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City of Austin

As discussed in Section 2, at the mitigation workshop held for the City, the planning team and stakeholders reviewed actions included in the 2004 Plan and provided an analysis for these actions, stating whether the action was completed, should be deleted or deferred for the Update. In addition, the planning team identified and prioritized new mitigation actions, including at least two mitigation actions for every hazard.

Previous Actions and Analysis

Past Action-1	
Proposed Action:	Implement Disaster Ready Austin

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane Wind, Tornado, Flood, Wildland Fire

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Priority (High, Moderate, Low):	High
Estimated Cost:	\$140,000 per year
Potential Funding Sources:	General revenue, grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2004 and ongoing

2009 Analysis:

This action will be deferred. While grant funding ended and DRA staff no longer exists, public education is still an ongoing primary mission of HSEM. HSEM is in the process of beginning a new campaign with children activity kits, which is scheduled for late 2009 as well as a campaign to promote a preparedness program to City employees.

Past Action-2

Proposed Action:	Implement and enhance a City-wide geographically-based telephone Emergency Notification System. Develop protocols for use of the system.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Tornado, Wildland Fire, Infectious Disease, Hazardous Materials Release, Pipeline Failure, Terrorism
Priority (High, Moderate, Low):	High
Estimated Cost:	\$80,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Austin Police Dept.
Implementation Schedule:	2003

2009 Analysis:

\$80,000 for purchase with monthly cost of maintenance and enhancement. Action has been completed.

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Past Action-3	
Proposed Action:	Undertake efforts to expand the existing Emergency Paging (AWACS) System to include warning and communications to other educational facilities, including other school districts in Travis County, and special needs populations, including access for the disabled. Over the long term, consideration should be given to making the system available to the public on a no-cost subscription basis.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Tornado, Flood, Wildland Fire, Infectious Disease, Hazardous Materials Release, Pipeline Failure, Terrorism
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be determined
Potential Funding Sources:	General Revenues, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:
Action has been completed in part and is in place. After an analysis it was determined that it would not be feasible to make the system available to the public.

Past Action-4	
Proposed Action:	Promote the use of NOAA “All Hazards” radios for early warning and post-event information.

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Hazard(s) Addressed:	Dam Failure, Flood, Tornado, Wildland Fire, Drought, Extreme Heat, Winter Storm, Hail, Thunderstorm
Priority (High, Moderate, Low):	High
Estimated Cost:	\$55 per radio
Potential Funding Sources:	General Revenues, grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is complete. Funding for the radios and distribution of the radios was completed in 2004.

Past Action-5

Proposed Action:	Enhance the capability for visual monitoring and digital recording of emergency situations from the new Emergency Operations Center in the Combined Center.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Dam Failure, Tornado, Wildland Fire, Infectious Disease, Winter Storm, Hazardous Materials Release, Pipeline Failure, Terrorism
Priority (High, Moderate, Low):	Low
Estimated Cost:	To be determined
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003

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2009 Analysis:
This action is complete.

Past Action-6	
Proposed Action:	<p>Develop evacuation plans, policies and procedures for the full range of contingencies and geographic areas of the City.</p> <ul style="list-style-type: none"> • Bring together experts in emergency planning, transportation planners and traffic engineers to develop evacuation plans, policies and procedures for the full range of contingencies that Austin may face. • Utilize the closed circuit televisions of the City of Austin and Texas Department of Transportation to help aid traffic flow during evacuations. • Develop canned messages for use with the public and the media. • Examine the need for additional legislative authority to conduct mandatory evacuations.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane Wind, Tornado, Flood, Terrorism, Infectious Disease, Hazardous Materials Release, Pipeline Failure
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$100,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management, Transportation, Planning and Sustainability, Fire Dept., Police Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action will be deferred due to the size and scope of the project. A determination has been made that the most effective way to proceed would be to obtain the services of a knowledgeable consultant to assist with the project. Suitable grant funding is being identified to provide for these consulting services.

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Past Action-7	
Proposed Action:	<p>Develop a coordinated, interagency emergency debris removal plan.</p> <ul style="list-style-type: none"> • Develop a proposed command structure. • Pre-designate staging areas and dumping sites. • Pre-qualify contractors for use in large-scale disasters. • Pre-identify specialized equipment needs and develop standby lease agreements. • Provide for recycling of materials. • Cover debris removal on both public and private properties.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Tornado, Hurricane Wind, Terrorism
Priority (High, Moderate, Low):	Medium
Estimated Cost:	Minimal - \$10,000-\$20,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2004

2009 Analysis:
This action has been completed.

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Past Action-8	
Proposed Action:	Establish the capability for a single, interagency mobile Incident Command Post and Mobile Communications Center.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Tornado, Hurricane Wind, Terrorism, Infectious Disease, Pipeline Failure, Hazardous Materials Release
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$300,000-\$350,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Austin Police Dept., Fire Dept.
Implementation Schedule:	2003 or as funding becomes available

2009 Analysis:
The mobile unit is currently deployed under the direction of the AFD. The program is close to completion and will not be deferred.

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Past Action-9	
Proposed Action:	<p>Design and implement a comprehensive concerted protection program for critical information systems infrastructure.</p> <ul style="list-style-type: none"> • Conduct an impact analysis to determine critical applications and maximum acceptable outage durations. • Enhance disaster avoidance capabilities for critical information systems. • Enhance the standardization of information technology policies and procedures. • Harden the existing operational informational technology infrastructure.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Tornado, Hurricane Wind, Terrorism, Infectious Disease, Pipeline Failure, Hazardous Materials Release, Drought, Wildland Fire
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1.5 - \$2 million
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Financial and Administrative Services Dept.
Implementation Schedule:	2004 and ongoing

2009 Analysis:
Action completed.

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Past Action-10	
Proposed Action:	Adopt the 2003 International Building Code

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Flood, Hurricane Wind, Hail
Priority (High, Moderate, Low):	High
Estimated Cost:	\$10,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2004

2009 Analysis:
The 2003 International Building Code is part of a comprehensive, coordinated set of codes produced by the International Code Council (ICC) and is expected to be widely adopted by states and municipalities across the country. This action is complete and will not be deferred. The Austin City Council adopted the 2003 IBC on 12/15/2005.

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Past Action-11	
Proposed Action:	Establish a voluntary program of value-added building codes that go beyond the 2003 International Building Code requirements.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Flood, Hurricane Wind, Hail
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$8,000-\$10,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review Dept
Implementation Schedule:	2010

2009 Analysis:
This action has been partially completed and will be deferred. The city plans to adopt the 2009 IBC in early 2010.

Past Action-12	
Proposed Action:	Improve code enforcement and inspection services.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Flood, Hurricane Wind, Hail
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$8,000-\$10,000
Potential Funding Sources:	General Revenue
Lead Agency/Department	Assistant City Manager

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Responsible:	
Implementation Schedule:	2004

2009 Analysis:
This action has been completed. On or about June 1, 2005 a comprehensive report was completed by Dr. Clarence Bibby (Austin Energy / CMO Consulting Services). In 2005, using the recommendation report, Code Enforcement was consolidated under Solid Waste Services.

Past Action-13	
Proposed Action:	Recruit and train up to three hundred Disaster Ready Austin volunteers to provide support in safeguarding the City of Austin before, during, and after any disaster.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Tornado, Hurricane Wind, Terrorism, Infectious Disease, Pipeline Failure, Hazardous Materials Release, Drought, Wildland Fire
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$125,000 per year
Potential Funding Sources:	Grant
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2005

2009 Analysis:
This action is complete. Program is part of CERT; as of Nov.2009, over 700 volunteers have been trained. Disaster Ready Austin merged with the HSEM CERT volunteer program which continues to train approximately 100 volunteers per year.

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Past Action-14	
Proposed Action:	Expand the Austin Police Department’s Civil Defense Battalion by two hundred trained volunteers to provide support in safeguarding the city of Austin in the event of a large-scale emergency.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Tornado, Hurricane Wind, Terrorism, Infectious Disease, Pipeline Failure, Hazardous Materials Release, Drought, Wildland Fire
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$275,000 per year for 3 years
Potential Funding Sources:	Grant
Lead Agency/Department Responsible:	Austin Police Dept.
Implementation Schedule:	2005

2009 Analysis:
Proposed action successfully completed with all volunteers trained. Grant ended in 2008.

Past Action-15	
Proposed Action:	Enhance the information base to support future hazard mitigation planning. Work with the Travis County Appraisal District to produce parcel polygon data in a HAZUS-compatible GIS format. Input localized flood data into HAZUS flood model for use in planning and in real-time disasters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium

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Estimated Cost:	\$500,000-\$1,000,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Emergency Mgmt, Watershed Protection and Development Review
Implementation Schedule:	Ongoing

2009 Analysis:

GIS-based parcel polygon data is vital for future planning for hazard mitigation and the use of HAZUS. GIS data is available and HAZUS model is available to staff who are trained in using the product. This action is partially complete and will be deferred.

