



City of Phoenix

JURISDICTIONAL SUMMARY

FOR THE

CITY OF PHOENIX

**MARICOPA COUNTY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN
2009**

CITY OF PHOENIX JURISDICTIONAL 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. There have been 51 federal or state declarations, 281 other events, and a combined total 336 disaster events recorded in Maricopa County, Arizona for the period of 1955 to 2008. 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 Phoenix demonstrated their commitment to hazard mitigation in 2003-2004 by preparing the first City of Phoenix Hazard Mitigation Plan (2004 Plan). The 2004 Plan was comprised of a multi-jurisdictional, countywide 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 the City and other participating jurisdictions, various Maricopa 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 to address Tribal specific planning elements, and jurisdictional summaries such as this one. The Plan will continue to guide the City, County, and other 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.

The overall purpose of DMA 2000 was to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state levels, and control federal costs of disaster assistance. Congress envisioned that implementation of these new requirements would result in the following key benefits:

- Reduction of loss of life and property, human suffering, economic disruption, and disaster costs.
- Prioritization of hazard mitigation planning at the local level, with an increased emphasis placed on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring that critical services/facilities survive a disaster.
- Establishment of economic incentives, awareness and education via federal support to state, tribal, and local governments that will result in forming community-based partnerships, implementing effective hazard mitigation measures, leveraging additional non-Federal resources, and establishing commitments to long-term hazard mitigation efforts.

In general, the DMA 2000 legislation requires all local, county, and tribal governments to develop a hazard mitigation plan for their respective communities in order to be eligible to receive certain federal non-emergency mitigation funds including Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation

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Program (PDM). FEMA's Flood Mitigation Assistance Program (FMA) planning requirements are also satisfied by this Plan as long as flooding is addressed.

In satisfying the regulatory requirements of DMA 2000, the primary purpose of the Plan is to identify natural hazards that impact Phoenix, 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 divided into eight primary sections as follows:

- Section 1 – Local Plan Adoption and FEMA Approval
- Section 2 – Introduction
- Section 3 – Planning Process
- Section 4 – Community Description
- Section 5 – Risk Assessment
- Section 6 – Mitigation Strategy
- Section 7 – Plan Maintenance Procedures
- Section 8 – Plan Tools

The planning process used to review and update the 2004 Plan included the organization and use of two planning team levels. The first was a Multi-Jurisdictional Planning Team (MJPT) that was comprised of one or more representatives from each participating jurisdiction. The second was the Local Planning Team (LPT) that was comprised of various staff and officials from the specific jurisdiction.

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 Plan. Attendance by each participating jurisdiction was required for every MJPT meeting as the meetings were structured to progress through the plan update process in a methodical, step-by-step manner. 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.

The MJPT met seven times from January to July 2009, with LPT meetings convened in between as needed to complete the homework and review/update tasks assigned.

The following are the contact details for the Plan primary point of contact for the City of Phoenix:

Mike DeBenedetto
Emergency Management Coordinator
Office of Emergency Management
200 West Washington Street, 12th Floor
Phoenix, AZ 85003
Work: 602.534.0642
Fax: 602.534.9202
Email: michael.debenedetto@phoenix.gov



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For information purposes, the following summarizes contact details for the Plan primary point of contact for Maricopa County:

Cristina Herrera
Emergency Services Planner
Maricopa County Department of Emergency Management
2035 North 52nd Street
Phoenix, AZ 85005
Work: 602.273.1411
Fax: 602.275.1638
Email: cristinaherrera@mail.maricopa.gov

The following table summarizes the LPT for Phoenix and roles of each person. The promulgation authorities are listed at the end of the table.

Name	Department / Division / Branch	Title	Planning Team Role / Description of Duties
Candace Huff	Aviation/Design & Construction Services Division	Special Projects Administrator	Aviation Design & Construction Liaison
Bobbie Reid	Aviation/Facilities and Services Division	Aviation Superintendent	Aviation Facilities Liaison
Jeff Barton	Budget & Research/Program Budgeting and Research Division	Deputy Budget & Research Director	Budgetary Liaison
Aaron Cook	City Auditor's Office	Internal Auditor III	Department Liaison
Lance Turcato	City Auditor's Office	Deputy City Auditor	Department Liaison
Gary Minton	City Clerk's Office/Records Management Division	Deputy City Clerk	Records and Electronic Media Liaison
Michael DeBenedetto	City Manager's Office/Office of Emergency Management	Emergency Management Coordinator	City Point of Contact
Jeri Todd	City Manager's Office/Office of Emergency Management	Administrative Assistant II	Planning Team Rep and Admin support
Liz Paulus	City Manager's Office/Office of Environmental Programs	Environmental Programs Specialist	Environmental Liaison
Tom Buschatzke	City Manager's Office/Water Strategy	Water Resources Management Advisor	Water Resource Liaison
Mary Magewick	Community and Economic Development/Management Services Division	Management Assistant II	Department Liaison
Margo Dorrough	Community and Economic Development	Administrative Assistant II	Department Liaison



