski	FCD	PPM	Project Manager	602-506-4695		jmp@mail.maricopa.gov

	Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
*	Joe LaFortune	Town of Queen Creek	Public Safety	Public Safety Division Manager	(480) 358-3502	(480) 477-4854	joe.lafortune@queencreek.org
*	Rodney Phelps	Gila River Indian County	OEM	Emergency Ops Spec	520-562-4487	520-610-0756	rodney.phelps@gric.nsn.us
*	DEBRA Sheff	City of Glendale	OEM	Operations + Training Officer	623-872-5008	602-6167759	dsheff@glendaleaz.com
	JIM SHANK	TOWN OF BUCKEYE	FIRE	FIRE PREVENTION SPECIALIST		623 695-4073	JSHANK@BUCKEYEAZ.GOV
	SHARON SANDER	MC COM DEV.				602 372-1529	SSANDERS3@MCDB.MARICOPA.GOV
	Ken Sowers	city of Avondale	Building	Building Official	623-333-4025	623 764-2420	ksowers@avondale.org
*	Cliff Puckett	Salt River Indian Community	Emergency Mngmt.	Emergency Manager	480 850-4408	480 694-9516	cliff.puckett@SRPMIC-NSN.GOV
	Konner Miller	Wickenburg Police	"	"	928 684 3152		JEEPRIDE97@YAHOO.COM

	Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
*	Gil DAMIANI	City of MESA	Emerg Mngmt	EM Coordinator	480-644-2631	480-682-7726	gil.damiani@mesaaz.gov
*	Glen Jones	City of Peoria	" "	" "	623 773-5202		Glen.Jones@peoria.gov
	DARREN ROBERTSON	YOUNGTOWN TOWN	" "	POLICE LT	6239743665	6235150931	DROBERTSON@YOUNGTOWNAZ.GOV
*	Karl EMBERG	Paradise Valley PD	Police Dept	LT	480-948-7418		Kemberg@paradisevalleyaz.gov
	JERI TODD	PHOENIX EMERG MNGMT	EMERGENCY MNGMT	AA II	602-534-6332		JERI.TODD@PHOENIX.GOV
	MIKE DEBENEDETTO	CITY OF PHOENIX	" "	EM COORDINATOR	6024952077		MICHAEL.DEBENEDETTO@PHOENIX.GOV
*	ART SNAPP	AVONDALE			623 333 6001		
	PAT FANNON	Town of Carefree	Marshal/EM.	Marshal/EM	480 488-3686	602 826-2169	Pat@CArefree.org
	ADAM STEIN	CAVE CREEK	MARSHAL	MARSHAL	480 488 6636	4802519060	ASTEIN@CAVECREEK.ORG
*	Ed Copp	SRP	Busi Cont & Emer Mgt	Mgr	602-236-8106	602-332-5635	ed.copp@srpnet.com
	Michael K. Gease	Flood Control District of Maricopa County	Floodplain Management and Services Division	Floodplain Planning Specialist	602-372-6118		migemail.maricopa.gov
	Steve Waters	"	Flood Warning	Flood Warn. Mgr.	602-506-4694		sdwe " "
	HOWARD MUNDING	EL MIRAGE FD		ASST CHIEF	623-876-4249	623 518-4527	HMUNDING@CITYOFELMIRAGE.ORG
	BRIAN BERNDT	CITY OF AVONDALE	DEVELOPMENT SERVICES	DIRECTOR	623-333-4011		bberndt@avondale.org
	Tim Murphy	FCDMC	Floodplain Delineation	Branch Manager	~~623~~ 602-506-4605		Tmm@mail.Maricopa.gov
	Sue Wood	ADEM	Mitigation	Prog Mgr	602-392-7518		Susan.wood@azdema.gov
	Alfred Medina	Guadalupe Fire Dept	~~Police~~ Fire Dept	Captain	480-839-1112	602-361-3674	almedina@cox.net

Maricopa County Multi-Jurisdictional Mulit-Hazard Mitigation Planning Meeting

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
GLOU FLOR	mcD&M		Planner	602 273-1411		GLOU FLOR @ mail. maricop
JOHN J. ROSE	MCDOT	SURVEY BRANCH	SURVEY MANAGER	602-506-4679		johnrose@mail.maricopa.gov
LORENZO JONES	City of Scottsdale	EMERGENCY MANAGEMENT	Emergency Management officer	480 312-1821		ljones@scottsdaleaz.gov
Othell Newbill	City of Goodyear	" "	Emergency Management Coord.	623-882-7112		oNewbill@goodyearaz.gov
Ken Waters	National Weather Service	Warning Coordinator	WCM	602-275-7002		ken.waters@noaa.gov
BOB Hansen	City of Tolleson	Fire Department	Divison Chief	623-936-8500		bhansen@tollesonaz.org
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623-222-5022		Kevin.Pool@surpriseaz.com
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480 505 5399		gturrubiartes@guadalupeaz.org
Tom Abbott	City OF Tempe	Fire Dept.	Deputy Chief	480 858 7219		tom_abbott@tempe.gov
Jim Begansky	MCDEM	—	Planner	602 273 1411		jimbegansky@mail.maricopa.go
JASON HOWARD	MARICOPA ASSOCIATION OF GOVERNMENTS	—	GIS MANAGER	602.254.6300		jhoward@mag.maricopa.gov
MITCH WAGNER	MCDOT	TRANSPORTATION PLANNING	SR. PLANNER	602-506-8054		MITCHWAGNER@MAIL.MARICOPA.GOV

Maricopa County Department of Emergency Management

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
TOM CHRISTMAS	FORT McDOWELL	FIRE	FIRE CHIEF	480-789-7521		TCHRISTMAS@FTMCDOWELL.ORG
Marc Walker	Chandler Fire	Fire	Asst Fire Chief	480-782-2135		Marc.Walker@chandleraz.gov
JOHN RAE	LITCHFIELD PARK	BLDG	SENIOR INSP.	6239351066		jrae@litchfield-park.gov
RANDY ROBERTS	FOUNTAIN HILLS FD	FIRE	ASST. CHIEF	480 8165114		rroberts@fh.az.gov
Cristina Herrera	MCDEM - County	MCDEM	HM Planner	602-273-1411		

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
Ed Copp PAT O'DOOLE	Salt River Project	Busi Cont & Emergency Management	Manager	602.236.8106	602.333.5635	Ed.Copp@srpnet.com
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator			sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Michael K .Gease MIG	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	Town of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown		Risk Manager/Emergency Coordinator			MHannah@youngtownaz.org
Bob Hansen	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm M.H.	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye	Fire	Assistant Chief/Emergency Manager		602-919-2801	dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez LOJ	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov
Mark Johnson	Town of Guadalupe		Emergency Services Coordinator			mjohnson@guadalupeaz.org
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator			slagreca@fh.az.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Brody Marshall	Town of Gila Bend	Fire Department	Fire Chief/ Emergency Management Coordinator			
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		rmiller@ci.wickenburg.az.us
Howard Munding	Town of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill	City of Goodyear	Emergency Management	Emergency Management Coordinator	623.882.7221		onewbill@goodyearaz.gov
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Ops. Spec.	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC.nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org
Darrell Rezendes	Town of El Mirage		Emergency Management Director			drezendes@cityofelmirage.org
Randy Roberts	Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6001		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevent	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov
BOB LEE	TOWN OF PARADISE VALLEY	BUILDING SAFETY	BUILDING OFFICIAL	480 348-3631		rlee@paradisevalleyaz.gov
CHRIS OCHS	Glendale	Water Utility	Deputy Director	623-930-2707		COCHS@glendale.az.com
Karl EMBERG	PARADISE VALLEY PD	Police Dept	Special Project DIV Commander	480-948-7418		Kemberg@paradisevalley.az.gov
Robert Marshall	Goodyear FD.	Emergency Management	Emergency Manager	623-882-7159.		RMarshall@goodyearaz.gov
Bruce Van Scyoc	Surprise FD	FD	Battalion Chief	623 256 7630		bruce.vanscyoc@surpriseaz.com
MICHAEL PAZ	MOTOROLA	GOVT & PUBLIC SAFETY	ACCOUNT EXEC	602-790-1789		MICHAEL.PAZ@MOTOROLA.COM
JOHN RAE	LITCHFIELD PARK	BUILDING SAFETY	SENIOR INSPECTOR	623 935 1066		jrae@litchfield-park.gov
Meredith Bond	MCDEM	Emergency Management		602-273-1411		meredithbond@mail.maricopa.gov
HARRY PARSI	TOWN OF GILA BEND	PUBLIC WORKS	TOWN ENGINEER	(928)683-2255		HPARSI@GILABENDAZ.DOT
~~PAT FARVER~~	~~Town of Carefree~~	~~Marshal Off~~	~~Marshal~~	~~480 488 3~~		
Pam Lansberry	APS	Tech. Ops.	Manager	602-809-1208		pamela.lansberry@aps.com
Mike Sabatini	MCDOT	Planning	Manager	602-506-8628		mikesabatini@mail.maricopa.gov
Devlin Fung	City of Glendale	IT/GIS	SR GIS ANALYST	623 930 4124		dfung@glendaleaz.com
Sheri Gibbons	Town of Gilbert	Fire	EMERGENCY Manager	480 503 6333		Sherig@ci.gilbert.az.us

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Meredith Bond	Maricopa County	Department of Emergency Management		602.273.1411		meredithbond@mail.maricopa.gov
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
~~Ed Copp~~ PATRICK OTOOLE	Salt River Project	Business Continuity and Emergency Management	~~Manage~~r ANALYST	~~602.236.8106~~ 602.236.5294	~~602.333.5635~~	~~Ed.Copp@srpnet.com~~ PATRICK.OTOOLE@SRPNET.COM
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator			sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Devlin Fung	City of Glendale	Information Technology / GIS	Senior GIS Analyst	623.930.4424		dfung@glendaleaz.com
Michael K .Gease	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	City of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown		Risk Manager/Emergency Coordinator			MHannah@youngtownaz.org
Bob Hansen (Kent Smith)	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye		Assistant Chief/Emergency Manager			dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator	480-837-9800	602-739-9919	slagreca@fh.az.gov
Pam Lansberry	APS	Technical Operations	Manager	602.809.1208		pamela.lansberry@aps.com
Bob Lee	Town of Paradise Valley	Building Safety	Building Official	480.348.3631		rlee@paradisevalleyaz.gov
Bob Marshall	City of Goodyear	Fire Department	Emergency Manager	623.882.7159		rmarshall@goodyearaz.gov
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		rmiller@ci.wickenburg.az.us
Howard Munding	~~Town~~ of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill	City of Goodyear	Emergency Management	Emergency Management Coordinator	623.882.7221		onewbill@goodyearaz.gov
Chris Ochs	City of Glendale	Water Utility	Deputy Director	623.930.2702		cochs@glendaleaz.com
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management	Principal Planning Analyst	602.236.5294		patrick.otoole@srpnet.com
Harry Parsi	Town of Gila Bend	Public Works	Town Engineer	928.683.2255		hparsi@gilabendaz.org
Michael Paz	Motorola	Government and Public Safety	Account Executive	602.790.1789		michael.paz@motorola.com
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Operations Specialist	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC-nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org
Darrell Rezendes	Town of El Mirage		Emergency Management Director			drezendes@cityofelmirage.org
Randy Roberts	Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Mike Sabatini	Maricopa County	Department of Transportation	Manager	602.506.8628		mikesabatini@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6001		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevens	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Bruce Van Scyoc	City of Surprise	Fire Department	Batallion Chief	623.256.7630		bruce.vanscyoc@surpriseaz.com
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Meredith Bond	Maricopa County	Department of Emergency Management		602.273.1411		meredithbond@mail.maricopa.gov
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
Shanon Cluff	City of Mesa	Fire Department	Deputy Chief			
Ed Copp	Salt River Project	Business Continuity and Emergency Management	Manager	602.236.8106	602.333.5635	Ed.Copp@srpnet.com
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator			sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Devlin Fung	City of Glendale	Information Technology / GIS	Senior GIS Analyst	623.930.4424		dfung@glendaleaz.com
Michael K .Gease	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	City of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown		Risk Manager/Emergency Coordinator			MHannah@youngtownaz.org
Bob Hansen	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye		Assistant Chief/Emergency Manager			dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator			slagreca@fh.az.gov
Richard Langevin	Maricopa County	Department of Emergency Management	Emergency Services Planner	602.273.1411		richardlangevin@mail.maricopa.gov
Pam Lansberry	APS	Technical Operations	Manager	602.809.1208		pamela.lansberry@aps.com
Bob Lee	Town of Paradise Valley	Building Safety	Building Official	480.348.3631		rlee@paradisevalleyaz.gov
Bob Marshall	City of Goodyear	Fire Department	Emergency Manager	623.882.7159		rmarshall@goodyearaz.gov
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		jeepride97@yahoo.com
Howard Munding	Town of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill	City of Goodyear	Emergency Management	Emergency Management Coordinator	623.882.7221		onewbill@goodyearaz.gov
Chris Ochs	City of Glendale	Water Utility	Deputy Director	623.930.2702		cochs@glendaleaz.com
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management	Principal Planning Analyst	602.236.5294		patrick.otoole@srpnet.com
Harry Parsi	Town of Gila Bend	Public Works	Town Engineer	928.683.2255		hparsi@gilabendaz.org
Michael Paz	Motorola	Government and Public Safety	Account Executive	602.790.1789		michael.paz@motorola.com
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Operations Specialist	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC-nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org
Darrell Rezendes	Town of El Mirage	FIRE DEPT	Emergency Management Director	623-876-4242	623-518-0421	drezendes@cityofelmirage.org
Randy Roberts	Town of Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov
Mike Sabatini	Maricopa County	Department of Transportation	Manager	602.506.8628		mikesabatini@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6001		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevens	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org
Julie Syrmopoulos	Maricopa County	Regional Development Services Agency	Relations Director	602-506-1387	602-722-9229	juliesyrmopoulos@mail.maricopa.gov
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Bruce Van Scyoc	City of Surprise	Fire Department	Batallion Chief	623.256.7630		bruce.vanscyoc@surpriseaz.com
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov
Mike FUSCO	CITY OF PEORIA	SAFETY MGT DIV	SAFETY OFFICER	623 773 7278	602 320 9723	michael.fusco@peoriaAZ.gov
Warren Leek	MCDEM	Emer Mgt	Director	602-273-1411		

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Meredith Bond	Maricopa County	Department of Emergency Management		602.273.1411		meredithbond@mail.maricopa.gov
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
Shanon Cluff	City of Mesa	Fire Department	Deputy Chief			
Ed Copp	Salt River Project	Business Continuity and Emergency Management	Manager	602.236.8106	602.333.5635	Ed.Copp@srpnet.com
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator	623.935.9040		sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Devlin Fung	City of Glendale	Information Technology / GIS	Senior GIS Analyst	623.930.4424		dfung@glendaleaz.com
Mike Fusco	City of Peoria	Safety Mitigation Division	Safety Officer	623.773.7278	602.370.9723	michael.fusco@peoriaaz.gov
Michael K .Gease	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	City of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown		Risk Manager/Emergency Coordinator	623.933.8286		MHannah@youngtownaz.org
Bob Hansen	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye		Assistant Chief/Emergency Manager	623.349.6711	602.919.2401	dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator			slagreca@fh.az.gov
Richard Langevin	Maricopa County	Department of Emergency Management	Emergency Services Planner	602.273.1411		richardlangevin@mail.maricopa.gov
Pam Lansberry	APS	Technical Operations	Manager	602.809.1208		pamela.lansberry@aps.com
Bob Lee	Town of Paradise Valley	Building Safety	Building Official	480.348.3631		rlee@paradisevalleyaz.gov
Warren Leek	Maricopa County	Department of Emergency Management	Director	602.273.1411		
Bob Marshall	City of Goodyear	Fire Department	Emergency Manager	623.882.7159		rmarshall@goodyearaz.gov
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		jeepride97@yahoo.com
Howard Munding	Town of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill	City of Goodyear	Emergency Management	Emergency Management Coordinator	623.882.7221		onewbill@goodyearaz.gov
Chris Ochs	City of Glendale	Water Utility	Deputy Director	623.930.2702		cochs@glendaleaz.com
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management	Principal Planning Analyst	602.236.5294		patrick.otoole@srpnet.com
Harry Parsi	Town of Gila Bend	Public Works	Town Engineer	928.683.2255		hparsi@gilabendaz.org
Michael Paz	Motorola	Government and Public Safety	Account Executive	602.790.1789		michael.paz@motorola.com
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Operations Specialist	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC-nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Darrell Rezendes	Town of El Mirage	Fire Department	Emergency Management Director	623.876.4242	623.518.0421	drezendes@cityofelmirage.org
Randy Roberts	Town of Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov
Mike Sabatini	Maricopa County	Department of Transportation	Manager	602.506.8628		mikesabatini@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6001		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevens	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org
Julie Syrmopoulos	Maricopa County	Regional Development Services Agency	Relations Director	602-506-1387	602-722-9229	juliesyrmopoulos@mail.maricopa.gov
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Bruce Van Scyoc	City of Surprise	Fire Department	Batallion Chief	623.256.7630		bruce.vanscyoc@surpriseaz.com
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov
Pete Weaver	Pinal County	Emergency Mgt	Director	520.866.6415		Pete.Weaver@pinalcountyaz.gov

Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Planning Meeting

Date: May 14, 2009

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Renelle Schaffer	General Public				480 543 7447	rschaffer2000@cox.com

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Meredith Bond	Maricopa County	Department of Emergency Management		602.273.1411		meredithbond@mail.maricopa.gov
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
Shanon Cluff	City of Mesa	Fire Department	Deputy Chief			
Ed Copp	Salt River Project	Business Continuity and Emergency Management	Manager	602.236.8106	602.333.5635	Ed.Copp@srpnet.com
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator	623.935.9040		sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Devlin Fung	City of Glendale	Information Technology / GIS	Senior GIS Analyst	623.930.4424		dfung@glendaleaz.com
Mike Fusco	City of Peoria	Safety Mitigation Division	Safety Officer	623.773.7278	602.370.9723	michael.fusco@peoriaaz.gov
Michael K .Gease	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	City of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown		Risk Manager/Emergency Coordinator	623.933.8286		MHannah@youngtownaz.org
Bob Hansen	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye		Assistant Chief/Emergency Manager	623.349.6711	602.919.2401	dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov
Lorenzo Jones	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator			slagreca@fh.az.gov
Richard Langevin	Maricopa County	Department of Emergency Management	Emergency Services Planner	602.273.1411		richardlangevin@mail.maricopa.gov
Pam Lansberry	APS	Technical Operations	Manager	602.809.1208		pamela.lansberry@aps.com
Bob Lee	Town of Paradise Valley	Building Safety	Building Official	480.348.3631		rlee@paradisevalleyaz.gov
~~Warren Look~~	~~Maricopa County~~	~~Department of Emergency Management~~	~~Director~~	~~602.273.1411~~		
Bob Marshall	City of Goodyear	Fire Department	Emergency Manager	623.882.7159		rmarshall@goodyearaz.gov
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		jeepride97@yahoo.com
Howard Munding	Town of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill	City of Goodyear	Emergency Management	Emergency Management Coordinator	623.882.7221		onewbill@goodyearaz.gov
Chris Ochs	City of Glendale	Water Utility	Deputy Director	623.930.2702		cochs@glendaleaz.com
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management	Principal Planning Analyst	602.236.5294		patrick.otoole@srpnet.com
Harry Parsi	Town of Gila Bend	Public Works	Town Engineer	928.683.2255		hparsi@gilabendaz.org
Michael Paz	Motorola	Government and Public Safety	Account Executive	602.790.1789		michael.paz@motorola.com
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Operations Specialist	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC-nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Darrell Rezendes	Town of El Mirage	Fire Department	Emergency Management Director	623.876.4242	623.518.0421	drezendes@cityofelmirage.org
Randy Roberts	Town of Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov
Mike Sabatini	Maricopa County	Department of Transportation	Manager	602.506.8628		mikesabatini@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Renelle Schaffer	General public			480.543.7447		rschaffer2000@yahoo.com
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6001 6000		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevens	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org
Julie Syrmopoulos	Maricopa County	Regional Development Services Agency	Relations Director	602-506-1387	602-722-9229	juliesyrmopoulos@mail.maricopa.gov
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Bruce Van Scyoc	City of Surprise	Fire Department	Batallion Chief	623.256.7630		bruce.vanscyoc@surpriseaz.com
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Pete Weaver	Maricopa County	Department of Emergency Management	Director	602.273.1411		
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Tom Abbott	City of Tempe	Fire Department	Deputy Chief	480.858.7219		tom_abbott@tempe.gov
Jim Begansky	Maricopa County	Department of Emergency Management	Planner	602.273.1411		jimbegansky@mail.maricopa.gov
Brian Berndt	City of Avondale	Development Services	Director	623.333.4011		bberndt@avondale.org
Meredith Bond	Maricopa County	Department of Emergency Management		602.273.1411		meredithbond@mail.maricopa.gov
Tom Christmas	Fort McDowell Yavapai Nation	Fire Department	Fire Chief	480.789.7521		tchristmas@ftmcdowell.org
Shanon Cluff	City of Mesa	Fire Department	Deputy Chief			
Ed Copp	Salt River Project	Business Continuity and Emergency Management	Manager	602.236.8106	602.333.5635	Ed.Copp@srpnet.com
Sonny Culbreth	City of Litchfield Park		Emergency Management Coordinator	623.935.9040		sculbreth@litchfield-park.org
Gil Damiani	City of Mesa	Emergency Management	Emergency Management Coordinator	480.644.2631	480.682.7760	Gil.Damiani@mesaaz.gov
Mike DeBenedetto	City of Phoenix	Emergency Management	Emergendcy Management Coordinator	602.495.2077		michael.debenedetto@phoenix.gov
Karl Emberg	Town of Paradise Valley	Police Department	Police Lieutenant	480.948.7418		KEmberg@paradisevalleyaz.gov
Pat Farmer	Town of Carefree	Marshal	Marshal	480.488.3686	602.826.2169	pat@carefree.org
Glen Floe	Maricopa County	Emergency Management	Planner	602.273.1411		glenfloe@mail.maricopa.gov
Devlin Fung	City of Glendale	Information Technology / GIS	Senior GIS Analyst	623.930.4424		dfung@glendaleaz.com
Mike Fusco	City of Peoria	Safety Mitigation Division	Safety Officer	623.773.7278	602.370.9723	michael.fusco@peoriaaz.gov
Michael K .Gease	Flood Control District of Maricopa County	Floodplain Management and Services	Floodplain Planning Specialist	602.372.6118		mig@mail.maricopa.gov
Sheri Gibbons	Town of Gilbert	Fire Department	Emergency Manager	480.503.6333	480.325.5425	sherig@ci.gilbert.az.us
George Good	City of Tolleson	Fire Department	Fire Chief/ Emergency Management Coordinator			ggood@tollesonaz.org
Rob Gunter	City of Glendale		Emergency Management Coordinator			rgunter@glendaleaz.com
Mark Hannah	Town of Youngtown	PUBLIC WORKS DIRECTOR	~~Risk Manager/Emergency Coordinator~~	623.933.8286		MHannah@youngtownaz.org
Bob Hansen	City of Tolleson	Fire Department	Division Chief	623.936.8500		bhansen@tollesonaz.org
Cristina Herrera	Maricopa County	Emergency Management	Emergency Services Planner	602.273.1411		cristinaherrera@mail.maricopa.gov
Matt Holm	Maricopa County	Planning/Development	Principal Planner	602.506.7162		MatthewHolm@mail.maricopa.gov
Dewey Horton	Town of Buckeye		Assistant Chief/Emergency Manager	623.349.6711	602.919.2401	dhorton@buckeyeaz.gov
Jason Howard	Maricopa Association of Governments		GIS Manager	602.254.6300		jhoward@mag.maricopa.gov
Lee Jimenez	Flood Control District of Maricopa County	Floodplain Management	Floodplain Representative	602.376.0582	602.793.6671	leejimenez@mail.maricopa.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Glenn Jones	City of Peoria	Emergency Management	Emergency Management Coordinator	623.777.5202		Glenn.Jones@peoriaaz.gov
Lorenzo Jones KSWICK	City of Scottsdale	Emergency Management	Emergency Management Officer	480.312.1821		ljones@scottsdaleaz.gov
Cliff Jones	City of Tempe	Fire Department	Fire Chief/Emergency Management Director			cliff_jones@tempe.gov
Joe LaFortune	Town of Queen Creek	Public Safety	Division Manager	480.358.3502	480.797.4854	Joe.LaFortune@queencreek.org
Scott LaGreca	Town of Fountain Hills	Fire Department	Fire Chief/ Emergency Management Coordinator			slagreca@fh.az.gov
Richard Langevin	Maricopa County	Department of Emergency Management	Emergency Services Planner	602.273.1411		richardlangevin@mail.maricopa.gov
Pam Lansberry	APS	Technical Operations	Manager	602.809.1208		pamela.lansberry@aps.com
Bob Lee Russ Lowry For Bob Lee	Town of Paradise Valley	Building Safety	Building Official	480.348.3631		rlee@paradisevalleyaz.gov
~~Warren Leek~~	~~Maricopa County~~	~~Department of Emergency Management~~	~~Director~~	~~602.273.1411~~		
Bob Marshall	City of Goodyear	Fire Department	Emergency Manager	623.882.7159		rmarshall@goodyearaz.gov
Dave McGhan	Arizona Public Service	Customer Accounts Manager	Technical Account Representative	602.371.7755	602.290.6925	david.mcghan@aps.com
Alfred Medina	Town of Guadalupe	Fire Department	Captain	480.839.1112	602.361.3674	almedina@cox.net
Ronnie Miller	Town of Wickenburg	Police Department	Emergency Manager	928.684.3152		jeepride97@yahoo.com
Howard Munding	Town of El Mirage	Fire Department	Assistant Fire Chief	623.876.4248	623.518.0422	hmunding@cityofelmirage.org
Tim Murphy	Flood Control District of Maricopa County	Floodplain Delineation	Branch Manager	602.506.4605		tmm@mail.maricopa.gov
Othell Newbill David Ramirez DR	City of Goodyear	Emergency Management City Engineer	Emergency Management Coordinator	623.882.7221 623-882-7954		onewbill@goodyearaz.gov david.ramirez@goodyearaz.gov
Chris Ochs	City of Glendale	Water Utility	Deputy Director	623.930.2702		cochs@glendaleaz.com
Patrick O'Toole	Salt River Project	Business Continuity and Emergency Management	Principal Planning Analyst	602.236.5294		patrick.otoole@srpnet.com
Harry Parsi HP.	Town of Gila Bend	Public Works	Town Engineer	928.683.2255		hparsi@gilabendaz.org
Michael Paz	Motorola	Government and Public Safety	Account Executive	602.790.1789		michael.paz@motorola.com
Rodney Phelps	Gila River Indian Community	Office of Emergency Management	Emergency Operations Specialist	520.592.4487	520.610.0756	rodney.phelps@gric.nsn.us
Jen Pokorski	Flood Control District of Maricopa County	Planning and Project Management	Project Manager	602.506.4695		jmp@mail.maricopa.gov
Kevin Pool	City of Surprise	Fire Department	Assistant Chief	623.222.5022		kevin.pool@surpriseaz.com
Cliff Puckett	Salt River Pima-Maricopa Indian Community	Emergency Management	Emergency Manager	480.850.4408	480.694.9516	Cliff.Puckett@SRPMIC-nsn.gov
John Rae	City of Litchfield Park	Building	Senior Inspector	623.935.1066		jrae@litchfield-park.org

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E.Mail Address
Darrell Rezendes	Town of El Mirage	Fire Department	Emergency Management Director	623.876.4242	623.518.0421	drezendes@cityofelmirage.org
Randy Roberts	Town of Fountain Hills	Fire Department	Assistant Chief	480.816.5114		rroberts@fh.az.gov
Duren Robertson	Town of Youngtown	Emergency Management	Police Lieutenant	623.974.3665	623.518.0931	drobertson@youngtownaz.org
John J. Rose	Maricopa County Department of Transportation	Survey Branch	Survey Manager	602.506.4679		johnrose@mail.maricopa.gov
Mike Sabatini	Maricopa County	Department of Transportation	Manager	602.506.8628		mikesabatini@mail.maricopa.gov
Sharon Sanders	Maricopa County	Community Development			602.392.1529	ssanders3@mccd.maricopa.gov
Renelle Schaffer	General public			480.543.7447		rschaffer2000@yahoo.com
Jim Shank	Town of Buckeye	Fire Department	Fire Prevention Specialist		623.695.4073	jshank@buckeyeaz.gov
Debra Sheff	City of Glendale	Office of Emergency Management	Operations & Training Officer	623.872.5008	602.616.1759	dsheff@glendaleaz.com
Art Snapp	City of Avondale	Community Services	Division Chief	623.333.6000		asnapp@avondale.org
Ken Sowers	City of Avondale	Building	Building Official	623.333.4025	623.764.2420	ksowers@avondale.org
Adam Stein	Town of Cave Creek	Marshal	Marshal, Emergency Services Coordinator	480.488.6636	480.251.9060	astein@cavecreek.org
Tracy Stevens	City of Avondale	Planning	Planning Manager	623.333.4012	623.640.0506	tstevens@avondale.org
Julie Symopoulos	Maricopa County	Regional Development Services Agency	Relations Director	602-506-1387	602-722-9229	juliesymopoulos@mail.maricopa.gov
Jeri Todd	City of Phoenix	Emergency Management	Administrative Assistant II	602.534.6332		jeri.todd@phoenix.gov
Gino Turrubiartes	Town of Guadalupe	Community Development Director	Director	480.555.5399		gturrubiartes@guadalupeaz.org
Bruce Van Scyoc	City of Surprise	Fire Department	Batallion Chief	623.256.7630		bruce.vanscyoc@surpriseaz.com
Mitch Wagner	Maricopa County	Department of Transportation	Senior Planner	602.506.8054		mitchwagner@mail.maricopa.gov
Marc Walker	City of Chandler	Fire Department	Assistant Fire Chief	480.782.2135		Marc.Walker@chandleraz.gov
Steve Waters	Flood Control District of Maricopa County	Flood Warning	Flood Warning Manager	602.506.4694		sdw@mail.maricopa.gov
Ken Waters	National Weather Service	Warning Coordinator	Warning Coordination Meteorologist	602.275.7002		ken.waters@noaa.gov
Pete Weaver	Maricopa County	Department of Emergency Management	Director	602.273.1411		
Sue Wood	Arizona Division of Emergency Management	Mitigation	Program Manager	602.392.7518		susan.wood@azdema.gov

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
Bernadine Burnette	Fort McDowell	Tribal Council	Vice President	480-789-7201		bburnette@ftmcdowell.org
TOM CHRISTMAS	FT. McDOWELL	FIRE DEPT	FIRE CHIEF	480-789-7520		TCHRISTMAS@FTMCDOWELL.ORG
Jim Alevras	FMYN	Public Works	Manager	480-789-7355		jalevras@ftmcdowell.org
JOE KANOVICH	FMYN	CEDD	PROJ. MANAGER	480-789-7743		JKANOVICH@FTMCDOWELL.ORG
Wayne Cooper	F.M.Y.N.	CEDD/Building Safety	Chief Building Inspector	480-789-7747	480-824-3971	wcooper@ftmcdowell.org
Phil Dorchester	FMYN	Administration	Tribal G.M.	480-789-7252		pdorchester@ftmcdowell.org
Paul Russell	FMYN	Tribal Council	Council Member	480-789-7203	[illegible]	prussell@ftmcdowell.org
Alfonso Rodriguez	FMYN	CEDD	Director	480-789-7740	[illegible]	[illegible]
MARK FRANK	FMYN	ENVIRONMENTAL	MANAGER	480-789-7163	480-980-8795	mfrank@ftmcdowell.org

Appendix C

Public Involvement Records

W. Scott Ogden

From: Art Snapp [asnapp@avondale.org]
Sent: Wednesday, May 13, 2009 3:48 PM
To: W. Scott Ogden
Subject: FW: Media Release/Avondale takes part in Multi-Hazard Mitigation Planning Process

---

From: Ingrid Melle
Sent: Wednesday, May 13, 2009 3:40 PM
To: Ingrid Melle
Subject: Media Release/Avondale takes part in Multi-Hazard Mitigation Planning Process

Avondale Public Information Office

For immediate release: May 13, 2009

Contact: Ingrid Melle, Public Information, (623) 333-1614

Avondale takes part in Multi-Hazard Mitigation Planning Process

The City of Avondale has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events.

"Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place," said Chief Art Snapp of Avondale Fire-Rescue. "It is clear that a focus on hazard mitigation will likely go a long way to benefiting the overall well-being of the residents of Avondale."

The mitigation planning process involves identifying and profiling the natural or human caused hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update process. For more information, please visit the multi-jurisdictional planning website at www.maricopa.gov/emerg_mgt or contact Art Snapp, Avondale Fire-Rescue at asnapp@avondale.org , 623-333-6110 or Cristina Herrera, Maricopa County Department of Emergency Management at cristinaherrera@mail.maricopa.gov; (602)273-1411.

# # #

Buckeye news . . .

For Immediate Release

Contact: Bob Bushner
623-349-6005 (w)
623-695-3175 (c)

Buckeye Working With County, Other Municipalities to Prepare for Natural Emergencies

Buckeye, Ariz. (April 29, 2009) – The Town of Buckeye is joining forces with Maricopa County and other municipalities to consolidate emergency planning services into a single multi-jurisdictional plan.

The goal of the planning effort is to reduce or eliminate the long-term risk to life and property from natural hazard events. The plan will not look at how communities respond to emergencies like floods or wildfires, but rather how to prevent the impact of those natural hazard events in the first place.

The planning process will identify and profile the natural hazards most likely to occur in a community, assess the vulnerability to those hazards and establish goals, actions and projects that will reduce the associated risks.

The planning will also to make communities eligible for certain hazard reduction grants and public assistance funds.

Maricopa County officials are seeking public input on the existing plan and the continued planning process. For more information, visit the planning website at www.maricopa.gov/emerg_mgt or contact Cristina Herrera, Maricopa County Department of Emergency Government, cristinaherrera@mail.maricopa.gov.

- 30 -

Jim Keen

From: coins@carefree.govoffice.com
Sent: Friday, April 17, 2009 3:40 PM
To: jim@carefree.org
Subject: COINS Info Cave Creek Major Plan Amends, Emerg. Mgmt. & Events

C Carefree
O Official
I Information
N Notification
S System

3:35PM Arizona Local Time

TOWN OF CAVE CREEK MAJOR GENERAL PLAN AMENDMENTS

The Town of Cave Creek has received four (4) major General Plan amendment applications.

1. Convert 20.5 acres of land south of the southeast corner of Carefree Highway and Cave Creek Road from its existing residential classification to a commercial classification for a Walmart store.
2. Convert 25 acres of land at the southwest corner of Carefree Highway and Cave Creek Road from its existing residential classification to a commercial classification.
3. Convert approximately 4 acres at the northeast corner of Carefree Highway and 48th Street from its existing residential classification to a commercial classification.
4. Change the major amendment criteria from the current standard of one (1) acre to a proposed standard of twenty (20) acres.

According to the Town of Cave Creek, the following ***public hearing dates*** are scheduled to consider these major amendments.

DATE	EVENT	SUBJECT
June 4, 2009	Planning Commission	Recommendation to Town Council on all major amendments.
June 15, 2009	Town Council	Final consideration of all major amendments and 1st reading to rezone Walmart's parcels.
June 22, 2009	Town Council	The 2nd and final consideration/reading of Walmart's rezoning application.

**All meetings will take place at the Cave Creek Town Hall at 7 PM. Please check with the Town of Cave Creek for any changes in this schedule.*

In association with these major General Plan amendments there are three (3) different ***citizen participation meetings*** coming up in May.

DATE	LOCATION	SUBJECT
May 6, 2009	Black Mtn. Baptist Church	Request to change 20.5 acres from residential to commercial land uses and rezone to commercial for a Walmart supercenter store at the south of the southeast corner of Carefree Highway and Cave Creek Road.
May 11, 2009	Cave Creek Town Hall	Modify major amendment criteria from 1 to 20 acres.
May 12, 2009	Cave Creek Town Hall	Request to change 25 acres

		from residential to commercial land uses at the southwest corner of Carefree Highway on Cave Creek Road.