Past Action-16

Proposed Action:	Enhance hazard mitigation planning as a factor in community development activities, including business development and long-range regional growth planning being carried out by Envision Central Texas (ECT).
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Tornado, Flood, Wildland Fire, Infectious Disease, Hazardous Materials Release, Pipeline Failure, Terrorism
Priority (High, Moderate, Low):	High
Estimated Cost:	\$50,000-\$75,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Economic Growth and Redevelopment Services and Transportation, Planning and Sustainability Department
Implementation Schedule:	Ongoing

2009 Analysis:

Action is partially complete, but ECT continues to focus on mitigation and critical issues such as land use, open space and social equity. Therefore the action is deferred as an ongoing activity. There are currently six Implementation Committees in

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place that convene educational events, develop position papers and contribute to a number of tools and ongoing projects, such as the Quality Growth Toolbox and Greenprint for Growth. ECT continues to fulfill its critical role of educating and engaging citizens in an ongoing dialogue about the challenges of growth and the opportunities to shape the region's future.

Past Action-17

Proposed Action:	Promote the Small Business Administration Pre-Disaster Mitigation Loan Program.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Tornado, Flood, Wildland Fire, Infectious Disease, Hazardous Materials Release, Pipeline Failure, Terrorism
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$50,000 per year
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2004 and ongoing

2009 Analysis:

HSEM continues to promote the program through public education activities.

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Past Action-18	
Proposed Action:	<p>Implement new flood warning and response tools and develop operational plans for their use. This action will help reduce the loss of life due to flooding by providing enhanced warning and response tools.</p> <ul style="list-style-type: none"> • (1) These tools include automated low water crossing barricades at: Old Bee Caves Rd. Joe Tanner Lane, Wasson Road, Waters Park Rd., Lakewood Dr., Old Spicewood Springs Rd., Spicewood Springs Rd., Colton-Bluff Springs Rd., Old San Antonio Rd. • (2) Acquire and implement upgraded Base Station hardware and software, to include web publishing of Flood Early Warning System data and advanced alarm/decision support capability. • (3) Study FEWS field gauging equipment, computer hardware, software and procedures to include potential use of NEXRAD precipitation data in GIS; and develop recommendations for system improvements. • (4) Coordinate with OEM and APD to develop operational plans for use of automated low water crossing barricades, advanced alarm/decision support software, and use of Emergency Notification System. • (5) Migrate Flood Early Warning System base station to Austin Travis County Emergency Operations Center. • (6) Install video monitoring at selected low water crossings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000,000 plus staff time
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department	Watershed protection and Development

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Responsible:	Review
Implementation Schedule:	Ongoing

2009 Analysis:

Action items 1-6 have been implemented, however, ongoing maintenance and improvements will continue following the assessment in Dr. Ford's report, which outlined improvement recommendations for FEWS.

Past Action-19	
Proposed Action:	<p>Improve the methods, standards and procedures for floodplain management.</p> <ul style="list-style-type: none"> • 1) Complete Base Mapping of digital terrain data to FEMA standards by 2003. • (2) Assist with development of the Waivers, Exceptions, and Regional Stormwater Management Program Reviews/Permits, Inspection, Environmental Reviews (WIER/PIER) database. • (3) Review current rating on Building Code Effectiveness Grading Schedule, and develop an action plan for improvement, with improvements implemented by 2006. • (4) Increase Community Rating System rating to increase flood insurance discounts in Special Flood Hazard Areas from 10- to 20-percent or more by 2006. • (5) Conduct comprehensive review by 2005 of city of Austin hydrological and hydraulic methods and procedures applicable to engineering studies for floodplain mapping, including potential for: <ul style="list-style-type: none"> • (a) use of most recent depth-duration-frequency for Texas; • (b) standard models and methods for hydrological/hydraulic studies; • (c) use of floodway; • (d) use of future conditions hydrology criteria; • (e) formalized processes for updating and maintaining floodplain mapping; and • (f) plan for code modifications to show regulatory floodplains on FEMA FIRMs. • (6) Present recommended code and technical criteria amendments to stakeholders and amend regulatory requirements as applicable, by 2006. • (7) Define future or fully developed conditions and produce an official city of Austin GIS map of conditions by 2006. • (8) Implement process improvements by 2006 to update and maintain future digital floodplain mapping, including merging city and FEMA floodplain mapping. • (9) Review and update all city and FEMA regulatory floodplain studies and maps in digital format by 2008. • (10) Deliver floodplain info to stakeholders by 2007 through use of web-based transaction.

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MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$2,000,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed protection and Development Review
Implementation Schedule:	2006-2008

2009 Analysis:
Action is partially complete and will be deferred. Action items 1-4 complete. For Item 5, floodplain mapping studies are ongoing with most populated urban watersheds completed.

Past Action-20	
Proposed Action:	Continue acquisition of repetitively flooded structures in the floodplain.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	\$200,000 per structure
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	Watershed Management and Development Review Dept.
Implementation Schedule:	2004 - 2012

2009 Analysis:
Staff training on available state and federal funding opportunities, 3 HMGP grants received, \$9.9 M of federal funding awarded, 114 flood-prone homes acquired and demolished, one HMGP grant application pending approval by FEMA to purchase up

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to 25 properties. Revisions to relocation ordinance on hold per law department. This action is partially complete and will be deferred.

Past Action-21

	Proposed Action:	Increase flood hazard protection from localized flood hazard events identified in the Watershed Master Plan of 2006, including storm drain improvement projects, creek crossing and pond inspections
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	Per Capital Project Listing from 2004 Plan – See Table 9-1 at the end of this section.
Potential Funding Sources:	General Revenue, Bonds, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2006-2012

2009 Analysis:

Partially completed. This action will be deferred. All work is ongoing, per Local Flood Hazard Mitigation Supervising Engineer. However, some projects will not be completed without significant increase in CIP funding.

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Past Action-22	
Proposed Action:	Provide increased protection from creek flooding to 350 structures/crossings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	Per Capital Project Listing Table from 2004 Plan – See Table 9-1 at the end of this section.
Potential Funding Sources:	General Revenue, Bonds, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review Department.
Implementation Schedule:	2008-2011

2009 Analysis:
Creek flooding poses a recurring city-wide risk to public safety and property. All work is ongoing. This action is deferred.

Past Action-23	
Proposed Action:	Enhance existing Regional Stormwater Management program.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$200,000

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Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed protection and Development Review
Implementation Schedule:	2007-2010

2009 Analysis:
This action is partially completed and will be deferred.

Past Action-24	
Proposed Action:	Design and implement in-stream erosion stabilization projects.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Low
Estimated Cost:	See Capital Project Listing at Table 9-1
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2008 and ongoing

2009 Analysis:
This action is partially complete and will be deferred.

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Past Action-25	
Proposed Action:	Carry out long-range Capital Improvement Projects to support implementation of the Watershed Master Plan and projects recommended by the U.S. Army Corps of Engineers for Onion and Williamson Creeks.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Moderate-High
Estimated Cost:	\$150 million
Potential Funding Sources:	Bonds, General Revenue, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2006 2010

2009 Analysis:
<p>This action is partially complete and will be deferred as an ongoing activity. Master Plan Projects: Carson: Thorberry - low water crossing upgrade (complete), Richland Estates - buyout of homes in 25 year floodplain (complete), Hoeke/Posten - buyout of floodprone properties and upgrade of Hoeke Ln (in design) Fort Branch: Reaches 6&7 – erosion and flood control project and buyout of floodprone structures (in design) Boggy: creek flood hazard mitigation, upgrade of Manor Rd, stream bank stabilization, and water quality retrofits (in design) Bull: Lakewood Dr low water crossing upgrade (in design) Walnut: Crystalbrook detention pond (complete) Williamson: Creekbend floodwall (complete) Master Plan Flood Scores: revisions to scoring methodology, inclusion of updated data and information, evaluation of new scores, updates to priority list of problem areas USACE: Dec 2008 Technical Memorandum for Williamson Creek detailing alternatives analysis and recommendations. Partnership with the Corp to buyout ~400 floodprone properties in Onion Creek Watershed. Onion buyouts. \$145 million bond passed by voters in 2006 for drainage and water quality improvements Drainage Utility Fund rate increases proposed for 2010.</p>

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Past Action-26	
Proposed Action:	Undertake regulatory modifications to include various code and criteria changes required to improve service to the public, provide developer incentives, reduce long-term maintenance needs, and prevent the creation of new watershed problems in the future.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	Cost dependent upon individual projects
Potential Funding Sources:	Medium
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2003-2012

2009 Analysis:
Partially complete; this action is deferred. Easement release criteria and policy have been developed. Policies and processes refined for model distribution.

Past Action-27	
Proposed Action:	Expand Watershed Protection Master Planning efforts beyond the seventeen Phase I watersheds.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$62,000,000
Potential Funding Sources:	General Revenue, Grants

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Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2003-2010

2009 Analysis:

Phase I of the Watershed Protection Master Plan inventoried existing watershed problems and gauged the impact of future urbanization on 17 of the city's 47 watersheds. The 17 watersheds included all of the urban watersheds and five surrounding, non-urban watersheds. Technical assessments have been completed for 24 additional watersheds for water quality; 2 additional watersheds for erosion, with 4 additional studies to be completed in FY2010; for an additional 12 watersheds, flood to be completed by FY2010. This action is partially complete and will be deferred.

Past Action-28

Proposed Action:	Conduct public education on the dangers of low water crossings.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	Costs will be covered as part of the Disaster Ready Austin education and outreach initiative
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This is an ongoing action and is deferred. HSEM belongs to the Texas Flash Flood Alley War Council.