CITY OF PHOENIX JURISDICTIONAL SUMMARY

Name	Department / Division / Branch	Title	Planning Team Role / Description of Duties
Derek Horn	Development Services/ Administration	Assistant Development Services Director	Building Code/Damage Assessment Liaison
Mo Glancy	Development Services/Commercial Services	Deputy Development Services Director	Building Code/Damage Assessment Liaison
Tauny Woo	Engineering and Architectural Services	City Engineer	Engineering and Architectural Liaison
Felissa Washington-Smith	Engineering and Architectural Services/ Administrative Services	Administrative Assistant III	Engineering and Architectural Liaison
Colleen Nathans	Finance/Risk Management	Assistant Risk Management Administrator	Risk Management Liaison
Richard Beardsley	Housing/ Administration	Deputy Housing Director	Department Liaison
Steve MacFarlane	Human Services/ Management Services	HSD Planning Supervisor	Department Liaison
Randell Smith	Information Technology/Enterprise Technical Services	Chief Information Security Officer	Information Technology Liaison
Elaine Cardwell	Law Department/ Management Services	Chief Counsel	Legal Counsel
Denton Casey (Alternate)	Law Department/ Civil Division	Assistant City Attorney IV	Legal Counsel
Diana Noli Hill	Municipal Court/ Civil Division	Municipal Court Administrator	Department Liaison
Doug Pilcher	Municipal Court/Administration	Executive Court Administrator	Department Liaison
Jason Harrell (Alternate)	Municipal Court/Management Services	Management Assistant II	Department Liaison
Danielle Taddy	Parks and Recreation/Specialized Maintenance and Aquatics	Special Operations Supervisor	Department Liaison
Boyd Winfrey	Parks and Recreation/ Development Planning Division	Principal Landscape Architect	Open Space Liaison
Lori Steward	Human Resources Department (formerly Personnel Department)	Labor Relations Administrator	Department Liaison
Max Enterline	Planning Department/ Administration	Planner II	Planning/Zoning Liaison
Charlie Brueggeman	Police Department/ Administrative Support	Project Manager	Police Facilities Liaison



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Name	Department / Division / Branch	Title	Planning Team Role / Description of Duties
Susan Robustelli	Public Transit/Operations	Management Assistant II	Department Liaison
Christine Smith	Public Works/Downtown Facilities Management	Deputy Public Works Director	Public Works and City Facilities Liaison
Wylie Bearup	Street Transportation	Street Transportation Director	Street Transportation and Dam Liaison
Sandra Remy (Alternate)	Street Transportation	Management Services Administrator	Street Transportation and Dam Liaison
Robert Hollander	Water Services/Compliance Regulatory and Affairs	Compliance Regulatory and Affairs Administrator	Department Liaison
Steve Rossi	Water Services/Water Conservation Office	Principal Planner	Drought Management Liaison
PROMULGATION AUTHORITY			
Phil Gordon	City Council	Mayor	Plan Promulgation
Tom Simplot	City Council	Vice Mayor	Plan Promulgation
Sal DiCiccio	City Council	Council Member	Plan Promulgation
Bill Gates	City Council	Council Member	Plan Promulgation
Michael Johnson	City Council	Council Member	Plan Promulgation
Claude Mattox	City Council	Council Member	Plan Promulgation
Peggy Neely	City Council	Council Member	Plan Promulgation
Michael Nowakowski	City Council	Council Member	Plan Promulgation
Thelda Williams	City Council	Council Member	Plan Promulgation

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. According to DMA 2000, the primary components of a risk assessment that answer the above questions are generally categorized into the following measures:

- Identify Hazards**
- Profile Hazard Events**
- Assess Vulnerability to Hazards**

The risk assessment for Phoenix utilized information developed by the LPT and Countywide hazard profile data. The vulnerability analysis results reported in the Plan reflect vulnerability at the community level as well as on a County-wide basis.

Following the lead of the State of Arizona, only natural hazards were considered for this update. The list of hazards in the 2004 Plan and the State Plan 2007¹ were reviewed and compared in an initial screening that used a systematic process that considered relevance, historical significance and experience, and catastrophic potential. The result was a list of hazards that are most relevant to Maricopa County. The Phoenix LPT further reduced the list to reflect only those hazards most important to Phoenix. The following table summarizes the Countywide list of hazards. The hazards selected for mitigation by the City are shown in bold type.

¹ State of Arizona, Division of Emergency Management, 2007, *State of Arizona Multi-Hazard Mitigation Plan*.



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Natural Hazard List for the Plan and Phoenix	
<ul style="list-style-type: none"> • Dam Inundation • Drought • Extreme Heat • Fissure • Flooding/Flash Flooding 	<ul style="list-style-type: none"> • Levee Failure • Severe Wind • Subsidence • Wildfire

Profiles were developed for each of the hazards by researching and mapping historical hazard events, obtaining other hazard mapping, analysis, and studies. In addition, Arizona used the Calculated Priority Risk Index (CPRI) for estimating.¹ Hazard profile maps for Dam Inundation (Emergency Spillway and Dam Failure), Fissure, Flooding/Flash Flooding, Levee Failure, Subsidence, and Wildfire were developed. Maps specific to Phoenix are provided following the text of this summary.

A vulnerability analysis was performed to assess and evaluate the City’s population and critical facility exposure risk to the identified hazards. The risk was tabulated in terms of exposure loss estimates and human population exposure. Critical facilities were individually identified by the MJPT and LPT and supplemental residential, commercial, and industrial facility information was obtained from FEMA’s HAZUS program. It is estimated that there are at least \$7.7 billion dollars² worth of critical and non-critical facilities within Phoenix. Residential, industrial, and commercial facilities within Phoenix are estimated to total over \$67.7 billion. The 2008 City population estimate is 1,561,485. The following table summarizes the general results of the vulnerability analysis for each of the top hazards in the City.

Hazard	Loss Estimate ^a	Potential Human Exposure ^b
Dam Inundation – Emergency Spillway	\$170.2 million	6,002
Dam Inundation – Dam Failure (High Hazard)	\$0	0
Drought	(No losses estimated)	1,561,485
Extreme Heat	(No losses estimated)	1,561,485
Flooding (High Hazard)	\$344.6 million	13,873
Severe Wind	(No losses estimated)	1,561,485

^a – These numbers represent estimates of the losses that may result assuming all delineated hazard areas are impacted at the same time. Actual event losses may not impact the entire area during a single event.

^b – These numbers represent the total human population potentially exposed to the hazard.