**Please check with the Town of Cave Creek to verify meeting times and locations.*

If you have concerns with any of these requests, please mark your calendars and plan on attending these critical meetings. Your voice is an important part of this process.

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the Town of Carefree, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- **Natural hazards that may impact or have impacted the community**
- **Profiles of the most relevant hazards**
- **Vulnerability assessment to the identified hazards**
- **Goals and objectives for hazard risk reduction/elimination**
- **Mitigation actions/projects to achieve the stated goals and objectives**
- **Plan maintenance strategy for the next 5-year cycle**

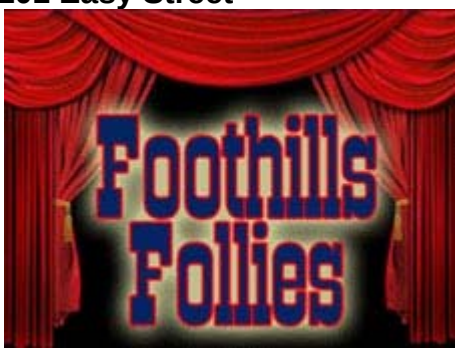
An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/Emerg_mgt or contact your community's representative below:

Town of Carefree
Carefree Marshal's Office
Marshal Patrick Farmer
480-488-3686
100 Easy Street Box 740
Carefree, Arizona
85377

Upcoming Events

Desert Foothills Theater's
2nd Annual Foothills Follies

Saturday, April 18, 2009 at 5:00PM
Carefree Gardens Amphitheater
101 Easy Street



Terrific Talent…Celebrate the return of hometown favorites and the work of some incredible performing artists. Last year's event included this season's American Idol contestant, Scott MacIntyre and his wonderful family. You just never know what great talent you'll see. Foothills Follies is an audition-in showcase of talent that features past and present DFT artists as well as other talent from around the area.

Tickets $10 adults; $5 students (with ID).
Purchase online at http://www.desertfoothillstheater.com
or call 480-488-1981

Tribune
EAST VALLEY • SCOTTSDALE

May 16, 2009

Chandler looks for input on preventing disasters

By Mike Branom
Tribune

Chandler residents are being encouraged to give their opinions on how the city can best prevent disasters.

The multihazard mitigation plan identifies vulnerabilities associated with natural disasters and develops long-term strategies for reducing or eliminating those risks. The plan doesn't address how the city should respond to emergencies, such as wildfires and floods, but rather the steps necessary to prevent or minimize the impact of such events.

Under the federal Disaster Mitigation Act of 2000, governments are required to develop and maintain a FEMA-approved hazard mitigation plan as a condition for receiving certain types of nonemergency disaster assistance funds and mitigation grants.

Chandler's plan can be found online at www.maricopa.gov/Emerg_Mgt. Feedback can be provided through next month to Assistant Fire Chief Marc Walker at (480) 782-2135 or marc.walker@chandleraz.gov [http://mailto:marc.walker@chandleraz.gov].

An updated plan is expected to be completed by the end of July.

May 15, 2009

Public invited to provide input on multi-hazard mitigation plan

The City of Chandler is seeking public input regarding proposed updates to the City's multi-hazard mitigation plan, which identifies a community's risks and vulnerability associated with natural disasters and develops long-term strategies for reducing or eliminating the risk and protecting people and property in future hazard events. The plan does not address how the City responds to emergencies like wildfires and floods, but rather the steps necessary for the community to take in order to prevent or minimize the impact of such emergencies in the first place.

Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance funds and mitigation grants.

Chandler residents are encouraged to participate in this important mitigation planning process by educating themselves about the existing plan and then offering comments and suggestions for the update. The plan is online at www.maricopa.gov/Emerg_Mgt/links.aspx and feedback can be provided through the end of June to Chandler Assistant Fire Chief Marc Walker at 480-782-2135 or marc.walker@chandleraz.gov.

This process will enable Chandler to develop a mitigation plan that offers a strategy for assessing the vulnerability to disaster damage, and establishing feasible goals and cost-effective projects that mitigate the associated risks. Chandler officials will then work with the Maricopa County Department of Emergency Management and other jurisdictions around the Valley to review and update all of the existing multi-hazard mitigation plans in these individual communities, and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan.

The multi-jurisdictional planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected to be completed by the end of July 2009.

- www.maricopa.gov/Emerg_Mgt/PDF/Maricopa County Final Plan.pdf

6.4.2009 | **Downtown Chandler Farmers Market**

Dr. A. J. Chandler Park

more...

5/18/2009

AFFIDAVIT OF PUBLICATION

THE FOUNTAIN HILLS TIMES
P.O. Box 17869
Fountain Hills, AZ 85269

Voice: (480) 837-1925
Fax: (480) 837-1951

STATE OF ARIZONA
COUNTY OF MARICOPA

Original Attached

L. ALAN CRUIKSHANK, being first duly sworn, upon oath deposes and says that he is the Publisher of *The Fountain Hills Times*, a newspaper of general circulation in the County of Maricopa and the State of Arizona, published at Fountain Hills, Arizona, and that the copy hereto attached is a true copy of the advertisement as published weekly in *The Fountain Hills Times* on the following dates:

04/22/09

PUBLISHER _____
L. ALAN CRUIKSHANK

SWORN TO BEFORE ME ON THIS 22ND DAY OF APRIL, 2009.

NOTARY PUBLIC _____
KAREN KIRKENDOLL

OFFICIAL SEAL
KAREN KIRKENDOLL
Notary Public - State of Arizona
MARICOPA COUNTY
My comm. expires May 13, 2009

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the Town of Fountain Hills, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit **www.maricopa.gov/Emerg...mgt** or contact your community's representative below:

Chief Scott LaCreca, Fire Chief/Emergency Management Coordinator
SLaCreca@fh.az.gov

Published in the FH Times on April 22, 2009.

AFFIDAVIT OF PUBLICATION

TOWN OF GILA BEND
PUBLIC NOTICE

The Town of Gila Bend has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate then into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg.mgt or contact:

Harry Parsi, Public Works Director/Engineer
Town of Gila Bend
PO Box A/644 W Pima Street
Gila Bend, AZ 85337
928.683.2255
hparsi@gilabendaz.org

or

Cristina Herrera
Maricopa County Department of Emergency Management
cristinaherrera@mail.maricopa.gov

Published in the Gila Bend Sun, May 14, 2009.

State of Arizona

ss

County of Maricopa

I, Glen Birchfield, editor and publisher of

The Gila Bend Sun,

a newspaper in general circulation, printed a published in the Town of Gila Bend, County Maricopa, State of Arizona, do solemnly swear tha copy of the above notice is the matter of

Public Notice
for

Town of Gila Bend
Emergency Management Mitigation Plan

as per clipping attached, was published weekly in t regular and entire edition of the said newspaper, a not in any supplement hereof, for a period of o consecutive week(s) as follows, to-wit

May 14, 2009

Glen Birchfield

Subscribed and sworn to before me,

this.....28.....day of.....May.....2009

Notary Publ

My Commission expires:
May 29, 2009

DARAH B. MANN
Notary Public, State of Arizona
Maricopa County
My Commission Expires
May 29, 2009

cc: Town of Gila Bend

AFFIDAVIT OF PUBLICATION

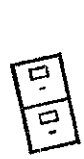
THE ARIZONA REPUBLIC

STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Marilyn Greenwood, 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 at 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
Zones 12 and 16

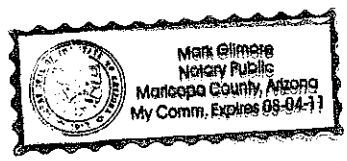
May 13, 2009.



FILE COPY

Marilyn Greenwood

Sworn to before me this
13TH day of
May A.D. 2009



Mark Gilmore

Notary Public

The Town of Gilbert has joined forces with Maricopa County and other Valley jurisdictions to review and update the existing individual multi-hazard mitigation plans. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure continued eligibility for non emergency, federal hazard mitigation grants.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact: Sheri Gibbons, Gilbert Fire Department at sherig@ci.gilbert.az.us

Published: May 13, 2009

Search Results:

Notice Type : Legal Notice **Posting Date :** 5/13/2009

Printer Friendly

The Town of Gilbert has joined forces with Maricopa County and other Valley jurisdictions to review and update the existing individual multi-hazard mitigation plans. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions and projects that mitigate the associated risks. The development of this mitigation plan will also ensure continued eligibility for non emergency, federal hazard mitigation grants. Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa gov/emerg_mgt or contact: Sheri Gibbons. Gilbert Fire Department at sherig@ci gilbert az us
Published: May 13 2009

Go Back Page 1 of 1

FIND IT FAST

place an ad
legal notices
real estate
auto
other vehicles
buy a home
buy a car
merchandise
sell a home

The Town of Gilbert has joined forces with Maricopa County and other Valley jurisdictions to review and update the existing individual multi-hazard mitigation plans. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure continued eligibility for non emergency, federal hazard mitigation grants. Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact: Sheri Gibbons, Gilbert Fire Department at sherig@ci.gilbert.az.us Published: May 13, 2009

County: Maricopa
Printed In: Glendale Star
Printed On: 2009/05/14

Public Input Invited
Multi-Hazard Mitigation Plan Update Begins
Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.
A multi-jurisdictional planning team comprised of representatives from Maricopa County, City of Glendale and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:
â€¢ Natural hazards that may impact or have impacted the community
â€¢ Profiles of the most relevant hazards
â€¢ Vulnerability assessment to the identified hazards
â€¢ Goals and objectives for hazard risk reduction/elimination
â€¢ Mitigation actions/projects to achieve the stated goals and objectives
â€¢ Plan maintenance strategy for the next 5-year cycle
An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/Emerg_mgt or contact your communityâ€™s representative below:
City of Glendale Office of Emergency Management
dsheff@glendaleaz.com
Publish The Glendale Star
May 14, 2009

Public Notice ID: 9831214

Multi-Hazard Mitigation Plan Update

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the City of Litchfield Park and various other towns, cities and tribal governments located within the county, have been meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team has been meeting regularly to review, revise, and/or update the following plan elements:

Natural hazards that may impact or have impacted the community
Profiles of the most relevant hazards
Vulnerability assessment to the identified hazards
Goals and objectives for hazard risk reduction/elimination
Mitigation actions/projects to achieve the stated goals and objectives
Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit **www.maricopa.gov/Emerg_mgt** or contact your community's representative below:

Sonny Culbreth; sculbreth@litchfield-park.org

NOTE: The above was published in the July-October City Line, which is mailed to every citizen within Litchfield Park

Mesa Fire Department

For Release: ***06/23/09***
Contact: ***Gil Damiani***
Assistant Fire Chief/City of Mesa Emergency Management Coordinator
480-644-2631
Gil.damiani@mesaaz.gov

City of Mesa Multi-Hazard Mitigation Planning

The City of Mesa has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events.

Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update.

For more information:

- Visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt
- Or contact:
    - Cristina Herrera, Maricopa County Department of Emergency Management cristinaherrera@mail.maricopa.gov
    - Gil Damiani-Assistant Chief, Mesa Fire Department, City of Mesa Emergency Management Coordinator gil.damiani@mesaaz.gov

-30-

TOWN OF PARADISE VALLEY
INDEPENDENT
Vol. 26, No. 17 Wednesday, April 29, 2009 www.newszap.com

Driving Safety
Police promote safe driving habits at area high school
Page 10

Honori
Emi
Fashion sh
and lunche
benefits t
Emily Cen
Page

community news

FOR BREAKING NEWS 24/7, VISIT WWW.NEWSZAP.COM

Post your News
News items and photos for Community News can be submitted to the newspaper by posting them in the Post Your News section at **www.newszap.com.**

Submitted photo/**Donna Lloyd**
Pony rides were just one activity of many enjoyed by more than 130 seriously ill children and family members at the "Best of the West Carnival" held April 4 at MacDonald's Ranch in Scottsdale.

Children, families enjoy 'Best in West' carnival

Thanks to The Frank Edward Piccolo Foundation, more than 130 seriously ill children and family members had the chance April 4 to experience a "Best in the West Carnival" at MacDonald's Ranch, 26540 N. Scottsdale Road.

The Frank Edward Piccolo Foundation sponsored the Great Escape, a Starlight Children's Foundation program designed to give families with seriously ill children a chance to have some fun and recharge outside of the hospital environment. They the magician; a strolling cowboy singer; and Earl Grey, the trick pony. In addition, the group enjoyed a cowboy cookout, snow cones and cotton candy.

"The daily emotional and financial struggles that come with caring for a sick child are often so overwhelming that the thought of leaving the house for a family event seems impossible," said Jo Ann Yeo, community development officer for Starlight Children's Foundation.

Public input sought in hazard plan

Under the Disaster Mitigation Act of 2000, state, county, local and tribal governments are required to develop and maintain a FEMA-approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team will meet regularly to review, revise and update the current Multi-Hazard Mitigation Plan.

They will review, revise, and/or update natural hazards that may impact or have impacted the community; profile the most relevant hazards; assess vulnerabilities to the identified hazards; identify goals and objectives for hazard risk reduction/elimination; and plan maintenance strategies for the next five-year cycle

An updated draft of the plan is expected in July 2009. Visit www.maricopa.gov/Emerg_mgt or e-mail Bob Lee, Paradise Valley's building safety manager at rlee@paradisevalleyaz.gov.

azcentral.com
ARIZONA'S HOME PAGE

Peoria updating plan on dealing with hazards

May. 4, 2009 12:30 PM
The republic|azcentral.com

The Peoria Fire Department emergency preparedness unit is teaming with the Maricopa County Emergency Management Department to gather public input on updating its multihazard mitigation plan.

Hazard-mitigation planning is a process used by government officials to identify risks and vulnerabilities that could be associated with natural disasters.

Officials will develop a long-term strategy for breaking the cycle of disaster damage, reconstruction and repeated damage.

Governments are required to develop and maintain these plans as a condition for receiving certain types of federal grants.

A planning team that includes Peoria officials will meet regularly to review, revise and update the plan.

The following elements will be topics of discussion:

- Natural hazards that may affcet the community.
- Profiles of the most relevant hazards.
- Vulnerability assessments to identify potential hazards.
- Goals and objectives for hazard reduction and elimination.
- Mitigation actions and projects to achieve the previously stated goals and objectives.
- Plan maintenance strategy forecast for the next five year cycle.

Peoria is taking residents' comments and suggestions through May 31. The local governments are expected to draft a plan by July.

Send comments or suggestions to Glenn Jones, the Peoria Fire Department's emergency preparedness coordinator, by phone at 623-773-5207 or by email at glenn.jones@peroriaaz.gov.

For more information, visit www.maricopa.gov/Emerg_mgt .

¿Dudas o comentarios? Contáctenos Teléfono: (602) 256-2443 Fax: (602) 256-2644 E-mail: prensanews@qwest.net

Prohiben los castigos en celdas al aire libre en prisiones de Ari

LIZETH FÉLIX

Después de la tragedia de Marcia Powell, una de las reclusas de la Prisión tatal Perryville, quien murió ego de haber estado más de atro horas en una celda al ai- libre que no tiene protección ra los rayos del sol, la gober- dora de Arizona ha pedido al epartamento de Penitencia- s que prohíba esos castigos en correccionales estatales.

y alambres; algunas tienen sombra, otras no.

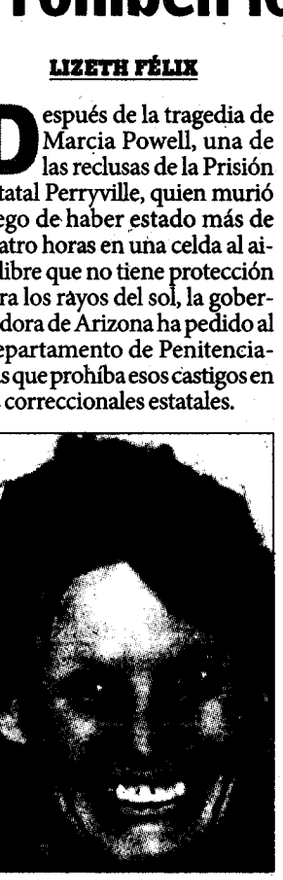
Estas celdas eran utilizadas todo el año, sin importar que las temperaturas sobrepasen los 100 grados Fahrenheit, desde los años sesentas. Según el reglamento de las correccionales, ningún prisionero debe permanecer más de dos horas en un confinamiento al aire libre, menos cuando las condiciones climáticas son severas.

El vocero de las correccionales, Barrett Marson, dio a conocer que en un esfuerzo con la Oficina de la Gobernadora de Arizona han decidido terminar de manera permanente el uso de las celdas al aire libre en Arizona. Por su parte, el director de Perryville ha dicho que suspenderá la práctica que pudo ser la causante principal de la muerte de Powell. "Éste lamentable suceso no volverá a ocurrir", expresó Charles Ryan.

La historia

El pasado mes de mayo, Marcia Powell sufrió un colapso después de pasar más de cuatro horas en una celda al aire libre, que no tenía sombra y con una temperatura ambiental que superaba los 107 grados Fahrenheit. La prisionera cumplía una sentencia por prostitución e iba a ser trasladada a una facilidad médica donde recibiría tratamiento psiquiátrico, para después ser reubicada en la prisión. Según declaraciones del director Ryan, Powell pudo haber sido víctima por parte de los que a pesar de q cerca de la zona d guardianes no se del estado en el q ba la convicta.

Los resultado sia que determi la verdadera cau estarán listos de



Marcia Powell murió ego de pasar cuatro horas una celda al aire libre.

Aunque aún no se tienen los tos oficiales de la autopsia del erpo de la rea, los médicos e la atendieron en el centro salud antes de morir dijeron e la deshidratación, la inso- ción y otras complicaciones eron, aparentemente, la causa la muerte.

En las 10 prisiones esta- es existen 233 celdas al aire re en las que se encierran a s custodios que esperan ser nsferidos a las habitaciones castigo, unidades y centros édicos, otras cárceles y asig- ciones laborales. Cada una de paredes del reclusorio insta- o en el techo son de cadenas

omo estar listos ara un desastre

ALEJANDRO MONTIEL
Portavoz de la ciudad de Phoenix

Ninguna ciudad del valle pue- de predecir cuándo llegará el óximo desastre al área metro-

que la deshidratación, la insolación y otras complicaciones fueron, aparentemente, la causa de la muerte.

En las 10 prisiones estatales existen 233 celdas al aire libre en las que se encierran a los custodios que esperan ser transferidos a las habitaciones de castigo, unidades y centros médicos, otras cárceles y asignaciones laborales. Cada una de las paredes del reclusorio instalado en el techo son de cadenas

Como estar listos para un desastre

ALEJANDRO MONTIEL
Portavoz de la ciudad de Phoenix

Ninguna ciudad del valle puede predecir cuándo llegará el próximo desastre al área metropolitana de Phoenix.

De hecho, ni siquiera sabemos con certeza qué tipo de desastre será la próxima emergencia.

¿Será una inundación masiva?

¿Serán ráfagas de viento, lluvias y tormentas eléctricas que afectarán a varios vecindarios de Phoenix?

¿Será un accidente nuclear?

Nadie puede predecir con certeza.

Sin importar, nosotros en la Municipalidad de Phoenix aprovechamos cualquier oportunidad que se nos presenta para planear y estar preparados.

Nunca esta de más planear.

Por eso, nosotros estamos orgullosos en informar que un grupo compuesto de representantes de varias jurisdicciones del Condado Maricopa, Phoenix y otras ciudades y pueblos del valle se reunirán regularmente para revisar y actualizar el plan presente para mitigar los peligros que se puedan presentar.

Bajo el programa para desastres "*Disaster Mitigation Act of 2000*", se requiere a cada estado, condado, gobierno local y tribu que desarrollen y mantengan un plan aprobado por FEMA para mitigar los peligros.

Esto asegura que ciudades como Phoenix puedan solicitar ciertos tipos de subsidios que no son de emergencia para la mitigación de peligros.

En nuestro caso, estamos hablando de hasta $3 millones. Y en nuestra economía actual, estos son fondos realmente necesarios.

Por esto, nuestro plan es reunirnos regularmente para hablar sobre los siguientes elementos del plan:

Peligros naturales que puedan impactar o que han impactado a la comunidad.

Perfiles de los peligros más relevantes.

La vulnerabilidad a los peligros identificados

Metas y objetivos para la reducción/eliminación de los riesgos de peligro.

Acciones de mitigación/proyectos para alcanzar las metas y los objetivos impuestos.

El mantenimiento del plan de estrategia para el próximo ciclo de cinco años Se espera tener un bosquejo actualizado para el mes de julio.

Para información adicional visite http://www.maricopa.gov/Emerg_Mgt/ o comuníquese con nosotros al 602-534-0642. Les aseguramos mantenerlos informados sobre el avance del plan.

About Town

June 2009

The Official Newsletter for Queen Creek Residents

IN THIS ISSUE:

Queen Creek newsletter

The Town's official newsletter first began as a quarterly publication in 2000. In May 2005, the About Town newsletter made its debut in its new monthly format. The Town began providing more specialized information through the Town Center Connection insert, which launched in the fall of 2006, and the QCPAC Performance Program insert beginning fall of 2007.

Town Contacts

Office Hours

Monday-Thursday, 7 a.m.-6 p.m.
Friday-Sunday, closed

Town Hall

22350 S. Ellsworth Road
Queen Creek, AZ 85242
Phone: 480-358-3000
Traffic: 480-358-3132
Fax: 480-358-3189

Development Services

Phone: 480-358-3003
Inspections: 480-358-3030

Parks and Recreation

Phone: 480-358-3700

Town of Queen Creek Water

Phone: 480-358-3450

www.queencreek.org

In accordance with the Americans with Disabilities Act, this publication can be made available in an alternative format, if requested. It can also be made available in Spanish. Si desea esta información en español por favor llame al teléfono 480-358-3000.

Fire Department adds water tender truck to fleet

The Queen Creek Fire Department recently purchased a new water tender truck and technical rescue trailer. The tender truck carries 3,000 gallons of water and can pump 1,000 gallons a minute. The truck is also equipped with two fold-out 3,000 gallon tanks, allowing it to leave the site of a fire to replenish the water supply. The technical rescue trailer, purchased with grant funds awarded from the state, allows firefighters to perform rescue operations in confined spaces and trenches. For more information, call 480-358-3360 or visit **www.queencreek.org**.

About Town newsletter converts to online service

Queen Creek discontinues monthly print newsletter, encourages residents to subscribe to new e-format

As one of several measures to economize and use less resources, the Town of Queen Creek has decided to convert the monthly *About Town* newsletter to an online-only service with an option for e-mail subscriptions. Although the Town recently implemented cost-saving measures for the newsletter, the transition online will save the Town additional funds in publication and postage costs.

This issue of the newsletter will be the last print publication before it transitions to the online format. Because the Town wants residents to continue to receive the timely, detailed information provided in the past by the print newsletter, residents are encouraged to subscribe the new e-newsletter. Along with interesting feature stories, the online newsletter will provide current Town news and statistics, project updates, answers to residents' questions and links to the Town's Web site for more information.

To subscribe to the Town of Queen Creek's new online newsletter, visit **www.queencreek.org** and click on the "Sign-up for eNews" button at the bottom of the home page. Select the type of notices from the topic list you would like to receive, including the Town's e-newsletter. Once you confirm your e-mail, you will begin to receive Queen Creek news in your inbox.

Queen Creek water rate increase

The second of three annual water rate increases will go into effect on July 1. The rate plan approved last year by the Town Council includes three incremental increases over three years, beginning in July 2008 and increasing in July each year through July 2010.

The rate increases will help to finance the debt incurred to acquire the former Queen Creek Water Company as well as to pay for system improvement costs. The increases are necessary to generate sufficient revenue for the Town to make its debt service payments. Additionally, the increase helps the Town maintain quality service and keep up with the mandates that state and federal government agencies continually require of water utilities.

The Town's three-tier rate structure rewards water conservation; those who use less water will pay less. For tips and information about conserving valuable water resources, visit **www.queencreek.org** or call 480-358-3450.

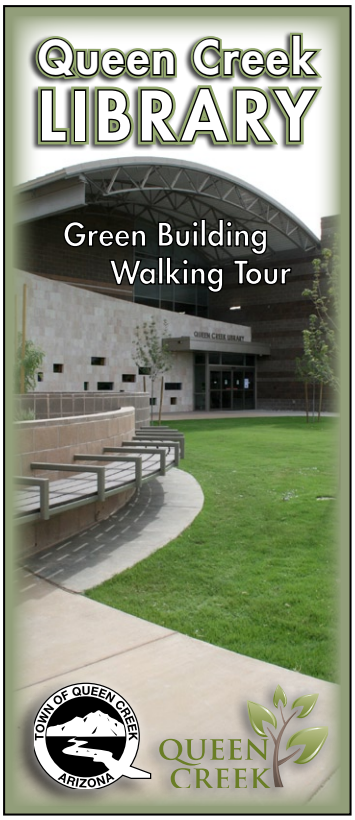
Water rate schedule

This schedule is calculated using a monthly minimum rate for the first 1,000 gallons and adding a proposed scaled rate by usage. The figures below are examples based on the usage of typical customers.

		Three Year Rate Increase Plan		
Type of Use	**Usage**	**July 2008 - Adjustment**	**July 2009 - Adjustment**	**July 2010 - Adjustment**
Residential - 3/4" Meter	10,000 gallons	$29.00	$31.90	$34.29
Commercial - 3/4" Meter	20,000 gallons	$49.00	$53.90	$57.94
Flood Irrigation - 2"	45 minutes	$25.25	$30.27	$34.30

Queen Creek Library highlights green features

The Queen Creek Library is the first municipal building in the Town of Queen Creek constructed under the Town's Green Building Policy and registered under the U.S Green Building Council to apply for its Leadership in Energy and Environmental Design (LEED) certification program. The new library features state-of-the-art construction practices and materials that decrease energy consumption, save money, reduce environmental impacts, and provide a healthy interior environment.



LEED-certified standards

Queen Creek's Green Building Policy requires new public construction and major remodels of greater than 5,000 square feet to be built to LEED-certified standards. LEED is a nationally accepted benchmark for the design, construction and operation of green buildings. A point rating system is used to qualify projects for LEED certification. Points are given in the following environmental impact areas: sustainable sites, water efficiency, energy and atmosphere, indoor environmental quality, innovation and design process.

Self-guided green building walking tour

Residents are encouraged to follow a self-guided green building walking tour to see the library's green features. Green Building Walking Tour brochures (see image to the left) will soon be available in the community information racks in the library lobby. The map in the brochure shows points of interest around the site, with descriptions about each feature. Smaller signs with coordinating descriptions will also soon be posted at the site to indicate the location of the points of interest.

For more information, visit **www.queencreek.org** and select "Library" under the "Community" drop-down list.

Queen Creek updates hazard mitigation plan

Under the Disaster Mitigation Act of 2000, state, county, local and tribal governments are required to develop and maintain a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

Hazard mitigation planning is used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazardous events. The process results in a plan that offers a strategy for breaking the cycle of disaster damage, reconstruction and repeated damage as well as a framework for developing feasible and cost-effective mitigation projects.

A planning team comprised of representatives from Maricopa County, the Town of Queen Creek and various other towns, cities and tribal governments located within the county will meet regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The team will address the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Assessment of vulnerability to the identified hazards
- Goals and objectives for hazard risk reduction or elimination
- Mitigation actions and projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next five-year cycle

An updated draft of the plan is expected to be completed in July 2009. For more information, call Joe LaFortune at 480-358-3502 or visit **www.queencreek.org** and scroll over "Public Safety" under the "Department & Services" drop-down list.

PUBLIC INPUT INVITED

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the City of Scottsdale, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/Emerg_mgt or contact the City of Scottsdale representative below:

Lorenzo Jones
Emergency Management Officer
(480) 312-8000

Charged to Fire Dept. | 100-08710-52185
Sent to Tiffany Nichols | 5/19/09 FDHQ 600

AFFIDAVIT OF PUBLICATION

OFFICE OF THE
CITY CLERK

2009 MAY -6 PM 2:41

THE ARIZONA REPUBLIC

STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Marilyn Greenwood, 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 at 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
Zone 8 9

May 1, 2009

Marilyn Greenwood

Sworn to before me this
4TH day of
May A.D. 2009

EDWARD CARLISE

AU-AUTHM ACTION NEWS

www.srpmic-nsn.gov/community/auauthm/

THE SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY NEWSPAPER

MAY 7, 2009

as dinner, breakfast and lunch.

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

BY CLIFF PUCKETT
SRPMIC Emergency Manager
SRPD

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, Salt River Pima-Maricopa Indian Community, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the Community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/Emerg_mgt or contact your community's representative below:

SRPMIC Emergency Manager Cliff Puckett (480) 850-4408 or cliff.puckett@srpmic-nsn.gov

City of Tempe

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the City of Tempe and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/Emerg_mgt or contact your community's representative below:

Tom Abbott
City of Tempe Fire Department

480-858-7219
tom_abbott@tempe.gov

Camp teaches joy of nature

This story was written by Patrick Impiccini of St. Joseph's Youth Camp.

For some kids, it's their first time to really see the night sky lit up with a million stars, or to wake to the sound of giant Ponderosa pines swaying in the breeze.

And, for a few, it's a rare chance to get three good meals a day and maybe even sleep in a safe, comfortable place.

The kids at St. Joseph's Youth Camp at Mormon Lake are there for a week of fun, trying new things and making friends.

St. Joseph's Youth Camp, a non-profit organization based in Tempe, operates the non-denominational camp south of Flagstaff. Sponsored in part by the Knights of Columbus, the camp has operated since 1949.

Week-long sessions, which start July 5, offer kids, ages 8 through 15, dozens of activities — such as archery, horseback riding, kayaking, rock climbing and arts and crafts — at an all-inclusive rate.

Transportation from the Valley to camp and back is included. Kids take a chartered tour bus, which leaves Our Lady of Mount Carmel Church in Tempe on Sunday afternoon and returns the next Saturday.

Jim Goodall maintains the camp and his wife, JoAnn, cooks. Jim remembers a camper who told him how much he loved camp because "you get three meals a day here." He and his family had been living in their car.

Another husband-wife team involves camp director Chris Giannola and his wife, Mary, who have worked at the camp for more than 10 years.

The rate for the 2009 season has been reduced to $400, from $450. Businesses, groups and individuals also may sponsor children and teens whose families can't afford to send them to camp.

The camp builds character and responsibility with games and activities that teach kids to work together and appreciate the nature.

Separate camps are available for kids 8 through 12, and for teens 13 through 15. To learn more or to register for camp, go to www.saintjosephyouthcamp.com or call 480-449-0848.

AFFIDAVIT OF PUBLICATION

Public Input Invited Multi-Hazard Mitiga

18

CLASS 18
OTHER
MUNICIPALITIES

The City of Tolleson has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact:

Bob Hansen
Division Fire Chief
623 936 8500
bhansen@tollesonaz.org or

Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov

Published: May 28, June 4, 11, 2009.

Arizona Business Gazette
The business resource

PO BOX 194
Phoenix, Arizona 85001-0194
(602) 444-7315 FAX (602) 444-7364

STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Ed Carlise, being first duly sworn, upon oath deposes and says: That of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

5/28/2009
6/4/2009

Sworn to before me this
4TH day of
JUNE 2009

TABITHA ANTONIADIS
Notary Public - Arizona
Maricopa County
My Comm. Expires Nov 8, 2012

Notary Public

Scott-
Here is a copy of the Plan
Printed in the Wickenburg Sun
our Newspaper.
Thanks
R Miller

WICKENBURG
POLICE DEPARTMENT

RONNIE MILLER
Emergency Operations Director

155 N. Tegner St. #C
Wickenburg, AZ 85309

Dipatch (928) 684-5411
Phoenix (602) 506-1523
Pager (928) 684-9713
Fax (928) 684-1601

Multi-hazard mitigation plan update begins

The Town of Wickenburg welcomes public input on its multi-hazard mitigation plan update.

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events.

The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction and repeated damage and a framework for developing feasible and cost-effective mitigation projects.

Under the Disaster Mitigation Act of 2000 (public law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA-approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the Town of Wickenburg and various other towns, cities and tribal governments located within the county will meet regularly to review, revise and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community;
- Profiles of the most relevant hazards;
- Vulnerability assessment to the identified hazards;
- Goals and objectives for hazard risk reduction/elimination;
- Mitigation actions/projects to achieve the stated goals and objectives;
- Plan maintenance strategy for the next five-year cycle.

An updated draft of the plan is expected by July.

For additional information, visit www.maricopa.gov/emerg_mgt or contact the following representatives:

Glen Flow, Maricopa County Emergency Services Planner at GlenFloe@mail.maricopa.gov or Ronnie Miller, Wickenburg Police Department Emergency Operations at RMiller@ci.wickenburg.az.us.

Nine highway projects funded

Arizona continues on its fast pace to get federally funded projects under construction to improve

preservation).

- I-40: Dead River Bridge in Apache County (rehabilitation

in Pima County (rehabilitation).

- SR 95: South of Bouse Wash in La Paz County (widening and

state. Here's how the funds will be distributed: Maricopa County will receive $130 million for five

YOUNGTOWN Village Reporter

June 2009

Business and Government Working for You

Youngtown Village Reporter
12030 Clubhouse Square
Youngtown, Arizona 85363

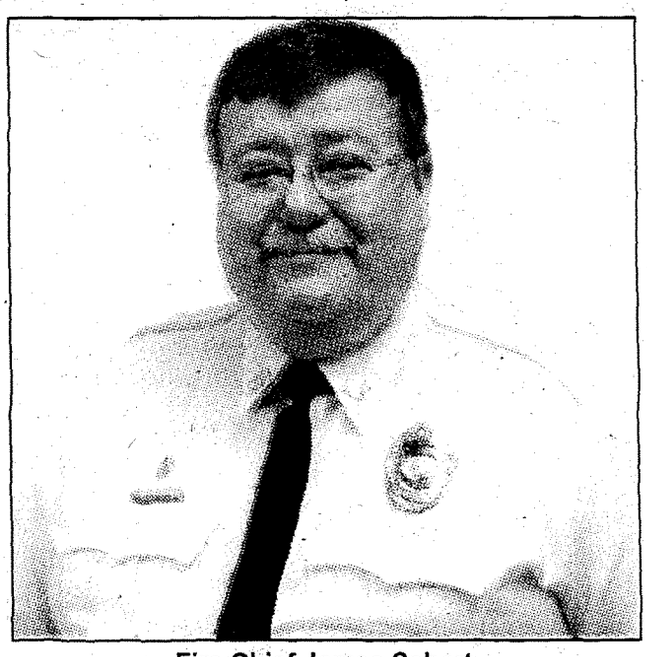
PRESORTED
STANDARD
U.S. POSTAGE
PAID
Glendale, AZ
PERMIT #244

POSTAL CUSTOMER
ECRWSS

SCFD chiefs hang up helmets, coil hoses for last time

The month of May 2009 saw the retirement of two of the founders of the Sun City Fire Department. Fire Chief James Sebert and Assistant Chief/Fire Marshal Steve Morrow both called it quits after more 20 years of service with the Sun City Fire District.

Chief Sebert began his 36-year career with Rural Metro Fire Department (R/M) part-time in 1973 and was hired full-time as a firefighter in Tucson in July 1974. He transferred to Phoenix in September 1975 and was promoted to lieutenant in 1977, captain in 1979, and



Fire Chief James Sebert

District Board as a consultant on October 1, 1988. On January 1, 1989 when Sun City Fire District began directly employing its own personnel, he began his SCFD career as the first Assistant

Youngtown, which has never had its own fire department, becoming part of the Sun City Fire District. The Sun City Fire District Board has named James Haner as fire chief. Former Youngtown

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, the Town of Youngtown, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit **www.maricopa.gov/Emerg_mgt** or contact Youngtown's representative below:

Mark Hannah
Public Works Manager
623-933-8286
e-mail: mhannah@youngtownaz.org

Published on Local Channel 11 from May 5-19, 2009

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), local governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition of eligibility for receiving non-emergency federal hazard mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, El Mirage and Surprise, and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit **www.maricopa.gov/Emerg_mgt** or contact your community's representative below:

City of El Mirage Fire Department at 623-583-7968
City of Surprise Fire Department at 623-222-5000

City at a Glance
Mayor & Council
City Government
City Council Meetings
City Departments & Services
Job & Volunteer Opportunities
Resident Services
Business Services
Codes & Ordinances
Elections & Voter Registration
Community Links
Stimulus Projects
Maps
Pay My Utility Bill
Contact Us

Printer Friendly
Email Page

Building Community Celebrating Diversity Fostering Pride

Welcome to the City of Avondale, Arizona! With almost 70,000 current residents and ranked as one of the fastest growing communities in Maricopa County, Avondale has come a long way from its agricultural past. **(For more, click here.)**

City Hall, Avondale Civic Center

'GREEN FRIDAY' REMINDER - City Hall is closed on Fridays. City Hall is open for business Monday through Thursday from 7 a.m. to 6 p.m. to provide two extra hours of customer service.

