Regional Mitigation Action Plan

Table of Contents

Section 1: Introduction
Section 2: Planning Process
Section 3: Community Profile
Section 4: Risk Assessment
Section 5: Capability Assessment
Section 6: Mitigation Strategy
Section 7: Plan Maintenance Procedures
Appendix A: Local Mitigation Actions
Appendix B: FEMA Region VI/State of Texas Plan Review Crosswalk
Appendix C: 2003 Proposed Regional Capital Improvement Program Projects List
Appendix D: Data Collection Tools and Planning Resources
Appendix E: Plan Adoption

This CD was prepared November 2004 and reflects the Alamo Area Council of Governments Regional Mitigation Action Plan as of that date.

Alamo Area Council of Governments Regional Mitigation Action Plan

November 2004

Prepared By:

PBSJ

INTRODUCTION

This section provides a general introduction to the Alamo Area Council of Governments (AACOG) Regional Mitigation Action Plan. This introduction is presented in the following five sections:

- Background
- Purpose
- Scope
- Authority

BACKGROUND

Natural hazards, such as floods, tornadoes and severe winter storms, are a part of the world around us. Their occurrence is natural and inevitable, and there is little we can do to control their force and intensity. After September 11, 2001 and our painful experiences with hazardous material accidents and fires, anthrax attacks, the Oklahoma City Murrah Federal Building destruction and the Atlanta Olympic bombing in 1996, the need has become apparent for communities to reduce their vulnerability to future technological disasters and human-caused events as well as natural hazards. While this Regional Mitigation Action Plan focuses on natural disasters, AACOG and the jurisdictions envision an ongoing planning process that is comprehensive and that incorporates the full range of hazards, including those that are human-caused.

The Alamo Region is vulnerable to a wide range of natural hazards, including flooding, tornadoes, tropical storms and hurricanes. These hazards threaten the life and safety of residents, and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life.

While the threat from hazard events may never become completely eliminated, there is much we can do to lessen their potential impact upon our communities and our citizens. By minimizing the impact of hazards upon the built environment, we can prevent such events from resulting in disasters. The concept and practice of reducing risks to people and property from known hazards is generally referred to as "hazard mitigation."

Hazard Mitigation
"Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards."

Hazard mitigation techniques include both structural measures, such as strengthening or protecting buildings and infrastructure from the destructive forces of potential hazards, and non-structural measures, such as the adoption of sound land use policies or the creation of public awareness programs. It is widely accepted that the most effective mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately made. A comprehensive mitigation approach addresses hazard vulnerabilities that exist today and in the foreseeable future. Therefore it is essential that projected patterns of future development are evaluated and considered in terms of how that growth will increase or decrease a community's overall hazard vulnerability.

One of the most effective means that a community can implement in a comprehensive approach to hazard mitigation is to develop, adopt and update as needed, a local hazard mitigation plan. A mitigation plan establishes the broad community vision and guiding principles for reducing hazard risk, and further proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

INTRODUCTION

The *Alamo Area Council of Governments Regional Mitigation Action Plan* (hereinafter referred to as "Mitigation Action Plan" or "Plan") is a logical first step toward incorporating hazard mitigation principles and practices into the routine government activities and functions of the twelve-county planning area and its municipalities. The Plan recommends specific actions to combat the forces of nature and protect residents from losses resulting from those hazards that pose the greatest risk. These mitigation actions go beyond the simple recommendation of structural solutions to reduce existing vulnerability, such as elevation, retrofitting and acquisition projects, to the development of local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities, all of which can aid in reducing the future vulnerability of the Alamo Region to identified hazards. The Plan has been designed to be a living document, with implementation and evaluation procedures included to help achieve meaningful objectives and successful outcomes.

Disaster Mitigation Act of 2000

In an effort to reduce the Nation's mounting natural disaster losses, the United States Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) to provide new and revitalized approaches to mitigation planning. Section 322 of the Act emphasizes the need for state and local entities to closely coordinate mitigation planning and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and the newly-created Pre-Disaster Mitigation (PDM) Program, both of which are administered by the Federal Emergency Management Agency (FEMA). Communities with an adopted and federally-approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

This Plan has been prepared in coordination with FEMA and the Texas Division of Emergency Management to ensure that it meets all applicable DMA 2000 and Annex P requirements. A Local Mitigation Plan Crosswalk, found in Appendix B provides a summary of current minimum standards of acceptability from FEMA and the State of Texas, and also notes the location where each requirement is met within the Plan.

PURPOSE

The purpose of this Mitigation Action Plan is to:

- Protect life, safety and property by reducing the potential for future damages and economic losses that result from natural hazards;
- Qualify for additional grant funding, in both the pre-disaster and post-disaster environment;
- Speed recovery and redevelopment following future disaster events;
- Demonstrate a firm local commitment to hazard mitigation principles; and
- Comply with state and federal legislative requirements for local hazard mitigation plans.

SCOPE OF WORK

The Mitigation Action Plan will be fully maintained to address those hazards determined to be "high and moderate risk" as determined from a detailed hazard risk assessment conducted in the AACOG planning area (see Section 4: *Risk Assessment*). Other hazards that pose a low or negligible risk will be considered but not fully addressed within this Plan.

The geographic scope (e.g., the overall planning area) for the Hazard Mitigation Plan includes a total of sixty-six (66) jurisdictions. However, while Kendall County and the City of Boerne are located geographically within the region, they are discussed in the Guadalupe-Blanco River Authority (GBRA) Mitigation Plan. The AACOG Plan may provide background information on these two jurisdictions, however they are not officially participating. Therefore, the AACOG Mitigation Plan includes the following twelve (12) counties and fifty-four (54) participating municipalities (**Table 1-1**):

Table 1-1. Participating Jurisdictions

Atascosa County	Olmos Park	Seguin
Christine	Selma	Falls City
Lytle	Somerset	Kenedy
Poteet	Universal City	**Kerr County**
Bandera	**Comal County**	Kerrville
Alamo Heights	Garden Ridge	Castroville
China Grove	**Frio County**	Hondo
Converse	Pearsall	Natalia
Fairs Oaks Ranch	Fredericksburg	Floresville
Helotes	Goliad	Poth
Hollywood Park		
Leon Valley	New Berlin	

AUTHORITY

This Mitigation Action Plan has yet to be adopted by the sixty-eight (68) participating jurisdictions. The evidence of local adoption by County Commissioners or City Councils in the AACOG will be included with a supplementary package to this Plan. The AACOG Plan has been developed to be in accordance with current state and federal rules and regulations governing local hazard mitigation plans, and shall be routinely monitored to maintain compliance with the following provisions, rules and legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390).
- FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.
- Texas Department of Public Safety, Division of Emergency Management; the State of Texas Hazard Analysis document; Annex P; and Checklist P.

PLANNING PROCESS

This section describes the planning process undertaken by the participating jurisdictions of the Alamo Area Council of Governments (AACOG) in the preparation of this Mitigation Action Plan. Specific topics covered in this section include:

- Overview of hazard mitigation planning;
- Description of how the plan was prepared;
- Introduction of the planning team;
- Discussion of how the public was involved;
- Explanation of the process used to involve relevant stakeholders; and
- Documentation of multi-jurisdictional participation.

OVERVIEW OF LOCAL HAZARD MITIGATION PLANNING

Local hazard mitigation planning is the process of organizing community resources, identifying and assessing hazard risks, and determining how to best minimize or otherwise manage those risks. This process results in a Mitigation Action Plan that identifies specific mitigation actions, each designed to achieve both short-term planning objectives and a long-term vision. Responsibility for each mitigation action is assigned to a specific individual, department or agency along with a schedule for its implementation. Plan maintenance procedures are established for the routine monitoring of implementation progress, as well as the evaluation and enhancement of the Plan itself. These maintenance procedures ensure that the Plan remains a dynamic and functional planning document over time.

Mitigation planning offers many benefits, including:

- Saving lives, property and money;
- Speeding recovery following disasters;
- Reducing future vulnerability through wise development and post-disaster recovery and reconstruction;
- Expediting the receipt of predisaster and post-disaster grant funding; and
- Demonstrating a firm commitment to improving community health and safety.

Typically, mitigation planning is described as having the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that predisaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery and reconstruction. Furthermore, mitigation practices will enable local residents, businesses and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track sooner and with less interruption.

The benefits of mitigation planning also extend beyond reducing a community's vulnerability to hazards. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals, such as preserving open space, maintaining environmental health and enhancing recreational opportunities.

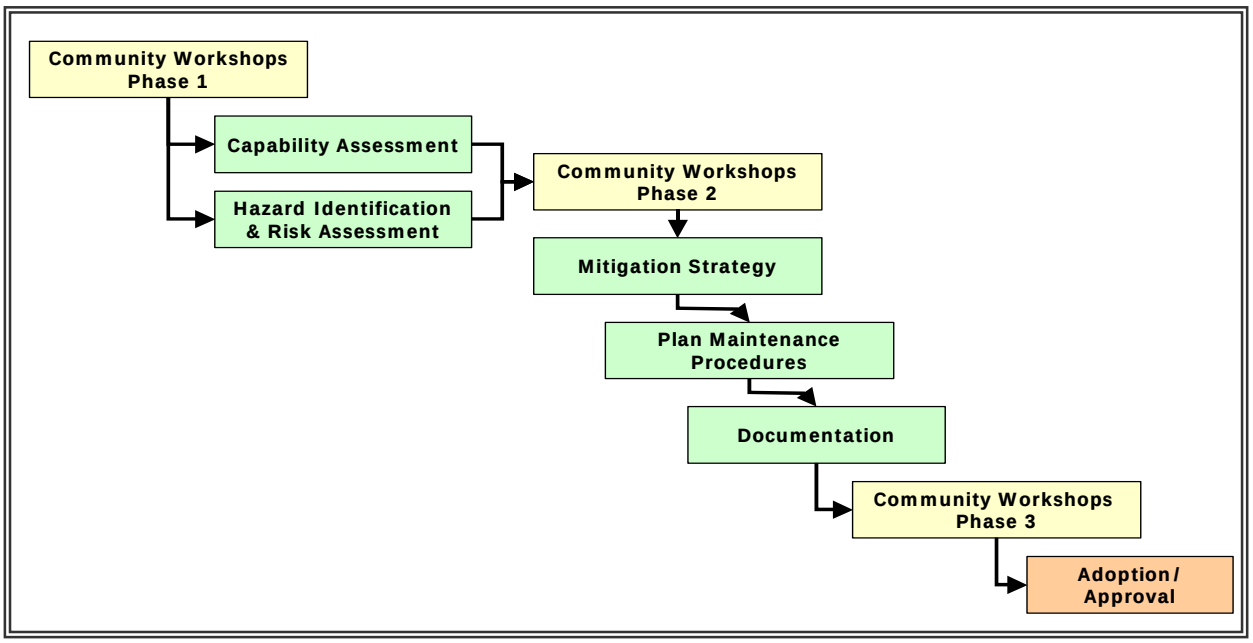
DESCRIPTION OF THE PLANNING PROCESS

This section of the document describes the framework around the general planning process undertaken by AACOG during the development of its regional hazard mitigation action plan.

Communities of AACOG utilized the planning process recommended by FEMA (Publication Series 386) to develop this Plan. A Local Mitigation Plan Crosswalk, found in Appendix B, provides a summary of FEMA's current minimum standards of acceptability and notes the location of where each requirement is met within the Plan.

The planning process included nine (9) major steps that were completed over since the beginning of 2003. These steps are displayed in **Figure 2-1** and discussed below.

Figure 2-1. A Community-Based Mitigation Planning Process



The *Community Profile*, located in Section 3, describes the makeup of the counties and local municipalities, including prevalent geographic, demographic and economic characteristics. In addition, building characteristics and land use patterns are discussed. This baseline information helps to provide a snapshot of each county and thereby assist AACOG and municipal officials in recognizing those factors that ultimately play a role in describing community vulnerability.

The *Risk Assessment*, found in Section 4 of the Plan, describes and analyzes the natural and human-caused hazards present within AACOG and participating jurisdictions. This analysis utilizes historical data on past hazard occurrences, and establishes hazard profiles along with a hazard risk ranking based on hazard frequency, magnitude and impact. The FEMA HAZUS® loss estimation methodology, combined with the use of existing historical hazard data, was used to produce the assessment. This information is critical when communities must determine the most appropriate mitigation actions for their community to pursue and implement. The findings

of the *Risk Assessment* enable communities to focus their efforts on those structures or planning areas facing the greatest risk.

The *Capability Assessment*, found in Section 5, provides a comprehensive examination of participating jurisdictions' capacity to implement meaningful mitigation actions and identifies existing opportunities for program enhancement. Capabilities addressed in this section include staff and organizational capability, technical capability, policy and program capability, fiscal capability, legal authority and political willpower. Information was obtained through the use of detailed questionnaires and the analysis of existing plans, ordinances and relevant documents. The purpose of this assessment is to identify any existing gaps, weaknesses or conflicts in programs or activities that may hinder mitigation efforts, or to identify those activities that can be built upon in establishing a successful community hazard mitigation program.

The *Risk Assessment*, *Capability Assessment* and *Community Profile* form the basis for designing the community's hazard mitigation strategy. These three background studies set the stage for developing, adopting and implementing the meaningful mitigation strategies found in Section 6. This process is designed to result in a Plan that is both strategic (through the identification of long-term goals) and functional (through mid-range objectives and short-term actions). Following the completion of the mitigation strategies section, AACOG concentrated on designing measures to ensure the Plan's ultimate implementation and adopted evaluation procedures to ensure that the Plan is routinely updated.

The creation of the Plan required a series of meetings, ongoing data collection and analysis, the garnering of public input and feedback from local officials, and the approval of local elected officials. The implementation schedule for the creation of the Plan is shown below in **Table 2-1**.

Table 2-1. Project Task Schedule

Initial Planning Workshops									
Hazard Identification and Risk Assessment									
Identification and Evaluation of Mitigation Strategies									
Second Round of Workshops									
Draft Plan									
Final Plan									

The AACOG mitigation planning effort will include 68 jurisdictions whose administrative boundaries are encompassed by the planning area. AACOG has included all jurisdictions in the planning area in the *Risk*

Assessment. Should any jurisdiction's governing body not approve the mitigation actions its representatives have selected by the date this Plan is submitted to the Texas Division of Emergency Management (DEM), AACOG will continue working with those jurisdictions to get a completed Mitigation Action Plan in order to qualify them for disaster benefits and to assist them in planning for hazard reduction.

The first meeting to kickoff the planning process was held on March 24, 2003 with members of AACOG and project consultant PBS&J holding a conference call. It was during this call that PBS&J laid out the project scope of work and reviewed responsibilities of all participants involved in the process. Protocol for the upcoming community meetings was also reviewed.

DESCRIPTION OF THE PLANNING TEAM

AACOG Executive Mitigation Committee

A multi-jurisdictional plan requires clear lines of communication and coordination with the public. To consolidate its new mitigation-planning mandate, AACOG chose to coordinate its planning effort with participating jurisdictions through its Regional Emergency Preparedness Advisory Committee (REPAC). The primary focus of the REPAC is to advise the AACOG Board of Directors on program and policy matters pertaining to First Responder, Homeland Security, and Emergency Preparedness areas within the region.

The selection of REPAC to guide mitigation activities was important for two main reasons. REPAC is an established entity within AACOG and can quickly integrate regional mitigation planning efforts into the overall objectives of the organization. Furthermore, AACOG realized that a centralized coordinated effort was necessary. Coordinated efforts reduce duplication of the workload and facilitate the identification of multi-objective planning opportunities (i.e., mitigation projects and policies that may compliment other AACOG initiatives).

In this planning process, REPAC fills the role of executive mitigation team. The REPAC will be the instrument of policy development, decision-making and management for the regional Plan. REPAC has a broad-base structure in which organization (department) leaders consult with one another during the execution of project tasks and provides an ideal mechanism to facilitate joint strategic planning and decision-making for AACOG constituents. During the execution of this planning process, REPAC has agreed to meet at least once per month. The role of the committee is three-fold: to assess progress with regard to the developed project work plan; to facilitate coordination and cooperation between and among all jurisdictions; and to help develop recommendations for the AACOG Board of Directors regarding new initiatives and policy directions that result from this process.

The Regional Emergency Preparedness Advisory Committee consists of 17 members and 18 alternatives. The committee is headed by a Chairperson that is selected to serve in this capacity for no more than two consecutive years. Further terms can be served by the Chairperson after an intervening term. Other members serve two year terms but may be recommended for additional term or terms. Alternates serve in the absence of appointed members. All alternates must be approved and appointed by the AACOG Board of Directors.

The membership of the REPAC is shown in **Table 2-2**.

Table 2-2. AACOG Regional Emergency Preparedness Advisory Committee (REPAC) Members as of 12/10/2003

Chair	Judge Marvin Quinney	Alternate	Edwin Baker
Alternate	Carl L. Mixon	Alternate	Jay Sikes
Alternate	Dr. Harold Timboe	Member	Dr. W.S. Riggins
Member	Mark Cheatum	Alternate	Anna Lux
Member	Carol Edgett	Alternate	Eddie Taylor
Member	Eric Epley	Alternate	Karen Rottinghaus
Member	General Eugene E. Habiger	Member	Harry Smith
Member	Chief Joe Hamilton	Member	Tom Winn
Member	Tony Malik	Member	Michael Wise

Local Hazard Mitigation Teams

In addition to the REPAC, local hazard mitigation teams were established at the county and municipal levels. These teams were organized by county. The diversity of jurisdictions in the region is reflected in the diversity of the local hazard mitigation teams. In the larger municipalities, several officials from various departments within the jurisdiction compose the local hazard mitigation team. In the more rural areas, the county and all of the jurisdictions within that county met together, often with each jurisdiction only having one representative on the team. In these county mitigation meetings, discussions centered on hazard assessment and the economic effects of potential damages and to compare mitigation actions by hazard.

COMMUNITY WORKSHOPS

First Community Workshop

The first of two community workshops was held March 27 and 28, 2003. Sign-in sheets and minutes from these workshops are available in *Appendix D* of this Plan.

Following brief presentations on the project approach, each meeting was open to participants for expressing any and all concerns regarding the planning process, natural hazards and hazard mitigation. Emphasis was placed on recent experiences with natural hazards and the necessity to act immediately to ensure preparedness for the next disaster event. "Cardstorming" sessions, interactive consensus-building exercises, provided important feedback from individuals who have been directly affected by disasters. This included their issues, concerns and

recommendations with regard to disaster recovery, natural hazards and reoccurring damages in their communities. Following are specific concerns identified by the community during the workshop.

- **Flooding** appears by far to be the hazard generating the most concern throughout the region. Individuals expressed specific concerns about two types of flooding in particular: urban flash flooding and rural riverine flooding. Flooding in urban areas is related to storm water management and inadequate drainage infrastructure. In many areas, major rainfall events cause flooding in urban areas. These rains affect residential homes (repetitive loss properties), while also disrupting roadway traffic by flooding major thoroughfares. In rural areas, the overwhelming concern is loss of life at low water crossings. Additionally, many communities noted that they have experienced repetitive infrastructure damages, mainly to bridges. Concerns were also expressed with regard to floodplain administration, the lack of flood hazard maps and regular maintenance of flood control structures.
- **Tornadoes** are also of major concern to all participating jurisdictions. Individuals expressed a specific unease that a general lack of understanding exists about this hazard. Everyone is aware of the danger and potential impact; however, not many participants were aware of the various mitigation strategies that can be employed to reduce that impact. Ideas surrounding education and outreach programs as well as advanced weather warning systems were raised as part of this discussion. Hardening of critical facilities, especially schools were also of concern.
- **Hurricane** winds are a concern for most communities in the region, although most concerns focused on the rainfall associated with hurricane-related events. Individuals were only concerned with wind resistant construction or retrofits for critical facilities such as shelters, not for residential properties.
- **Severe thunderstorms** and **hail** were reported to be frequent throughout the region, and workshop participants raised questions about residential damages, as well as other personal property damages caused by hailstorms, specifically to personal vehicles and to the roofs of businesses and homes in the community.
- The **wildfire** hazard is a major concern in many communities, and many participants expressed a genuine interest in gaining a better understanding of wildfires as a hazard. Of particular concern was the classification of vegetation types that define fuel loads, especially in outlying-forested areas that are adjacent to newly built subdivisions.
- **Earthquake** hazards were not classified as a major concern. Several communities however did express concern with regard to the location of fault lines. Participant-raised questions revolved around the type of damages that might be expected from a major earthquake, which aided in heightening overall awareness of this hazard and perhaps serving to escalate its consideration in future planning efforts. Specific concerns included: potential damages to residential structures, commercial masonry buildings (of historic nature), as well as underground gas and oil pipelines.

Detailed information on each of these hazards has been discussed in the *Risk Assessment* section of this Plan.

The brainstorming session was also used to identify five issues or areas of particular concern. The community responses were then grouped into 10 broad categories, which all participants agreed should become the guiding principles of the Plan. They are: Communication and Coordination; Financial Resources; Technical Assistance; Training; Planning; Education and Public Participation; Critical Facilities; Infrastructure and Utilities; Weather Warning Systems and Hazard Identification Technologies; and Environmental Concerns. The progression

from five issues to 10 principles eventually led to the various goals of the Mitigation Action Plan. These areas are addressed in detail in Section 6 of the Plan: *Mitigation Strategy*.

Second Community Workshop

The second round of community workshops was conducted: June 26, 2003, at the Pleasanton Fire Station in Pleasanton; June 27, 2003, at the Upper Guadalupe River Authority in Kerrville; and July 1, 2003, at the AACOG Boardroom in San Antonio. Sign-in sheets along with detailed minutes from these workshops are available in *Appendix D* of this Plan. The purpose of these meetings was to present general findings from the *Risk Assessment* and to present the findings from the *Local Capability Assessment Survey*. At this meeting, workshop participants were also provided a Unique Hazards Identification worksheet. This tool was to be used to identify local risk areas that were not common to the entire planning area.

After the *Risk Assessment* and *Capability Assessment* presentations, Mitigation Actions Worksheets were distributed to workshop participants. These tools were used to gather information from participants about specific mitigation actions that will be implemented throughout the communities in the region. This includes the community name, a description of the action item, hazard(s) addressed, objective(s) addressed, lead agency or department responsible, estimated cost, proposed funding method, implementation schedule and priority. Workshop participants were encouraged to complete these worksheets at the meeting or to take them back to review before their community officials and then return them within two weeks.

The information gathered from the Mitigation Actions Worksheets has been incorporated into the *Mitigation Strategy* section of this Plan.

AACOG MITIGATION VALUES

In April 2003, AACOG adopted a policy directive to guide the development of the region's missions, goals and objectives.

The following values were then created to guide AACOG in the implementation of its mitigation mission.

- **Commitment to Constituency**
  AACOG will strengthen relationships with an increasingly informed and interested citizenry by reinforcing the public participation process with outreach, early involvement and review of plans, candid and understandable presentations, and consistency in follow-up.
- **Commitment to Partnership**
  AACOG will develop and/or support formal and informal partnerships in its planning region for the implementation of goals and objectives defined in its mitigation plan. Through formal or informal cooperative agreements, these partnerships will help to leverage the limited resources available and tap new sources of support.

- **Provide Leadership and Technical Assistance**
  AACOG will bring together various interests to address the needs and issues of its ever-changing social and economic environment. With its commitment to the region, AACOG will utilize a wide range of expertise to support its planning efforts.
- **Use Resources Wisely**
  AACOG will pursue diverse and cooperative funding options to reflect the interrelated nature of the region. Pooling resources for projects, such as the development of this Plan, will allow AACOG to identify additional funding options that will benefit the region. In an increasingly competitive environment for already limited resources, AACOG will strive to development programs that are reliable, equitable, flexible, adequate and acceptable to its constituents.
- **Collective Responsibility**
  AACOG recognizes that it has a responsibility to make decisions that encompass the interest of all our customers and take into consideration the general welfare of the public in internal decision processes.

BUILDING COMMITMENT AMONG REGIONAL PARTNERS

Rather than simply focusing efforts on a single community and its public stakeholders, the multi-jurisdictional approach requires a regional approach to outreach. The Alamo Area Council of Governments initiated the planning effort March 27 and 28, 2003. These initial meetings represented a community outreach effort to engage local jurisdictions in the regional mitigation-planning framework. In designing the outreach program, these workshops provided important forums to communicate information about the planning process and its intent.

As the planning process progresses, it becomes increasingly important to narrow the focus, as each community will be asked to provide specific feedback concerning issues unique to them—and eventually these communities will be asked to support the adoption of the Plan. The project team has explained that community-level public participation is necessary in order to develop broad-based planning goals, targeted objectives, and specific action items addressing how each jurisdiction will handle natural hazards.

BUILDING LOCAL HAZARD MITIGATION TEAMS

During the initial community workshops, the AACOG Regional Mitigation Action Plan Partners encouraged representatives from each local jurisdiction to work closely during the development of the Plan, and very importantly, to establish a formal local hazard mitigation team. It was explained that this team should be comprised of individuals committed to the welfare of their community and willing to carry on the mission of implementing mitigation actions identified in the Plan. Each participating jurisdiction was asked to appoint a single contact person and/or delegate that would work as part of the multi-jurisdictional team and serve as the primary liaison between the jurisdiction and AACOG.

Although independent, the local hazard mitigation teams are intended to function as an adjunct part of the larger AACOG Regional Mitigation Action Plan Partners to the grant. These partners include AACOG, the City of San Antonio (COSA), the San Antonio River Authority (SARA), and Bexar County. The local teams are expected to provide an invaluable community outreach function and ensure that local issues and/or areas of

concern are being sufficiently addressed by the larger group. Individual citizen and community-based input also provides the entire planning team with a greater understanding of local concerns and ensures a higher degree of mitigation success by developing community "buy-in" for mitigation strategies. This community-based planning initiative also allows local officials to become involved in the regional Plan. It is hoped that this involvement will harvest a vested interest in whether or not the Plan is adopted by local legislative or executive authority.

A list of the local team leaders and mitigation team members will be provided in *Appendix D*.

HOW THE PUBLIC WAS INVOLVED

As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the natural hazards present in their community and take personal steps to reduce their potential impact. Public awareness is the key to making a home, neighborhood, school, business or city safer from the potential effects of natural hazards. To ensure success in achieving these goals, AACOG has continued an outreach effort to make sure each jurisdiction takes initiatives to ensure broad community participation and dialogue. This has been achieved through:

- **Public Notification**
  Written information about the project, including notices of all meetings and workshops, has been provided to county judges and local emergency management offices. In addition, a group e-mail notification program has been established to keep community members informed of project progress, including major milestones. See *Appendix D* for documentation of public notification.
- **Staff Resources**
  AACOG utilized Mr. Don McFarland, Criminal Justice Manager for Emergency Preparedness, to assist with public outreach and notification. Mr. McFarland has proven to be an invaluable resource, as he is well known in the community and familiar with community expectations and concerns. Further, he has a good understanding of the mitigation planning process and mitigation actions related to Alamo Region hazards.
- **Neighborhood Outreach**
  AACOG, upon request, has facilitated public meetings in participating jurisdictions. AACOG has also worked to involve interested neighborhood organizations to listen to and gain valuable information regarding neighborhood concerns. PBS&J and subcontractor H_2O Partners, Inc. assisted with this outreach effort.
- **Community Review**
  In working with these communities, AACOG has established mechanisms to ensure participation of a wide audience in the review of draft and final plans prior to community approval.

Public meetings were conducted during the planning process in order to collect input from AACOG citizens. Public meetings were held the evenings of June 26 and 27, 2003, and on July 1, 2003, at three locations throughout the region: Southern meeting was held in Pleasanton; Northern meeting in Kerrville; and Central meeting in San Antonio.

HOW OTHER POTENTIAL STAKEHOLDERS WERE INVOLVED

A range of stakeholders were involved in the mitigation planning process. Stakeholder involvement was encouraged through the use of multiple planning workshops, public meetings, press releases, public notices and the notification of stakeholder groups. *Appendix D* contains information on how the public meetings were advertised. Any potential stakeholders were invited to attend and offer comments.

MULTI-JURISDICTION PARTICIPATION

The participating jurisdictions are listed in the *Introduction* section of this Plan. Each jurisdiction was responsible for a variety of tasks including, but not limited to the following:

- Signing of inter-local agreements to participate in the Region Mitigation Action Plan development;
- Participation in each mitigation planning workshop;
- Completion the *Local Capability Assessment Survey*;
- Development of a Regional Mitigation Action Plan, including development of region-wide goals and objectives; and
- Identification of completed local mitigation projects, if applicable.

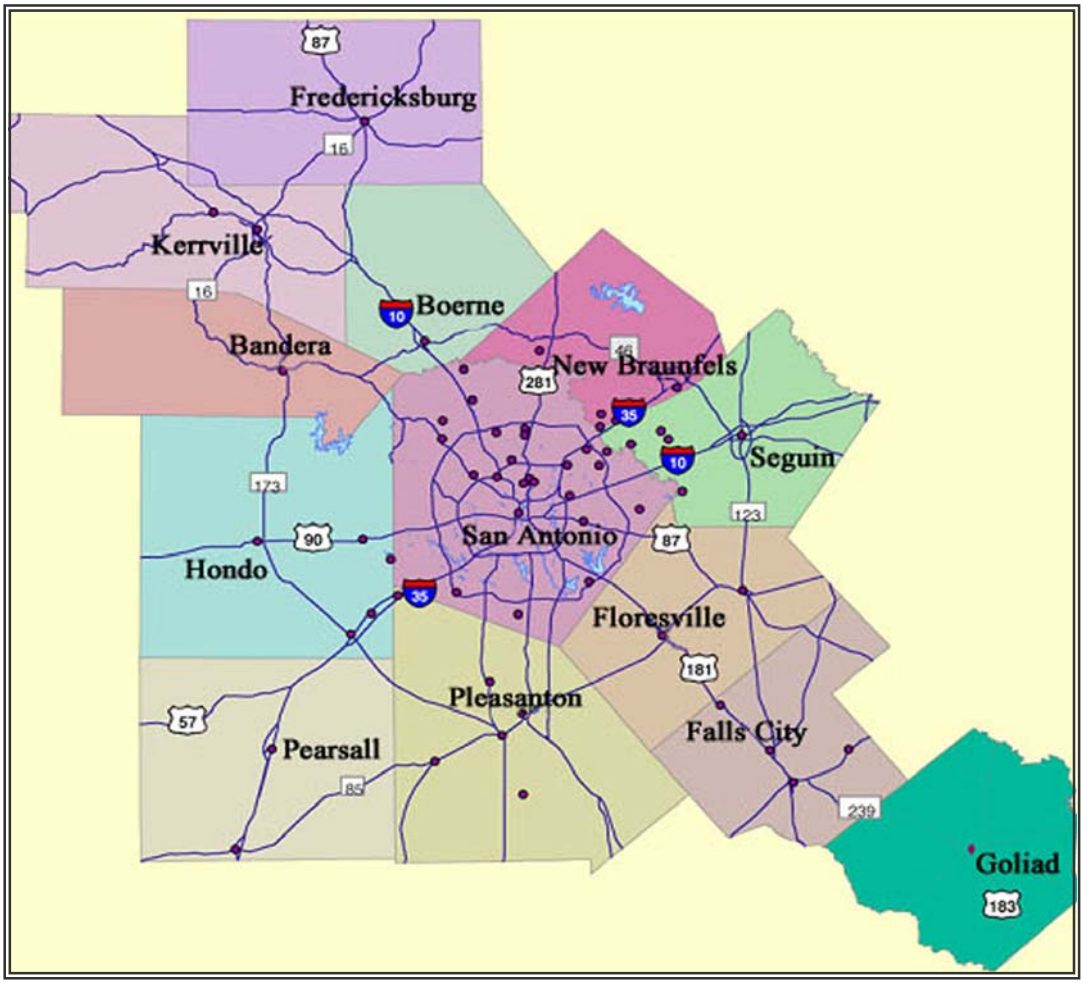
Through AACOG's leadership, a high level of cooperative involvement occurred in the Mitigation Action Plan process, involving local elected leaders and city staffs. This level of interest and participation in the planning process laid a good foundation for development of a plan that will be utilized by participating jurisdictions for the five-year period following adoption of the Plan. The multiple-jurisdictional planning approach has been an efficient and effective way for smaller municipalities and counties in the AACOG area to leverage resources and share expertise in the planning effort. This model serves the entire region and is an approach that has been validated by this planning process. The following section, *Community Profile*, provides a view of the region and its unique demographics and geography.

COMMUNITY PROFILE

THE BASIN AT-A-GLANCE – A PROFILE OF THE AREA

The 13-county planning area[1] that comprises the official AACOG region is rich with history and tradition, with the growing metropolis of San Antonio at its heart. The Alamo Region is proximal to the major Texas population centers and over two-thirds of the trade between the United States and Mexico moves through the area on its many interstate highways.

Figure 3-1. Official AACOG Planning Area



Source: AACOG Regional Data Center.[2]

[1] As discussed in the Scope section of the *Introduction*, Kendall County and the City of Boerne are included in the Guadalupe-Blanco River Authority (GBRA) Mitigation Plan, though they are geographically located within the AACOG region.

[2] Points denote surrounding communities.

Table 3-1. Land Area of Counties in the AACOG Plan

Comal	561.5	Gillespie	1,061.2
Guadalupe	711.2	Frio	1,133.1
Bandera	791.8	Bexar	1,246.9
Goliad	853.6		

Source: Texas Almanac.

GEOGRAPHY

The Alamo Region covers over 12,000 square miles centered around the City of San Antonio where the Hill Country meets the Gulf Coastal Plain. The physical environment across the region changes from rolling prairie to wooded, rugged limestone hills, to shrubby coastal plain.

Rainfall in the area averages 30 to 40 inches annually, replenishing many lakes, springs and creeks as well as the rivers. Rain is also absorbed into the Edwards, Carrizo-Wilcox, and Gulf Coast aquifers; and into the Trinity Group of aquifers. **Figure 3-2** and **Figure 3-3** show the river basins and watersheds of the area. **Tables 3-2**, **3-3** and **3-4** list the major rivers and tributaries, lakes and reservoirs, and major dams in the area.

Texas has more inland water than any other state, and the AACOG planning area is no exception. More than 50 bridges span the San Antonio River as it meanders through the heart of San Antonio. In 1939, the downtown stretch was made into a pedestrian river walk, called the Paseo del Rio, by the Work Projects Administration. Today it is still one of San Antonio's principal attractions.

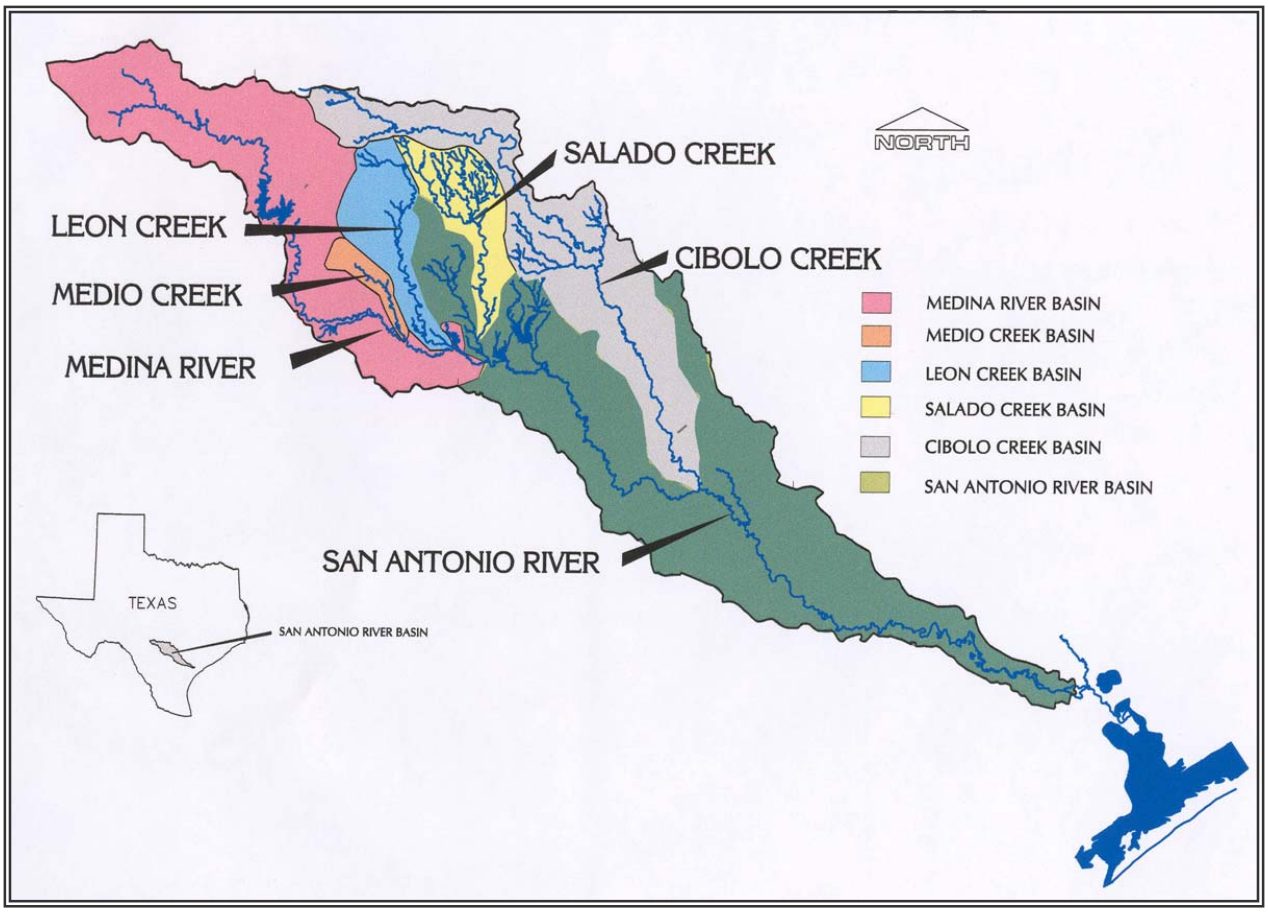
The Comal River, said to be the shortest river in the United States, rises from large springs in New Braunfels, a popular site for recreation and tubing. Artificially created lakes such as Canyon Lake and Medina Lake provided an economic boost for the region from real estate, irrigation and recreation opportunities.

San Antonio River Walk

Frio River

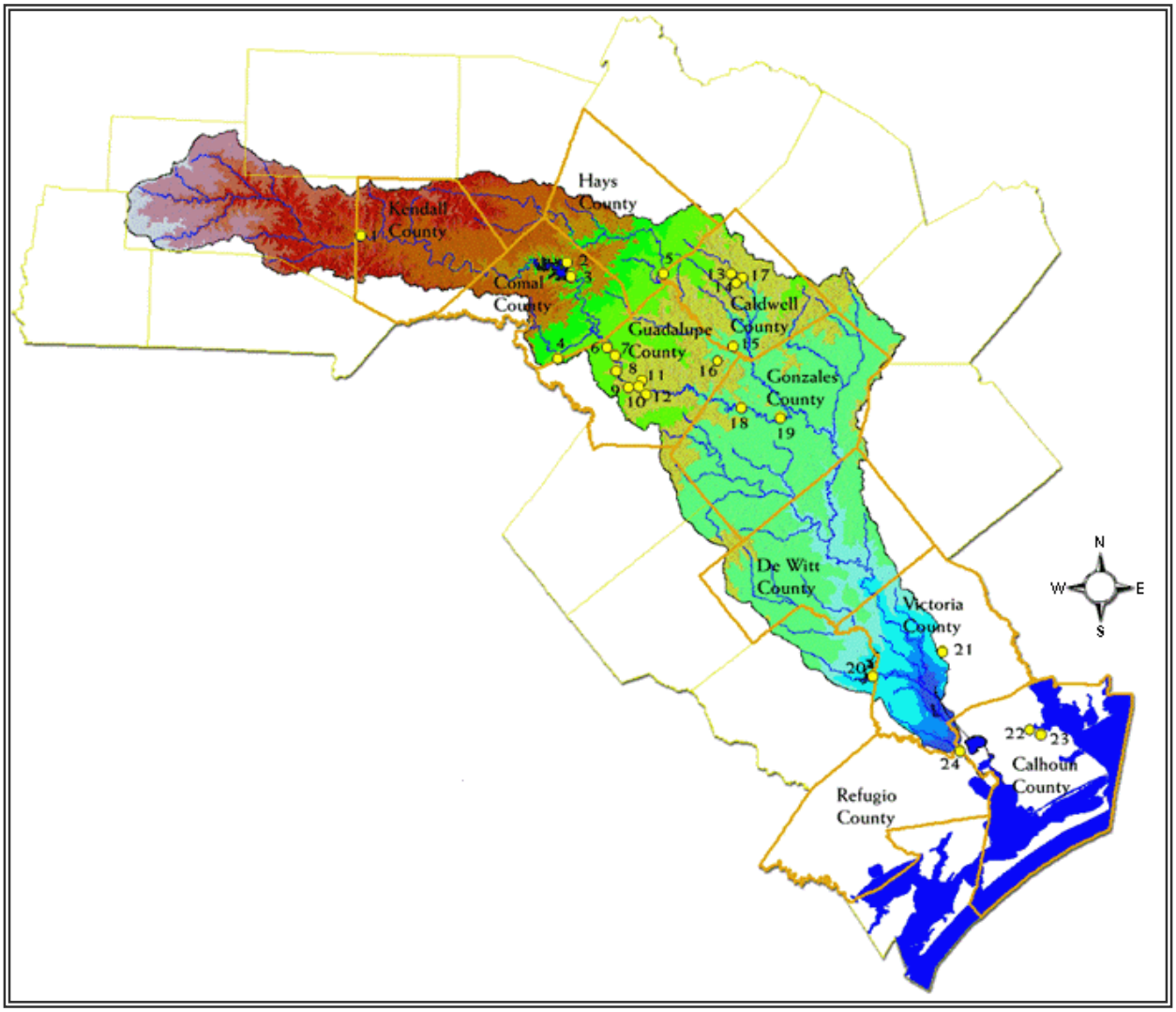
Photos by Texas Economic Development.