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Past Action-29

	Proposed Action:	Promote an increase in the number of at-risk structures covered by flood insurance through mail outs to floodprone properties; conduct outreach to the banking community and insurance agents.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	Costs covered as part of Disaster Ready Austin
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management and Watershed Protection and Development Review Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is complete. More than 50,000 letters were mailed Aug. 13, 2008. Notification is completed annually as part of CRS. In 2008 the city's insurance carrier evaluated those public buildings of a higher flood risk and purchased flood insurance.

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Past Action-30	
Proposed Action:	Develop a public outreach strategy and implementation plan for flood hazard information.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	Costs covered as part of Disaster Ready Austin education and outreach
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management with the Watershed Protection and Review Department
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This is an ongoing effort, which is partially complete and therefore deferred.

Past Action-31	
Proposed Action:	Enhance readiness to carry out post-disaster flood mitigation projects such as using handheld GPS to document high water marks and immediately providing those impacted by a flood event with detailed information on rebuilding requirements.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000-\$30,000

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Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review Dept
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is complete. GPS units purchased in 2005 and available to document high water marks.

Past Action-32

Proposed Action:	Ensure that more city inspectors are trained in floodplain management.
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Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	Minimal
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed Protection and Development Review dept
Implementation Schedule:	2003 and ongoing

2009 Analysis:

An ongoing program with upcoming training sessions about Elevation Certificates and Building Code has been established, therefore this action is complete.

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Past Action-33	
Proposed Action:	Design and implement a comprehensive community awareness and educational campaign on the wildland fire danger, targeted at areas of highest risk.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000 per year and ongoing
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action is partially complete and will be deferred. AFD participates in the annual wildfire awareness public education campaign, which is region wide with ESDs in primarily higher risk areas of county

Past Action-34	
Proposed Action:	Develop capabilities, systems and procedures to pre-deploy fire-fighting resources during times of high wildland fire hazard. Through training and education, prepare the Austin Fire Department for wildland-interface scenarios.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$35,000 training and equipment
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department	Austin Fire Dept.

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Responsible:	
Implementation Schedule:	2003 -2011

2009 Analysis:
Action partially complete and will be deferred. Purchased additional brush trucks to total of 12; established wildland firefighting committee to participate in county initiatives.

Past Action-35	
Proposed Action:	Expand on the existing County Resource Coordinator (CRC) concept to develop and implement a coordinated, regional interagency wildland fire mitigation plan and structure.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue, Grant, stakeholder contributions
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action is deferred as it is ongoing. AFD participates in county wildland firefighting committee planning and initiatives.

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Past Action-36	
Proposed Action:	Upgrade and expand Geographic Information System hardware and software to support completion of wildland-fire study for the entire city and surrounding areas.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$35,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2003-2011

2009 Analysis:
This action is not complete and will be deferred. The AFD was unable to raise appropriate levels of funding to expand the hardware and software, but is currently working on generating staff and revenue to complete the action.

Past Action-37	
Proposed Action:	<p>Promote use of new technologies for detecting and suppressing fires.</p> <ul style="list-style-type: none"> • Give consideration to decreasing the threshold for requiring sprinkler detection systems on new construction. • Promote residential sprinkler systems. • Provide financial incentives to retrofit existing structures to enhance fire protection. • Consider an ordinance requiring sprinklers on older residential high-rise buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire

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Priority (High, Moderate, Low):	High
Estimated Cost:	On a national average, residential sprinklers add 1 – 1.5 percent to the total building cost, or approximately \$0.80 per square foot.
Potential Funding Sources:	General Revenues, Grants
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2003

2009 Analysis:

This action is not complete and will not be deferred. Considered high rise sprinkler ordinance for older structures, but failed to gain sufficient political support.

Past Action-38

Proposed Action:	Continue and enhance fire prevention and fire safety awareness educational efforts.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	High
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2003 and Ongoing

2009 Analysis:

Partially complete. No home hazard inspection program but fairly aggressive smoke detector installation program for targeted populations and neighborhoods.

Section 9 – Mitigation Actions

Past Action-39	
Proposed Action:	Continue to undertake an aggressive fire inspection program.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Austin Fire Dept.
Implementation Schedule:	2004 and Ongoing

2009 Analysis:
The City of Austin has adopted the International Fire Code and is conducting inspections according to the 2009 International Fire Code. This action is complete.

Past Action-40	
Proposed Action:	Initiate a drought awareness and water conservation program as part of the existing water conservation campaign.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$8,000-\$10,000
Potential Funding Sources:	General Revenues
Lead Agency/Department	Transportation Planning and Sustainability

Section 9 - Mitigation Actions

Responsible:	Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is deferred as it is an ongoing activity. The Water Conservation Program and Campaign have been implemented each year beginning in 2003.

Past Action-41

Proposed Action:	Establish a pilot project to investigate the potential for automated Evapotranspiration technology to program irrigation systems on a voluntary basis to conserve water resources.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Drought
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$50,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Transportation Planning and Sustainability Dept.
Implementation Schedule:	2005

2009 Analysis:

This action will be deferred.

Section 9 – Mitigation Actions

Past Action-42	
Proposed Action:	Develop an enforcement plan and capabilities for use in the event of mandatory water rationing.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$5,000-\$10,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Transportation Planning and Sustainability Dept, Austin Police Dept.
Implementation Schedule:	2004

2009 Analysis:
An enforcement plan was needed to identify capabilities in the event of severe drought. This action is complete.

Past Action-43	
Proposed Action:	Ensure water and energy conservation at city facilities.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue

Section 9 - Mitigation Actions

Lead Agency/Department Responsible:	All city departments
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is ongoing and is deferred.

Past Action-44

Proposed Action:	Provide community outreach and education to individuals and businesses concerning winter storm alerts and preparatory actions for homes and businesses.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Winter Storm
Priority (High, Moderate, Low):	Low
Estimated Cost:	Costs part of Disaster Ready Austin
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This is an on-going activity and therefore is deferred. Costs are covered as a part of HSEM. Information is made available through the HSEM website, calendar and other on-line sources.

Section 9 – Mitigation Actions

Past Action-45

	Proposed Action:	Conduct major tree pruning initiative along power lines
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Winter Storm
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$6,000 over two years; then on 4-year cycle
Potential Funding Sources:	General Revenues
Lead Agency/Department Responsible:	Austin Energy
Implementation Schedule:	2004 and in five year cycle

2009 Analysis:

This is an ongoing activity and will be deferred. Austin Energy is attempting to establish a five year cycle on overhead electric lines. There has been a substantial reduction in the duration and frequency of outages with normal storms in areas where tree work has been completed.

Past Action-46

	Proposed Action:	Foster the construction of “tornado safe rooms.” <ul style="list-style-type: none"> • (1) Work with builders to offer tornado safe rooms as option for new construction. • (2) Work with real estate community to show tornado safe room in model home. • (3) Promote retrofitting of existing structures to include tornado safe rooms. • (4) Incorporate benefits of tornado safe rooms into Disaster Ready Austin's community awareness and education programs.
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MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Hurricane Wind
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$3,000 - \$8,000 per structure, depending on new construction or retrofitting existing structures
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management; Watershed Protection and Development Review
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action is not complete and will be deleted as there was no public support.

Past Action-47	
Proposed Action:	Ensure that public community facilities have severe weather action plans, conduct frequent drills and designate tornado shelter areas. Encourage the building of tornado safe community shelters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Hurricane Wind
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$8,000-\$10,000
Potential Funding Sources:	General Revenues, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

Section 9 – Mitigation Actions

2009 Analysis:

This action is partially complete and will be deferred. No drills have been conducted, but HSEM continues to encourage the building of shelters through our DRA website.

Past Action-48

	Proposed Action:	Promote the use of steel connectors in new and existing construction
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Tornado, Hurricane Wind
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$450-\$500 per new structure
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action requires continued outreach and is deferred. HSEM continues to encourage the use of steel connectors in new and existing construction through the HSEM website.

Section 9 – Mitigation Actions

Past Action-49

	Proposed Action:	Provide community outreach and education to individuals and businesses concerning actions for homes and businesses to take in preparation for hailstorms.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Hail
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$5,000
Potential Funding Sources:	General Revenues, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is partially complete and will be deferred as an ongoing activity.

Past Action-50

	Proposed Action:	Complete the modernization of Tom Miller Dam
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood
Priority (High, Moderate, Low):	High
Estimated Cost:	\$22.3 Million

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Potential Funding Sources:	LCRA
Lead Agency/Department Responsible:	LCRA
Implementation Schedule:	2003-2004

2009 Analysis:
LCRA will provide the funding for this action. This action has been completed.

Past Action-51	
Proposed Action:	Undertake a comprehensive facility review of Mansfield Dam.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$45,000
Potential Funding Sources:	LCRA
Lead Agency/Department Responsible:	LCRA
Implementation Schedule:	2003-2004

2009 Analysis:
This action has been completed.

Section 9 – Mitigation Actions

Past Action-52	
Proposed Action:	<p>Establish a City of Austin dam inspection and maintenance program for small flood control dams.</p> <ul style="list-style-type: none"> • (1) Inventory existing dams and establish a priority list to meet or exceed State required inspection and review regulations. • (2) Complete dam safety analysis and preliminary engineering for each pond in priority list to achieve full compliance with Texas Commission on Environmental Quality Dam Safety Rules. • (3) Develop a yearly program to inspect existing dams. • (4) Develop a review process for proposed dams.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Flood
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$2 million
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2006 and ongoing

2009 Analysis:
<p>This action is almost fully completed. Action item (1) is completed, ongoing effort by 3 FTEs to maintain inventory; for item (2), the preliminary study is complete; (3) Completed, ongoing effort to implement program on yearly basis; and item (4) is completed</p>

Section 9 – Mitigation Actions

Past Action-53

	Proposed Action:	Provide community outreach and education to individuals and businesses concerning actions they can take in preparation for possible terrorist events.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Terrorism
Priority (High, Moderate, Low):	High
Estimated Cost:	To be determined
Potential Funding Sources:	Disaster Ready Austin
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is ongoing and is deferred.