¹ The CPRI is explained in detail in the State of Arizona’s *Model Local Hazard Mitigation Plan*. A digital copy of the plan can be obtained at the following URL or the reader can go to Section 4.2.3 of this plan:
http://www.dem.state.az.us/operations/mitigation/MLHMP_Final_No%20Cover.pdf

² This estimate is likely to be coarse as there were many assets that the community was unable to obtain detailed replacement estimates for the Plan development schedule.

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The MJPT and Phoenix LPT developed a strategy for mitigating the hazard risks identified within the City. The mitigation strategy provides the “*what, when, and how*” of actions that will reduce or possibly remove the City’s exposure to hazard risks, and is generally categorized into the following components:

- Goals and Objectives**
- Capability Assessment**
- Mitigation Actions/Projects**
- Implementation Strategy**

The MJPT reviewed and discussed the 2004 Plan goals and objectives and compared them to the 2007 State Plan. The result of the discussions resulted in establishing one goal and four clear objectives as follows:

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

This goal and four objectives will be used by all participating jurisdictions in the Plan.

The Phoenix LPT reviewed and updated the community’s capability assessment regarding legal, regulatory, technical/staff, and financial resources. The following tables summarize the results:



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Summary of legal and regulatory capabilities for Phoenix	
Regulatory Tools for Hazard Mitigation	Description
CODES	<ul style="list-style-type: none"> • 2006 Phoenix Building Construction Code with July 2, 2008 and April 1, 2009 Amendments • 2006 Phoenix Building Code • July 1, 1994 ADA Guidelines • 2003 ICC/ANSI A 117.1 • 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 • 2005 National Electrical Code/NFPA-70 • 2008 National Electrical Code/NFPA-70 (effective May 1, 2009) • 2006 Uniform Plumbing Code with Phoenix Amendments • 2004 ASME A17.1 Safety Code for Elevators and Escalators with Phoenix Amendments • 2002 ASME A17.3 Safety Code for Existing Elevators and Escalators with Phoenix Amendments • 2003 ASME A18.1 Safety Code for Platform Lifts and Stairway Chairlifts • Phoenix Zoning Code • Title 14, Federal Code of Regulations - Federal Aviation Administration • Aviation Department Rules and Regulations • National Flood Insurance Program (NFIP) Regulations
ORDINANCES	<ul style="list-style-type: none"> • Phoenix Code of Ordinances
PLANS, MANUALS, and/or GUIDELINES	<ul style="list-style-type: none"> • 2001 Phoenix General Plan (beginning revision) • 2009 City of Phoenix Major Emergency Response and Recovery Plan (currently being updated) • 2009 Maricopa County Regional Multi-Hazard Mitigation Plan (currently being updated) • 2004 Design Standards Manual for Water And Wastewater Systems • 2004 Storm Water Policies and Standards • 2005 Supplement to the MAG Uniform Standard • 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

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Summary of legal and regulatory capabilities for Phoenix	
Regulatory Tools for Hazard Mitigation	Description
STUDIES	<ul style="list-style-type: none"> • FEMA DFIRM Maps • Dam Safety Studies and Emergency Action Plans • 7R/25L Runway Safety Area Environmental Assessment – Conditional Letter of Map Revision • Salt River Low Flow Channel Planning Study • Flood Insurance Studies (FIS) • Levee Studies

Summary of technical staff and personnel capabilities for Phoenix		
Staff/Personnel Resources	<input checked="" type="checkbox"/>	Department/Agency - Position
Planner(s) or engineer(s) with knowledge of land development and land management practices	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Planning Dept. – Principal Planner, Planner III, Village Planner & Planner II Water Services – Superintendents, Civil Engineers, Principal Engineering Technician, Hydrologist
Floodplain Manager	<input checked="" type="checkbox"/>	Street Transportation Dept. - Civil Engineer III
Surveyors	<input checked="" type="checkbox"/>	Street Transportation Dept. – Survey Teams
Staff with education or expertise to assess the community’s vulnerability to hazards	<input checked="" type="checkbox"/>	Water Services – Environmental Programs Coordinator, Civil Engineers, Water Quality Inspectors
Personnel skilled in GIS and/or HAZUS	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	City Manager’s Office - Emergency Management Coordinator



CITY OF PHOENIX JURISDICTIONAL SUMMARY

Summary of technical staff and personnel capabilities for Phoenix		
Staff/Personnel Resources	<input checked="" type="checkbox"/>	Department/Agency - Position
Grant writer(s)	<input checked="" type="checkbox"/>	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		

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

Using the vulnerability analysis, capability assessment, and goals and objectives, the Phoenix LPT then developed an updated list of mitigation actions/projects with an implementation strategy clearly defined. Each action/project was evaluated and prioritized based on: 1) Direct Impact on Life and/or Property; 2) Long-Term Solution; and 3) Benefit vs. Cost. The table on the following page summarizes the updated mitigation action/project list for Phoenix.

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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