Figure 3-2. San Antonio River Basin Watersheds Map



Source: San Antonio River Authority.

Figure 3-3. Guadalupe River Basin Map



Source: Guadalupe-Blanco River Authority.

Table 3-2. Major Rivers and Tributaries in the Plan Area

Guadalupe River	230	6,070	Comal, Guadalupe, Kendall, Kerr
San Antonio River	180	1,336	Bexar, Goliad, Karnes, Wilson
Pedernales River	106	N/A	Gillespie
Atascosa River	92	N/A	Atascosa
Leona River	83	N/A	Frio
Sabinal River	60	241	Bandera
Arroyo Seco	N/A	N/A	Bexar

Source: Handbook of Texas Online, Texas State Historical Association and USGS.

Table 3-3. Major Lakes and Reservoirs in the Plan Area

Canyon Lake	8,240	386,200	Guadalupe River	Comal
Calaveras Lake	3,624	63,200	Calaveras Creek	Bexar
Victor Braunig Lake	1,350	26,500	Arroyo Seco	Bexar
Lake McQueeney	396	5,000	Guadalupe River	Guadalupe

Source: Texas Almanac.

Table 3-4. Major Dams in the Plan Area

Canyon Dam	1964	US Army Corps of Engineers	502,800
Coleto Creek Dam	1980	Guadalupe-Blanco River Authority	117,240
Victor Braunig Plan Dam	1962	City of San Antonio	16,944
Lake Placid Dam	1964	Guadalupe-Blanco River Authority	N/A

Source: National Inventory of Dams.

POPULATION AND DEMOGRAPHICS

San Antonio is the ninth largest city in the United States, and the region is projected to grow by over a million by 2040. Population and demographics are key considerations for mitigation planning and preparedness education. In 2000, the 12 counties in this Plan had a population of 1,814,796 in over 12,000 square miles. Bexar and Guadalupe are the most populous counties and San Antonio and New Braunfels are the most populous cities. Medina County is the largest in the area, covering 1,327 square miles. Pearsall and Frio counties have the largest percentage of non-English speaking population. Charlotte and Atascosa counties have the largest percentage of race that is neither white nor black. Ingram and Kerr counties have the largest percentage of population with a disability. Poteet and Frio counties have the smallest percentage of high school graduates.

As shown in **Table 3-6**, the total population of the AACOG region is expected to grow by about 1.2 million people by the year 2040. This means that not only will resources continue to diminish, but exposure to hazards and monetary damages due to hazard events will also continue to increase over the years. Adopting the Mitigation Action Plan will allow jurisdictions to be proactive in dealing with current and future hazard events. **Table 3-5** through **Table 3-8** provide detailed information regarding population and demographics.

Table 3-5. AACOG Population Growth Projection

2000	42.5	6.1	49.5	1.9

(Assuming Rates of Zero Net Migration (0.0 Scenario))

2010	38.7	6.0	53.0	2.3
2030	32.4	5.7	58.7	3.2

(Assuming Rates of Net Migration equal to One-Half of 1990-2000 (0.5 Scenario))

2010	38.7	6.0	53.0	2.3
2030	32.4	5.7	58.7	3.2

(Assuming Rates of Net Migration equal to 1990-2000 (1.0 Scenario))

2010	38.0	6.0	53.2	2.8
2030	31.0	5.6	57.7	5.7

Source: Texas State Data Center.

Table 3-6. 2000 Population and Population Projections Through 2040

Atascosa	Atascosa County	38,628	41,064	43,609	44,989	45,468
	Christine*	436	436	436	436	436
	Lytle	2,383	2,500	2,620	2,726	2,810
	Poteet	3,305	3,383	3,463	3,534	3,589
	Bandera	957	1,056	1,179	1,307	1,411
Bexar	Alamo Heights	7,319	7,671	8,039	8,148	8,239
	Castle Hills	4,202	4,207	4,211	4,215	4,218
	Converse	11,508	15,339	19,445	23,204	26,132
	Fair Oaks Ranch	4,695	6,181	6,271	6,339	6,408
	Helotes	4,285	7,980	11,812	14,808	17,244
	Hollywood Park	2,983	3,111	3,232	3,340	3,428
	Leon Valley	9,239	9,284	9,329	9,456	9,583
	Olmos Park	2,343	2,549	2,744	2,918	3,059
	Selma	788	4,851	6,291	7,731	7,750
	Somerset	1,550	2,009	2,443	2,830	3,145
	Universal City	14,849	17,248	19,722	21,970	21,970
	Comal County	78,021	80,165	82,649	83,194	82,499
	Garden Ridge	1,882	2,380	3,017	3,743	4,454

		Population				
Frio	Frio County	16,252	17,756	19,432	20,977	22,482
	Pearsall	7,157	7,317	7,474	7,608	7,719
	Fredericksburg	8,911	10,313	11,778	12,349	12,349
Goliad						
	Goliad	1,975	2,225	2,416	2,505	2,505
	Cibolo	3,035	4,497	6,284	8,216	10,146
	New Berlin*	467	467	467	467	467
	Seguin	22,011	25,309	29,339	33,696	38,048
Karnes						
	Karnes City	3,457	3,710	4,008	4,322	4,573
	Runge	1,080	1,099	1,209	1,294	1,367
	Kendall County	15,446	15,846	16,269	16,782	17,250
Kerr	Kerr County	43,653	41,180	40,022	39,181	18,831
	Kerrville	20,425	23,044	25,681	26,934	27,544
	Castroville	2,664	2,974	3,316	3,636	3,912
	Hondo	7,897	9,050	10,324	11,513	12,541
	Natalia	1,663	1,937	2,240	2,523	2,768
Wilson						
	Floresville	5,868	9,000	10,261	11,653	12,999
	Poth	1,850	2,099	2,409	2,750	3,081

Sources: 2000 U.S. Census; Mid-range Estimate Projections from Texas State Data Center; Texas Water Development Board; *If no projections available; population is assumed to remain unchanged.

Table 3-7. Race and Language Spoken at Home (2000)

Atascosa	Atascosa County	76.5%	0.7%	26.3%	54.7%	45.3%
	Christine	84.9%	0.0%	21.1%	32.1%	67.9%
	Lytle	76.3%	0.7%	26.6%	54.2%	45.8%
	Poteet	69.2%	0.4%	34.7%	30.6%	69.4%
	Bandera	96.7%	0.2%	4.9%	82.7%	17.3%
Bexar	Alamo Heights	95.3%	0.7%	5.8%	83.5%	16.5%
	Castle Hills	93.7%	0.7%	7.2%	75.4%	24.6%
	Converse	72.7%	14.0%	17.6%	79.3%	20.7%
	Fair Oaks Ranch	97.3%	0.6%	3.5%	92.9%	7.1%
	Helotes	89.9%	2.5%	10.8%	77.5%	22.5%
	Hollywood Park	97.2%	0.3%	4.3%	92.4%	7.6%
	Leon Valley	80.9%	3.2%	19.3%	68.2%	31.8%
	Olmos Park	94.4%	2.1%	4.3%	81.2%	18.8%
	Selma	88.6%	4.6%	8.9%	77.2%	22.8%
	Somerset	81.8%	0.3%	22.8%	52.1%	47.9%
	Universal City	83.7%	7.2%	12.8%	82.0%	18.0%
	Comal County	90.9%	1.2%	10.0%	80.4%	19.6%
	Garden Ridge	95.0%	2.2%	4.1%	90.4%	9.6%
Frio	Frio County	74.2%	5.0%	23.4%	38.8%	61.2%

County	Community	Race*			Language Spoken at Home	
		White	Black	Other	English	Other
	Pearsall	76.4%	0.5%	25.9%	26.9%	73.1%
	Fredericksburg	94.1%	0.3%	6.7%	72.5%	27.5%
Goliad						
	Goliad	77.6%	6.3%	18.8%	64.2%	35.8%
	Cibolo	84.0%	6.5%	12.6%	83.5%	16.5%
	New Berlin	98.5%	0.4%	1.5%	87.7%	12.3%
	Seguin	68.7%	9.6%	25.5%	58.9%	41.1%
Karnes						
	Karnes City	73.6%	6.1%	23.2%	43.5%	56.5%
	Runge	69.8%	2.4%	30.6%	43.7%	56.3%
	Kendall County	94.3%	0.5%	7.0%	83.0%	17.0%
Kerr	Kerr County	90.4%	1.9%	9.4%	81.8%	18.2%
	Kerrville	87.4%	3.2%	11.3%	80.3%	19.7%
	Castroville	84.5%	0.2%	19.0%	74.1%	25.9%
	Hondo	75.4%	8.6%	18.4%	47.3%	52.7%
	Natalia	68.4%	1.3%	33.6%	34.9%	65.1%
Wilson						
	Floresville	74.5%	1.8%	26.8%	46.5%	53.5%
	Poth	69.2%	0.5%	33.2%	54.4%	45.6%

Sources: 2000 U.S. Census and 2000 U.S. Census as compiled by the Texas State Data Center, Texas A&M University. *Adds to more than 100 percent because some individuals indicate more than one race.

Table 3-8. Education and Disability Status (2000)

Atascosa	Atascosa County	65.2%	10.5%	23.4%
	Christine	45.2%	1.6%	20.0%
	Lytle	72.9%	13.7%	23.1%
	Poteet	50.9%	5.1%	28.7%
	Bandera	72.8%	12.2%	27.5%
Bexar				
	Alamo Heights	97.0%	66.9%	12.0%
	Castle Hills	92.9%	42.8%	19.1%
	Converse	89.6%	19.0%	18.8%
	Fair Oaks Ranch	98.0%	58.5%	8.0%
	Helotes	94.5%	43.2%	12.6%
	Hollywood Park	96.7%	48.3%	17.3%
	Leon Valley	88.5%	30.5%	22.3%
	Olmos Park	96.8%	69.0%	9.9%
	Selma	81.0%	28.4%	22.6%
	Somerset	64.8%	5.9%	21.4%
	Universal City	90.6%	29.6%	19.6%
	Comal County	83.9%	26.2%	18.0%
	Garden Ridge	94.8%	48.7%	11.8%
Frio	Frio County	57.7%	8.4%	22.6%
	Pearsall	52.5%	8.3%	25.3%

County				
	Fredericksburg	79.4%	22.0%	28.2%
Goliad				
	Goliad	66.8%	12.2%	25.0%
	Cibolo	89.5%	28.1%	14.5%
	New Berlin	86.5%	26.1%	14.3%
	Seguin	61.7%	15.2%	23.3%
Karnes				
	Karnes City	51.4%	10.5%	22.0%
	Runge	55.3%	6.3%	27.5%
	Kendall County	85.4%	31.4%	16.4%
Kerr	Kerr County	81.2%	23.3%	25.2%
	Kerrville	81.0%	22.9%	26.4%
	Castroville	84.6%	25.4%	20.8%
	Hondo	59.9%	7.4%	21.1%
	Natalia	52.9%	6.0%	22.3%
Wilson				
	Floresville	57.0%	11.3%	24.6%
	Poth	67.2%	10.0%	18.1%

Sources: 2000 U.S. Census as compiled by the Texas State Data Center, Texas A&M University. Percent of persons 25 years of age or older who are high school graduates or higher and college graduates or higher. Percent of civilian non-institutionalized population over age five with a disability.

ECONOMY

Comptroller's Discussion of Regional Economics and Outlook through 2005

Table 3-9. State of Texas Comptroller's Economic Regions

Alamo	12	San Antonio MSA
Costal Bend	19	Corpus Christi MSA Victoria MSA

Source: State of Texas Comptroller.

Alamo Region Outlook

Alamo Region counties represented in this Plan are: Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, Medina and Wilson.

Employment in the Alamo Region of Texas is projected to grow at a 1.6 percent annual rate, the same rate as the state as a whole and the same rate as the Alamo Region grew from 1995 to 2000. By 2005, total employment in the region should reach more than 1,125,600 and should add an average of more than 23,100 jobs each year from 2002 to 2005.

Based on historical data since 1970, the Comptroller projects strong economic growth for the region. Employment in the Alamo Region grew at a slightly higher rate in the 1990s than the state as a whole, and overall growth in this region kept pace with statewide trends. The state's economy is expected to continue to grow in the first five years of the new millennium, though not as rapidly as in the 1990s, and employment in this region will grow more slowly as well. But the most noticeable change will likely occur in the structure of this growth, with much more occurring in industries requiring a more highly trained workforce. Accordingly, the primary challenge for this region will be to provide the educational skills needed to train its work force to meet the changing needs of business in an Internet economy.

Real gross regional product in the region—the total value added through production within the region—should expand at a 1.8 percent annual rate, from $44.1 billion in 1992 dollars in 2000 to $48.3 billion in 2005. The region should add about 84,400 additional jobs from 2000 to 2005, rising from 1,041,100 in 2000 to 1,125,500 in 2005. As expected across the state, this rate of growth will be slowest during the next couple of years but will accelerate into 2004 and 2005. From 2002 to 2005, the region should add an average of 23,100 jobs annually.

Coastal Bend Region Outlook

Coastal Bend Region counties in this Plan are: Goliad.

Employment in the Coastal Bend Region is projected to grow at a 1.7 percent annual rate, about the same rate seen over the last 30 years, but slightly slower than the 1.9 percent growth rate expected for the state as a whole. By 2005, total employment in the Coastal Bend Region should reach more than 426,500.

Based on historical data since 1970, the Comptroller projects stable economic growth for the region. Although Coastal Bend Region has seen some flux during the last two years of the 20th century, the next five years should see growth in line with that seen during the late 1990s. The primary challenge for this region is providing the educational skills needed to train the work force to meet the changing needs of business in an Internet economy.

Overall, the Coastal Bend Region is expected to grow at about its long-term trend rate, but slightly slower than in the state as a whole. Through 2005, real gross regional product in the region—the total value added through production within the region—should expand at a 2.0 annual rate, from $17.1 billion in 1992 dollars in 2000 to $18.8 billion in 2005. During the 1990s, this region saw its real gross regional product expand at a 2.2 percent annual rate, so in value terms this forecast is for just slightly slower growth over the next few years than was seen during the 1990s.

This pattern is likely to be repeated in terms of employment. Through 2005, employment growth in the Coastal Bend Region should average 1.7 percent annually, down slightly from a 1.9 percent posted from 1990 to 2000 in the region. This growth rate matches the long-term employment growth rate established over the last 30 years of the 20th century. The region should add about 33,800 additional jobs from 2000 to 2005, rising from 392,700 in 2000 to 426,500 in 2005. As expected across the state, this rate of growth will be slowest during the next couple of years but will accelerate into 2004 and 2005.

This level of economic growth will accompany reasonable population gains. Population in the region is expected to rise from 730,900 in 2000 to 749,900 in 2005.

Table 3-10 provides detailed employment and income information for 2000.

Table 3-10. Employment and Income, 2000

Atascosa	Atascosa County	3.5%	16,441	$33,081	$14,276	20.2%
	Christine	3.7%	174	$23,333	$10,465	38.3%
	Lytle	2.3%	1,089	$34,857	$14,826	16.6%
	Poteet	3.6%	1,224	$25,329	$9,368	28.0%
	Bandera	4.6%	441	$31,089	$16,502	15.3%
Bexar						
	Alamo Heights	1.7%	3,787	$64,688	$45,640	3.5%
	Castle Hills	2.2%	1,690	$53,687	$38,909	5.8%
	Converse	4.4%	6,281	$47,947	$18,949	6.5%
	Fair Oaks Ranch	1.0%	2,357	$99,685	$45,293	1.7%

County						
	Helotes	1.5%	2,254	$76,951	$29,534	2.0%
	Hollywood Park	0.5%	1,265	$64,844	$34,138	2.7%
	Leon Valley	3.0%	4,994	$49,079	$21,743	8.1%
	Olmos Park	1.8%	1,280	$87,560	$65,697	3.9%
	Selma	1.3%	397	$51,979	$22,491	5.5%
	Somerset	2.1%	579	$30,268	$11,237	23.2%
	Universal City	2.2%	7,993	$50,501	$23,189	7.7%
	Comal County	2.4%	37,958	$46,147	$21,914	8.6%
	Garden Ridge	0.8%	938	$90,184	$40,201	1.8%
Frio	Frio County	3.5%	5,688	$24,504	$16,069	29.0%
	Pearsall	3.8%	2,590	$21,602	$13,383=	35.0%
	Fredericksburg	1.6%	3,810	$32,276	$18,788	11.9%
Goliad						
	Goliad	2.0%	794	$26,200	$13,997	23.1%
	Cibolo	2.2%	1,768	$53,780	$23,998	6.1%
	New Berlin	1.8%	258	$52,250	$22,779	4.0%
	Seguin	5.5%	9,947	$31,618	$13,740	17.2%
Karnes						
	Karnes City	2.9%	1,089	$25,156	$12,243	27.0%
	Runge	4.9%	375	$20,417	$8,480	31.3%
	Kendall County	2.1%	11,321	$49,251	$24,619	10.5%

County						
Kerr	Kerr County	2.4%	18,164	$34,283	$19,767	14.5%
	Kerrville	2.4%	8,087	$32,085	$20,193	15.6%
	Castroville	1.7%	1,291	$42,308	$21,615	9.1%
	Hondo	3.5%	2,738	$27,917	$12,635	22.6%
	Natalia	6.3%	606	$22,557	$8,583	33.4%
Wilson						
	Floresville	4.3%	2,370	$30,093	$13,340	18.2%
	Poth	2.2%	848	$35,492	$13,910	18.1%

Source: U.S. Census 2000.

Table 3-11. Employment by Industry—Percent (2000)

Atascosa	Atascosa Co.	6.2	13.7	8.6	15.2	6.9	1.5	4.2	37.8	5.8
	Christine	12.9	14.1	4.3	8.0	6.1	1.2	2.5	49.7	1.2
	Lytle	2.3	8.5	7.7	16.6	7.0	1.9	7.9	42.3	5.7
	Poteet	4.0	15.7	11.5	16.4	5.0	2.1	3.6	35.7	6.1
	Bandera	1.7	12.1	6.4	15.1	3.7	0.7	12.6	42.1	5.4
Bexar										
	Alamo Heights	0.4	4.7	5.3	12.9	1.7	4.2	11.4	55.6	3.7
	Castle Hills	1.6	4.2	3.3	15.9	4.5	4.7	13.6	48.9	3.3
	Converse	0.5	5.7	6.6	22.1	7.1	2.7	7.9	39.1	8.2
	Fair Oaks Ranch	1.5	5.7	9.0	14.8	3.3	3.9	16.9	42.6	2.3
	Helotes	0.6	6.2	6.3	13.3	4.0	2.3	13.8	45.0	8.5

County										
	Hollywood Park	0.2	6.4	7.2	12.7	4.0	1.7	10.3	53.0	4.6
	Leon Valley	0.6	4.7	5.1	18.2	4.2	2.2	9.0	49.4	6.7
	Olmos Park	1.0	4.3	5.2	9.8	1.4	2.0	15.7	55.9	4.7
	Selma	3.4	6.6	4.7	15.8	4.0	5.8	3.7	46.7	9.2
	Somerset	2.0	13.9	7.6	13.2	6.7	2.5	5.6	41.5	7.0
	Universal City	0.2	5.1	5.5	17.8	7.0	3.1	8.3	41.8	11.3
	Comal Co.	1.5	9.7	11.3	16.4	5.3	3.1	6.9	41.6	4.3
	Garden Ridge	1.2	6.6	5.4	19.8	4.7	4.6	10.7	39.1	8.1
Frio	Frio Co.	14.0	9.5	5.0	14.4	5.4	0.5	5.2	34.7	11.2
	Pearsall	10.3	9.1	6.4	16.2	5.9	0.6	4.5	36.7	10.3
	Fredericksburg	3.0	8.9	5.3	18.6	3.3	1.0	4.7	51.5	3.8
Goliad										
	Goliad	6.1	10.7	4.7	12.8	3.3	3.0	4.3	44.7	10.3
	Cibolo	0.0	8.2	8.3	15.2	3.6	2.8	7.4	40.1	14.4
	New Berlin	6.8	12.4	10.0	17.6	8.8	1.2	5.2	28.9	8.8
	Seguin	1.6	8.3	24.7	14.4	2.6	1.6	3.6	39.8	3.5
Karnes										
	Karnes City	3.9	10.4	10.3	14.0	3.1	0.0	4.6	43.2	10.6
	Runge	13.1	14.6	6.5	12.2	4.2	0.0	4.2	34.6	10.7
	Kendall Co.	4.3	11.8	6.0	13.9	3.7	2.5	12.2	41.4	4.3
Kerr	Kerr Co.	3.5	10.8	7.7	13.8	3.0	2.3	4.8	50.1	4.0
	Kerrville	1.6	10.0	7.7	14.2	2.3	2.7	5.2	51.9	4.4
	Castroville	1.8	12.2	6.4	12.6	3.9	1.3	8.3	49.6	4.0

County										
	Hondo	2.2	10.1	9.9	16.7	4.4	1.3	5.6	39.6	10.3
	Natalia	3.4	13.5	8.4	13.9	5.8	0.9	4.7	45.9	3.4
Wilson										
	Floresville	1.7	13.8	7.5	19.0	7.1	2.1	4.9	38.2	5.7
	Poth	4.7	6.8	14.4	16.3	8.6	1.8	6.2	34.8	6.4

Source: U.S. Census 2000.

Table 3-12. Largest Employers Per County

Atascosa	➢ H E Butt Grocery ➢ Jourdanton ISD ➢ Long & Associates ➢ Lytle ISD ➢ Pleasanton ISD ➢ Poteet ISD ➢ S B H Corporation ➢ San Miguel Electric ➢ Tristar ➢ Wal-Mart Associates
Bexar	➢ Baptist Medical Center ➢ Bexar County Hospital District ➢ City Public Service Board ➢ CITYCORP Data Systems ➢ Department of Defense ➢ H E Butt Grocery Co ➢ Judson ISD

Guadalupe	➢ Guadalupe Valley Hospital ➢ H B Zachry Construction ➢ H E Butt Grocery ➢ Holly Farms Of Texas ➢ Motorola ➢ Schertz-Cibolo-Universal City ISD ➢ Seguin ISD ➢ Structural Metals ➢ Texas Lutheran University ➢ Wal-Mart Associates
Kendall	➢ Benefit Planners ➢ Boerne ISD ➢ Comfort ISD ➢ Fair Oaks Club ➢ H E Butt Grocery ➢ Kaspar Ranch Hand ➢ Kendall County

County	Top Employers
	➢ Labor Ready GP Co. Inc. ➢ North East ISD ➢ Northside ISD ➢ Postal Data Center ➢ San Antonio – City of ➢ San Antonio ISD ➢ San Antonio Regional Hospital ➢ Southwestern Bell ➢ United Services Auto Assn ➢ Univ of Texas at San Antonio ➢ USSA Federal Savings Bank ➢ Wal-Mart Associated Inc ➢ West Telemarketing Corp
Frio	➢ Correctional Services Corp. ➢ Dilley ISD ➢ Frio Hospital Association ➢ Harvest Communities ➢ Outreach Health Community Care Services ➢ Pearsall ISD ➢ Randall Preston Produce ➢ South Texas Skilled Nursing Center ➢ Texas Dept of Criminal Justice ➢ Wal-Mart Associates

County	Top Employers
	➢ Mission Pharmacal Company ➢ Tapatio Springs Golf Resort ➢ Wal-Mart Associates
Medina	➢ City of Hondo ➢ Crane Plumbing ➢ Devine ISD ➢ H E Butt Grocery ➢ Hondo ISD ➢ Medina Community Hospital ➢ Medina Valley ISD ➢ Natalia ISD ➢ Strom Aviation ➢ Texas Dept of Criminal Justice

County	Top Employers
	➢ Mamacitas
Goliad	➢ Central Power & Light ➢ First National Bank of Goliad ➢ Goetz Services ➢ Goliad ISD ➢ Goliad Manor ➢ Govic Enterprises ➢ Super S Foods ➢ Texas Association of Counties ➢ Western Atlas-Western ➢ Wilson Vaccinating Service

County	Top Employers

Source: Texas Economic Development. Employers are listed alphabetically with no ranking intended. The Department listed the top 10employers by County for all Counties in the region except Bexar County. The top 20 employers were listed for them.

LAND USE

Agricultural land use taken from the 1997 Census of Agriculture is provided in **Table 3-13**, while the variations of land use by county are displayed in **Figure 3-4**.

As population increases in areas such as San Antonio, so will areas of development. Runoff from developed areas often contains toxic chemicals, phosphorus and nitrogen, and is the second most common source of water pollution for lakes and estuaries nationwide and the third most common source for rivers.

As more land is developed, more surface area becomes impervious—affecting ground water recharge and the volume and rate of surface water runoff. *The National Water Quality Inventory: 1998 Report to Congress* identified runoff from development as one of the leading sources of water quality impairment. Runoff from development was ranked as the sixth leading source of impairment in rivers, fourth in lakes, and second in estuaries.

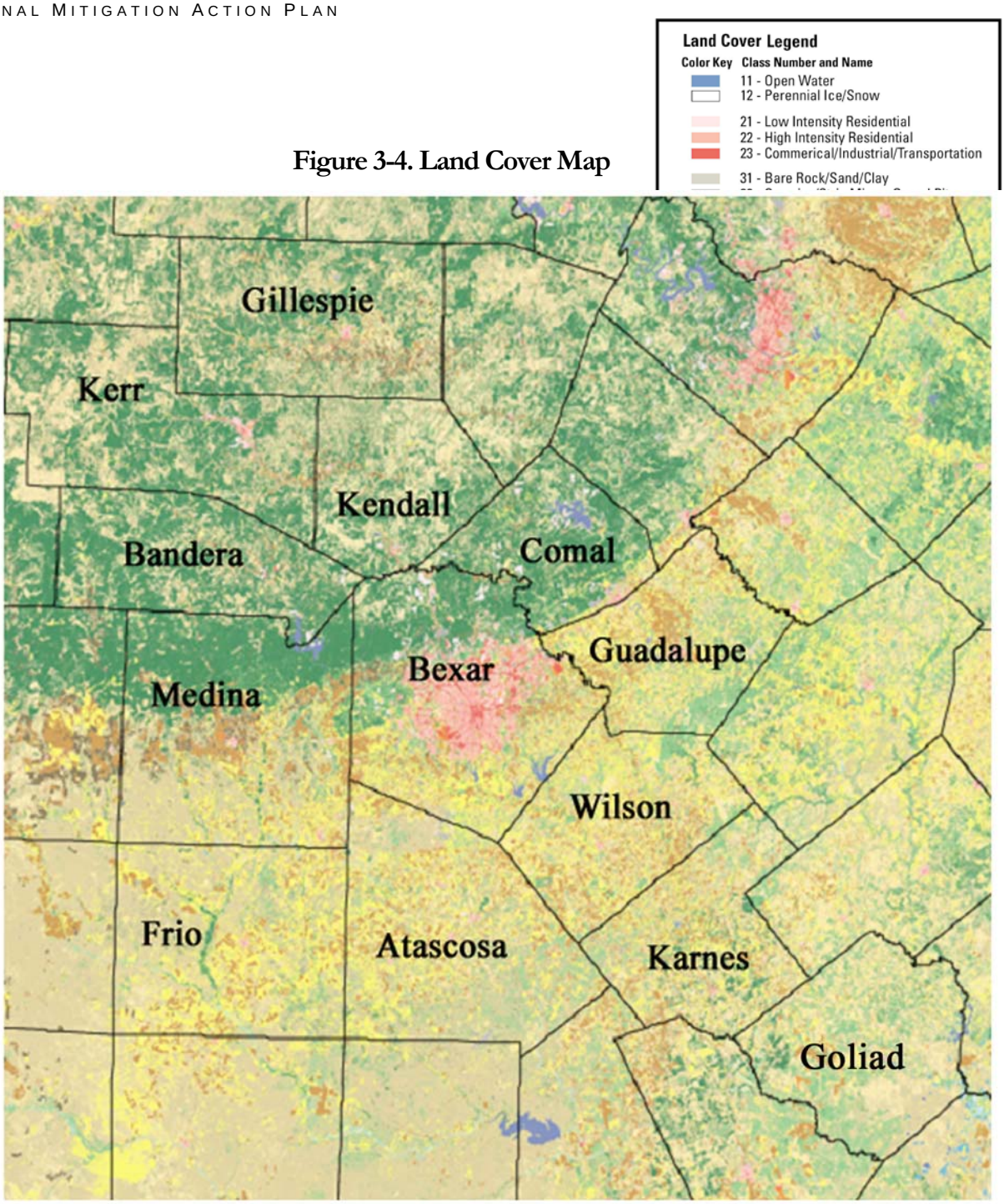
If the AACOG area population continues to grow as expected the region may experience a continuous trend of increased storm water from urban development, degraded water quality in creeks, and increased pollutant levels in surface waters.

Table 3-13. Agricultural Land Use

Bexar	1,964	1,508	75,041	12,844
Wilson	1,794	1,567	91,457	19,087
Gillespie	1,462	1,275	40,367	3,402
Karnes	1,051	952	56,249	2,838
Kerr	778	654	9,949	1,952
Comal	657	526	13,185	133
Frio	485	412	58,900	46,919

Source: GovStats, Census of Agriculture, 1997.

Figure 3-4. Land Cover Map



Source: USGS

FORM OF GOVERNMENT

Texas cities of more than 5,000 citizens adopt a home-rule charter. These are governed by a city council and either a city manager or a mayor. Cities having fewer than 5,000 residents, or "general law" cities, have powers and duties specifically granted by the constitution and state law. A city manager plan can be adopted in any general law city.

Counties' powers and duties are specifically granted and limited by the constitution and state law. Each county has a commissioner's court, which consists of four commissioners, each elected from a commissioner's precinct, and a county judge elected from the entire county. In smaller counties, the county judge retains judicial responsibilities in probate and insanity cases. Special Districts are created to perform a specific function.

Table 3-14. Form of Government

Alamo Heights	Mayor-Council	Pearsall	Mayor-Council
Fredericksburg	Mayor-Council	Schertz	Council-Manager
Kirby	Council-Manager	Terrell Hills	Council-Manager
New Braunfels	Council-Manager		

Balcones Heights	Mayor	Hondo	City Manager
Bulverde	City Administrator	Jourdanton	City Manager
Castroville	City Administrator	Kenedy	Mayor
China Grove	Mayor	La Vernia	Mayor
Cibolo	City Administrator	Lytle	Mayor
Dilley	City Administrator	Natalia	Mayor
Fair Oaks Ranch	Mayor	Olmos Park	City Manager
Floresville	City Manager	Poth	Mayor
Goliad	Mayor	Selma	City Administrator
Helotes	Mayor	Somerset	Mayor
Hollywood Park	Mayor	Windcrest	Mayor

Guadalupe-Blanco River Authority
San Antonio River Authority

Table 3-15. Seat of Government

Atascosa	Jourdanton
Bexar	San Antonio
Frio	Pearsall
Goliad	Goliad

Guadalupe	Seguin
Kendall	Boerne
Medina	Hondo

DISASTER DECLARATIONS

A total of 17 disaster declarations have been issued since 1961 for the Alamo Region, all for weather-related hazard events. Of these, 10 were presidential disaster declarations and seven were issued only to provide assistance through the Small Business Administration (SBA). The Alamo Region has experienced many additional disasters that were not severe enough to be declared by the President, but nevertheless resulted in millions of dollars in direct and indirect costs to governments, businesses and residents, and caused significant human suffering, injuries and deaths.

Table 3-16. Presidential and SBA Disaster Declarations

1964	Kendall	Flood	SBA	462
1967	Atascosa Goliad Karnes	Hurricane Beulah	Presidential SBA	OEP 232 DR
1971	Medina	Flood	SBA	842
1973	Bexar Guadalupe Wilson	Flood	SBA	1021

Year	Counties	Event	Type of Declaration	Declaration Numbers
1978	Bandera Kendall Kerr	Flood	Presidential SBA	561 DR
1989	Frio	Freeze	Presidential SBA	850 DR
1997	Bandera Bexar Comal Gillespie Goliad Guadalupe Kendall Kerr Medina	Flood	Presidential SBA	1179 DR
2001	Medina	Severe Storms – Tornado	SBA	3378
2002	Frio	Tropical Storm Fay	Presidential SBA	1434 DR

Source: Texas Division of Emergency Management, November 21, 2002.

COMMUNITIES DESIGNATED FOR SPECIAL CONSIDERATION

Based on U.S. Census 2000 data, three communities meet all three criteria for Small and Impoverished Communities: Charlotte, Natalia and Runge. The three criteria are: a population less than 3,000 not within the corporate boundaries of a larger city; an average per capita annual income not exceeding 80 percent of the national level; and the local unemployment rate exceeds the national rate by one percentage point or more.

It is essential to designate these communities because, according to the Disaster Mitigation Act of 2000, "In determining whether to provide technical and financial assistance to a State or local government under this section, the President shall take into account the extent to which assistance will fund mitigation activities in small impoverished communities."

RISK ASSESSMENT: HAZARD IDENTIFICATION

The United States and its communities are vulnerable to a wide array of natural and human-caused hazards that threaten life and property. These hazards include:

Natural

- Flood
- Hurricanes and Coastal Storms
- Severe Thunderstorms and Tornadoes
- Wildfire
- Drought/Extreme Heat
- Winter Storms and Freezes
- Hail
- Erosion
- Dam/Levee Failure
- Earthquakes, Sinkholes and Landslides

Human-caused

- Terrorism
- Hazardous Materials (HAZMAT)
- Energy Pipeline Failures

Some of these hazards are interrelated (i.e., hurricanes can cause flooding and tornadoes), and some consist of hazardous elements that are not listed separately (i.e., severe thunderstorms can cause lightning; hurricanes can cause coastal erosion). In addition, terrorist-related incidents or accidents involving chemical, radiological or biological agents can coincide with natural hazard events, such as flooding caused by destruction of a dam or an accidental chemical release caused by a tornado. It should also be noted that some hazards, such as severe winter storms, may impact a large area yet cause little damage, while other hazards, such as a tornado, may impact a small area yet cause extensive damage. This section provides a general description for each of the hazards listed above along with their hazardous elements, written from a national perspective. The *Hazard Analysis* and *Vulnerability Assessment* sections of this Plan explore the specific, regionalized implications of these natural hazards in the Alamo Region planning area.

FLOOD

Flooding is the most frequent and costly natural hazard in the United States, a hazard that has caused more than 10,000 deaths since 1900. Nearly 90 percent of presidential disaster declarations result from natural events in which flooding was a major component.

Floods are generally the result of excessive precipitation, and can be classified under two categories: general floods, precipitation over a given river basin for a long period of time; and flash floods, the product of heavy localized precipitation in a short time period over a given location. The severity of a flooding event is determined by the following: a combination of stream and river basin topography and physiography; precipitation and weather patterns; recent soil moisture conditions; and the degree of vegetative clearing.

General floods are usually long-term events that may last for several days. The primary types of general flooding include riverine, coastal, and urban flooding. Riverine flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Coastal flooding is typically a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, nor'easters, and other large coastal storms. Urban flooding occurs where man-made development has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff.

Flash flooding events usually occur from a dam or levee failure within minutes or hours of heavy amounts of rainfall, or from a sudden release of water held by an ice jam. Most flash flooding is caused by slow-moving thunderstorms in a local area or by heavy rains associated with hurricanes and tropical storms. Although flash flooding occurs often along mountain streams, it is also common in urbanized areas where much of the ground is covered by impervious surfaces. Flash flood waters move at very high speeds—"walls" of water can reach heights of 10 to 20 feet. Flash flood waters and the accompanying debris can uproot trees, roll boulders, destroy buildings, and obliterate bridges and roads.

The periodic flooding of lands adjacent to rivers, streams, and shorelines (land known as floodplain) is a natural and inevitable occurrence that can be expected to take place based upon established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval.

Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies such as the 100-year flood are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood

frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1 percent chance of occurring in any given year.

Table 4.1-1 shows flood damage values by fiscal year from a national perspective.

Table 4.1-1. National Flood Damage by Fiscal Year (October Through September)

1960	111,168	0.22620	491	180.671	2.72
1962	86,574	0.23180	373	186.538	2.00
1964	194,512	0.23792	818	191.889	4.26
1966	116,645	0.24934	468	196.560	2.38
1968	443,251	0.26809	1653	200.706	8.24
1970	173,803	0.29623	587	205.052	2.86
1972	4,442,992	0.32436	13698	209.896	65.26
1974	692,832	0.37329	1856	213.854	8.68
1976	1,054,790	0.43119	2446	218.035	11.22
1978	1,028,970	0.49164	2093	222.585	9.40
1980	No data	0.58145	0	227.225	0.00
1982	No data	0.67533	0	231.664	0.00
1984	3,540,770	0.72824	4862	235.825	20.62
1986	5,939,994	0.76769	7737	240.133	32.22
1988	214,297	0.81764	262	244.499	1.07
1990	1,636,366	0.88186	1856	249.464	7.44
1992	672,635	0.93619	718	255.030	2.82
1994	1,120,149	0.97870	1145	260.327	4.40
1996	6,121,753	1.01937	6005	265.229	22.64

Fiscal Year	Damage (Thousands of Current Dollars)	Implicit Price Deflator	Damage (Millions of 1995 Dollars)	U.S. Population (Millions)	Damage Per Capita (1995 Dollars)
1998	2,465,048	1.05199	2343	270.248	8.67
2000	1,336,744	1.08960	1227	282.125	4.35

Source: National Weather Service.

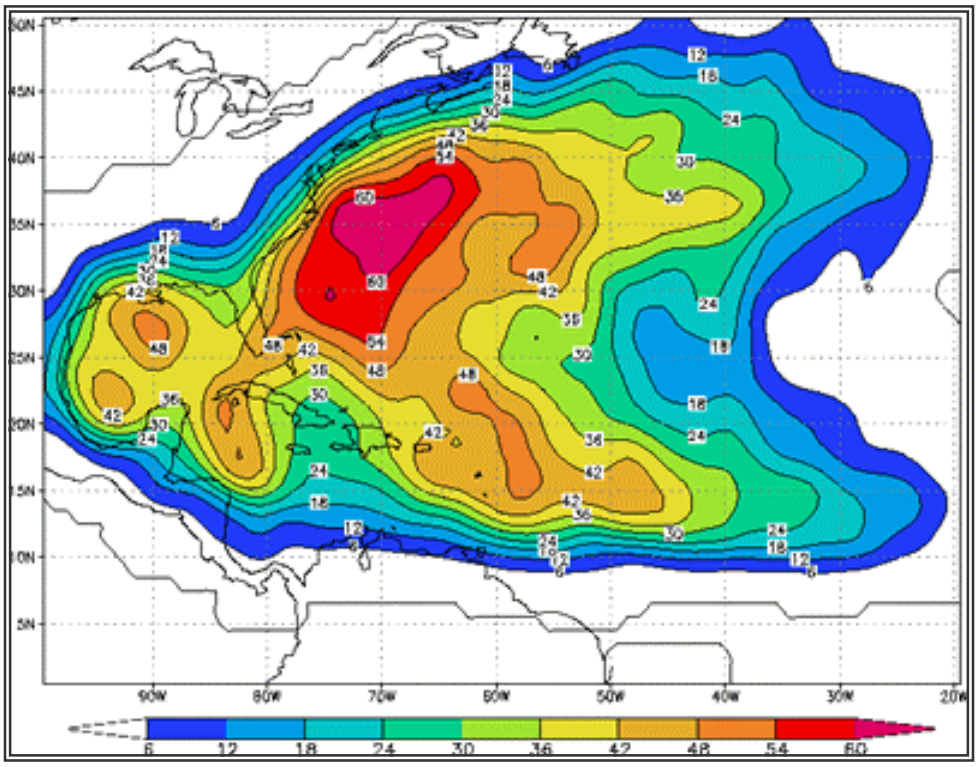
Hurricanes and Coastal Storms

Hurricanes, tropical storms, nor'easters and typhoons, also classified as cyclones, are any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a "safety-valve," limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves, and tidal flooding which can be more destructive than cyclone wind.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September and the average number of storms that reach hurricane intensity per year in this basin is about six (6).

Figure 4.1-1 shows for any particular location what the chance is that a tropical storm or hurricane will affect the area sometime during the entire June to November Atlantic hurricane season. The figure was created by the National Oceanic and Atmospheric Administration's Hurricane Research Division using data from 1944 to 1999 and counting hits when a storm or hurricane was within approximately 100 miles (165 km) of each location.

Figure 4.1-1. Empirical Probability of a Named Storm



Source: National Oceanic and Atmospheric Administration, Hurricane Research Division.

As an incipient hurricane develops, barometric pressure (measured in Millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale, which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense. The Saffir-Simpson Scale is shown in **Table 4.1-2**.

Table 4.1-2. Saffir-Simpson Scale

Source: National Hurricane Center.