News Flash

RSS

Free Breakfast and Lunch Meal Distribution Sites for Youth
This Summer, Avondale is host to fifteen locations that will be serving wholesome summer meals for youth ages 1 to 18. Programs are funded by grants provided by the USDA. [Read on...]

Come to a D-backs Game and Represent Avondale!
As part of the Diamondbacks Arizona Home Town Series, Avondale will be the guest community at the Diamondbacks vs. Los Angeles Dodgers game Saturday, August 15 at Chase Field. [Read on...]

Avondale Offers Businesses the Invitation to Become a Sponsor
There are many opportunities for businesses to support the vision and work of the City of Avondale. [Read on...]

Household Hazardous Waste, Shred-A-Thon and Electronics Recycling Event
Spring cleaning? Avondale residents are invited to take part in the city's Household Hazardous Waste, Shred-A-Thon and Electronics Recycling Event, scheduled for Saturday, June 6. [Read on...]

Avondale takes part in County Multi-Hazard Mitigation Planning Process
The mitigation planning process involves identifying and profiling the natural or human caused hazards most likely to occur in a community.... [Read on...]

City News Releases
Click here to access all Avondale News Releases. [Read on...]

CALENDAR

June 1
City Council Regular Meeting

June 1
Muncipal Arts Committee

June 4 - June 6
Avondale Seniors to Hold Rummage Sale Fundraiser

[View All Events]

FAQ

1. Where is City Hall located?
2. When are City Council meetings held?
3. What are City Hall hours?

[View All General City Information]

QUICK LINKS

Buy a Home in Avondale
Sam Garcia Western Avenue Library
Civic Center Library
Bulk Trash Information
New Water Service Application
Care1st Resource Center

[View More Links]

City at a Glance
Mayor & Council
City Government
City Council Meetings
City Departments & Services
Job & Volunteer Opportunities
Resident Services
Business Services
Codes & Ordinances
Elections & Voter Registration
Community Links
Stimulus Projects
Maps
Pay My Utility Bill
Contact Us

Printer Friendly
Email Page

News Flash - Selected

View Archived

Avondale takes part in County Multi-Hazard Mitigation Planning Process

The City of Avondale has joined forces with Maricopa County to review and update the existing individual multi-hazard mitigation plans. The mitigation planning process involves identifying and profiling the natural or human caused hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. [Additional info...]

News Flash - All

RSS

View Archived

News Flash - Home

View Archived

Free Breakfast and Lunch Meal Distribution Sites for Youth

Working through the Arizona Department of Education, 15 organizations across Avondale are providing summer meals for all youth and students. Sites in Avondale include:

Agua Fria HS, 530 E Riley Dr
Bradley Academy, 200 N Dysart Rd
Canyon Breeze Elementary, 11675 W Encanto Blvd
Estrella HS, 510 N Central Ave
Garden Lakes Elementary, 10825 W Garden Lakes Pkwy
La Mission Jubilee Church, 11147 W Buckeye Rd
Lattie Coor School, 1406 N Central Ave
Michael Anderson Elementary, 45 S 3rd Ave
Neighborhood Housing Service, 19 N Central Ave
Norton Circle Housing Development, 304 S 5th Ave
Quentin Elementary, 11050 W Whyman Ave
Rio Vista Elementary, 10237 W Encanto Blvd
Rose Terrace Apartments, 525 E Harrison Dr
Salvation Army, 11 N 3rd Ave
Sam Garcia Western Ave Library, 495 E Western Ave

For specific information about the program or specific hours for each site, please contact the Arizona Department of Education at 602-542-8700 or 800-352-4558.

Dept of Education Summer Food website

Come to a D-backs Game and Represent Avondale!

Avondale Day is an exclusive Arizona Diamondbacks Arizona Hometown Day! Game time is 1:10 p.m.

Arizona Diamondbacks are offering discount tickets in honor or Avondale Day. The tickets, which usually sell for $20, will be priced at $15. The Diamondbacks are also offering limited 'All-you-can-Eat' seats that come with all the food you can eat, including hot dogs, popcorn, peanuts, and chips, soft drinks and bottled water, priced at a special $35 per seat.

Discount tickets are in select seat locations:
- Standard Seats - $15 (game ticket price) - Lower Level Bullpen Reserve, section 106
- All You Can Eat Seats - $35 (includes game ticket AND FOOD) - section 222

Tickets must be pre-purchased by August 11. To purchase discount tickets, go to www.dbacks.com/groups;
Sign In: avondale - Password: hometown

Questions? Call Arizona Diamondbacks Group Tickets Sales at (602) 462-4121 BUY TICKETS

Avondale Offers Businesses the Invitation to Become a Sponsor

There are many opportunities for businesses to support the vision and work of the City of Avondale. Sponsorships provide companies and organizations an opportunity to achieve a high degree of visibility within the local community, through customized programs that fit specific marketing and sales goals.

Find out more, Visit www.avondale.org/sponsorship .

Partner with us on a special event! Adopt a tree, park bench or a soccer field! Purchase a piece of public art! Our sponsorship program can provide positive exposure for business products and services.
[Additional info...]

Household Hazardous Waste, Shred-A-Thon and Electronics Recycling Event

Spring cleaning? Avondale residents are invited to take part in the city's Household Hazardous Waste, Shred-A-Thon and Electronics Recycling Event, scheduled for Saturday, June 6 from 8 to 11 a.m. Items will be collected at Coldwater Park, 10 N. Eliseo Felix Way in Avondale.

WHEN: Saturday, June 6, 8 a.m. to 11 a.m.
WHERE: 10 N. Eliseo Felix Way; Coldwater Park (from Dysart Road, enter from Western Ave.)
COST: There is no charge; however, AVONDALE residents will be required to show proof of residency (i.e. drivers license, copy of recent water bill) to drop off items.
[Additional info and guidelines...]

City News Releases

Click here to access all Avondale News Releases. www.avondale.org/NEWS

City at a Glance
Mayor & Council
City Government
City Council Meetings
City Departments & Services
Job & Volunteer Opportunities
Resident Services
Business Services
Codes & Ordinances
Elections & Voter Registration
Community Links
Stimulus Projects
Maps
Pay My Utility Bill
Contact Us

Printer Friendly
Email Page

For immediate release: May 13, 2009
Contact: Ingrid Melle, Public Information, (623) 333-1614

Avondale takes part in Multi-Hazard Mitigation Planning Process

The City of Avondale has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events.

“Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place,” said Chief Art Snapp of Avondale Fire-Rescue. “It is clear that a focus on hazard mitigation will likely go a long way to benefiting the overall well-being of the residents of Avondale.”

The mitigation planning process involves identifying and profiling the natural or human caused hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update process. For more information, please visit the multi-jurisdictional planning website at www.maricopa.gov/emerg_mgt or contact Art Snapp, Avondale Fire-Rescue at asnapp@avondale.org , 623-333-6110 or Cristina Herrera, Maricopa County Department of Emergency Management at cristinaherrera@mail.maricopa.gov; (602)273-1411.

You are here: Home > Departments > Public Safety > Fire

Administration
CERT
Fire Prevention
Honor Guard
Operations
Public Education
Recruitment
Safety Tips
Station Locations
Training Tower

Emergency Alerts

Buckeye
79°F
Weather Forecast

E-News Sign-up

QUICK LINKS
Insurance Companies
Hazard Mitigation Statement
Fire Department FAQ's
Customer Survey
View More Links

Search

Print Page | Email Page

WindPowered

Town of Buckeye
1101 East Ash Ave
Buckeye, AZ 85326
623-349-6000

Town of Buckeye Fire Department

"To be the Best and Build for the Future"

404 South Miller Road
Buckeye, Arizona 85326

P: (623) 349-6700 F: (623) 349-6750

Administrative Hours:
Monday - Thursday
7:00 a.m - 6:00 p.m.
email

The Buckeye Fire Department provides fire protection and advanced life support care for the Town of Buckeye. The Fire Department is a full time (career) organization serving the community from six fire stations with approximately 87 staff positions. Currently, the department has six Class A pumpers, two 100 foot aerial trucks, a technical rescue support vehicle, two brush trucks, two command vehicles and six staff vehicles. All line staff are certified firefighters and approximately 50% are Para-medics.

The Fire Department is a member of the nationally recognized valley wide automatic aid consortium in which all participants are dispatched via computer through the use of an automatic vehicle locater system regardless of the jurisdiction. This insures the closest appropriate unit and resources will respond and automatically access all of the fire resources of the greater Phoenix area.

Buckeye Fire is very active in training and recruitment and currently has an Intergovernmental Agreement with Glendale Community College for cooperative training and certification programs. We are actively involved in promoting community awareness and public education starting in the grade schools with staff assigned to each school and continuing into high school with cooperative vocational training. Trainers conduct fire safety programs, first aid training, CRR and various training programs throughout the community and on an ongoing basis.

FAQ'S

- What is the Protection Class Rating for my home?
- How does my club or organization arrange a tour of the fire station?
- How do I schedule a fire inspection?

[View All Fire Department]

Emergency Services

Division of the Buckeye Fire Department

Phone: (623) 349-6700
Fax: (623) 349-6750

Address
1101 E. Ash
Buckeye, Arizona 85326

Dewey Horton, Assistant Fire Chief
Email dhorton@buckeyeaz.gov

Bob Costello, Fire Chief
Email bcostello@buckeyeaz.gov

In an effort to assist coordination and prepare for the four phases of Emergency preparedness, this division is bringing the Town of Buckeye into the Maricopa County Hazard Mitigation Planning process. These phases include: **Mitigation** (the effort to minimize the impact of a disaster), **Preparedness** (planning/training) **Response** (the response and coordination of resources to an incident), **Recovery** (restoration of town services as quickly as possible). The Emergency Services Officer represents the Town of Buckeye on local, regional and national issues relating to emergency management and homeland security issues.

Current Projects:

The Town of Buckeye is currently in the process of updating its Hazard Mitigation Plan, which will assist in establishing a baseline for future policies and developmental tools in ensuring the most appropriate disaster planning projects are identified and undertaken for the town.

Maricopa County Department of Emergency Management (MCDEM) will act as lead agency for the 24 participating Towns and Cities, along with 2 of the county tribal nations. Once fully implemented, a significant reduction of future risk and potential losses should be anticipated in the event of a disaster, whether manmade, natural or through terrorist activities. Implementation of the various aspects of the plan will be the responsibility of the participating agencies involved with this update.

For more information or to submit comments, call (602) 273-1411 or visit Maricopa County Department of Emergency Management **web site.**

Experience the True Arizona in Cave Creek - eclectic shopping, art galleries and the unrivaled beauty of the Sonoran Desert. More than 30 restaurants to choose from, everything from fine dining to cowboy cook-outs. Horseback riding, rodeos, country and western dancing, museums, parks and nature preserves, hiking and biking and old mining tours.

News & Announcements

View All RSS

OPEN SPACE ACQUISITION KICK-OFF EVENT
Be a part of the F.O.R.C.E. (Friends of Recreation, Conservation and the Environment)! Join the Town of Cave Creek, Desert Foothills Land Trust for an inaugrual fund-raising event to acquire over 4,000 acres of State Trust Land. [Read on...]

APRIL IS WATER AWARENESS MONTH
The connection between water and the month of April goes back at least as far as the 14th Century, when Geoffrey Chaucer opened his classic “Canterbury Tales” with the observation that April was when the plants’ roots began to receive water. [Read on...]

Emergency Management Planning Process
The Town of Cave Creek is currently partnering with Maricopa County as well as 23 municipal jurisdictions to update and consolidate the Maricopa County Multi-Jurisdictional, Multi-Hazard Mitigation Plan. Public input is welcome and encouraged. [Read on...]

Calendar & Events

View All

Mar. 10
Board of Adjustment Meeting - CANCELLED

Apr. 6
Regular Town Council Meeting

Apr. 16
Planning Commission Meeting - CANCELLED

Town of Cave Creek
37622 N. Cave Creek Rd.
Cave Creek, AZ 85331
480 · 488 · 1400
Fax 480 · 488 · 2263

Find out what's happening in the city. Below is a list of current news releases.

News & Announcements - Selected

Emergency Management Planning Process

The Town of Cave Creek is currently partnering with Maricopa County as well as 23 municipal jurisdictions to update and consolidate the Maricopa County Multi-Jurisdictional, Multi-Hazard Mitigation Plan. Public input is welcome and encouraged. For more information or to submit comments, please call 602-273-1411 or visit the Maricopa County Department of Emergency Management Web site. [Emergency Management Web site]

News & Announcements - All RSS

View Archived

News & Announcements - Home

OPEN SPACE ACQUISITION KICK-OFF EVENT

Be a part of the F.O.R.C.E. (Friends of Recreation, Conservation and the Environment)! Join the Town of Cave Creek, Desert Foothills Land Trust for an inaugrual fund-raising event to acquire over 4,000 acres of State Trust Land.

Maricopa County Parks is hosting an afternoon of events featuring displays from Wild At Heart and Cave Creek Regional Park's collection of live reptiles and invertebrates and music by Rondavous Trio.

The event will be held at the new Cave Creek Regional Park Nature Center from 2:00pm to 6:00pm on Saturday April 18th, 2009.

Tickets for this event are $25.00 (children under 12 are free) and are available at Town Hall or call 480-488-6600 for more ticket information. The ticket entitles the entrant to one glass of wine or beer. Complimentary soft drinks and water will also be provided. [Event Flyer]

APRIL IS WATER AWARENESS MONTH

The connection between water and the month of April goes back at least as far as the 14th Century, when Geoffrey Chaucer opened his classic “Canterbury Tales” with the observation that April was when the plants’ roots began to receive water.

Back in the future, former Gov. Janet Napolitano chose April as Water Awareness Month for similar reasons – it is the time when outdoor water use increases for gardens, landscaping, and pools. April also is a great time to focus on ways we can all be better water stewards.
ADWR asks the public to do its part in educating, celebrating, and taking action to promote conservation.
“All citizens of Arizona should use water as efficiently as possible and practice a low water-use lifestyle as a way to help ensure a long-term sufficient water supply,” said ADWR Director Herb Guenther. “There are many ways to strengthen Arizona’s ‘culture of conservation’ and through our combined efforts we will succeed,” Guenther added.

At the Arizona Department of Water Resources (ADWR), we are answering our own call by conducting a series of workshops and webinars on water conservation practices; participating in school water-use audits, promoting xeriscape, offering leak-detection opportunities to Arizona water providers and providing low-water-use pre-rinse spray valves to Arizona eateries; and participating at various water-education events around the state, including Make a Splash with Arizona Project WET Water Festivals.

Sources of information on conservation are nearly inescapable; they're everywhere you look – especially on our website: www.azwater.gov. [Department of Water Resources web site...]

ANNEXATION OF STATE TRUST LANDS

On October 20, 2008 the Arizona State Selection Board, comprised of the Governor, State Treasurer and State Attorney General approved the annexation of approximately 8.8 miles of Arizona State Trust Land to be annexed into the Town of Cave Creek. [Full text with map]

Online Open Space Survey

The Town of Cave Creek is in the process of acquiring approximately 4,000 acres of State Trust Land for Open Space.

We would like to hear from you! Let us know how you think the new Open Space should be used. Please follow the link below to fill out an on-line survey. [Online Open Space Survey]

Town of Cave Creek
37622 N. Cave Creek Rd.
Cave Creek, AZ 85331
480 · 488 · 1400
Fax 480 · 488 · 2263

quick links:

CONTACT CHANDLER
CITY SERVICES - A TO Z
CHANDLER CHANNEL 11
COUNCIL AGENDA
DEPARTMENTS
DOWNTOWN
ECONOMIC DEVELOPMENT
EN ESPAÑOL
E-SERVICES
HELPFUL COMMUNITY LINKS
INFOMAP
JOBS WITH CHANDLER
ONLINE TAX AND LICENSE
PHONE NUMBERS
STREAMING VIDEO
SHOP CHANDLER
UNIFIED DEV MANUAL
UTILITY BILL PAYMENTS

City Meetings Calendar

4.20.2009 | **Public Housing Authority Commission**
22 S. Delaware St.

4.20.2009 | **City Council Study Session**
22 S. Delaware St.

4.21.2009 | **Mayor's Committee for the Aging**
125 E. Commonwealth Ave.

4.21.2009 | **Architectural Review Committee**
215 E. Buffalo St.

more...

Chandler Events Calendar

4.22.2009 | **Council Open House**
745 E. Germann Rd.

4.23.2009 | **Downtown Chandler Farmers Market**

Dr. A. J. Chandler Park

4.23.2009 | **Public Housing Authority Commission**

4.25.2009 | **City of Chandler Birthday Party**
San Marcos Courtyard

Emergency Preparedness

The City of Chandler provides this information to better prepare residents in the event of some type of emergency or disaster situation.

Publications

- **Emergency Preparedness Guide for Homeowners** (PDF) **-** This guide is provided by the U.S. Department of Homeland Security, the Homeownership Alliance and Habitat for Humanity to assist in planning for an emergency.
- For more on emergency preparedness, visit the **U.S. Department of Homeland Security** Web site.

Emergency Situation Information & Tips

- **Storms/Monsoons**
- **Power Outages**
- **Heat Wave**
- **Homeland Security**
- **Hazardous Materials**
- **Water Contamination**
- **Palo Verde Nuclear Emergency**

Emergency Communications

The City of Chandler will make every attempt to adequately inform citizens in the event of an emergency situation. If there is an emergency event, **the City's Web site**, **Chandler Channel 11**, and **Public Safety TV 98** will be updated with specific information in the event of a real emergency or disaster situation. If there is an emergency event and you would like more information, please use the following resources:

Multi-Hazard Mitigation Plan

Maricopa County Department of Emergency Management
The City of Chandler has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds. Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the **multi-jurisdictional planning website** or contact:
Marc Walker, Chandler Fire Department, 782-2135 or Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov.

Chandler Emergency Center Hotline
(480) 782-2990

Chandler Police Back-Up Phone System
(480) 963-0911
(480) 963-6601
(480) 963-6602

Television - Local News Stations (Non Cable)

Channels 3, 5, 10, 12 and 15

Radio - Local News Stations
Check most A.M. Stations

Agency
Chandler Fire Department

- Emergency (Police/Fire)
- Non-Emergency

- 9-1-1
- 480-782-2120

City Meetings Calendar

4.20.2009 | **Public Housing Authority Commission**
22 S. Delaware St.

4.20.2009 | **City Council Study Session**
22 S. Delaware St.

4.21.2009 | **Mayor's Committee for the Aging**
125 E. Commonwealth Ave.

4.21.2009 | **Architectural Review Committee**
215 E. Buffalo St.

more...

Chandler Events Calendar

4.22.2009 | **Council Open House**
745 E. Germann Rd.

4.23.2009 | **Downtown Chandler Farmers Market**

Dr. A. J. Chandler Park

4.23.2009 | **Public Housing Authority Commission**

4.25.2009 | **City of Chandler Birthday Party**
San Marcos Courtyard

more...

Homeland Security Information

The City of Chandler is providing this information to better prepare residents in the event of some type of emergency or disaster situation related to Homeland Security issues.

FEDERAL

- **Dept. of Homeland Security**
- **Federal Bureau of Investigation - FBI**
- **Federal Emergency Management Agency - FEMA**
- **Ready.gov**
- **Center for Disease Control**
- **CitizenCorps.gov**

STATE

- **Arizona Homeland Security**
- **Community Information & Referral**

COUNTY

- **Maricopa County Department of Emergency Management**
  The City of Chandler has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds. Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the **multi-jurisdictional planning website** or contact:
  Marc Walker, Chandler Fire Department, 782-2135 or Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov.

LOCAL

City of Chandler Emergency Operations Center Information

- Be Prepared - Steps that every Chandler resident can take to prepare themselves and their family for emergency situations.
- Chandler's Community Emergency Response Teams (CERT) - C.E.R.T. is hands-on disaster preparedness training for residents from the Chandler Fire Department

OTHER

Red Cross

- Terrorism: Preparing for the Unexpected
- En Español

more...

Chandler Police Department

Emergency (Police/Fire)	9-1-1
Non-Emergency	480-782-4130
Need an Officer	480-782-4130
Front Desk	480-782-4000

City of Chandler

After Hours Help	480-782-4130
General Information	480-782-2220

State of Arizona

Emergency Management	602-244-0504

Utility Companies

APS	602-371-7171
SRP	602-271-GASS
Southwest Gas	602-277-1000
Cox	1-800-573-1311
Qwest	602-236-8811

Miscellaneous

American Red Cross	602-336-6660
Federal Emergency Management Agency (FEMA)	1-800-462-9029
Chandler Community Response Team	

Helpful Links

The Town of Fountain Hills

The Official Website of the Town of Fountain Hills, Arizona

Fountain Hills Rural/Metro Fire Department

The Fountain Hills Rural Metro Fire Department is made up of a dynamic body of men and women who work to ensure the safety of Fountain Hills' residents. While the Town owns the equipment and firehouses, the Town of Fountain Hills contracts with Rural-Metro for the personnel. This relationship has proven cost-effective and provided seamless service to residents in Fountain Hills. The Fire Department is lead by Chief Scott LaGreca and Assistant Chief Randy Roberts.

People

- Fire Chief: Scott LaGreca
- Assistant Fire Chief / Fire Marshal: Randy Roberts

Emergency Education

- What to do in common emergencies
- What to do with snakes
- CARE: Crisis Activated Response Effort of Fountain Hills
- Multi-hazard Mitigation Plan

To download the Town of Fountain Hills official Emergency Operations Plan PDF, click here.
(Please note, this is a 133-page document)

Contact Information

Get Involved

- Public Safety Advisory Commission (pdf)
- Fire Department Explorers

Office Location & Hours

16705 E. Ave. of the Fountains
Fountain Hills, AZ 85268 - Map
7:00 AM to 6:00 PM M-Th

Contact Information

- Tel: 480-816-5100
- Fax: 480-837-3145
- All Contact Information

Other Resources

- Fountain Hills Mission Statement
- A.D.A. Notice
- Arizona @ Your Service
- Current Weather

The Town of Fountain Hills

The Official Website of the Town of Fountain Hills, Arizona

Multi-hazard Migitation Plan

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update.

For more information, please visit the multi-jurisdictional planning website at www.maricopa.gov/emerg_mgt or contact Chief Scott LaGreca, Fire Chief/Emergency Management Coordinator at SLaGreca@fh.az.gov or Cristina Herrera, Maricopa County Department of Emergency Management at cristinaherrera@mail.maricopa.gov.

Office Location & Hours

16705 E. Ave. of the Fountains
Fountain Hills, AZ 85268 - Map
7:00 AM to 6:00 PM M-Th

Contact Information

- Tel: 480-816-5100
- Fax: 480-837-3145
- All Contact Information

Other Resources

- Fountain Hills Mission Statement
- A.D.A. Notice
- Arizona @ Your Service
- Current Weather

Mission Statement

We are determined to be a leader among indigenous communities guided by principles of Sovereignty and grounded in Yavapai Tradition and Culture. We strive to improve the health, well being, and happiness of our Nation.

Up Coming Events

Gathering of the Pais
Gathering of the Pais Map

FMYN Graduation Dinner Celebration
(For FMYN Graduates Only)

Celebrate the 61th Native American Right to Vote

The Lori Piestewa National Native American Games

The 27th Annual Orme Dam Victory Days Celebration

News

FMYN President Top Honors at NIGA

Department Information

Police Department

Fire Department
Tribal Hazard Mitigation Plan 2009

Legal Department
Prop 202 Application

Library
Library Community Garden (Pre-Prep)

Public Input Invited

The Fort McDowell Yavapai Nation has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact:

FMYN Fire Chief, Tom Christmas

tchristmas@ftmcdowell.org

or

Cristina Herrera, Maricopa County Department of Emergency Management,
cristinaherrera@mail.maricopa.gov

GILBERT
ARIZONA

Home Page

Quick Links

· Hazard Mitigation Plan Update

· Fire Fighter Recruitment
· Gilbert Fire Department Honor Guard
· Station Tours and Other Community Events for the Town of Gilbert
· View map of current and future Fire Station Facilities
· Water Safety

· Volunteering Programs - Community Emergency Response Team *(CERT)*, Fire Corps Program

· Continuous Chest Compressions CPR Class Schedule

Mission Statement

Our Vision

To become the finest fire service organization possible by utilizing and developing our members to their fullest potential, maximizing our use of the resources available to us, and being responsive to the growth and changing needs of our community.

Our Mission

To protect the lives, property, and environment of the people who live, work, play, and travel in Gilbert by:

- Rapid and effective emergency response;
- Innovative prevention, enforcement, and education efforts;
- Maintenance of a highly trained and dedicated work force.

Our Values

Human Life – our top priority.
Service – our reason for existence.
Excellence – our goal
Integrity – the basis for trust.
Accountability – personal and professional.
Cooperation – to achieve common goals.
Innovation – for creative problem solving.
Education – for growth

Emergency Management Division

Current Projects and Initiatives

The Town of Gilbert is updating its Hazard Mitigation Plan, which establishes a framework of policies and tools to be developed to ensure the most appropriate and equitable hazard mitigation planning projects are identified and undertaken. Maricopa County will lead this update effort and involve all 24 municipalities and two of the county's tribal nations. Once fully implemented, a significant reduction of future risk and potential losses should be realized in the event of a disaster. Implementation of the various aspects of the plan will be the responsibility of the various jurisdictions and agencies involved in the update. For more information or to submit comments contact Sheri Gibbons, Emergency Management Coordinator at 480-503-6333 or visit the Maricopa County Department of Emergency Management Web site.

Quick Links

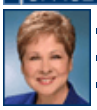
- 72-Hour Kits
- CERT Program
- Power Outage

Links to Other Websites:

- American Red Cross
- AZ 2-1-1 Online
- Center for Disease Control and Prevention
- Federal Emergency Management Agency (FEMA)
- Homeland Security - Ready.gov
- Maricopa County Emergency Management
- World Health Organization

QUICK LINKS
- ALL DEPARTMENTS
- ALL SERVICES
- Bid Opportunities
- Boards and Commissions
- City Clerk
- Development Services
- Economic Development
- En Español
- Events and Festivals
- From the Heart
- Glendale 11
- Improvements
- Jobs with Glendale
- Library
- Neighborhood Services
- Online Bill Pay
- Online Services
- Parks and Recreation
- Press Room
- Public Meetings
- Public Notices
- Volunteer!

SEARCH
Go!

OFFICE OF THE MAYOR

- Mayor's Bulletins
- In the Community
- Home Page

CITY COUNCIL

- Council Members
- District News
- Home page

CITY MANAGER

- Meet Ed Beasley
- Executive Team
- Home Page

OTHER USEFUL LINKS
- America Supports You
- Arena
- Downtown Dining District
- Glendale's Got Game
- Luke Air Force Base
- Pentagon Channel
- Stadium
- VisitGlendale.com
- Westgate City Center

FOLLOW US ONLINE

City Clerk - Public Notices

The City of Glendale City Clerk's Office is providing these public notices for informational purposes The official posting site of the City of Glendale is the board located outside the Council Chambers. If you have a question about a city public notice, a hearing or any related topic, please contact the City Clerk's office.

These notices are grouped by the issuing department and sorted in chronological order. All of these documents require the Adobe Acrobat Reader which can be downloaded for free at www.adobe.com.

Mayor and Council

- **Community Meetings & Events 5/8/09**
- **GSC 5/5/2009**
- **Community Meeting & Events 5/4/2009**
- **Community Meeting & Events 4/17/2009**
- **Community Meeting & Events 4/24/09**

Airport

- **Aviation Advisory Committee 5/9/2009**

Arts

- **Arts Commission Agenda 4/27/2009**
- **Arts Commission Agenda 4/27/09**

Community Revitilization

- **Citizens Avisory Commission Agenda 5/6/09**
- **Public Notice (Monthly) 05/01/09**

Economic Development

- **Western Maricopa Enterprise Zone 4/30/09**

Emergency Management

- **Notice of Multi-Hazard Mitigation Plan Update 5/8/09**
- **Emergency Management Public Involvement 5/7/09**

Engineering

- **Notice to Contractors No. 089005 5/7/09**
- **RFQ- Civic Center Construction Manager Project No. 089009 4/23/09**

Human Resources

- **Persons with Disabilities 4/21/09**

Materials Control

- **Notice of Unclaimed Personal Property (Weapons) 05/01/09**

Materials Management

- **Notice of Unclaimed Personal Property 5/8/09**
- **Notice of Proposal No. 09-15 5/8/09**
- **Notice of Proposal No. 09-10 5/8/09**

Learn more about social media

- Notice of Proposal No. 09-14 4/24/09

Parks and Recreation

- Parks & Recreation Advisory 5/11/09

Planning

- Notice of Public Hearing CUP09-02 5/8/09
- BOA Agenda 5/14/09
- Planning Commission Agenda 5/7/09
- Historic Preservation Commission 4/23/09

Transportation

- CTOC 5/7/2009
- Citizens Advisory Bicycle Advisory 5/4/2009

Utilities

- Notice of Public Hearing- Increase in Rates 5/8/09

Public Input Invited

Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, City of Glendale and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit **www.maricopa.gov/Emerg_mgt** or contact your community's representative below:

City of Glendale Office of Emergency Management
dsheff@glendaleaz.com

CERT

Emergency Plans and Exercises

Multi-Jurisdictional, Multi-Hazard Mitigation

Public Awareness

Seasonal News

Training

Emergency Management

Multi-Jurisdictional, Multi-Hazard Mitigation Plan

The City of Goodyear has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the **multi-jurisdictional planning website** or contact:

Othell T. Newbill III, CEM, City of Goodyear Emergency Management Coordinator,
onewbill@goodyearaz.gov

or

Cristina Herrera, Maricopa County Department of Emergency Management,
cristinaherrera@mail.maricopa.gov

Top

Last Updated: 5/28/2009

Block Watch
City Parks
Emergency Management
GAIN
Media Communications
Refuse/Recycling
Special Events
Valley Metro Bus

City of Litchfield Park
214 W. Wigwam Blvd.
Litchfield Park, AZ 85340
Phone: (623) 935-5033
Fax: (623) 935-5427

Recreation Center
(623) 935-9040

Emergency Management

Overview

The City of Litchfield Park has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather, how we, as a community, prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update.

For more information, please visit the multi-jurisdictional planning website at www.maricopa.gov/emerg_mgt/

Contact Information

City of Litchfield Park Emergency Management
email

Maricopa County Department of Emergency Management
email

maricopa.gov Arizona

Contact Us

Site Map | Search | Phone Directory | Departments | Services | Email Alerts

December 29, 2008

Search

Go

Quick Links

- Assessor / Parcel Information
- Awarded Contracts
- Bid Solicitations
- Board of Supervisors
- Case History
- County at a Glance
- Diversity
- Employment
- GIS Maps & Services
- Emergency Mgmt / Homeland Security
- Parks
- Recorded Docs
- Request for Public Records Forms
- Restaurant Ratings
- Self Service Center
- Tax Information

Other Sites

Cities In Maricopa

AZ State Services

Local News - Phoenix

- Southwest Valley home-price drops sharpest in metro Phoenix
- Boys die after brutal beating at Valley park
- Avondale food bank struggling to fill need
- Council dislikes Goodyear Palms Plaza project's signs
- Avondale considers condemning water company
- Semi overturns on I-10 in Southwest Valley

More News..

azcentral.com

Events

<	December 2008					>
S	M	T	W	T	F	S
30	1	2	3	4	5	6

In the Headlines

Rescue Groups Helping to Save Lives

MCACC's rescue partners are saving more lives over the holidays.

more details...

Maricopa County Animal Care and Control

County Spotlight

>>

Environmental Services: Clandestine Drug Lab Records

Maricopa County Environmental Services is involved in many different types of Environmental Health and Safety issues. Did you know that the Environmental Services Department is the custodian of the public records for reported Clandestine Drug Labs throughout Maricopa County? Search any Health and Safety complaints we have on record at Complaints Research Corner.

View a predefined report at Environmental Services: Clandestine Drug Lab Records

Other County News

PM-2.5 Health Watch on December 29th 12/29/2008
There is a PM-2.5 Health Watch in effect for Monday, December 29, 2008 from midnight to midnight [24-hour period]. ....More Details

Consider Clean Air this Holiday Season; Don't Burn 12/23/2008
Maricopa County is taking a proactive approach this winter season and educating folks about the hazards of burning wood as well as gift wrapping paper ....More Details

My Maricopa.gov

Personalize Maricopa.gov

Find My Information...

Based on MY Address, find...
My Schools, My Taxes,
My Assessor Parcel Info,
My Voting Precinct,
My Congressional District,
My Supervisoral Dist,
My Justice Precinct, GIS
Maps & more... Click Here

Personalize this area to get information specific to your address and the community which you live in.

National Threat Level

Currently: ELEVATED - YELLOW

ELEVATED

Maricopa County Homeland Security

Ready

Weather - Phoenix

Temperature: 60 ° F
Skies: Mostly Cloudy
Humidity: 72%
Wind: SE 9 mph
Visibility: 10.0
Dewpoint: 51
Updated: 12/17/08 10:51 AM MST

Local Pollen Reports
Airport Conditions
Lawn and Garden Weather

Weather data provided by weather.com®

THE WEATHER CHANNEL weather.com

Trivia

7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

View Full Calendar
County Observed Holidays

County Begins Multi-Hazard Mitigation Plan Update 12/12/2008
Maricopa County recently secured a grant from the Federal Emergency Management Agency (FEMA) to update the county's Multi-Jurisdictional Multi-Hazard ....More Details

Public Health marks 20th anniversary of World AIDS Day 12/12/2008
MCDPH marks 20th anniversary of World AIDS Day with community wide event. The Valley's Red Ribbon created at the event is a possible World Record! ....More Details

PET PHOTOS WITH SANTA 12/2/2008
PETCO OFFERING PICTURES WITH SANTA ....More Details

First Flu Case of the Season 11/26/2008
Although Valley temperatures continue to loom into the mid 80's this week, the flu is right on schedule. Today, the Arizona Department of Health Servi ....More Details

Public Health Urges Residents to Get Vaccinated Against Flu 11/26/2008
Maricopa County Public Health Director, Dr. Bob England, Fire Chief Bob Khan and the American Lung Association encourage all families to get immunized ....More Details

Get involved, not infected! World AIDS Day 2008 Dec. 1st 11/26/2008
Maricopa County Department of Public Health (MCDPH) and the Arizona Department of Public Health (ADHS) encourage all community members to continue edu ....More Details

More County News ...

What professional sports team plays in a stadium owned by Maricopa County?

Click for Answer

Maricopa County || 301 W. Jefferson St. || Phoenix, AZ 85003
602-506-3011

NEWS

for immediate release

MARICOPA COUNTY
Emergency Management
2035 North 52nd Street
Phoenix, AZ 85008

www.maricopa.gov

County Begins Multi-Hazard Mitigation Plan Update

Maricopa County recently secured a grant from the Federal Emergency Management Agency (FEMA) to update the county's Multi-Jurisdictional Multi-Hazard Mitigation Plan. This plan establishes a framework of policies and tools to be developed to ensure the most appropriate and equitable disaster planning projects are identified and undertaken in Maricopa County.

The current plan was originally written in response to the Disaster Mitigation Act of 2000 and subsequently approved by FEMA in November of 2004. It requires an update every five years.

Maricopa County will lead this update effort and involve all 24 municipalities and two of the county's tribal nations. Once fully implemented, a significant reduction of future risk and potential losses should be realized in the event of a disaster. Implementation of the various aspects of the plan will be the responsibility of the various jurisdictions and agencies involved in the update.

Maricopa County will regularly post the progress of the plan update on its website. While stakeholder meetings are intended for the individual agencies involved, the public is welcome and encouraged to review the material below, submit comment and track the progress of this plan update.