Past Action-54

	Proposed Action:	Complete water vulnerability assessments for water supply and water treatment systems and make improvements to harden security and ensure that appropriate emergency plans are in place.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Terrorism
Priority (High, Moderate, Low):	High
Estimated Cost:	\$7 million
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department	Water and Wastewater Dept.

Section 9 – Mitigation Actions

Responsible:	
Implementation Schedule:	2006

2009 Analysis:
This action is completed. A Vulnerability Assessment was completed by June of 2003. Original initiatives to harden completed by June 2006.

Past Action-55	
Proposed Action:	Create a built environment that is difficult to attack, resilient to the consequences of a possible terrorist attack, and protective of its occupants should an incident occur.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Terrorism
Priority (High, Moderate, Low):	High
Estimated Cost:	Cost to be determined for each facility, and the measure of security applied
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:
Project is partially complete and deferred. The costs are covered through various Homeland Security grant funds.

Section 9 – Mitigation Actions

Past Action-56	
Proposed Action:	Direct efforts towards re-routing hazardous materials not destined for the city to routes outside of the City of Austin.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hazardous Materials Release
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be determined
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Transportation Planning and Sustainability Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action is ongoing and will be deferred

Past Action-57	
Proposed Action:	Conduct a public awareness and educational campaign to raise awareness about hazardous materials.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hazardous Materials Release
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$5,000-\$10,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department	Transportation Planning and Sustainability

Section 9 - Mitigation Actions

Responsible:	Dept., Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This action is an ongoing outreach effort and will be deferred.

Past Action-58	
Proposed Action:	Promote increased security around fixed hazardous materials sites.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hazardous Materials Release
Priority (High, Moderate, Low):	High
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue, Grants, Private Funding
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management
Implementation Schedule:	2003 and ongoing

2009 Analysis:
This is an ongoing action and is deferred. HSEM provides general information on hazardous materials on the HSEM website and uses Homeland Security grant funds to harden vulnerable sites.

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Past Action-59	
Proposed Action:	Initiate an extreme heat public awareness and educational campaign under the auspices of Disaster Ready Austin.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Priority (High, Moderate, Low):	High
Estimated Cost:	\$10,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management, Austin Energy
Implementation Schedule:	Ongoing

2009 Analysis:
This action is deferred as an ongoing outreach activity. Austin Energy provides information to customers through a bill insert that addresses energy conservations, free weatherization programs, rebates and programs available to individuals interested in energy conservation. Austin Energy also advertises a Customer Assistance program that collects money to assist customers.

Past Action-60	
Proposed Action:	Increase tree plantings along public rights of way to reduce the Urban Heat Island effect.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Priority (High, Moderate, Low):	Low

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Estimated Cost:	\$150,000 – \$250,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Austin Energy, NeighborWoods Program
Implementation Schedule:	Ongoing

2009 Analysis:

This action is deferred as an ongoing activity. Austin Community Tree program is part of the Austin Climate Protection Plan through Austin Energy.

Past Action-61

Proposed Action:	Utilize digital automated electric power meters.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Extreme Heat
Priority (High, Moderate, Low):	Low
Estimated Cost:	To be Determined
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Austin Energy
Implementation Schedule:	2004-2011

2009 Analysis:

This action will enable Austin Energy to obtain the information necessary to charge more for electric power during peak periods of demand, thus helping to foster energy conservation. This action is partially completed and will be deferred. Austin Energy is currently deploying AMRs throughout the service territory.

Section 9 – Mitigation Actions

Past Action-62

	Proposed Action:	Ensure that potential risk information on the location of hazardous pipelines is available to builders, excavators, the banking and real estate industry, and current and potential property owners.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$25,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management; Watershed Protection and Development Review, Austin Fire Dept
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is partially complete and will be deferred. Information is available on the HSEM website.

Past Action-63

	Proposed Action:	Provide “best practices” for builders and developers in building around and operating around hazardous pipelines.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	Low
Estimated Cost:	N/A

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Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management, Watershed Protection and Review Dept.
Implementation Schedule:	2003 ongoing

2009 Analysis:

This action will reduce the danger of accidents and thus protect lives and property from pipeline accidents. Action is partially completed and will be deferred. City of Austin ordinance revised in 2001 to include national “best practices.” Information is also available on the HSEM website.

Past Action-64

Proposed Action:	Educate the public about pipelines safety risks, how to detect a pipeline accident, and what to do in case of a pipeline accident.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	High
Estimated Cost:	\$25,000 annually
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Office of Homeland Security and Emergency Management, Watershed Protection and Development Review, Austin Fire Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is partially complete and deferred. Information is available on the HSEM website. This action will provide vital information to the public on how to avoid pipeline safety hazards and, if faced with an accident, how to detect it and what steps to take to save lives and property.

Section 9 – Mitigation Actions

Past Action-65

	Proposed Action:	Have in place adequate plans, procedures and capabilities to respond quickly and effectively to a pipeline accident.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be determined
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Austin Fire Dept., Watershed Protection and Development Review
Implementation Schedule:	October 2009

2009 Analysis:

Action complete; will not be deferred

Past Action-66

	Proposed Action:	Work with the State General Land Office, the Railroad Commission of Texas and the Federal Office of Pipeline Safety to ensure that adequate monitoring takes place on Austin’s pipelines.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	Medium

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Estimated Cost:	\$10,000
Potential Funding Sources:	General Revenue, Grants
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2003

2009 Analysis:

This action is deferred with no immediate timetable to implement. The City of Austin is no longer working with the GLO and RRC as funding was not received. However the City is open to undertaking the action as a joint effort between HSEM, WPD and AFD.

Past Action-67

Proposed Action:	Design and implement a system for early detection of leaks and accidents to protect those most at risk.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	Medium
Estimated Cost:	To be determined
Potential Funding Sources:	General Revenues
Lead Agency/Department Responsible:	Watershed Protection and Development Review
Implementation Schedule:	2003 and ongoing

2009 Analysis:

WPDR currently is not working on this project and recommends project be turned over to the Austin Fire Dept or Emergency Management Office. This project is deferred.

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Past Action-68	
Proposed Action:	Adopt and implement a Hazardous Pipeline Ordinance to ensure adequate insurance to cover the costs of any potential hazardous incidents; establish penalties for non-compliance; and restrict certain uses within 200 feet of a hazardous liquid pipeline; and prohibit new construction within 200 feet of a hazardous liquid pipeline.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Pipeline Failure
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Austin Fire Department
Implementation Schedule:	2003 for Ordinance adoption

2009 Analysis:
This action has been completed. The ordinance was adopted in 2008.

Past Action-69	
Proposed Action:	Improve accident reporting of minor accidents and engineering investigations of collisions to determine patterns to improve signals, traffic markings, and identify educational efforts needed to reduce accidents.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Transportation Collision
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$5,000-\$10,000
Potential Funding Sources:	General revenue, grants

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Lead Agency/Department Responsible:	Transportation Planning and Sustainability; Austin Police Dept.
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action is deferred as no grant or program is currently underway through APD.

Past Action-70

Proposed Action:	Enhance the use of Closed Circuit TV (CCTV) and the “Intelligent Transportation System” for use in monitoring during major emergency situations.
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MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Transportation Collision
Priority (High, Moderate, Low):	Low
Estimated Cost:	\$300,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Transportation Planning and Sustainability
Implementation Schedule:	2003 and ongoing

2009 Analysis:

This action will provide a more comprehensive base of information from which to help mitigate traffic accidents and other disasters. Project partially complete with current working capacity of 680 signals. This action is deferred.

The following table includes capital improvement projects to reduce the flood hazard as included in the 2004 Plan. As these projects are referenced in the

Section 9 – Mitigation Actions

previous mitigation actions, the table has been included for a more comprehensive look at previous flood actions for the City.