The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds, barometric pressure, and storm surge potential, which are combined to estimate potential damage. Categories 3, 4, and 5 are classified as "major" hurricanes, and while hurricanes within this range comprise only 20 percent of total tropical cyclone landfalls, they account for over 70 percent of the damage in the United States. **Table 4.1-3** describes the damage that could be expected for each category of hurricane.

Table 4.1-3. Hurricane Damage Classification

		No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.
		Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland.
		Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.

Source: National Hurricane Center.

A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to 20 feet in a Category 5 storm. The storm surge arrives ahead of the storm's actual landfall and the more intense the hurricane is, the sooner the surge arrives. Water rise can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas. A storm surge is a wave that has outrun its generating source and become a long period swell. The surge is always highest in the right-front quadrant of the direction in which the hurricane is moving. As the storm approaches shore, the greatest storm surge will be to the north of the hurricane eye. Such a surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast.

Storm surge heights, and associated waves, are dependent upon the shape of the continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves.

Damage during hurricanes may also result from spawned tornadoes and inland flooding associated with heavy rainfall that usually accompanies these storms. Hurricane Floyd, as an example, was at one time a Category 4 hurricane racing towards the North Carolina coast. As far inland as Raleigh, the state capital located more than 100 miles from the coast, communities were preparing for extremely damaging winds exceeding 100 miles per hour. However, Floyd made landfall as a Category 2 hurricane and will be remembered for causing the worst inland flooding disaster in North Carolina's history. Rainfall amounts were as high as 20 inches in certain locales and 67 counties sustained damages.

Similar to hurricanes, nor'easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their associated strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful.

Nor'easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surfs that cause severe beach erosion and coastal flooding. There are two main components to a nor'easter: (1) a Gulf Stream low-pressure system (counter-clockwise winds) generated off the southeastern U.S. coast, gathering warm air and moisture from the Atlantic, and pulled up the East Coast by strong northeasterly winds at the leading edge of the storm; and (2) an Arctic high-pressure system (clockwise winds) which meets the low-pressure system with cold, arctic air blowing down from Canada. When the two systems collide, the moisture and cold air produce a mix of precipitation and have the potential for creating dangerously high winds and heavy seas. As the low-pressure system deepens, the intensity of the winds and waves will increase and cause serious damage to coastal areas as the storm moves northeast.

Table 4.1-4 shows an intensity scale proposed for nor'easters that is based upon levels of coastal degradation.

Table 4.1-4. Dolan-Davis Nor'easter Intensity Scale

1 (Weak)	Minor changes	None	No	No
3 (Significant)	Erosion extends across beach	Can be significant	No	Loss of many structures at local level
5 (Extreme)	Extreme beach erosion	Dunes destroyed over extensive areas	Massive in sheets and channels	Extensive at regional-scale; millions of dollars

Source: North Carolina Division of Emergency Management.

SEVERE THUNDERSTORMS AND TORNADOES

According to the National Weather Service, more than 100,000 thunderstorms occur each year, though only about 10 percent of these storms are classified as "severe." Although thunderstorms generally affect a small area when they occur, they are very dangerous because of their ability to generate tornadoes, hailstorms, strong winds, flash flooding, and damaging lightning. While thunderstorms can occur in all regions of the United States, they are most common in the central and southern states because atmospheric conditions in those regions are most ideal for generating these powerful storms.

Thunderstorms are caused when air masses of varying temperatures meet. Rapidly rising warm moist air serves as the "engine" for thunderstorms. These storms can occur singularly, in lines, or in clusters. They can move through an area very quickly or linger for several hours.

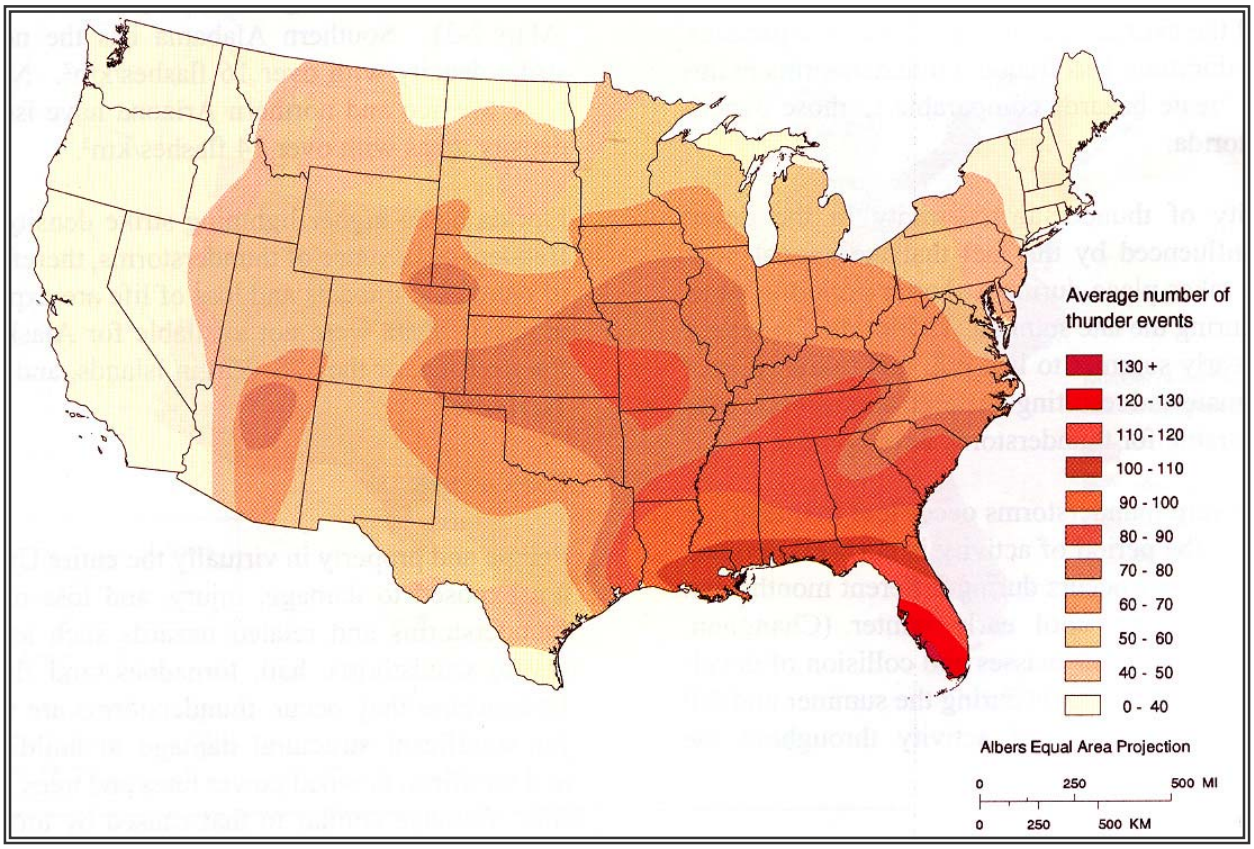
Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a "bolt" when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit.

Lightning rapidly heats the sky as it flashes but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder. On average, 89 people are killed each year by lightning strikes in the United States.

The National Weather Service collected data for thunder days, number and duration of thunder events, and lightening strike density for the 30-year period from 1948 to 1977. A series of maps was generated showing the annual average thunder event duration, the annual average number of thunder events, and the mean annual density of lightning strikes.

Figure 4.1-2 illustrates thunderstorm hazard severity based on the annual average number of thunder events from 1948 to 1977.

Figure 4.1-2. Annual Average Number of Thunder Events



Source: Federal Emergency Management Agency

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes and other coastal storms) when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, also accompanied by lightning or large hail. According to the National Weather Service, tornado wind speeds normally range from 40 to more than 300 miles per hour. The most violent tornadoes have rotating winds of 250 miles per hour or more and are capable of causing extreme destruction and turning normally harmless objects into deadly missiles.

Each year, an average of over 800 tornadoes is reported nationwide, resulting in an average of 80 deaths and 1,500 injuries (NOAA, 2002). They are more likely to occur during the spring and early summer months of March through June and can occur at any time of day, but are likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touch down briefly, but even small short-lived tornadoes can inflict tremendous damage. Highly destructive tornadoes may carve out a path over a mile wide and several miles long.

Waterspouts are weak tornadoes that form over warm water and are most common along the Gulf Coast and southeastern states. Waterspouts occasionally move inland, becoming tornadoes that cause damage and injury. However, most waterspouts dissipate over the open water causing threats only to marine and boating interests. Typically a waterspout is weak and short-lived, and because they are so common, most go unreported unless they cause damage.

The destruction caused by tornadoes ranges from light to inconceivable depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damages to structures of light construction such as residential homes (particularly mobile homes), and tend to remain localized in impact. The Fujita-Pearson Scale for Tornadoes (**Table 4.1-5**) was developed to measure tornado strength and associated damages.

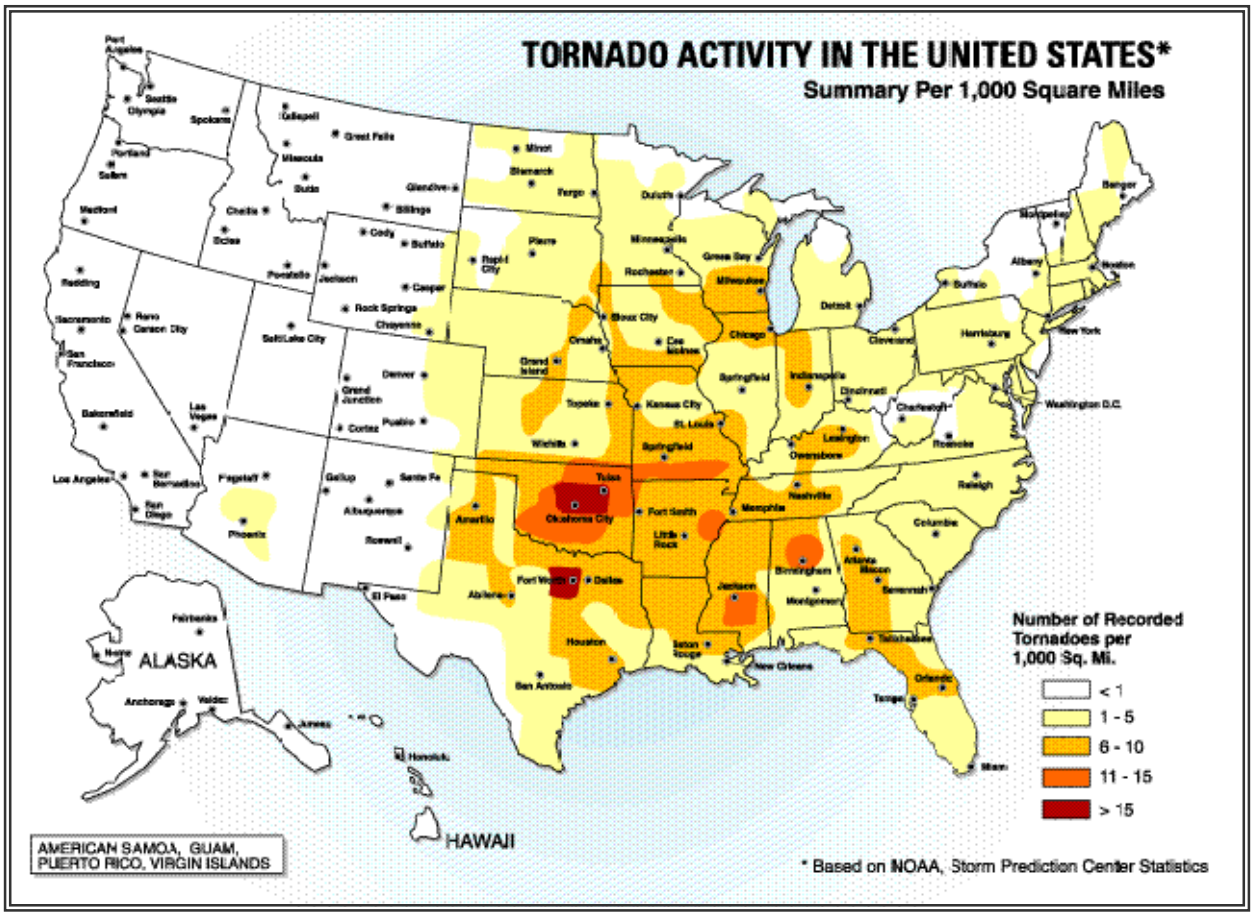
Table 4.1-5. Fujita-Pearson Scale for Tornadoes

F0	Gale tornado	40—72 MPH	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
F2	Significant tornado	113—157 MPH	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F4	Devastating tornado	207—260 MPH	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F6	Inconceivable tornado	319—379 MPH	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies.

Source: The Tornado Project, 2002.

According to the NOAA Storm Prediction Center (SPC), the highest concentration of tornadoes in the United States has been in Oklahoma, Texas, Kansas and Florida respectively. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of "tornado alley"), Florida experiences the greatest number of tornadoes per square mile of all U.S. states (SPC, 2002). **Figure 4.1-3** shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

Figure 4.1-3. Tornado Activity in the United States

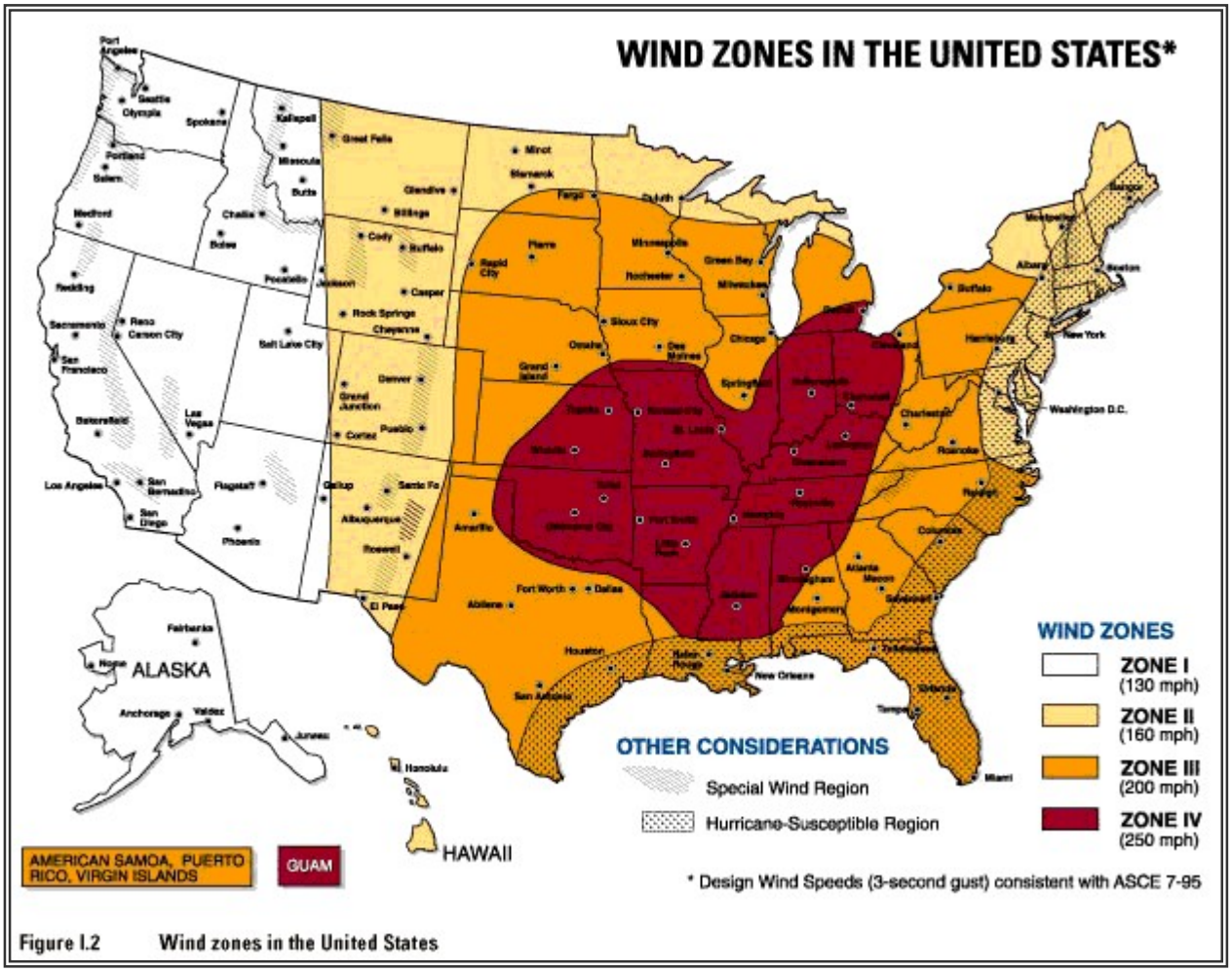


Source: American Society of Civil Engineers.

The tornadoes associated with tropical cyclones are most frequent in September and October when the incidence of tropical storm systems is greatest. This type of tornado usually occurs around the perimeter of the storm, and most often to the right and ahead of the storm path or the storm center as it comes ashore. These tornadoes commonly occur as part of large outbreaks and generally move in an easterly direction.

Figure 4.1-4 shows how the frequency and strength of extreme windstorms vary across the United States. The map was produced by the Federal Emergency Management Agency and is based on 40 years of tornado history and over 100 years of hurricane history. Zone IV, the darkest area on the map, has experienced both the greatest number of tornadoes and the strongest tornadoes. As shown by the map key, wind speeds in Zone IV can be as high as 250 MPH.

Figure 4.1-4. Wind Zones in the United States



Source: Federal Emergency Management Agency.

WILDFIRE

A wildfire is any fire occurring in a wildland area (i.e., grassland, forest, brush land) except for fire under prescription.[1] Wildfires are part of the natural management of the Earth's ecosystems, but may also be caused by natural or human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning.

There are three classes of wildland fires: surface fire, ground fire, and crown fire. A surface fire is the most common of these three classes and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire (muck fire) is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildland fires are usually signaled by dense smoke that fills the area for miles around.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfire. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

Fire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural disasters (tornadoes, hurricanes, etc.) increase the probability of wildfires by producing fuel in both urban and rural settings. Forest damage from hurricanes and tornadoes may block interior access roads and fire breaks, pull down overhead power lines, or damage pavement and underground utilities.

Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high fire hazard areas. The increasing demand for outdoor recreation places more people in wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for the inferno that can sweep through the brush and timber and destroy property in minutes.

[1] Prescription burning, or "controlled burn," undertaken by land management agencies is the process of igniting fires under selected conditions, in accordance with strict parameters.

DROUGHT/EXTREME HEAT

Drought is a natural climatic condition caused by an extended period of limited rainfall beyond that which occurs naturally in a broad geographic area. High temperatures, high winds, and low humidity can worsen drought conditions, and can make areas more susceptible to wildfire. Human demands and actions can also hasten drought-related impacts.

Droughts are frequently classified as one of following four types:

- Meteorological,
- Agricultural,
- Hydrological, and
- Socio-economic.

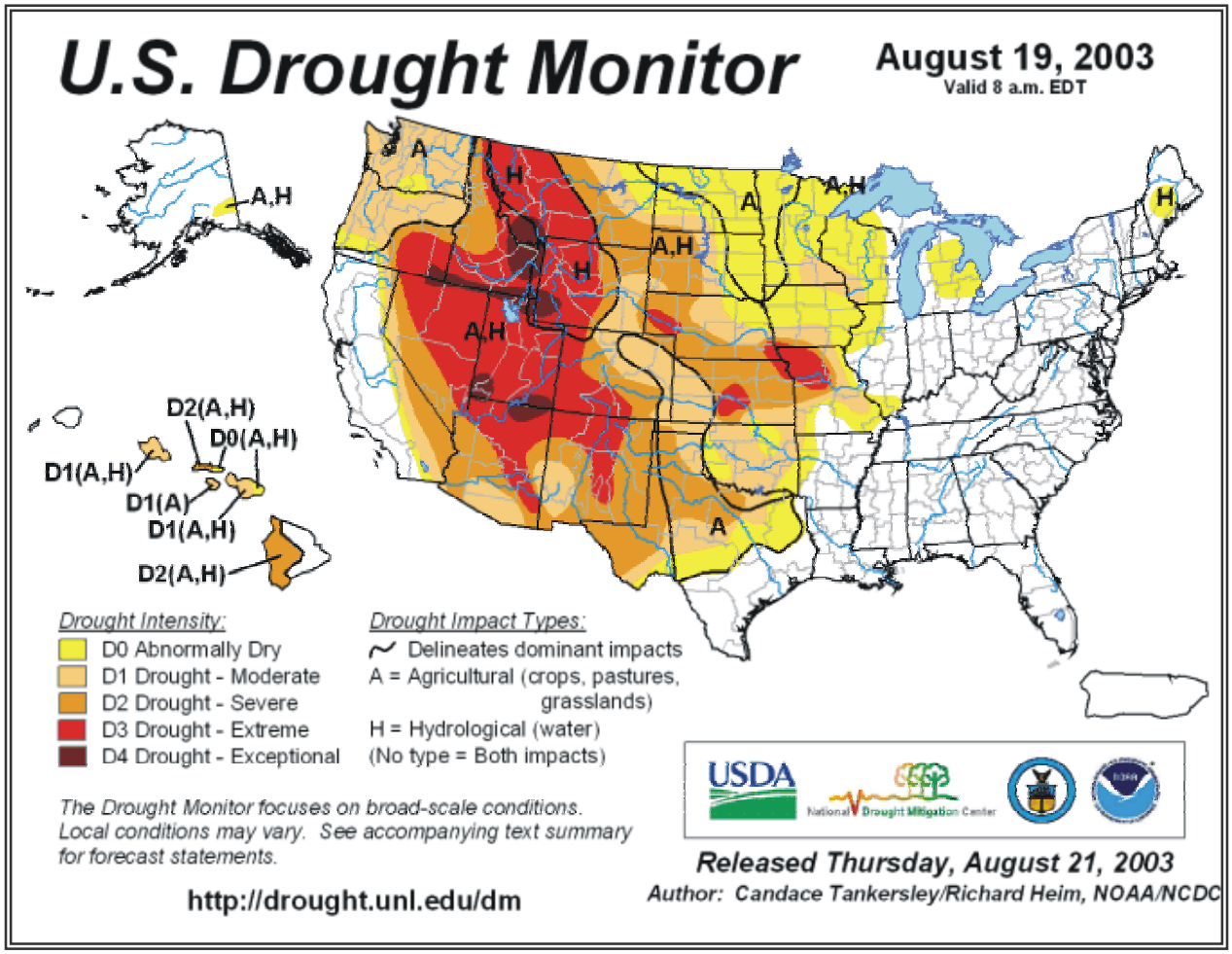
Meteorological droughts are typically defined by the level of "dryness" when compared to an average, or normal amount of precipitation over a given period of time. Agricultural droughts relate common characteristics of drought to their specific agricultural-related impacts. Emphasis tends to be placed on factors such as soil water deficits, water needs based on differing stages of crop development, and water reservoir levels. Hydrological drought is directly related to the effect of precipitation shortfalls on surface and groundwater supplies. Human factors, particularly changes in land use, can alter the hydrologic characteristics of a basin. Socio-economic drought is the result of water shortages that limit the ability to supply water-dependent products in the marketplace.

While drought mostly impacts land and water resources, extreme heat can pose a significant risk to humans. Extreme heat can be defined as temperatures that hover 10 degrees or more above the average high temperature for the region, last for prolonged periods of time, and are often accompanied by high humidity. Under normal conditions, the human body's internal thermostat produces perspiration that evaporates and cools the body. However, in extreme heat and high humidity, evaporation is slowed and the body must work much harder to maintain a normal temperature. Elderly persons, young children, persons with respiratory difficulties, and those who are sick or overweight are more likely to become victims of extreme heat. Because men sweat more than women, they are more susceptible to heat-related illness because they become more quickly dehydrated. Studies have shown that a significant rise in heat-related illness occurs when excessive heat persists for more than two days. Spending at least two hours per day in air conditioning can significantly reduce the number of heat-related illnesses.

Extreme heat in urban areas can create health concerns when stagnant atmospheric conditions trap pollutants, thus adding unhealthy air to excessively hot temperatures. In addition, the "urban heat island effect" can produce significantly higher nighttime temperatures because asphalt and concrete (which store heat longer) gradually release heat at night.

Figure 4.1-5 shows a U.S. Drought Monitor summary map from the United States Department of Agriculture for August 19, 2003. Drought Monitor summary maps identify general drought areas and label droughts by intensity, with D1 being the least intense and D4 being the most intense.

Figure 4.1-5. U.S. Drought Monitor



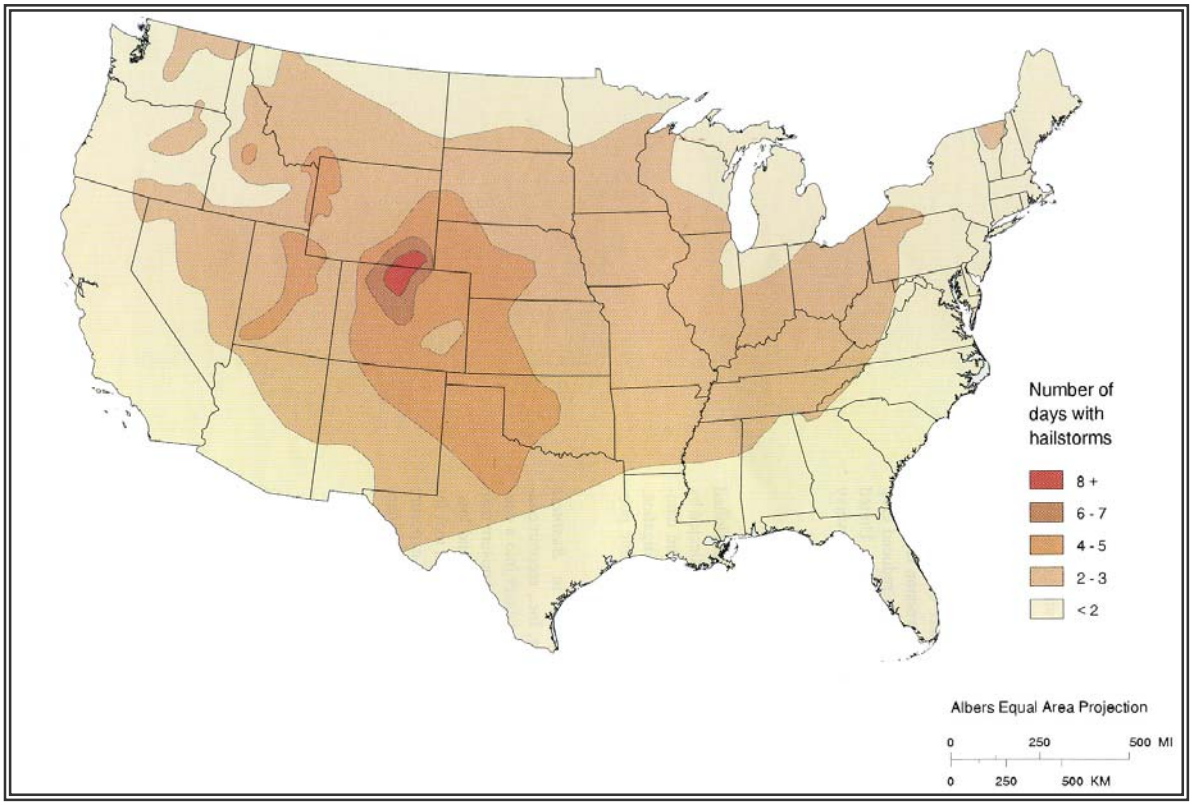
Source: U.S. Department of Agriculture, National Drought Mitigation Center

Weekly-updated maps may be obtained online from The Drought Monitor Web site, maintained by the National Drought Mitigation Center, located at the following Web address: http://drought.unl.edu/dm.

HAIL

Hailstorms are an outgrowth of severe thunderstorms. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until, having developed sufficient weight, they fall as precipitation—as balls or irregularly shaped masses of ice greater than 0.75 in. (1.91 cm) in diameter. The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth's surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size. **Figure 6** shows the annual frequency of hailstorms in the United States.

Figure 4.1-6. Annual Frequency of Hailstorms in the United States



Source: Federal Emergency Management Agency

WINTER STORMS AND FREEZES

A winter storm can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Some winter storms may be large enough to affect several states, while others may affect only a single community. Many winter storms are accompanied by low temperatures and heavy and/or blowing snow, which can severely impair visibility.

Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Sleet—raindrops that freeze into ice pellets before reaching the ground—usually bounce when hitting a surface and do not stick to objects; however, sleet can accumulate like snow and cause a hazard to motorists. Freezing rain is rain that falls onto a surface with a temperature below freezing, forming a glaze of ice. Even small accumulations of ice can cause a significant hazard, especially on power lines and trees. An ice storm occurs when freezing rain falls and freezes immediately upon impact. Communications and power can be disrupted for days, and even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

A freeze is weather marked by low temperatures, especially when below the freezing point (zero degrees Celsius or thirty-two degrees Fahrenheit). Agricultural production is seriously affected when temperatures remain below the freezing point.

EROSION

Erosion is the gradual breakdown and movement of land due to both physical and chemical processes of water, wind, and general meteorological conditions. Natural, or geologic, erosion has occurred since the Earth's formation and continues at a very slow and uniform rate each year.

There are two types of soil erosion: wind erosion and water erosion. Wind erosion can cause significant soil loss. Winds blowing across sparsely vegetated or disturbed land can pick up soil particles and carry them through the air, thus displacing them. Water erosion can occur over land or in streams and channels. Water erosion that takes place over land may result from raindrops, shallow sheets of water flowing off the land, or shallow surface flow, which is concentrated in low spots. Stream channel erosion may occur as the volume and velocity of water flow increases enough to cause movement of the streambed and bank soils. Major storms such as hurricanes may cause significant erosion by combining high winds with heavy surf and storm surge to significantly impact the shoreline.

An area's potential for erosion is determined by four factors: soil characteristics, vegetative cover, topography climate or rainfall, and topography. Soils composed of a large percentage of silt and fine sand are most

susceptible to erosion. As the content of these soils increases in the level of clay and organic material, the potential for erosion decreases. Well-drained and well-graded gravels and gravel-sand mixtures are the least likely to erode. Coarse gravel soils are highly permeable and have a good capacity for absorption, which can prevent or delay the amount of surface runoff. Vegetative cover can be very helpful in controlling erosion by shielding the soil surface from falling rain, absorbing water from the soil, and slowing the velocity of runoff. Runoff is also affected by the topography of the area including size, shape and slope. The greater the slope length and gradient, the more potential an area has for erosion. Climate can affect the amount of runoff, especially the frequency, intensity and duration of rainfall and storms. When rainstorms are frequent, intense, or of long duration, erosion risks are high. Seasonal changes in temperature and rainfall amounts define the period of highest erosion risk of the year.

During the past 20 years, the importance of erosion control has gained the increased attention of the public. Implementation of erosion control measures consistent with sound agricultural and construction operations is needed to minimize the adverse effects associated with increasing settling out of the soil particles due to water or wind. The increase in government regulatory programs and public concern has resulted in a wide range of erosion control products, techniques, and analytical methodologies in the United States. The preferred method of erosion control in recent years has been the restoration of vegetation.

DAM/LEVEE FAILURE

Worldwide interest in dam and levee safety has risen significantly in recent years. Aging infrastructure, new hydrologic information, and population growth in floodplain areas downstream from dams and near levees have resulted in an increased emphasis on safety, operation and maintenance.

There are about 80,000 dams in the United States today, the majority of which are privately owned. Other owners include state and local authorities, public utilities, and federal agencies. The benefits of dams are numerous: they provide water for drinking, navigation, and agricultural irrigation. Dams also provide hydroelectric power, create lakes for fishing and recreation, and save lives by preventing or reducing floods.

Though dams have many benefits, they also can pose a risk to communities if not designed, operated, and maintained properly. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and great property damage if development exists downstream of the dam. If a levee breaks, scores of properties are quickly submerged in floodwaters and residents may become trapped by this rapidly rising water. The failure of dams and levees has the potential to place large numbers of people and great amounts of property in harm's way.

EARTHQUAKES, SINKHOLES AND LANDSLIDES

Earthquake

An earthquake is the motion or trembling of the ground produced by sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Earthquakes can affect hundreds of thousands of square miles; cause damage to property measured in the tens of billions of dollars; result in loss of life and injury to hundreds of thousands of persons; and disrupt the social and economic functioning of the affected area.

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (mountain regions and along hillsides), and liquefaction, in which ground soil loses the ability to resist shear and flows much like quick sand. In the case of liquefaction, anything relying on the substrata for support can shift, tilt, rupture, or collapse.

Most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's ten tectonic plates. These plate borders generally follow the outlines of the continents, with the North American plate following the continental border with the Pacific Ocean in the west, but following the mid-Atlantic trench in the east. As earthquakes occurring in the mid-Atlantic trench usually pose little danger to humans, the greatest earthquake threat in North America is along the Pacific Coast.

The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates, as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rocks' strength, a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy and producing seismic waves, generating an earthquake.

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude (see **Table 4.1-5**). Each unit increase in magnitude on the Richter Scale corresponds to a ten-fold increase in wave amplitude, or a 32-fold increase in energy. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects. The scale levels are typically described using roman numerals, with a I corresponding to imperceptible (instrumental)

events, IV corresponding to moderate (felt by people awake), to XII for catastrophic (total destruction). A detailed description of the Modified Mercalli Intensity Scale of earthquake intensity and its correspondence to the Richter Scale is given in **Table 4.1-6**.

Table 4.1-5. Richter Scale

Less than 3.5	Generally not felt, but recorded.
Under 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
7.0-7.9	Major earthquake. Can cause serious damage over larger areas.

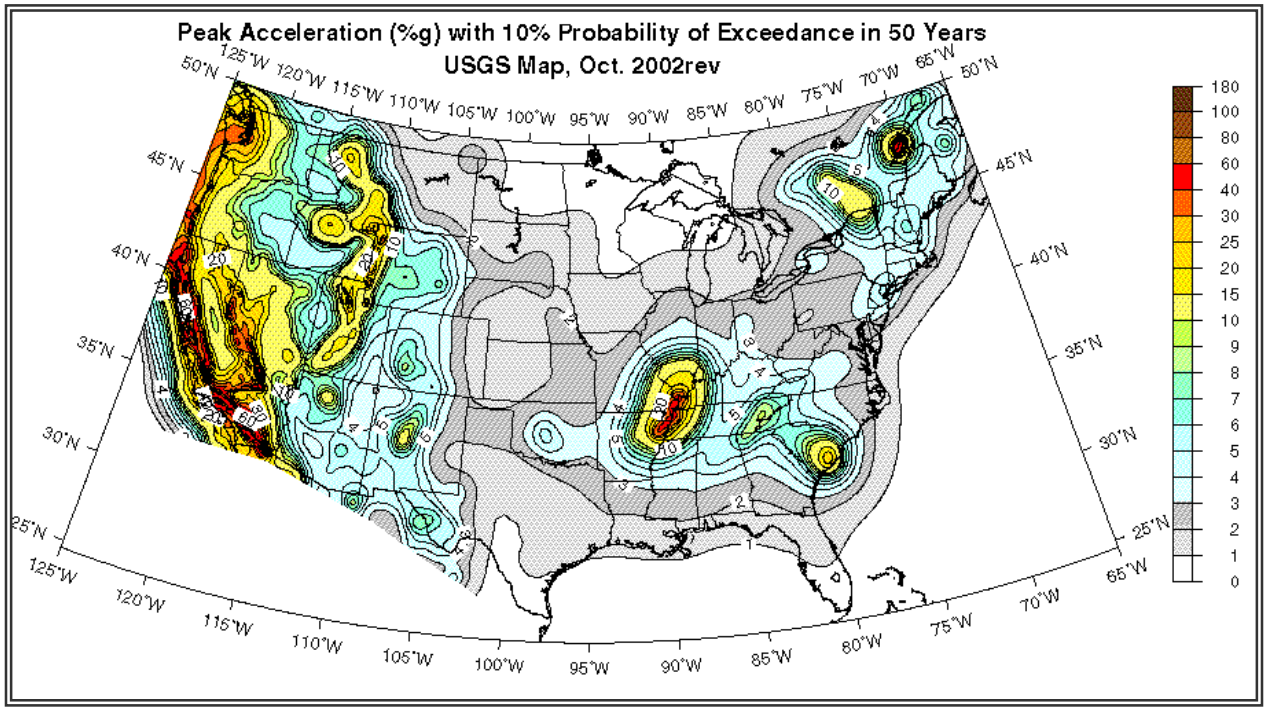
Table 4.1-6. Modified Mercalli Intensity Scale for Earthquakes

I	Instrumental	Detected only on seismographs	
III	Slight	Felt by people resting; like a truck rumbling by	
V	Slightly Strong	Sleepers awake; church bells ring	<4.8
VII	Very Strong	Mild Alarm; walls crack; plaster falls	<6.1
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	<6.9
XI	Very Disastrous	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards	<8.1

Source: North Carolina Division of Emergency Management.

Figure 4.1-7 shows the probability that ground motion will reach a certain level during an earthquake. The data show peak horizontal ground acceleration (the fastest measured change in speed, for a particle at ground level that is moving horizontally due to an earthquake) with a 10 percent probability of exceedance in 50 years. The map was compiled by the U.S. Geological Survey (USGS) Geologic Hazards Team, which conducts global investigations of earthquake, geomagnetic, and landslide hazards.

Figure 4.1-7. Peak Acceleration with 10 Percent Probability of Exceedance in 50 Years



Source: U.S. Geological Survey.

Sinkholes

Sinkholes are a natural and common geologic feature in areas with underlying limestone and other rock types that are soluble in natural water. Most limestone is porous, allowing the acidic water of rain to percolate through their strata, dissolving some limestone and carrying it away in solution. Over time, this persistent erosional process can create extensive underground voids and drainage systems in much of the carbonate rocks. Collapse of overlying sediments into the underground cavities produces sinkholes.

The three general types of sinkholes are: subsidence, solution, and collapse. Collapse sinkholes are most common in areas where the overburden (the sediments and water contained in the unsaturated zone, surficial aquifer system, and the confining layer above an aquifer) is thick, but the confining layer is breached or absent. Collapse sinkholes can form with little warning and leave behind a deep, steep sided hole. Subsidence sinkholes form gradually where the overburden is thin and only a veneer of sediments is overlying the limestone. Solution sinkholes form where no overburden is present and the limestone is exposed at land surface.

Sinkholes occur in many shapes, from steep-walled holes to bowl or cone shaped depressions. Sinkholes are dramatic because the land generally stays intact for a while until the underground spaces get too big. If there is not enough support for the land above the spaces, then a sudden collapse of the land surface can occur. Under natural conditions, sinkholes form slowly and expand gradually. However, human activities such as dredging, constructing reservoirs, diverting surface water, and pumping groundwater can accelerate the rate of sinkhole expansions, resulting in the abrupt formation of collapse sinkholes.

Although a sinkhole can form without warning, specific signs can signal potential development:

- Slumping or falling fenceposts, trees, or foundations;
- Sudden formation of small ponds;
- Wilting vegetation;
- Discolored well water; and/or
- Structural cracks in walls, floors.

Sinkhole formation is aggravated and accelerated by urbanization. Development increases water usage, alters drainage pathways, overloads the ground surface, and redistributes soil. According to the Federal Emergency Management Agency (FEMA), the number of human-induced sinkholes has doubled since 1930, insurance claims for damages as a result of sinkholes has increased 1,200 percent from 1987 to 1991, costing nearly $100 million.

Landslides

A landslide is the downward and outward movement of slope-forming soil, rock, and vegetation, which is driven by gravity. Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes due to construction or erosion, earthquakes, volcanic eruptions, and changes in groundwater levels.

There are several types of landslides: rock falls, rock topple, slides, and flows. Rock falls are rapid movements of bedrock, which result in bouncing or rolling. A topple is a section or block of rock that rotates or tilts before falling to the slope below. Slides are movements of soil or rock along a distinct surface of rupture, which separates the slide material from the more stable underlying material. Mudflows, sometimes referred to as mudslides, mudflows, lahars or debris avalanches, are fast-moving rivers of rock, earth, and other debris saturated with water. They develop when water rapidly accumulates in the ground, such as heavy rainfall or rapid snowmelt, changing the soil into a flowing river of mud or "slurry." Slurry can flow rapidly down slopes or through channels, and can strike with little or no warning at avalanche speeds. Slurry can travel several miles from its source, growing in size as it picks up trees, cars, and other materials along the way. As the flows reach flatter ground, the mudflow spreads over a broad area where it can accumulate in thick deposits.

Landslides are typically associated with periods of heavy rainfall or rapid snow melt and tend to worsen the effects of flooding that often accompanies these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly.