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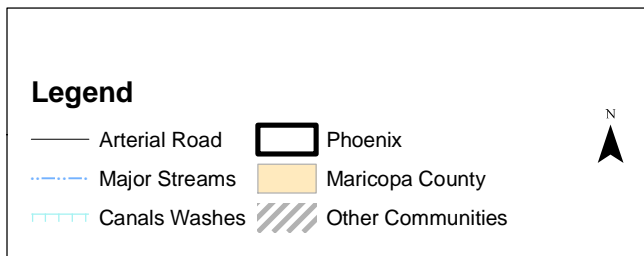
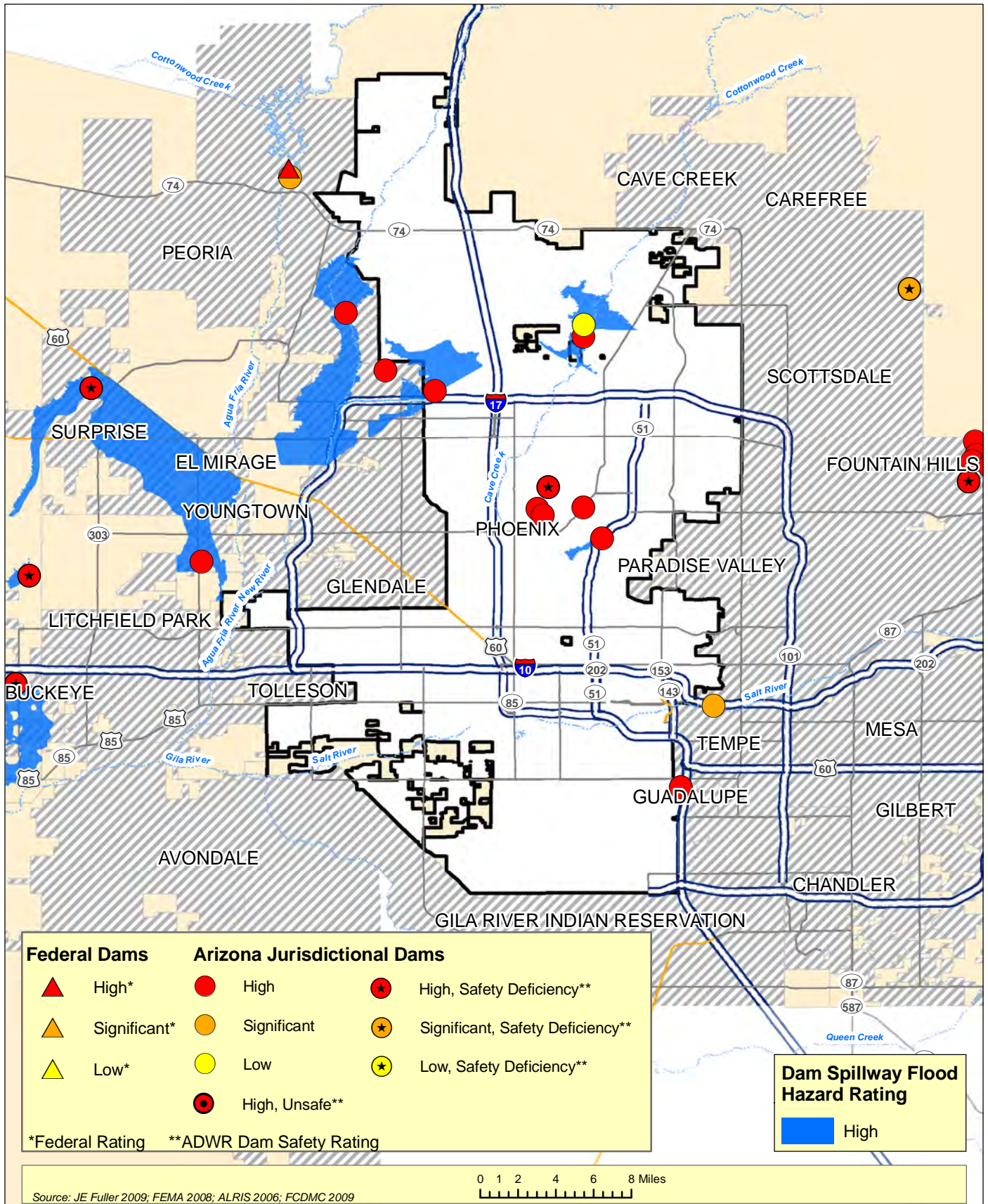
Table 6-7-19: Summary of mitigation actions and projects and implementation strategy for Phoenix									
Mitigation Action/Project					Implementation Strategy				
ID No.	Description	Hazard(s) Mitigated	Community Assets Mitigated (Ex/New)	Estimated Cost	Priority Ranking	Planning Mechanism(s) for Implementation	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.									

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As a final step in the planning process, plan maintenance procedures were developed by the MJPT to establish guidelines for maintaining, reviewing, and updating the Plan over the next five (5) years. The Plan will 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). The review will consider the following:

- ***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?*

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. The MJPT also determined that 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.