2004 Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan
Stakeholder Meeting Schedule
About Mitigation Planning/History & Background/Plan Update Process

For more information or to submit comments and questions, call the Maricopa County Department of Emergency Management at 602-273-1411 or one of the contacts below:

Cristina Herrera, Emergency Planner
Maricopa County
Department of Emergency Management
2035 North 52nd Street
Phoenix, AZ 85008
(602)273-1411
Fax: (602)275-1638
Pager: (602)201-1478

W. Scott Ogden, P.E., CFM
Mitigation Planning Consultant
JE Fuller
8400 S. Kyrene Road, Suite 201
Tempe, AZ 85284
(480)222-5717
Fax: (480)839-2193
Cell: (480)299-3394

<< Back

HAZARD MITIGATION PLANNING

What is hazard mitigation planning?

Hazard mitigation planning is a ***process*** for State, local, and Indian Tribal governments to identify policies, activities, and tools to implement mitigation actions. Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. This process has four steps:

1. Organizing resources;
2. Assessing risks;
3. Developing a mitigation plan; and
4. Implementing the plan and monitoring progress.

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

In 2003 and 2004, Maricopa County, two Indian Tribes, and all incorporated cities and towns in Maricopa County, participated in a multi-jurisdictional mitigation planning effort that resulted in the development of a multi-jurisdictional hazard mitigation plan with separate plans that covered each participating jurisdiction. The Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2004) and all of the separate plans received official Federal Emergency Management Agency (FEMA) approval on November 29, 2004. The 2004 Plan was designed to meet the federal regulations set forth by the Disaster Mitigation Act of 2000, which requires all local, county, tribal and state governments to develop a multi-hazard mitigation plan for their respective jurisdictions in order to be eligible to receive certain hazard mitigation and public assistance funds.
The 2004 Plan is nearing the end of the 5-year planning cycle and is set to expire in November 2009. The Maricopa County Department of Emergency Management (MCDEM) applied for and received a planning grant to fund a multi-jurisdictional effort to review, update and consolidate the 2004 Plan, with resubmittal to FEMA prior to its expiration in November 2009.

Plan Update Process

MCDEM initiated the update process in December 2008. The plan update process will require the regrouping of the Maricopa County Hazard Mitigation Planning Team, which originally was comprised of one or more lead contacts from each participating jurisdiction as well as public utilities, hospitals, police, fire and sheriff's departments, and other public and private entities.
Input must be obtained from neighboring communities, local and regional agencies involved in hazard mitigation activities and agencies having authority to regulate development including businesses, academia and other private and non-profit interests. The Hazard Mitigation Planning Team will be meeting regularly to review, revise, and/or update of the following elements:

- **Previously identified hazards that may impact or have impacted the community**
- **Profiles of the most relevant hazard events**
- **Assessment of vulnerability to hazards**
- **Assessment of the communities' capability to mitigate hazards**
- **Hazard mitigation goals and objectives for the community**
- **Hazard mitigation actions and/or projects**
- **Implementation strategy for the plan**
- **Plan maintenance strategy for the next 5-year cycle**

- **Write and officially adopt plan**

STAKEHOLDER MEETINGS

To meet the goal of having an approved plan by November 2009, a meeting calendar running from January 2009 to July 2009 has been established.

Stakeholder Meeting #1 - Minutes
Stakeholder Meeting #1 - Material
Stakeholder Meeting #1 - State Hazard Mitigation Measures checklist
Stakeholder Meeting #2 - Minutes
Stakeholder Meeting #2 – CPRI Guidance
Stakeholder Meeting #2 – Calculation Template

PUBLIC INVOLVEMENT

The public is welcome to attend of the stakeholder meetings and encouraged to participate and comment on the plan during its drafting stages and prior to seeking final approval from the Federal Emergency Management Agency. To submit comments online, please use the links below.

FOR MORE INFORMATION:

For more information or to submit comments and questions, call the Maricopa County Department of Emergency Management at 602-273-1411 or one of the contacts below:

Cristina Herrera, Emergency Planner
Maricopa County
Department of Emergency Management
2035 North 52nd Street
Phoenix, AZ 85008
(602)273-1411
Fax: (602)275-1638
Pager: (602)201-1478

W. Scott Ogden, P.E., CFM
Mitigation Planning Consultant
JE Fuller
8400 S. Kyrene Road, Suite 201
Tempe, AZ 85284
(480)222-5717
Fax: (480)839-2193
Cell: (480)299-3394

Emergency
9-1-1

Fire Non-Emergency
480-644-2101

Police Non-Emergency
480-644-2211

Utilities
Gas leaks/odors
480-644-4277

Problems with gas/sewer/water
480-644-2221

Power outage
480-644-2265

After hours, weekends/holidays
480-644-2262

Site Links

Emergency Preparedness home

Sandbags

Pandemic Flu Task Force

How to Prepare for an Emergency

Countering Terrorism

Four Steps to Safety

Emergency Preparedness Links

Assistant Chief Gil Damiani

Community Emergency Response Team

Citizen Corps

Información en Español

What is a Hazard Mitigation Plan?

A Hazard Mitigation Plan is a ***process*** for State, local, and Indian Tribal governments to identify policies, activities, and tools to implement mitigation actions. Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. This process has four steps:

1. organizing resources;
2. assessing risks;
3. developing a mitigation plan; and
4. implementing the plan and monitoring progress.

Your opportunity to contribute:

The City of Mesa is gathering information to complete a Hazard Mitigation Plan. Maricopa County will lead this effort and involve all 24 county municipalities and two of the county's tribal nations.

Once fully implemented, a reduction of future risk and potential losses should be realized in the event of a disaster. Implementation of the various aspects of the plan will be the responsibility of the various jurisdictions and agencies involved in the update.

For more information or to submit comments and questions, call the **Maricopa County Department of Emergency Management** at 602-273-1411 or one of the contacts below:

Cristina Herrera, Emergency Planner
Maricopa County
Department of Emergency Management
2035 North 52nd Street
Phoenix, AZ 85008
(602)273-1411
Fax: (602)275-1638
Pager: (602)201-1478

W. Scott Ogden, P.E., CFM
Mitigation Planning Consultant
JE Fuller
8400 S. Kyrene Road, Suite 201
Tempe, AZ 85284
(480)222-5717
Fax: (480)839-2193
Cell: (480)299-3394

"Preparing People to Help Themselves"

Knowing how to respond in an emergency situation can mean the difference between life and death. To teach residents to be better prepared the City of Mesa and the Mesa Fire Department offers **Community Emergency Response Team** (**CERT**) training.

Applications are currently being accepted for the classes beginning April 4. For more information visit our **web page.** To register for class please call 480-644-2780.

Emergency Preparedness

Emergency response during a natural or man-made disaster is coordinated through the City of Mesa Fire Department's Emergency Management center. During a disaster, residents and visitors in the Mesa area are advised to visit **www.Mesaaz.gov** or tune to Mesa Channel 11 or local radio and television stations for

information.

The City of Mesa provides the following information to help you plan for unexpected emergencies. Fire and Police respond quickly during these events; however, it is important for residents to prepare to ensure the comfort and safety of their families and homes.

FAMILY PREPAREDNESS GUIDE

Be Prepared

- How to prepare
- Four steps to safety
- Countering terrorism
- Emergency preparedness classes
- Emergency Evacuation Plan
- Avian flu
- Pandemic flu plan
- Preparing for pandemic flu
- Seasonal vs. Pandemic flu
- What is a flu pandemic?
- West Nile Virus

Potential Hazards

- Explosion
- Biological Threat
- Preparing for a Terrorist Bombing
- Nuclear Threat
- Chemical Threat
- Terrorist Attack
- Radiation
- Heat emergency
- Extended power outage
- Natural Disasters (wildfires, fires)

Teams and Related Information

- Community Emergency Response Team
- Amateur Radio Emergency Response Volunteers
- Pandemic Flu Task Force
- Related links
- Maricopa County Emergency Management 602-273-1411
- Arizona Division of Emergency Management
- EIN-Arizona Emergency Information Network

Video

- Mesa Channel 11 What's On Fire: Emergency Preparedness

Current and Past Events

2009

- 1200 Volunteers needed for Crisis Response Drill...Coyote Crisis Campaign

2008

- Emergency Preparedness Expo at Bass Pro Shops September 27, 2008

MEETINGS & EVENTS

Public Meeting Agendas

Calendar of Events 04/17

- Arts Advisory Committee
- Board of Adjustment
- Hillside Building Committee
- Historical Advisory Committee
- Mary Ann Brines Exceptional Performance Award Committee
- Mummy Mountain Preserve Trust
- Municipal Property Corporation Summary
- Personnel Appeals Board
- Planning Commission
- Public Safety Personnel Retirement Board
- Town Council
  - Notice of Possible Quorum for February
  - Water Utility Committee

Staff reports and meeting information packets are available for public i

PUBLIC NOTICE
Hazard Mitigation Plan

The Town of Paradise Valley has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires,

but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact:

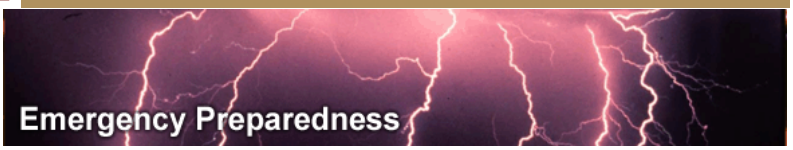
Bob Lee, Town of Paradise Valley Building Safety Manager, rlee@paradisevalleyaz.gov
or Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov

· Home · Town Government · Schools · Places of Worship ·
· Visitor Information · Mummy Mountain Preserve Trust · Goldwater Memorial ·

Town Hall
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

04/17/2009 18:34:08

Emergency Home
Getting Started
Disaster Preparedness
Environmental Preparedness
Weather Preparedness
Getting Involved
Contact Information
Kids Corner



Peoria Home Page > Government (Misc) > Emergency and Safety

Safety and Emergency Preparedness

The key to safety and preparedness ...knowing what to do and when to do it.

Welcome to the City of Peoria's Emergency Preparedness website. On this website you can find information for disaster, weather, and environmental preparedness along with how to get involved and how to get started with your own personal emergency preparedness program.

The City of Peoria has elected to participate in the Multi Hazard Mitigation Plan sponsored by Maricopa County. For more information and up to date status, please click here.

Have a question? Send us a quick e-mail at EmergencyInfo@PeoriaAz.gov, or contact us by phone at 623-773-5207. We are more than happy to help you get what you need!

Resources and Information

- Emergency Management Home
- State, County, and Local Links
- National Links
- Resources for People with Disabilities
- Weather and Natural Disaster Links
- Disaster Relief Links
- Resource Library

Emergency Management Program

The Emergency Management Coordinator is responsible for managing the city's Emergency Management Program during each of the four phases of Emergency Management, which include: response, recovery, preparedness, and mitigation planning. The Emergency Management Coordinator is also responsible for:

- Coordinating training programs and emergency operations drills.
- Assisting departments with their emergency and mitigation plans.
- Operating the Emergency Operations Center when necessary to manage the distribution of city services and resources to respond to and recover from a man-caused or natural event of significant impact to the city.
- Administering the submittal process for federal and state reimbursement claims for the city's costs during emergency operations.
- Managing grant funding that is received through various grant programs established under the U.S. Department of Homeland Security.

IF YOU ARE EXPERIENCING AN EMERGENCY AT THIS MOMENT, CALL 9-1-1.

For more information, call 602-534-0642.

Note: The city of Phoenix is currently in the process of updating their Hazard Mitigation Plan in coordination with the Maricopa County Department of Emergency Management. For additional information on this process, please visit the Multi-Hazard Mitigation Plan website hosted by Maricopa County **http://www.maricopa.gov/pr_detail.aspx?releaseID=1004**.

HAZARD MITIGATION PLAN

The Town has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans to consolidate into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important. Residents are encouraged to learn about the existing plan and provide comments on the update. For more information, please visit the multi-jurisdictional planning site Web site or contact:

- Joe LaFortune Town of Queen Creek, Public Safety Division Manager
- Cristina Herrera Maricopa County, Department of Emergency Management

River Fire
partment
out SRFD
Vision, & Values
ry of SRFD
er Recruitment
Explorers
n Locations
tion Services
cy Management
unity Safety
ful Links
Employee
ols Page

SALT RIVER FIRE DEPARTMENT

Office of the Emergency Manager

Thank you for visiting the Salt River Pima-Maricopa Indian Community (SRPMIC) Emergency Management site!

It is important that our Community members know that the SRPMIC Government is working very hard to ensure that our Community is p for any type of disaster that may impact the safety or quality of life for our members. Staff in all areas of Government are involved in this prevent, plan, respond, and recover from a disaster or major event in our Community.

One of the most critical components for an effective disaster plan is having Community Members that are educated and prepared on wh when disaster strikes.

We hope that you will use this website to not only educate yourself on what our Community staff is doing in the area of emergency prep but perhaps more importantly, what you and your family can do to prepare for a disaster before it strikes. Please feel free to contact the Emergency Management Office if you have additional questions on our Community or your family's emergency preparedness needs.

For additional questions, you can contact Cliff Puckett, the Community's Emergency Manager, at 480 850-4408.

Consolidated Multi-hazard Mitigation Plan

The Salt River Pima-Maricopa Indian Community has joined forces with Maricopa County and other jurisdictions around the Valley to re update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigatior goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first pla

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this n plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plar comments on the update. For more information, please visit the multi-jurisdictional planning website or contact: SRPMIC Emergency Ma Puckett (cliff.puckett@srpmic-nsn.gov) at 480 850-4408 or Cristina Herrera, Maricopa County Department of Emergency Management (cristinaherrera@mail.maricopa.gov).

Community Emergency Response Team (CERT)

The Salt River Fire Department's Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their Community and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.

Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help.

CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

For more information please call Salt River Fire Admin at 480.850.8240 for the next available training session.

Disaster Strikes ... Are you prepared?

In the year 2007 the Salt River Pima-Maricopa Indian Community took a big step in enhancing the safety of our Community. This step w a full time emergency manager to improve our readiness for a disaster or major event that could have a negative impact on our Commu members, our land, and our quality of life. Just hiring an emergency manager is only one critical component to having an effective Comr emergency plan. One of the most critical components for an effective plan is having Community members that are educated and prepar

to do when disaster strikes.

The following chart is a basic way to prepare yourself and your family for an emergency situation. For more information you can contact Puckett, the Community Emergency Manager, at 480 850-4408, or go to the American Red Cross website.

Be Prepared. It's as easy as 1, 2, 3.

		
Learn about the basic decisions you and your family should be prepared to make in case of an emergency. • Prepare a Plan • Having a Family Plan • Deciding to Stay or Go • Pet Preparedness Plan • Special Item Needs • Utility Breakdown Plan • School Plan • Employer Preparedness • In a Moving Vehicle	**Get tips on how to create a survival kit for any situation.** • Make a Kit • Portable Kit • Water & Food • First Aid Kit • Clean Air • Special Needs • Warmth • Financial Security • Pet Items • Supply Checklist	**Find out how to keep an eye on your emergency situation and adapt to changing circumstances.** Visit www.az211.gov to get updates. Call the Community Emergency Hotline at 480 850-4111. Answer your telephone which may have an emergency message from emergency responders advising you of appropriate action to take.

Emergency Shelter in Place ... Do you know how?

Most people know that there is a chance that they may be asked to evacuate if there is an emergency such as a chemical spill in their a evacuating, most people would go to a shelter that would be set up by emergency workers, or some would prefer to go to a friend or rel house until it is safe to return. What if the emergency instructions were not to evacuate, but to "shelter in place". Do you know what this Would you know what to do to protect yourself and your family? If the answer is "no", you are not alone. Most people are very confused "shelter in place" really means.

Sheltering in place simply means that you stay in your residents, or current location such as work, and take some general precautions s

- Close and lock all windows and exterior doors.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Get your family disaster supplies kit and make sure the radio is working.
- Go to an interior room without windows that's above ground level.
- In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier than air, and may basements even if the windows are closed.
- Bring your pets with you, and be sure to bring additional food and water supplies for them.
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone available if yc report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into the room.
- Keep listening to your radio, television, telephone until you are told all is safe or you are told to evacuate. Local officials may call evacuation in specific areas at greatest risk in your community.

So remember, evacuating is not the only choice in a disaster or hazardous situation. Sometimes the safest thing for you and your family shelter in place, and now you know how to do this.

Emergency Messages Delivered to Your Phone

You pick up your telephone at home and it is obviously one of those recorded messages that we all get, usually advertising something . could actually be a recorded emergency message that is being sent to your home to advise you and your family of a hazardous situatior

Our Community is part of the Community Emergency Notification System, known as CENS. CENS is a phone notification system that ca emergency information to thousands of home phones in a matter of minutes. If there was a large scale emergency in our Community, th be one of the tools that our Public Safety personnel would use to notify our Community Members, Community Staff, and business in our Community about the event. The recorded message would advise you of the event and give you some general instructions as to what tc example if they wanted you to evacuate the area, they would state this and give a location of where you could go for assistance. In som situations, it is best to stay in your home. Emergency workers call this shelter in place. This CENS system could notify you to shelter in p give brief instructions on how to do this.

This system can only be used for a true emergency and the use of it is regulated and monitored. There is also a significant cost to use tl which also controls this system from being improperly used. Some additional facts about CENS are as follows:

- It will not leave a message on your cell phone

- If you have caller ID it will come up "Priority Alert" or "Alert Call"
- It is designed to leave a message on an answering machine
- It will call back automatically if it gets a busy signal
- This system is only available to the Maricopa County region

So, the next time you pick up the phone and are tempted to hang up because you think that it is just a recorded advertisement, think aga could be an emergency message from emergency workers trying to deliver important information to you in an effort to keep you and you safe.

For additional questions on this system, you can contact Cliff Puckett, the Community's Emergency Manager, at 480 850-4408.

)05 East Osborn Road · Scottsdale, Arizona 85256 · 480.850.8000

Emergency Management

A DIVISION OF FIRE

Phone: (480) 312-1821
Fax: (480) 312-1887

Physical Address
8401 E. Indian School Rd
Scottsdale, AZ 85251

Lorenzo Jones, Emergency Management Officer
Email: ljones@ScottsdaleAZ.gov

Kerry Swick, Battalion Chief
Email: kswick@ScottsdaleAZ.gov

The Emergency Management - Homeland Security Division is responsible for preparing for and carrying out all emergency functions necessary to mitigate, prepare for, respond to, and recover from significant incidents and disasters caused by all hazards, whether natural, technological, or human caused.

The Division coordinates all four phases of emergency preparedness. The four phases are: **Mitigation** (efforts to minimize the impact of a disaster), **Preparedness** (planning/training), **Response** (the response and coordination of resources to an incident), **Recovery** (restoration of City services as quickly as possible). The Emergency Management Officer represents the City of Scottsdale on local, regional and national issues relating to emergency management and homeland security.

Current Projects and Initiatives:
The City of Scottsdale is updating its Hazard Mitigation Plan, which establishes a framework of policies and tools to be developed to ensure the most appropriate and equitable hazard mitigation planning projects are identified and undertaken.

Maricopa County will lead this update effort and involve all 24 municipalities and two of the county's tribal nations. Once fully implemented, a significant reduction of future risk and potential losses should be realized in the event of a disaster. Implementation of the various aspects of the plan will be the responsibility of the various jurisdictions and agencies involved in the update.

For more information or to submit comments, call 602-273-1411 or visit the Maricopa County Department of Emergency Management Web site.

DIVISIONS
ADMINISTRATIVE SERVICES
COMMUNITY RELATIONS
EMERGENCY MANAGEMENT
FIELD OPERATIONS
FIRE AND LIFE SAFETY
TRAINING AND DEVELOPMENT/EMERGENCY SERVICES

ALL DEPARTMENTS
CITY ORGANIZATIONAL CHART (PDF/100KB/1P)

SRP Crisis Management

StormReady

inside SRP

WEB PAGES

- Crisis Management Team
- Business Continuity & Emergency Management
- Business Continuity Team
- SRP Incident Management

LINKS

- AZ211
- Ready.gov
- Arizona Department of Homeland Security
- Arizona Division of Emergency Management
- Maricopa County Division of Emergency Management
- Pinal County Division Public Works
- Gila County Emergency Management
- AZ Counter Terrorism Information Center
- U.S. Department of Homeland Security
- Federal Emergency Management Administration
- Red Cross
- Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan

SRP Crisis Management

- Crisis Management Team
- Business Continuity and Emergency Management
- Business Continuity Team
- SRP Incident Management

NEWS & ALERTS

Chinese spies may have put chips in US planes
4/17/2009

New bird flu cases suggest the danger of pandemic is rising
4/15/2009

Electricity Grid in U.S. Penetrated By Spies
4/8/2009

Today's Power Moves
6/2/2008

New/Changed Documents

Page 1 of 8

- 4430 Art and Print Services 4/21/2009 1:57 PM
- EPA Guidance for Spills from Electrical Equipment 4/21/2009 1:32 PM
- Wildland PDO OP #49505 4/21/2009 1:30 PM
- 2008 Wildland Response Plan 4/21/2009 1:30 PM
- OP Emergency Alerts #14003 2008 05 23 4/21/2009 1:29 PM
- SRP Credit Card Incident Response Plan 4/21/2009 1:29 PM
- OP Pre load shed OP#14601 2006 4/21/2009 1:29 PM
- 2007 Wildland Fire Letter - BLM 4/21/2009 1:29 PM
- OP Valley Fuel Oil #11608 2006 4/21/2009 1:29 PM
- OP SRP Wildfire Response Plan 4/21/2009 1:28 PM
- OP Anthrax Emergency Response Plan 4/21/2009 1:28 PM
- Anthrax Protocol for State 12JUL02 4/21/2009 1:28 PM

Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan

The Salt River Project has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at:

www.maricopa.gov/emerg_mgt

or contact:

Cristina Herrera, Maricopa County Department of Emergency Management

Disaster/Terrorist Emergency Preparedness

Since September 11, 2001 we now live in a different world than we did before. We are now more aware of our vulnerabilities, more appreciative of our freedoms and more understanding that we have a personal responsibility for the safety of our families, our neighbors and our nation.

The Tempe Fire Department is concerned about the well-being of our citizens either through a natural disaster or a terrorist emergency. We know that disaster preparedness works. We can take action now that will help protect our families, reduce the impact an emergency has on our lives and deal with the chaos if an incident occurs near us. The following information was put together to assist the citizens of Tempe in preparing for any type of emergency.

- Disaster Supply Kit Checklist

  The following checklist will help you assemble a disaster supply kit that meet the needs of your household.

- Are You Ready? A Guide To Citizen Preparedness

  The publication provides practical information on how your family can prepare for any disaster. It includes up-to-date hazard specific safety tips and information about preparedness and protection.

- National Security Emergencies For Kids

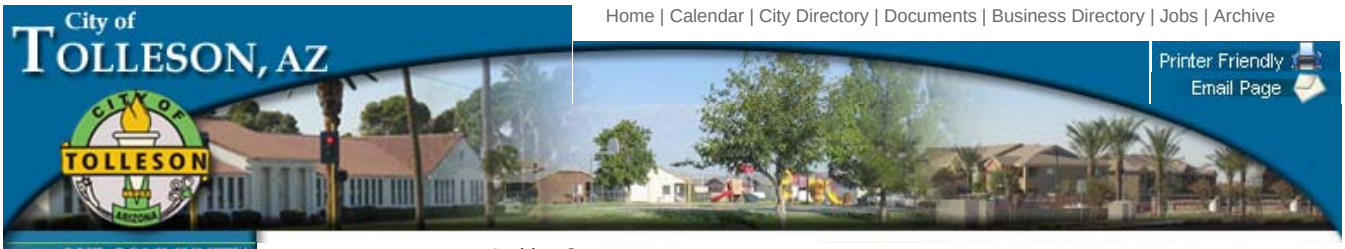
  This website contains information geared for children on what is terrorism and what they can do to assist their families in preparing for any type of disaster.

- Community Emergency Response Teams (CERT)

  Local government prepares for everyday emergencies. However, there are emergencies and disasters that can overwhelm the community's immediate response capability. While adjacent jurisdictions, State and Federal resources can activate to help, there may be a delay for them getting to those who need help. The primary reason for CERT training is to give people the decision-making and physical skills to offer immediate assistance to family members, neighbors, and associates. While people will respond to others in need without the training, the goal of the CERT program is to help them do so effectively and efficiently without placing themselves in unnecessary danger.

- Maricopa County Department of Emergency Management

  The City of Tempe is participating in the 2009 revision to the Maricopa County Multi-Hazard Mitigation Plan. Tempe's planning process is open to public comment and attendance of development meetings. Please check back shortly for the schedule of meetings.

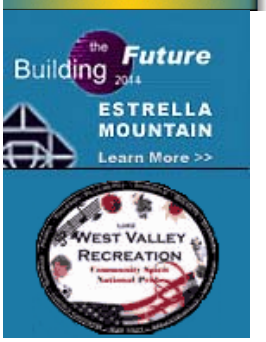


OUR COMMUNITY
CITY GOVERNMENT
CITY DEPARTMENTS
PHOTO GALLERY

How Do I...?
About Tolleson
Job Opportunities
Mayor and Council
Agendas and Minutes
Codes and Ordinances
RFP/RFQ Bid Documents

go

E-NEWS SIGNUP



You are here: Home > Archive Center

View Other Items in this Archive | View All Archives

City Notices - May 28/June 4 Multi-Hazard Mitigation Plan Fire Department Mitigation Plan Public Hearing Notice

This archive is a document file. Click on the link below to open it, or right-click to save the document or open it in a new window.

05 28 06 04 09 Fire Dept Mitigation Public Notice.pdf (44 kb)

Some files located here may require the use of Adobe Acrobat Reader. The link provided will take you to the Adobe site where you can download the latest version.

The City of Tolleson has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing individual multi-hazard mitigation plans and consolidate them into a single multi-jurisdictional, multi-hazard mitigation plan. The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure eligibility for certain hazard mitigation grants and public assistance funds.

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing plan and offer comments on the update. For more information, please visit the multi-jurisdictional planning website at: www.maricopa.gov/emerg_mgt or contact:

Bob Hansen

Division Fire Chief

623 936 8500

bhansen@tollesonaz.org

or

Cristina Herrera, Maricopa County Department of Emergency Management,
cristinaherrera@mail.maricopa.gov

SITE SEARCH GO

Administration
Records
Investigations
Patrol
Communications / Dispatch
Emergency Operations - Hazard Mitigation
Animal Control

NOTIFY ME GO
Print Page
Email Page

PUBLIC INPUT INVITED

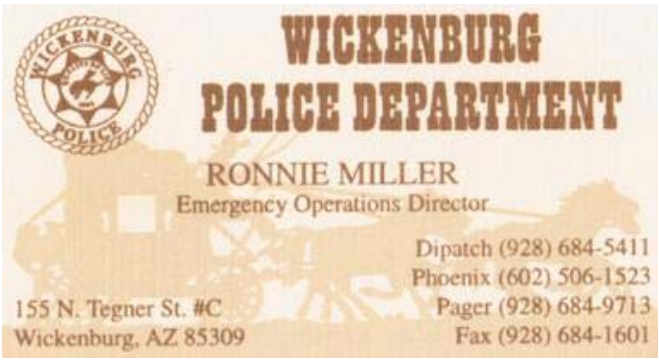
Multi-Hazard Mitigation Plan Update Begins

Hazard mitigation planning is the process used to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), state, county, local and tribal governments are required to develop and maintain a FEMA approved hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance and mitigation grants.

A multi-jurisdictional planning team comprised of representatives from Maricopa County, Town of Wickenburg and various other towns, cities and tribal governments located within the county, will be meeting regularly to review, revise and update the current Multi-Hazard Mitigation Plan. The planning team will be meeting regularly to review, revise and/or update the following plan elements:

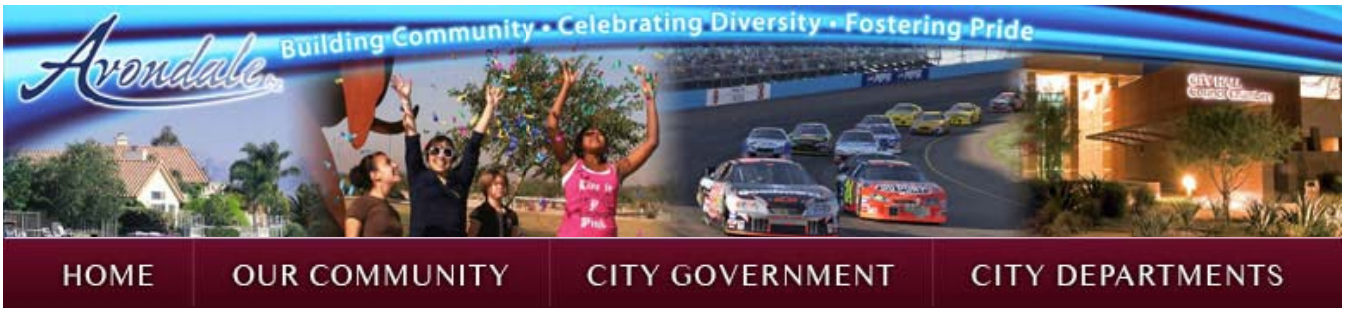
- Natural hazards that my impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction / elimination
- Mitigation actions / projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

An updated draft of the plan is expected in July 2009. For additional information, please visit www.maricopa.gov/emerg_mgt or contact your community?s representative below:



Maricopa County
Glen M. Floe
Emergency Services Planner
Emergency Management
2035 N. 52nd St.
Phoenix, Arizona 85008

Email: GlenFloe@mail.maricopa.gov
Office: 602-273-1411
Fax: 602-275-1638
Pager: 602-202-5561



You are here: Home > News Flash

Printer Friendly
Email Page

News Flash - Selected

View Archived

County Hazard Mitigation Plan available for review

The City of Avondale has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and consolidate them into one multi-jurisdictional, multi-hazard mitigation plan.

A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community might lessen or even prevent the impact of such things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation PLAN will also ensure the community's continued eligibility for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated PLAN and offer comments.

For more information, please visit the multi-jurisdictional planning website at:
http://www.maricopa.gov/Emerg_Mgt/links.aspx

or contact:

Art Snapp Division Chief, Avondale Fire Rescue
at 623 333-6000;asnapp@avondale.org or Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov

[Jurisdictional Planning Website]

News Flash - All

RSS

View Archived

News Flash - Home

View Archived

VOTE Avondale!

Avondale voters can cast their ballots early at City Hall beginning October 8. The General Election is scheduled for November 3. Last day to register to vote for the General Election is October 5, 2009. Early voting for the General Election is October 8 to October 29.

The ballot will ask voters to consider an extension to the city's Alternative Expenditure Limitation commonly referred to as "Home Rule" and will include five (5) propositions related to amendments to the City Charter.
[Additional info...]

Calling All Gardeners

If you are interested in a community garden in Avondale, Councilmember Stephanie Karlin would like to hear from you.

Please contact Sammi Curless at 623-333-1600 or emailpublicinformation@avondale.org.

General Plan Update 2030

What do you like about the City? What needs improvement? This is your opportunity to say how the City should develop over the next 20 years. Take Our Survey

Participate in Resident Survey - NOW online!

Avondale Residents not able to attend the Resident Appreciation Night are urged to provide the City with survey feedback in regards to City services and quality of life as residents. One lucky winner of the online resident survey poll and one from the event will win a gift card to Harkins Theaters. Online surveys can be found at www.avondale.org/survey until October 29, 2009.

Click Here to access Survey

Support Luke Air Force Base

Luke Forward was created to bring together supporters of Luke Air Force Base in one place to share information about how to help secure a follow-on mission for the Base. Visit the Luke Forward website

H1N1 Flu Public Inquiry Hotline

The Community Information and Referral (CIR) public inquiry hotline is now open to receive questions about the impact of H1N1 Flu on our community.

The public may call 602-263-8856 or 800-352-3792 – 24 hours a day, 7 days a week to speak with bi-lingual staff about general questions about H1N1 Flu, learn how it is affecting our local community as well as learn websites and telephone numbers for more information.

Additionally, the Maricopa County Department of Public Health has preparedness information available on their website, which offers specific guidance for individuals, employers, schools and community groups about how to become prepared for a health emergency. Maricopa County Health Department Website

NEWS RELEASES

For access to all media releases sent out via the Public Information office visit www.avondale.org/news [Avondale Press Releases]

Fire Department Welcome
Fire Department Sections
Save Haven for Newborn Infants
Resources
CPR Classes
Request a Fire Inspection
Fire Department FAQ
Vial of Life Program
Maricopa County Hazard Mitigation Plan

Search Go
Print | E-Mail | Share
Notify Me

You are here: Home > City Pages > Fire Department Page

Fire Department

Fire Department
PO Box 26
13513 N El Mirage Rd
El Mirage, Arizona 85335

Administration:
Phone: (623) 583-7968
Fax: (623) 583-5287
TDD: (623) 933-3258

Administration Hours:
Monday - Friday
8:00 am - 5:00 pm
(Excluding Holidays)

Contacts:

Darrell Rezendes
Fire Chief
(623) 876-4242

Howard Munding
Assistant Fire Chief
(623) 876-4249

Marilyn Alexander
Administrative Assistant
(623) 876-4243

The El Mirage Fire Department proudly serves the 40,000 residents of the fastest growing city in the state of Arizona. Engine 121 responded to 2,390 calls in 2007. On average, each call lasts 1 hour. The department currently has 10 Firefighter/Paramedics and 8 Firefighter/EMTs who provide fire suppression and emergency medical services. The department also provides a wide range of non-emergency services including blood-pressure screening, CPR training, and fire safety public education.

We welcome you to explore our website and learn more about our department.

Our Mission:

"We, the members of the El Mirage Fire Department, dedicate our efforts to provide for the safety and welfare of the public through preservation of Life, Property and the Environment".

Frequently Asked Questions View All

Fire Department FAQ
1. Does the City offer CPR Classes...?
2. Where can I get my blood pressure checked...?
3. How can I get a fire report...?

View All FAQs...Fire Department FAQ

Home | Events Calendar | Staff Directory | Business Directory | Document Center | Job Postings | Archive Center

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

The City of El Mirage has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and consolidated them into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community might lessen or even prevent the impact of such things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation PLAN will also ensure the community's continued eligibility for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated PLAN and offer comments. For more information, please visit the multi-jurisdictional planning website at:

http://www.maricopa.gov/Emerg_Mgt/links.aspx

or contact:

Howard Munding, El Mirage Assistant Fire Chief, hmunding@cityofelmirage.org

or

Cristina Herrera, Maricopa County Department of Emergency Management,
cristinaherrera@mail.maricopa.gov

Emergency Management Division

Current Projects and Initiatives

The Town of Gilbert has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and consolidate them into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

Residents are highly encouraged to review the updated PLAN and offer comments. For more information, please visit the multi-jurisdictional planning website at the Maricopa County Department of Emergency Management or contact Sheri Gibbons, Gilbert Fire Department or Cristina Herrera, Maricopa County Department of Emergency Management.

Quick Links

- 72-Hour Kits
- CERT Program
- Power Outage

Links to Other Websites:

- American Red Cross
- AZ 2-1-1 Online
- Center for Disease Control and Prevention
- Federal Emergency Management Agency (FEMA)
- Homeland Security - Ready.gov
- Maricopa County Emergency Management
- World Health Organization

>> Current Status

National Threat Advisory: ELEVATED
Significant Risk of Terrorist Attacks

Emergency Operations Center NOT ACTIVE

>> Emergency Management Events

<	October 2009					>
S	M	T	W	T	F	S
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

Emergency Management News

Local Emergency Planning Committee to Meet 10/19/2009
The Local Emergency Planning Committee will hold its regular quarterly meeting on Wednesday, October 21 at 6:00 p.m., at the Chandler Community Center ....More Details

Public Input Sought for Hazard Mitigation Plan 10/6/2009
Maricopa County Department of Emergency Management has completed the final draft of the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (P ....More Details

Central Region Citizen Corps Nationally Recognized 8/17/2009
Central Region Citizen Corps received an Honorable Mention in national competition among the nation's Citizen Corps Councils. ....More Details

Maricopa County Public Health Message on Swine Flu 4/27/2009
The Maricopa County Department of Public Health has been closely monitoring events related to H1N1 Flu cases. ....More Details

MCDEM Employee Garners Red Cross Award 4/20/2009
John Padilla, Maricopa County Emegency Management, for the Good Neighbor award which is given to someone for innovative solutions to help meet the nee ....More Details

More EM News ...