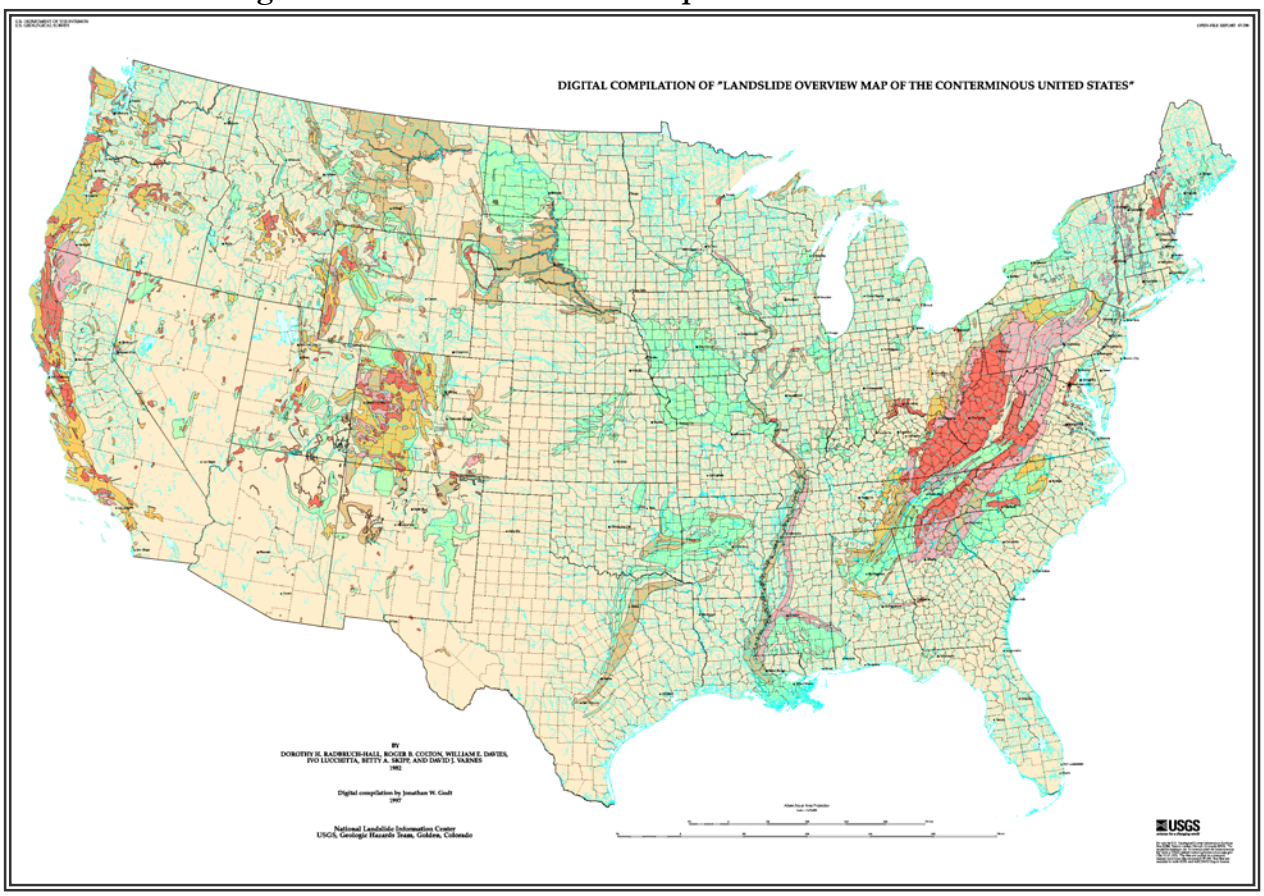
Among the most destructive types of debris flows are those that accompany volcanic eruptions. A spectacular example in the United States was a massive debris flow resulting from the 1980 eruptions of Mount St. Helens, Washington. Areas near the bases of many volcanoes in the Cascade Mountain Range of California, Oregon and Washington are at risk from the same types of flows during future volcanic eruptions.

Areas that are generally prone to landslide hazards include previous landslide areas; the bases of steep slopes; the bases of drainage channels; and developed hillsides where leach-field septic systems are used. Areas that are typically considered safe from landslides include areas that have not moved in the past; relatively flat-lying areas away from sudden changes in slope; and areas at the top or along ridges, set back from the tops of slopes.

In the United States, it is estimated that landslides cause up to $2 billion in damages and from 25 to 50 deaths annually. Globally, landslides cause billions of dollars in damage and thousands of deaths and injuries each year.

Figure 4.1-8 delineates areas where large numbers of landslides have occurred and areas which are susceptible to landsliding in the conterminous United States. This map layer is provided in the U.S. Geological Survey Professional Paper 1183, *Landslide Overview Map of the Conterminous United States*, available online at http://landslides.usgs.gov/html_files/landslides/nationalmap/national.html.

Figure 4.1-8. Landslide Overview Map of the Conterminous United States



EXPLANATION

LANDSLIDE INCIDENCE

- Low (less than 1.5% of area involved)
- Moderate (1.5%-15% of area involved)
- High (greater than 15% of area involved)

LANDSLIDE SUSCEPTIBILITY/INCIDENCE

- Moderate susceptibility/low incidence
- High susceptibility/low incidence
- High susceptibility/moderate incidence

Susceptibility not indicated where same or lower than incidence. Susceptibility to landsliding was defined as the probable degree of response of [the areal] rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. High, moderate, and low susceptibility are delimited by the same percentages used in classifying the incidence of landsliding. Some generalization was necessary at this scale, and several small areas of high incidence and susceptibility were slightly exaggerated.

Source: U.S. Geological Survey

TOXIC RELEASE/ HAZARDOUS MATERIALS

Hazardous materials or toxic releases can have a substantial impact. Such events can cause multiple deaths, completely shut down facilities for thirty days or more, and cause more than 50 percent of affected properties to be destroyed or suffer major damage. In a hazardous materials incident, solid, liquid and/or gaseous contaminants may be released from fixed or mobile containers, although this profile focuses on fixed sites. Weather conditions will directly affect how the hazard develops. The micro-meteorological effects of the buildings and terrain can alter travel and duration of agents. Shielding in the form of sheltering-in-place can protect people and property from harmful effects. Non-compliance with fire and building codes, as well as failure to maintain existing fire and containment features can substantially increase the damage from a hazardous materials release. The duration of a hazardous materials incident can range from hours to days. Warning time for hazardous materials incidents is minimal to none. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind and wildlife.

HAZMAT incidents can also occur as a result of or in tandem with natural hazard events, such as floods, hurricanes, tornadoes and earthquakes, which in addition to causing incidents can also hinder response efforts. In the case of Hurricane Floyd in September 1999, communities along the Eastern United States were faced with flooded junkyards, disturbed cemeteries, deceased livestock, floating propane tanks, uncontrolled fertilizer spills and a variety of other environmental pollutants that caused widespread concern.

Approximately 6,774 HAZMAT events occur each year, 5,517 of which are highway incidents, 991 are railroad incidents and 266 are due to other causes (FEMA, 1997).

ENERGY PIPELINE FAILURES

The energy infrastructure of the United States is comprised of many components, including the physical network of pipes for oil and natural gas, electricity transmission lines, and other means for transporting energy to the Nation's consumers. This infrastructure includes facilities that convert raw natural resources into energy products, as well as rail networks, trucking lines and marine transportation (U.S. Department of Energy, 2003). Much of this infrastructure is aging, and in addition to the challenges of keeping the infrastructure up-to-date with the latest technological advances and consumer needs, the potential for an energy pipeline failure must be considered.

The two (2) million miles of oil pipelines in the United States are the principal mode for transporting oil and petroleum products such as gasoline. Virtually all natural gas in the United States is moved via pipeline as well. (DOE, 2003) Much of the oil pipeline infrastructure is old, requiring regular safety and environmental reviews to ensure its safety and reliability. The potential risk of pipeline accidents is a significant national concern.

The energy infrastructure is vulnerable to physical and cyber disruption, either of which could threaten its integrity and safety (DOE, 2003). Disruptions could originate with natural events such as geomagnetic storms and earthquakes, or could result from accidents, equipment failures or deliberate interference. In addition, the Nation's transportation and power infrastructures have grown increasingly complex and interdependent — consequently, any disruption could have far-reaching consequences.

DATA SOURCES

American Society of Civil Engineers (ASCE), "Facts About Windstorms."
Web site: www.windhazards.org/facts.cfm

Bureau of Reclamation, U.S. Department of the Interior
Web site: www.usbr.gov

Federal Emergency Management Agency (FEMA)
Web site: www.fema.gov

National Climatic Data Center (NCDC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: http://lwf.ncdc.noaa.gov/oa/ncdc.html

National Drought Mitigation Center, University of Nebraska-Lincoln
Web site: www.drought.unl.edu/index.htm

National Severe Storms Laboratory (NSSL), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: www.nssl.noaa.gov

National Weather Service (NWS), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: www.nws.noaa.gov

Storm Prediction Center (SPC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service
Web site: www.spc.noaa.gov

The Tornado Project, St. Johnsbury, Vermont
Web site: www.tornadoproject.com

United States Geological Survey (USGS), U.S. Department of the Interior
Web site: www.usgs.gov

RISK ASSESSMENT:
HAZARD ANALYSIS

The *Hazard Analysis* section provides information on historical hazard occurrences in the Alamo Area Council of Governments region for the following hazards:[1]

Natural

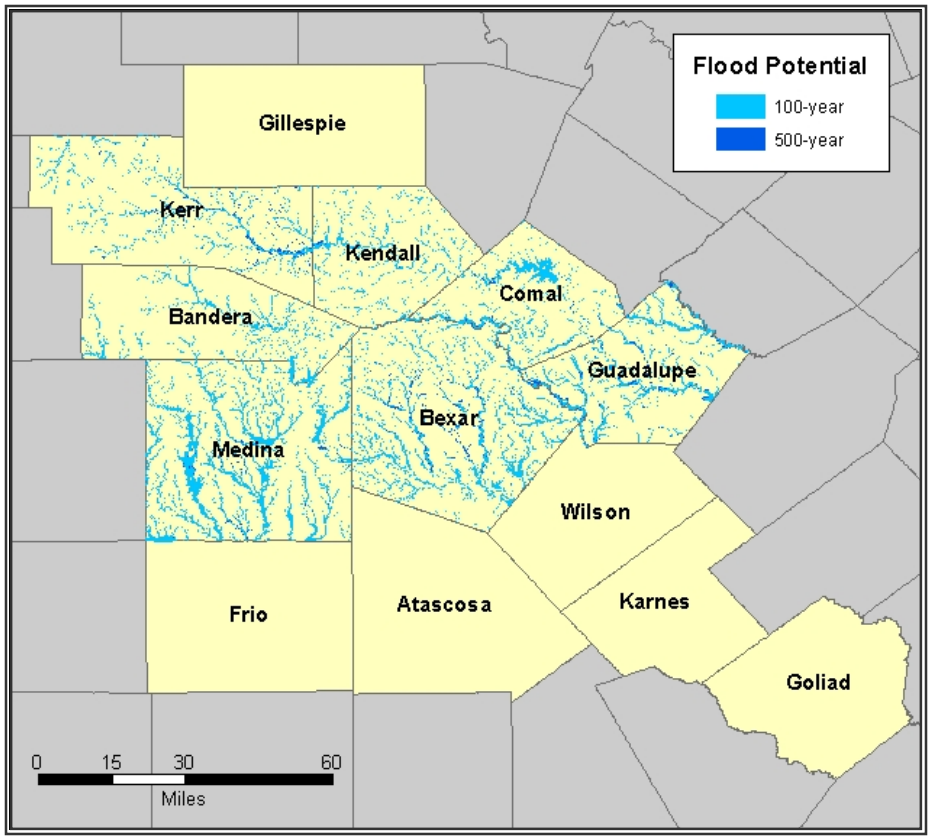
- Flood
- Tornadoes
- Hurricanes
- Thunderstorms
- Drought
- Hail
- Wildfire
- Winter Storms
- Dam/Levee Failure
- Earthquakes and Sinkholes

Historical records are used to identify the level of risk, with the methodological assumption that the data sources cited are reliable and accurate.

[1] This listing differs slightly in terminology, order and grouping from the *Hazard Identification* section as those hazards affecting the AACOG region are more fully explored.

FLOOD

There are numerous rivers and streams that wind through the AACOG region, setting the stage for potential flooding during heavy rain events. Flash flooding can develop quickly in the region, endangering life and property and requiring rescue.


Flood Potential
100-year
500-year
Gillespie
Kerr
Kendall
Comal
Bandera
Guadalupe
Bexar
Medina
Wilson
Frio
Atascosa
Karnes
Goliad
0
15
30
60
Miles

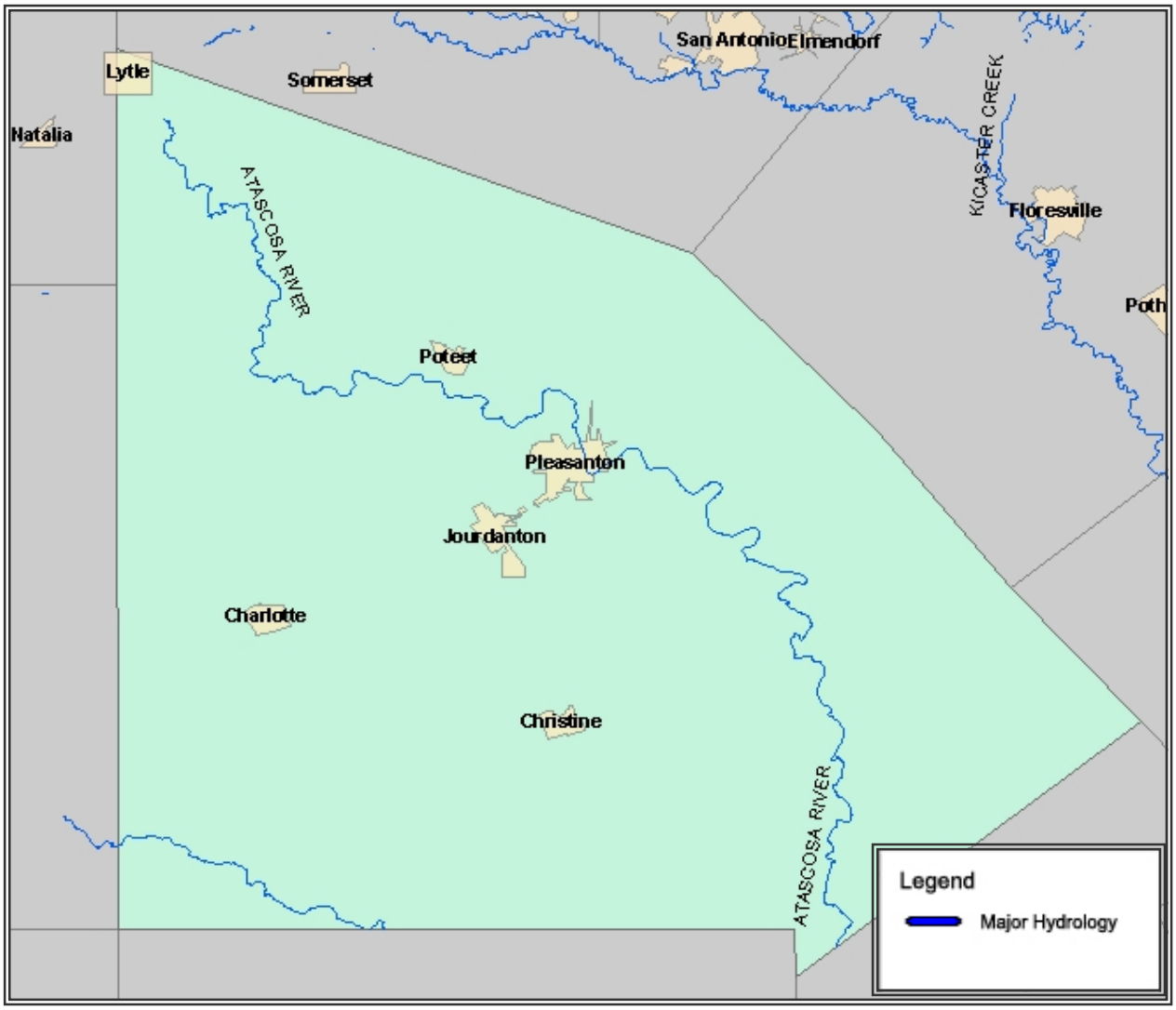

Lytle
Somerset
San Antonio
Elmendorf
Natalia
ATASCOSA RIVER
KICASTER CREEK
Floresville
Poth
Poteet
Pleasanton
Jourdanton
Charlotte
Christine
ATASCOSA RIVER
Legend
Major Hydrology

Figure 4.2-3. Flood Zones in Bandera County

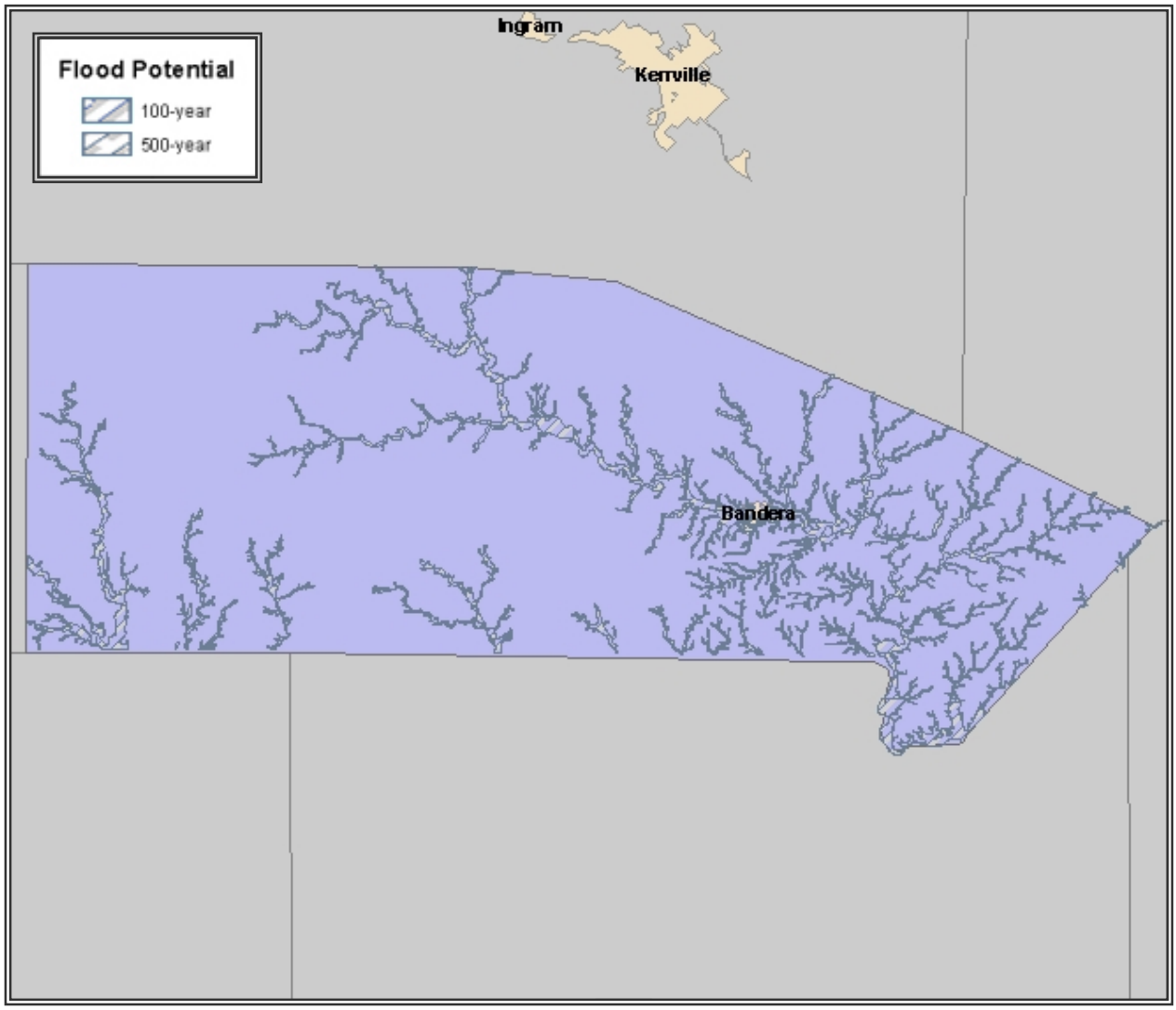
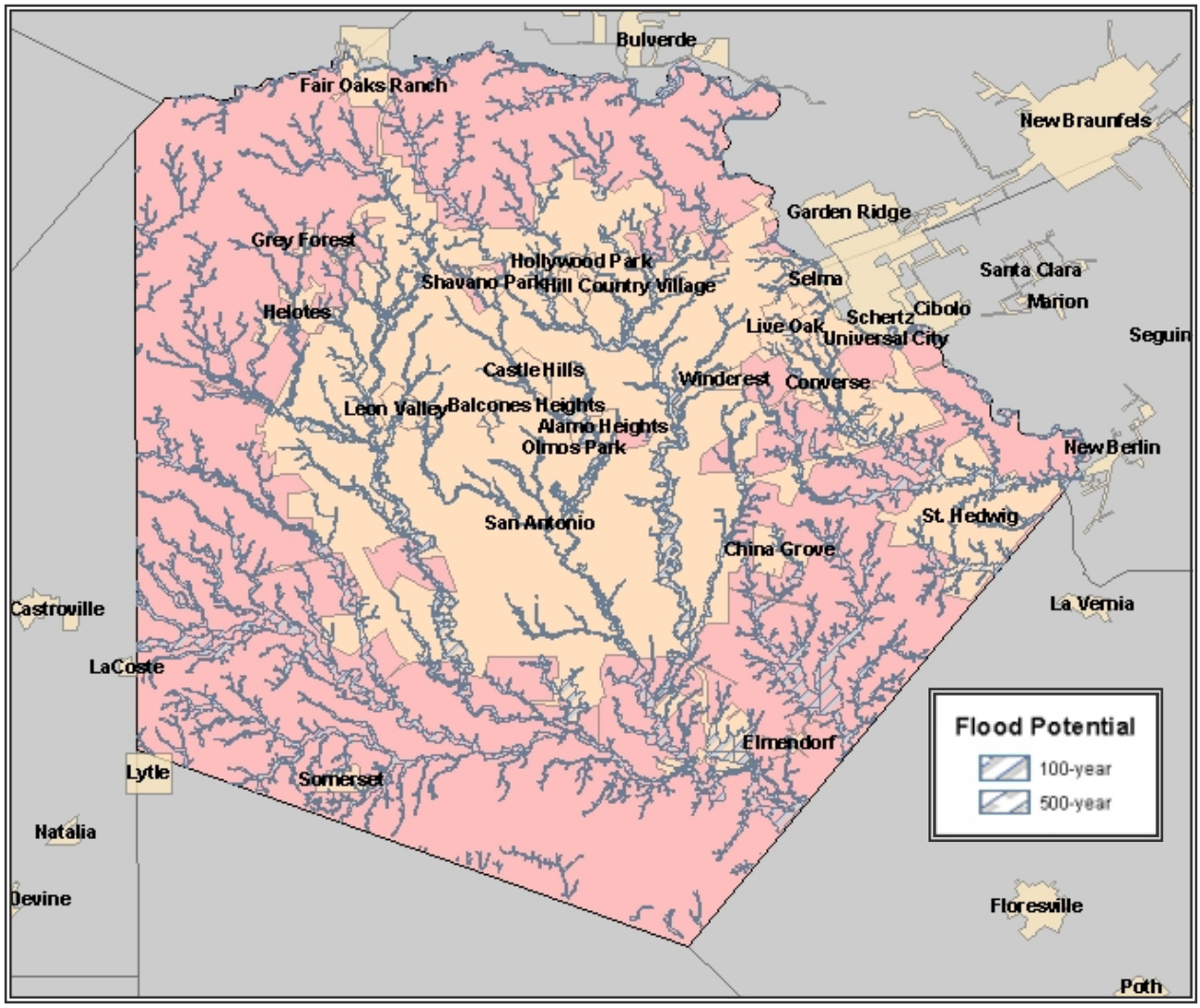
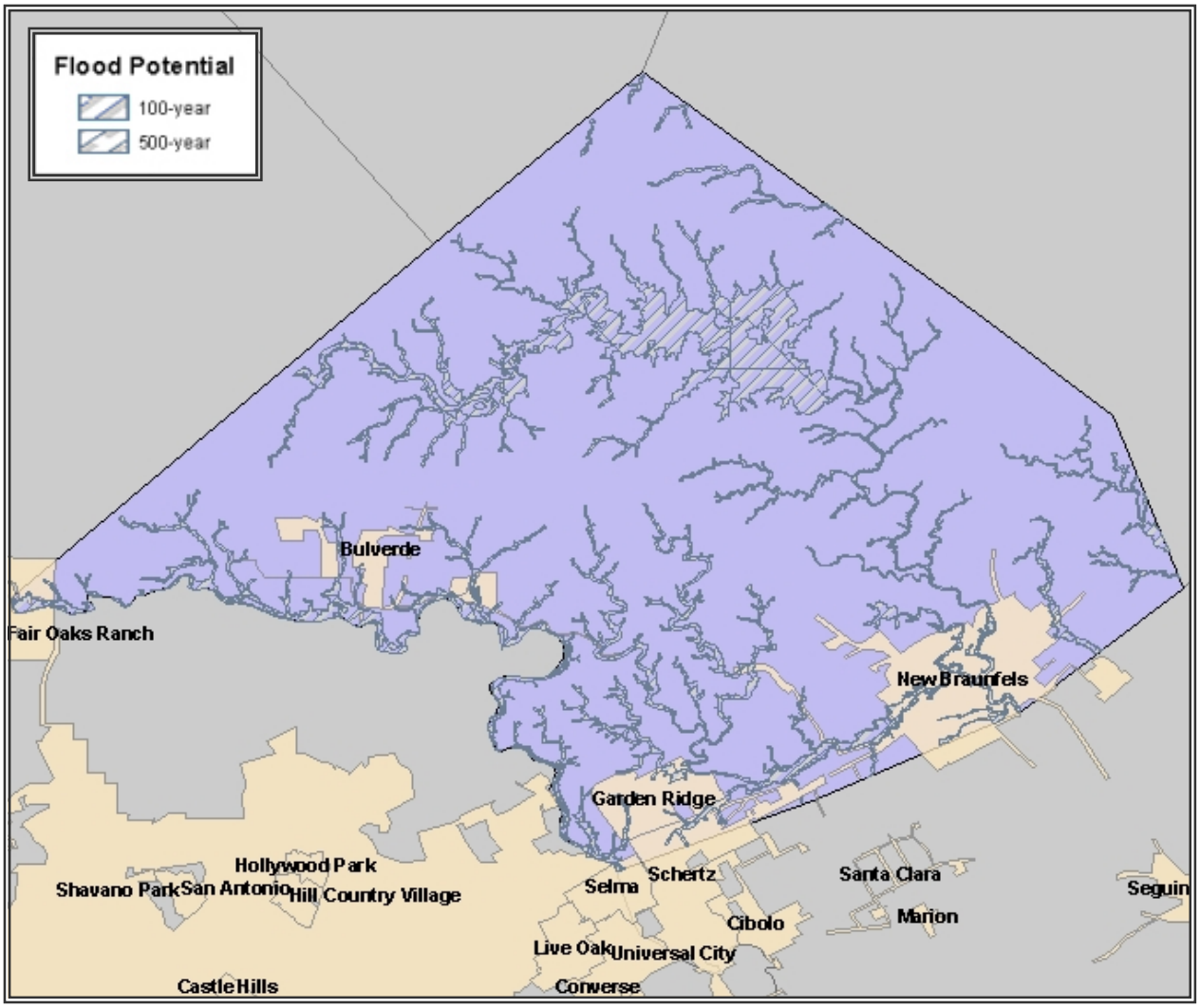
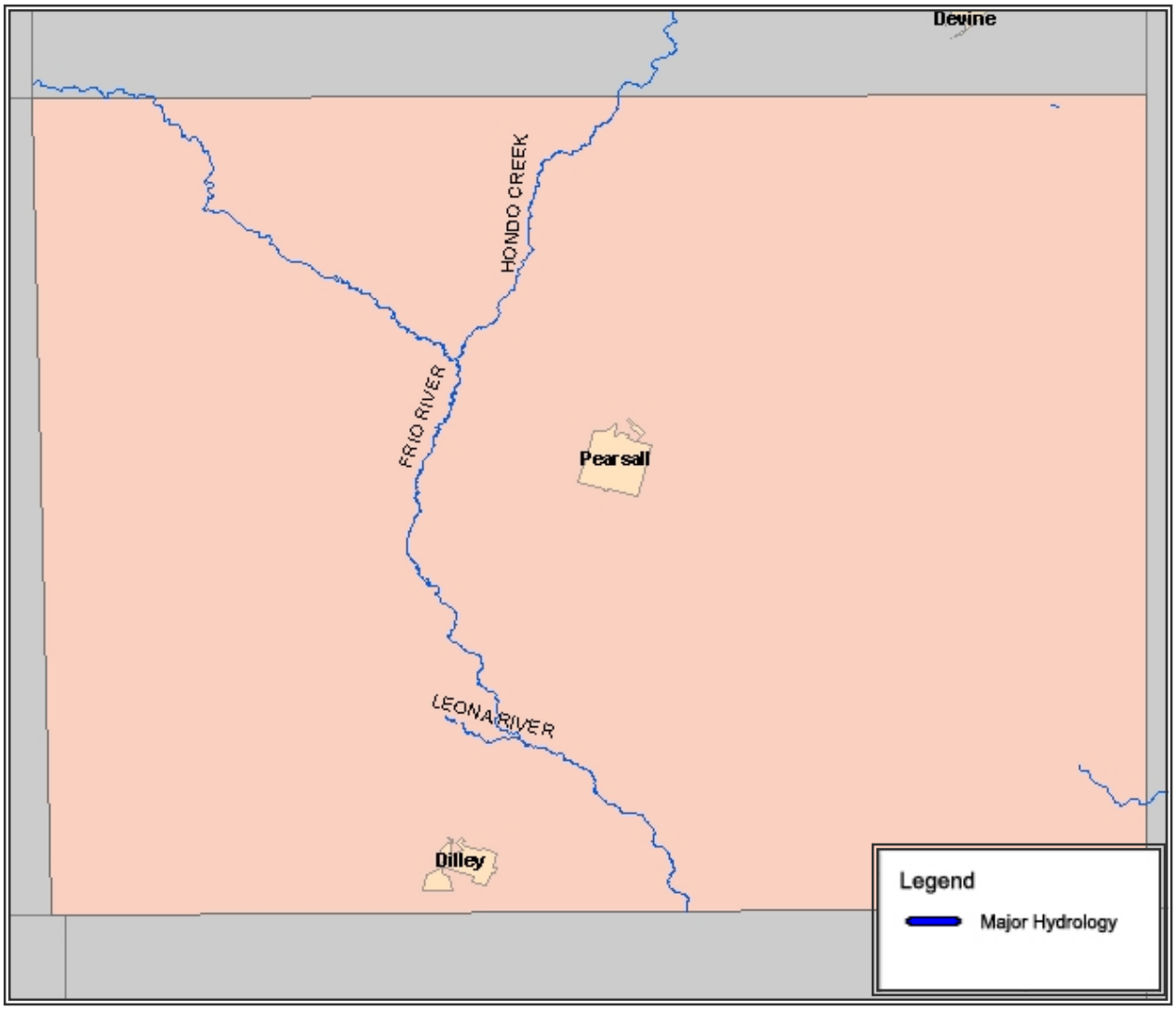


Figure 4.2-4. Flood Zones in Bexar County




Flood Potential
100-year
500-year
Bulverde
Fair Oaks Ranch
New Braunfels
Garden Ridge
Hollywood Park
Shavano Park
San Antonio
Hill Country Village
Selma
Schertz
Santa Clara
Seguin
Cibolo
Marion
Live Oak
Universal City
Converse
Castle Hills


Devine
HONDO CREEK
FRIO RIVER
Pearsall
LEONA RIVER
Dilley
Legend
Major Hydrology

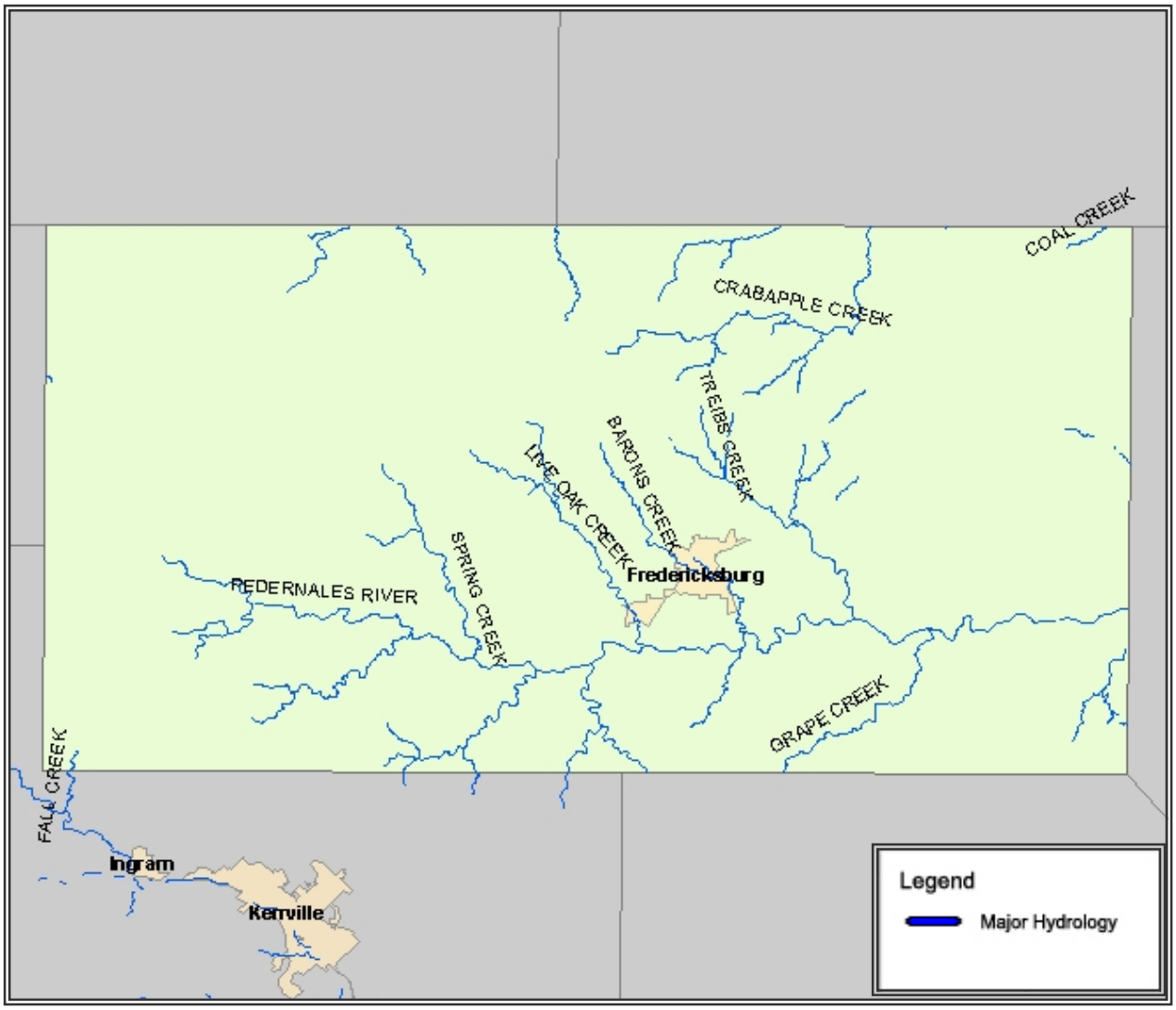
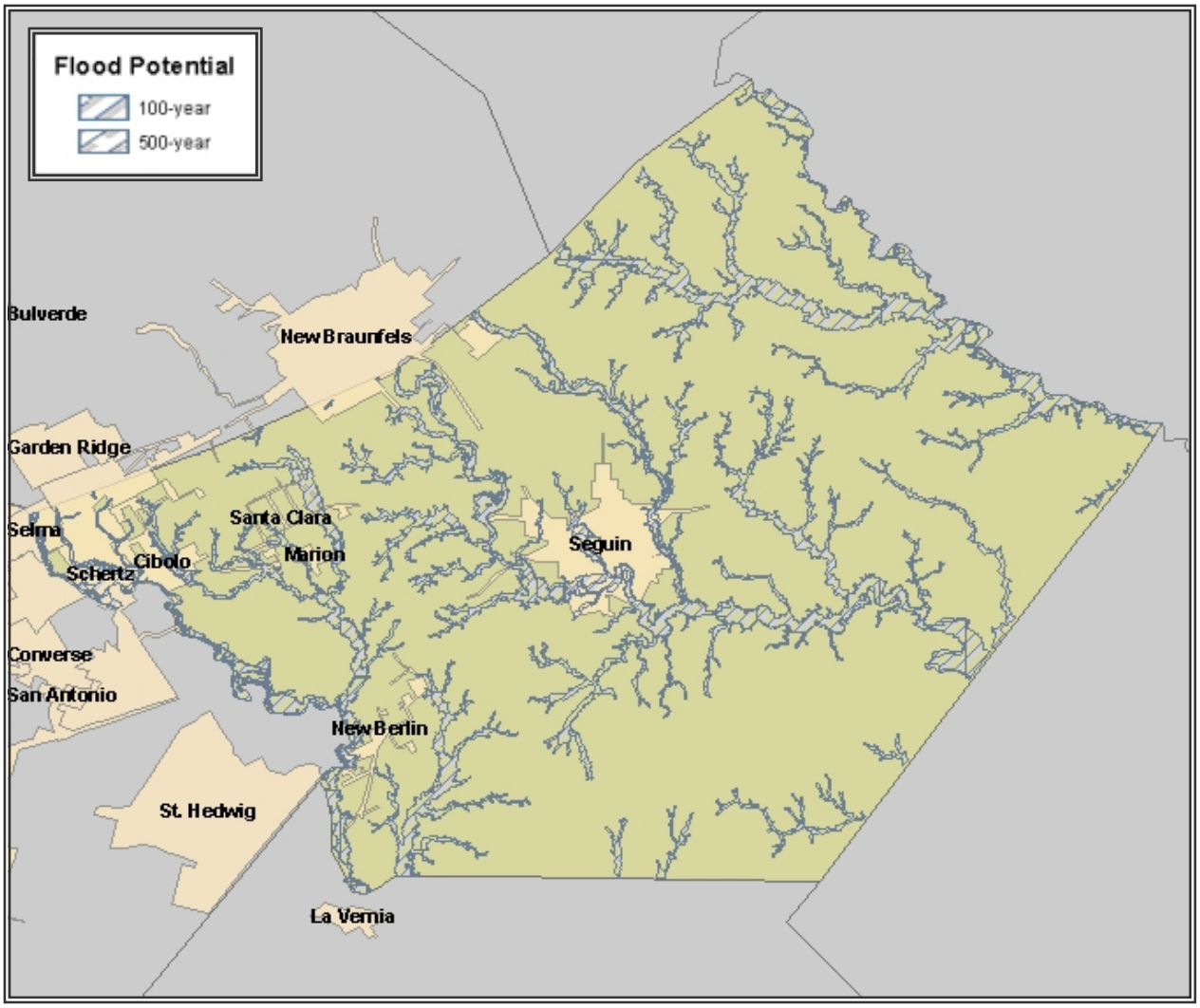

COAL CREEK
CRABAPPLE CREEK
TREIBS CREEK
BARONS CREEK
LIVE OAK CREEK
SPRING CREEK
REDERNALES RIVER
Fredericksburg
GRAPE CREEK
FALL CREEK
Ingram
Kerrville
Legend
Major Hydrology