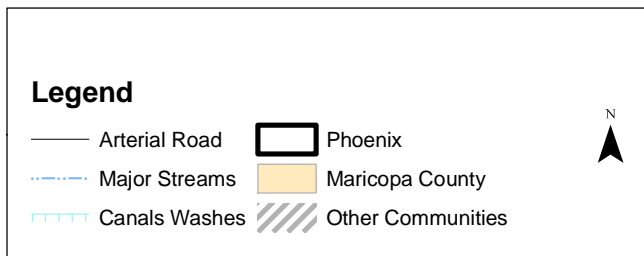
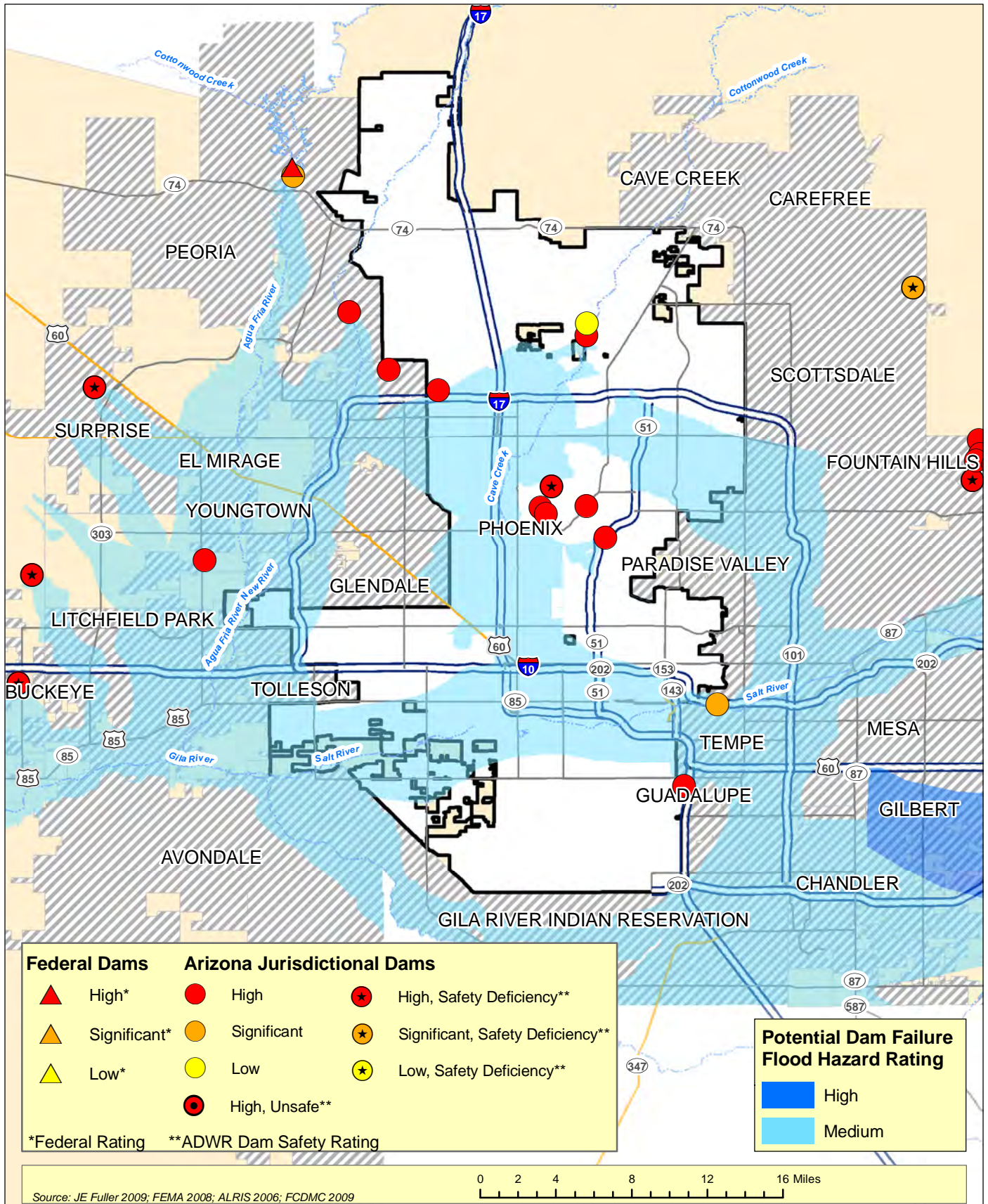


Maricopa County Multi-Jurisdictional Hazard Mitigation Plan




City of Phoenix

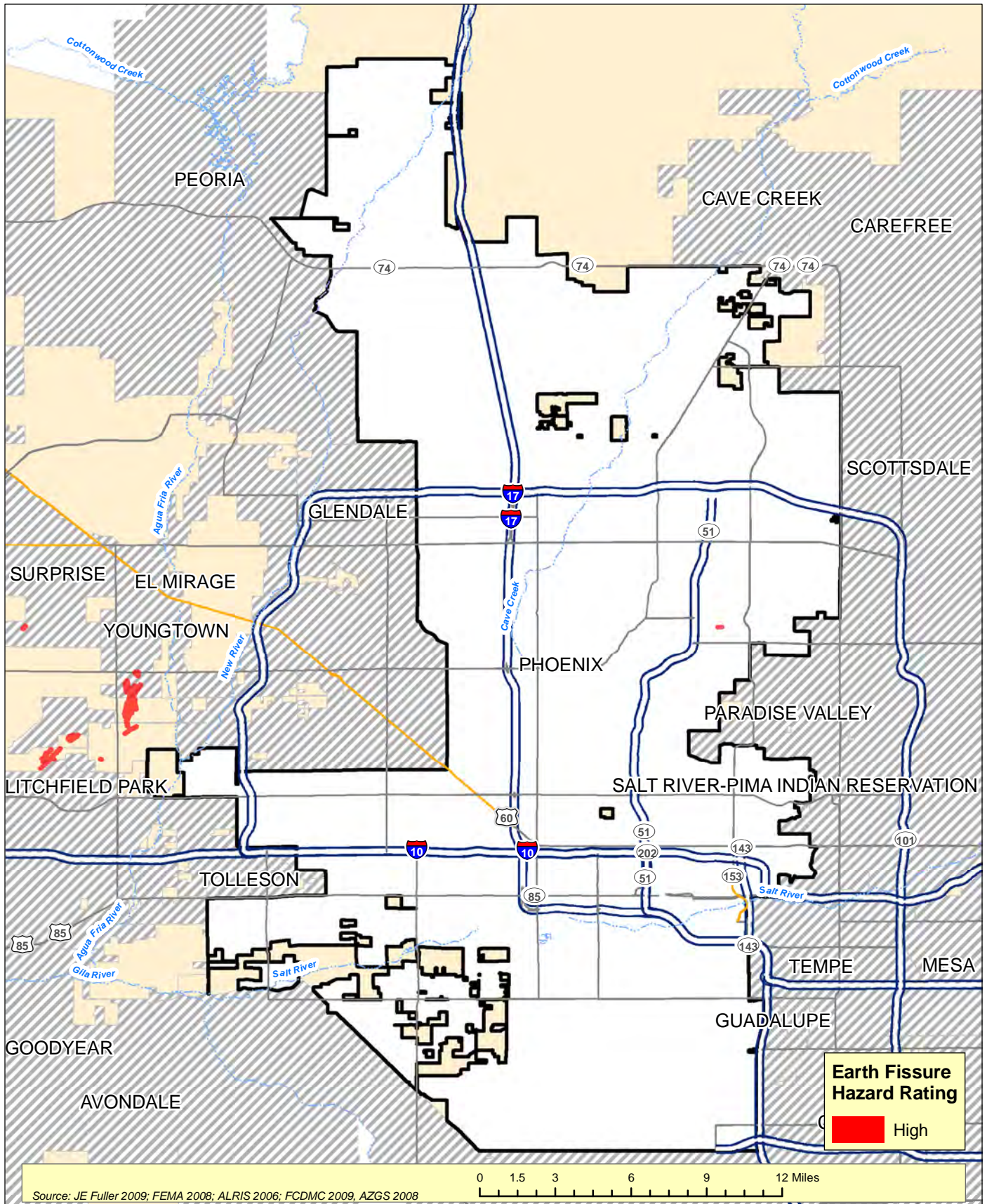
Map #1D18
City of Phoenix
Dam Spillway
Flood Hazard Map
 as of May 2009



Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #2D18
City of Phoenix
Potential Dam Failure Flood Hazard Map
 as of May 2009

City of Phoenix




Legend

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

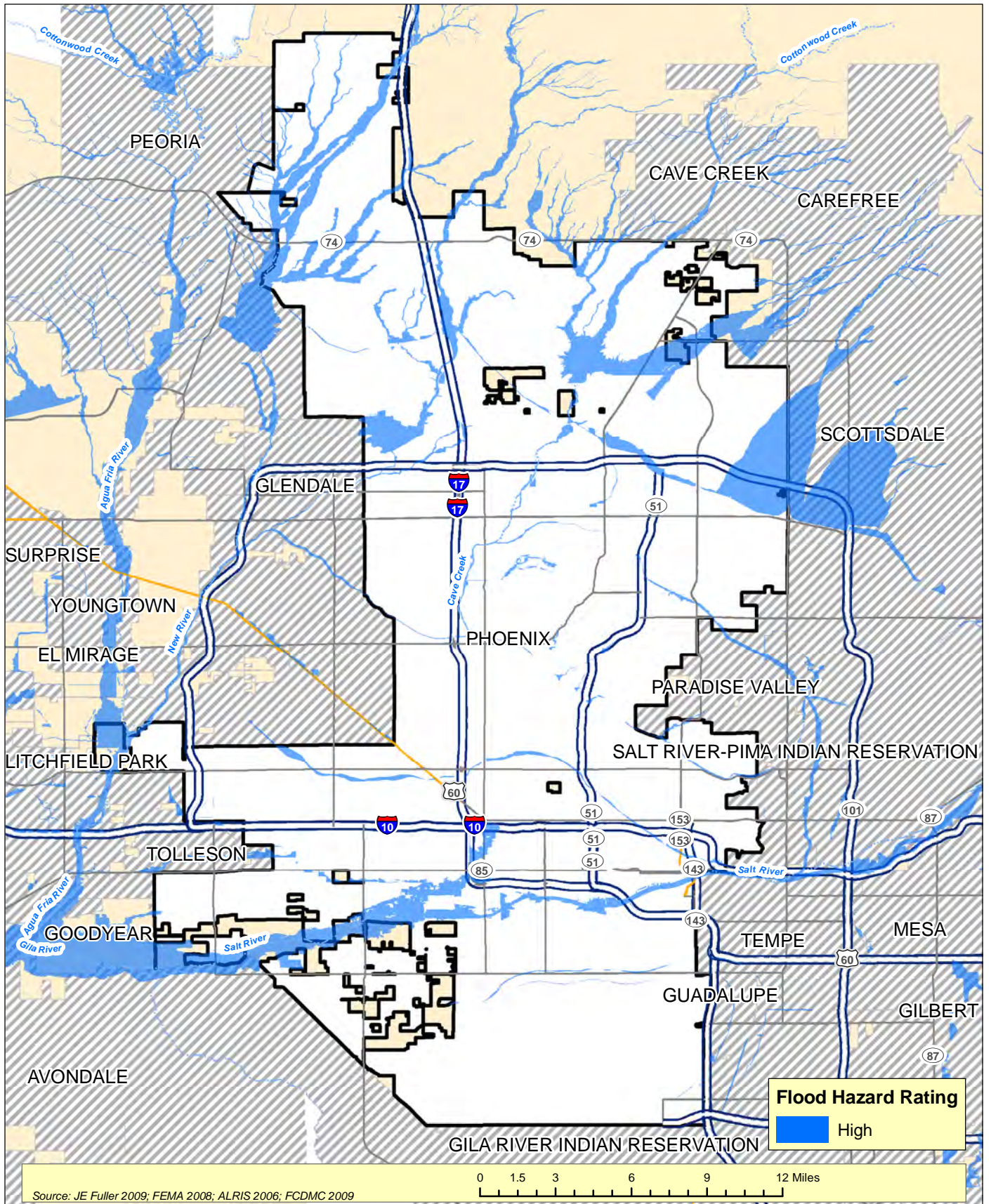
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**Maricopa County Multi-Jurisdictional
Hazard Mitigation Plan**