>> Partner Agencies

AZ Emergency Management
AZ Dept. of Homeland Security
FEMA
U.S. D ept. of Homeland Security
Red Cross

>> Information Central

HAM Operators
StormReady

>> Quick Links

Events Calendar
Preparedness
Local Emergency Planning Committee (LEPC)
Community Emergency Response Team (CERT)

Transportation Security Administration (TSA)

Palo Verde Nuclear Generation Station Special Assistance Survey

Search Emergency Management
Go

Home Contact Us Sitemap

Maricopa County || 301 W. Jefferson St. || Phoenix, AZ 85003
602-506-3011

NEWS

for immediate release

MARICOPA COUNTY
Emergency Management
2035 North 52nd Street
Phoenix, AZ 85008

www.maricopa.gov

Public Input Sought for Hazard Mitigation Plan

Public Comments Requested on

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Maricopa County - October 6, 2009

Maricopa County Department of Emergency Management has completed the final draft of the Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan which is now available for public review and comment.

The purpose of the Plan is to guide and define hazard mitigation planning strategies to better protect the people and property of Maricopa County from the effects of natural hazard events. Preparation of the Plan will also meet eligibility requirements for non-emergency federal mitigation funds. Twenty-four (24) incorporated cities and towns, two tribes, and one other governmental organization located in Maricopa County actively participated in this cooperative effort. The updated Plan final draft is available to view on this web page.

As with all plans that impact the public, Maricopa County and the participating jurisdictions and organizations value the input of the residents abd encourage the review the final draft plan. You may email your comments to the following:

Pete Weaver, Emergency Management Director or Cristina Herrera, Mitigation Planner.

Public comments will be accepted through October 16, 2009.

<< Back

HAZARD MITIGATION PLANNING

UPDATE: Public Comments Requested on Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Maricopa County Department of Emergency Management has completed the final draft of the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (Plan) which is now available for public review and comment. The purpose of the Plan is to guide and define hazard mitigation planning strategies to better protect the people and property of Maricopa County from the effects of natural hazard events. Preparation of the Plan will also meet eligibility requirements for non-emergency federal mitigation funds. Twenty-four (24) incorporated cities and towns, two tribes, and one other governmental organization located in Maricopa County actively participated in this cooperative effort. The updated Plan final draft is available to view below.

- Executive Summary and Table of Contents (<1MB)
- Section 1: Jurisdictional Adoption and FEMA Approval (<1MB)
- Section 2: Introduction (<1MB)
- Section 3: Planning Process (<1MB)
- Section 4a: Community Descriptions (3.5MB)
- Section 4b: Community Descriptions (continued) (4MB)
- Section 5: Risk Assessment (5MB)
- Section 6: Mitigation Strategy (1MB)
- Section 7: Plan Maintenance Procedures (<1MB)
- Section 8: Plan Tools (<1MB)
- Appendix A (<1MB)
- Appendix B (3MB)
- Appendix C (5.5MB)
- Appendix D (<1MB)
- Appendix E (<1MB)

As with all plans that impact the public, Maricopa County and the participating jurisdictions and organizations value the input of the citizens that the plan may impact. Local citizens are encouraged to review the final draft plan. You may email your comments to the following:

Pete Weaver, Emergency Management Director peteweaver@mail.maricopa.gov
Or
Cristina Herrera, Mitigation Planner cristinaherrera@mail.maricopa.gov

Public Comments will be accepted through October 16, 2009

What is hazard mitigation planning?

Hazard mitigation planning is a ***process*** for State, local, and Indian Tribal governments to identify policies, activities, and tools to implement mitigation actions. Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. This process has four steps:

1. Organizing resources;
2. Assessing risks;
3. Developing a mitigation plan; and
4. Implementing the plan and monitoring progress.

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

In 2003 and 2004, Maricopa County, two Indian Tribes, and all incorporated cities and towns in Maricopa County, participated in a multi-jurisdictional mitigation planning effort that resulted in the development of a multi-jurisdictional hazard mitigation plan with separate plans that covered each participating jurisdiction. The Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2004) and all of the separate plans received official Federal Emergency Management Agency (FEMA) approval on November 29, 2004. The 2004 Plan was designed to meet the federal regulations set forth by the Disaster Mitigation Act of 2000, which requires all local, county, tribal and state governments to develop a multi-hazard mitigation plan for their respective jurisdictions in order to be eligible to receive certain hazard mitigation and public assistance funds.
The 2004 Plan is nearing the end of the 5-year planning cycle and is set to expire in November 2009. The Maricopa County Department of Emergency Management (MCDEM) applied for and received a planning grant to fund a multi-jurisdictional effort to review, update and consolidate the 2004 Plan, with resubmittal to FEMA prior to its expiration in November 2009.

Plan Update Process

MCDEM initiated the update process in December 2008. The plan update process will require the regrouping of the Maricopa County Hazard Mitigation Planning Team, which originally was comprised of one or more lead contacts from each participating jurisdiction as well as public utilities, hospitals, police, fire and sheriff's departments, and other public and private entities.
Input must be obtained from neighboring communities, local and regional agencies involved in hazard mitigation activities and agencies having authority to regulate development including businesses, academia and other private and non-profit interests. The Hazard Mitigation Planning Team will be meeting regularly to review, revise, and/or update of the following elements:

- **Previously identified hazards that may impact or have impacted the community**
- **Profiles of the most relevant hazard events**
- **Assessment of vulnerability to hazards**
- **Assessment of the communities' capability to mitigate hazards**
- **Hazard mitigation goals and objectives for the community**
- **Hazard mitigation actions and/or projects**
- **Implementation strategy for the plan**
- **Plan maintenance strategy for the next 5-year cycle**
- **Write and officially adopt plan**

STAKEHOLDER MEETINGS

To meet the goal of having an approved plan by November 2009, a meeting calendar running from January 2009 to July 2009 has been established.

Stakeholder Meeting #1 - Minutes
Stakeholder Meeting #1 - Material
Stakeholder Meeting #1 - State Hazard Mitigation Measures checklist
Stakeholder Meeting #2 - Minutes
Stakeholder Meeting #2 – CPRI Guidance
Stakeholder Meeting #2 – Calculation Template
Stakeholder Meeting #3 – Minutes
Stakeholder Meeting #4 – Minutes

PUBLIC INVOLVEMENT

The public is welcome to attend of the stakeholder meetings and encouraged to participate and comment on the plan during its drafting stages and prior to seeking final approval from the Federal Emergency Management Agency. To submit comments online, please use the links below.

FOR MORE INFORMATION:

For more information or to submit comments and questions, call the Maricopa County Department of Emergency Management at 602-273-1411 or one of the contacts below:

Cristina Herrera, Emergency Planner
Maricopa County
Department of Emergency Management
5630 E. McDowell Road
Phoenix, AZ 85008
(602)273-1411
Fax: (602)275-1638

W. Scott Ogden, P.E., CFM
Mitigation Planning Consultant
JE Fuller
8400 S. Kyrene Road, Suite 201
Tempe, AZ 85284
(480)222-5717
Fax: (480)839-2193

AZ Emergency Management

AZ Dept. of Homeland Security

FEMA

U.S. D ept. of Homeland Security

Red Cross

Transportation Security Administration (TSA)

Events Calendar

Preparedness

Local Emergency Planning Committee (LEPC)

Community Emergency Response Team (CERT)

Palo Verde Nuclear Generation Station Special Assistance Survey

Search Emergency Management

Go

Home

Contact Us

Sitemap

Maricopa County || 301 W. Jefferson St. || Phoenix, AZ 85003
602-506-3011

MEETINGS & EVENTS

Public Meeting Agendas
Calendar of Events 10/02
· Arts Advisory Committee
· Board of Adjustment
· Hillside Building Committee
· Historical Advisory Committee
· Mary Ann Brines Exceptional Performance Award Committee
· Mummy Mountain Preserve Trust
· Municipal Property Corporation Summary
· Personnel Appeals Board
· Planning Commission
· Public Safety Personnel Retirement Board
· Town Council
- Water Utility Committee
· Notice of Possible Quorum for October

Staff reports and meeting information packets are available for public review at Town Hall.

PUBLIC NOTICE
Hazard Mitigation Plan

The Town of Paradise Valley has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and consolidate them into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we

respond to emergencies like floods and wildfires, but rather how we as a community might lessen or even prevent the impact of such things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation PLAN will also ensure the community's continued eligibility for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated PLAN and offer comments. For more information, please visit the multi-jurisdictional planning website at:

http://www.maricopa.gov/Emerg_Mgt/links.aspx

or contact: Bob Lee, Town of Paradise Valley Building Safety Manager, rlee@paradisevalleyaz.gov

or

Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov

· Home · Town Government · Schools · Places of Worship ·
· Visitor Information · Mummy Mountain Preserve Trust · Goldwater Memorial ·

Town Hall
6401 East Lincoln Drive
Paradise Valley, Arizona 85253

10/14/2009 11:16:43

THE CITY OF PEORIA ARIZONA

Emergency and Safety

Multi-Hazard Mitigation Plan

The City of Peoria has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and consolidate them into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community might lessen or even prevent the impact of such things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation PLAN will also ensure the community's continued eligibility for non-emergency, federal hazard mitigation grants.
Residents are highly encouraged to review the updated PLAN and offer comments.

For more information, please visit the multi-jurisdictional planning website at:
www.maricopa.gov/Emerg_Mgt/links.aspx or contact:

Glen Jones at EmergencyInfo@PeoriaAz.gov, or Cristina Herrera, Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov.

10/14/2009 11:39:55 AM http://www.peoriaaz.gov/content2.asp?id=29568

Office of Emergency Management

The city of Phoenix has partnered with Maricopa County and other towns, cities, and tribal governments located within the county to review and update the existing multi-hazard mitigation plans, and to consolidate the plans into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (Plan) is now available for review and comment.

The goal of mitigation planning efforts is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how a jurisdiction responds to emergencies like floods and wildfires, but rather how preventative measures taken by a jurisdiction might lessen or even eliminate the impact of natural hazards.
The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a jurisdiction, assessing the vulnerability to the hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation Plan will also ensure participating jurisdictions remain eligible for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated Plan and offer comments. For more information, please visit the multi-jurisdictional planning website at:

http://www.maricopa.gov/Emerg_Mgt/links.aspx

or contact:

Michael DeBenedetto or Jeri Todd
Phoenix Office of Emergency Management
michael.debenedetto@phoenix.gov
jeri.todd@phoenix.gov
602-534-0642

or

Cristina Herrera, Maricopa County Department of Emergency Management
cristinaherrera@mail.maricopa.gov

Last modified on 10/19/2009 09:46:32

Maricopa County Multi-Jurisdictional Multi-Hazard Mitigation Plan

The Salt River Project has joined forces with Maricopa County and other jurisdictions around the Valley to review and update the existing multi-hazard mitigation plans and to consolidate them into one multi-jurisdictional, multi-hazard mitigation plan. A final draft of the 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community might lessen or even prevent the impact of such things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation PLAN will also ensure the community's continued eligibility for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated PLAN and offer comments. For more information, please visit the multi-jurisdictional planning website at:

www.maricopa.gov/emerg_mgt/links.aspx

or contact:

Cristina Herrera, Maricopa County Department of Emergency Management

cristinaherrera@mail.maricopa.gov

SALT RIVER FIRE DEPARTMEI

Office of the Emergency Manager

Thank you for visiting the Salt River Pima-Maricopa Indian Community (SRPMIC) Emergency Management site!

It is important that our Community members know that the SRPMIC Government is working very hard to ensure that our C for any type of disaster that may impact the safety or quality of life for our members. Staff in all areas of Government are i prevent, plan, respond, and recover from a disaster or major event in our Community.

One of the most critical components for an effective disaster plan is having Community Members that are educated and p when disaster strikes.

We hope that you will use this website to not only educate yourself on what our Community staff is doing in the area of em but perhaps more importantly, what you and your family can do to prepare for a disaster before it strikes. Please feel free Emergency Management Office if you have additional questions on our Community or your family's emergency preparedn

For additional questions, you can contact Cliff Puckett, the Community's Emergency Manager, at 480 850-4408.

Consolidated Multi-hazard Mitigation Plan

The Salt River Pima-Maricopa Indian Community has joined forces with Maricopa County and other jurisdictions around th update the existing multi-hazard mitigation plans and consolidate them into one multi-jurisdictional, multi-hazard mitigatior 2009 Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (PLAN) is now available for review and comment.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard e how we respond to emergencies like floods and wildfires, but rather how we as a Community might lessen or even preven things in the first place.

The mitigation planning process involved identifying and profiling the natural hazards most likely to occur in a Community, vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update will also ensure the Community's continued eligibility for non-emergency, federal hazard mitigation grants.

Residents are highly encouraged to review the updated PLAN and offer comments. For more information, please visit the planning website or contact SRPMIC Emergency Manager, Cliff Puckett at 480 850-4408 or cliff.puckett@srpmic-nsn.gov Maricopa County Department of Emergency Management, cristinaherrera@mail.maricopa.gov

Community Emergency Response Team (CERT)

The Salt River Fire Department's Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their Community and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.

Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help.

CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

For more information please call Salt River Fire Admin at 480.850.8240 for the next available training session.

Disaster Strikes ... Are you prepared?

In the year 2007 the Salt River Pima-Maricopa Indian Community took a big step in enhancing the safety of our Community. This step was to hire a full time emergency manager to improve our readiness for a disaster or major event that could have a negative impact on our Community members, our land, and our quality of life. Just hiring an emergency manager is only one critical component to having an effective Community emergency plan. One of the most critical components for an effective plan is having Community members that are educated and prepared on what to do when disaster strikes.

The following chart is a basic way to prepare yourself and your family for an emergency situation. For more information you can contact Cliff Puckett, the Community Emergency Manager, at 480 850 American Red Cross website.

Be Prepared. It's as easy as 1, 2, 3.

1 Prepare a Plan	2 Make a Kit	3 Be Informed
Learn about the basic decisions you and your family should be prepared to make in case of an emergency.	**Get tips on how to create a survival kit for any situation.**	**Find out how to keep an eye on your emergency situation and adapt to changing circumstances.**
• Prepare a Plan • Having a Family Plan • Deciding to Stay or Go • Pet Preparedness Plan • Special Item Needs • Utility Breakdown Plan • School Plan • Employer Preparedness • In a Moving Vehicle	• Make a Kit • Portable Kit • Water & Food • First Aid Kit • Clean Air • Special Needs • Warmth • Financial Security • Pet Items • Supply Checklist	Visit www.az211.gov to get updates. Call the Community Emergency Hotline at 480 850-4111. Answer your telephone which may have an emergency message from emergency responders advising you of appropriate action to take.

Emergency Shelter in Place ... Do you know how?

Most people know that there is a chance that they may be asked to evacuate if there is an emergency such as a chemical evacuating, most people would go to a shelter that would be set up by emergency workers, or some would prefer to go to house until it is safe to return. What if the emergency instructions were not to evacuate, but to "shelter in place". Do you kı Would you know what to do to protect yourself and your family? If the answer is "no", you are not alone. Most people are v "shelter in place" really means.

Sheltering in place simply means that you stay in your residents, or current location such as work, and take some general

- Close and lock all windows and exterior doors.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Get your family disaster supplies kit and make sure the radio is working.
- Go to an interior room without windows that's above ground level.
- In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier thar basements even if the windows are closed.
- Bring your pets with you, and be sure to bring additional food and water supplies for them.
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emer
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into t

- Keep listening to your radio, television, telephone until you are told all is safe or you are told to evacuate. Local off evacuation in specific areas at greatest risk in your community.

So remember, evacuating is not the only choice in a disaster or hazardous situation. Sometimes the safest thing for you a shelter in place, and now you know how to do this.

Emergency Messages Delivered to Your Phone

You pick up your telephone at home and it is obviously one of those recorded messages that we all get, usually advertisin could actually be a recorded emergency message that is being sent to your home to advise you and your family of a haza

Our Community is part of the Community Emergency Notification System, known as CENS. CENS is a phone notification emergency information to thousands of home phones in a matter of minutes. If there was a large scale emergency in our C be one of the tools that our Public Safety personnel would use to notify our Community Members, Community Staff, and b Community about the event. The recorded message would advise you of the event and give you some general instruction example if they wanted you to evacuate the area, they would state this and give a location of where you could go for assis situations, it is best to stay in your home. Emergency workers call this shelter in place. This CENS system could notify you give brief instructions on how to do this.

This system can only be used for a true emergency and the use of it is regulated and monitored. There is also a significan which also controls this system from being improperly used. Some additional facts about CENS are as follows:

- It will not leave a message on your cell phone
- If you have caller ID it will come up "Priority Alert" or "Alert Call"
- It is designed to leave a message on an answering machine
- It will call back automatically if it gets a busy signal
- This system is only available to the Maricopa County region

So, the next time you pick up the phone and are tempted to hang up because you think that it is just a recorded advertiser could be an emergency message from emergency workers trying to deliver important information to you in an effort to kee safe.

For additional questions on this system, you can contact Cliff Puckett, the Community's Emergency Manager, at 480 850-

---

From: Cristina Herrera - EMERMGTX
To: W. Scott Ogden;
Subject: FW: Comments on Mitigation of Natural Emergencies
Date: Wednesday, October 14, 2009 11:37:45 AM

Here you go.

Cristina Herrera
Emergency Services Planner
Maricopa County Dept of Emergency Management
5630 E. McDowell Road
Phoenix, AZ 85008
(602)273-1411

From: Pete Weaver - EMERMGTX
Sent: Tuesday, October 13, 2009 1:02 PM
To: 'Robert Marsh'
Cc: Chief Gil Damiani (Gil.Damiani@mesaaz.gov)
Subject: RE: Comments on Mitigation of Natural Emergencies

Mr. Marsh,

Thank you for taking time to review the Maricopa County Multi-jurisdictional Hazard Mitigation Plan. Your comments are greatly appreciated. Yes, the Plan is quite lengthy and includes much information. The Plan describes the purpose and the process taken to update the 2004 Multi-jurisdictional Hazard Mitigation Plan which must be conducted every five years.

The current FEMA requirement for this type of plan is to address natural hazards that can affect the jurisdiction. Grant funding opportunities may be secured as a result of developing a Hazard Mitigation Plan to fund projects that will reduce or eliminate losses from future disasters. For example, elevation of a home to reduce the risk of flood damages as opposed to buying sandbags and pumps to fight the flood.

The Plan does not discuss the protection of the county's mass transportation system specifically. However, the Plan does identify disaster prone areas for the natural hazards that can affect the County region which includes the mass transportation system and other critical infrastructure.

The participating jurisdictions evaluated their city programs to determine their capabilities on implementing hazard mitigation activities. They reported their capabilities in a report form that asked for a "yes/no/don't know" response. This is a continuous planning process in which those areas with gaps are addressed and updated annually.

Continued public involvement is very important in the hazard mitigation planning process. Therefore, making this document available to the public for comments is important. When there is information in the plan that is considered to be sensitive or classified information, a secured log on to access the plan will be explored. We commend you for your understanding that sensitive information should be secure. Other planning efforts for the "non-natural" are underway and will be addressed in a secure legal manner to safeguard the public.

We would like to add that the City of Mesa Emergency Management is very pro-active in planning, response, mitigation and recovery processes and should also be commended for their efforts on these joint projects.

Again, thank you for taking the time to provide public comments to the Maricopa County Multi-jurisdictional Hazard Mitigation Plan. Please let us know if we may be of further assistance.

Respectfully,

Pete Weaver, CEM, MPA

Director, Maricopa County Department of Emergency Management
5630 E McDowell Road,
Phoenix, AZ 85008
Phone: 602-273-1411
Fax: 602-275-1638
E-mail: peteweaver@mail.maricopa.gov

From: Robert Marsh [mailto:robertmarsh@cox.net]
Sent: Tuesday, October 06, 2009 5:25 PM
To: Pete Weaver - EMERMGTX; Cristina Herrera - EMERMGTX
Subject: Comments on Mitigation of Natural Emergencies

Hello Mr. Weaver,

Quickly reviewing the plan I have some comments and questions for you. Honestly, I did not read all the items.

Why would there be any city programs for the county where the response from the county is “don’t know”?

Is there any plan to make access to this information available by secure log on, rather than available to the general public?

Where is the discussion of protecting our county mass transportation system?

Is there a discussion somewhere about items which would be man made disasters which would become natural disasters, other than contamination of the water supply, such as plane crashes, dirty bombs, bus or car highjackings for suicide missions, etc.?

Looks like a lot of work went in to formulating your plans. Congratulations on completing them.

Sincerely,
Robert Marsh
5013 E. Flossmoor Ave.
Mesa, AZ 85206-2834

480-529-2936

Appendix D

Detailed Historic Hazard Records

State and Federally Declared Natural Hazard Events That Included Maricopa County January 1966 to October 2008				
Hazard	No. of Declarations	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	12	0	0	$303,000,000
Dam Failure	0	0	0	$0
Earthquake	0	0	0	$0
Fissure	0	0	0	$0
Flooding / Flash Flooding	16	52	115	$594,150,000
Landslide / Mudslide	0	0	0	$0
Levee Failure	0	0	0	$0
Snow Storm	0	0	0	$0
Sleet / Freezing Rain	0	0	0	$0
Subsidence	0	0	0	$0
Thunderstorm / High Wind	4	0	0	$0
Tornado	0	0	0	$0
Tropical Storm / Huricane	1	0	0	$375,000,000
Wildfire	18	0	0	$0

Notes:

- Damage Costs are reported as is and no attempt has been made to adjust costs to current dollar values

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
2/24/1966	Flooding / Flash Flooding		$43,673	04/30/66	217-DR	$3,256,224	Graham, Greenlee, Maricopa, Pima, Pinal	Floods; state/federal disaster declared. A cold winter storm put up to 1.26 inches of rain in many areas of Tucson. Eleven accidents from slick roads and flooding produced most of the damage in the Tucson area.					$0	ADEM, 2008; Tucson NWS, 2008 at http://www.wrh.noaa.gov/twc/hydro/floodhis.php ;
9/15/1970	Flooding / Flash Flooding		$12,977	09/22/70	294-DR	$9,613,107	Apache, Coconino, Gila, Maricopa, Navajo, Yavapai	The unprecedented flash floods in the central mountains of Arizona Saturday afternoon and evening September 5th, transformed a weekend camping holiday into a nightmarish tragedy for many persons. Never before in the State's recorded weather history had it rained so hard or so much in one day and never before had so many mountain streams and normally dry washes risen so rapidly or filled so fast with raging torrents. All-time previous record crests were exceeded. The 23 lives lost make this the greatest natural disaster in the history of the State. All who lost their lives were away from home and all but four were in automobiles. Fourteen died attempting to flee campgrounds in the headwaters area of Tonto Creek just below the Mogollon Rim and about 30 miles northeast of Payson. Tropical storm Norma produced heavy precipitation along and east of the Baboquivari Mountains and northward to Tucson and Avra Valley. Rapid runoff washed out roads and several bridges near Tucson and flooded homes.	23				$0	ADEM, 2008; AFMA Floods Happen, Spring 2003.
6/15/1972	Flooding / Flash Flooding		$16,158	07/03/72	343-DR	$10,879,002	Maricopa, Pima, Pinal	Flood damages in Maricopa County were over $8,000,000. Scottsdale and Phoenix were hit the hardest.			$8,000,000		$8,000,000	ADEM, 2008
4/28/1973	Wildfire		$36,718				Statewide						$0	ADEM, 2008
4/22/1975	Wildfire		$8,923				Statewide						$0	ADEM, 2008
11/7/1976	Flooding / Flash Flooding		$186,950				Maricopa	Flooding					$0	ADEM, 2008
9/2/1977	Infestation						Statewide	Cotton Crop Pesticide Application					$0	ADEM, 2008
3/2/1978	Flooding / Flash Flooding		$485,718	03/04/78	550-DR	$67,122,627	Statewide	Warm temeratures accompanied by heavy rain filled reservoirs behind all of the dams on the Salt and Verde Rivers and forced large volumes of runoff to be released. This was the largest flow of water down the Salt since 1891. The released water overflowed the channel and flooded residential areas and farmlands. During the same period storm fronts passing over the state caused flash flooding and destruction. 9.53 inches of rainfall occurred on Mt Lemmon. Overflows of the Gila River flooded Duncan and 1000-2000 acres of farmland in Safford Valley. The Rillito Creek, Pantano and Tanque Verde Creeks in Tucson were near bankfull. Total damage was approximately $65.9 million, of which $37 million was attributed to Maricopa County alone. Thousands of homes were damaged and 116 homes were destroyed. More than 7,000 people had to be sheltered and four people lost their lives. For Maricopa County - the storm centered over the mountains north and east of Phoenix, 35 miles north at Rock Springs. Extrapolation of intensity-probability data: 5.73 in./ 24 hr. equates to a 400 yr. storm. Main source of flooding due to Verde River with runoff volume exceeding reservoir storage capacity above Bartlett Dam. Flooding also occurred along irrigation canals on north side of metro area, and along tributaries of the Gila River and Queen Creek. 1 death-countywide. Total damage costs: $37 million: $3.1 million-residential, $16 million-public, $4 million-agriculture, $7.8 million-industrial, $0.75 million-commercial. "Flood Damage Report, 28 February-6 March 1978 on the storm and floods in Maricopa County, Arizona", U.S. Army Corps of Engineers, Los Angles District, FCDMC Library #802.024.	4		$65,900,000		$65,900,000	ADEM, 2008; Tucson NWS, 2008 at http://www.wrh.noaa.gov/twc/hydro/floodhis.php; AFMA Flood Happens, Fall 2003
4/21/1978	Wildfire		$11,528				Statewide						$0	ADEM, 2008
12/16/1978	Flooding / Flash Flooding		$1,909,498	12/21/78	570-DR	$113,561,122	Statewide	Following the spring flooding, Arizona was hit hard again in December 16th-20th. Total precipitation ranged from less than 1 inch in the northeastern and far southwestern portions of Arizona to nearly 10 inches in the Mazatzal Mountains northeast of Phoenix. A large area of the central mountains received over 5 inches. The main stems of the Gila, Salt, Verde, Agua Fria, Bill Williams, and Little Colorado Rivers, as well as a number of major tributaries, experienced especially large discharges. The flooding areas with the most significant damages included the Little Hollywood District near Safford and major portions of Duncan, Clifton, Winslow, and Williams. Damages were estimated at $39,850,000. 10 people die and thousands are left homeless. Severe damage to roads and bridges. For Maricopa County, 4 deaths, $16.3 million-public and $5 million-agriculture losses estimated. ["Flood Damage Report, Phoenix Metropolitan Area, December 1978 Flood", November 1979, U.S. Army Corps of Engineers, FCDMC Library #802.027]	10		$39,850,000		$39,850,000	ADEM, 2008; Tucson NWS, 2008 at http://www.wrh.noaa.gov/twc/hydro/floodhis.php; AFMA Flood Happens, Fall 2003
3/29/1979	Thunderstorm / High Wind		$39,284				Maricopa	High winds and flooding					$0	ADEM, 2008
4/16/1979	Wildfire		$204,207				Statewide						$0	ADEM, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
2/13/1980	Flooding / Flash Flooding		$1,958,611	02/19/80	614-DR	$42,744,642	Maricopa, Gila, Yavapai, Mohave , White Mt. Apache Tribe, San Carlos Apache Tribe, Fort Gila River Indian Community, Fort McDowell Indian Community, Salt River Indian Community	Severe flooding in central Arizona. Record discharges (later broken in 1993) were recorded in the Phoenix metro area on the Salt, Verde, Agua Fria and Gila Rivers, as well as on Oak Creek in north central Arizona. The Phoenix metro are is almost cut in half as only two bridges remain open over the Salt River. It takes hours for people to move between Phoenix and the East Valley using either the Mill Avenue or Central Avenue bridges. Even the Interstate 10 bridge is closed for fear that it has been damaged. Precipitation during this period at Crown King in the Bradshaw Mountains was 16.63 inches. Three people die. Salt River has a peak flow of 170,000 cubic feet per second. Damages estimated at $63,700,000 for Phoenix Metro Area. [Phoenix Flood Damage Survey, February 1980, U.S. Army Corps of Engineers, Los Angles District, FCDMC Library #802.029]	3	3	$63,700,000	$3,000,000	$66,700,000	ADEM, 2008
6/2/1980	Wildfire		$298,845				Statewide						$0	ADEM, 2008
6/16/1980	Wildfire						Statewide	AZ Executive Order 81-5: [Terminating the Declaration of a State of Emergency of June 16, 1980 (caused by a severe forest and grassland fire contingency) and returning all unexpended funds authorized by A.R.S. ° 35-192 to the General Fund.					$0	ADEM, 2008
6/26/1981	Wildfire						Statewide	Fire suppression assitance					$0	ADEM, 2008
6/30/1981	Wildfire		$256,904				Statewide						$0	ADEM, 2008
6/30/1982	Wildfire		$492,635				Statewide						$0	ADEM, 2008
7/23/1984	Flooding / Flash Flooding		$55,373	1/15/1985	730-DR	$505,323	Mohave, Yuma, Maricopa	Flooding and Wind Damage					$0	ADEM, 2008
10/14/1986	Infestation	EUZ60C	$48,897				Maricopa	Imported Red Fire Ants					$0	ADEM, 2008
03/17/1987	Wildfire	EUZSLD					Statewide	Wildland fires statewide					$0	ADEM, 2008
08/12/1987	Drought	EUZ7AU	$14,941				Maricopa, Pima, Pinal	Southern Arizona drought					$0	ADEM, 2008
03/17/1990	Wildfire	EUFIR					Statewide	Wildland fire contingency					$0	ADEM, 2008
09/07/1990	Flooding / Flash Flooding	EUZ901	$1,175,040	12/06/90	884-DR	$5,875,202	Mohave, Gila, Pima, Pinal, Yavapai, Graham, Coconino, Maricopa	Severe storms caused monsoon rains from July 8 through September 14, 1990. Heavy rains and high winds caused flash flooding and wind damage. Havasupai reservation received heavy flood losses. Three lives were lost.	3				$0	ADEM, 2008
2/14/1992	Flooding / Flash Flooding	EUZ922	$35,000				Maricopa	Flooding on Salt River Pima Maricopa Indian Community					$0	ADEM, 2008
01/08/1993	Flooding / Flash Flooding	93003	$30,072,157	01/19/93	977-DR	$104,069,362	Statewide	During January and February 1993, winter rain flooding damage occurred from winter storms associated with the El Nino phenomenon. These storms flooded watersheds throughout Arizona by dumping excessive rainfall amounts that saturated soils and increased runoff. Warm temperature snowmelt exacerbated the situation over large areas. Erosion caused tremendous damage and some communities along normally dry washes were devastated. Stream flow velocities and runoff volumes exceeded historic highs. Many flood prevention channels and retention reservoirs were filled to capacity and so water was diverted to the emergency spillways or the reservoirs were breached, causing extensive damage in some cases (e.g., Painted Rock Reservoir spillway). Ultimately, the President declared a major federal disaster that freed federal funds for both public and private property losses for all of Arizona's fifteen counties. Damages were widespread and significant, impacting over 100 communities. Total public and private damages exceeded $400 million and eight deaths and 112 injuries were reported to the Red Cross (FEMA, April 1, 1993; ADEM, March, 1998).	8	112	$330,000,000	$70,000,000	$400,000,000	ADEM, 2008
09/09/1993	Wildfire	94002	$200,000				Statewide	Statewide wildfire suppression - State Land Department					$0	ADEM, 2008
6/30/1994	Wildfire						Statewide	AZ Executive Order 94-9: In Accordance with Established Emergency Procedures declare a state of emergency in Apache, Cochise, Coconino, Gila, Graham, Greenlee, LaPaz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai and Yuma counties due to wildfire conditions					$0	ADEM, 2008
10/14/1994	Wildfire	95003	$600,000				Statewide	Statewide wildfire suppression - State Land Department					$0	ADEM, 2008
02/15/1995	Flooding / Flash Flooding	95007	$1,525,663				Coconino, Gila, Graham, Geenlee, La Paz, Maricopa, Navajo, Pinal, Yavapai, Yuma	On February 15, 1995, the Governor proclaimed an emergency due to flooding in Coconino, Gila, Maricopa, Yavapai, and Yuma Counties. The proclamation included an allocation of $100,000 for emergency measures and recovery costs. The proclamation was amended to include Graham, Greenlee, LaPaz, navajo, and Pinal Counties.					$0	ADEM, 2008
03/13/1996	Infestation	96003	$796,456				Statewide	Wheat (karnal bunt)					$0	ADEM, 2008
05/16/1996	Wildfire	96004	$1,000,729				Statewide	Statewide wildfire suppression - State Land Department					$0	ADEM, 2008
06/07/1996	Drought	96005	$211,499				Statewide						$0	ADEM, 2008
08/15/1996	Thunderstorm / High Wind	97001	$2,642,140				Maricopa						$0	ADEM, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
09/24/1997	Tropical Storm / Huricane	98002	$2,318,259				Statewide	Hurricane Nora - $200 million property damage. An estimated $150 to $200 million in damage was sustained by crops throughout Yuma County due mainly to flooded crops. About $30 to $40 million was to lemon trees. The heavy rain was attributed to Tropical Storm Nora. Flooding from Hurricane Nora results in the breaching of Narrows Dam. The calculated 24-hour, 100-year rainfall amount in NW Maricopa County was exceeded at six ALERT measuring sites. 3 to 5 inches of rain which fell from Nora led to some flash flooding inportinons of northwest Maricopa County. Two earthen dams gave way in Aguila and caused widespread flooding. One dike was located seven miles east of Aguila and the second in the center of the Martori Farms complex. Half of the cotton crop was lost at Martori Farms, as well as 300 to 500 acres of melons. Up to five feet of water filled Aqguila. About 40 people were evacuated from the hardest hit area of the town. Water flowing down the Sols Wash was so high that the Sols Wash Bridge in Wickenburg was closed for more than two hours. There was some flooding below Sols Wash in the streets around coffinger Park. Several houses in the area were flooded. Highway 71 west of Wickenburg and Highway 95 north were closed due to high water form the storm.			$200,000,000	$175,000,000	$375,000,000	ADEM, 2008
01/20/1999	Infestation	99001	$177,702				Statewide	Red Imported Fire Ant Emergency					$0	ADEM, 2008
05/06/1999	Wildfire	99004	$4,894				Statewide	Statewide wildland fire emergency					$0	ADEM, 2008
6/23/1999	Drought	99006					Statewide	PCA 99006; Statewide Drought Emergency, Declared June 23, 1999: Lack of precipitation had significantly reduced surface and ground water supplies and stream flows. The drought continues to endanger crops, property and livestock of the citizens of Arizona. This proclamation has been extended to June 23, 2003, as this is still a threatening situation. USDA Programs offer Arizona Ranchers Drought Relief, (Phoenix) - Federal officials this week announced three programs designed to ease the impact of Arizona's drought on the state's ranching industry and the state's natural resources. Gov. Jane Dee Hull in June issued a drought declaration for the state, initiating a federal review process that culminated in the U.S. Department of Agriculture's determination that Arizona agriculture could qualify for drought assistance. The following are brief descriptions of the three assistance packages for which Arizona ranchers may qualify: Those ranching operations that earlier this year reduced herd sizes in response to poor pasture conditions and lack of water due to the drought can receive capital gains tax deferment if those herds are replaced within two years, according to the Internal Revenue Service. It is recommended that businesses consult their tax specialist or the IRS for further details. For more information, contact Joe Lane, Associate Director of Animal Services Division, at (602) 542-3629. The USDA Natural Resource Conservation Service has received an initial $6 million through its Emergency Watershed Program (EWP) to treat short- and long-term damage to rangeland and cropland due to drought. Ranchers and farmers can receive financial assistance to implement recovery measures that will retard runoff and reduce the threat of future flooding and erosion hazards. For more information, contact Mike Sommerville, State Conservationist, at (602) 280-8810. The USDA Farm Services Agency has emergency drought assistance loans available. For more information, contact George Arredondo, USDA/FSA State Executive Director, at (602) 640-5200. Arizona's dry winter and low snowpack mostly impacted the state's ranching industry due to poor pasture conditions. Summer rains have improved rangelands throughout Arizona. According to the USDA Arizona Agricultural Statistics Service, as of Aug. 15, range and pasture condition was reported as 6 percent poor, 21 percent fair, 39 percent good, and 34 percent excellent. As much as 99 percent of Arizona's crops are irrigated, generally mitigating short-term drought impacts.					$0	ADEM, 2008
8/13/1999	Drought			08/13/99	USDA		Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	GLICKMAN DECLARES PENNSYLVANIA, 13 ARIZONA COUNTIES AS DISASTER AREAS AND ANNOUNCES ADDITIONAL DROUGHT ASSISTANCE Release No. 0334.99, WASHINGTON, August 13, 1999 Agriculture Secretary Dan Glickman today declared all of Pennsylvania and 13 counties in Arizona as agricultural disaster areas due to drought. The declaration makes farmers in those areas and all contiguous counties eligible for emergency low-interest loans and other assistance to help cover losses from the drought. In Arizona, today's disaster declaration applies to Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, and Yuvapai Counties. Also eligible, because they are contiguous, are La Paz and Yuma Counties. Glickman has already declared all or part of Arizona, Connecticut, Maryland, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Virginia, and West Virginia as disaster areas. Due to the close proximity to these states, certain counties in California, Delaware, Indiana, Kentucky, Massachusetts, Michigan, Nevada, Rhode Island, Vermont, and Utah also qualify for emergency loan assistance.					$0	ADEM, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
9/21/1999	Thunderstorm / High Wind	20004	$2,961,207	10/15/99	1304-DR	$89,017	Maricopa, Cochise	Disaster Summary for FEMA-1304-DR, Arizona. Declaration Date: Oct. 15, 1999. Incident Type: severe storms, high winds and flooding. Incident Period: Sept. 14 through Sept. 23, 1999. Counties Declared and Types of Assistance as of Oct. 15, 1998: Maricopa county for the Individual Assistance program. (1) All counties in the state are eligible to apply for assistance under the Hazard Mitigation Grant Program.					$0	ADEM, 2008
6/23/2000	Drought						Statewide	Annual extension of PCA 99006; Statewide Drought Emergency, Declared June 23, 1999: Lack of precipitation had significantly reduced surface and ground water supplies and stream flows. The drought continues to endanger crops, property and livestock of the citizens of Arizona. This proclamation has been extended until further notice, as this is still a threatening situation.			$2,000,000	$1,000,000	$3,000,000	ADEM, 2008
07/21/2000	Drought			07/21/00	USDA		Apache, Cochise, Graham, Greenlee, Pima, Pinal, Santa Cruz, Gila, Maricopa, Navajo, Yuma	GLICKMAN DECLARES 7 ARIZONA COUNTIES AGRICULTURAL DISASTER AREAS: Washington, July 17, 2000 - Agriculture Secretary Dan Glickman today declared seven of Arizona's 15 counties as agricultural disaster areas due to drought, making farmers in those areas and 12 neighboring counties, including counties in Utah, New Mexico and Colorado, eligible for emergency low-interest loans. "Farmers and ranchers in Arizona are experiencing real difficulties this year due to drought," said Glickman. "USDA emergency low-interest loans are available to help producers to cover some of their losses." Glickman's disaster declaration covers 7 of Arizona's 15 counties: Apache, Cochise, Graham, Greenlee, Pima, Pinal and Santa Cruz. Four other contiguous Arizona counties also are covered by the declaration (Gila, Maricopa, Navajo and Yuma) and therefore are eligible for the same benefits. Other contiguous counties in New Mexico are Catron, Cibola, Grant, Hidalgo, McKinley, and San Juan counties. San Juan county in Utah and Montezuma county in Colorado are included in the declaration as contiguous counties. This designation makes qualified family-sized farm operators in both primary and contiguous counties eligible for emergency low-interest loans from USDA. Farmers in eligible counties have eight months to apply for the loans. Each loan application is considered on its own merits, taking into account the extent of losses, security available, repayment ability, and other eligibility requirements. USDA previously approved emergency haying and grazing on Conservation Reserve Program acreage, providing assistance to approved producers whose pastures have been decimated by drought. For further information, farmers may contact their local Farm Service Agency offices or visit website: http://www.fsa.usda.gov/pas/disaster/assistance1.htm.					$0	ADEM, 2008
10/23/2000	Flooding / Flash Flooding	21104	$1,054,182	10/27/00	1347-DR	$5,251,582	Cochise, La Paz, Maricopa, Pinal, Santa Cruz	In the early morning hours of Sunday October 22, a large low pressure area dumped four to six inches of rain over parts of eastern LaPaz and western Maricopa County. This caused flash flooding in the upper part of the Centennial Wash between the Harcuvar and Harquahala mountain ranges. The heavy runoff flowed into the town of Wenden where water ran over the highway 60 bridge. At its peak the wash was about 3/8ths of a mile wide and 12 feet deep. The resulting high water surged through the town of Wenden with at least 400 residents evacuated. There was extensive damage to the town and for many miles downstream. The reported flow was in excess of 20,000 cfs. When the flood hit Wenden, it inundated some mobile homes, causing them to lift off their foundations and float down the wash. An estimated 125 mobile homes were affected. One migrant worker was killed when flood waters swept through the town during the early morning hours. Additional heavy rainfall hit this area several days later and complicated relief efforts for many of the homeless. A spotter in Wickenburg reported that route 93 was closed north of Wickenburg due to high water. Sols wash was out of its banks and flooded Coffinger Park as well as nearby homes. The Vulture Mine road was closed and motorists had to be rescued. Flood water produced considerable damage to melon and cotton crops in this rural area of northwest Maricopa County. The roads around Aguila were closed for several hours.	1		$8,200,000	$2,000,000	$10,200,000	ADEM, 2008 NCDC, 2008
6/23/2001	Drought						Statewide	Annual extension of PCA 99006; Statewide Drought Emergency, Declared June 23, 1999: Lack of precipitation had significantly reduced surface and ground water supplies and stream flows. The drought continues to endanger crops, property and livestock of the citizens of Arizona. This proclamation has been extended until further notice, as this is still a threatening situation.					$0	ADEM, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
08/17/2001	Thunderstorm / High Wind	22001	$11,805				Maricopa, Pima	A large thunderstorm complex developed over northwest Maricopa County and moved to the south and southwest. The thunderstorm induced gust front, at times over 60 miles long, west to east, caused widespread electric power outages in the Gila Bend area south to Ajo in west Pima County. In the immediate Gila Bend area, thirty-eight 230kv poles downed, and thirty-nine 69kv poles downed. A substation was damaged as well as telephone lines. The reported wind gust of 66 knots was recorded at the Gila Bend municipal airport at 0245. As the gust front moved further to the south and southwest, a total of 140 power poles were blown over as reported by the Arizona Public Service. Electric power services were disrupted up to 5 days.					$0	ADEM, 2008 NCDC, 2008
05/17/2002	Drought			05/17/02	USDA		Statewide	VENEMAN DESIGNATES ARIZONA AS DROUGHT DISASTER AREA, Governor Hull and Veneman Tour Fire Areas and Assess Damage in Prescott National Forest Areas: PHOENIX, Ariz., May 17, 2002--Agriculture Secretary Ann M. Veneman today designated the entire state of Arizona as a drought disaster area. This designation makes Arizona farmers and ranchers immediately eligible for USDA emergency farm loans due to losses caused by drought this year.					$0	ADEM, 2008
5/18/2002	Infestation						Statewide	the Arizona Game and Fish Department placed an emergency ban on the importation of live hoofed animals (e.g., deer and elk) into Arizona due to a fear of Chronic Wasting Disease (CWD). CWD is a disease closely related to “mad cow disease” in cattle and scrapie in domestic sheep and goats but affects dear and elk.					$0	ADEM, 2008
6/23/2002	Drought						Statewide	Annual extension of PCA 99006; Statewide Drought Emergency, Declared June 23, 1999: Lack of precipitation had significantly reduced surface and ground water supplies and stream flows. The drought continues to endanger crops, property and livestock of the citizens of Arizona. This proclamation has been extended until further notice, as this is still a threatening situation.					$0	ADEM, 2008
07/11/2002	Drought			07/11/02	USDA		Statewide	VENEMAN ANNOUNCES EXPANSION OF CRP EMERGENCY HAYING AND GRAZING PROGRAM FOR WEATHER-STRICKEN STATES, WASHINGTON, July 11, 2002 - Agriculture Secretary Ann M. Veneman today approved 18 states for Conservation Reserve Program emergency haying and grazing statewide, making all CRP participants in these states basically eligible for this emergency measure. Veneman also said USDA will waive rental reduction fees to encourage donation of hay to farmers and ranchers in immediate need. "Drought and severe weather conditions have depleted hay stocks and grazing lands across the country," said Veneman. "This approval provides immediate relief to livestock producers and encourages donations of hay to producers who need immediate assistance." The 18 approved states are: Arizona, Colorado, Georgia, Idaho, Kansas, Minnesota, Montana, Nebraska, New Mexico, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Texas, Utah, Virginia and Wyoming.ARIZONA FARMERS FACING CATASTROPHE ... Arizona officials are saying that the losses from the livestock industry alone last year will be upward of $300 million. …				$300,000,000	$300,000,000	ADEM, 2008
07/18/2002	Drought			07/18/02	USDA		Maricopa, Pima, Pinal in the Tohono O'Odham Nation	VENEMAN DESIGNATES COUNTIES IN ARIZONA, CALIFORNIA, TEXAS AND VIRGINIA AS DISASTER AREAS, Decision Allows Farmers and Ranchers to Receive Emergency Farm Loans: WASHINGTON, July 18, 2002 -- In continuing efforts to expedite emergency disaster declarations in areas hit hard by adverse weather conditions, Agriculture Secretary Ann M. Veneman today designated counties in Arizona, California, Texas and Virginia as agricultural disaster areas. This designation makes farmers and ranchers with losses immediately eligible for USDA emergency (EM) farm loans. "These emergency declarations will provide farmers and ranchers with much needed assistance to recover from these natural disasters," said Veneman. "We continue to utilize all existing authorities to provide relief for weather-stricken areas." In Arizona, Maricopa, Pima and Pinal counties in the Tohono O'Odham Nation were named primary disaster areas due to drought.					$0	ADEM, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
5/2/2003	Wildfire	23003	$2,378,020				Statewide	Forest Health Emergency - As a result of the on-going drought conditions the forests within our state have been infested with the Pine Bark Beetle. This proclamation will expedite the clearing of dead, dying and diseased trees and other vegetation that interfere with emergency response and evacuation needs.					$0	ADEM, 2008
6/23/2003	Drought						Statewide	Annual extension of PCA 99006; Statewide Drought Emergency, Declared June 23, 1999: Lack of precipitation had significantly reduced surface and ground water supplies and stream flows. The drought continues to endanger crops, property and livestock of the citizens of Arizona. This proclamation has been extended until further notice, as this is still a threatening situation.					$0	ADEM, 2008
12/29/2004	Flooding / Flash Flooding	25004	$2,131,217	2/17/2005	1581-DR	$5,986,604	Gila, Graham, Greenlee, Pinal, Yavapai, Maricopa, Mohave	A strong Pacific storm system moved across Arizona December 28th and 29th with heavy rainfall. The heavy rain and melting snow resulted in excessive runoff in many areas from Williams to Flagstaff to Winslow and south to Prescott and Black Canyon City. High water, mudslides, and rock slides resulted in numerous road closures and evacuations in the area. Many creeks experienced significant rises. Seventy people were evacuated in southwest Flagstaff when water over-topped an earthen flood control dam. A dozen neighborhoods (about 300 people) along Oak Creek were evacuated in the Sedona area and two neighborhoods down stream. A 14 mile section of Highway 89 between Flagstaff and Sedona was closed because of rock slides. High water on the Verde River forced evacuations in Cornville and Bridgeport. Four RVs were lost in Oak Creek at the Page Springs RV park while 23 vehicles were removed before the water rose too high. About 100 people were evacuated in Black Canyon City in two different mobile-home parks. Portions of Navajo Route 71 and Old Navajo Route 2 were closed northeast of Winslow when the Little Colorado River overflowed the banks. Six families were evacuated near Bird Springs on the Navajo Reservation. All thirty-one low water crossings and seven other streets were closed in Prescott due to flooding. Two passengers were rescued from a stranded vehicle in Prescott. Preliminary counts indicate that as many as 150 homes may have sustained damages up to approximately one million dollars. Roads and bridges sustained an additional one million dollars damage.			$2,000,000		$2,000,000	ADEM, 2008 NCDC, 2008
2/16/2005	Flooding / Flash Flooding	25005	$4,669,352	3/14/2005	1586-DR	$9,536,276	Gila, Graham, Greenlee, Pinal, Yavapai, Maricopa, Mohave	A strong storm system drew moist subtropical air from the Pacific to give northern Arizona widespread moderate to heavy rains. This precipitation event began Thursday night (02/10) and lasted through the early hours on Sunday (02/13). Rainfall totals of 2 to 3 inches were common in many locations...with locally heavier amounts found in portions of Yavapai and Northern Gila counties. Flooding caused road closures in Black Canyon City, Walker, Pinedale, and Globe. Paper Mill Road in Snowflake was washed out by the flood waters. Highway 377 was closed due to flooding between Heber and Holbrook. A trailer park in Black Canyon City was evacuated before the water rose into the parking lot. No trailers were damaged. Minor pasture flooding was reported in Cornville. A trailer park in the community of Tonto Creek was evacuated. Flood waters entered homes in Porter Creek Estates (near Show Low). The Gila River at the Town of Duncan had moderate flooding and the smaller dikes broke allowing water to backup into the town. Damage occurred to a residence near Duncan High School, and a trailer downstream of the high school. Also, U.S. Highway 70 near the high school was covered with four feet of water and the approach ramps to the highway were overtopped with flowing water. East Avenue and low lying areas in the west end of the Town of Duncan were evacuated on the evening of Saturday February 12, 2005. The railroad tracks also on the west end of Duncan were covered with water and power went out in the west side of the town. The San Francisco River at the Town of Clifton had minor flooding reported. There was no damage reported in the Town of Clifton. However, there was water to the bottom of the Railroad Bridge which stopped railroad traffic from the Morenci Mine and minor overflow of the river in the northern end of Clifton. Also, the town gates, designed to divert water away from the Town of Clifton were closed, isolating the town from road and railroad access from the north. The Town of Solomon at the Gila River reported minor flooding. The Solomon Road, Pima Road, and Thatcher Road bridge approaches were all flooded and closed. U.S. Highway 70 Bridge near Bylas was also flooded and closed.			$1,500,000		$1,500,000	ADEM, 2008 NCDC, 2008