Figure 4.2-8. Flood Zones in Guadalupe County



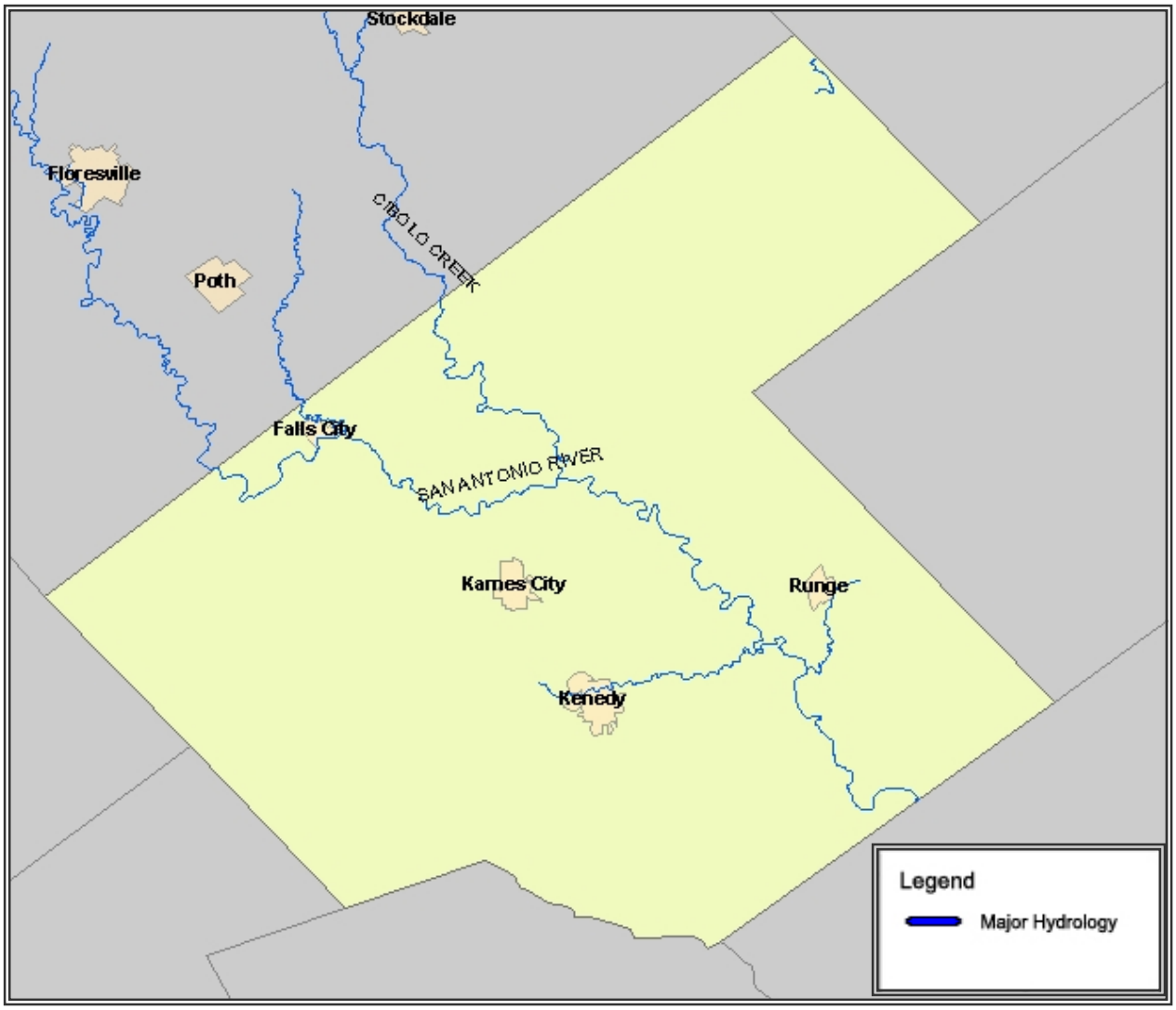
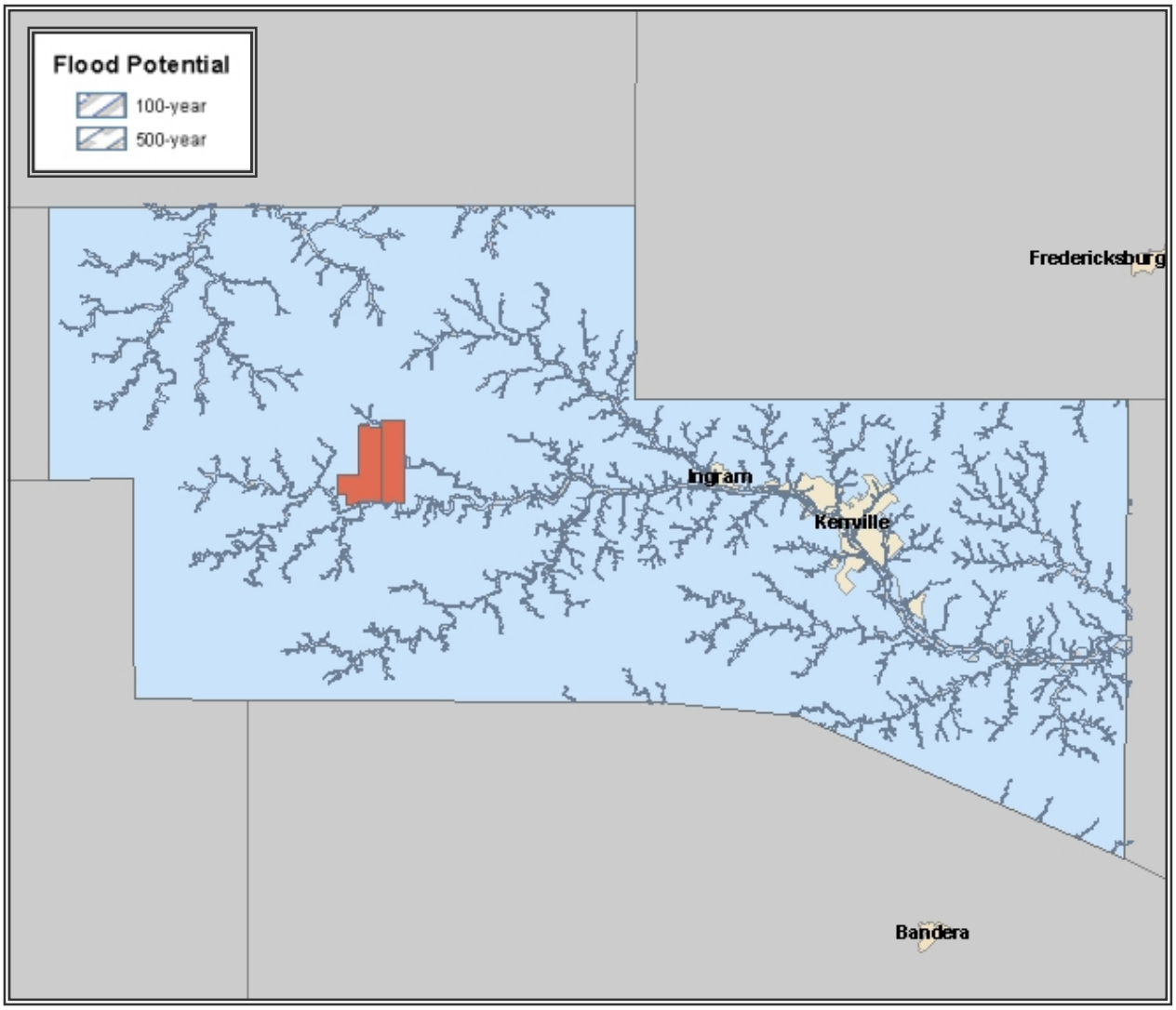
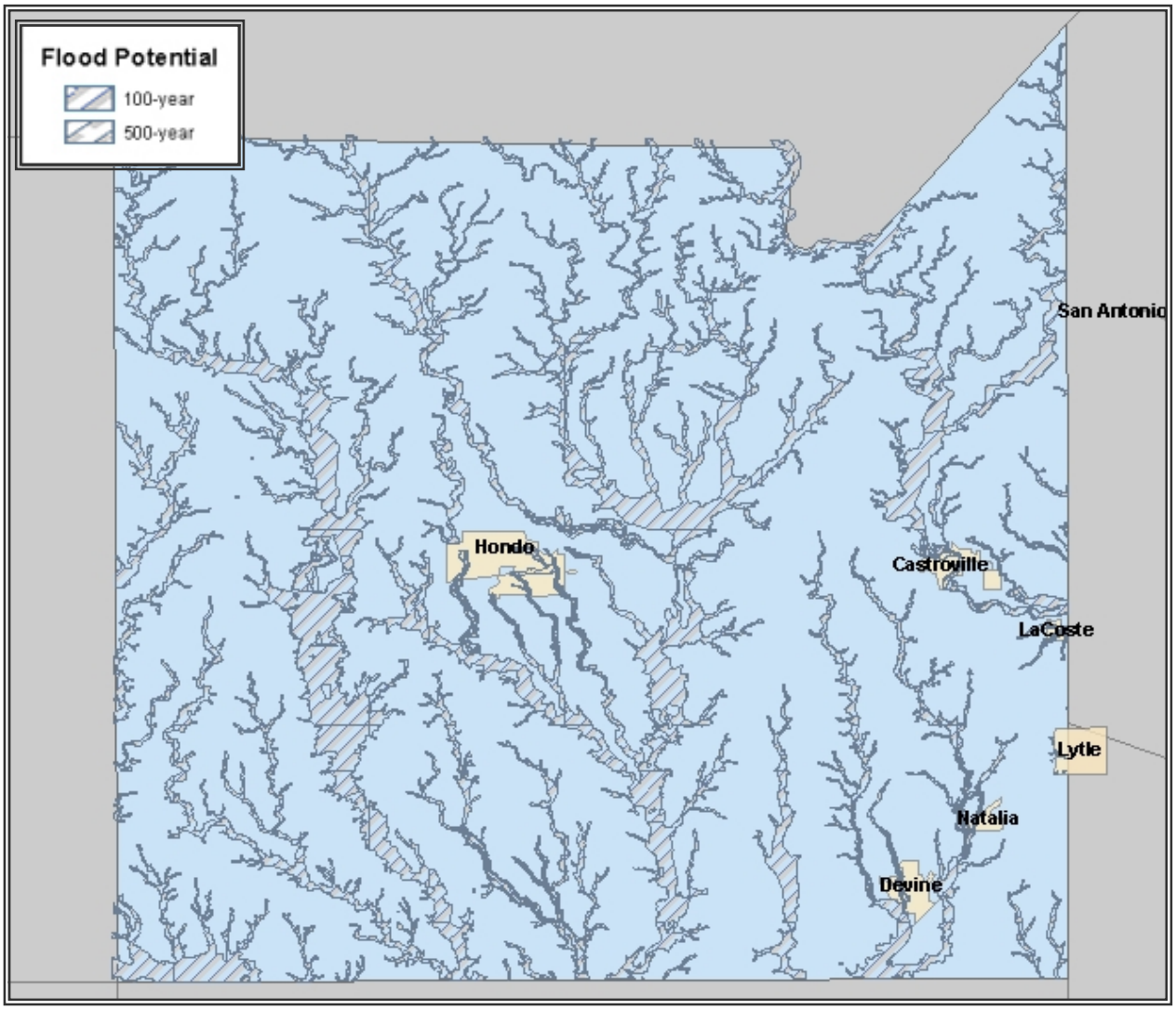

Stockdale
Floresville
CIBOLO CREEK
Poth
Falls City
SAN ANTONIO RIVER
Karnes City
Runge
Kenedy
Legend
Major Hydrology

Figure 4.2-10. Flood Zones in Kerr County



Note: The flood hazard zones for the areas in orange have not been mapped.

Figure 4.2-11. Flood Zones in Medina County



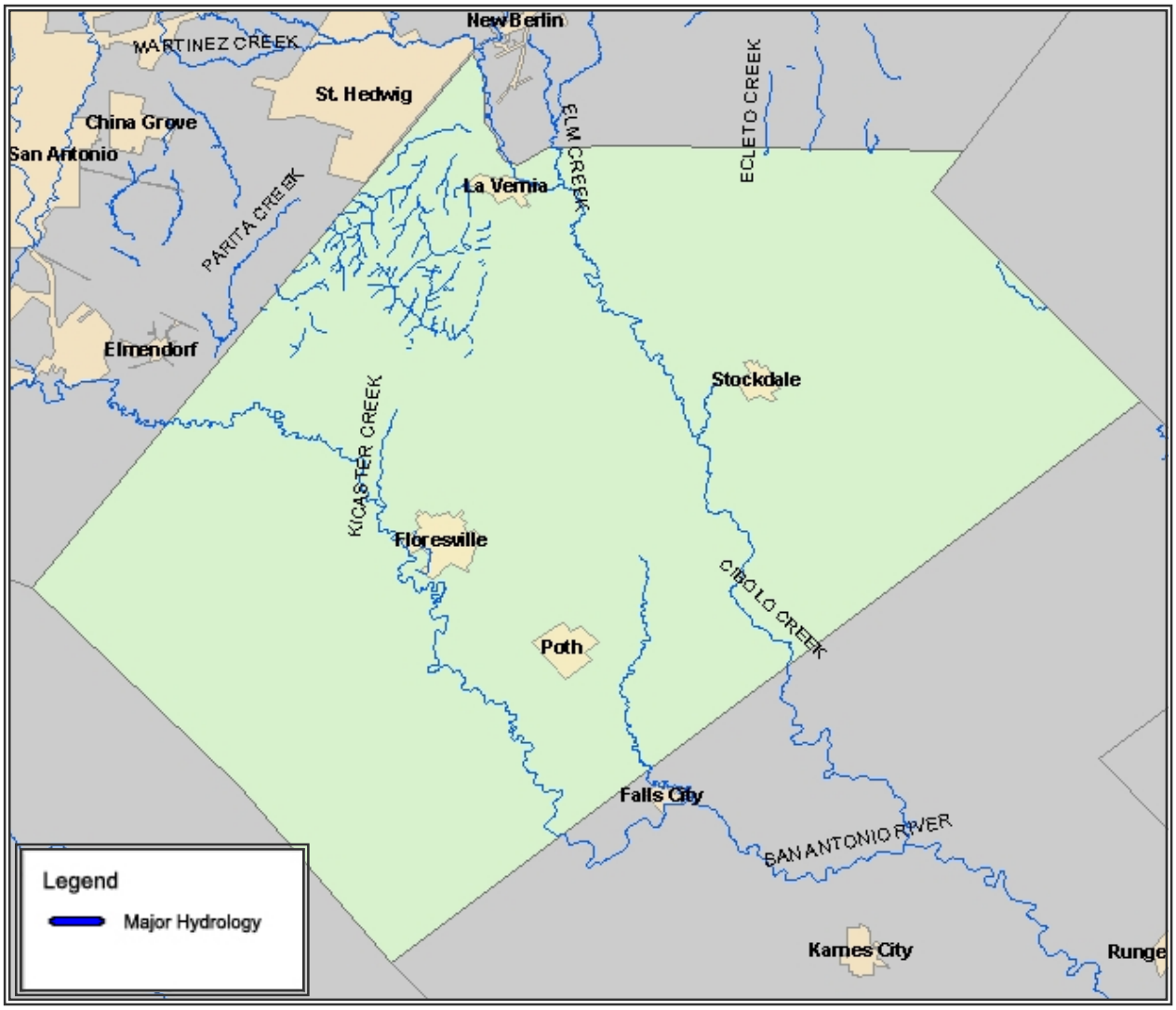

New Berlin
MARTINEZ CREEK
St. Hedwig
China Grove
San Antonio
PARITA CREEK
ELM CREEK
ECLETO CREEK
La Vernia
Elmendorf
Stockdale
KICASTER CREEK
Floresville
CIBOLO CREEK
Poth
Falls City
SAN ANTONIO RIVER
Kames City
Runge
Legend
Major Hydrology

Table 4.2-1. Flash flooding events in the AACOG region

Atascosa	08/29/1996	0	0	$662,000	$490,000
Bexar	05/13/1994	17	1301	$86,580,000	$555,000
Frio	06/01/1996	0	15	$1,067,000	$1,250,000
Goliad	03/18/1997	1	0	$0	$0
Karnes	09/08/1996	0	670	$66,809,000	$695,000
Medina	05/05/1993	1	59	$13,897,000	$250,000

Source: National Climatic Data Center.

The following event descriptions were obtained from the National Climatic Data Center.

Notable flood events:

05/29/1995 Gillespie County
Flash flooding caused $500,000 in property damage and $30,000 in crop damage.

06/28 to 06/29/1995 Bandera, Bexar, Kerr and Medina Counties
Flash flooding took place due to three (3) to four (4) inches of heavy rainfall across the area. Two deaths were reported when two men in a pickup truck were swept off a low bridge across Medina River in southwest Bexar County. Numerous rescues were carried out.

10/28/1996 Frio County
Flooding caused $2,000 in property damage and $1.1 million in crop damage.

04/02 to 04/03/1997 Atascosa, Bandera, Gillespie, Goliad, Karnes, Kerr and Medina Counties
Brief flash flooding resulted from rainfall of two (2) to four (4) inches in two hours. A man and his wife were traveling back home as they encountered a flooded creek close to Medina. As they attempted to cross through the creek, their car was washed off the road and they drowned. Roads were closed and under water, mainly over the western part of Atascosa County. Twenty people were injured during this event.

06/21 to 06/22/1997 Bandera, Bexar, and Medina Counties
Very heavy rains, which came in three events over three days, caused widespread flooding as well as flash flooding across numerous counties. Rainfall amounts for the three rain events averaged between four (4) and six (6) inches, with over 15 inches across many locations. A general rainfall of 12 to 15 inches between Bandera and Boerne, with up to 20 inches west of Boerne, produced flooding along Cibolo Creek that filled two flood retention dams as well as Boerne City Lake. Near Boerne, Castle Lake Dam failed, sending a large wave down Bear Creek and washing out a road and bridge. Homes and businesses damaged or destroyed numbered approximately 200 in Guadalupe County, 150 in each of Bandera and Bexar Counties, 100 in Medina County, and 50 in Comal County. There were three deaths due to cars being swept into creeks—one in Medina County

and two in Bandera County. There were also 20 injuries in Bandera County, 10 injuries in Bexar County and Comal County, 20 in Guadalupe County, and 50 in Medina County.

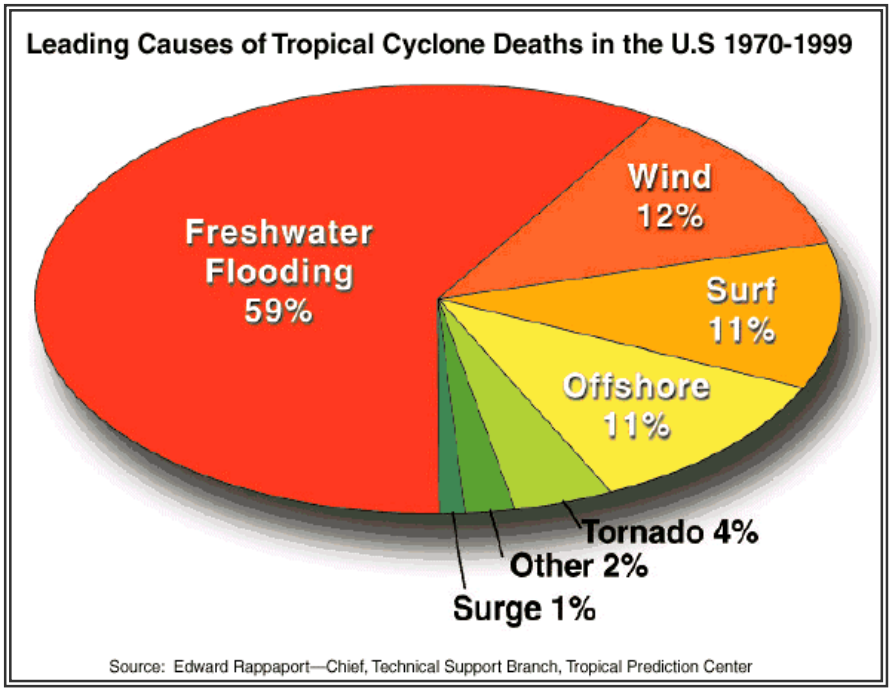
10/17/1998 Bexar, Guadalupe, Karnes and Wilson Counties "Great October Flood"
Flooding along the San Antonio River, Cibolo Creek and Geronimo Creek. Several homes just below Loop 410 had 10 feet of water over the slabs. The crest of Cibolo Creek at Schertz in excess of 30 feet put over 17 feet of water above the tops of mobile homes. Farther up, another community of mobile homes, permanent homes, and RVs were completely destroyed. Many homes above the city park flooded. Downstream, in Wilson County, near Lavernia, Cibolo Creek produced a sheet flow that surged over the floodplain in an area well over a mile wide and up to six feet deep, flooding many homes. Numerous homes were flooded all along Salado Creek. Wheatley area near South Cross Street and Pecan Valley was devastated, with many houses destroyed or severely damaged. Rainfall amounts ranged from 15 to 22 inches. Damage and destruction to livestock and agriculture, roads and bridges and both public and property and buildings significantly exceeded that of previous flooding. Thousands of livestock were killed, as nearly 3,000 homes were destroyed and another 8000 or so homes were damaged. Nearly 1,000 mobile homes were destroyed and another 3,000 were damaged. Twenty-five people drowned as a direct result of the flooding, and most of those deaths were associated with driving vehicles into flooded waters. There were 5,970 injuries throughout the region, over $392 million in property damages and $2.37 million in crop damages.

08/30/2001 Atascosa, Bexar, Comal, Goliad, Guadalupe, Karnes, Kerr, and Wilson Counties
Showers and thunderstorms began reforming across the I-35 corridor from San Antonio to New Braunfels near sunrise, and by mid-morning, had produced an additional rainfall averaging one (1) to two (2) inches from San Antonio and New Braunfels southeastward into the Seguin and Floresville areas. The highest totals reached near 11 inches from just east of San Antonio to Seguin and Kingsbury in Guadalupe County and across Wilson County from Floresville eastward. Wilson County Emergency Management Officials reported that severe flash flooding had cut SH123, which runs from south of Seguin into Stockdale. Water was reported to be six (6) inches over the 500-year floodplain mark along SH123, and the road remained closed for several hours. Over 100 homes in Stockdale were flooded, causing an estimated $2 million in damage. Two injuries were reported and several rescues were made.

11/14 to 11/17/2001 Atascosa, Bandera, Bexar, Comal, Frio, Goliad, Guadalupe, Karnes, Kerr, and Medina Counties
Rainfall redeveloped in the early morning hours, with totals since the previous night approaching five (5) inches in the western part of the county around 7 a.m. Flash flooding developed just before sunrise and continued into the early afternoon. Road closures were widespread, with most of the damage to bridges and roads. Total property damages were estimated at $541,000.

Also, Texas is affected by a large number of tropical weather systems. Recent research indicates that inland flooding was responsible for the greatest number of fatalities over the last 30 years. Studies also show that 59 percent of the tropical cyclone deaths in the United States resulted from severe inland flooding (**Figure 4.2-13**). Tropical storms and hurricanes are discussed in greater detail later in this section.

Figure 4.2-13. Leading Causes of Tropical Cyclone Deaths in the United States (1970—1999)



Source: Tropical Prediction Center

08/22 to 08/23/1998 Atascosa, Bandera, Bexar, Guadalupe, Kerr, Medina, and Wilson Counties
Tropical Storm Charley made landfall near Port Aransas the night of Friday, August 21, 1998. With very light winds through the mid and upper atmosphere and extremely high preciptable water values, the stage had been set for an extended heavy rainfall event. Rainfall rates were generally between one (1) and two (2) inches per hour. As the storm center approached the Hill Country area west of San Antonio Saturday afternoon, it began to slow and stall. To this point, rain totals of between three (3) and six (6) inches had been received over much of South Central Texas, but flooding problems had been limited mainly to flash flooding over low water crossings along secondary roads. Moderate to heavy rainfall continued, producing widespread flash flooding over secondary roads and over low water crossings. Flooding also developed over much of Kerr County as the heavy rain forced the Guadalupe River out of banks from Hunt eastward to near Kerrville. Damages were estimated at $250,000 for property and $160,000 for crops.

09/06 to 09/09/2002 Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Goliad, Guadalupe, Karnes, Medina and Wilson Counties
Isolated showers had occurred over much of South Central Texas in advance of Tropical Storm Fay on Friday, September 6, 2002. Tropical Storm Fay came ashore near Palacios on September 7. Rainfall, at first spotty, became widespread by mid morning. Heavier amounts had fallen from Bandera to San Antonio to Uvalde that averaged between one (1) and two (2) inches, with isolated totals to near six (6) inches. Flash flooding developed over Bandera, Bexar, and Medina counties in the early afternoon, ending in the early evening. Around a dozen rescues occurred in deep water in the county, but none in San Antonio. One mother and daughter drove past a barricade on Ingram Road and had to be rescued as their car became submerged. Minor damage was reported to bridges and county roads. By late afternoon, rainfall was widespread across South Central Texas, having

spread westward to the Rio Grande. A band of heavy rain stretching from near San Antonio through Floresville to Karnes City produced an additional round of flash flooding from late afternoon into the early evening. Rain amounts averaged from one (1) to two (2) inches with isolated totals to near nine (9) inches in the western part of Wilson County. The region experienced $1.3 million in property damages, $250,000 in crop damages and a total of 31 injuries were reported.

TORNADOES

When compared with other states, Texas ranks #1 in the number of tornado events; #1 in tornado deaths; #1 in tornado injuries; and #1 in damages. These rankings are based upon data collected for all states and territories for tornado events between 1950 and 1994 (SPC, 2003).

According to the National Climatic Data Center, the geographic area of the Alamo Area Council of Governments experienced 221 tornado events from 1950 through February of 2003 (**Table 4.2-2**). These events caused 11 deaths and a total of approximately $85,286,000 in property damage (NCDC, 2003).

Table 4.2-2. Tornado Activity in the AACOG Region (1950-2003)

Atascosa	15	$308,000	0
Bexar	55	$59,411,000	3
Frio	16	$90,000	5
Goliad	21	$250,000	0
Karnes	22	$483,000	0
Medina	19	$20,993,000	3

Source: National Climatic Data Center.

Notable Tornadoes

04/28/1953 Atascosa and Bexar Counties
A tornado recorded as F4 on the Fujita Scale caused two deaths and 15 injuries.

04/25/1966 Karnes County
An F3 tornado caused three injuries and $250,000 in property damage.

04/15/1973 Frio County
An F4 tornado caused five deaths and two injuries.

04/29/1975 Medina County
An F3 tornado caused three deaths and five injuries.

03/30/1976 Medina County
An F1 tornado caused eight injuries and $250,000 in property damage.

09/17/1988 Bexar County
Three tornado events in one evening: Tornado #1 was recorded as F1 on the Fujita Scale, causing $2.5 million in property damage, one death and one injury. Tornado # 2 was recorded as F2 on the Fujita Scale, causing $25 million in property damage and three injuries. Tornado #3 was recorded as F1 on the Fujita Scale, causing $25 million in property damage and three injuries.

05/11/1999 Gillespie County
An F# tornado caused $1 million in property damage and $100,000 in crop damage.

10/12/2001 Gillespie County
A tornado in Stonewall, rated F3 on the Fujita Scale. The worst damage was to trees and homes between RR1623 and SH290, across the northwest and north central part of Stonewall. Ninety homes sustained damage with six destroyed. In addition, seven mobile homes were destroyed and 20 damaged. Damage was also reported to 22 buildings. Approximately $1 million in damage was recorded and five persons were injured as a result of the tornado.

10/12/2001 Medina County
The tornado nearly 500 yards in width was rated F2 because of the level of damage from the airport to the armory. Almost 150 homes in Hondo and almost 50 more outside the city were damaged, with nearly 100 mobile homes damaged. At least 10 houses and 30 mobile homes were destroyed. Losses to homes and mobile homes were estimated at $1.5 million dollars. In addition, nearly two-dozen aircraft were damaged and destroyed at the Hondo Airport. Commercial losses totaled nearly $18 million dollars. At least 25 persons were injured.

03/19/2002 Bexar County
A series of six tornadoes strike. Tornado number five, strongest of the six and rated as a minimal F2 tornado on the Fujita Scale, produced a hit-and-miss damage path. It completely destroyed four mobile homes and damaged several others, causing $3.5 million in property damage and 30 injuries.

Figure 4.2-14 and **Figure 4.2-15** show historical tornado occurrences by county.

Figure 4.2-14. Historical Occurrences of Tornadoes

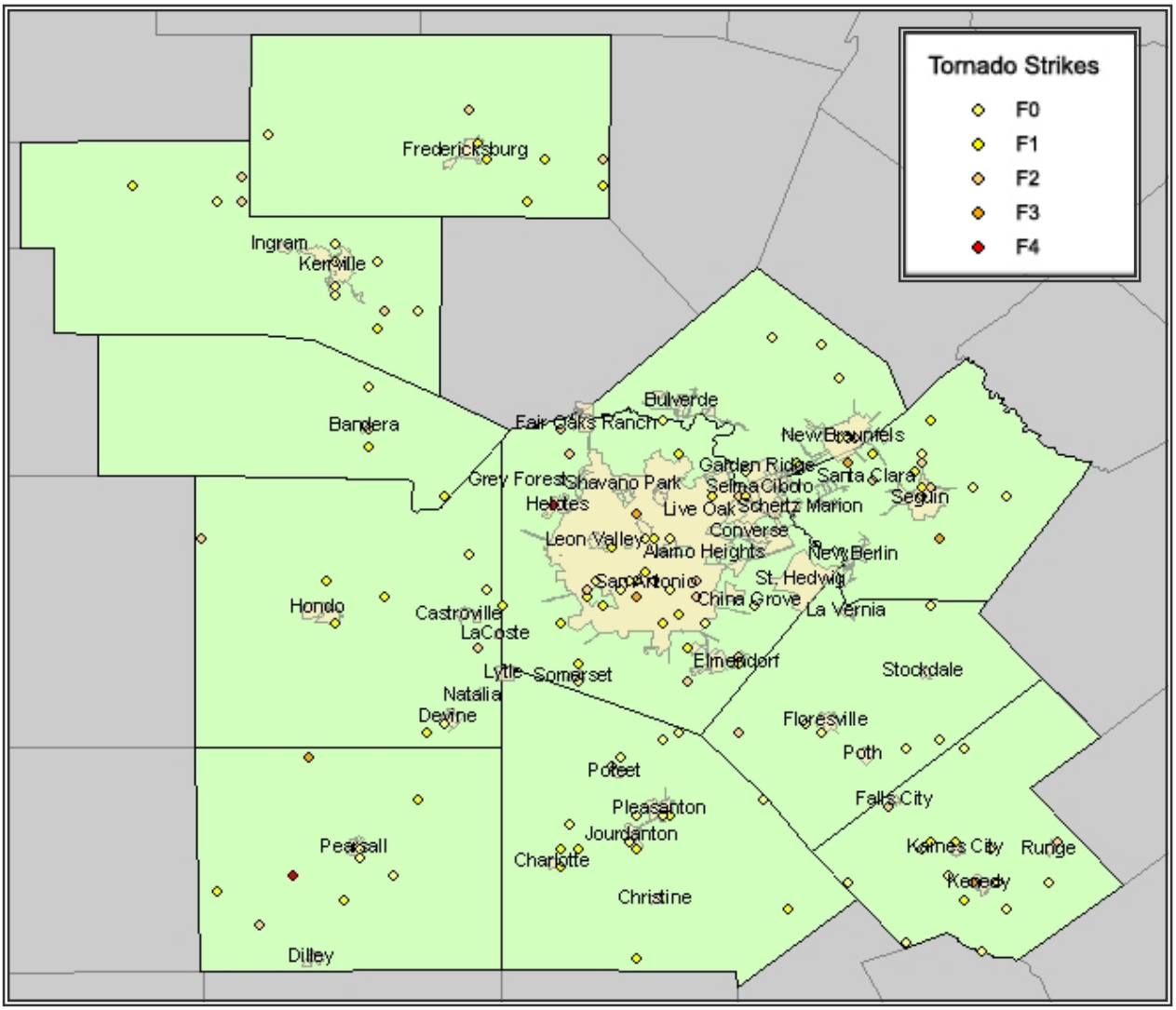
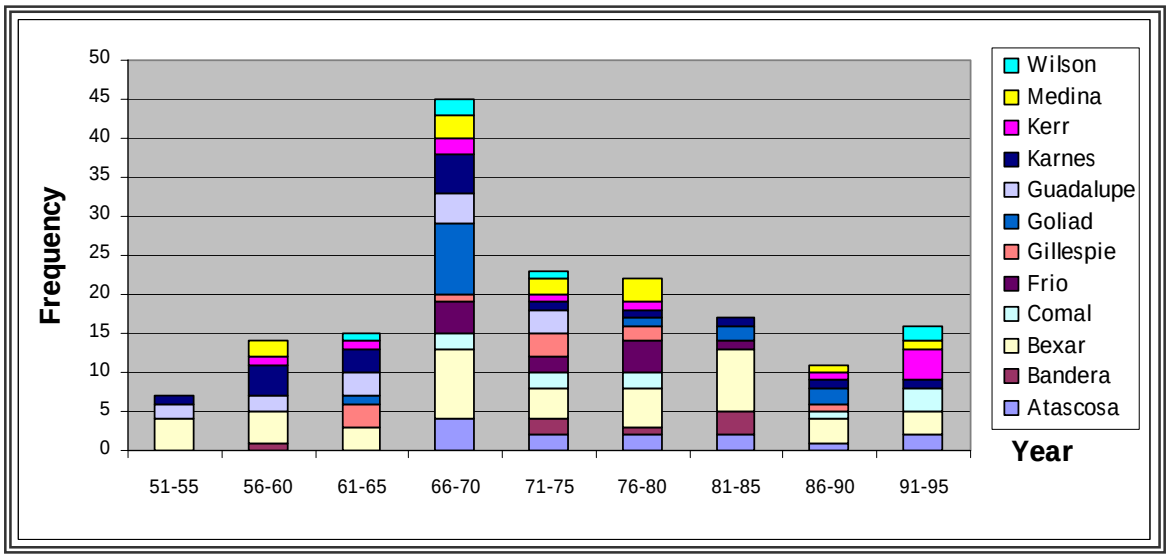


Figure 4.2-15. Frequency of Tornado Events



HURRICANES

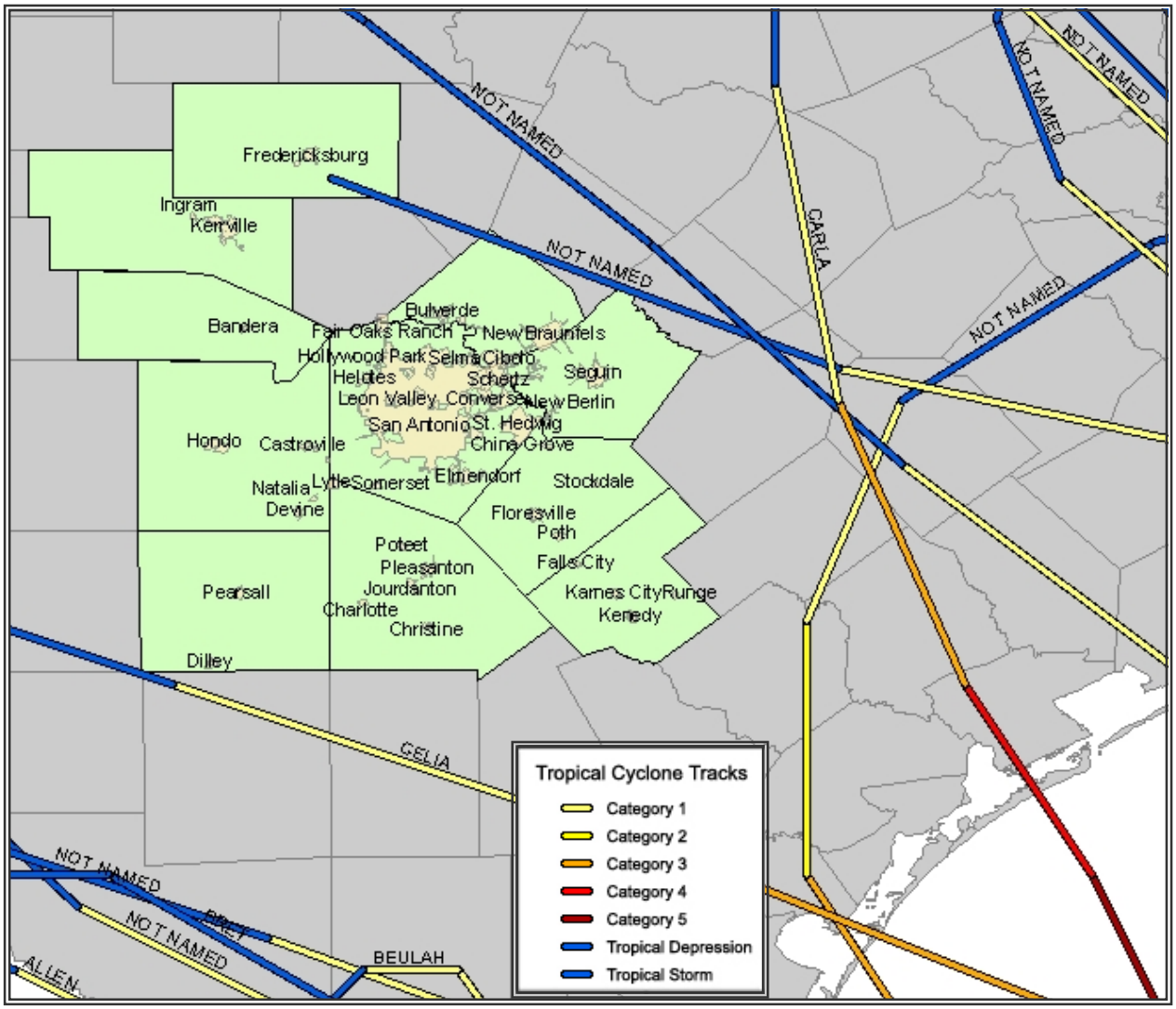
Because the AACOG region is located inland of the Texas coastline, hurricanes usually lose strength as they make landfall and move northward without hurricane force winds impacting the area. However, the area has been impacted by hurricanes in the past and it can be expected that they will experience more hurricanes in the future. **Table 4.2-3** includes records of historical hurricanes affecting the AACOG area since 1950. There was one unnamed tropical depression that passed through the region in 1909 and an unnamed tropical storm passed just east of the region in 1942.

Table 4.2-3. Historical Occurrences

Carla	Karnes County and almost entire Texas coast	09/14/1961	0	$400,000,000

Source: National Climatic Data Center

Figure 4.2-16 Historical Tropical Events to Impact the Alamo Region



Historical Hurricanes to Impact the Alamo Region:

Hurricane Carla

Carla made landfall near Port Lavaca on September 14, 1961. Carla was among the largest hurricanes of historical record (number 2 behind the Great New England Hurricane of 1938). The storm produced numerous tornadoes, gusts reaching 175 MPH, torrential rains, and a 22-foot storm surge at Port O'Connor (not in the AACOG Region). Hurricane force wind gusts were seen along almost the entire Texas Coast. The path of devastation extended from Victoria to Dallas. A death toll of only 34 people in Texas can be attributed in part to what was the largest peace time evacuation of in U.S. history. A quarter million people fled the middle and upper Texas coasts, moving inland to safety.

Hurricane Beulah 1967

At the time, Hurricane Beulah was the third largest hurricane on record, following Carla in 1961 and the Great New England Hurricane of 1938. Beulah, which struck the coast near Brownsville on September 20, 1967, turned to the southwest, paralleling the coastline. Winds of hurricane-force strength extended up the coast to Corpus Christi, which received gusts up to 86 MPH. The storm surge reached 20 feet along lower sections of Padre Island (not in the AACOG Region).

One hundred and fifteen tornadoes were spawned by the system, the most ever known to be generated by a tropical storm (five times the previous record set by Isbell in 1964). Most of the tornadoes were confined to the coast of Texas and were rather weak. Fifteen people died in Texas during Beulah. Five were killed by a tornado and 10 died due to drowning. Damages were estimated conservatively at $100 million.

Hurricane Celia

In 1970, Hurricane Celia became the third hurricane to impact the Texas coast in the past yen years. The storm spared most of the Alamo Region as torrential rains were not associated with the storm as it moved just south of the region. Jourdanton and Pearsall received no rain at all even though they were only 30 to 40 miles from the storm's center. Hurricane force winds did impact the areas but their impact was negligible.

THUNDERSTORMS

According to the National Climatic Data Center, the geographic area of the Alamo Area Council of Governments experienced 482 thunderstorm wind events from 1950 through February of 2003 (**Table 4.2-4**). These events caused one death and a total of approximately $34,877,000 in property damage (NCDC, 2003).

Table 4.2-4. Thunderstorm Activity in the AACOG Region (1950-2003)

Atascosa	45	$1,085,000	0
Bexar	136	$4,648,000	1
Frio	25	$525,000	0
Goliad	23	$0	0
Karnes	17	$165,000	0
Medina	50	$13,955,000	0

Source: National Climatic Data Center

Notable thunderstorm events:

03/27/1994 Bexar, Comal and Guadalupe Counties

In Bexar County, thunderstorm winds gusted over 50 knots as power lines were downed, trees were blown over and a sturdy metal sign was knocked down. Windows were blown out at Broadway and Interstate 410, and considerable damage was reported to roofs of homes and to windows of cars and houses across northern Bexar County. Power was lost to 30,000 homes and businesses for several hours. The thunderstorms then moved eastward into Comal and Guadalupe Counties, producing damaging wind at New Braunfels and large hail at Schertz and Cibolo. Damaging winds in Seguin uprooted several trees and knocked down numerous large tree limbs. This thunderstorm system caused extensive property damage and cut off electric service to 11,000 homes. Eleven power lines that had been built to withstand over 100 mph winds were twisted and toppled by the storm. Damage was the most severe from the New Braunfels and Schertz area eastward to Staples. Twenty-one residences in Schertz, Cibolo, and Marion were damaged, with four mobile homes destroyed and four with major damage. Damage in the Schertz-Cibolo region alone was estimated at well over $2 million. Barns and storage areas were blown over or damaged. Other damage was mainly to roofs and windows of houses and to windows of automobiles. A total of $6 million in property damage and $150,000 in crop damage was sustained during this thunderstorm event.

05/18/1995 Atascosa County
A bow-shaped thunderstorm system moved rapidly through Atascosa County, producing large hail and damaging winds and causing $100,000 in property damage and $15,000 in crop damage. Windows were blown out in Jourdanton by large hail, driven horizontally by strong winds. Trees and power lines were knocked down. Mobile homes were overturned and a barn was destroyed near Charlotte. A storage shed company was destroyed; one of the sheds was blown nearly two miles down the road. Also destroyed were a finance company and an aircraft maintenance company. Two mobile homes were destroyed and another dozen damaged in Pleasanton.

02/10/1998 Frio and Medina Counties
In Frio County, severe thunderstorm winds caused damage between Moore and Big Foot, destroying a grainery at Moore and a shed at Big Foot. In Medina County, hail propelled by winds estimated at over 80 mph broke windows and destroyed vegetation across the southeast corner of the county. The hail was piled up to 3 feet deep in many locations. Over 1,000 windows were broken out of homes and cars in Devine. Major damage was reported to 12 homes with minor damage to nearly 1,300 others. Hundreds of cars were damaged by the combination of wind and hail. Also several school buses were damaged. Damage was estimated at $10.1 million in property losses and $60,000 in crop losses.