Table 9-1. Capital Improvement Projects

Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
1134 Northwestern Ave.	Erosion	Corner of house 1 ft. from 10 ft. vertical bank; buyout	Very High	Boggy	\$450,000
1606 Summer Creek Court	Erosion	Reconstruct stream bank	Very High	West Bouldin	250,000
1803 Victoria Drive Erosion Stabilization	Erosion	Install box culvert w/ surface swale	Very High	Tannehill	750,000
3205 Manchaca	Erosion	Home threatened (3 ft. from edge of creek bank)	Very High	West Bouldin Tributary	250,000
3607 E. 12th Street	Erosion	Undermined driveway due to storm run-off safety concern; buyout.	Very High	Tannehill	150,000
Allandale Neighborhood	Localized Flooding	Storm drain improvements	Very High	Shoal	3,800,000
Arowhead Drive	Localized Flooding	Storm drain improvements	Very High	Dry	200,000
Audubon Place	Localized Flooding	Storm drain improvements	Very High	Country Club	500,000
Bannockburn Neighborhood	Localized Flooding	Storm drain improvements	Very High	Williamson	1,500,000
Bowman Avenue	Localized Flooding	Storm drain improvements	Very High	Johnson	1,100,000
Brentwood Neighborhood	Localized Flooding	Storm drain improvements	Very High	Shoal	1,000,000
Capitol Drive	Localized Flooding	Storm drain improvements	Very High	Little Walnut	900,000
Crestmont @ Hancock Branch	Erosion	Armor storm bank	Very High	Shoal	300,000
Crystal Brook Ph. 2 Flood Control Improvements	Creek Flooding	Floodwall and levee improvements	Very High	Walnut	4,500,000

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Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Del Querto	Localized Flooding	Storm drain improvements	Very High	West Bouldin	2,100,000
Dixie Drive along Onion Creek	Erosion	22 homes are threatened by bank erosion. Buyout.	Very High	Onion	3,500,000
Dryfield Drive	Localized Flooding	Storm drain improvements	Very High	Little Walnut	800,000
East 32nd Street	Localized Flooding	Storm drain improvements	Very High	Boggy	3,700,000
East 4th Street	Localized Flooding	Storm drain improvements	Very High	Town Lake	8,000,000
Erosion Buyout 1702 S. 6th Street	Erosion	2 primary structures on outside bend, 16 ft high vertical bank; buyout	Very High	West Bouldin	300,000
FOR-1 Implementation Phase	Integrated	Design and Construction	Very High	Fort	12,000,000
Fort Branch Phase 3 and 4	Flood / Erosion	Bridge Replacement and Channel modifications.	Very High	Fort Branch	3,342,000
Fort Branch-WMA-1 Study Phase	Integrated	Preliminary Engineering and Alternatives Analysis	Very High	Fort	670,000
Grayson area	Localized Flooding	Storm drain improvements	Very High	Boggy	750,000
Jamestown Channel	Erosion	1400 ft. degraded channel due to storm run-off; safety concerns	Very High	Little Walnut Tributary	1,000,000
JJ Seabrook Drive	Localized Flooding	Storm drain improvements	Very High	Tannehill	650,000
JOH-1 Study Phase	Integrated	Preliminary Engineering and Alternatives Analysis	Very High	Johnson	600,000
Johnson Creek Neighborhood	Localized Flooding	Storm drain improvements	Very High	Johnson	7,500,000

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Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Long Bow	Localized Flooding	Storm drain improvements	Very High	Blunn	3,900,000
Madison Avenue	Localized Flooding	Storm drain improvements	Very High	Shoal	2,500,000
Mearns Meadow	Creek Flooding	Channel enlargement and box culverts.	Very High	Little Walnut	8,000,000
Meridith Street	Localized Flooding	Storm drain improvements	Very High	Johnson	800,000
Oak Haven	Localized Flooding	Storm drain improvements	Very High	Barton	1,100,000
Oakmont Blvd.	Localized Flooding	Storm drain improvements	Very High	Johnson	1,000,000
Onion and Williamson Creeks FC/EC Implementation	Flood and Erosion	US Army Corp of Engineers project implementation	Very High	Onion and Williamson	100,000,000
Onion and Williamson Creeks Study	Flood and Erosion	US Army Corp of Engineers study project	Very High	Onion and Williamson	760,000
Onion Creek Buyouts: Little Cypress Lane & Onion Creek Dr	Creek Flooding	Buyout of 5 mobile homes in 10-year floodplain	Very High	Onion	400,000
Palm Circle	Localized Flooding	Storm drain improvements	Very High	Old Country Club	2,000,000
Pond G Detention & Erosion Control Improvements	Erosion / Flood	Erosion and Flood Control Pond	Very High	Walnut	4,148,000
Powell Circle	Localized Flooding	Storm drain improvements	Very High	East Bouldin	300,000
Ridgelea Neighborhood	Localized Flooding	Storm drain improvements	Very High	Shoal	2,000,000
Rosedale Neighborhood	Localized Flooding	Storm drain improvements	Very High	Shoal	2,500,000
Scenic Brook Flood Control	Creek Flooding	Storm Drain system improvements	Very High	Williamson	1,200,000
Shoal Creek 5th to 6th Street Bank Stabilization	Erosion	Protect bridge and reconstruct the streambank	Very High	Shoal	250,000

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Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Stanford Lane	Localized Flooding	Storm drain improvements	Very High	Johnson	2,400,000
Tanglewood Forest Pond	Creek Flooding	Reconstruction of pond	Very High	Slaughter	970,000
Tom Green Ave.	Localized Flooding	Storm drain improvements	Very High	Waller	3,500,000
Town Lake-Guadalupe Lavaca / CSC	Localized Flooding	Storm drain improvements	Very High	Town Lake	2,800,000
Walnut Creek Regional Erosion Ponds Preliminary Engineering	Erosion Control	Preliminary Engineering and Alternatives Analysis for regional erosion control ponds	Very High	Walnut	181,000
Walnut/Wells Branch EC/FC Pond Improvements	Erosion / Flood	Erosion Prevention and Flood Control Pond	Very High	Walnut	1,200,000
West Applegate	Localized Flooding	Storm drain improvements	Very High	Little Walnut	2,000,000
West Cow Path	Localized Flooding	Storm drain improvements	Very High	Walnut	800,000
Whispering Valley Area	Localized Flooding	Storm drain improvements	Very High	Walnut	500,000
Wilshire Blvd.	Localized Flooding	Storm drain improvements	Very High	Boggy	900,000
WMS-4 Study Phase	Integrated	Preliminary Engineering and Alternatives Analysis	Very High	Williamson	605,000
2700 - 2900 Lamar	Erosion	Stabilize channel	High	Shoal	1,000,000
46th @ Speedway Erosion Stabilization	Erosion	Reconstruct storm channel	High	Waller	700,000
5300-5400 Wellington	Erosion	Reconstruct storm bank	High	Fort Branch	750,000
Chimney Hills	Creek Flooding	Channel Enlargement	High	Walnut	4,000,000
Crossing Place Culvert Improvements	Creek Flooding	Culvert Upgrade and Channel modifications.	High	Old Country Club	734,600

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Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Drainage Infrastructure Mapping (DIG)/ GASB 34	All	GIS-based inventory of all drainage infrastructure incorporating storm drain system modeling.	High	All water-sheds	10,000,000
Dunbarton and Willamette	Creek Flooding	Channel Enlargement	High	Little Walnut	3,000,000
East Bouldin--"S" bend	Erosion	Reconstruct storm bank	High	East Bouldin	300,000
Enfield Road Storm drain improvements	Localized Flooding	Storm drain improvements	High	Johnson/Town Lake	1,000,000
Hoeke Lane Flood Control Improvements	Creek Flooding	Channel modifications and purchase of houses in the floodplain	High	Carson	2,000,000
Little Stacy Park BLU-EC8	Erosion	Reconstruct storm bank	High	Blunn	750,000
Los Indios Trail Culvert Upgrade and Pond Modification	Creek Flooding	Roadway culvert upgrade and detention pond modification	High	Rattan	1,025,000
Lower Shoal Creek L-SHL-2	Integrated	Flood bypass tunnel	High	Shoal	65,000,000
Lower Tannehill Flood Control Improvements	Creek Flooding	Channel modifications	High	Tannehill	2,000,000
Lower Waller Creek	Integrated	Flood bypass tunnel	High	Waller	53,000,000
Meadow Creek Cr & Radam Lane	Creek Flooding	Buyout and demolition of four single family repetitive loss homes in the 10-year floodplain	High	Williamson	1,000,000
Onion Creek Buyouts: Shady Cedar Dr & Thatch Lane	Creek Flooding	Acquisition and demolition of four mobile homes in the 10-year floodplain	High	Onion	320,000
Patton Avenue and Jet Lane Area	Creek Flooding	Channel Construction and House Buyouts	High	Carson	4,500,000

Section 9 – Mitigation Actions

Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Quail Creek L-LWA-3	Creek Flooding	Channel Enlargement and bridge replacement	High	Little Walnut	5,000,000
Railroad grade and shed downstream of West Mary	Erosion	Reconstruct storm bank	High	West Bouldin	550,000
Shiloh Drive	Creek Flooding	Channel Enlargement	High	South Boggy	1,000,000
Stonegate Mobile Home Park	Creek Flooding	Buyout, Detention or Channel Enlargement	High	Little Walnut	1,500,000
Thornberry Road	Creek Flooding	Culvert Upgrade and Regional Detention Pond	High	Carson	850,000
Travis Country Circle-Bridge Upgrade	Creek Flooding	Bridge upgrade	High	Barton	425,000
Upper Bartholomew Park	Erosion	Reconstruct storm channel	High	Tannehill	1,250,000
Upper Boggy Creek	Creek Flooding	Floodplain house acquisition	High	Boggy	16,000,000
Waller Creek UT Intramural Field Flood Control Pond	Creek Flooding	Regional Detention Pond	High	Waller	2,800,000
Walnut Creek Regional Erosion Control Pond @ Metro Park	Erosion Control	Erosion control pond	High	Walnut	5,120,000
Walnut Creek Regional Erosion Control Pond @ Pond 2	Erosion Control	Erosion control pond	High	Walnut	1,400,000
Walnut Creek Regional Erosion Control Pond @ Waters Park	Erosion Control	Erosion control pond	High	Walnut	4,120,000
Waters Park	Creek Flooding	Acquisition and	High	Walnut	500,000