**Map #3D18
City of Phoenix
Earth Fissure
Hazard Map
as of May 2009**




City of Phoenix



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

Legend

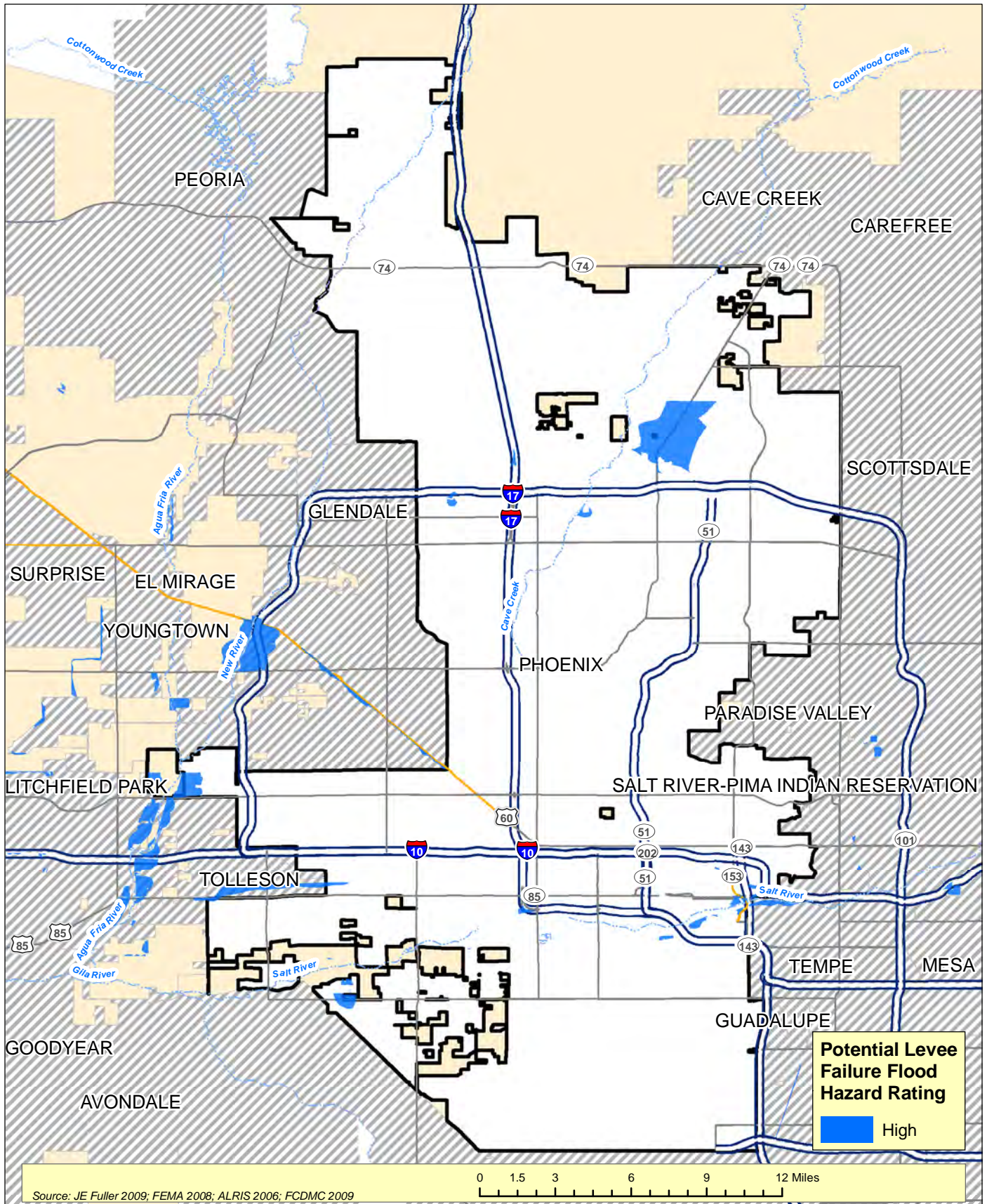
- Arterial Road
- Major Streams
- Canals Washes
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

N
▲

Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #4D18
City of Phoenix
Flood Hazard
Map
as of May 2009

City of Phoenix





Legend

Arterial Road	Phoenix
Major Streams	Maricopa County
Canals Washes	Other Communities

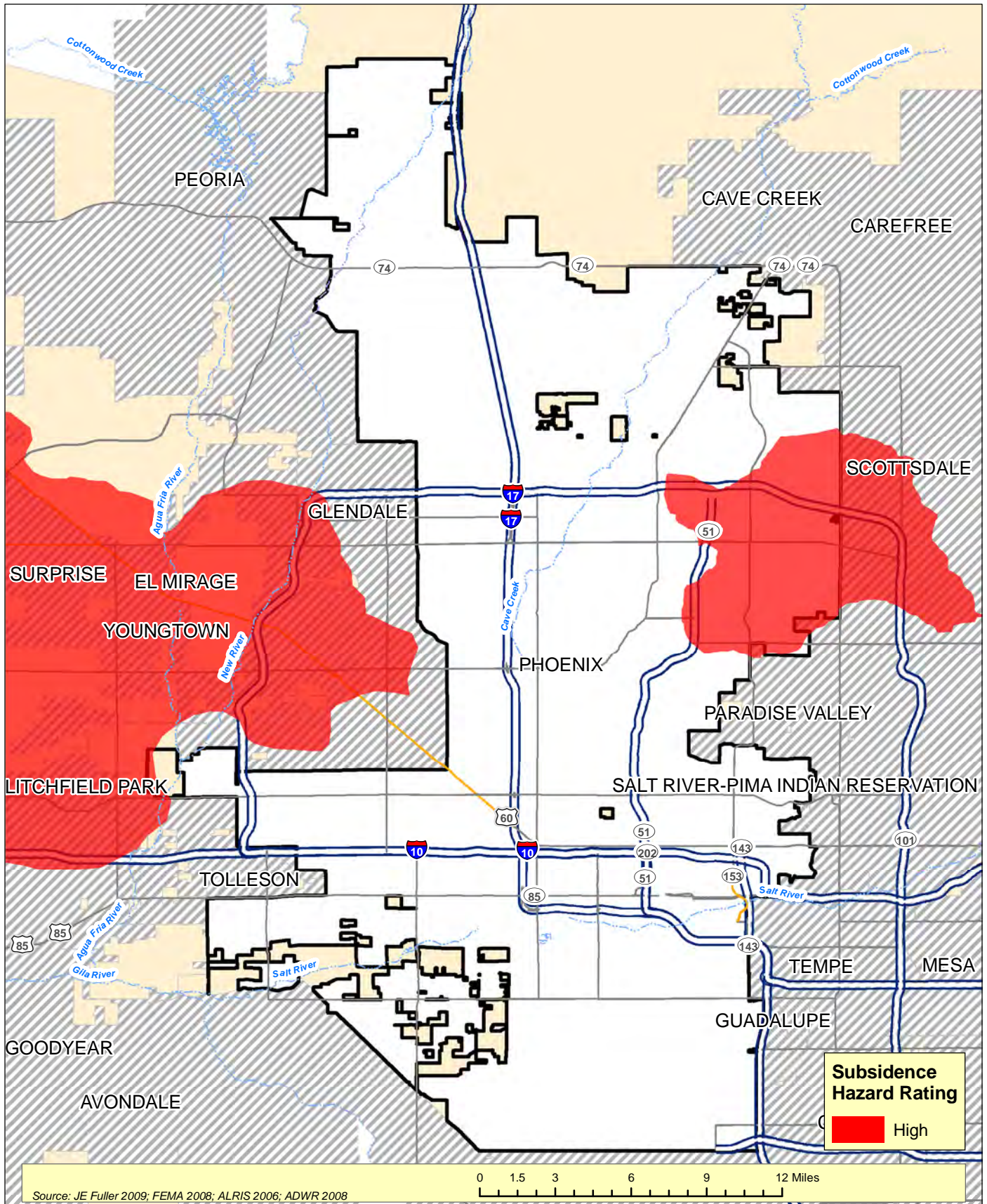
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Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