10/12/2001 Comal, Kerr, and Medina Counties
Severe thunderstorms affected several counties, causing a total of $2.6 million in property damage. In Comal County, trees were blown down with widespread damage to the roofs and windows of homes just west of New Braunfels. In Kerr County, winds caused widespread damage in and around the city of Kerrville and five aircraft were damaged or destroyed at the Kerrville Airport. In Medina County, the damage at Hondo was due to the combination of a large tornado, severe downburst winds and large hail. Severe downburst winds (estimated in excess of 100 miles an hour), struck first, followed by heavy rain, then hail to the size of golfballs, and finally, just in front of the tornado, winds began to calm. Wind damage began 2 miles northwest of the Hondo Airport, continued across the downtown area, and ended 5 miles southeast of the center of town. This damage was characterized by large limbs knocked from trees, trees uprooted, roofs and winds torn from homes and businesses, and power lines knocked down.

03/19/2002 Atascosa, Bexar, Guadalupe, Medina, and Wilson Counties
Severe thunderstorms affected several counties, causing 27 injuries and a total of $3.4 million in property damage, $400,000 in crop damage.

- High winds in Bexar County damaged roofs, propelled hail into homes and cars, and knocked over power poles. About ten persons were injured by the flying debris. The greatest devastation was in southwest Bexar County just northeast of the town of Lytle. Emergency management and Red Cross officials estimated 50 mobile homes and houses severely damaged or destroyed, with minor damage to another 100 mobile homes and houses.

- High winds across Guadalupe County caused widespread damage to homes, trees and outbuildings. Near Zorn, the high winds took sections of roofs off homes, and rolled and damaged several homes and mobile homes. One mobile home had been rolled over a truck and was completely destroyed.
- Across Eastern Medina County, wind damage was widespread, with road signs blown down, trees knocked over, roofs damaged and large limbs were taken out of trees. Over a dozen people were injured as glass, broken from house and vehicle windows, was propelled by the gusty winds.
- Severe winds, estimated as high as 60 mph, caused spotty damage across much of Wilson County, where trees and tree limbs were blown down, roofs were damaged, and outbuildings were blown over.

05/17/2002 Bexar County

Severe thunderstorm winds damaged 16 cars and knocked over fences in the northwest part of San Antonio, near I-10 and Callaghan Road. The area of damage was very limited in extent, covering only about a square mile. Severe thunderstorm winds also damaged property of the Animal Defense League on Wurzbach Parkway in northeast San Antonio. Fences were knocked down and roofs were taken off buildings. Approximately $450,000 in property damage resulted from this thunderstorm.

DROUGHT

According to the National Climatic Data Center, the AACOG region has recently experienced prolonged drought event (**Table 4.2-5**), causing billions of dollars of damage to property and crops.

Recent significant drought events that have affected the AACOG region include:

1996-1997
From spring 1996 through spring 1997, most of the AACOG area experienced little precipitation, worsening drought conditions in the area. On average, over $200 million in crop damage and over $108 million in property damage was recorded as a result of this drought in the AACOG area. (Monthly crop damages are based on the estimated annual loss to agriculture across all of Texas through this year. Property damages do not include business or commercial revenue losses.)

2000
With little no rain falling from March to early October, a severe drought gripped 33 counties in South Central Texas. Lake and river levels were reported to be extremely low, with many approaching record low levels. Numerous small creeks and streams had already ceased flowing. Aquifer levels reported all time low levels. Agricultural activities were essentially brought to a halt, though no crop damage estimates were recorded. Unprecedented, strong conservation measures remained in place over most of the area.

Table 4.2-5. Recent Drought in the AACOG Region (1996-2000)

Atascosa	18	$141,000,000	$281,000,000
Bexar	15	$132,000,000	$257,000,000
Frio	23	$141,000,000	$281,000,000
Goliad	1	$0	$0
Karnes	14	$132,000,000	$257,000,000
Medina	22	$141,000,000	$281,000,000

Source: National Climatic Data Center

HAIL

According to the National Climatic Data Center, the geographic area of the Alamo Area Council of Governments experienced 847 hail events from 1950 through February of 2003 (**Table 4.2-6**), with some hail stones exceeding four inches in diameter. These events calculate to a total of approximately $23,696,000 in property damage (NCDC, 2003). **Figure 4.2-16** shows the location of past hail events and **Figure 4.2-17** shows the historical frequency of events by county.

Table 4.2-6. Hail Activity in the AACOG Region (1950-2003)

Atascosa	59	$240,000	2.75"
Bexar	221	$50,000	4.5"
Frio	50	$60,000	4.0"
Goliad	48	$1,055,000	3.0"
Karnes	27	$33,000	2.75"
Medina	54	$11,285,000	4.5"

Source: National Climatic Data Center

Notable hail events:

05/29/1995 Gillespie County
Flash flooding caused $500,000 in property damage and $30,000 in crop damage.

03/06/1994 Comal and Medina Counties
In Comal County, one inch hail was reported. In Medina County near Hondo, three-quarter-inch diameter hail was reported. Total property and crop damage was estimated at $20,000.

03/27/1994 Bexar, Comal, Frio and Guadalupe Counties
Hail began falling in northwestern Bexar County, eventually increasing to golf ball-size. As a second wave of thunderstorms moved into Bexar County from the west, hail up to one inch in diameter began to fall at the Rolling Oaks Mall in the northeast part of the county. Hail up to golf ball-size was also indicated at Universal City. The thunderstorms then moved eastward into Comal and Guadalupe Counties, producing large hail at Schertz, Cibolo, and Seguin. Damage was mainly to roofs and windows of houses and to windows of

automobiles. Also, severe thunderstorm produced golf ball-size hail at Pearsall as it moved through Frio County. Total damages exceeded $5.5 million.

04/15/1994 Goliad County
From Weesatche to Fannin, golf ball-sized hail was reported. Estimated damages exceeded $500,000.

06/23/1994 Kerr County
As a severe thunderstorm wreaked havoc on Kerrville, hail damage was generally confined to roofs and windows of homes and windows of automobiles, causing $50,000 in property damage.

05/18/1995 Atascosa County
A bow-shaped thunderstorm system moved rapidly through Atascosa County, producing large hail and damaging winds, which caused over $60,000 in property damage.

03/30/1997 Frio County
Hail, along with high winds later in the morning, destroyed crops in a 5,000-acre area just south of Pearsall, causing approximately $100,000 in crop losses.

03/16/2000 Bexar County
Hail ranging from 1.25 to 2.5 inches in diameter fell in San Antonio, damaging buildings and vehicles. Approximately $100,000 in property damage was reported.

03/28/2000 Bexar County
In Leon Valley, widespread damage (approximately $5 million) was reported to cars in the Leon Valley due to the very large hail (2.75 inches in diameter).

04/03/2000 Karnes County
Large hail, driven by strong winds, caused widespread damage to windows of homes and vehicles in and around Panna Maria. Damage was also reported to gardens and crops in the area. Property damages were estimated at $30,000 and crop damage totaled approximately $50,000.

05/06/2001 Bexar County
During one of the most devastating hail-and-wind storms in the history of Bexar County, wind-driven hail in sizes up to four inches in diameter destroyed roofs of hundreds of homes, and severely damaged hundreds of cars, as well as breaking thousands of windows in houses and vehicles. Damages were estimated to reach at least $60 million for homes, and an additional $60 million for cars.

05/20/2001 Wilson County
Large hail (ranging form 1.75 inches to 4.0 inches in diameter) across the county damaged houses and dented cars, destroyed windshields and windows, and caused over $200,000 in property damages and over $150,000 in crop damages.

04/07/2002 Atascosa and Medina Counties

In Atascosa County, hail up to the size of tennis balls, driven by high winds, damaged windows of homes and cars in the Pleasanton area, causing $100,000 in property damage. In Medina County, softball-sized hail driven by high winds broke house and car windows and damaged roofs, causing $400,000 in property damages and $200,000 in crop damages.

Figure 4.2-16. Location of Past Hail Events

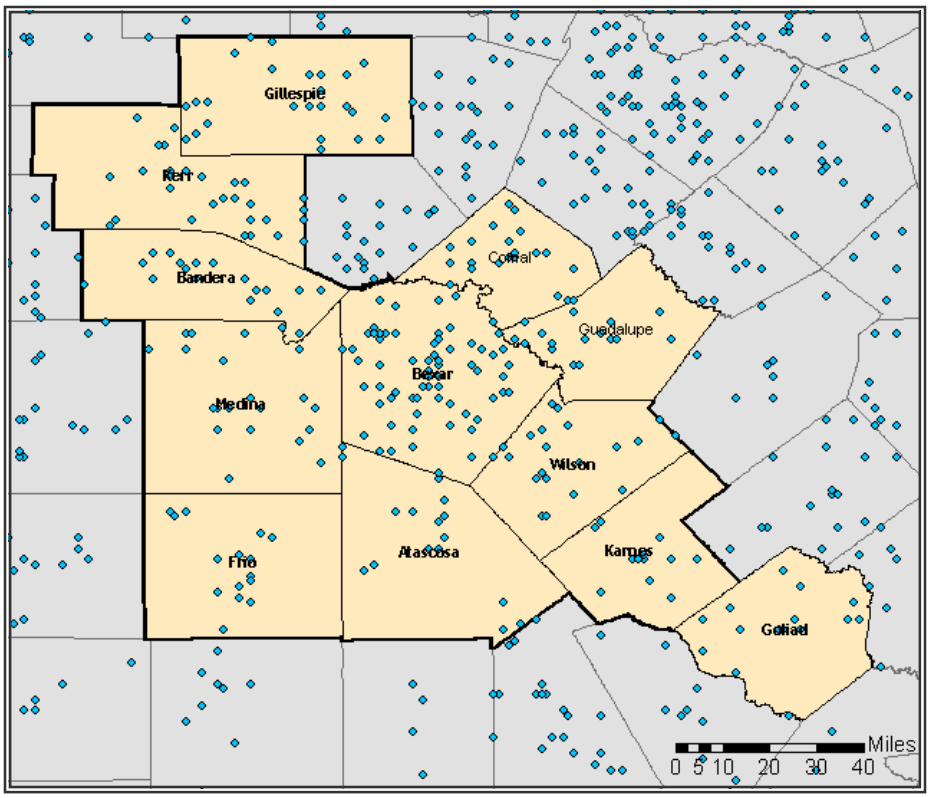
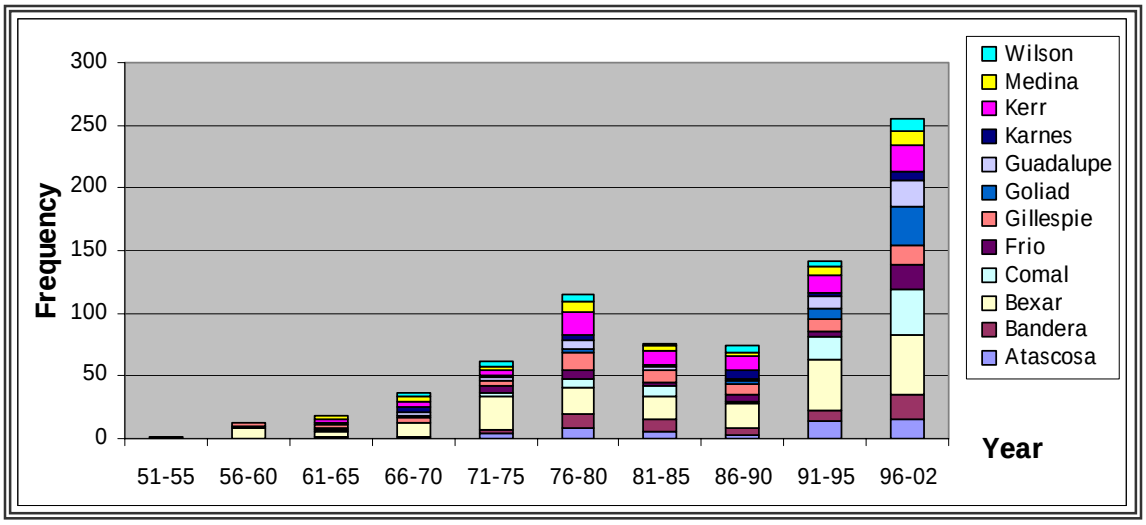


Figure 4.2-17. Historical Frequency of Events by County



WILDFIRE

According to the Texas Forest Service, about 90 percent of all Texas wildfires are man-caused, with escaped debris burning as the greatest cause. Of the 12 counties covered in this plan, half have high, substantial or moderate risk for urban and wildfires (**Table 4.2-7** and **Figure 4.2-18**). Per National Climatic Data Center records, there had been no record of wildfire occurrence in the Alamo Region since 1950.

A major component of the risk assessment was the relation of population and urban development to hazardous wildland fuels. To achieve a rating the fuels model map for Texas was categorized in to fuel complexes that represented low, moderate, and high hazard fuels. This correlation was developed under the direction of Ms. Karen Allender and the UWI Division of the Texas Forest Service. Fuels were grouped by NFDRS and Anderson Fuel Model ratings and the resulting descriptors of low to high hazard were assigned. These descriptors were based on the fuel complexes potential for spread rates, heat output (BTUs) and duration of output, difficulty of control, and potential for fire movement in the canopy of the vegetation. Fuels that had the highest potential for crowning, difficulty in control and heat output for duration posed the most hazards.

Table 4.2-7. Risk for Urban and Wildfires

Atascosa	Low
Bexar	High
Frio	Low
Goliad	Moderate
Karnes	Low
Medina	Substantial

Low Risk: These are primarily counties that have little population or population densities that are not located near or in a hazardous wildland fuel.

Moderate Risk: These are counties that may have a high population but are located near or in a moderate or low hazard fuel complex. Also, counties that have a low population but have significant growth located near or in a high hazard fuel complex are included in this category.

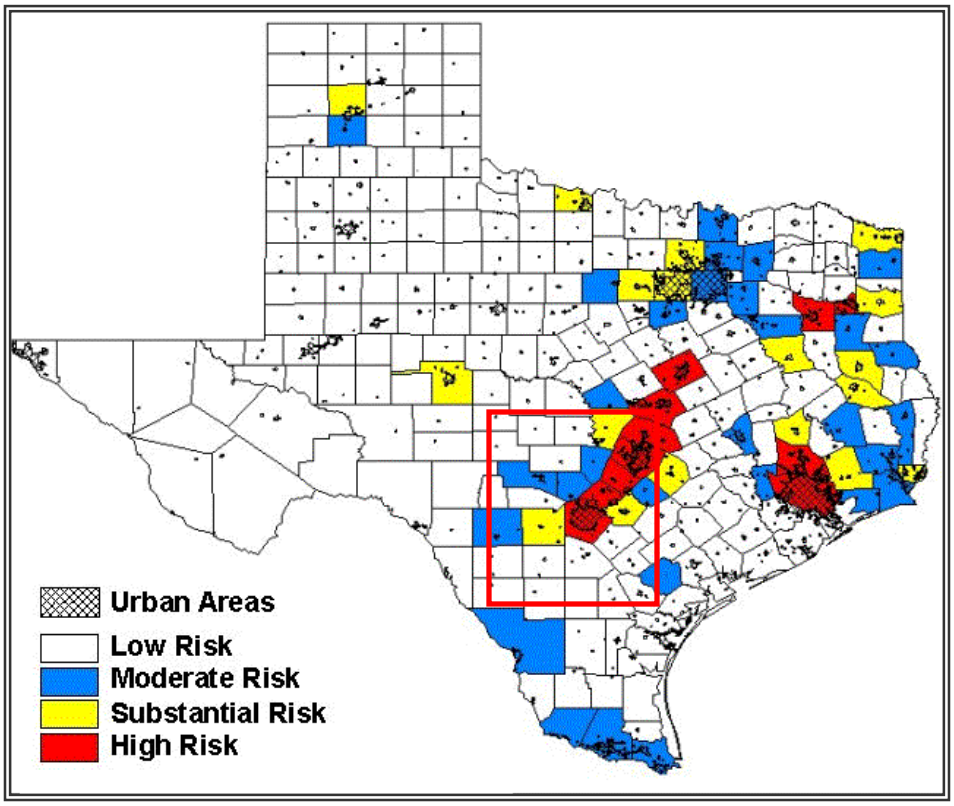
Substantial Risk: These are counties that have a moderate population and a high growth rate and are located near or in a high or moderate hazard fuel complex.

High Risk: These are counties that have high population numbers with moderate to high growth rates and are located near or in a high hazard complex.

This overall hazard rating is descriptive in nature and not predictive, based on wide ranging parameters. In most cases, the interface risk in a county will change based on the distribution of hazardous wildland fuels, population, and growth within the county. Keeping this in mind, counties that have an overall low hazard rating may have

isolated areas within the county that are at high risk. Just as counties identified as high risk may have isolated areas within the county that are at low risk. The statewide urban wildland interface risk assessment is an attempt to rank the state by county into risk categories based on population, growth rate, and hazardous wildland fuels. This assessment is intended to be used as a planning tool to develop and prioritize urban wildland interface fire mitigation and prevention strategies.

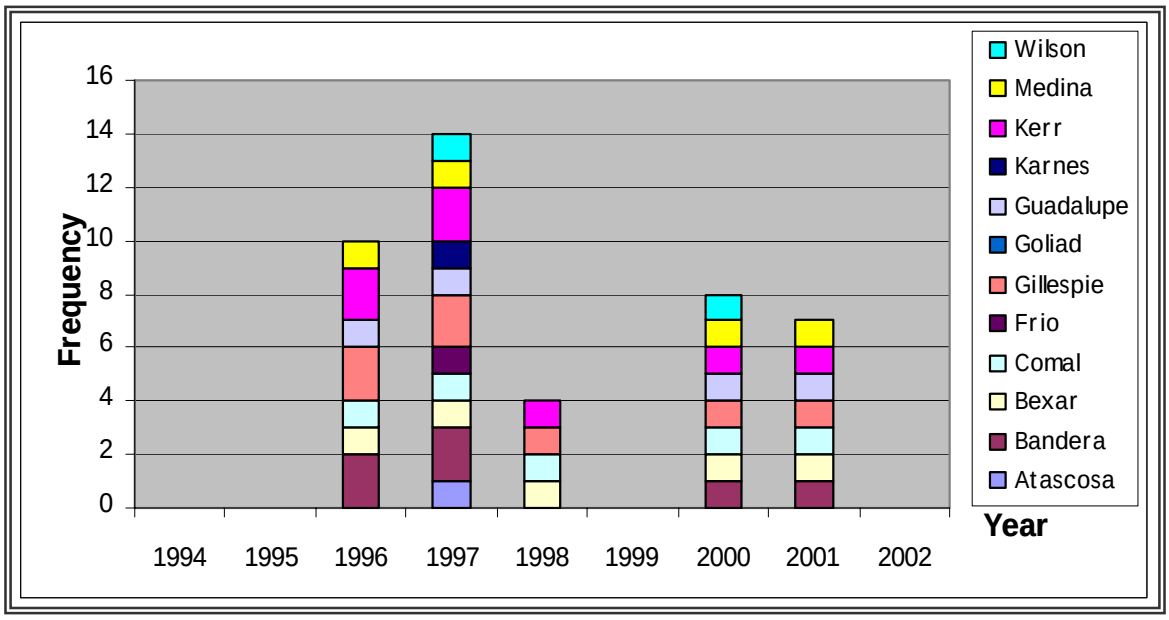
Figure 4.2-18. Risk for Urban and Wildfires



WINTER STORMS

Figure 4.2-19 shows the frequency of recent winter storm events in the Alamo Region. Historical records of winter storms prior to 1996 are incomplete.

Figure 4.2-19. Frequency of Recent Winter Storm Events



Significant Events

01/12/1985
A winter storm in the region dumped over 13 inches of snow. This was more snow than had ever fallen in the region for an entire winter season.

The following winter storm events have been recorded by the National Climatic Data Center since 1996:

02/01/1996
In Bandera, Bexar, Comal, Gillespie, Guadalupe, Kerr and Medina counties, rain changed to sleet and eventually snow. As the event spread eastward, the sleet formed sheets of ice over bridges and roadways. Nearly 700 vehicle accidents were reported in San Antonio. Property damage was estimated at $1.5 million, and crop damages were estimated at $20,000.

11/24/1996
Thunderstorms accompanied a very strong arctic cold front as it moved across the Bandera, Gillespie and Kerr counties during the early morning hours. Morning temperatures in the 60s and 70s across the Hill Country plunged into the 20s and 30s within two to three hours after frontal passage. Snow began to fall across the area a few hours after the front had passed, and continued falling into the evening. Snow depth was four (4) inches

along the edges of the snow area. Property damage was estimated at $80,000, and crop damages were estimated at $20,000.

01/07/1997
Widespread light rain began changing into sleet across Bandera, Gillespie and Kerr counties. The sleet developed into a wintry precipitation mixture of sleet, freezing rain and snow across the Hill Country as the upper level system continued to draw closer. Hundreds to thousands of limbs were lost across central Texas due to the weight of ice, sleet and snow. Property damage was estimated at $5 million, and crop damages were estimated at $100,000.

01/10/1997
A second strong cold front moved into central Texas on the evening of January 10, 1997, and again temperatures began to drop steadily across the area. Again, an upper level disturbance moving through the southwestern United States began to form widespread rain and showers as it approached south Texas on the 11th. By that evening, rain had begun to change to freezing rain across the Hill Country. By Sunday evening, the wintry mixture of sleet and freezing rain had spread across Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kerr, Medina and Wilson counties. By early on the morning of January 13, the precipitation had become primarily snow across the Hill Country with freezing rain and sleet continuing over the San Antonio area and eastward before it began to taper off. Property damage was estimated at $1 million, and crop damages were estimated at $20,000.

12/23/1998
Temperatures in the 70s plunged into the 20s by evening as an arctic cold front crossed through South Central Texas on its way to the Gulf of Mexico. North winds gusting to 30 and 35 MPH brought chill indices near the zero-mark. Spotty freezing rain and freezing drizzle on the morning of the 23rd began to cover roads and bridge, making driving very difficult in Bexar, Comal, Gillespie, and Kerr counties. Over 200 vehicle accidents were reported in the San Antonio area. Vehicular accidents accounted for dozens to hundreds of injuries, as well as one death in Guadalupe County and two in Bexar County. Several other injuries were reported as pedestrians slipped on icy pathways.

12/12/2000
Temperatures plunged rapidly into the 40s and 50s shortly after a cold front's arrival. Northerly winds gusting to 30 and 35 MPH further emphasized this dramatic temperature change. By mid-afternoon, temperatures over the Texas Hill Country had fallen below the freezing mark and light rain and drizzle had begun to change into freezing rain and freezing drizzle. The combination of freezing rain, freezing drizzle, and sleet continued to spread across Bandera, Bexar, Comal, Gillespie, Guadalupe, Kerr, Medina and Wilson counties, forcing the closing of numerous bridges and overpasses. Storm damage generally consisted of accidents on slick roads and trees and tree limbs toppling over on power lines.

11/29/2001
Very frigid arctic air moved southward into South Central Texas, as an upper level disturbance approached from the west. The disturbance began to produce widespread rain and showers that became a combination of sleet and snow as it fell through the cold near-surface air in Bandera, Bexar, Comal, Gillespie, Guadalupe, Kerr and Medina counties. Ice was reported up to an inch thick over the area and hundreds of automobile accidents were reported. Snow accumulation was two (2) inches in Hunt, in west central Kerr County.

DAM/LEVEE FAILURE

There is no historical evidence of complete dam failure in the Alamo Region. However, there is historical evidence of floodwaters crossing the spillways of dams, funneling additional floodwater downstream and increasing flood damages along the path of the rivers. For example, a lingering weather system dumped heavy rains on South Texas in early July 2002. The Comal Lake Dam in Comal County flowed through the dam spillway for the first time in its 45-year history, diverting water into the Guadalupe River. Medina Lake Dam in Medina County caused a scare and calls for evacuation where water raged over the spillway at a record 11 feet and flood waters came within 14 to 18 inches of overtopping the dam. Floodwaters also poured over the spillway of Canyon Lake Dam in Comal County, permanently changing the landscape and destroying homes.

According to the National Inventory of Dams, there are 80 known dams in the Alamo Region that are considered to be high risk for failure (see **Table 4.2-8** for county dam hazard data). Nearly 40 percent of dams in the area are considered to be high or significant hazard facilities.

Dam hazard definitions, as accepted by the National Interagency Committee on Dam Safety, are as follows:

1. LOW HAZARD POTENTIAL - Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.
2. SIGNIFICANT HAZARD POTENTIAL - Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.
3. HIGH HAZARD POTENTIAL - Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

Table 4.2-8. County Dam Hazard Data

Atascosa	3	14	34	51
Bexar	31	1	29	61
Frio	0	1	16	17
Goliad	0	0	5	5
Karnes	15	0	18	33
Medina	4	1	26	31

EARTHQUAKES AND SINKHOLES

Earthquakes

Though earthquakes are not likely to affect Texas, their effects have been felt throughout history. **Table 4.2-9** lists recorded earthquakes in the Alamo Area Council of Governments region.

Table 4.2-9. Recorded Earthquakes in the AACOG Region

08/16/1931	III	Fredericksburg	Gillespie	512
08/16/1931	III	Jourdanton	Atascosa	576
08/16/1931	IV	New Braunfels	Comal	593
08/16/1931	IV	San Antonio	Bexar	564
07/23/1983	III	Schertz	Guadalupe	91
03/03/1984	IV	Christine	Atascosa	7
03/03/1984	IV	Pleasanton	Atascosa	11
03/03/1984	III	Leming	Atascosa	24

Source: National Geophysical Data Center

Sinkholes

Sinkholes are of interest to Central and Western Texas because they are one of the predominant landform features of those areas of the state. Their development may be sudden and may result in property damage or loss of life. Portions of Gillespie, Kerr, Bandera, Medina, Frio, Comal, Bexar and Atascosa counties are located in karst regions, which are susceptible to cave and sinkhole development due to the geology and geomorphology of the area. However, no property damage or loss of life due to sinkholes in these areas has been recorded.

DATA SOURCES

American Society of Civil Engineers (ASCE), "Facts About Windstorms."
Web site: www.windhazards.org/facts.cfm

Bureau of Reclamation, U.S. Department of the Interior
Web site: www.usbr.gov

Federal Emergency Management Agency (FEMA)
Web site: www.fema.gov

National Climatic Data Center (NCDC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: http://lwf.ncdc.noaa.gov/oa/ncdc.html

National Geophysical Data Center, "Tsunamis and Tsunami-Like Waves of the Eastern United States"
Web site: http://www.ngdc.noaa.gov/seg/hazard/tsu.shtml

National Inventory of Dams, U.S. Department of the Interior
Web site: http://crunch.tec.army.mil/nid/webpages/nid.cfm

National Hurricane Center, National Oceanic & Atmospheric Administration (NOAA)
Web site: http://www.nhc.noaa.gov/

National Severe Storms Laboratory (NSSL), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: www.nssl.noaa.gov

National Weather Service (NWS), U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Web site: www.nws.noaa.gov

Storm Prediction Center (SPC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service
Web site: www.spc.noaa.gov

The Tornado Project, St. Johnsbury, Vermont
Web site: www.tornadoproject.com

United States Geological Survey (USGS), U.S. Department of the Interior
Web site: www.usgs.gov

RISK ASSESSMENT:
VULNERABILITY ASSESSMENT

High-level, detailed vulnerability assessments were completed for flood, hurricane winds, tornado, drought, hail, thunderstorms and earthquake due to the higher level of risk for these hazards compared to others. The loss estimates provided in this section were developed using available data, and the methodologies applied have resulted in an approximation of risk. These estimates should be used to understand relative risk from hazards and potential losses; however it is important to understand that uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from approximations and simplifications that are necessary for a comprehensive analysis (such as abbreviated inventories, demographics or economic parameters).

To conduct the risk assessment effort, two distinct hazard risk assessment methodologies were applied; utilizing both HAZUS®MH (FEMA's loss estimation software) and a statistical risk assessment methodology. Both approaches provide estimates for the potential impact by using a common, systematic framework for evaluation.

The HAZUSMH risk assessment methodology is parametric, in that distinct hazard and inventory parameters (for example, wind speed and building types) were modeled using the HAZUSMH software to determine the impact (damages and losses) on the built environment. The HAZUSMH software was used to estimate losses from wind (hurricane and tornado) and flood hazards.

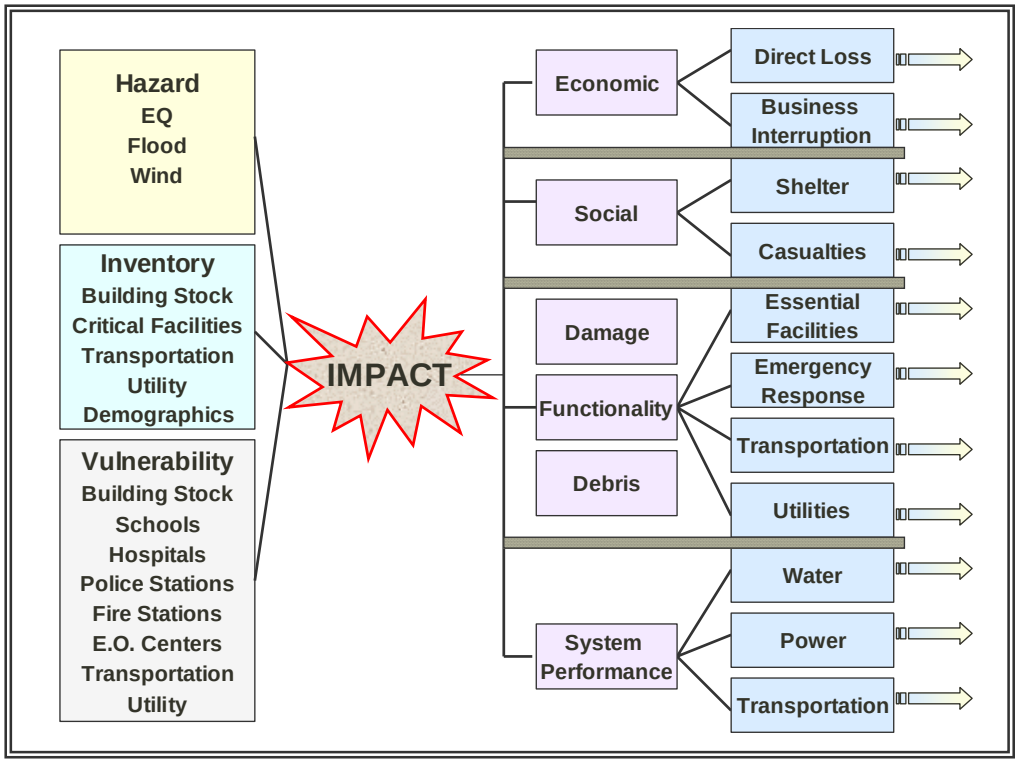
The second methodology, a statistical risk assessment methodology, was applied to analyze hazards of concern that are outside the scope of the HAZUSMH software. The HAZUS-driven methodology uses a statistical approach and mathematical modeling of risk to predict a hazard's frequency of occurrence and estimated impacts based on recorded or historic damage information.

The risk assessment methodologies used in this Plan are standardized, meaning they have been applied to all jurisdictions the same way, regardless of capability. It is understood that jurisdictions with higher capability could, and should, conduct a more detailed assessment. Likewise, jurisdictions with lower capability should strive to improve their own local risk assessment capabilities. However, using the standardized risk assessment approach gives all the participating jurisdictions a common starting point for assessing risks. The vulnerability assessment numbers will be improved by the time of the five-year update.

Explanation of HAZUS-MH Risk Assessment Methodology

HAZUSMH is FEMA's standardized loss estimation software program, built upon an integrated geographic information system (GIS) platform (**Figure 4.3-1**). This risk assessment applied HAZUSMH to produce regional profiles and estimate losses for three of the seven hazards addressed in this section: flood, hurricane winds and earthquake. At the time this analysis was completed, a new version of HAZUSMH, scheduled for a Fall 2003 release, was under development to better address potential losses from wind and flood hazards and to incorporate updated baseline data. Accordingly, various modules and alpha versions of the HAZUSMH software were used in combination to estimate losses from earthquake, wind, and flood hazards.

Figure 4.3-1. Conceptual Model of HAZUS^{MH} Methodology



Explanation of Statistical Risk Assessment Methodology

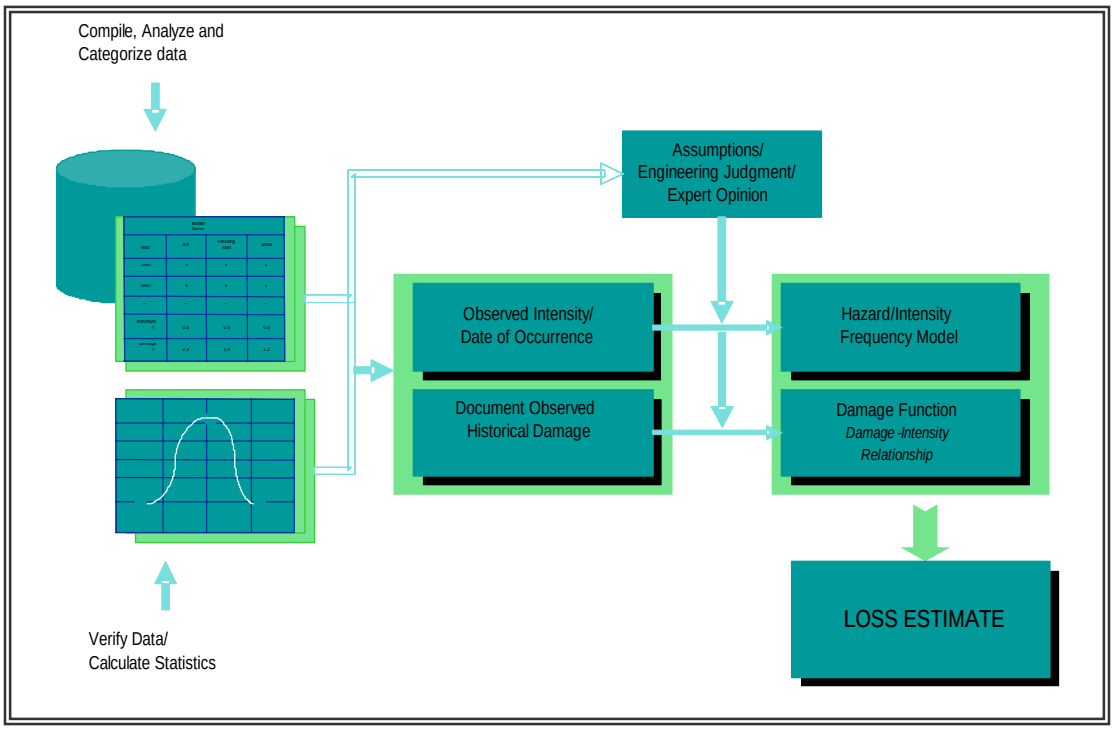
Risks associated with other natural hazards were analyzed using a statistical assessment methodology developed and used specifically for this effort. This approach is based on the same principals as HAZUS^{MH}, but does not rely on readily-available automated software. Historical data for each hazard are used and statistical evaluations are performed using manual calculations. The general steps used in the statistical risk assessment methodology are summarized below:

- Compile data from national and local sources;
- Conduct statistical analysis of data to relate historical patterns within data to existing hazard models (minimum, maximum, average, and standard deviation);
- Categorize hazard parameters for each hazard to be modeled (e.g., tornado);
- Develop model parameters based on analysis of data, existing hazard models, and risk engineering judgment;
- Apply hazard model including:
    - Analysis of frequency of hazard occurrence;
    - Analysis of intensity and damage parameters of hazard occurrence;
    - Development of intensity and frequency tables and curves based on observed data;

- Development of simple damage function to relate hazard intensity to a level of damage (for example, one flood = $ in estimated damages);
- Development of exceedence and frequency curves relating a level of damage for each hazard to an annual probability of occurrence; and
- Development of loss estimate.

Figure 4.3-2 illustrates a conceptual model of the statistical risk assessment methodology as applied to this risk assessment.

Figure 4.3-2. Conceptual Model of the Statistical Risk Assessment Methodology



The economic loss results are presented here using two interrelated risk indicators:

1) The Annualized Loss (AL), which is the estimated long-term value of losses to the general building stock in any single year in a specified geographic area (i.e., county).

2) The Annualized Loss Ratio (ALR), which expresses estimated annualized loss as a fraction of the building inventory replacement value.

The estimated Annualized Loss (AL) addresses the two key components of risk: the probability of the hazard occurring in the study area and the consequences of the hazard, largely a function of building construction type and quality, and of the intensity of the hazard event. By annualizing estimated losses, the AL factors in historic patterns of frequent smaller events with infrequent but larger events to provide a balanced presentation of the risk.

The Annualized Loss Ratio (ALR) represents the AL as a fraction of the replacement value of the local building inventory. This ratio is calculated using the following formula:

"ALR = ANNUALIZED LOSSES / TOTAL EXPOSURE AT RISK"

The annualized loss ratio gauges the relationship between average annualized loss and building replacement value. This ratio can be used as a measure of relative risk between areas and, since it is normalized by replacement value, it can be directly compared across different geographic units such as metropolitan areas or counties.

It is important to note that HAZUS-MH was used to produce "worst case scenario" results. The outputs in this document are considered to be the result of a worst-case scenario event for each hazard, and it is understood that any smaller events, which could occur would most likely create fewer losses than those calculated here.

This section provides information on hazard vulnerability in the Alamo Area Council of Governments area by jurisdiction (county). **Figure 4.3-3** shows the demographic distribution at the county level (based on Census 2000). The population in the region is expected to increase to over two million residents over the next 40 years.

Figure 4.3-3. Population Distribution (2000 Census)

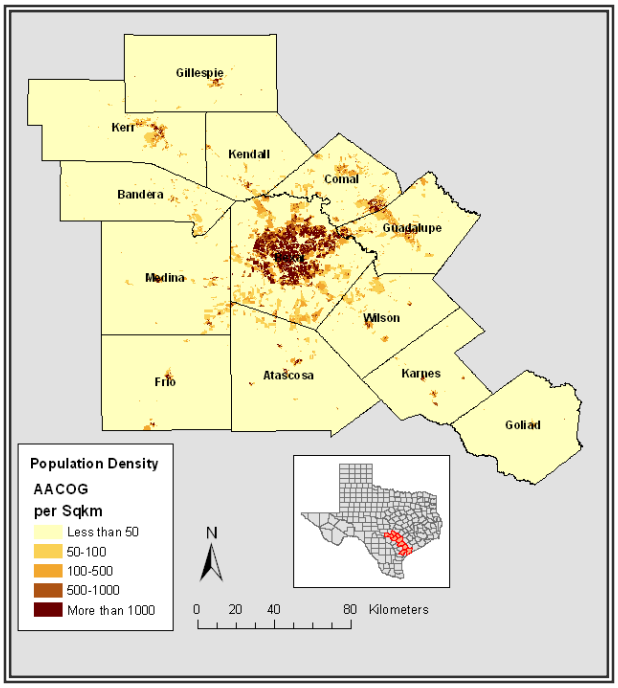


Table 4.3-1. Total Exposure

Atascosa	$2,917,010,000
Bexar	$200,955,030,000
Frio	$944,690,000
Goliad	$704,940,000
Karnes	$1,188,814,000
Kerr	$5,637,259,000
Wilson	$2,867,712,000

Table 4.3-2, shown below, provides a breakdown by county of the estimated number of facilities and dollar exposure that was the basis of the risk assessment presented in this section. This information was derived from HAZUS^{MH}, thus any values not available in the current version of HAZUS^{MH} are not shown.

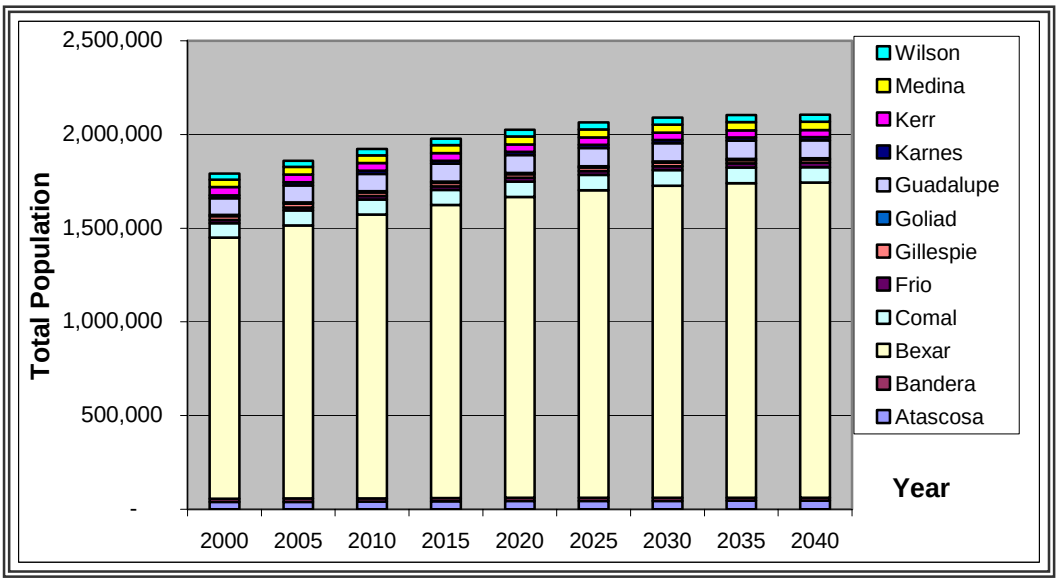
Table 4.3-2. Building Exposure Based on HAZUS^{MH}

Atascosa	38,628	13,699	$2,463,679,000	66	$311,157,000	51
Bexar	1,392,931	561,593	$170,753,585,000	5,691	$22,363,476,000	686
Frio	16,252	3,948	$799,080,000	22	$108,764,000	24
Goliad	6,928	3,151	$612,638,000	18	$63,388,000	6
Karnes	15,446	4,238	$965,796,000	37	$139,413,000	31
Kerr	43,653	19,522	$4,406,371,000	224	$936,520,000	48
Wilson	32,408	12,957	$2,510,329,000	46	$212,781,000	36

Atascosa	112	61	279	74	1	6
Bexar	278	-	1,019	314	46	161
Frio	161	18	213	56	-	-
Goliad	54	226	170	6	3	18
Karnes	118	68	192	-	2	3
Kerr	-	42	344	-	1	2
Wilson	120	-	202	-	3	4

Figure 4.3-4 shows current and projected total population for the region. This information, derived from 2000 Census Data and projections, indicates consistent growth in the area exceeding the 2,000,000 mark beginning around the year 2020.