Section 9 – Mitigation Actions

Project Name	Mission	Project Description	Priority	Water-shed	Est. Total Project Cost
Road		demolition of commercial repetitive loss property			
Watershed Information Management System	All	Acquire GIS system to manage data; automation of development review, water quality, erosion and flood analyses	High	All water-sheds	100,000
Blunn Creek EC/WQ Pond #14	Integrated	St. Ed's Area - WQ and flood control pond, bridge replacements	Moderate	Blunn	7,650,000
Floodplain Studies and Digital Mapping	Flood	Develop GIS based H & H studies and digital floodplain mapping	Moderate	All	200,000/yr
GIS Base Data - Digital Terrain	All	Acquire higher resolution digital terrain data	Moderate	All water-sheds	800,000
GIS Base Data - Land Use Projections	Flood	Digital mapping of future land use projections for implementation of regulatory criteria	Moderate	All water-sheds	100,000
Phase II Master Plan	All	Technical assessments and solution development	All non Phase I water-sheds	Phase II Master Plan	

New Actions

NEW ACTION-1	
Proposed Action:	Develop a geospatially coded tool that will allow users to: use climate-related EPHI (environmental public health indicator) surveillance to plan and prioritize environmental management decisions and policy changes related to climate change; track the likely impact of policy decisions over temporal and geographic scales; assess progress toward protecting public health; and, trigger emergency alerts when identified key variables coincide.
BACKGROUND INFORMATION	
Site and Location:	Austin, Texas Travis County, Texas
History of Damages:	Extreme Heat: 8 mortalities from 1999-2000 reported to NCDC. 9 mortalities in 2002-2004 reported by TX Dept of State Health Services Department of Health Statistics. Flood: 4 mortalities, 61 injuries, \$590K property damage from 2001-2007 reported to NCDC.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Wildland Fire, Drought, Extreme Heat
Effect on new/existing buildings:	Extreme heat can compromise the habitability of buildings with little or no insulation, no radiant barrier, and/or lacking air conditioning. Flooding can cause structural and moisture damage.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000
Potential Funding Sources:	US EPA
Lead Agency/Department Responsible:	Austin/Travis County Department of Health and Human Services
Implementation Schedule:	2011-2013

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>This would be a tool that the entire community, city staff, and stakeholders could use.</p>

Section 9 – Mitigation Actions

NEW ACTION-2	
Proposed Action:	Establish new data gathering techniques and data sharing agreements across departments to improve environmental public health surveillance.
BACKGROUND INFORMATION	
Site and Location:	Austin, Texas Travis County, Texas
History of Damages:	Extreme Heat: 8 mortalities from 1999-2000 reported to NCDC. 9 mortalities in 2002-2004 reported by TX Dept of State Health Services Department of Health Statistics. Flooding: 4 mortalities, 61 injuries, \$590K property damage from 2001-2007 reported to NCDC.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Wildland Fires, Drought, Extreme Heat
Effect on new/existing buildings:	Extreme heat can compromise the habitability of buildings with little or no insulation, no radiant barrier, and/or lacking air conditioning. Flooding can cause structural and moisture damage.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000 - \$2,000,000
Potential Funding Sources:	US EPA
Lead Agency/Department Responsible:	Austin/Travis County Department of Health and Human Services
Implementation Schedule:	2011-2013

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>The Austin/Travis County Department of Health and Human Services is currently limited in its ability to perform public health surveillance on the potential health effects of extreme heat and flooding events on vulnerable populations due to lack of data. This action will increase availability of data by authorizing city departments to minimize firewalls that limit data sharing capacity. Additionally, the City of Austin should establish data sharing agreements with area hospitals and other health care providers around heat- and flooding-related morbidity and mortality. Finally, the City of Austin should review data collection and storage techniques to ensure that information related to socioeconomic vulnerability, building and land use patterns affecting the urban heat island effect, and structural and non-structural flooding mitigation programs – among others – is systematically collected, geospatially coded, stored, and shared with the health department to assist in the development of a robust surveillance program.</p>

Section 9 – Mitigation Actions

NEW ACTION-3	
Proposed Action:	Implement urban heat island mapping
BACKGROUND INFORMATION	
Site and Location:	Map pockets of heat throughout the area in Travis County to see where measures need to be taken to reduce the heat impact.
History of Damages:	Seasonal extreme temperature for the city leads to harmful effects to health.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on new/existing buildings:	Potential for reflective or green roofs to keep existing buildings cool.
Priority (High, Moderate, Low):	High
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	Austin Climate Protection Program (ACPP)
Implementation Schedule:	Eighteen months after receipt of funding

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
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Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-4	
Proposed Action:	Develop a study to determine the relationship between allergies and climate change.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Allergies increase as the city experiences more extreme weather, especially extreme heat. The purpose of the study would be to determine the relationship between climate change and the increase in allergies.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Infectious Disease, Drought
Effect on new/existing buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	ACPP in coordination with the Health Dept. and UT
Implementation Schedule:	Twelve months after receipt of funds

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
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Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-5	
Proposed Action:	Institute a tree planting program to reduce heat island impacts and flood damage
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	The city experiences seasonal flooding and extreme temperature. Planting trees will help reduce floodwaters and also reduce temperatures.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Flood
Effect on new/existing buildings:	Planting trees around existing buildings will help keep temperature down as well as reduce energy cost. In addition, trees can help to reduce the effect of floodwaters.
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	ACPP
Implementation Schedule:	TBD

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-6	
Proposed Action:	Complete a study to determine the effect thermal comfort/power outages have on people
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	The city experiences high temperatures throughout the summer and is currently experiencing record heat for 2009. Although winters are milder in Austin, power outages are common.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Winter Storm
Effect on new/existing buildings:	This action would determine the effect on people rather than property
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	ACPP
Implementation Schedule:	TBD

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-7	
Proposed Action:	Complete a study for the Capitol Metropolitan region to downscale US climate change models to show climate change impacts expected in our region.
BACKGROUND INFORMATION	
Site and Location:	Region-wide
History of Damages:	The city is in a period of record drought for 2009 which leads to wildfires and water shortage.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Wildland Fire, Drought, Flood, Infectious Disease
Effect on new/existing buildings:	This action would determine the effect on people rather than property
Priority (High, Moderate, Low):	High
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	ACPP
Implementation Schedule:	2011 and Ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>There is currently a large study on the climate change model for the entire U.S. Impact studies are being conducted by region. This action would look at downscaling the regional study. Collaboration could be possible with the University of Texas through their research department and perhaps working with grad students.</p>

Section 9 – Mitigation Actions

NEW ACTION-8	
Proposed Action:	Develop a study to determine the relationship between infectious disease and climate change.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	No history currently, but as we start to see climate change impacts in our region it would be useful to develop a study to prepare for potential increases in infectious diseases.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Infectious Disease, Drought
Effect on new/existing buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	ACPP in coordination with the Health Dept. and UT
Implementation Schedule:	Twelve months after receipt of funds

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
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Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-9	
Proposed Action:	Develop Community Wildfire Protection Plan for the City of Austin and/or surrounding communities.
BACKGROUND INFORMATION	
Site and Location:	City of Austin and surrounding communities/natural areas.
History of Damages:	There is limited data on the damages resulting from wildfires and few damaging wildfires have been identified, however the potential is generally accepted to be moderate to high.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Effect on new/existing buildings:	Increased protection of new and existing structures
Priority (High, Moderate, Low):	High
Estimated Cost:	Dependent on design - \$200,000 for contract-reduced direct cost if done by city staff
Potential Funding Sources:	Dependent on design - Department budgets and/or grants
Lead Agency/Department Responsible:	Dependent on design – AFD, HSEM. and/or interagency working group
Implementation Schedule:	Dependent on design – 6 months to 1 year

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>	5 <input type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>	5 <input type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>A Community Wildfire Protection Plan could clearly define the fire concerns in the Austin area and identify clear goals and objectives for all stakeholders. Currently, there are limited programs and/or resources available in the community to adequately mitigate wildland fires and/or wildland urban interface fires.</p> <p>This plan has been proven to be economically, socially, and environmentally acceptable. There would likely be limited political or legal concerns regarding the development of the plan, but there could be challenges to implementing the plan. It may be difficult to administer the plan due to the amount of coordination involved and there is insufficient technical data available at the current time to write the plan. Additional data would need to be compiled and analyzed.</p>

Section 9 – Mitigation Actions

NEW ACTION-10	
Proposed Action:	Establish an interdepartmental/interagency wildland fuels crew to implement mechanical fuel reduction projects, conduct prescribed burns, and suppress wildland fires.
BACKGROUND INFORMATION	
Site and Location:	City of Austin and surrounding communities/natural areas
History of Damages:	There is limited data on the damages resulting from wildfires and few damaging wildfires have been identified, however the potential is generally accepted to be moderate to high.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Effect on new/existing buildings:	Increased protection on new/existing structures
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Dependent on design - 6 person crew - \$500,000/yr plus \$200,000 start up expenses
Potential Funding Sources:	Dependent on design - Department budgets and/or external partners
Lead Agency/Department Responsible:	Dependent on design – Wildland fire management agency that follows the National Wildfire Coordinating Group (NWCG) standards
Implementation Schedule:	Dependent on design – multi-year, year round