State of Arizona Declaration				Federal Presidential Declaration							Damage Estimates			
Date	Hazard	State PCA No.	Expenditures	Date	ID	Expenditures	Counties Affected	Description	Fatalities	Injuries	Property	Crop/Livestock	Total	Sources
2/22/2006	Wildfire	26006	$192,390				Statewide	On February 22, 2006, the Governor declared an emergency due to the driest winter in recorded history coupled with above average temperatures and the earliest recorded start to a wildfire season. The entire state was threatened by extreme wildfire hazards. The 2006 state wildfire presuppression resources strategy required additional financial support. The declaration provided $200,000 for pre-suppression resources to the Arizona State Land Department, Office of State Forester and the Arizona Division of Emergency Management.					$0	ADEM, 2008
6/23/2006	Infestation	26008	$743,000				Cochise, Maricopa, Pima, Pinal, Santa Cruz, Yuma	Glassy-winged sharpshooter infestation - The Glassy-Winged Sharpshooter is a known vector of Xyella fastidiosa, a bacteria that causes plant diseases such asPierce's disease of grapes, almond leaf scorch, alfalfa dwarf, oleander leaf scorch, and citrus verigated chlorosis, that threaten the viability of wine, citrus and other agricultural and horticultural industries as well as public landscapes. The Glassy-Winged has been detected in Arizona in a small isolated location in the city of Sierra Vista, Cochise County. The Arizona Department of Agriculture has been placing detection traps, monitoring and eradicating the Sharpshooter.					$0	ADEM, 2008
9/14/2007	Flooding / Flash Flooding	28002	$200,000				Maricopa, Mohave	On September 14, 2007, the Governor declared a state of emergency for a series of potent monsoon storms and flash floods throughout several communities in Arizona, specifically Mohave County, the Town of Cave Creek and the Town of Mammoth from July 21 – August 6, 2007 and allocated $200,000 to this emergency.					$0	ADEM, 2008

Maricopa County Historic Hazard Events June 1955 to September 2008				
Hazard	No. of Records	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	0	0	0	$0
Dam Failure	1	0	0	$0
Earthquake	0	0	0	$0
Fissure	2	0	0	$2,500
Flooding / Flash Flooding	31	9	7	$101,610,500
Landslide / Mudslide	0	0	0	$0
Levee Failure	0	0	0	$0
Snow Storm	4	1	0	$115,000
Sleet / Freezing Rain	0	0	0	$0
Subsidence	2	0	0	$4,170,000
Thunderstorm / High Wind	193	6	144	$421,055,000
Tornado	44	0	57	$37,220,900
Tropical Storm / Hurricane	0	0	0	$0
Wildfire	4	0	0	$0

Notes:
- No attempt has been made to adjust Damage Costs to current dollar values

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
26-Sep-97	Dam Failure	Tropical Storm Nora moved through the western portion of Maricopa County dumping record breaking precipitation along the way. The Narrows Dam located just north of Maricopa County on Centennial Wash, began filling in the early part of the storm with flows reaching a depth of over two feet in the emergency spillway before the dam itself failed by breach in two locations. The peak discharge estimated from the dam spillway was 2,610 cfs. No downstream damages were reported.		0	0	$0	$0	$0	FCDMC, 2009
01-Mar-01	Dense Fog	Dense fog was reported over much of south central Arizona around sunrise. Three fog-related accidents left 8 people hurt near the intersection of Arizona 347 and Arizona 238 just north of the town of Maricopa. The accidents forced the closure of route 347 from Maricopa to I-10 until about 10:30 am.		0	8	$0	$0	$0	NCDC, 2008
12-Jul-05	Extreme Heat / Cold	This was the third warmest July on record in Phoenix. The average monthly temperature was 97.3 degrees, just 4 tenths of a degree shy of the record warmest July which was set in 2003. The average maximum temperature for the month was 109.5 compared to a normal of 106.6 degrees. Several daily high temperature records were tied or broken, including 115 degrees on July 12, 114 degrees on July 13, and 116 degrees on July 17, the hottest day of the month. The average minimum temperature for July was 85.0 degrees, compared to a normal of 82.9. The daily low temperature records that were tied or broken included July 16, 17, 18, 19 and 21st. The low temperature on July 17 was 93, just 3 degrees shy of the hottest minimum ever in Phoenix. The onset of the wet season, usually around the 7th, was delayed until the 17th. Even after July 17, there was not much humidity, and the total rainfall for the month at Phoenix Sky Harbor airport was only .16 inches. Authorities have attributed 30 deaths to heat, nearly all victims were homeless. M97PH, M66OU, M37VE, F75PH, F75PH, F75PH, M62OT, F81PH, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M65OT, M55OT, M55OT, M55OT, M55OT, M55OT, M55OT, M55OT		30	0	$0	$0	$0	NCDC, 2008
25-Aug-05	Fissure	A fissure in Queen Creek was reopened due to runoff from a thunderstorm causing damages to utlities, fences and driveway access. The event led led to the enactment of HB2639, which called for a statewide identification and public disclosure of fissure hazards.	Queen Creek	0	0	$0	$0	$0	Arizona Land Subsidence Group, 2007. Land subsidence and earth fissures in Arizona: Research and informational needs for effective risk management, white paper, Tempe, AZ, http://www.azgs.az.gov/Earth%20Fissures/CR-07-C.pdf
21-Jul-07	Fissure	The "Y-Crack" fissure was reopened due to runoff from a thunderstorm causing damages to utilities, fences, and vehicles. In one location, the fissure opened up to about 10 feet wide and 12-15 deep under a horse in it's corral, engulfing and killing the horse.	Chandler Heights	0	0	$0	$2,500	$2,500	AZGS, 2007