Map #5D18
City of Phoenix
Potential Levee Failure Flood Hazard Map
 as of May 2009

City of Phoenix



Legend

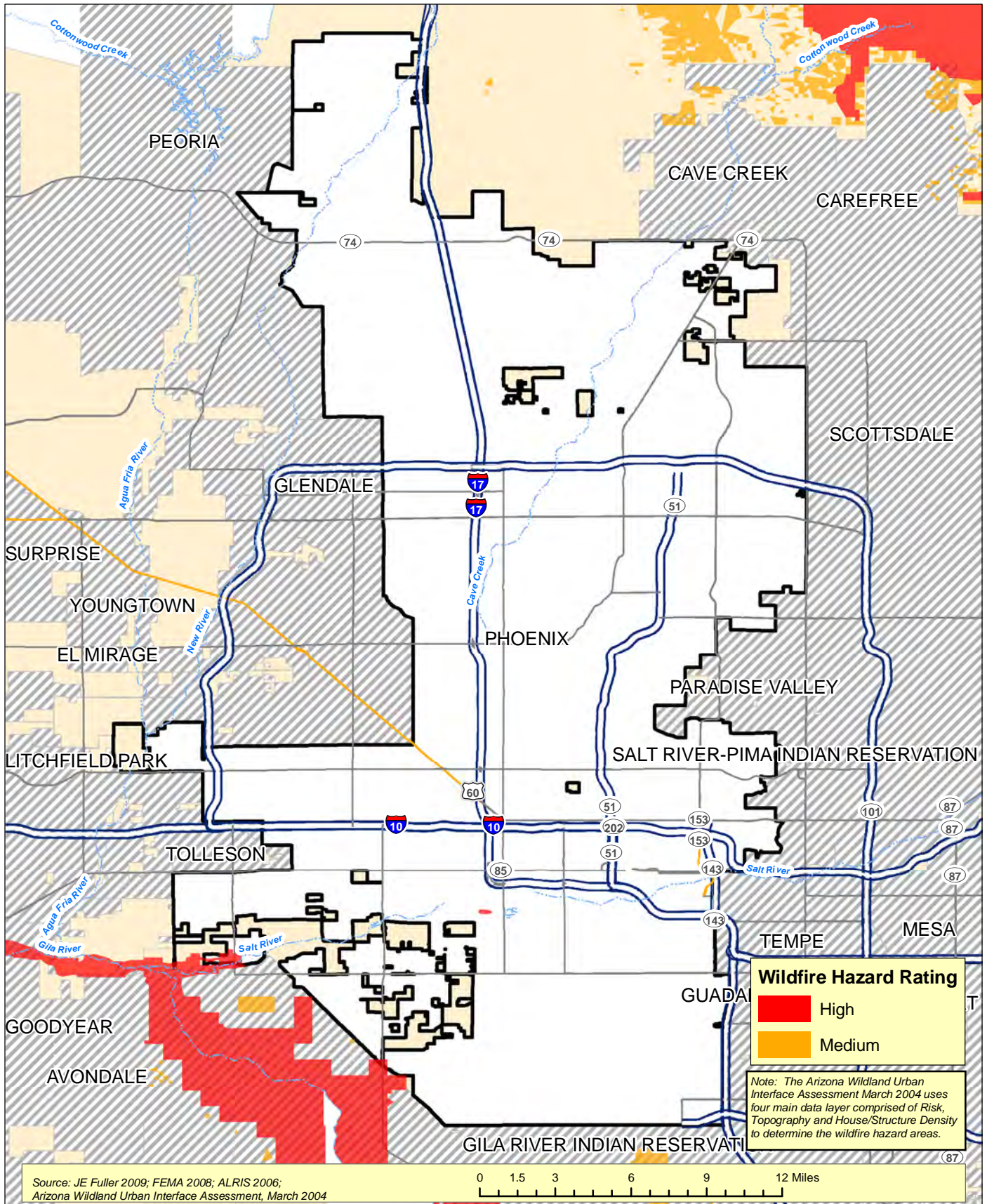
- Arterial Road
- Major Streams
- Canals Washes
- ☐ Phoenix
- ☐ Maricopa County
- ▨ Other Communities

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Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

City of Phoenix

Map #6D18
City of Phoenix
Subsidence
Hazard Map
 as of May 2009



Legend

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

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Maricopa County Multi-Jurisdictional Hazard Mitigation Plan

City of Phoenix

Map #7D18
City of Phoenix
Wildfire Hazard Map
 as of May 2009