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>	5 <input type="checkbox"/>
Administratively Possible:				
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Politically Acceptable:				
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Economically Sound:				
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Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

COMMENTS
<p>An interagency fuels crew that had the ability to work across jurisdictional and ownership boundaries could significantly reduce hazardous fuel loads and contribute needed resources for prescribed fire and wildland fire operations. This crew would need to be designed as a wildland fire crew with flexible hours and the ability to travel. Currently there are limited resources available in any city department (or partnering agency) to conduct wildland fire mitigation projects.</p> <p>This type of crew and their work has been proven to be technically, economically, and socially acceptable. There is likely to be some resistance ecologically based on the competing objectives of fire protection and endangered species protection. The greatest challenges would be overcoming interdepartmental and interagency financial, legal, and political barriers.</p>

Section 9 – Mitigation Actions

NEW ACTION-11	
Proposed Action:	Establish a position for an interdepartmental/interagency wildland fire and/or wildland urban interface program coordinator.
BACKGROUND INFORMATION	
Site and Location:	City of Austin and surrounding communities/natural areas
History of Damages:	There is limited data on the damages resulting from wildfires and few damaging wildfires have been identified, however the potential is generally accepted to be moderate to high.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildland Fire
Effect on new/existing buildings:	Increased protection on new/existing structures
Priority (High, Moderate, Low):	High
Estimated Cost:	Dependent on design - \$150,000/yr
Potential Funding Sources:	Dependent on design - Department budgets and/or external partners
Lead Agency/Department Responsible:	Dependent on design – AFD, HSEM, or wildland fire management agency that follows NWCG standards
Implementation Schedule:	Dependent on design – multi-year, year round

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input checked="" type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input checked="" type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>An interagency wildland fire or wildland urban interface coordinator that had the responsibility and accountability for the coordination of communication, suppression, fuel mitigation, and outreach between multiple jurisdictions could significantly reduce the potential damages from a wildland fire, could improve the overall safety of the community, and improve the long-term sustainability of the ecosystem. The focus of this position would be mitigation and not suppression. This individual would need to have a wide range of abilities, but must have wildland fire and wildland fuel mitigation experience. Currently there are limited resources available in any city department (or partnering agency) to conduct wildland fire mitigation projects and the work that is being done is not well coordinated.</p> <p>This type of position has been proven to be technically, economically, socially and environmentally acceptable. The greatest challenges would be overcoming interdepartmental and interagency financial, legal, and political barriers.</p>

Section 9 – Mitigation Actions

NEW ACTION-12	
Proposed Action:	Expand the capability of the city’s communication system for citizens
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	The City has a 24-hour notification system, but a new system is needed that is more interactive. The new system will allow citizens to review documents and respond to the City. This system would provide efficient/user-friendly site without a webmaster.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Drought, Extreme Heat, Flood, Hail, Hazardous Material Release, Hurricane Wind, Infectious Disease, Pipeline Failure, Thunderstorm, Terrorism, Tornado, Wildland Fire, Winter Storm
Effect on new/existing buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000
Potential Funding Sources:	Grant funds for a pilot program
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	2009 and ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>The AISD school consortium would be involved to enhance capabilities for the school system as well.</p>

Section 9 – Mitigation Actions

NEW ACTION-13	
Proposed Action:	Conduct a large-scale public education program on the home care and treatment of individuals and family members during a pandemic influenza
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Pandemics have occurred in 1918, 1956, 1967 and 2009

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Infectious Disease
Effect on new/existing buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	Unknown
Potential Funding Sources:	FEMA and CDC grants
Lead Agency/Department Responsible:	HSEM, HHSD
Implementation Schedule:	September 2009

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>Create and distribute a ready reference guide for citizens to use in the event of a severe pandemic influenza event. The guide should include information on the care of the ill as well as measures for the care giver to take to lessen the possibility of infection. The goal would be to lessen the impact on the public health, medical community during a pandemic to the greatest extent possible. Target those with no medical home especially. The document/training should be educationally and culturally appropriate.</p>

Section 9 – Mitigation Actions

NEW ACTION-14	
Proposed Action:	Construct a multi-purpose structure that could provide an ongoing commercial purpose until needed, at which point it could be re-configured as a disaster-safe shelter
BACKGROUND INFORMATION	
Site and Location:	Downtown Austin
History of Damages:	The City has routinely opened shelters as a result of a CASHP activation and winter weather events

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Infectious Disease, Winter Storm
Effect on new/existing buildings:	May require new construction as well as the demolition of existing structures depending on the ultimate location of the facility
Priority (High, Moderate, Low):	High
Estimated Cost:	\$10,000,000 to \$15,000,000
Potential Funding Sources:	Grants and private funding
Lead Agency/Department Responsible:	Building Services
Implementation Schedule:	18 months after receipt of funds

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>The concept behind this action is to construct a large downtown parking facility in Austin in such a way that it could be converted to a shelter in response to extreme conditions. For example, when not needed, the facility can be used as a contract and special event parking facility that generates revenue. When needed, the cars can be moved and the facility configured in such a way as to serve as a shelter. This means that the facility would need to be able to be “closed off” to support a HVAC system. Additionally, the structure would need to be able to support water for showers, wastewater facilities and food service capabilities. The structure could then be used for the homeless population in the event of a winter storm or as a cooling station during an extreme heat event. The facility could also be used as a designated medical special needs shelter during an activation of a CASHP activation. Finally, the facility could be utilized as a medical surge facility in the event of a pandemic influenza.</p>

Section 9 – Mitigation Actions

NEW ACTION-15	
Proposed Action:	Retrofit AISD facilities for wind resistance/safe room
BACKGROUND INFORMATION	
Site and Location:	Austin ISD locations and critical facilities
History of Damages:	Austin ISD area schools housed evacuees from Hurricane Ike and also were minimally damaged from hurricane winds. Stronger windows are needed to resist hurricane winds and also damage from hail, ice or flooding during a hazard event.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane Wind, Tornado, Winter Storm, Hail, Thunderstorm, Flood
Effect on new/existing buildings:	This action would strengthen current buildings by making them more resistant to hurricane and high winds.
Priority (High, Moderate, Low):	High
Estimated Cost:	TBD
Potential Funding Sources:	Federal and state grants
Lead Agency/Department Responsible:	AISD – Office of Homeland Security and Emergency Management
Implementation Schedule:	2010-2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>This action would include a protective covering for windows for all elementary schools and also the purchase of generators in case of a power outage.</p>

Section 9 – Mitigation Actions

NEW ACTION-16	
Proposed Action:	Develop an AISD center that will also function as a disaster-safe shelter.
BACKGROUND INFORMATION	
Site and Location:	To be determined
History of Damages:	During Hurricane Ike, Austin area schools housed evacuees. Supplies were short and also there was not enough available space. A disaster-safe shelter could provide room for evacuees, a shelter for the Austin community, and also function as an auditorium or gym for AISD.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Flood, Hail, Hazardous Material Release, Hurricane Wind, Infectious Disease, Thunderstorm, Terrorism, Tornado, Wildland Fire, Winter Storm
Effect on new/existing buildings:	This action would allow for more efficient use of current buildings as well as the development of a new shelter
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$2,500,000
Potential Funding Sources:	Federal and state grants
Lead Agency/Department Responsible:	AISD – Office of Homeland Security and Emergency Management
Implementation Schedule:	2010-2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-17	
Proposed Action:	Develop an awareness campaign for extreme temperature and promote through the City of Austin Website, home safe calendar and pamphlets to neighborhood associations
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Because the city experiences mild winter, many residents do not properly protect their property or enact home mitigation measures. In addition the city experience extreme heat every summer. Heat strokes and even fatalities can occur if citizens are unaware of the dangers of extreme heat.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Winter Storm
Effect on new/existing buildings:	Retrofit existing structures and construct new structures with double pane windows and other methods to reduce effects of extreme heat and winter storm
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$5,000 annually
Potential Funding Sources:	Federal and state grants/ general revenue
Lead Agency/Department Responsible:	HSEM, Public Health Dept., EMS
Implementation Schedule:	2010 and ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-18	
Proposed Action:	Develop a safe room program to retrofit residences in order to protect against a tornado or hurricane wind event.
BACKGROUND INFORMATION	
Site and Location:	To be determined
History of Damages:	During Hurricane Ike the City experienced high winds and often is prone to mild tornados which cause damage to buildings and property and threaten the safety of citizens

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Hurricane Wind
Effect on new/existing buildings:	This action would strengthen existing buildings and residences by making them more resistant to damage from tornadoes and hurricane winds
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$6,000 per safe room
Potential Funding Sources:	Federal Grants
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	To be implemented after receipt of funds

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
Promote through Association of Builders/Developers to include in new construction; Safe room grants pay approximately ½, or \$3,000 of the \$6,000 cost to add a safe room to a residence.