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
15-Jun-72	Flooding / Flash Flooding	Flood damages in Maricopa County were over $8,000,000. Scottsdale and Phoenix were hit the hardest.		0	0	$8,000,000		$8,000,000	ADEM, 2008
02-Mar-78	Flooding / Flash Flooding	For Maricopa County, the storm centered over the mountains north and east of Phoenix, 35 miles north at Rock Springs. Extrapolation of intensity-probability data: 5.73 in./ 24 hr. equates to a 400 yr. storm. Main source of flooding due to Verde River with runoff volume exceeding reservoir storage capacity above Bartlett Dam. Flooding also occurred along irrigation canals on north side of metro area, and along tributaries of the Gila River and Queen Creek. 1 death-countywide. Total damage costs: $37 million: $3.1 million-residential, $16 million-public, $4 million-agriculture, $7.8 million-industrial, $0.75 million-commercial. "Flood Damage Report, 28 February-6 March 1978 on the storm and floods in Maricopa County, Arizona", U.S. Army Corps of Engineers, Los Angles District, FCDMC Library #802.024.		1	0	$33,000,000	$4,000,000	$37,000,000	Flood Damage Report, 28 February-6 March 1978 on the storm and floods in Maricopa County, Arizona, U.S. Army Corps of Engineers, Los Angles District, FCDMC Library #802.024.
08-Jan-93	Flooding / Flash Flooding	The new Mill Avenue Bridge was washed away by the raging Salt River. A large landfill in Mesa was washed away. The Gillespie Dam west of Phoenix was damaged as high water spread throughout low-lying areas. Many roads closed and motorists stranded by flooded dips and washes. Phoenix alone sustained at least $4.2 million in damages from this prolonged period of heavy rains. This January was the wettest January on record with 5.22 inches at the airport. It was also the 4th all- time wettest month. Total rainfall for both December and January was 8.30 inches; this was the greatest ever for any two consecutive months. Arizona experienced its worst flooding in a decade as record rainfall and associated flooding forced many from homes and disrupted business. The Red Cross reported 678 dwellings destroyed or damaged. Early estimates of damage were at least $56 million statewide. A Presidential Federal Disaster Declaration was requested and signed by the President on January 19th. Several storm systems affected the state before the major storm arrived during the night of January 7-8. Significant precipitation of two to three inches were reported in a few sites between Phoenix and the Mogollon Rim. Moist low-level flow was forced upward and resulted in heavy rain and snow in the highest elevations. Periods of heavy rainfall resulted from the interaction of dynamic forcing and convective instability. The most significant flash flood events occurred when convective rains fell on watersheds already saturated from earlier rainfall. Another factor contributing to the unusually high runoffs and associated flooding was snow melt. The snow level during the 6th to the 8th rose to about 8,500 feet, several thousand feet above typical snow levels. In summary, the combination of a northward-displaced subtropical jet, with its abundant moisture supply and associated disturbances, and a southward-displaced polar jet, with its storm track, led to the abnormally wet period from just after Christmas to mid-January.	Countywide	0	1	$34,500,000	$3,500,000	$38,000,000	Flood Damage Report, State of Arizon, Floods of 1993, U.S. Army Corps of Engineers, Los Angles District, August 1994. NCDC, 2008
20-Jan-93	Flooding / Flash Flooding	While attempting to cross the swollen Agua Fria River, a man fell off his horse and drowned. His body was found 3 miles downstream.(M21O)	New River	1	0	$0	$0	$0	NCDC, 2008
12-Feb-93	Flooding / Flash Flooding	The National Guard was called out to repair and reinforce the dike around San Lucy cemetery, near Gila Bend. Three houses north of Gila Bend were innundated from the rising water from Painted Rock Reservoir. Crops and fields were also inundated by floodwaters.	Gila Bend	0	0	$50,000	$5,000,000	$5,050,000	NCDC, 2008
14-Feb-95	Flooding / Flash Flooding	A man died and three others were injured in a vehicle accident during a heavy down pour of rain. (M47V)	Phoenix	1	3	$0	$0	$0	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
15-Feb-95	Flooding / Flash Flooding	Heavy rains fell on the Salt and Verde water sheds during February the 13th through the 15th. This combined with rain falling on snow pack in the higher mountains of central and northern Arizona lead to flooding and flash flooding. The Verde and Salt water sheds averaged 2.16 and 1.27 inches of rain, respectively, between the morning of February the 13th and the morning of February the 15th. During the night of February the 14th, remote rain gages at Camp Wood, Highland Pine, and Groom Creek, located in the Bradshaw Mountains, reported 5.12 inches of rain, 4.5 inches, and 4.3 inches, respectively. Record flows were observed on the Verde River, at Camp Verde, when the flow peaked at 70,000 cubic feet per second. Flooding was observed downstream at Cornville, where about 60 families were evacuated, another 20 families were evacuated from Camp Verde. Rest areas on Interstate 17, 12 northeast Camp Verde were under water. Automobile size boulders blocked Highway 87, north of Payson. Several people were rescued from Turtle Island, in Oak Creek Canyon. Low land flooding occurred along the Hassayampa and Agua Fria Rivers, also along Tonto Creek. Flood waters from the Hassayampa River, near Wickenburg, washed out 300 to 400 feet of fence, some granite fill, and a blimp hangar. Damage was estimated at $5,500. Five bridges in Coconino County, around the Sedona area sustained minor damage, estimated at $80,000. The park area of Los Abrigados Resort, near Sedona, was completely under water, and a gazebo was destroyed. Damage was estimated at $20,000. Numerous roads were under water and damaged in Oak Creek Canyon, Kachina Village, and behind Lake Mary. These damages were estimated at $500,000.	Wickenburg	0	0	$5,500	$0	$5,500	NCDC, 2008
28-Mar-98	Flooding / Flash Flooding	Three members of a Boy Scout troop perished after their sport utility vehicle was swept out from under them. The scouts tried to cross a running wash near Sunflower. Occasionally heavy rain showers persisted in the area throughout the afternoon and early evening.	Sunflower	3	0	$0	$0	$0	NCDC, 2008
14-Jul-99	Flooding / Flash Flooding	Major storm hit most of the Phoenix metropolitan area with numerous reports of street flooding. At least a half-dozen swift-water rescues, including a dramatic rescue by MCSO helicopter covered by local TV. No major injuries. Freeways and other major roads flooded. Three elderly south Phoenix women momentarily were trapped when their mobile home collapsed in driving rain. The roof of a major business collapsed in Phoenix.	Mesa	0	0	$80,000	$0	$80,000	NCDC, 2008
21-Oct-00	Flooding / Flash Flooding	A spotter in Wickenburg reported that route 93 was closed north of Wickenburg due to high water. Sols wash was out of its banks and flooded Coffinger Park as well as nearby homes. The Vulture Mine road was closed and motorists had to be rescued. Flood waters produced considerable damage to melon and cotton crops in this rural area of northwest Maricopa County. The roads around Aguila were closed for several hours.	Aguila	0	0	$2,000,000	$1,000,000	$3,000,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
27-Oct-00	Flooding / Flash Flooding	The second major storm in a week left considerable flooding in both rural and urban areas. A trailer park in Aguila and another in Buckeye had to be evacuated. Homes in Peoria, Youngtown, Surprise and surrounding areas reported flooding. The hardest hit was the Ventana Lakes subdivision of Peoria. This area expeienced record or near record monthly rainfall totals; one unofficial gauge 15 miles east of Aguila registered 8.79 inches for the month! A gauge in Aguila had 5.05 inches for the month. Department of Transportation estimate of damage to roads and bridges alone was $1,000,000. Dikes and ditches in the agricultural areas sustained major damage in addition to crop losses.	Aguila	0	0	$2,000,000	$1,000,000	$3,000,000	NCDC, 2008
13-Aug-03	Flooding / Flash Flooding	Flash flood in Sols Wash swept the vehicle downstream from Vulture Mine Road	Wickenburg	1	0	$0	$0	$0	NCDC, 2008
28-Aug-03	Flooding / Flash Flooding	Locally heavy rainfall affected a large part of the Phoenix metro area late Tuesday the 26th. The heaviest rain fell north of Sun City where one gage near Surprise recorded about 4 inches. More than 2 inches fell at Antelope Creek near Wickenburg. Washes overflowed and roads were flooded. Several swift water rescues were performed between 183rd Avenue and 187th Avenue. Several homes were damaged by flooding .	North Central Portion	0	0	$50,000	$0	$50,000	NCDC, 2008
04-Sep-03	Flooding / Flash Flooding	Flash Flooding at the entrance to the White Tank Mountain Regional Park near the intersection of Olive Rd and Citrus Rd. Very heavy rain occurred in the area between 7:00 PM and 9:00 PM MST. A vehicle with two male occupants was swept off of Olive Rd. around 8:30 PM MST. The two occupants attempted to leave the vehicle and were swept down the wash approximately 60 yards. A swift water rescue by law enforcement had to be conducted after they became trapped in rushing water approximately 3 feet deep. The individuals suffered minor injuries (cuts and bruises) as a result of the incident.	Waddell	0	2	$0	$0	$0	NCDC, 2008
30-Jul-05	Flooding / Flash Flooding	Very heavy rainfall, about 2 inches per hour, caused flooding of low spots and washes. The peak flow in Hartman Wash, was reported as 1200 cfs. Major damage occurred at Bear Cat Manufacturing where a large robotic welding building was destroyed by the flood.	Wickenburg Muni Arpt	0	0	$3,000,000	$0	$3,000,000	NCDC, 2008
02-Aug-05	Flooding / Flash Flooding	One of the heaviest rainfall events of the 2005 season struck the greater Phoenix metropolitan. Almost 3 inches of rain fell at many locations in the metro, causing roofs to collapse and streets to flood quickly. Up to 120 residents at the Crystal Creek Apartments in Phoenix were evacuated after 83 apartment units were damaged by flood waters. Additional roof damage was reported at the Scottsdale Community College, and Osco Drug store in Mesa, and a Frys grocery store in Tempe.	Phoenix	0	0	$1,000,000	$0	$1,000,000	NCDC, 2008
09-Aug-05	Flooding / Flash Flooding	Heavy rains during the afternoon flooded highways and roads. A few business buildings and residential homes were damaged by flash flood waters. An off-duty National Weather Service employee reported that a two hour rainfall of 3.18 inches occurred prior to 17:30 MST.	Mesa	0	0	$50,000	$0	$50,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
09-Aug-05	Flooding / Flash Flooding	Heavy rains from widespread thunderstorms caused flash flood waters to over-flow washes from New River east to the Seven Springs area and Camp Creek. Rainfall runoff was higher than normal in the Cave Creek Complex area and contributed significantly to the rapid flooding. The first fatality involved a pickup truck with a horse trailer; the driver attempted to drive on a flooded road and the vehicle was swept away drowning the driver. The second fatality involved a seven year old girl who was being evacuated from a home along Camp Creek. The rescuer and the young girl attempted to cross the flooded creek on foot where the girl slipped from the grasp of the adult and was swept away and drowned.	New River	2	0	$300,000	$0	$300,000	NCDC, 2008
31-Aug-06	Flooding / Flash Flooding	Very heavy rainfall...up to 1.61 inches...left many washes and streets flooded in the Wittmann area. Up to 6 inches of water was flowing across U.S. 60 at one point. One half inch of rain fell in Wickenburg in less than an hour. Small hail accompanied some of the heavy showers and thunderstorms.C227	Wittmann	0	0	$5,000	$0	$5,000	NCDC, 2008
09-Sep-06	Flooding / Flash Flooding	Several roads reported flooded in town after torrential rainfall hit in a short period. One gauge indicated nearly 2 inches in 30 minutes. A wash overflowed its banks, flooding a nearby home with water up to 18 inches deep.	Wickenburg	0	0	$100,000	$0	$100,000	NCDC, 2008
21-Jul-07	Flooding / Flash Flooding	Heavy rains fell at Queen Creek, with 1.61 inches at the Queen Creek landfill and 1.54 inches at East Maricopa Floodway and Queen Creek Road. High water forced road closures at Hunt and Ellsworth and the Magic Ranch subdivision. At least one car stalled in high water at Hunt Highway and Hawes.Portions of three counties experience flash flooding.	Queen Creek	0	0	$20,000	$0	$20,000	NCDC, 2008
23-Jul-07	Flooding / Flash Flooding	Thunderstorms and very heavy rainfall spread across much of the area. A spotter in Carefree reported 1.5 inches of rain in less than one hour...and many roads and low spots were flooded. A wastewater treatment plant and a park was damaged in Carefree. Flooding was reported in Queen Creek, where a water line was damaged from the flash flood and resulted in the closure of Higley Road. A large ground fissure resulted from flooding at Queen Creek and 195th Street, and near Happy Road south of San Tan Blvd. One horse was reported killed in this fissure. |Very moist and unstable air resulted in widespread showers and thunderstorms across much of South-Central Arizona. Many roads and low spots became flooded by late afternoon.	Cave Creek	0	0	$200,000	$0	$200,000	NCDC, 2008
25-Jul-07	Flooding / Flash Flooding	About 1.5 inches of rain in less than an hour resulted in flooding in Wickenburg. Torrential rainfall rates, about 2 inches per hour, fell in Phoenix. A roof of a central Phoenix Safeway store caved in due to the rainfall. Phoenix Fire Department rescued a 12 year-old from a flooded area near 35th Avenue and Loop 101.Scattered thunderstorms and moderate to heavy rainfall spread across many desert areas.	Wickenburg	0	0	$100,000	$0	$100,000	NCDC, 2008
26-Jul-07	Flooding / Flash Flooding	A vehicle attempted to cross a flooded roadway and became stranded and quickly flipped over. Bystanders at nearby Phoenix International Raceway pulled four young people from the pickup. TV images showed the bystanders breaking out the windows, reaching inside the overturned pickup, and tossing the two young childrem to other rescuers.Afternoon thunderstorms and very heavy rainfall resulted in flooding.	Avondale	0	1	$5,000	$0	$5,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
30-Jul-07	Flooding / Flash Flooding	Locally heavy rains resulted in flooded streets and considerable water in washes and other low-lying areas. A car stalled at Country Club Drive underneath the Broadway Road bridge where about 2 feet of water had accumulated. Several water rescues were made when vehicles became stuck in flooded areas on Carefree highway.|Heavy rains first hit the northwest part of Maricopa County, then spread into the Metro Phoenix area. Many streets were flooded, trees downed and considerable property damage.	Aguila	0	0	$150,000	$0	$150,000	NCDC, 2008
31-Jul-07	Flooding / Flash Flooding	Roads closed in north Scottsdale. At least 6 water rescues. Several automatic gauges reported between 1.5 and 2.0 inch per hour rainfall rates. Floodwaters caused $2 million of damage at Desert Sun Elementary School in North Scottsdale.Very heavy rainfall accompanied thunderstorms over much of Maricopa County. Strong and gusty winds were also reported with some of the more intense storms.	Scottsdale Muni	0	0	$2,000,000	$0	$2,000,000	NCDC, 2008
01-Dec-07	Flooding / Flash Flooding	Several spotters reported flooding of roads in the Cave Creek area. Washes and low spots draining into the Cave Creek were also flooded. Additional reports of flooding were received. One of the heaviest 24 hour amounts was 3.94 inches at Fraesfield Mountain in Carefree.Locally heavy rains and the resulting runoff contributed to flooded roads in North Central Maricopa County.	Cave Creek	0	0	$20,000	$0	$20,000	NCDC, 2008
07-Jan-08	Flooding / Flash Flooding	Emergency crews rescued a 61 year old man who attempted to drive his pickup truck across Cave Creek Wash at Desert Hills Road.The last in a series of storm systems resulted in heavy rainfall in a few areas. Carefree Ranch reported a 24 hour total of 1.30 inches on Monday. The runoff from these recent rains left some low spots and highway dips flooded. Motorists who tried to cross low spots and washes in northern Maricopa County had to be rescued.	Cave Creek	0	0	$5,000	$0	$5,000	NCDC, 2008
13-Jul-08	Flooding / Flash Flooding	A record daily maximum rainfall of 1.30 inches was set at Sky Harbor Airport. Other reports of heavy rain included .90 inch in 20 minutes in Tempe, and 1.00 inch in 20 minutes near Wickenburg.Showers and thunderstorms produced very heavy rainfall totals across parts of South-Central Arizona.	Sky Harbor Int Arpt	0	0	$20,000	$0	$20,000	NCDC, 2008
13-Jul-08	Flooding / Flash Flooding	Numerous streets and highways reported flooded in Phoenix and Tempe. One spotter near Guadalupe and McClintock picked up 2 1/2 inches in just 45 minutes. One unofficial report near Baseline and I-10 included 3.75 inches from this storm. A roof of a charter school in Ahwatukee was reported to have collapsed from the accumulated rain water.Showers and thunderstorms produced very heavy rainfall totals across parts of South-Central Arizona.	Buckhorn	0	0	$400,000	$0	$400,000	NCDC, 2008
28-Aug-08	Flooding / Flash Flooding	Many reports of large hail that accompanied several waves of thunderstorms across the city of Phoenix.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	West Chandler	0	0	$50,000	$0	$50,000	NCDC, 2008
06-Jan-97	Snow Storm	A cold winter storm created snowfall at unusually low elevations. A trace of snow was recorded at Tucson, and 4 to 10 inches at elevations between 4000 and 6000 feet. This storm closed schools, stranded many motorists, caused broken water pipes, and caused the death of many ostriches at commercial farms.C103		0	0	$100,000	$0	$100,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
01-Apr-99	Snow Storm	Rain, wind, and snow in the mountains spread across a large part of Arizona. Snow was reported at the 3600 foot elevation in Carefree, north of Phoenix. Several inches of snow fell in parts of Gila County where roofs were damaged and trees taken down by snow at Top of the World, near Globe. Three inches of snow canceled play Friday at the Tradition golf tournament in north Scottsdale, and the final round on Sunday was canceled. A rock slide disrupted traffic at Gonzalez Pass west of Miami, Arizona.		0	0	$10,000	$0	$10,000	NCDC, 2008
05-Mar-00	Snow Storm	Snow accumulated to between 2 and 4 inches in the higher elevations of southern Gila county and northern Maricopa county. A hiker died along the Seven Springs trail, northwest of Bartlett Lake, due to hypothermia.		1	0	$0	$0	$0	NCDC, 2008
11-Mar-06	Snow Storm	Power to a number of communities was knocked out as heavy snow broke tree limbs and took out power lines. At one point, 20,000 APS customers were without power, mainly affecting Globe, Miami, and Superior. Numerous trees and branches were down at the Boyce Thompson Arboretum near Superior. Unusually heavy snow was reported from observers in areas to the north and east of the Phoenix metro area, with 10 inches on the ground at Punkin Center. Heavy rainfall also occurred at Queen Creek, where one gauge recorded 3.39 inches up to 9 pm Saturday. This event also ended the 143-day record long streak of days without any measurable rain in Phoenix.		0	0	$5,000	$0	$5,000	NCDC, 2008
20-Sep-92	Subsidence	Subsidence near the base led to flow reversal in a portion of the Dysart Drain, an engineered flood conveyance. On September 20, 1992, surface runoff from four inches of precipitation caused the sluggish Dysart Drain to spill over flooding the base runways, damaging more than 100 homes, and forcing the base to close for 3 days. Total damage was on the order of $3 million	Litchfield Park	0	0	$3,000,000	$0	$3,000,000	Schumann, H. H. (1995). Land Subsidence and Earth fissure hazards near Luke Air Force Base, Arizona. In K. R. Prince, D. L. Galloway, & S. A. Leake (Eds.), U.S. Geological Survey subsidence interest group conference, Edwards Air Force Base, Antelope Valley, California, November 18–19, 1992—abstracts and summary (pp. 18-21). Sacramento, CA: U.S. Geological Survey. (Open-File Report No. 94-532)
01-Jan-92	Subsidence	Sections of the CAP canal in Scottsdale traverse an area that has subsided up to 1.5 feet over a 20-year period, threatening the canal's maximum flow capacity. In response, CAP raised the canal lining 3 feet over a one-mile segment of affected area at a cost of $350,000. A second and much larger subsidence area was later identified near the Scottsdale Airpark. Plans for raising the canal lining will cost an estimated $820,000. Recently, a third subsidence area has been identified east of the Scottsdale Airpark in the Scottsdale WestWorld area. This happened in spite of the fact that during the original design phase, CAP Engineers showed considerable foresight in mapping a route to minimize the likelihood of encountering zones of subsidence	Scottsdale	0	0	$1,170,000	$0	$1,170,000	Gelt, J. (1992, Summer). Arroyo, 6(2). University of Arizona Water Resources Research Center (Ed.). Retrieved from http://www.ag.arizona.edu/AZWATER/arroyo/062land.html
29-Jul-85	Thunderstorm / High Wind			0	6	$0	$0	$0	NCDC, 2008
29-Jul-85	Thunderstorm / High Wind			0	6	$0	$0	$0	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
29-Jul-85	Thunderstorm / High Wind			0	12	$0	$0	$0	NCDC, 2008
25-Jun-86	Thunderstorm / High Wind			0	1	$0	$0	$0	NCDC, 2008
29-Oct-87	Thunderstorm / High Wind			0	4	$0	$0	$0	NCDC, 2008
10-Jul-88	Thunderstorm / High Wind			1	6	$0	$0	$0	NCDC, 2008
28-Jul-88	Thunderstorm / High Wind			0	1	$0	$0	$0	NCDC, 2008
29-Jul-88	Thunderstorm / High Wind			0	1	$0	$0	$0	NCDC, 2008
14-Oct-88	Thunderstorm / High Wind			0	3	$0	$0	$0	NCDC, 2008
17-Aug-89	Thunderstorm / High Wind			0	1	$0	$0	$0	NCDC, 2008
08-Feb-93	Thunderstorm / High Wind	Large trees were blown down and a plate glass window was destroyed.	Phoenix	0	0	$500	$0	$500	NCDC, 2008
12-May-93	Thunderstorm / High Wind	Straight line winds snapped off about 20 power poles, blew shingles off the roof of the Super 8 motel, and damaged a storage shed. Power was off for much of this area for most of the day.	Gila Bend	0	0	$50,000	$0	$50,000	NCDC, 2008
05-Aug-93	Thunderstorm / High Wind	Strong winds from nearby thunderstorms exceeded 50 mph in many areas of the Valley. Homes and businesses sustained damage, trees were uprooted and power lines were downed. Arizona Public Service reported 10,000 customers without power. An 8-year-old boy in Avondale was severely injured just after 1800 MST when a window burst and glass cut his jugular vein. The roof of a convenience store was blown off, as well as some damage to a church and an elementary school. A 1-mile section of a 69,000-volt power line near Perryville was knocked down. High winds blew tree limbs onto power poles and took shingles off several homes.	Mesa	0	0	$50,000	$0	$50,000	NCDC, 2008
05-Aug-93	Thunderstorm / High Wind	Strong winds from nearby thunderstorms exceeded 50 mph in many areas of the Valley. Homes and businesses sustained damage, trees were uprooted and power lines were downed. Arizona Public Service reported 10,000 customers without power. An 8-year-old boy in Avondale was severely injured just after 1800 MST when a window burst and glass cut his jugular vein. The roof of a convenience store was blown off, as well as some damage to a church and an elementary school. A 1-mile section of a 69,000-volt power line near Perryville was knocked down. High winds blew tree limbs onto power poles and took shingles off several homes.	Avondale	0	1	$5,000,000	$0	$5,000,000	NCDC, 2008
06-Aug-93	Thunderstorm / High Wind	One mobile home overturned due to high winds. Several power poles blown down near Palo Verde Nuclear Generating Station. About 5,000 homes near Sun City were left without electricity.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008
08-Aug-93	Thunderstorm / High Wind	Thunderstorms downed power lines and caused minor damage to a home.	Buckeye	0	0	$5,000	$0	$5,000	NCDC, 2008
09-Aug-93	Thunderstorm / High Wind	The Mountain Gate Mobile Home Park was hit by strong winds from thunderstorms that moved north through the city. Seventy-six units were damaged, with six being destroyed and four having major damage. About 10,000 customers lost power for varying amounts of time.	Phoenix	0	0	$500,000	$0	$500,000	NCDC, 2008
20-Aug-93	Thunderstorm / High Wind	Many roofs were damaged as this storm moved rapidly north through Mesa. Most of the damage was near Brown and Power roads. In nearby Fountain Hills, more homes sustained roof damage, trees uprooted as winds reached an estimated 70 mph. In the area, up to 36 power poles were downed by the high winds.	Fountain Hills	0	0	$500,000	$0	$500,000	NCDC, 2008
20-Aug-93	Thunderstorm / High Wind	Many roofs were damaged as this storm moved rapidly north through Mesa. Most of the damage was near Brown and Power roads. In nearby Fountain Hills, more homes sustained roof damage, trees uprooted as winds reached an estimated 70 mph. In the area, up to 36 power poles were downed by the high winds.	Mesa	0	0	$500,000	$0	$500,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
11-Mar-94	Thunderstorm / High Wind	A seven car accident was blamed on low visibility due to dense blowing dust at Interstate 10 and Maricopa Road. Two minor injuries were reported.	Tempe	0	2	$0	$0	$0	NCDC, 2008
25-May-94	Thunderstorm / High Wind	About ten trees, one of which was a 60-foot-tall Eucalyptus tree, were uprooted or snapped in half by a thunderstorm microburst which roared through a condominium complex in far north Scottsdale. Some tiles were ripped off roofs, and a few car windows were also broken. One car was severely damaged when the Eucalyptus tree toppled onto it.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008
28-Jul-94	Thunderstorm / High Wind	A cluster of severe thunderstorms moved west across the Phoenix metropolitan area between 7 and 8 pm. The thunderstorms toppled and uprooted large trees, blew shingles off roofs, and downed power lines. Lightning also struck a manufacturing plant, and the resulting fire destroyed the building and its contents.	Phoenix	0	0	$5,000,000	$0	$5,000,000	NCDC, 2008
02-Sep-94	Thunderstorm / High Wind	Severe thunderstorms ripped through the greater Phoenix area with winds in Chandler estimated between 60-65 mph. A weather spotter at 7th St. and Glendale Ave. measured 1.75 inch rain in 50 minutes. Phoenix Sky Harbor Airport, received 1.36 inch. Extensive street flooding was reported around the valley with water three to five feet deep in some underpasses. Numerous trees, both medium and large were blown down. A house caught fire from lightning. A roof and air conditioning unit were blown off a house on 15th Ave., south of Indian School Road. Over 129,000 customers lost power. Seventy power poles were blown down in the Queen Creek area, and another 50 poles near 7th Avenue and Baseline Road. Thunderstorm winds blew out a store front window causing an estimated $6000 damage. A 22-year-old man was killed by lightning while trying to retrieve his vehicle in a parking lot. (O22M)	Chandler	0	0	$50,000	$0	$50,000	NCDC, 2008
02-Sep-94	Thunderstorm / High Wind	Severe thunderstorms ripped through the greater Phoenix area with winds in Chandler estimated between 60-65 mph. A weather spotter at 7th St. and Glendale Ave. measured 1.75 inch rain in 50 minutes. Phoenix Sky Harbor Airport, received 1.36 inch. Extensive street flooding was reported around the valley with water three to five feet deep in some underpasses. Numerous trees, both medium and large were blown down. A house caught fire from lightning. A roof and air conditioning unit were blown off a house on 15th Ave., south of Indian School Road. Over 129,000 customers lost power. Seventy power poles were blown down in the Queen Creek area, and another 50 poles near 7th Avenue and Baseline Road. Thunderstorm winds blew out a store front window causing an estimated $6000 damage. A 22-year-old man was killed by lightning while trying to retrieve his vehicle in a parking lot. (O22M)	Tempe	1	0	$0	$0	$0	NCDC, 2008
04-Sep-94	Thunderstorm / High Wind	About 100 trees were uprooted by thunderstorm winds at a Scottsdale country club. Damage was estimated at $50,000.	Scottsdale	0	0	$500,000	$0	$500,000	NCDC, 2008
13-Sep-94	Thunderstorm / High Wind	A micro burst struck a school building at the Littleton Elementary School in the community of Cashion, two miles SW of Tolleson. The roof was torn off about eight classrooms with one teacher and eight children being injured. A National Weather Service Storm Survey Team estimated winds of 100 mph. A teacher reported the ground covered with hail, some golf ball-size. A weather spotter at 75th Avenue and Camelback Road reported 1.25 hail. A mile long stretch of power poles were downed near 107th Avenue and Interstate 10. Damage to the school was estimated in excess of $500,000.	Cashion	0	9	$5,000,000	$0	$5,000,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
21-Feb-95	Thunderstorm / High Wind	Three ground crew personnel were injured by a lightning strike, at Phoenix Sky Harbor Airport. An aircraft was being moved when lightning struck the tail of the plane.	Phoenix	0	3	$0	$0	$0	NCDC, 2008
28-Jul-95	Thunderstorm / High Wind	Strong microburst winds from a high-based thunderstorm moved through the Litchfield Park area around 2050 MST. A spotter in Litchfield Park reported roof and tree damage. At the Wigwam Resort, a palm tree and tennis court lights were blown over. At 2305 MST, a store window in Mesa was blown out by microburst winds. Thunderstorm winds up to 70 mph were reported in northwest Phoenix which blew off roofing material, and downed trees and power lines. A high school gymnasium in Scottsdale sustained roof damage from microburst winds which will cost around $98,000 to repair.	Scottsdale	0	0	$98,000	$0	$98,000	NCDC, 2008
27-Sep-95	Thunderstorm / High Wind	A wet microburst hit the town of Queen Creek. A tree was blown over onto a house. A large potato storage shed was destroyed. Wood and metal from the shed along with hail were blown into 12 nearby school buses damaging them all. An office roof was torn off at Queen Creek High School. The high school also had four other roofs and numerous air conditioning units damaged as well as broken windows. An estimated 4,000 to 6,000 acres of cotton in nearby fields were destroyed by wind and hail.	Queen Creek	0	0	$100,000	$0	$100,000	NCDC, 2008
28-Sep-95	Thunderstorm / High Wind	An 80-foot tree crashed into a mobile home bedroom. Numerous reports of downed trees in the area.	Chandler	0	0	$1,500	$0	$1,500	NCDC, 2008
01-Nov-95	Thunderstorm / High Wind	In Glendale, a Salt River Project utility worker received a minor shock when lightning struck about 150 feet away from his pickup. He was treated at the scene and released.	Phoenix	0	1	$0	$0	$0	NCDC, 2008
01-Feb-96	Thunderstorm / High Wind		Apache Junction	0	1	$0	$0	$0	NCDC, 2008
25-Feb-96	Thunderstorm / High Wind	Thunderstorm winds caused damage to 10 mobile homes at the Silveridge RV Resort in East Mesa.	Mesa	0	0	$5,000	$0	$5,000	NCDC, 2008
25-Jul-96	Thunderstorm / High Wind	Strong thunderstorm winds with visibilities reduced by dust toppled a double wide mobile home in transit on I-10 near Picacho.		0	0	$30,000	$0	$30,000	NCDC, 2008
25-Jul-96	Thunderstorm / High Wind	An Aircoupe aircraft was damaged beyond repair when strong winds flipped the plane over. Minimal damage was sustained by two other planes when one blew into the other. Out of a total of 116 hangars at the Chandler Airport, 24 were damaged. Two hangars had door sections torn loose. One hangar door was blown 200 feet.	Chandler Arpt	0	0	$30,000	$0	$30,000	NCDC, 2008
14-Aug-96	Thunderstorm / High Wind	Every town in the western half of the Phoenix Metropolitan Area reported some damage. The hardest hit areas were in northwest Phoenix, Glendale, and Peoria. Other towns that sustained damage were Sun City, Surprise, El Mirage, Tolleson, Avondale, Goodyear, and Buckeye. Approximately 400 power poles were knocked down throughout these towns, 100 owned by SRP and 300 owned by APS. There were from 70,000 to 75,000 homeowner claims for about $100 million in damage.	Phoenix	0	0	$100,000,000	$0	$100,000,000	NCDC, 2008
14-Aug-96	Thunderstorm / High Wind	Two juvenile detention centers, the Adobe Mountain Secure Facility and the Black Canyon Secure Facility, both in north Phoenix, sustained an estimated $250,000 combined damage when strong winds damaged a perimeter fence, blew out a plastic glass window and damaged severaly roofs at the complex. Two support pillars under construction at the Interstate 17 and Loop 101 interchange in north Phoenix buckled from the high winds, with an estimated $250,000 damage.	Phoenix	0	0	$500,000	$0	$500,000	NCDC, 2008
14-Aug-96	Thunderstorm / High Wind	Several large trees were blown over, power poles were blown down, mobile homes were overturned, and buildings were ripped apart. A window was blown out of a mobile home injuring a young woman.	Buckeye	0	1	$0	$0	$0	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
14-Aug-96	Thunderstorm / High Wind	Glendale was one of the hardest hit areas after very powerful thunderstorms ripped through the area. The storm collapsed a the roof of an apartment complex and blew metal dumpsters weighing up to two tons into roadways. Sahuaro Ranch School, 10401 N. 63rd Ave., lost part of its roof. An Albertsons grocery store at 59th Avenue and Beardsley Road was battered by the storm, leaving three people hurt. The storm did extensive damage to the roof of Arrowhead Community Hospital, 18701 N. 67th Avenue. At the Northwest Garden Apartments, 9350 N. 67th Avenue, residents were evacuated after the storm collapsed the roof over eight units. Shingles and twisted sheets of park awnings were scattered across the complex. At the Adobe Mountain Juvenile Correctional Facility, one staff member was slightly injured when windows blew out in one of the units. Fences around the perimeters of the facility were damaged by falling trees. About 40 vehicles were damaged, two of them hit by a dumpster blown through the parking lot.	Glendale	0	4	$0	$0	$0	NCDC, 2008
22-Aug-96	Thunderstorm / High Wind	Gusty thunderstorm winds caused damage and a few injuries at a Fry's Food Store at the intersection of Power Road and Baseline Road in East Mesa. The winds lifted a 2000 pound tent and slammed it against a truck. The glass-covered artwork beneath the tent shattered and caused minor cuts to two people. A teenage boy was thrown into a grocery cart corral and treated at a local hospital for back injuries. Several cars in the parking lot sustained dents from flying debris.	Mesa	0	3	$0	$0	$0	NCDC, 2008
02-Sep-96	Thunderstorm / High Wind	Lightning-induced fire caused extensive damage to a home in the 6100 block of East Inglewood Street.	Mesa	0	0	$63,000	$0	$63,000	NCDC, 2008
02-Sep-96	Thunderstorm / High Wind	Lightning struck a home in the 1300 block of South Nassau which started a blaze in the attic and caused extensive structural damage and damage to the home's contents.	Mesa	0	0	$90,000	$0	$90,000	NCDC, 2008
10-Jul-97	Thunderstorm / High Wind	Downburst winds from nearby thunderstorms kicked up a thick cloud of dust as it moved across plowed fields. This cloud of dust then moved across interstate 10 between Red Rock and Picacho reducing visibilities to zero at times. This resulted in 12 collisions involving about 30 vehicles. Twenty-five people were injured, but 19 were only minor.		0	25	$200,000	$0	$200,000	NCDC, 2008
26-Aug-97	Thunderstorm / High Wind	Lightning struck a house in Chandler slightly injuring a woman. It struck phone lines, power lines, and plumbing in the house igniting a blaze which caused an estimated $50,000 damage to the upstairs bathroom, bedrooms, and attic. The woman was injured while talking on the phone when the lightning travelled along the phone cord and grazed her face and neck.	Chandler	0	1	$50,000	$0	$50,000	NCDC, 2008
31-Jul-98	Thunderstorm / High Wind	About 60 power poles damaged or destroyed by winds gusting to at least 60 mph. Along Power Road some lines fell onto several cars.	Mesa	0	0	$500,000	$0	$500,000	NCDC, 2008
11-Aug-98	Thunderstorm / High Wind	Winds took down 6 power poles, and forced the closure of I-10 for 1 1/2 hours. A squad car from the Buckeye Police Department received minor damage when crushed by a falling power pole. Two private planes from Pierce Aviation were destroyed and several other planes were damaged by high winds. The roof of the administration building was damaged by the storm.	Buckeye	0	0	$150,000	$0	$150,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
12-Aug-98	Thunderstorm / High Wind	A strong to severe complex of storms formed northeast of Wickenburg and moved to the southwest and intensified. The storms produced severe damage to at least 2 aircraft at the Wickenburg airport. About 6 power poles were blown down, and evaporative coolers were blown off roofs. Large tree limbs were broken off in Wickenburg. Sheriff's deputies rescued a boater and eight passengers on Lake Pleasant.	Wickenburg	0	0	$300,000	$0	$300,000	NCDC, 2008
25-Oct-98	Thunderstorm / High Wind	For the third time on this day, Fountain Hills was hit by high winds that blew sand and debris into streets along with hail and heavy rain.	Fountain Hills	0	0	$10,000	$0	$10,000	NCDC, 2008
25-Oct-98	Thunderstorm / High Wind	Winds collapsed a mobile home, and blew the roof off another home on the Salt River Pima-Maricopa Indian Community.	Phoenix	0	0	$10,000	$0	$10,000	NCDC, 2008
15-Dec-98	Thunderstorm / High Wind	Lightning struck the plywood roof of a home under construction. A worker was killed when the lightning bolt traveled down a wooden rafter and hit him in the head. Three other workers received minor injuries from this lightning.	Paradise Vly	1	3	$0	$0	$0	NCDC, 2008
05-Jul-99	Thunderstorm / High Wind	Three U.S. Forest Service firefighters were stunned or paralyzed for a few minutes as lightning hit the ground near them. They also suffered some burns on the feet and shoulders.C114	Carefree	0	3	$0	$0	$0	NCDC, 2008
06-Jul-99	Thunderstorm / High Wind	The widespread dust storm sharply reduced visibility along Interstate 10, about 7 miles northeast of Casa Grande. One motorist was killed as a series of wrecks were reported in a 25-mile section of the freeway.		1	14	$0	$0	$0	NCDC, 2008
06-Jul-99	Thunderstorm / High Wind	Lightning triggered a house fire in the 8300 block of N. Via Mia.	Scottsdale	0	0	$5,000	$0	$5,000	NCDC, 2008
06-Jul-99	Thunderstorm / High Wind	Winds blew down trees, power lines and traffic lights in parts of the East Valley. Blowing dust cut the visibility at Sky Harbor airport, delaying up to 50 flights. Many streets flooded and 3 motorists in Sun City were rescued. SRP reported 20 power poles down.	Mesa	0	0	$50,000	$0	$50,000	NCDC, 2008
06-Jul-99	Thunderstorm / High Wind	Very strong winds downed trees and power poles. Although no injuries were reported, 20 wooden power poles supporting 69,000 volt power lines snapped in Fountain Hills, according to SRP crews.	Fountain Hills	0	0	$100,000	$0	$100,000	NCDC, 2008
07-Jul-99	Thunderstorm / High Wind	An entire line of power poles down along McDowell Road between Longmore and Dobson roads.	Scottsdale	0	0	$50,000	$0	$50,000	NCDC, 2008
07-Jul-99	Thunderstorm / High Wind	Widespread area of very strong winds, damaged homes and cut power to at least 11,500 customers around the metropolitan area. Trees and limbs were downed. Official winds to 57 mph were clocked at 43rd Ave and lower Buckeye Road. President Clinton, arrived in Phoenix just before the blinding dust storm moved in. There were delays of up to 90 minutes at the airport. Numerous streets were flooded including streets in Scottsdale, Laveen, Ahwatukee, and Tatun Blvd. No serious injuries reported.	Phoenix	0	0	$70,000	$0	$70,000	NCDC, 2008
10-Jul-99	Thunderstorm / High Wind	High winds tore off a portion of a roof and pushed over a camper on Van Buren Street east of Palo Verde Road. In addition, power poles were blown down just outside of Buckeye.	Buckeye	0	0	$30,000	$0	$30,000	NCDC, 2008
14-Jul-99	Thunderstorm / High Wind	A home in the 3800 block of East San Remo in east Gilbert was struck by lightning causing a 2 foot hole in the concrete shingles on the roof. No fire was involved but most electrical appliances were damaged.C124	Gilbert	0	0	$10,000	$0	$10,000	NCDC, 2008
14-Jul-99	Thunderstorm / High Wind	Power poles down.	Mesa	0	0	$15,000	$0	$15,000	NCDC, 2008
23-Jul-99	Thunderstorm / High Wind	Power poles damaged at 7th Ave and Fillmore. Numerous water rescues due to flooded streets and washes running. Flights at Sky Harbor airport were delayed about a half hour.	Phoenix	0	0	$30,000	$0	$30,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
25-Jul-99	Thunderstorm / High Wind	Buildings damaged or destroyed. One mobile home was tossed about 30 feet down an embankment.	Palo Verde	0	2	$0	$0	$0	NCDC, 2008
27-Jul-99	Thunderstorm / High Wind	Lightning struck and killed a motorcyclist and injured another near Bartlett Dam.	Fountain Hills	1	1	$0	$0	$0	NCDC, 2008
10-Aug-99	Thunderstorm / High Wind	Microburst winds and heavy rain developed over much of north Phoenix around 430 pm. As many as 20 power poles were downed by the high winds, and torrential rain near Rose Garden Lane between 19th and 25th avenues. This left a half-dozen people trapped in their vehicles, but no injuries. At least 17,000 customers were left without power. One motorist escaped injury when steel construction beams were blown onto his vehicle at a freeway construction site at Beardsley and 23rd Avenue. A large moving truck was toppled onto its side by high winds at 19th Avenue and Deer Valley Road..	Phoenix	0	0	$500,000	$0	$500,000	NCDC, 2008
14-Aug-99	Thunderstorm / High Wind	Thunderstorms moved through east Mesa with high winds and rain. At least 20 power poles were reported down with most damage near 80th Street and Southern. Occupants of seven vehicles were trapped in their cars and had to be rescued. Two individuals suffered minor injuries.	Mesa	0	2	$30,000	$0	$30,000	NCDC, 2008
19-Aug-99	Thunderstorm / High Wind	Dense blowing dust and blowing sand accompanied strong winds and heavy rain in much of the metropolitan area. At least one air conditioner was blown from a roof in Phoenix. Flights in and out of Sky Harbor airport were delayed by as much as 90 minutes during the height of the storm. Near zero visibility was reported with winds of 45 mph.	Phoenix	0	0	$5,000	$0	$5,000	NCDC, 2008
22-Aug-99	Thunderstorm / High Wind	Strong winds blew three large concrete walls down at a construction site near 30th Street and Broadway. Winds kicked up dust and sand which lowered visibility to less than 1/4 mile in many areas.	Phoenix	0	0	$15,000	$0	$15,000	NCDC, 2008
27-Aug-99	Thunderstorm / High Wind	Torrential rain, hail and high wind swept through mainly the west Phoenix area. The remnants of hurricane Bret left as much as 2.35 inches of rain in half an hour at 43rd Avenue and Thomas Road. Several sections of a roof at the Desert Sky Mall collapsed due to the microburst wind and rain. No injuries were reported, although several thousand people had to be evacuated. Sections of the roof collapsed just 10 minutes after the evacuations. Numerous power poles were downed between 33rd Ave and 83rd Ave. Department of Public Safety shut down I-10 for about 3 hours after power lines fell. Major street flooding was also reported, and Phoenix firefighters rescued two motorists from flooded washes in the 9000 block of N. 11th Street and 1200 block of E. Cheryl Drive. About 50 flights from Sky Harbor airport were delayed up to 2 hours due to rain and wind..	Phoenix	0	0	$300,000	$0	$300,000	NCDC, 2008
31-Aug-99	Thunderstorm / High Wind	A 21 year-old woman near Williams Gateway airport received a shock from lightning as she spoke on the telephone.	Mesa	0	1	$0	$0	$0	NCDC, 2008
31-Aug-99	Thunderstorm / High Wind	A worker was struck by lightning while installing an air conditioner in a new home in Sun Lakes.C133	Sun Lakes	0	1	$0	$0	$0	NCDC, 2008
31-Aug-99	Thunderstorm / High Wind	A Gilbert backhoe driver in the 100 block of E. Guadalupe Road was injured and treated for minor injuries when his machinery was struck by lightning.	Gilbert	0	1	$0	$0	$0	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
31-Aug-99	Thunderstorm / High Wind	A large area of the East Valley experienced high winds and heavy rain. Williams Gateway airport traffic controllers evacuated the tower during very strong winds that peaked at 83 mph at 1:49 pm MST. A nearby fire station roof was damaged by the wind. Roof damage was reported at the VF Factory Outlet stores in Mesa with subsequent water damage. At least one residence in the 1800 block of S. 74th Street was damaged. A number of trailer homes had roof damage. Four people were injured on US 60 east of Greenfield Road involving at least 4 vehicles Department of Public Safety closed the road for about two hours. Rain totals included 1.89 inches in east Mesa and .98 inch in Fountain Hills.	Mesa	0	4	$200,000	$0	$200,000	NCDC, 2008
14-Sep-99	Thunderstorm / High Wind	Considerable damaage in NW Phoenix and Peoria due primarily to strong wind.	Phoenix	0	0	$2,000,000	$0	$2,000,000	NCDC, 2008
14-Sep-99	Thunderstorm / High Wind	A 32-year old woman was knocked unconscious as lightning struck a nearby tree.	Mesa	0	1	$0	$0	$0	NCDC, 2008
14-Sep-99	Thunderstorm / High Wind	Winds blew down power poles, trees, and caused considerable damage to homes and businesses in the East Valley. A family in Mesa was trapped inside their vehicle for about an hour after power poles crashed down around them. Power outages affected at least 8,500 customers in the East Valley. The Mesa Regal RV Resort suffered major damage as three trailers were totally destroyed. An airplane was flipped over at Falcon Field with damage to hangar doors. Sky Harbor airport reported numerous flight delays.	Chandler	0	2	$5,000,000	$0	$5,000,000	NCDC, 2008
19-Sep-99	Thunderstorm / High Wind	Major roof damage at a strip mall on East Indian School Road.	Scottsdale	0	0	$100,000	$0	$100,000	NCDC, 2008
19-Sep-99	Thunderstorm / High Wind	Four homes were reported damaged, with ceiling leaks, damaged windows, minor and major roof damage, and one home partially habitable. C141	Laveen	0	0	$165,000	$0	$165,000	NCDC, 2008
19-Sep-99	Thunderstorm / High Wind	Microburst winds struck the Desert Sands Trailer Park where at least 14 homes were totally destroyed and about 340 homes were damaged. Over 200,000 customers lost power after more than 40 power poles were snapped by the winds and rain. Talley Industries, on Greenfield Road received about $500,000 in damage as a large portion of the roof was removed by wind. A large truck was overturned near 80th Street and Baseline Road. Trees were uprooted in nearby Gilbert.	Mesa	0	2	$30,000,000	$0	$30,000,000	NCDC, 2008
03-Dec-99	Thunderstorm / High Wind	A dry cold front moving across southern Arizona brought gusty winds and areas of blowing dust. A peak wind of 58 mph occured at Douglas. In northern Greenlee county a tree was blowin across Highway 191 blocking traffic just south of Hanagan Meadow.		0	0	$10,000	$0	$10,000	NCDC, 2008
21-Feb-00	Thunderstorm / High Wind	Thunderstorms moved through much of the metro Phoenix area. Strong and gusty winds with blowing dust and small hail accompanied the rain. A light pole was reported blown down at 75th Ave and Mulberry.	Phoenix	0	0	$3,000	$0	$3,000	NCDC, 2008
29-Jun-00	Thunderstorm / High Wind	Two men riding their motorcycles westbound on I-10 were caught in a thunderstorm. They pulled off the road and got off their bikes. While standing around the bikes, lightning struck very close, and knocked the two men unconcious. They were treated and released at a nearby hospital.	Tonopah	0	2	$0	$0	$0	NCDC, 2008
05-Aug-00	Thunderstorm / High Wind	A line of thunderstorms formed rapidly over northern Maricopa County and affected many communities from Wickenburg to Carefree. The town of Wittman was especially hard hit as 38 power poles were downed by very high winds. Arizona Public Service also reported 1600 customers lost power.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
07-Aug-00	Thunderstorm / High Wind	Winds blew down power poles and lines. Heavy rain resulted in a large roof collapse at a business near 35th Ave and Bell. Some homes sustained damage. Urban street flooding was also widespread across the northern sections of the city.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008
11-Aug-00	Thunderstorm / High Wind	Severe thunderstorm winds tore part of the roof off a boat house on Apache Lake.	Mesa	0	0	$5,000	$0	$5,000	NCDC, 2008
17-Aug-00	Thunderstorm / High Wind	Microburst winds struck a large area of East Mesa during the evening. The hardest hit area was between Lindsay and Gilbert Roads and between Baseline and Southern Ave. Strong winds flipped trailers, blew out windows, and knocked down about 20 power poles. Some motorists were injured and stranded as the power poles fell onto the roadway. Fifteen people had to be rescued from their cars, and four people from one car were taken to a hospital for treatment. Storms also hit parts of east Phoenix, and high winds cut visibility along I-10 near Casa Grande.	Mesa	0	4	$500,000	$0	$500,000	NCDC, 2008
04-Oct-00	Thunderstorm / High Wind	Thunderstorms developed over a large area of the metropolitan area. Lightning struck the towers on Mummy Mountain and knocked out the Paradise Valley Police Department communication system. Lightning was also blamed on causing a house fire on 35th Avenue and starting tree fires in Scottsdale. High winds were reported at 16th and Roosevelt and at 23rd Avenue and Dobbins where power poles were knocked down. Small hail accompanied these storms.C150	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008
19-Oct-00	Thunderstorm / High Wind	Man struck by lightning at Williams Gateway Airport.	Mesa	0	1	$0	$0	$0	NCDC, 2008
18-May-01	Thunderstorm / High Wind	Winds damaged shingles, flipped a heavy table, and reduced visibility to near zero.	Wickenburg	0	0	$5,000	$0	$5,000	NCDC, 2008
18-May-01	Thunderstorm / High Wind	Winds took down 3 power poles about 5 miles east of Tonopah. Power was out for about 2 days in a 30 mile radius.	Wintersburg	0	0	$10,000	$0	$10,000	NCDC, 2008
04-Jul-01	Thunderstorm / High Wind	Mesa firefighters responded to 14 fires caused by lightning during a 90 minute period. One house in the 7100 block of East Dewan sustained about $30,000 in damage. Other lightning strikes caused fires in palm trees.	Mesa	0	0	$50,000	$0	$50,000	NCDC, 2008
14-Jul-01	Thunderstorm / High Wind	Winds blew sheds and trees down while damaging several homes in the area. C160	Wittmann	0	0	$20,000	$0	$20,000	NCDC, 2008
14-Jul-01	Thunderstorm / High Wind	A microburst hit parts of Scottsdale and Tempe with very strong winds and heavy rain. Many homes and businesses sustained damage, with at least 19 power poles blown down. One pole landed on a vehicle near Scottsdale and Indian Bend roads, killing the driver. About 6,000 residents were left without power, including the nearby Radisson Resort. Winds ripped the roofs off four homes in the McCormick Ranch area, and dumped them up to two blocks away. Numerous trees were uprooted.	Scottsdale	1	0	$5,000,000	$0	$5,000,000	NCDC, 2008
17-Jul-01	Thunderstorm / High Wind	As many as 8 power lines downed by high winds near 113th Avenue and Southern. High winds also blew down a large electronic information display billboard at Phoenix International Raceway.	Tolleson	0	0	$250,000	$0	$250,000	NCDC, 2008
25-Jul-01	Thunderstorm / High Wind	Thunderstorm winds took down numerous power lines and as many as 12 power poles in and near Glendale. The hardest hit area was 91st Avenue and Glendale Road. A 42 year old man was struck by lightning as he stood in the doorway of his west Phoenix home. With his hand on the doorknob, lightning passed through his body and exited through his right foot.	Glendale	0	1	$30,000	$0	$30,000	NCDC, 2008
14-Aug-01	Thunderstorm / High Wind	Severe thunderstorm wind, possible microburst, destroys mobile home trapping 2 occupants inside the mobile home near 27th Ave and Deer Valley Rd.	Phoenix	0	1	$30,000	$0	$30,000	NCDC, 2008
09-Jul-02	Thunderstorm / High Wind	Several trees uprooted and blown across roads and streets in Ahwatukee. Patio roof damaged by winds.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
09-Jul-02	Thunderstorm / High Wind	Dense blowing dust accompanied winds that gusted to about 60 mph. A small airplane was damaged while trying to land at Falcon Field. Thunderstorms developed over the East Valley, and microburst winds struck in Mesa, along University Drive between Extension and Country Club. About 20 power poles were blown down leaving 7,500 homes without power in this area .	Mesa	0	0	$80,000	$0	$80,000	NCDC, 2008
13-Jul-02	Thunderstorm / High Wind	Lightning struck a home in the 5600 block of N. Saguaro Road,.	Paradise Vly	0	0	$50,000	$0	$50,000	NCDC, 2008
14-Jul-02	Thunderstorm / High Wind	The first of two microburst events occurred on the airport at 1300 Airlane Blvd.C165	(Phx)Sky Harbor Arpt	0	0	$20,000,000	$0	$20,000,000	NCDC, 2008
14-Jul-02	Thunderstorm / High Wind	Microburst winds heavily damaged the Arizona Public Service power sub-station at 7th Ave and Thomas. Widespread damage was reported across the greater Phoenix metropolitan area caused by the storm's high winds and heavy rainfall with up to 2 inches in 90 minutes. Utility companies reported that 22 power poles were downed, leaving at least 47,000 homes and businesses without power electricity for many hours. Homes in Scottsdale and Ahwatukee were struck by lightning and set on fire.	Phoenix	0	0	$20,000,000	$0	$20,000,000	NCDC, 2008
14-Jul-02	Thunderstorm / High Wind	The second of two microburst events struck on the airport at the Postal facility and the West economy parking lot. A large thunderstorm complex, with strong microburst winds estimated at 100 mph struck Sky Harbor International Airport. Southerly winds and dense blowing dust initially spread across the East valley and converged with a fast-moving thunderstorm in North Phoenix. These merging systems developed into a severe thunderstorm with winds that uprooted trees, took down power poles and damaged homes and businesses near the airport. Several hangars sustained major damage. Flying debris damaged five commercial aircraft, several private planes and hundreds of cars in the nearby parking lots. Numerous flights were diverted during the overnight hours due to the debris that was scattered on the runway.	(Phx)Sky Harbor Arpt	0	0	$30,000,000	$0	$30,000,000	NCDC, 2008
23-Jul-02	Thunderstorm / High Wind	At least 2 trees blown down in north Scottsdale. Heavy rain and lightning were blamed for the collapse of a section of a roof of the Goodwill store in south Scottsdale. One man inside the store suffered minor injuries. Trees and cactus blown down in Glendale.	Scottsdale	0	1	$200,000	$0	$200,000	NCDC, 2008
06-Sep-02	Thunderstorm / High Wind	Microburst winds damaged or destroyed over 100 homes at the Blue Sky Mobile Estates Park in Glendale. Winds also damaged over 100 vehicles at car dealerships near 51st Avenue. Nearby roofs were damaged and power poles were blown down. C168	Glendale	0	0	$1,000,000	$0	$1,000,000	NCDC, 2008
07-Sep-02	Thunderstorm / High Wind	Numerous reports of large hail throughout the West Valley, including Sun City, Peoria, and Phoenix. Winds to over 60 mph damaged homes, blew down power poles and uprooted trees. Streets were flooded in the West Valley as rain totals were as much as 1.85 inches. Arizona Public Service and Salt River Project estimated over 11,000 customers were without power.	Goodyear	0	0	$200,000	$0	$200,000	NCDC, 2008
20-Jul-03	Thunderstorm / High Wind	Lightning struck the chimney of a house in the 8900 block of East Pershing Avenue. The bolt knocked out the fireplace and the drywall of the living room, but caused no fire as the current discharged somewhere in the bottom of the fireplace.	Scottsdale	0	0	$20,000	$0	$20,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
29-Jul-03	Thunderstorm / High Wind	Thunderstorms were widespread across Maricopa County, from Queen Creek to Wittmann from 1925 MST to 2130 MST. Microburst winds hit the north part of Tempe and took out stoplights at most of the city's major intersections. Winds tore down tree limbs and caused power outages, with about 30,000 customers losing power. Lightning struck trees and homes, and some street flooding was reported. Chandler airport had a peak wind speed of 64 mph at 8 pm. Sky Harbor airport closed its runways for about 40 minutes, until 9 pm, as winds peaked at 56 mph. Phoenix Fire Department responded to six house fires, 20 tree fires, 75 downed power lines, and numerous fender benders.	Chandler Arpt	0	0	$200,000	$0	$200,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind		Queen Creek	0	0	$5,000	$0	$5,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind		Buckeye	0	0	$10,000	$0	$10,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind		Phoenix	0	0	$25,000	$0	$25,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind		Wittmann	0	0	$30,000	$0	$30,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind		Phoenix	0	0	$100,000	$0	$100,000	NCDC, 2008
14-Aug-03	Thunderstorm / High Wind	Lightning was blamed on a fire which destroyed a house in Sun City West.	Sun City	0	0	$150,000	$0	$150,000	NCDC, 2008
22-Aug-03	Thunderstorm / High Wind	Severe thunderstorms struck this area with high winds blowing down power poles and lines. Homes and businesses were damaged. Salt River Project reported about 200 power poles down in the area near Ellsworth and Ocotillo road, Up to 5,000 customers were left without power. Power was restored the following day to 2,000 households and fully restored by Monday. Hundreds of mature trees blown down and onto streets and homes. Windshields on a number of vehicles were blown out. Winds caused a building to collapse, killing a horse. Several aircraft were overturned by high winds, and a construction trailer in Queen Creek was destroyed.	Queen Creek	0	0	$300,000	$0	$300,000	NCDC, 2008
26-Aug-03	Thunderstorm / High Wind	Power pole and line down resulted in power outage to about 2,000 customers.	Scottsdale	0	0	$5,000	$0	$5,000	NCDC, 2008
14-Jul-04	Thunderstorm / High Wind	Winds damaged buildings and ripped limbs from trees. About 1,800 customers in Phoenix were left without power after power poles and lines were downed by strong winds.	Phoenix	0	0	$20,000	$0	$20,000	NCDC, 2008
24-Jul-04	Thunderstorm / High Wind	Thunderstorm winds blew power lines down in Mesa. A home in the 2200 block of west McNair in Chandler was destroyed by fire when 3 palm trees nearby were struck by lightning and the fire spread to the home.	(Chd)Williams Afb	0	0	$150,000	$0	$150,000	NCDC, 2008
15-Aug-04	Thunderstorm / High Wind	Home heavily damaged by winds from severe thunderstorm as reported by county relief aid volunteers.	Aguila	0	0	$60,000	$0	$60,000	NCDC, 2008
15-Aug-04	Thunderstorm / High Wind	Severe thunderstorms developed along the Maricopa and northwest Pinal County line, in vicinity of Sun Lakes. Damaging high winds, multiple microbursts, were primarily in the southern side of Sun Lakes, and the adjacent desert to the south of the community in Pinal County (6 N Bapchule). 80 manufactured mobile homes sustained heavy damage, roofs, carports, sheds, and awnings, and 25 medium to large trees were uprooted.	Sun Lakes	0	0	$200,000	$0	$200,000	NCDC, 2008
18-Sep-04	Thunderstorm / High Wind	Strong winds severely damaged a large part of the Cave Creek Roadhouse in Cave Creek.C189	Cave Creek	0	0	$20,000	$0	$20,000	NCDC, 2008
17-Jul-05	Thunderstorm / High Wind	Winds took down tree branches and damaged a car near Hayden and Thomas Roads.	Phoenix	0	0	$20,000	$0	$20,000	NCDC, 2008
17-Jul-05	Thunderstorm / High Wind	House fire reported at 11620 N 114th Drive. At least 4 palm tree fires were reportedly started by lightning strikes.	Youngtown	0	0	$50,000	$0	$50,000	NCDC, 2008
17-Jul-05	Thunderstorm / High Wind	Power lines down in south Phoenix. At the height of the storm, more than 40,000 APS customers were without power. The Phoenix Fire Department responded to 200 calls for service. Two large trees were uprooted at the Wigwam Resort and Golf Club.	Phoenix	0	0	$70,000	$0	$70,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
18-Jul-05	Thunderstorm / High Wind	Winds briefly peaked at 77 mph as microburst struck the airport. Windows were damaged at terminal 4.C193	(Phx)Sky Harbor Arpt	0	0	$15,000	$0	$15,000	NCDC, 2008
23-Jul-05	Thunderstorm / High Wind	Dozens of trees were blown down, with many cars and homes sustaining damages due to the winds. Most of the damage was in the Springfield Resort Community near Riggs and McQueen roads.	Chandler	0	0	$70,000	$0	$70,000	NCDC, 2008
24-Jul-05	Thunderstorm / High Wind	About 41 power poles blown down by strong winds along route 85 between Buckeye and Gila Bend.	Buckeye	0	0	$50,000	$0	$50,000	NCDC, 2008
25-Jul-05	Thunderstorm / High Wind	Trees down and shingles blown off roofs. Near Greenfield and Broadway roads in Mesa, 1.75 inches of rain was reported. Power was out for 600 SRP customers in Chandler.	Mesa	0	0	$20,000	$0	$20,000	NCDC, 2008
26-Jul-05	Thunderstorm / High Wind	Power lines down, trees uprooted, and shingles blown off roofs across a large portion of northwest Phoenix. At least 30 trees were downed by winds at the Palm Ridge Rrecreation Center in Sun City West. One automatic weather station at the White Tank mountains measured the 60 mph gust.	Sun City	0	0	$100,000	$0	$100,000	NCDC, 2008
31-Jul-05	Thunderstorm / High Wind	Power lines and trees down near I-17 and Glendale. Winds reached 53 mph in Fountain Hills and caused areas of blowing dust across Mesa and Tempe. As many as 8 boats were capsized on Tempe Town Lake.	Fountain Hills	0	0	$10,000	$0	$10,000	NCDC, 2008
31-Jul-05	Thunderstorm / High Wind	Lightning caused a fire at a North Peoria home, completely destroying it.	Peoria	0	0	$500,000	$0	$500,000	NCDC, 2008
07-Aug-05	Thunderstorm / High Wind	Trees and utility power poles blown down.C79	New River	0	0	$5,000	$0	$5,000	NCDC, 2008
09-Aug-05	Thunderstorm / High Wind	Strong thunderstorms over east Phoenix metropolitan valley caused lightning which struck up to 13 homes in a Mesa neighborhood. Dramatic damage occurred as a result of the lightning; windows were blown out of the houses, drywall was damaged, electric power service meters and circuit breakers were destroyed, electric transformers were blown out of the ground.	Mesa	0	0	$350,000	$0	$350,000	NCDC, 2008
14-Aug-05	Thunderstorm / High Wind	As many as 12 electric utility power poles were blown down by severe thunderstorm winds. The storm winds also damaged the roof of the Paloma school building, and toppled a large tree onto a house.	Gila Bend	0	0	$100,000	$0	$100,000	NCDC, 2008
09-Sep-05	Thunderstorm / High Wind	Several power poles snapped as microburst winds struck near Extension Road and west Eighth Avenue. The downed power lines created temporary chaos as children were not allowed to leave three schools, and vehicles were not allowed into the area due to the live wires. About 4,000 people were left without power because of the storm.C207	Mesa	0	0	$30,000	$0	$30,000	NCDC, 2008
07-Jun-06	Thunderstorm / High Wind	Winds associated with thunderstorms uprooted trees and brought down power lines to parts of the Phoenix metropolitan area. About 6,000 SRP customers were without power in the Gilbert area. Dense blowing dust also resulted in very low visibility, delaying flights at Sky Harbor airport.	Tempe	0	0	$300,000	$0	$300,000	NCDC, 2008
25-Jun-06	Thunderstorm / High Wind	Strong winds from nearby thunderstorms damaged traffic signals in Scottsdale.	Scottsdale	0	0	$50,000	$0	$50,000	NCDC, 2008
30-Jun-06	Thunderstorm / High Wind	Power poles downed by high winds which reached as high as 59 mph at Falcon Field. About 16,000 homes were without power at the height of the storm. Dense blowing dust, with zero visibility was reported on the Superstition Freeway.	Mesa	0	0	$100,000	$0	$100,000	NCDC, 2008
06-Jul-06	Thunderstorm / High Wind	Microburst winds damaged windows and doors. Camper damaged at a truck stop along Interstate 10.	Tonopah	0	0	$10,000	$0	$10,000	NCDC, 2008
15-Jul-06	Thunderstorm / High Wind	Strong and gusty winds, estimated at 45 to 50 mph caused near zero visibility in a number of locations around the metro Phoenix area. Some power outages were reported, mainly in the West Valley area near Buckeye.		0	0	$20,000	$0	$20,000	NCDC, 2008
18-Jul-06	Thunderstorm / High Wind	Power poles down and roofs damaged due to strong thunderstorm winds.	Mobile	0	0	$30,000	$0	$30,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
18-Jul-06	Thunderstorm / High Wind	Considerable damage to two aircraft at Williams Gateway Airport. A twin engine plane was flipped onto a single engine plane when microburst winds struck the airport.	Chandler Williams Af	0	1	$1,000,000	$0	$1,000,000	NCDC, 2008
21-Jul-06	Thunderstorm / High Wind	Strong winds affected parts of Scottsdale, Cave Creek and Carefree. Power lines were knocked down leaving about 16,800 customers without power. The strongest wind recorded at Scottsdale airport was 61 mph.C219	Cave Creek	0	0	$20,000	$0	$20,000	NCDC, 2008
25-Jul-06	Thunderstorm / High Wind	Several cities throughout the central portion of Maricopa County had major wind damage as a series of thunderstorms and microbursts moved across the area. According to the Salt River Project, an estimated 65 power poles were blown down, in parts of Scottsdale, Tempe and Mesa. At one point, about 20,000 customers were without power. Arizona Public Service reported about 8,000 customers were without power. At Phoenix Sky Harbor Airport, the official peak wind gust was 59 mph. However, winds at Williams Gateway Airport gusted to 86 mph and flipped a small twin-engine plane atop another aircraft. In Mesa, 35 schools reported damages due to the storm. In addition to numerous trees and homes damaged by winds, locally heavy rainfall caused some flooding of streets thoughout the Valley. One of the heaviest amounts was 2.70 inches at Crossroads Park.	Central Portion	0	1	$150,000,000	$0	$150,000,000	NCDC, 2008
10-Aug-06	Thunderstorm / High Wind	Power lines down across an area estimated to be about a mile long.	Goodyear	0	0	$40,000	$0	$40,000	NCDC, 2008
14-Aug-06	Thunderstorm / High Wind	Numerous trees reported down throughout Estrella Mountain Park.	Goodyear	0	0	$100,000	$0	$100,000	NCDC, 2008
21-Aug-06	Thunderstorm / High Wind	Lightning caused a fire to 500 tons of hay on the Salt River Indian Reservation.	Phoenix	0	0	$100,000	$0	$100,000	NCDC, 2008
21-Aug-06	Thunderstorm / High Wind	Severe thunderstorms and very heavy rain spread across most of the East Valley. Power lines and power poles were down, street signs and vehicles were damaged. Chandler airport recorded peak winds of 57 mph along with dense blowing dust at 6:40 pm. One spotter estimated the strongest winds at 70 mph near University and Brown, in Mesa. Streets and low spots were flooded.	Mesa	0	0	$200,000	$0	$200,000	NCDC, 2008
22-Aug-06	Thunderstorm / High Wind	Strong winds tore shingles from roofs, snapped a flag pole and caused other damage as storms moved toward the northwest. SRP reported a total of about 50 power poles knocked down during the storms of August 21 and August 22. Combined figures show an estimated 18,000 customers were without power at the height of the storms.	Glendale	0	0	$200,000	$0	$200,000	NCDC, 2008
24-Aug-06	Thunderstorm / High Wind	Lightning caused a house fire near Country Club and Brown Road.	Mesa	0	0	$50,000	$0	$50,000	NCDC, 2008
03-Sep-06	Thunderstorm / High Wind	Thunderstorm winds brought down trees and branches near 16th Street and Greenway.	Phoenix	0	0	$5,000	$0	$5,000	NCDC, 2008
09-Sep-06	Thunderstorm / High Wind	Eight large trees, more than a foot in diameter, blown down near downtown Wickenburg.C242	Wickenburg	0	0	$5,000	$0	$5,000	NCDC, 2008
12-Apr-07	Thunderstorm / High Wind	Wind gusts over 40 mph were widespread across the Phoenix area, with a peak gust of 54 mph reported in Fountain Hills.A sharp cold front whipped through Arizona resulting in winds well over 40 mph and dense blowing dust with visibility less than a quarter mile. Some roof damage was also reported in Parker.		0	0	$1,000	$0	$1,000	NCDC, 2008
28-Apr-07	Thunderstorm / High Wind	A major dust storm with visibility less than 1/4 mile in spots, along with winds of 40 to 50 mph, moved quickly across the Phoenix metropolitan area during the afternoon. Trees were knocked over, power outages were reported, and flight delays affected Sky Harbor airport.Unusual heat for so early in the season, together with increased moisture, resulted in widespread light showers, very strong winds and areas of dense blowing dust and sand.		0	0	$10,000	$0	$10,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
19-Jul-07	Thunderstorm / High Wind	Power line downed by high winds. Winds gusted to 55 mph at Sky Harbor airport. While walking in his yard, a man touched the live wire and was electrocuted.Power line downed by high winds in North Phoenix.	Phoenix	0	0	$20,000	$0	$20,000	NCDC, 2008
30-Jul-07	Thunderstorm / High Wind	Trees and power lines were downed through parts of Gilbert. Streetlights were also reported to be down due to the winds. Utility poles and at least one large billboard in the East Valley were damaged by winds.Heavy rains first hit the northwest part of Maricopa County, then spread into the Metro Phoenix area. Many streets were flooded, trees downed and considerable property damage.	Phoenix	0	0	$100,000	$0	$100,000	NCDC, 2008
14-Aug-07	Thunderstorm / High Wind	Lightning struck a home near 51st Ave and Indian School Road. No major damage was reported, but a small attic fire was quickly put out.Scattered thunderstorms formed over parts of Phoenix with locally strong winds at the airport.	Phoenix	0	0	$20,000	$0	$20,000	NCDC, 2008
16-Aug-07	Thunderstorm / High Wind	Authorities in the Gila River Indian Community estimated winds as high as 80 mph.Scattered thunderstorms pushed through parts of the East Valley, knocking down power lines.	Avondale	0	0	$20,000	$0	$20,000	NCDC, 2008
01-Sep-07	Thunderstorm / High Wind	A microburst struck a Chandler RV and trailer park, damaging at least one trailer and taking down power lines and uprooting trees.Dense blowing dust with low visibility spread throughout many East Valley communities. In addition, thunderstorms brought gusty winds to near 60 mph in Apache Junction.	Chandler	0	0	$50,000	$0	$50,000	NCDC, 2008
15-Sep-07	Thunderstorm / High Wind	Between Buckeye and Gila Bend trees were uprooted...signs blown down and one roof blown off a shop. Two miles south of Cotton Center a power pole snapped because of the winds.Strong winds from nearby thunderstorms affected some communities near Gila Bend.	Cotton Center	0	0	$50,000	$0	$50,000	NCDC, 2008
16-Sep-07	Thunderstorm / High Wind	Large trees down...including a 50 foot pine tree near Southern avenue and Greenfield road. Four homes damaged near Sossaman road and Main street. Power lines were down near Main street and Southern avenue.Thunderstorms developed over the far East Valley resulting in damage to homes, power lines and trees.	Mesa Falcon Arpt	0	0	$200,000	$0	$200,000	NCDC, 2008
04-Feb-08	Thunderstorm / High Wind	Lightning started an attic fire in Sun City and a house fire in Glendale.Thunderstorms brought rain, hail and lightning to portions of the Phoenix area on Monday afternoon.	Sun City	0	0	$20,000	$0	$20,000	NCDC, 2008
20-Feb-08	Thunderstorm / High Wind	Lightning resulted in considerable damage to various electrical and electronic systems at the Pioneer Elementary School in Glendale. A nearby eucalyptus tree was also struck, which resulted in pieces of wood or bark exploding outward in all directions. Minor damage occurred to one side of a home near the school.A strong low pressure system and associated cold front moved across the region. Thunderstorms developed late in the evening and moved eastward across the northern sections of Maricopa County. Small hail and frequent lightning was observed with the strongest storms.	Glendale Muni Arpt	0	0	$30,000	$0	$30,000	NCDC, 2008
25-Jun-08	Thunderstorm / High Wind	The Ethan Fire was sparked by lightning on the 25th, and grew to over 5,000 acres several days later. Estimated cost to fight the fire was about $700,000.Late afternoon thunderstorms moved across portions of the Phoenix metropolitan area. One cloud to ground lightning strike apparently started a brush fire near the Gila River southwest of Phoenix.	Avondale			$5,000	$0	$5,000	NCDC, 2008
03-Jul-08	Thunderstorm / High Wind	Lightning was blamed in starting a fire in the attic of a Tempe home. Tempe Fire responded to two other weather related fires.Thunderstorms moved through parts of the East Valley, and cloud to ground lightning started a fire in the attic of a home.	Tempe	0	0	$50,000	$0	$50,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
04-Jul-08	Thunderstorm / High Wind	Scottsdale airport recorded peak winds of 53 mph during thunderstorms. Winds at Sky Harbor airport reached as high as 39 mph and some tents at the Tempe Town Lake fireworks display were blown down.Sufficient moisture and instability together with an outflow boundary from the east was sufficient to trigger thunderstorms in Phoenix.	Scottsdale Muni Arpt	0	0	$2,000	$0	$2,000	NCDC, 2008
10-Jul-08	Thunderstorm / High Wind	Streets and highways became flooded and some road closures were reported after rainfall rates exceeded 2 inches per hour in the heaviest storms. One spotter in East Mesa had a total of 2.50 inches.Strong and locally damaging winds affected portions of South-central Arizona during the evening hours.	Sunnyslope	0	0	$200,000	$0	$200,000	NCDC, 2008
10-Jul-08	Thunderstorm / High Wind	Winds caused power outages and property damage due to microburst winds as high as 65 mph. Winds blew down a tree near 78th Street and McDonald which damaged a covered parking structure.Strong and locally damaging winds affected portions of South-central Arizona during the evening hours.	Buckhorn	0	0	$400,000	$0	$400,000	NCDC, 2008
13-Jul-08	Thunderstorm / High Wind	Winds from a microburst blew down about 25 trees and damaged light poles at Mesa Community College. A security officer was slightly injured when the strong winds blew him from his golf cart.Showers and thunderstorms produced very heavy rainfall totals across parts of South-Central Arizona.	Mcqueen	0	0	$100,000	$0	$100,000	NCDC, 2008
21-Jul-08	Thunderstorm / High Wind	Microburst winds took down a total of 55 power poles in Mesa, leaving as many as 12,000 SRP customers without power. About 31 homes were damaged at a trailer park on North Recker, 4 of those had roofs blown off. On Southern Ave near Power Road, 15 poles were knocked down with lines impacting 7 vehicles, including a bus. The peak wind speed at Falcon Field was 44 mph at 7:47 pm. In Mesa, power poles were knocked down, trapping 6 vehicles, including a bus. One of the injuries was from cuts from broken glass.Numerous power poles were blown down and homes were damaged in East Mesa when severe thunderstorms hit the area.	Twin Knolls	0	2	$1,000,000	$0	$1,000,000	NCDC, 2008
26-Jul-08	Thunderstorm / High Wind	Power poles and trees were reported down at Chandler Heights and Greenfield roads, as well as Ocotillo and Higley and at Ocotillo and Power roads.Brief strong winds caused isolated damage to parts of the Southeast Valley.	Chandler Heights	0	0	$15,000	$0	$15,000	NCDC, 2008
05-Aug-08	Thunderstorm / High Wind	Power lines down near 7th Street and Northern.Winds gusted to 51 mph at Sky Harbor airport.	Sunnyslope	0	0	$2,000	$0	$2,000	NCDC, 2008
07-Aug-08	Thunderstorm / High Wind	Power poles down in central Phoenix.Very strong winds from thunderstorms took down trees, power lines and left thousands of customers without power. Very heavy rain resulted in flooded roads.	Phoenix	0	0	$10,000	$0	$10,000	NCDC, 2008
07-Aug-08	Thunderstorm / High Wind	Brush fire was started by lightning and grew to about 425 acres. No structures were involved in the fire.Very strong winds from thunderstorms took down trees, power lines and left thousands of customers without power. Very heavy rain resulted in flooded roads.	Buckeye	0	0	$10,000	$0	$10,000	NCDC, 2008
07-Aug-08	Thunderstorm / High Wind	Large branches blown from trees.Very strong winds from thunderstorms took down trees, power lines and left thousands of customers without power. Very heavy rain resulted in flooded roads.	Sunnyslope	0	0	$10,000	$0	$10,000	NCDC, 2008
07-Aug-08	Thunderstorm / High Wind	Power poles and lines reported blown down. As many as 70 poles were down in the Buckeye area alone.Very strong winds from thunderstorms took down trees, power lines and left thousands of customers without power. Very heavy rain resulted in flooded roads.	Valencia	0	0	$70,000	$0	$70,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
14-Aug-08	Thunderstorm / High Wind	Winds at Chandler Airport reached 50 knots as severe thunderstorms moved toward the west.The southern and central portions of Arizona were very moist and unstable. Storms developed and moved toward the southwest and strong winds kicked up widespread areas of blowing dust. A Severe Thunderstorm Watch was in effect for much of the evening.	Chandler Arpt	0	0	$10,000	$0	$10,000	NCDC, 2008
14-Aug-08	Thunderstorm / High Wind	Several crashes on the Loop 202 were blamed on strong winds and rain. Power outages were reported after winds and rain moved through the East Valley. SRP reported about 3,000 customers were left without electricity...and APS reported 2,000 customers without power.The southern and central portions of Arizona were very moist and unstable. Storms developed and moved toward the southwest and strong winds kicked up widespread areas of blowing dust. A Severe Thunderstorm Watch was in effect for much of the evening.	Papago Arpt	0	0	$25,000	$0	$25,000	NCDC, 2008
14-Aug-08	Thunderstorm / High Wind	Strong winds reported at Brown and Mesa. Trees were damaged.The southern and central portions of Arizona were very moist and unstable. Storms developed and moved toward the southwest and strong winds kicked up widespread areas of blowing dust. A Severe Thunderstorm Watch was in effect for much of the evening.	Mesa	0	0	$5,000	$0	$5,000	NCDC, 2008
25-Aug-08	Thunderstorm / High Wind	Microburst winds hit Chandler airport and flipped at least two planes. Winds also damaged a fence and other property. Northeast winds peaked at 67 mph at 3:25 pm.Thunderstorm winds over 70 mph damaged planes at Chandler Municipal Airport. Strong winds also blew down trees and damaged some homes in the Chandler area. Dense blowing dust was also reported.	Sun Lakes	0	0	$1,000,000	$0	$1,000,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	Trees and power lines down.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Sunnyslope	0	0	$100,000	$0	$100,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	Easterly winds gusted up to 65 knots at Sky Harbor airport. Several aircraft and at least one terminal building was damaged, with debris blown onto the runways and adjacent areas. About 500 people were stranded in the terminals overnight due to flight delays and power outages.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Sky Harbor Int Arpt	0	0	$2,000,000	$0	$2,000,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
28-Aug-08	Thunderstorm / High Wind	A trained spotter reported a wind gust of 85 mph at 16th St and Thomas. Widespread damage occurred to homes, businesses and windows knocked out in at least one high-rise. Numerous power poles were taken down, and many trees uprooted. Some damage also occurred at the Arizona State Capitol in Phoenix.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Phoenix	0	0	$20,000,000	$0	$20,000,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	Numerous trees blown down by strong winds.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Litchfield	0	0	$25,000	$0	$25,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	Microburst winds observed in Mesa near Recker and Brown.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Mesa Falcon Arpt	0	0	$30,000	$0	$30,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	In Tempe, an 18 year-old man was injured by a falling tree. Winds on the ASU campus were measured at 69 mph and severely damaged the indoor football practice facility.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Tempe	0	1	$4,000,000	$0	$4,000,000	NCDC, 2008
28-Aug-08	Thunderstorm / High Wind	Trees uprooted at 48th street and Mcdowell. Nearby homes damaged.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Kendall	0	0	$500,000	$0	$500,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
28-Aug-08	Thunderstorm / High Wind	Very strong wind gusts reported at Estrella Parkway and Elliott.Several waves of severe thunderstorms moved westward across the central and eastern portions of Maricopa County. Upper level winds were stronger than usual, and copious moisture combined with warm temperatures allowed storms to redevelop well into the night. Winds over 80 mph were noted in parts of Phoenix and Tempe. Nearly continuous lightning was also observed during the peak of the activity. Fortunately, no fatalities were associated with these severe storms.	Estrella	0	0	$50,000	$0	$50,000	NCDC, 2008
29-Aug-08	Thunderstorm / High Wind	Top wind speeds of 55 to 65 mph were common across many areas. One report was a measured speed of 60 mph at 91st avenue and Jomax. A 58 mph gust was measured at the White Tank mesonet location. A wood fence was damaged and a trailer was overturned in Waddell.Winds near 60 mph were associated with some thunderstorms in the Phoenix area.	Ennis	0	0	$100,000	$0	$100,000	NCDC, 2008
29-Aug-08	Thunderstorm / High Wind	Spotter reported a very heavy rainfall rate of 3.19 inches per hour during a 10 minute period.Strong winds from nearby thunderstorms caused significant damage to homes in this area.	Cave Creek	0	0	$2,000	$0	$2,000	NCDC, 2008
10-Sep-08	Thunderstorm / High Wind	About 6 power poles were downed, resulting in power outages for as many as 4500 customers in Queen Creek.Showers and thunderstorms developed across much of southwest and south-central Arizona. A few storms became severe, with strong winds, hail and very heavy downpours.	Queen Creek	0	0	$12,000	$0	$12,000	NCDC, 2008
10-Sep-08	Thunderstorm / High Wind	Numerous power poles down near 424th and Indian School, or about 2 miles west of Tonopah.Showers and thunderstorms developed across much of southwest and south-central Arizona. A few storms became severe, with strong winds, hail and very heavy downpours.	Tonopah	0	0	$50,000	$0	$50,000	NCDC, 2008
10-Sep-08	Thunderstorm / High Wind	A trained spotter reported a wind gust of 60 mph along with pea sized hail at McClintock and Guadalupe.Showers and thunderstorms developed across much of southwest and south-central Arizona. A few storms became severe, with strong winds, hail and very heavy downpours.	Tempe	0	0	$5,000	$0	$5,000	NCDC, 2008
11-Sep-08	Thunderstorm / High Wind	According to Arizona Public Service, 48 power poles across a distance of 3 miles were blown down along Old Highway 80 between Buckeye and Gila Bend. Winds were measured up to 56 mph on the Palo Verde Nuclear Generating Station tower.Thunderstorms moved steadily toward the northeast during the afternoon hours. As a result, locally heavy rain, strong winds, and very low visibility due to dust and sand moved across the deserts.	Arlington	0	0	$100,000	$0	$100,000	NCDC, 2008
11-Sep-08	Thunderstorm / High Wind	Winds were estimated to reach as high as 60 mph along with visibility to less than 1/4 mile in blowing dust.Thunderstorms moved steadily toward the northeast during the afternoon hours. As a result, locally heavy rain, strong winds, and very low visibility due to dust and sand moved across the deserts.	Tonopah	0	0	$20,000	$0	$20,000	NCDC, 2008
13-Jun-55	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
25-Jul-56	Tornado			0	0	$250	$0	$250	NCDC, 2008
04-Aug-57	Tornado			0	0	$2,500	$0	$2,500	NCDC, 2008
29-Aug-57	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
11-Mar-58	Tornado			0	0	$2,500	$0	$2,500	NCDC, 2008
11-May-58	Tornado			0	0	$30	$0	$30	NCDC, 2008
24-Sep-58	Tornado			0	0	$30	$0	$30	NCDC, 2008
22-Jul-61	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
08-Sep-61	Tornado			0	2	$250,000	$0	$250,000	NCDC, 2008
29-Jul-67	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
19-Dec-67	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
04-Jul-68	Tornado			0	2	$25,000	$0	$25,000	NCDC, 2008
20-Jul-68	Tornado			0	3	$25,000	$0	$25,000	NCDC, 2008
03-Oct-68	Tornado			0	3	$250,000	$0	$250,000	NCDC, 2008
01-Aug-69	Tornado			0	2	$25,000	$0	$25,000	NCDC, 2008
05-Sep-70	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
30-Aug-71	Tornado			0	41	$2,500,000	$0	$2,500,000	NCDC, 2008
14-Sep-71	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
18-Oct-71	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
13-Jun-72	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
21-Jun-72	Tornado			0	3	$25,000,000	$0	$25,000,000	NCDC, 2008
23-Jul-72	Tornado			0	0	$30	$0	$30	NCDC, 2008
12-Aug-72	Tornado			0	0	$30	$0	$30	NCDC, 2008
10-Sep-72	Tornado			0	1	$2,500,000	$0	$2,500,000	NCDC, 2008
24-Aug-74	Tornado			0	0	$2,500	$0	$2,500	NCDC, 2008
05-Sep-81	Tornado			0	0	$250,000	$0	$250,000	NCDC, 2008
05-Sep-81	Tornado			0	0	$250,000	$0	$250,000	NCDC, 2008
12-Aug-82	Tornado			0	0	$30	$0	$30	NCDC, 2008
08-Aug-83	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
16-Aug-83	Tornado			0	0	$250,000	$0	$250,000	NCDC, 2008
09-Aug-84	Tornado			0	0	$250,000	$0	$250,000	NCDC, 2008
29-Aug-87	Tornado			0	0	$250	$0	$250	NCDC, 2008
04-Jan-89	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
06-Jan-92	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
06-Jan-92	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
13-Feb-92	Tornado			0	0	$2,500	$0	$2,500	NCDC, 2008
13-Feb-92	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
23-May-92	Tornado			0	0	$250	$0	$250	NCDC, 2008
23-May-92	Tornado			0	0	$25,000	$0	$25,000	NCDC, 2008
17-Jan-93	Tornado	Eighteen homes sustained damage, 4 with major damage, many trees and signs blown over by tornado. Most damage occurred when the tornado moved east from 59th and Clinton to 72nd and Cholla. Controllers from the nearby Scottsdale Airport watched this tornado move through this ,north Scottsdale residential area.	Phoenix To	0	0	$5,000,000	$0	$5,000,000	NCDC, 2008
08-Feb-93	Tornado	A sheriff's deputy was the first to spot this weak tornado in this area. The New River residents described the sound as similar to a freight train. The tornado created a suction that made it impossible to open a door for a brief period. A palo verde tree was uprooted and the tornado lifted the roof off a house.	New River	0	0	$5,000	$0	$5,000	NCDC, 2008
08-Feb-94	Tornado	A strong winter storm moved across the state and spawned a tornado in the small town of El Mirage. Damage was mainly limited to roofs, although the tornado was strong enough to move a parked pickup truck about six feet and damaged a metal storage shed.	Phoenix	0	0	$50,000	$0	$50,000	NCDC, 2008
07-Mar-94	Tornado	A pilot reported a weak tornado briefly touching down just south of the Foothills Golf Course. Some roof damage occurred to a large maintenance building.	Phoenix	0	0	$5,000	$0	$5,000	NCDC, 2008
13-Feb-95	Tornado	A National Weather Service Survey Team concluded a weak (F1) tornado occurred at the General Motors Desert Proving Grounds facility. Moderate damage was observed. A roof was damaged and about 20 vehicles were damaged and moved around. One vehicle was lifted, moved several feet, and set down inside a roped off area containing solar exposure equipment. The tornado moved northeast and lasted about five minutes. Damage was initially estimated around $200,000.	Phoenix	0	0	$200,000	$0	$200,000	NCDC, 2008