Figure 4.3-4. Current and Projected Total Population for AACOG Area



FLOOD

Using FEMA Q3 Flood Data where available, along with the modeling approach as described earlier, losses were estimated using return period events ranging from 10-year to 500-year events. Assumptions based on engineering judgment were made where data were not readily available, namely related to the extent of flooded areas and depth of flooding. With this approach, annualized losses were calculated by accounting for the losses from different return period events and their respective annual probabilities of occurrence. (e.g., the annual probability of observing a 100-year flood is 1 percent).

In general, presenting results in the annualized form serves on three fronts:

(1) In essence, contribution of potential losses from all future disasters are accounted for with this approach;

(2) Results in this form from different hazards are readily comparable and hence easier to rank; and

(3) With respect to evaluating mitigation alternatives, utilization of annualized losses is the most objective approach to server for this purpose.

Coastal Flooding

Due to its geographic location, the Alamo Region does not experience coastal flooding.

Riverine Flooding

Riverine flooding poses a serious threat to most counties in the AACOG area. Heavy rainfall events can cause flash flooding—closing roads and endangering lives. Swift water rescues are frequently required during flash flood events. Digital floodplain mapping data (FEMA Q3 data) is currently available only for Kerr, Kendall (not participating in this Plan), Comal, Bexar, Guadalupe, Bandera and Medina counties in the Alamo Region (**Figure 4.3-5**).

Figure 4.3-5. Q3 Flood Data Available for AACOG Area

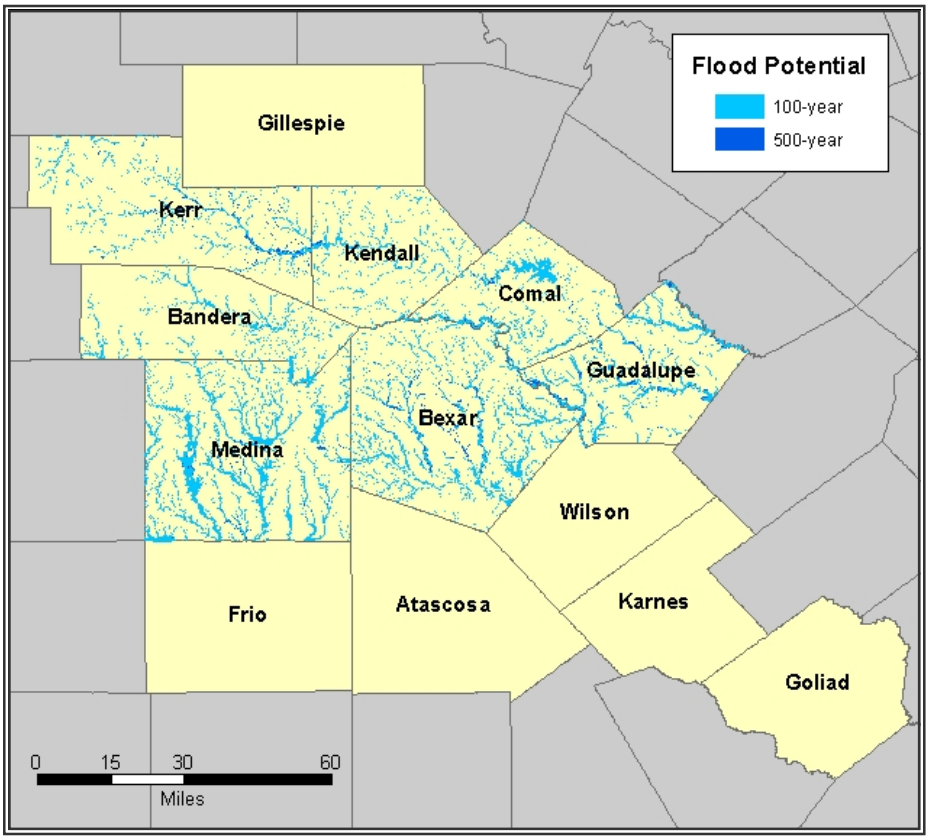


Table 4.3-3 shows vulnerability and estimated exposure by county due to riverine flooding, and **Table 4.3-3** shows the potential annualized losses by county. Due to the complexity of analyzing detailed flood risk for such a large planning area which encompasses numerous jurisdictions, it is important to note that this risk assessment is based on aggregated data and represents a base-level assessment for the region as a whole. Additional work will be done on an ongoing basis to enhance, expand and further improve the accuracy of the baseline established here and enhance the level of detail provided in future plan updates.

Table 4.3-3. Exposure at Risk by County (Flood)

Atascosa	3,258	834	$165,152,000	4	$7,598,000	3	$20,638,000
Bexar	104,313	31,757	$7,142,015,000	998	$1,308,169,000	626	$2,150,417,000
Frio	91	35	$6,542,000	1	$660,000	0	$0
Goliad	817	304	$61,366,000	1	$247,000	3	$8,945,000
Karnes	818	319	$62,371,000	4	$10,488,000	11	$40,706,000
Kerr	6,780	2,408	$488,714,000	51	$69,335,000	41	$144,254,000
Wilson	923	265	$53,342,000	1	$624,000	8	$31,123,000

Atascosa	1	$121,000	0	Not Applicable
Bexar	18	$346,633,000	7	Not Available
Frio	0	$0	0	Not Applicable
Goliad	1	$34,000	0	Not Applicable
Karnes	1	$9,844,000	1	Not Available
Kerr	1	$5,732,000	0	Not Applicable
Wilson	1	$1,697,000	0	Not Applicable

Table 4.3-4. Potential Annualized Losses by County (Flood)

Atascosa	$193,509,000	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Bexar	$10,947,234,000	$23,841,000	$4,232,000	$7,806,000	$953,700	$36,833,000	0.3365%
Frio	$7,202,000	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Goliad	$70,592,000	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Karnes	$123,409,000	$3,069,000	$243,000	$376,000	Not Available	$3,688,000	2.9884%
Kerr	$708,035,000	$2,429,000	$362,000	$844,000	$25,700	$3,661,000	0.5170%
Wilson	$86,786,000	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

Repetitive Loss Structures

Another way to gauge flood hazard risk is to identify and analyze the number of properties that have filed multiple flood insurance claims. Properties that meet this criterion are typically referred to as repetitive loss properties.[1] For planning purposes, information on repetitive loss properties in the AACOG region has been researched and information is available for each of the participating jurisdictions. To provide a frame of reference for this study, the Federal Emergency Management Agency's Repetitive Loss Properties Strategy, which is aimed at eliminating or reducing the damage to property and the disruption of life caused by repeated flooding of the same properties, was used for context. Through this federal initiative, 10,000 repetitive loss properties have been identified across the country as "target" repetitive loss properties. **Table 4.3-5** provides general summary information on these target properties within the AACOG planning area by jurisdiction, including the total number of properties on FEMA's target list, the number of losses paid to these structures, the dollar amount of cumulative losses paid, average annual insured loss, and the projected future damages that could be avoided if mitigation measures are taken to remove these properties from harm's way. Local officials maintain specific property information for these repetitive loss properties; however, details are not included in this Plan due to privacy restrictions.

[1] The National Flood Insurance Program (NFIP) definition of repetitive loss is, "any NFIP-insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced: a) four or more paid flood losses; or b) two paid flood losses within a 10-year period that equal or exceed the current value of the insured property; or c) three or more paid losses that equal or exceed the current value of the insured property." For purposes of the Community Rating System the definition of repetitive loss is, "a property for which two or more NFIP losses of at least $1,000 each have been paid within any 10-year rolling period since 1978."

Table 4.3-5. Targeted Repetitive Loss Properties

Atascosa	0	0	$0	$0	$0
Bexar	2	8	$607,277,000	$28,053,000	$348,105,000
Frio	0	0	$0	$0	$0
Goliad	0	0	$0	$0	$0
Karnes	0	0	$0	$0	$0
Medina	0	0	$0	$0	$0

HURRICANE WINDS

Due to the Alamo Region's geographic location, this area of the state is vulnerable to damage from hurricane winds and to inland impact from coastal storms. Those counties closer to the coast are more vulnerable than inland areas. **Figure 4.3-6** shows the potential hurricane winds that could affect the area for 100- and 500-year wind events.

Figure 4.3-6. Potential Hurricane Winds for 100- and 500-year Wind Events

100-year Wind Event **500-year Wind Event**

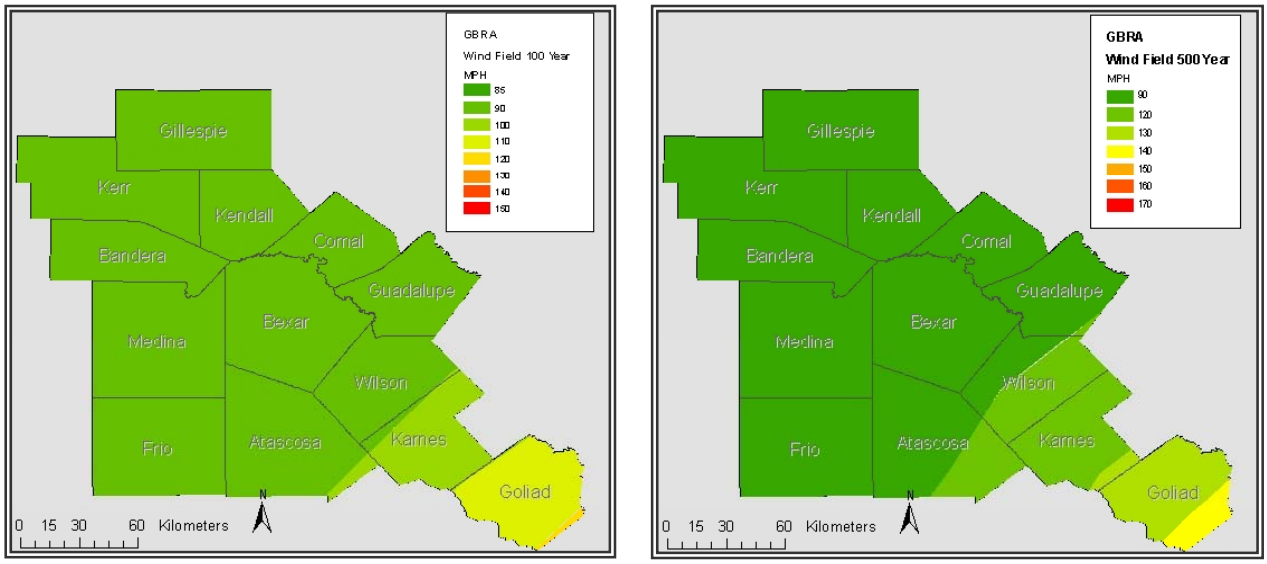


Table 4.3-6 shows estimated exposure and losses by county due to hurricane winds, and **Table 4.3-7** shows the potential damage to critical facilities by county.

Table 4.3-6. Estimated Exposure and Losses by County (Hurricane Winds)

Atascosa	$389,966	$329,361	$41,598	0.0134%
Bexar	$26,241,603	$22,297,763	$2,920,322	0.0131%
Frio	$123,079	$104,108	$14,170	0.0130%
Goliad	$781,790	$679,426	$70,298	0.1109%
Karnes	$587,970	$477,669	$68,952	0.0495%
Kerr	$300,356	$234,773	$49,898	0.0053%
Wilson	$792,876	$694,066	$58,831	0.0276%

Table 4.3-7. Critical Facilities Potentially Damaged by County (Hurricane Winds)

Atascosa	51	0	51	0	21	30
Bexar	686	0	686	0	5	681
Frio	24	0	24	0	0	24
Goliad	6	0	6	0	5	1
Karnes	31	0	31	0	26	5
Kerr	48	0	48	0	0	48
Wilson	36	0	36	0	25	11

[2] For the purposes of this table, negligible means less than $5,000 in damages may be incurred.

TORNADO

Historical evidence shows that most of the area is vulnerable to tornadic activity. This hazard can result from severe thunderstorm activity or may occur during a major tropical storm or hurricane. Because it cannot be predicted where a tornado may touch down, all buildings and facilities are considered to be exposed to this hazard and could potentially be impacted (and it is not possible to estimate the number of residential, commercial, etc buildings or facilities that may experience losses). The entire inventory listed in **Table 4.3-2** is vulnerable to tornadoes.

Figure 4.3-7 shows the probability of tornado occurrence and potential monetary damages for each county in the area. (Bandera, Frio and Guadalupe counties were not included in the study behind **Figure 4.3-7** because tornado damage in these counties has historically been negligible.)

Overall, Bexar County has the most vulnerability of those counties studies, with more than a 60 percent chance of being impacted by a tornado in any given year. All counties, except Bandera, Frio and Guadalupe, have less than a 10 percent probability in any given year of being impacted by a tornado causing more than $100,000 in damages.

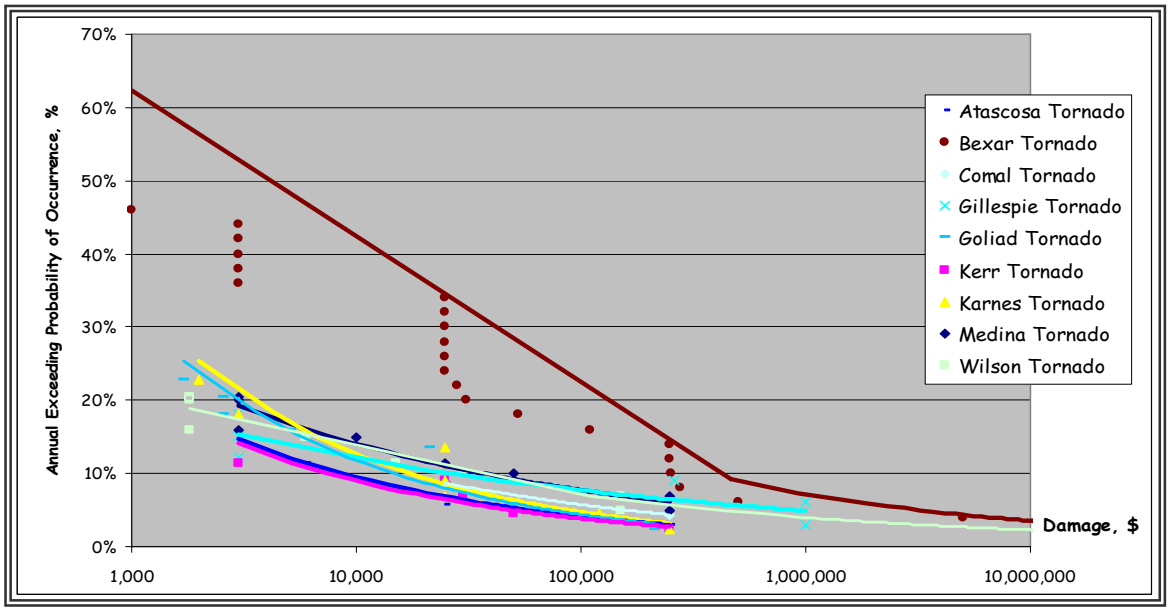


Figure 4.3-7. Probability of Tornado Occurrence and Potential Monetary Damages[3]

[3] Tornado damage in Bandera, Frio and Guadalupe counties is negligible and therefore not shown here.

Table 4.3-8 shows estimated potential annualized losses and percent loss ratio by county.

Table 4.3-8. Potential Annualized Losses and Percent Loss Ratio (Tornado)

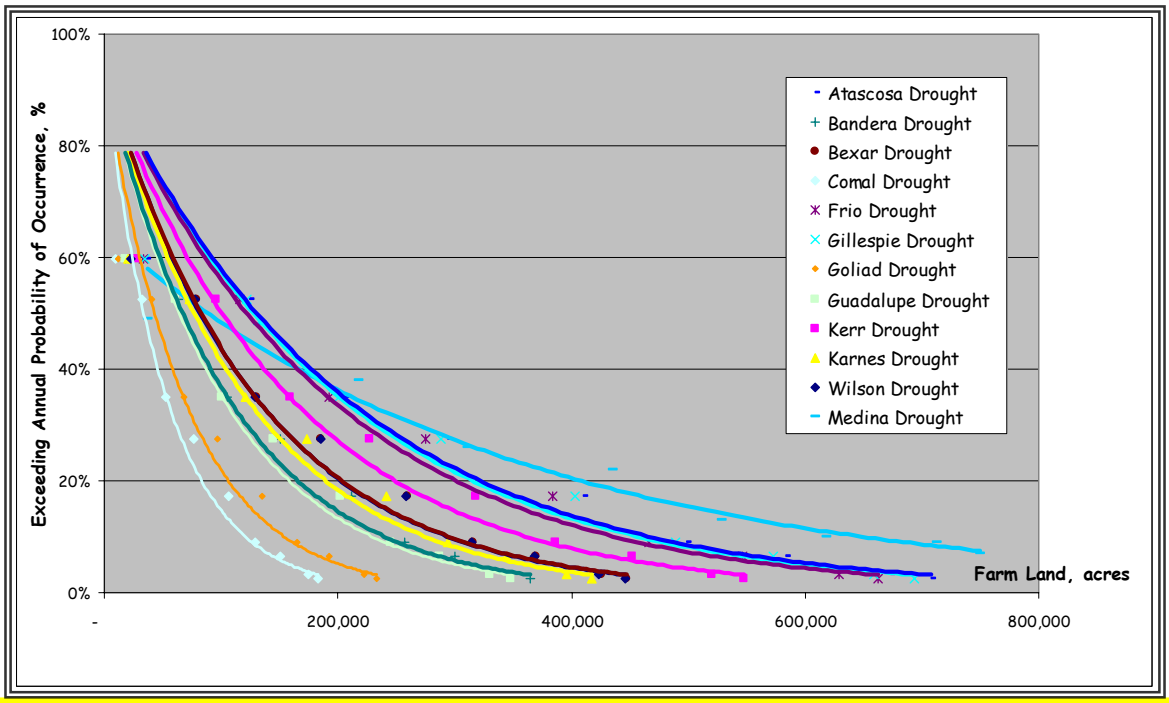
Atascosa	$2,917,010,000	$12,400	0.0004%
Bexar	$200,955,030,000	$1,713,320	0.0009%
Frio	$944,690,000	Negligible	0.0003%
Goliad	$704,940,000	$11,765	0.0017%
Karnes	$1,188,814,000	$13,841	0.0012%
Kerr	$5,637,259,000	$10,977	0.0002%
Wilson	$2,867,712,000	$449,210	0.0157%

[4] For the purposes of this table, negligible means less than $5,000 in damages may be incurred.

Drought

Figure 4.3-8 shows the annual probability of drought occurrence and potential farmland damages for each county in the area.

Figure 4.3-8. Annual Probability of Drought Occurrence and Potential Farm Land Damages



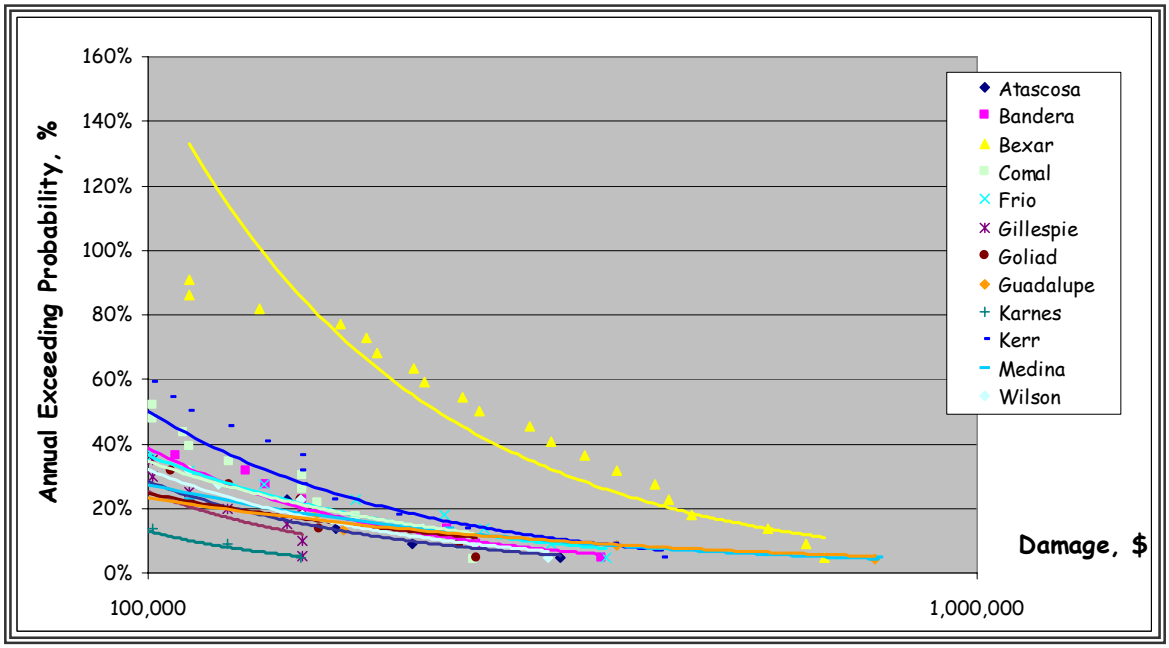
In a given year, most of the counties in the AACOG area have a less than 80 percent chance of drought occurrence. Medina County has less probability of occurrence at 60 percent annually. However, Medina County also has nearly 800,000 farm acres that could potentially be impacted if a severe drought event were to occur (less than 10 percent probability).

Although the AACOG area is vulnerable to drought, estimated potential losses are quite difficult to calculate because drought causes little damage to the built environment, mostly affecting crops and farmland. Therefore, it is assumed that all buildings and facilities are exposed to drought but would experience negligible damage in the occurrence of a drought event. The entire inventory listed in **Table 4.3-2** is vulnerable to drought.

HAIL

Figure 4.3-9 shows the annual probability of hail occurrence and potential monetary damages for each county in the area.

Figure 4.3-9. Annual Probability of Hail Occurrence and Potential Monetary Damages



Because it cannot be predicted where hail may fall, all buildings and facilities are considered to be exposed to this hazard and could potentially be impacted, so estimated annualized losses cannot be broken down into further categories (residential, commercial, etc.). The entire inventory listed in **Table 4.3-2** is vulnerable to hail. **Table 4.3-9** shows estimated exposure, potential annualized losses, and annualized percent loss ratio by county.

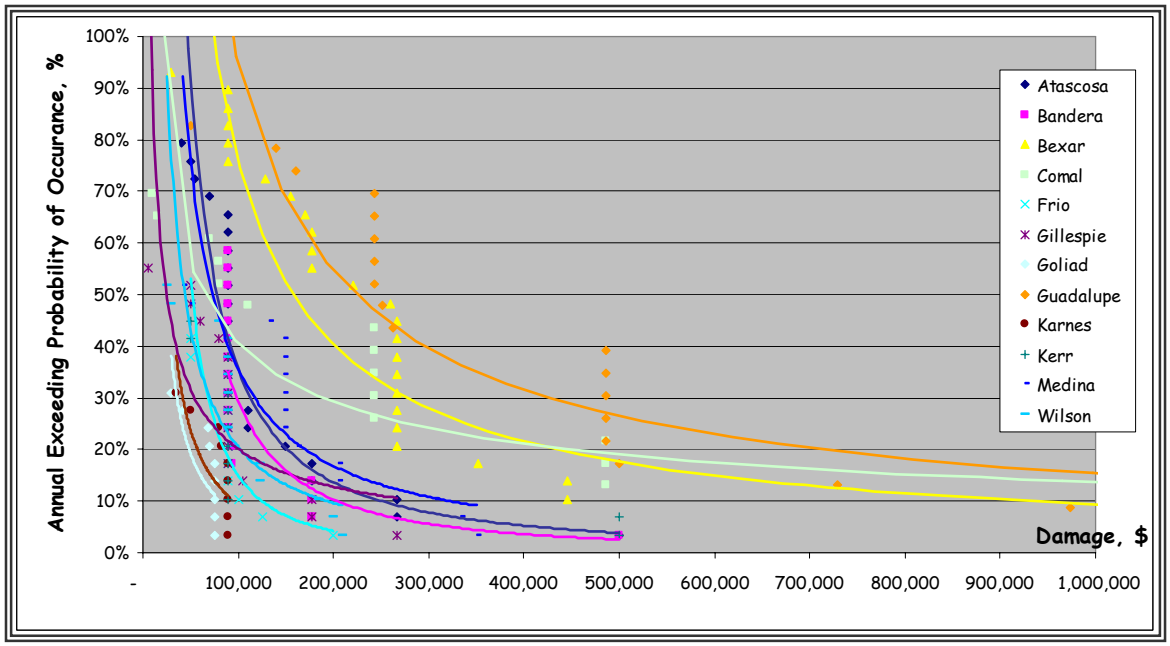
Table 4.3-9. Exposure, Potential Annualized Losses and Percent Loss Ratio by County (Hail)

Atascosa	$2,917,010,000	$78,227	0.00%
Bexar	$200,955,030,000	$298,510	0.00%
Frio	$944,690,000	$100,671	0.01%
Goliad	$704,940,000	$75,154	0.01%
Karnes	$1,188,814,000	$36,051	0.00%
Kerr	$5,637,259,000	$142,297	0.00%
Wilson	$2,867,712,000	$84,010	0.00%

THUNDERSTORMS

Figure 4.3-10 below shows the annual probability of thunderstorm wind occurrence and potential monetary damages for each county in the area. Guadalupe County is the most vulnerable, with a 100 percent chance in any given year of being impacted by thunderstorm winds creating over $100,000 in damages.

Figure 4.3-10. Probability of Thunderstorm Wind Occurrence and Potential Losses



Because it cannot be predicted where a thunderstorm might impact, all buildings and facilities are considered to be exposed to this hazard and could potentially be impacted (and it is not possible to estimate the number of residential, commercial, etc buildings or facilities that may experience losses). The entire inventory listed in **Table 4.3-2** is vulnerable to thunderstorms. **Table 4.3-10** shows estimated exposure, potential estimated annualized losses, and annualized percent loss ratio by county.

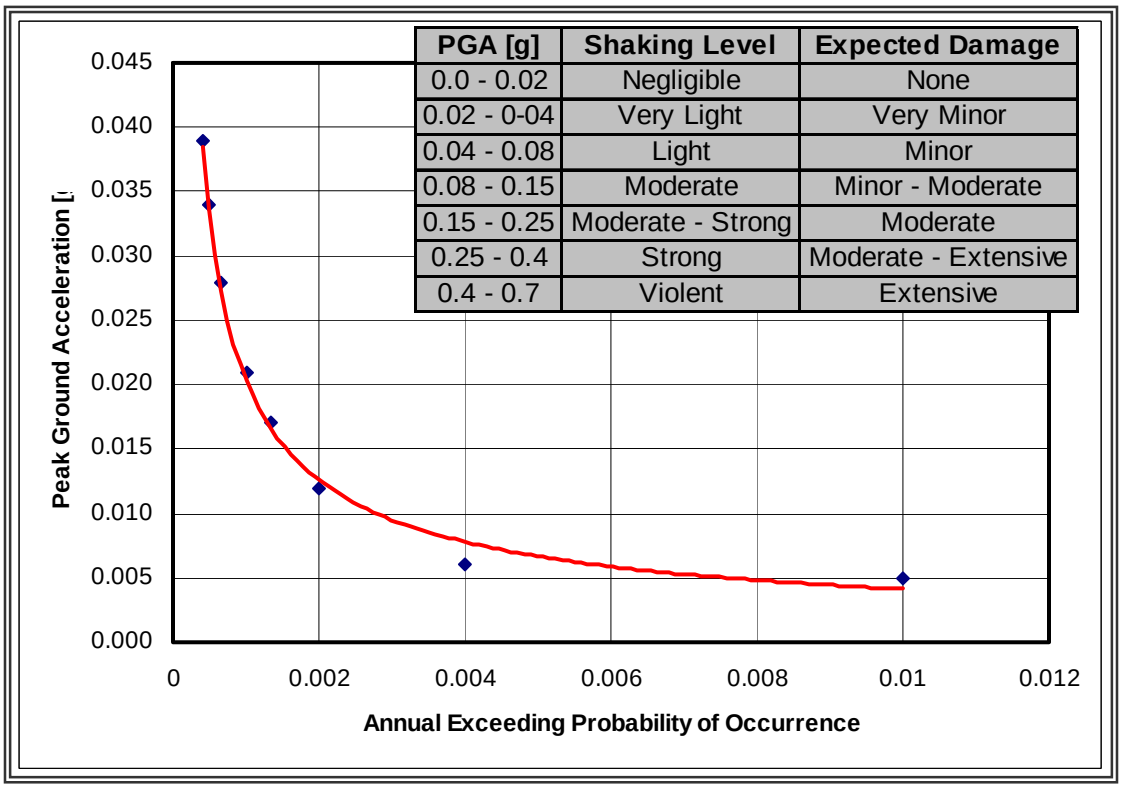
Table 4.3-10. Potential Annualized Losses and Percent Loss Ratio by County (Thunderstorm)

Atascosa	$2,917,010,000	$110,483	0.0038%
Bexar	$200,955,030,000	$364,069	0.0002%
Frio	$944,690,000	$43,034	0.0046%
Goliad	$704,940,000	$21,587	0.0031%
Karnes	$1,188,814,000	$25,397	0.0021%
Kerr	$5,637,259,000	$74,172	0.0013%
Wilson	$2,867,712,000	$59,004	0.0021%

EARTHQUAKE

Figure 4.3-11 shows the probability of earthquake occurrence and potential strength for the area. The highest potential peak ground acceleration (PGA) is less than 0.04g, meaning that, in the worst possible earthquake event in the area, the shaking would be very light and the damage would be very minor.

Figure 4.3-11. Probability of Earthquake Occurrence and Potential Strength

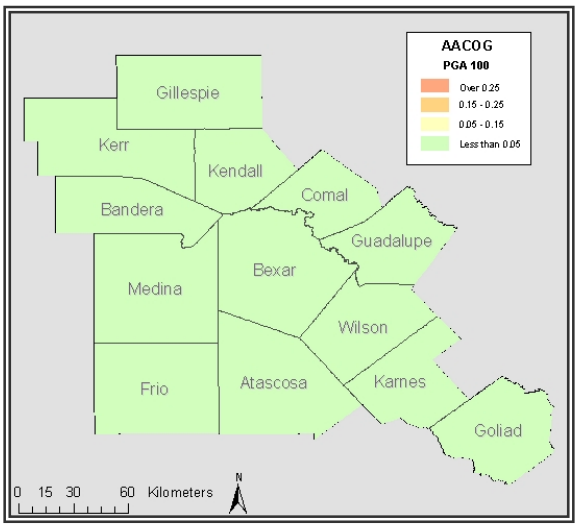


PGA [g]	Shaking Level	Expected Damage
0.0 - 0.02	Negligible	None
0.02 - 0-04	Very Light	Very Minor
0.04 - 0.08	Light	Minor
0.08 - 0.15	Moderate	Minor - Moderate
0.15 - 0.25	Moderate - Strong	Moderate
0.25 - 0.4	Strong	Moderate - Extensive
0.4 - 0.7	Violent	Extensive

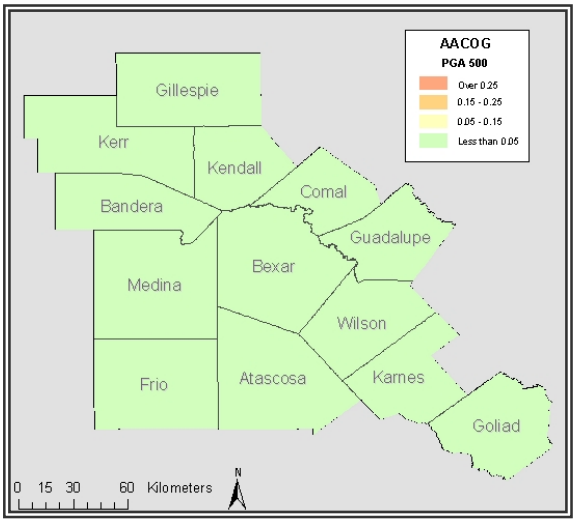
Figure 4.3-12 shows the potential ground motion for a 100-year and 500-year earthquake. Risk for earthquake for all counties in this area, as well as potential losses due to earthquake impact, is considered negligible. Although earthquakes are not likely to occur in the region, if one were to occur, the entire region would be at risk and therefore, the entire inventory listed in **Table 4.3-2** is vulnerable to earthquakes.

Figure 4.3-12. Peak Ground Acceleration (Ground Motion) for 100- and 500-Year Event

100-year Earthquake Event



500-year Earthquake Event



DAM/LEVEE FAILURE

Table 4.3-11 shows estimated dam failure exposure of people and buildings by county.

Table 4.3-11. Estimated Exposure of People and Buildings by County (Dam Failure)

Atascosa	6	$1,413,909	1	$238,610	12
Bexar	21,001	$6,555,748,174	68	$230,633,906	20,164
Frio	1	$12,877	0	$0	1
Goliad	25	$4,497,287	1	$147,313	58
Karnes	1	$343,034	0	$0	5
Kerr	104	$21,548,504	1	$321,063	162
Wilson	1	$93,071	1	$19,688	2

ENERGY PIPELINES

Energy pipelines cross many counties in South Texas. If any of these energy pipelines, oil or gas, were to rupture, such an event could endanger property and lives in the immediate area (within less than half a mile radius). **Table 4.3-12** shows estimated oil pipeline exposure of people and buildings by county, and **Table 4.3-13** shows estimated gas pipeline exposure of people and buildings by county. For both of these tables, oil and gas pipeline information was provided by the Department of Energy. The information was loaded into HAZUS and exposure numbers were taken by placing a half-mile (.5 mile) buffer around the energy pipelines.[5]

Table 4.3-12. Potential At Risk in Oil Pipeline Rupture by County

Atascosa	593	$64,327,000	11	$19,409,000	1,580
Bexar	6,094	$863,055,000	54	$113,843,000	16,413
Frio	219	$26,559,000	2	$2,692,000	828
Goliad	78	$10,181,000	0	$38,000	128
Karnes	152	$20,883,000	5	$7,249,000	355
Kerr	-	-	-	-	-
Wilson	1,118	$137,330,000	13	$23,886,000	2,862

[5] Wilson County indicated that they have received information that shows that they have gas pipelines running through the County. More specific information can be obtained through the Wilson County Emergency Management Office.

Table 4.3-13. Potential At Risk in Gas Pipeline Rupture by County

Atascosa	53	$6,276,000	1	$33,000	81
Bexar	-	-	-	-	-
Frio	4	$509,000	1	$587,000	5
Goliad	271	$34,355,000	1	$916,000	479
Karnes	50	$6,324,000	0	$0	117
Kerr	56	$7,753,000	1	$755,000	122
Wilson	-	-	-	-	-

OTHER HAZARDS

Though the Alamo Area Council of Governments recognizes that its region is vulnerable to other hazards such as wildfire, winter storms/freezes and sinkholes, a high-level detailed risk assessment was not completed due to the low level of risk and/or vulnerability for these hazards within the area as a whole as compared with other hazards. It can be assumed however that if any of these hazards were to occur in the Region, one specific area is no more vulnerable to the hazard than the rest of the region; therefore, the entire inventory listed in **Table 4.3-2** is vulnerable to these hazards.

UNIQUE RISKS FOR LOCAL JURISDICTIONS

During the Mitigation Strategy workshop, participants were provided a Unique Hazards Identification worksheet that asked questions about unique risks within individual jurisdictions[6]. Participants were to identify any localized risk areas that are not common to the entire region. No worksheets were returned for the entire region so it can be assumed that aside from the different flood hazard areas that are different in every jurisdiction, there are no specific unique risk areas in the region.

Each jurisdiction that participated in the planning process also completed local capability assessments (see Section 5,Capability Assessment) and was asked to provide information about unique hazards in their

[6] A copy of the Unique Hazard Worksheet can be found in Appendix D.

communities. Other local knowledge was gathered and combined with the aforementioned data to develop **Table 4.3-14**.

Table 4.3-14. Unique Hazards in the AACOG Region

Atascosa County			X	X			
City of Charlotte			X				
City of Christine			X				
City of Jourdanton			X			X	
City of Lytle							
City of Pleasanton						X	
City of Poteet							
Bandera County	X		X	X		X	
City of Bandera						X	X
Bexar County	X		X	X	X	X	X
City of Alamo Heights			X			X	X
City of Balcones Heights						X	
City of Castle Hills			X			X	
City of China Grove			X		X		
City of Converse					X	X	
City of Fair Oaks Ranch						X	
City of Grey Forest						X	X
City of Helotes			X			X	
City of Hill Country Village						X	
Town of Hollywood Park			X			X	X
City of Kirby							
City of Leon Valley			X			X	X
City of Live Oak							
City of Olmos Park						X	
City of San Antonio	X		X		X	X	X
City of Selma						X	X
City of Shavano Park			X			X	X
City of Somerset			X			X	

Jurisdiction	More than 10 Repetitive Loss Properties	Target 10,000 Repetitive Loss Properties	Undersized Culverts	No Building Codes	Local HAZMAT Concerns	Localized Drainage Issues	At-Risk Critical Facilities/ Infrastructure
City of Terrell Hills					X	X	X
City of Universal City						X	
City of Windcrest							
Comal County	X	X	X	X		X	X
City of Garden Ridge						X	X
City of Bulverde							
City of New Braunfels	X					X	
Frio County			X	X	X	X	X
City of Dilley			X			X	
City of Pearsall						X	
Gillespie County			X			X	
City of Fredericksburg					X	X	
Goliad County						X	X
City of Goliad						X	X
Guadalupe County	X	X		X		X	X
City of Cibolo							
City of Marion							
City of New Berlin						X	X
City of Schertz					X	X	X
City of Seguin	X					X	X
Karnes County				X		X	
City of Karnes City						X	
City of Kenedy						X	
City of Runge						X	
City of Falls City						X	
Kerr County				X		X	
City of Ingram						X	
City of Kerrville						X	

Jurisdiction	More than 10 Repetitive Loss Properties	Target 10,000 Repetitive Loss Properties	Undersized Culverts	No Building Codes	Local HAZMAT Concerns	Localized Drainage Issues	At-Risk Critical Facilities/ Infrastructure
Medina County				X			
City of Castroville						X	X
City of Devine							
City of Hondo							
City of LaCoste					X	X	
City of Natalia							
Wilson County			X	X		X	X
City of Floresville						X	X
City of La Vernia						X	
City of Poth						X	
City of Stockdale			X			X	X

Table 4.3-15 provides the hazard risk by jurisdiction for each hazard. For each jurisdiction, each hazard was given a rating of high, moderate, or low based on how vulnerable they are to that hazard or which how probable that hazard is to impact the jurisdiction.