Section 9 – Mitigation Actions

NEW ACTION-19	
Proposed Action:	Conduct public awareness campaign for realtors, insurance agents, lenders, surveyors and other professionals on benefits of flood insurance under the National Flood Insurance Program (NFIP)
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Austin experiences flooding and flash flooding which leads to damage to property and even fatalities. The NFIP benefits those who have purchased flood insurance for their homes. More training is needed regarding policies for agents, lenders and other professionals

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Thunderstorm
Effect on new/existing buildings:	This action would reduce the impact of flooding for existing and new structures
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Staff time
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Partner with other associations and groups currently providing NFIP training
Implementation Schedule:	Ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>Link to Watershed Mgmt. and to GeoSpatial Emergency Management Support System (GEMSS) through the Texas Natural Resources Information System (TNRIS).</p>

Section 9 – Mitigation Actions

NEW ACTION-20	
Proposed Action:	Increase public awareness regarding the National Flood Insurance Program (NFIP) and Preferred Risk Policy for residents outside of the Special Flood Hazard Area (SFHA)
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Austin experiences flooding and flash flooding which leads to damage to property and even fatalities. Flood insurance provides protection to those who have purchased flood insurance for their homes. Over 30% of NFIP claims occur outside of the SFHA.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Thunderstorm
Effect on new/existing buildings:	This action would result in stronger buildings if citizens purchased flood insurance
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$5,000 per year
Potential Funding Sources:	Grants and general revenue
Lead Agency/Department Responsible:	HSEM – partnering with organizations providing free NFIP training where available.
Implementation Schedule:	Annually

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
Advertise to neighborhood associations

Section 9 – Mitigation Actions

NEW ACTION-21	
Proposed Action:	Install perimeter lighting at Tom Miller, Decker and Longhorn Dam.
BACKGROUND INFORMATION	
Site and Location:	Tom Miler Dam – 20.294°N, 97.786°W Decker Dam – 30.285°N, 97.597°W Longhorn Dam – 30.250° N, 97.714°W
History of Damages:	The city has not experienced a major dam failure since the early 1930s. Perimeter lighting would help increase security at the above locations.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Terrorism
Effect on new/existing buildings:	Prevent flood damage to existing structures within the inundation area for each dam
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3= Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-22	
Proposed Action:	Strengthen access restrictions at Tom Miller, Decker and Longhorn Dam.
BACKGROUND INFORMATION	
Site and Location:	Tom Miler Dam – 20.294°N, 97.786°W Decker Dam – 30.285°N, 97.597°W Longhorn Dam – 30.250° N, 97.714°W
History of Damages:	Although the last major dam failure occurrence for the City was the result of a flood in the 1930s, access restrictions are necessary in light of concerns for terrorism since 9/11.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Dam Failure, Terrorism
Effect on new/existing buildings:	Prevent flood damage to existing structures within the inundation area for each dam
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3= Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-23	
Proposed Action:	Purchase communication equipment for uniform communication capability among first responders in the event of a pipeline failure or hazardous material spill.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	The city does not have radio equipment that would be safe to use to communicate nearby a hazardous material release or pipeline failure. Technology is currently available for radios that would allow for communication even in a volatile environment.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Pipeline Failure, Hazardous Material Release, Terrorism
Effect on new/existing buildings:	This action enhances communicability between responders and does not directly impact new/existing buildings.
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	TBD
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	2010-2011 with replacements as needed

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 - Mitigation Actions

NEW ACTION-24	
Proposed Action:	Increase public awareness of the dangers of pipeline failure through the Pipeline Safety Trust, a NFP Public charity in order to promote fuel transportation safety.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	Pipeline failure may occur due to ruptures or terrorism

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Pipeline Failure, Terrorism
Effect on new/existing buildings:	This action does not directly affect new/existing buildings.
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Staff time
Potential Funding Sources:	Grants
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
Coordinate with neighborhood associations and host public meetings.

Section 9 – Mitigation Actions

NEW ACTION-25	
Proposed Action:	Develop a public awareness campaign to encourage citizens to purchase NOAA weather radios.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	NOAA weather radios keep citizens informed in the event of a natural disaster. These radios are available for purchase at many locations throughout the city, such as HEB.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Thunderstorm, Hail, Flood, Tornado, Hurricane Wind, Winter Storm
Effect on new/existing buildings:	NOAA radios allow citizens to take measures to protect their property and existing buildings in the event of a natural disaster
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Minimal
Potential Funding Sources:	General Fund
Lead Agency/Department Responsible:	HSEM
Implementation Schedule:	To be implemented annually

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>The City could use this as a tie-in with other public awareness campaigns, thereby keeping the cost at a minimum.</p>

Section 9 – Mitigation Actions

NEW ACTION-26	
Proposed Action:	Conduct study to determine specific buildings and critical facilities that could be upgraded to Green Building Status.
BACKGROUND INFORMATION	
Site and Location:	To be determined
History of Damages:	In 2007 the National Association of Home Builders (NAHB) and the International Code Council (ICC) partnered to form to establish a much-needed and nationally-recognizable standard definition of what is meant by "Green Building". This would help buildings to conserve energy, but also make critical facilities more resistant to natural hazards.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Thunderstorm, Hail, Extreme Heat, Winter Storm, Tornado, Flood
Effect on new/existing buildings:	This would increase energy savings and costs for existing buildings, but also affect the development of new buildings, as they are built to a higher standard
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	To be determined be determined based on the study results
Potential Funding Sources:	City funds, Grants
Lead Agency/Department Responsible:	Building Services / Green Building
Implementation Schedule:	Complete study by 2011

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
<p>This would hold builders to a higher standards as a builder, remodeler or developer must incorporate a minimum number of features in the following areas: energy, water, and resource efficiency, lot and site development, indoor environmental quality, and home owner education</p>

Section 9 – Mitigation Actions

NEW ACTION-27	
Proposed Action:	Promote the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) through the City of Austin’s Public Awareness Week.
BACKGROUND INFORMATION	
Site and Location:	Outlying and rural areas of the City of Austin
History of Damages:	Although the City experiences little snow, it is often prone to floods and hail events, the most recent in the Spring of 2009.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail, Thunderstorm, Winter Storm
Effect on new/existing buildings:	This action would help for monitoring rain and hail events to better report historical occurrences; thereby identifying areas and existing buildings that are not properly protected
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Negligible
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible:	Watershed Department in conjunction with the National Weather Service
Implementation Schedule:	Annually – every March

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
The City already works with the National Weather Service (NWS) to promote public awareness of natural hazards. This would be a great tie-in for the Public Awareness Week, which is hosted every March.

Section 9 – Mitigation Actions

NEW ACTION-28	
Proposed Action:	Install additional flashing lights at low water crossings at areas additionally annexed to the City.
BACKGROUND INFORMATION	
Site and Location:	<p>There have been several low water crossing areas that were recently annexed to Austin. The following locations need flashing warning lights:</p> <p>10140 Old San Antonio Road 6100 W. Slaughter 10100 David Moore Drive 9708 Carson Creek Boulevard 600 block of W. Dittmar at Cooper Lane (single lane bridge crossing) Slaughter Creek Drive in the Hollow at Slaughter Creek Bilbrook Place E. Dessau Road 12000 and 12100 Cameron Road Burleson Road (south of the Bergstrom Airport) S. Brodie Lane</p>
History of Damages:	Austin experiences torrential floods every year. More warnings are needed at low water crossings to prevent people from driving through dangerous areas.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Thunderstorm, Hail, Flood
Effect on new/existing buildings:	This would protect lives and property, but mainly vehicles rather than buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	Up to \$10,000 per crossing
Potential Funding Sources:	HMGP, CDBG, PDM grants
Lead Agency/Department Responsible:	Watershed Dept.
Implementation Schedule:	To be installed by 2012

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS

Section 9 – Mitigation Actions

NEW ACTION-29	
Proposed Action:	Create a neighborhood and community plan, including drills and exercises to educate the public regarding the location of pipelines and actions to take in the event of a hazardous material spill.
BACKGROUND INFORMATION	
Site and Location:	Citywide
History of Damages:	The city has experienced few man-caused events, but citizens should be aware of procedures and locations of hazardous areas.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Pipeline Failure, Hazardous Material Release
Effect on new/existing buildings:	This action primarily concerns protecting lives instead of directly effecting buildings.
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Minimal cost as partnering opportunities are available
Potential Funding Sources:	General Revenue and grants where available
Lead Agency/Department Responsible:	Austin Fire Department; Watershed Protection and Development Services
Implementation Schedule:	Ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
There are many groups that conduct drills and education for the public at little to no expense. Partnering opportunities with these groups would be sought.

Section 9 – Mitigation Actions

NEW ACTION-30	
Proposed Action:	Develop and implement shelter-in-place training for AISD schools and city buildings to mitigate against hazardous material releases
BACKGROUND INFORMATION	
Site and Location:	Critical infrastructure and schools throughout the city.
History of Damages:	The City has had few spill events and has not been affected by a major occurrence. However employees, students, teachers and citizens should be aware of proper procedures for shelter-in-place

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hazardous Material Release
Effect on new/existing buildings:	This activity would help to protect people in the event of a spill and would not negatively affect existing buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	Minimal
Potential Funding Sources:	Staff time
Lead Agency/Department Responsible:	AISD, Building Services
Implementation Schedule:	Ongoing

Section 9 – Mitigation Actions

ADDITIONAL CONSIDERATIONS				
The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)				
Socially Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Technically Feasible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Administratively Possible:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Politically Acceptable:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Legal:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Economically Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>
Environmentally Sound:				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input checked="" type="checkbox"/>

COMMENTS
Shelter-in-place techniques and tips are available through the Department of Homeland Security. There needs to be a greater awareness and promotion of these techniques in the event of a hazardous material release.