Date	Hazard	Description	Location	Fatalities	Injuries	Damage Estimates			
						Property	Crop/Livestock	Total	Source
10-Jun-96	Tornadoe / Dust Devil	Half of a roof was blown off a house in Tucson near River and Campbell streets. No thunderstorms in area so most likely cause was a very strong dust devil.		0	0	$15,000	$0	$15,000	NCDC, 2008
3/30/2004	Wildfire	In March 2004, The Citris Fire located west of Gila Bend burned over 5,700 acres along the Gila River included State, Private and Federal lands.	Gila Bend	0	0	$0	$0	$0	URS, 2004
6/1/2005	Wildfire	In June 2005, lightning touched off the Cave Creek Complex Fire in the northern part of Maricopa County about 5 miles northeast of Carefree. The fire had threatened 440 homes in the Tonto Hills and Camp Creek areas, as well as major power lines serving Phoenix. There were damages reported to 11 residences and 3 out-buildings in Camp Creek.	Carefree	0	0	$0	$0	$0	USFS, 2009
6/25/2008	Wildfire	In June 2008, lightning touched off the Ethan Brush Fire in the heavily vegetated Gila River bed south of Laveen. Approximately 50 residents of 18 homes were evacuated overnight and allowed to return the their undamaged homes the next day. The fire ultimately consumed about 7,000 acres.	Laveen	0	0	$0	$0	$0	Az Republic, 2008
8/1/2008	Wildfire	In August 2008, the Robins Butte fire burned about 500 acres of the Gila River bottom located four miles west of State Route 85, south of Palo Verde Road, and near Buckeye.	Buckeye	0	0	$0	$0	$0	Az Republic, 2008

Appendix E

Plan Maintenance Review Reports