Table 4.3-15

Hazard Risk by Jurisdiction

Atascosa County	**M**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Charlotte	**L**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Christine	**L**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Jourdanton	**M**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Lytle	**L**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Pleasanton	**H**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Poteet	**L**	**M**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
Bandera County	**H**	**L**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
City of Bandera	**H**	**L**	**H**	**L**	**H**	**L**	**M**	**L**	**L**	**L**
Bexar County	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Alamo Heights	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Balcones Heights	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Castle Hills	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of China Grove	**M**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Converse	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Fair Oaks Ranch	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Grey Forest	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Helotes	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Hill Country Village	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
Town of Hollywood Park	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Kirby	**M**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Leon Valley	**H**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**
City of Live Oak	**M**	**M**	**H**	**H**	**H**	**L**	**M**	**L**	**L**	**L**

Jurisdiction	Flood	Hurricanes and Coastal Storms	Severe Thunderstorms and Tornadoes	Wildfire	Drought/Extreme Heat	Winter Storms and Freezes	Hail	Erosion	Dam/Levee Failure	Earthquakes, Sinkholes and Landslides
City of Olmos Park	H	M	H	H	H	L	M	L	L	L
City of San Antonio	H	M	H	H	H	L	M	L	L	L
City of Selma	H	M	H	H	H	L	M	L	L	L
City of Shavano Park	H	M	H	H	H	L	M	L	L	L
City of Somerset	H	M	H	H	H	L	M	L	L	L
City of Terrell Hills	H	M	H	H	H	L	M	L	L	L
City of Universal City	H	M	H	H	H	L	M	L	L	L
City of Windcrest	M	M	H	H	H	L	M	L	L	L
Comal County	H	M	H	H	H	L	M	L	L	L
City of Garden Ridge	H	M	H	H	H	L	M	L	L	L
City of Bulverde	M	M	H	H	H	L	M	L	L	L
City of New Braunfels	H	M	H	H	H	L	M	L	L	L
Frio County	M	M	H	L	H	L	M	L	L	L
City of Dilley	L	M	H	L	H	L	M	L	L	L
City of Pearsall	L	M	H	L	H	L	M	L	L	L
Gillespie County	H	L	H	L	H	L	M	L	L	L
City of Fredericksburg	M	L	H	L	H	L	M	L	L	L
Goliad County	L	H	H	M	H	L	M	L	L	L
City of Goliad	M	H	H	M	H	L	M	L	L	L
Guadalupe County	H	M	H	H	H	L	M	L	L	L
City of Cibolo	M	M	H	H	H	L	M	L	L	L
City of Marion	M	M	H	H	H	L	M	L	L	L
City of New Berlin	H	M	H	H	H	L	M	L	L	L
City of Schertz	H	M	H	H	H	L	M	L	L	L
City of Seguin	H	M	H	H	H	L	M	L	L	L

Jurisdiction	Flood	Hurricanes and Coastal Storms	Severe Thunderstorms and Tornadoes	Wildfire	Drought/Extreme Heat	Winter Storms and Freezes	Hail	Erosion	Dam/Levee Failure	Earthquakes, Sinkholes and Landslides
Karnes County	H	H	H	L	H	L	M	L	L	L
City of Karnes City	L	H	H	L	H	L	M	L	L	L
City of Kenedy	M	H	H	L	H	L	M	L	L	L
City of Runge	M	H	H	L	H	L	M	L	L	L
City of Falls City	M	H	H	L	H	L	M	L	L	L
Kerr County	H	L	H	M	H	L	M	L	L	L
City of Ingram	H	L	H	M	H	L	M	L	L	L
City of Kerrville	H	L	H	M	H	L	M	L	L	L
Medina County	H	M	H	H	H	L	M	L	L	L
City of Castroville	H	M	H	H	H	L	M	L	L	L
City of Devine	M	M	H	H	H	L	M	L	L	L
City of Hondo	M	M	H	H	H	L	M	L	L	L
City of LaCoste	H	M	H	H	H	L	M	L	L	L
City of Natalia	M	M	H	H	H	L	M	L	L	L
Wilson County	M	M	H	L	H	L	M	L	L	L
City of Floresville	M	M	H	L	H	L	M	L	L	L
City of La Vernia	M	M	H	L	H	L	M	L	L	L
City of Poth	M	M	H	L	H	L	M	L	L	L
City of Stockdale	M	M	H	L	H	L	M	L	L	L

H = High

M= Moderate

L = Low

CONCLUSION

Based upon the outputs of the methodologies (including HAZUS^{MH}) described in the beginning of this section, the risk in each county in the Alamo Region can be rated on a scale of Low, Medium, High for each identified hazard (**Table 4.3-14**) based upon annualized losses and the annualized loss ratio. These ratings were calculated by taking the annualized loss ratio and multiplying it by 50,000 [multiply by 500 to get a proxy 500-year loss and multiply by 100 to get a percentage number]. The results of the calculation are then ranked as follows: Low risk equals 0 to 5 percent; Medium risk equals 6 to 20 percent; and High risk is any percentage over 20. For counties for which flood annualized losses were not available, the approximate ranking was derived from the percentage of the total building stock which is exposed to flood (counties with 5 percent or more located in the floodplain is considered High risk, less than 5 percent is ranked as Medium risk).

It should be noted that although some counties may have medium or low risk, hazard occurrence is still possible. Also, any hazard occurrence could potentially cause a great impact and losses could be extremely high (e.g., an F5 tornado or a Category 5 hurricane).

Table 4.3-14. Risk by County and by Hazard for the AACOG Region

Atascosa	High	Medium	High	High	High	Low
Bexar	High	Medium	High	Medium	Medium	Low
Frio	Medium	Medium	Medium	High	High	Low
Goliad	High	High	High	High	High	Low
Karnes	High	High	High	High	High	Low
Medina	High	Medium	Medium	High	High	Low

The vulnerability assessment for the AACOG area serves as a steppingstone for achieving an effective mitigation plan. Although these estimates are an approximation of risk, they allow jurisdictions to better prepare for future hazard events.

CAPABILITY ASSESSMENT

WHAT IS A CAPABILITY ASSESSMENT?

The purpose of conducting a capability assessment is to determine the ability of counties and municipalities in the Alamo Area Council of Governments region to implement a mitigation strategy.[1] As in any planning process it is important to determine what actions are feasible, based on an understanding of those departments tasked with their implementation. More specifically, the capability assessment helps to determine what mitigation actions are practical and likely to be implemented over time given the fiscal, technical, administrative and political framework of the community. It also provides an opportunity to assess existing plans, policies and processes in place. A careful analysis was conducted to detect any existing gaps, shortfalls or weaknesses within existing government activities that could exacerbate community vulnerability. The assessment also highlights positive measures already in place, which should continue to be supported and through future mitigation efforts.

COMPLETION OF THE CAPABILITY ASSESSMENT

The Disaster Mitigation Act of 2000 requires that local governments review and incorporate, if appropriate, existing plans, studies, reports and technical information into their hazard mitigation plans. PBS&J and H_2O Partners worked closely with AACOG officials to distribute a detailed *Local Capability Assessment Survey* to participating AACOG jurisdictions. The survey asked several detailed questions about existing local plans, policies, programs or ordinances that contribute to and/or hinder that community's ability to implement hazard mitigation actions. In addition, a series of questions were asked concerning each jurisdictions technical, fiscal, administrative and political capabilities. The survey results provided an extensive inventory of existing local plans, policies, programs and ordinances. Just as important, local officials conducted a self-assessment of their capabilities.[2]

The information provided by the participating jurisdictions was then incorporated into a database for further analysis. A general scoring methodology was applied to quantify and rank each jurisdiction's overall capability relative to one another. According to the scoring system, each plan, policy, ordinance or program was assigned a rating based on its relevance to hazard mitigation. Additional points were added based on each county and municipal government's self-assessment. A total score and general rating (Limited, Moderate or High) was then determined according to the number of points received. The general survey results have been summarized in **Table 5-1**. The results of the survey can also serve as a good source of introspection for those jurisdictions that

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[1] While the Interim Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, we believe that it is it a critical step to develop a mitigation strategy that meets the needs of each jurisdiction while taking into account their own unique abilities. However, the Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).

[2] A copy of the survey and the scoring system used to assess county and municipal capabilities has been included in *Appendix D*. Due to the length of the survey and the number of participating jurisdictions in the AACOG Plan, the completed surveys were not included in this document. Hard copies of the surveys can be obtained from the jurisdictions.

wish to improve their own capability. Identified gaps may be recast as specific mitigation actions, designed to address identified weaknesses.

An inventory and analysis of previously implemented mitigation actions was also included as part of the capability assessment. This information provides a region-wide perspective of the efforts taken to reduce the effect of natural hazards on the AACOG region and provides insight into the effectiveness of those efforts. Documenting past mitigation measures can also serve to help assess the degree to which local governments are willing to adopt future mitigation actions.

CAPABILITY ASSESSMENT FINDINGS

The findings of the capability assessment are described below. **Table 5.1** provides a jurisdictional overview of the plans and programs in place, followed by summary statistics of the *Local Capability Assessment Surveys*. Each county and municipality was asked to self-assess their capabilities, which are described next. As required by Annex P under the Texas Division of Emergency Management, completed Hazard Mitigation Grant Program (HMGP) projects are identified and described. Finally, conclusions are presented, including a discussion of the approach used to develop meaningful mitigation strategies based on the capability and risk assessment findings.

Table 5-1. Capability Assessment Findings

Charlotte	✓	✓	✓			✓	✓	✓	✓	✓								
Christine	✓	✓	✓			✓	✓	✓	✓	✓								
Jourdanton	✓	✓	✓			✓	✓	✓	✓	✓							✓	✓
Lytle	✓	✓	✓			✓	✓	✓	✓	✓							✓	
Pleasanton	✓	✓	✓			✓	✓	✓	✓	✓							✓	✓
Poteet	✓	✓	✓			✓	✓	✓	✓	✓							✓	
Bandera			✓	✓	✓	✓	✓					✓			✓		✓	✓
Alamo Heights		✓	✓	✓	✓	✓	✓	✓	✓		✓			✓		✓	✓	✓
Balcones Heights			✓											✓			✓	✓
Castle Hills	✓		✓	✓	✓	✓		✓		✓	✓			✓	✓		✓	✓
China Grove		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
Converse	✓	✓		✓		✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
Fair Oaks Ranch		✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	✓
Grey Forest		✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Helotes		✓		✓	✓	✓		✓		✓		✓		✓			✓	✓
Hill Country Village			✓									✓		✓			✓	✓
Hollywood Park														✓	✓		✓	✓

Jurisdiction	HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	BC
Kirby	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓
Leon Valley	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Live Oak	✓	✓			✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
Olmos Park	✓				✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
San Antonio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selma			✓	✓		✓	✓	✓	✓	✓				✓	✓	✓	✓	✓
Shavano Park			✓	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓
Somerset					✓							✓		✓	✓		✓	✓
Terrell Hills				✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓
Universal City					✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓
Windcrest		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Bulverde	✓	✓		✓		✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
Garden Ridge	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
New Braunfels	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Dilley											✓				✓		✓	
Pearsall																	✓	
Fredericksburg	✓	✓	✓		✓	✓	✓	✓		✓	✓			✓	✓	✓	✓	✓
Goliad																	✓	
Cibolo																	✓	
Marion	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓					✓	✓
New Berlin												✓		✓	✓			
Schertz			✓	✓		✓		✓		✓		✓		✓	✓		✓	✓
Sequin			✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
Karnes City				✓		✓						✓		✓		✓	✓	✓
Kenedy			✓	✓	✓				✓			✓			✓	✓	✓	✓
Runge																	✓	
Falls City												✓			✓	✓	✓	✓
Ingram	✓	✓		✓		✓						✓	✓		✓	✓	✓	✓
Kerrville	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Castroville			✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	✓

Jurisdiction	HMP	DRP	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG-PL	HPP	ZO	SO	FDPO	NFIP	BC
Devine	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
Hondo				✓		✓								✓	✓	✓	✓	✓
LaCoste						✓								✓	✓		✓	✓
Natalia			✓														✓	✓
Floresville														✓	✓		✓	✓
La Vernia			✓	✓										✓	✓	✓	✓	✓
Poth												✓	✓	✓	✓		✓	
Stockdale		✓		✓		✓					✓	✓		✓	✓	✓	✓	✓

EMERGENCY MANAGEMENT CAPABILITIES

Hazard mitigation is widely recognized as one of the four primary "phases" of emergency management. Other phases include preparedness, response and recovery. In reality, each phase is interconnected with hazard mitigation as **Figure 5.1** suggests. Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the *Local Capability Assessment Survey* asks several questions across a range of emergency management plans in order to assess the jurisdiction's willingness to plan and their level of technical proficiency.

Figure 5-1. Hazard Mitigation and the Phases of Emergency Management

Hazard Mitigation Plan: A hazard mitigation plan represents a community's blueprint for how they intend to reduce the impact of natural and human-caused hazards on people and the built environment. Elements of a hazard mitigation plan include a risk assessment, capability assessment and mitigation strategy.

- Survey results indicate that four (4) counties have developed hazard mitigation plans, while four (4) others are in the process of developing plans.
- Seventeen (17) percent of municipalities reported that they had a hazard mitigation plan in place at the time of the survey. An additional twenty-six (26) percent of municipalities indicated that they were currently developing plans, while twelve (12) percent reported that they were part of a county-level plan. Forty-five (45) percent of municipalities did not have a plan in place at the time of the survey.[3]

Disaster Recovery Plan: A disaster recovery plan serves to guide the physical, social, environmental and economic recovery of a community, including the physical reconstruction process following a disaster.

- Survey results indicate that seven (7) counties have developed disaster recovery plans.
- Seventeen (17) percent of the municipalities surveyed indicated that they had a disaster recovery plan in place, while fifteen (15) percent of municipalities reported that they were part of a county recovery plan. Forty-nine (49) percent of municipalities did not have a plan in place at the time of the survey.

Emergency Operations Plan: An emergency operations plan outlines the responsibilities of those responding to an emergency or disaster and the means by which resources are deployed.

- Survey results indicate that ten (10) counties have emergency operation plans.
- Thirty-eight (38) percent of municipalities reported that they have an Emergency Operations Plan. Two (2) percent of municipalities are in the process of developing a plan and twenty-one (21) percent are relying on the county. Thirty-nine (39) percent of municipalities do not have a plan.

Continuity of Operation Plan: A continuity of operations plan establishes a clear chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster.

- Survey results indicate that eight (8) counties have continuity of operation plans, while five (5) have not started a plan.
- Twenty-two (22) percent of municipalities reporting have continuity of operation plans. Three (3) percent of municipalities are currently developing plans and seventeen (17) percent are part of a county-level plan. Fifty-six (56) percent of municipalities reporting do not have a plan.

Radiological Emergency Plan: A radiological emergency plan delineates roles and responsibilities for assigning personnel and the means to deploy resources in the event of a radiological accident.

- Survey results indicate that eight (8) counties have a radiological emergency plan.
- Twenty-two (22) percent of municipalities have Radiological Emergency Plans, five (5) percent are developing plans, and seventeen (17) percent are relying on county plans. Fifty-six (56) percent of municipalities do not have a plan.

[3] Each participating county and municipality will have a hazard mitigation plan in place once this planning process is complete.

General Planning Capabilities

The implementation of hazard mitigation activities often involves individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists and others. Similarly, hazard mitigation planning cuts across multiple disciplines. As a result, the questions asked in the *Local Capability Assessment Survey* regarding general planning capabilities were designed to measure the degree to which mitigation is integrated into other planning efforts.

Regional Planning: Regional planning refers to any type of planning effort that involves a community working in conjunction with neighboring jurisdictions. For example, the development of this Hazard Mitigation Plan is a regional planning effort.[4]

- Survey indicates that fifty-four (54) percent of counties have participated in regional plans, while forty-six (46) percent have not collaborated in such efforts.
- Forty-three (43) percent of municipalities have participated in regional plans; fifty-seven (57) percent have not been involved in regional planning efforts.

Comprehensive Plan: A comprehensive plan establishes the overall vision for a community and helps to guide municipal decision-making.

- Survey results indicate that three (3) counties have comprehensive plans that address natural hazards while one (1) county has a comprehensive plan in place but it does not address hazards.
- Forty-three (43) percent of municipalities have a comprehensive plan, two (2) percent are developing a plan, and two (2) percent are part of a county-level plan. Fifty-three (53) percent of municipalities do not have a comprehensive plan in place.

Transportation Plan: A transportation plan identifies the means to gauge transportation demands and the options to meet those needs, while considering the social, economic and environmental characteristics of the area. The development of transportation networks can significantly impact the amount, type and location of future growth. As a result, transportation planning can have a dramatic impact on future hazard vulnerability.

- Survey results indicate that seven (7) counties have transportation plans.
- Eighty-three (83) percent of municipalities do not have a transportation plan.[5]

Capital Improvements Plan: A capital improvements plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism to guide future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

- Survey results indicate that five (5) counties have a capital improvement plan.
- Eighty-three (83) percent of municipalities indicated that they do not have a capital improvement plan.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often overlooked aspect of the historic preservation plan is the assessment of buildings

[4] The response rate from participating jurisdictions indicates that those who filled out the survey did not recognize the AACOG Regional Mitigation Plan as regional in nature.
[5] Many of the survey respondents considered the Transportation Plan to be part of the Emergency Plan (Annex S)—not a separate planning document.

and sites located in areas subject to natural hazards to include the identification of the most effective way to reduce future damages.[6] This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harms way.

- Two (2) of the counties surveyed have a historic presentation plan.
- Fifty-three (53) percent of the municipalities surveyed have a historic preservation plan.

Zoning Ordinances: Zoning represents the means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the public health, safety and welfare. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas.

- No counties have a zoning ordinance.[7]
- Fifty-three (53) percent of the participating municipalities have zoning ordinances.

Subdivision Ordinances: A subdivision ordinance is intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.[8]

- Survey results indicate that ten (10) counties have a subdivision ordinance.
- Fifty (50) percent of municipalities have subdivision ordinances.

Building Codes, Permitting and Inspections: Building codes regulate construction standards. Decisions regarding the adoption of building codes, the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- No counties reported the enforcement of building codes.[9]
- Sixty (60) percent of the municipalities have building codes.

Floodplain Management Capability

Flooding represents the greatest natural hazard facing the Nation and the AACOG planning area. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques.

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[6] See *Protecting the Past from Natural Disasters*. 1989. Nelson, Carl. National Trust for Historic Preservation: Washington, D.C.

[7] Counties do not have the statutory right to implement zoning (Chapter 232 of the Texas Local Government Code).

[8] For additional information regarding the use of subdivision regulations in reducing flood hazard risk, see *Subdivision Design in Flood Hazard Areas*. 1997. Morris, Marya. Planning Advisory Service Report Number 473. American Planning Association: Washington, D.C.

[9] Counties do not have the authority to adopt building codes. Some counties have circumvented this restriction by adopting Uniform Fire and Building Codes for commercial buildings and certain public facilities, stating that they are needed for fire safety.

Floodplain Management Plan: A floodplain management plan provides a framework for action regarding the corrective and preventative measures in place to reduce flood-related impacts.

- Six (6) counties have a floodplain management plan.
- Forty-one (41) percent of participating municipalities have a floodplain management plan.

Storm Water Management Plan: A storm water management plan is designed to address flooding associated with storm water runoff. The storm water management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

- Survey results indicate that five (5) counties have a storm water management plan.
- Seventy-one (71) percent of municipalities do not have a storm water management plan. Seventeen (17) percent of municipalities have a storm water management plan, seven (7) percent are currently developing one and five (5) percent are part of a county-level plan.

Flood Damage Prevention Ordinance: A local Flood Damage Prevention Ordinance is a tool used by counties and municipalities to regulate the type of construction that occurs in the floodplain.

- Survey results indicate that thirteen (13) counties have a Flood Damage Prevention/Management Ordinance.
- Sixty-seven (67) percent of the municipalities reported that they do not have a Flood Damage Prevention Ordinance.

Technical Capability

Technical capability can be defined as possessing the skills and tools needed to improve decision-making, including the development of sound mitigation actions. Technical capability can be measured across three primary elements: 1) geographic information systems (GIS) and database management; 2) grants management; and 3) hazard mitigation planning. Measuring the degree to which each element is found in the AACOG region was conducted using the *Local Capability Assessment Survey* and through discussions with county and municipal staff. Self-assessment survey questions addressing technical capability focused on the use of GIS, while questions addressing grants management and mitigation planning capability can be found in Part VI, Participation in Grant Programs and Projects and Part II, Hazard Mitigation Plans, Policies and Ordinances.

The analysis of the responses to the capability assessment survey indicated that there is generally a low technical capability at the county and municipal level. According to survey results, nine (9) counties rated their technical capability as low, while one rated themselves as having a moderate level of technical capability. Eight (8) of the forty-three (43) responding municipalities assessed themselves as having a moderate level of technical capability. The remainder of municipalities reported a low technical capability. The following factors affect technical capability:

- Information on previous disasters and mitigation projects;
- Expertise in mitigation planning; and
- Training to undertake GIS-driven risk assessments, identify potential mitigation projects, and develop hazard mitigation plans.

Recommendations: The result of the technical capability assessment highlights a belief among those who filled out the survey that the existing capability of most counties and communities could be improved. As a result,

local Mitigation Action Plans should be developed that strengthen technical capabilities. While there is a wide range of technical resources across county and municipal governments, the development of a systematic protocol for sharing resources could significantly increase the level of technical capability to analyze natural hazards and develop meaningful actions to reduce their impact. Building on the series of regional mitigation actions in the AACOG planning area could also be used to assist in this effort.

Administrative/Institutional Capability

Administrative and institutional capability was evaluated by reviewing county and municipal staffing and the existing organizational structure found across local government to implement mitigation strategies. The analysis of the responses to the *Local Capability Assessment Survey* indicated that there is a moderate administrative capability at the county level. Three counties reported a high administrative capability, three (3) counties reported a moderate level, and three (3) counties reported a low administrative capability. However, the survey response from the municipalities differed. Of the fifty-six (56) reporting municipalities, fifty-seven (57) percent rated their administrative capability as low, while twenty-nine (29) percent rated their administrative capability as moderate to undertake mitigation activities. Four (4) percent of municipalities reported a high level of administrative capability. The following are a summary of key issues affecting administrative capability:

- Limited integration of mitigation into county/local governments functions; and
- The level of interdepartmental coordination.

Recommendations: The result of the administrative capability assessment demonstrates that administrative capability varies geographically. Of those counties that possess high or moderate administrative capability, most municipalities within these counties rated themselves as maintaining a moderate level of administrative capability. Conversely, those counties with low capability tended to contain municipalities with low capability. In most cases this can be explained as a function of urban versus rural counties. Urban counties tend to have a higher level of administrative capability. The enhancement of administrative capability may be achieved through county-municipal training, outreach and mentoring of smaller rural jurisdictions as well as the sharing of resources, when appropriate.

Fiscal Capability

The ability to take action is often closely associated with the amount of money available to implement policies and projects.[10] This may take the form of grants received or state and locally based revenue. The costs associated with policy and project implementation vary widely. In some cases, policies are tied primarily to staff costs associated with the creation and monitoring of a given program. In other cases, money is linked to an

[10] Gaining access to federal, state or other sources of funding is often an overriding factor driving the development of hazard mitigation plans. However, an important objective of local governments seeking a more sustainable future is the concept of self-reliance. Over time, counties and municipalities should seek the means to become less dependent on federal assistance, developing a more diversified approach that assesses the availability of federal, state and locally generated funding to implement mitigation actions. Additional assistance may be available from the business and corporate sector as well as certain non-profit groups. This should be coupled with an attempt to identify mitigation measures that cost little or no money, yet may compliment the larger array of actions identified in the Plan.

actual project, like the acquisition of flood-prone homes, which can require a substantial commitment from local, state and federal funding sources.

The analysis of the responses to the capability assessment survey indicated that there is a low fiscal capability at the county and municipal levels respectively. Of the eleven (11) counties responding to this question, three (3) reported a moderate fiscal capability, and eight (8) counties self-assessed their fiscal capability as low. Eighty-four (84) percent of municipalities reported their fiscal capability as low, fourteen (14) percent rated their fiscal capability as moderate and two (2) percent rated their fiscal capability as high.

Recommendations: The factors used in the self-assessment of local capability should be used as a general guide to help craft mitigation actions that are achievable. When considering the effect of fiscal capability on the implementation of policies and projects, jurisdictions should ask several questions:

- Does the action require a monetary commitment or staff resources?;
- Can jurisdictions combine resources with other counties or municipalities to address identified problems?; and
- Is the jurisdiction willing to commit local revenue on a sustained or one time basis?

Political Capability

One of the most difficult and sensitive capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future events. Due to the low response rate to this question, it was not possible to rate the political capability of counties and municipalities to enact meaningful and proactive mitigation policies. However, the AACOG region has an extensive number of existing and completed mitigation projects, including several regional watershed-level efforts to reduce the impacts associated with flooding.

Recommendations: While county and municipal government officials were reluctant to self-assess their political capability, it is clear that a number of past projects indicate a general understanding of hazard mitigation, particularly as it relates to flood hazards. When possible, local governments who have implemented hazard mitigation projects should attempt to assess their effectiveness following future events. The ability to document mitigation projects and policies that work is a high priority among FEMA officials. Therefore, local officials should work with the Texas Division of Emergency Management and FEMA officials following disasters to evaluate past mitigation projects. The results should be presented to locally elected officials in order to provide real world examples of how mitigation can protect lives and property.

PREVIOUSLY IMPLEMENTED MITIGATION MEASURES

The success of future mitigation efforts in a community can be gauged by past efforts. Previously implemented mitigation measures indicate that there is, or has been in the past, some political desire to reduce the effects of natural hazards on the community. Past success of these projects can also be influential in building support for new mitigation efforts.

Hazard Mitigation Grant Program Projects

The Federal Emergency Management Agency's Hazard Mitigation Grant Program (HMGP) provides competitive funding to states and local governments for the implementation of long-term hazard mitigation measures following a presidential disaster declaration. Grants are awarded to permanently reduce or eliminate future damages and losses from natural hazards. According to the Texas Division of Emergency Management, there have been no HMGP projects completed in the region. However, there are several ongoing HMGP projects. They are listed in **Table 5-2**.

Table 5-2. HMGP Projects in the AACOG Region

Note: The information listed immediately below was taken from surveys completed by each jurisdiction.

Alamo Heights	Buyout of two residential properties in the 100-year floodplain.
Bexar County	The most recent HMGP project was the Lakewood Acres Property buyout (146 properties in the floodplain, $5,795,116). This project was initiated as a result of flooding in October 1998.
New Braunfels	Buyout program for flood damaged properties. Properties were damaged during the Flood of 2002.
Guadalupe County	NOAA Weather Radios, Guadalupe-Blanco River Authority (GBRA) Hazard Mitigation Plan
La Vernia	La Vernia received FEMA funds through a 2000 "Unmet Needs" program. The funds were used to acquire four (4) flood-damaged properties located in the 100-year floodplain. The City of La Vernia also applied for drainage improvement funds through the same program. The application is still pending.
Leon Valley	Household Hazardous Waste project—regarded as "somewhat successful"—this project did not receive the public participation that was anticipated.
San Antonio	Major buyout program following flooding in 1998.
Shavano Park	Nine projects have been applied for but none have been funded.

Jurisdiction	HMGP Project Description
Wilson County	
Windcrest	Citywide HAZMAT collection in March 2003. The program was very well received.

Public Assistance Program Projects

FEMA's Public Assistance (PA) grant program is available to states, local governments and eligible non-profits following a presidentially-declared disaster. Grants focus on emergency measures such as debris removal, costs associated with operational response, and the repair and reconstruction of damaged infrastructure. Information listed below was taken from surveys completed by each jurisdiction. The **Table 5-3** lists PA projects as supplied by the Texas Division of Emergency Management.

Table 5-3. PA Projects in the AACOG Region

Note: The information listed below was taken from surveys completed by each jurisdiction. The official list of PA projects as supplied by the Texas Division of Emergency Management can be found in Appendix D.

Atascosa County	Currently re-building county roads that were damaged in the July 2002 floods (DR-1425).
Bexar County	There are currently 75 percent FEMA reimbursable PA programs underway to mitigate further flood damage to Schaeffer Road at Cibolo Creek (estimated cost $300,000) and to mitigate flood damage to Montgomery Road south of the Medina River (estimated cost $200,000).
New Braunfels	Awaiting further information.
Fredericksburg	See Gillespie County.
Hollywood Park	Floods of 2002 FEMA 1425-DR-TX

La Vernia	City received funds from FEMA 1257 after the October 1998 flood for repair of several city streets, debris removal, equipment and labor.
San Antonio	Significant number of projects from the 1998 and 2002 floods.
Seguin	Several projects.
Wilson County	Several as a result of 2002 flooding.

U.S. Army of Corps of Engineers Studies, Plans and Projects

The United States Army Corps of Engineers (USACE) provide a variety of hazard mitigation services. Examples include developing plans, studies and projects related to the reduction or elimination of long-term risk to human life and property. The information provided in **Table 5-4** was submitted by the jurisdictions in their *Local Capability Assessment Survey*.

Table 5-4. Corps of Engineers Studies, Plans and Projects in the AACOG Region

Note: Information listed below was taken from surveys filled out by each jurisdiction.

Alamo Heights	Feasibility study underway with USACE for drainage improvements along Austin Highway on Lower Broadway in Alamo Heights.
Bandera County	San Antonio River Authority—Medina Study
Bulverde	Receiving assistance on the Lewis Creek Watershed Project
Converse	A study was done by USACE on the Martinez Creek Dam #5—study done in 2002/2003. SARA in cooperation with the NRCS is currently evaluating Martinez Dam #4 for rehabilitation to meet current standards.
Live Oak	In progress—SARA is working on a project in the City Park at the dam. SARA in cooperation with the NRCS is currently under design for the rehabilitation of Martinez Dam #5 to meet current standards.
Seguin	Glen Cove Lift Station Relocation and Water Plant Intake Bank Erosion
Universal City	USACE participated in the rehab of Cibolo Creek following the flood of 1998.

Texas Water Development Board Studies, Plans and Projects—Flood Mitigation Assistance Program

In the State of Texas, the Texas Water Development Board (TWDB) administers the FEMA Flood Mitigation Assistance (FMA) program. FMA provides funding for projects and plans that are aimed at reducing the number of insured properties that have incurred repetitive flood losses. The TWDB also provides Flood Protection Planning Grants to communities to support regional flood protection planning efforts. The grants rely on state-appropriated funds. Eligible activities under Flood Protection Planning Grants include studies and analyses to: identify problems resulting from or relating to flooding; determine needs of the affected public; and identify potential solutions.

Table 5-5. FMA Grantees in the AACOG Region

San Antonio	FMA Planning Grant	1998	$46,652
Garden Ridge	FMA Planning Grant	1998	$22,501

Table 5-6. TWDB Flood Protection Planning Grants in the AACOG Region

Pre-Disaster Mitigation Program; Property Protection—Mitigation Program

The Pre-Disaster Mitigation (PDM) Program is designed to provide states and communities with funding to implement cost-effective hazard mitigation activities. Eligible activities may include the acquisition or elevation of flood-prone properties, retrofitting structures, education and outreach efforts, and mitigation planning.[11]

Table 5-7. PDM Program Activity in the AACOG Region

Note: Information listed below was taken from surveys filled out by each jurisdiction.

Bexar County	Bexar County is participating along with AACOG, SARA, and the City of San Antonio (and other AACOG region counties and municipalities) in a $150,000 PDM funded program to produce a Regional Mitigation Action Plan.
Stockdale	Domestic Preparedness money will be used to purchase a decontamination trailer ($51,512) and emergency response equipment ($48,916).

Table 5-8. Master Drainage and Storm Water Management Plans in the AACOG Region

Note: Information listed below was taken from surveys filled out by each jurisdiction.

Alamo Heights	Sewer line televising program in planning stage to assess condition of existing sewer lines.
Comal County	Plan in place
Floresville	Drainage project north of town implemented by the Texas Department of Transportation to alleviate flooding in low-lying areas of the Lodi section of town.
Gillespie County	Master plan originally formed in 1985 and again in 1996. There are current Drainage and Storm Water Management ordinances.
Kerrville	Storm water drainage master plan dated 1983.
La Vernia	Currently awaiting approval of drainage funding through "Unmet Needs" program.
Live Oak	The city has a master drainage plan and a storm water management plan.

[11] Pre-Disaster Mitigation funding was provided to AACOG by FEMA and Texas DEM in order to develop this plan.

Jurisdiction	Description
New Braunfels	Plan has been formulated but not adopted.
Schertz	Under development. Recently approved assessment of storm water fees to fund drainage improvement projects.
Stockdale	Drainage Improvement Project—awaiting approval/instructions on application for permit. Involves 1,000 feet of land that will be cleared.
Windcrest	Current master drainage and storm water plans are effective in channeling excess water to storm channels. Reassessment of storm water plans is conducted on an ongoing basis.

Table 5-9. Comprehensive and Capital Improvements Plans in the AACOG Region

Note: Information listed below was taken from surveys filled out by each jurisdiction.

Alamo Heights	City Hall complex renovation project. Ongoing water and street improvement projects.
Bulverde	In development.
Dilley	Planning Study 1998.
Fredericksburg	See Gillespie County.
Gillespie County	The current comprehensive and capital improvement projects are all part of the 1996 Master Plan that was compiled by the county and the City of Fredericksburg.
Kirby	Street and drainage.
Leon Valley	Currently capital improvement plans are in use and being implemented.
Lytle	Adding water lines to circle city with larger mains.
New Braunfels	Plans in place.
Poteet	Construct 300,000-gallon storage tank and rehab existing tank. Construct new sewer plant and rehab existing plant. Reconstruct existing streets and paved unpaved streets.

Jurisdiction	Description
Schertz	
Somerset	Drainage issues on 1st Street
Stockdale	Serve all areas of Stockdale with water, sewer and natural gas. All streets to be paved and curbed. Improvements to park area. Attract new businesses. Promote improved emergency fire and medical services and implement a local police department. Improve distribution system as necessary. Improve drainage and acquire flood-prone property.
Windcrest	Plans are effective in mitigating the effects of hazards in the community.

For additional information regarding comprehensive and capital improvement plans, see *Appendix C*.

The table below provides information on local building and fire codes within the region. Where available, the date and type of codes in use has been listed, including a description of the inspection and permit process. If available, the number and qualifications of inspectors have been listed, as well as the number of building starts and inspections.

Table 5-10. Building and Fire Codes in the AACOG Region

Note: This is an abbreviated version of the information concerning building and fire codes. Complete data is maintained in a set of Microsoft® Excel® spreadsheets separate from this Plan.

Atascosa County	NA	NA
City of Christine		
City of Lytle		
City of Poteet		
City of Bandera	Yes	1997 Southern Standard Building Code
City of Alamo Heights	Yes	International Building Code (Code of Ordinances, City of Alamo Heights)
City of Castle Hills	Yes	International Building Code 2000
City of Converse	Yes	International Building Code (2002 Edition)—National Electric Code along with Fire Code and Life Safety Code
City of Fair Oaks Ranch	Yes	2000 International Residential Code, 2000 International Building Code

Jurisdiction	Adopted Building Codes	Current Building Code (Date and Type)
City of Helotes	Yes	International Building Code—2000, International Residential Code 2000
City of Hollywood Park	Yes	Uniform Building Code 1985
City of Leon Valley	Yes	Uniform Building Code, Uniform Plumbing and Mechanical Codes, the National Electric Code and the National Fire Code—when these codes were initially adopted, the city also included a section in the ordinance which states "and subsequent additions or alterations to these codes," which means that they are automatically updated when a new issue is published.
City of Olmos Park	Yes	Uniform Building Code, Adopted September 13, 1979
City of Selma	Yes	International Building Code, adopted 2001
City of Somerset	Yes	1991 Southern Building Code
City of Universal City	Yes	IBC, IRC and supplemental codes 2000, adopted May 2003 and October 2002 respectively
Comal County	No	NA
City of Bulverde	Yes	ICC—Effective 2002
Frio County	No	NA
City of Pearsall	No	
City of Fredericksburg	Yes	Standard Building Code adopted in the 1960s and used until the International Building Code was adopted in 2001
City of Goliad	No	NA
City of Cibolo		
City of New Berlin	No	NA
City of Seguin	Yes	2000 International Building Code

Jurisdiction	Adopted Building Codes	Current Building Code (Date and Type)
Karnes County		
City of Karnes City	Yes	International Building Code, March 26, 2002
City of Runge		No answer
Kerr County	No	NA
City of Kerrville	Yes	International Building Code 2002
City of Castroville	Yes	International Residential Building Code 2002—Standard Building Code (Commercial) amended through 1997
City of Hondo		
City of Natalia	Yes	Southern Building Code and International Building Code
City of Floresville	Yes	International Building Code July 10, 2003
City of Poth	No	NA

Building Code Effectiveness Grading Schedule

Municipalities were evaluated using the Building Code Effectiveness Grading Schedule (BCEGS). The Insurance Services Office (ISO) has developed a method to assess the effectiveness of municipal building codes, including the degree to which they are enforced. The development and enforcement of sound building codes can help predict how structures will withstand the impacts associated with disasters such as hurricanes or tornadoes. Following the voluntary assessment, ISO staff analyzes the results and assigns a grade based on a 1 to 10 scale. A grade of 1 represents an exemplary commitment to their building code; whereas a grade of 10 means that there is no recognizable enforcement. It is up to the insurance industry to provide premium credits based on the findings. The results of those jurisdictions that agreed to submit to the evaluation are listed below.

Table 5-11. BCEGS Ratings in the AACOG Region

Charlotte	Atascosa				X			1996
Jourdanton	Atascosa			X				1996
Lytle	Atascosa	7	7					1996
Pleasanton	Atascosa			X				1996
Poteet	Atascosa				X			1996
Bandera	Bandera	6	6					1996
Alamo Heights	Bexar			X				1996
Balcones Heights	Bexar	6	6					1996
Castle Hills	Bexar	6	6					1996
Converse	Bexar	7	7					1996
Leon Valley	Bexar			X				1996
Live Oak	Bexar	5	5					1999
San Antonio	Bexar	8	8					1996
Schertz	Bexar	6	6					1999
Selma	Bexar	5	5					2002
Terrell Hills	Bexar	7	7					1999
Universal City	Bexar	7	7					1996
Windcrest	Bexar				X			1996
Hill Country Village	Bexar			X				1997
Hollywood Park	Bexar			X				1996
New Braunfels	Comal			X				1996
Dilley	Frio				X			1996
Pearsall	Frio			X				1996
Fredericksburg	Gillespie	5	5					2002
Goliad	Goliad				X			1996

Jurisdiction	County	Personal Rating	Commercial Rating	Chose not to participate	No recognized program	Not Applicable	Not listed	Most Recent Date
Marion	Guadalupe			X				1996
Seguin	Guadalupe	5	5					2001
Karnes City	Karnes			X				1996
Kenedy	Karnes				X			1996
Runge	Karnes				X			1996
Kerrville	Kerr	5	5					2002
Castroville	Medina	NR	7					1996
Hondo	Medina	8	8					1996
Floresville	Wilson	7	7					1999
Poth	Wilson				X			1996
Stockdale	Wilson	Not rated	9					1996

Floodplain Management Programs in the AACOG Region

Sound floodplain management involves a series of programs designed to reduce flood-related damages. Programs such as the National Flood Insurance Program (NFIP), the Community Rating System (CRS), and the Flood Mitigation Assistance (FMA) program provide the framework needed to implement a successful floodplain management program. The NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. In order for a county or municipality to join the NFIP, they must adopt a Local Flood Damage Prevention Ordinance, which requires jurisdictions to follow established minimum building standards in the floodplain.[12] Another key service provided by the NFIP is the mapping of identified flood hazard areas. Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk and set flood insurance rates. The maps also provide an important tool to educate residents, government officials and the business community about the likelihood of flooding in their community.

[12] House Bill 1018 requires Texas cities and counties to join the NFIP. The 77th Legislature of the State of Texas amended Subchapter I, Chapter 16, Water Code, by adding Section 16.3145 to read as follows: "The governing body of each city and county shall adopt ordinances or orders, as appropriate, necessary for the city or county to be eligible to participate in the National Flood Insurance Program...not later than January 1, 2001."

Table 5-12. Summary of NFIP Policies and Claims by County in the AACOG Region (As of September 30, 2003)

Atascosa	110	$11,519,000	18	$203,935,000
Bexar	4,116	$616,272,000	1,338	$19,181,187,000
Frio	38	$2,072,000	5	$14,654,000
Goliad	13	$684,000	11	$324,235,000
Karnes	36	$2,512,000	10	$96,018,000
Kerr	593	$80,182,000	176	$1,921,462,000
Wilson	126	$15,035,000	39	$1,456,014,000

An additional indicator of floodplain management capability is the number of participants in the NFIP's Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined actions that go beyond the minimum requirements of the National Flood Insurance Program. Each of the 18 activities, or measures, is assigned points. As points are accumulated and reach identified thresholds, communities may apply for a reduced CRS class. Class ratings, which run from 1 to 10, are tied to flood insurance premium reductions. Therefore, as class ratings decrease, the percent reduction in flood insurance policies held in that community decreases (**Figure 5-2**).

Figure 5-2 CRS Premium Discounts

1	45%
3	35%
5	25%
7	15%
9	5%

The majority of counties and municipalities participating in the AACOG Regional Mitigation Action Plan participate in the National Flood Insurance Program. Thirteen counties and ninety-three (93) percent of municipalities participate in the NFIP.[13] According to respondents, no counties or municipalities participate in the NFIP's Community Rating System (CRS).

Table 5-13: Floodplain Management Program Information for AACOG Jurisdictions

Note: This is an abbreviated version of the information concerning floodplain management programs. Complete data is maintained in a set of Microsoft® Excel® spreadsheets separate from this Plan.

Atascosa County	Yes	A	County Court Order	June 10, 1996
City of Christine	No	Non-participant	N/A	N/A
City of Lytle	Yes	A	N/A	N/A
City of Poteet	Yes	A	N/A	N/A
City of Bandera	Yes	A	None	N/A
City of Alamo Heights	Yes	B	Flood Damage Prevention and Control, Chapter 7 of the Code of Ordinances	N/A
City of Castle Hills	Yes	A	No answer to any of the survey questions.	N/A
City of Converse	Yes	B	None	N/A
City of Fair Oaks Ranch	Yes	A	City Ordinance 75-15	October 1, 2002
City of Helotes	Yes	A	Floodplain Management Ordinance	September 8, 1988, amended October 22, 1998

[13] Some jurisdictions surveyed do not participate in the NFIP due to the lack of mapped Special Flood Hazard Areas or the belief that they do not face a significant flood risk. However, localized flooding may occur regardless of existing streams, rivers or low-lying areas. Furthermore, homeowners are not eligible to maintain flood insurance unless the jurisdiction in which they own property participates in the NFIP.

Jurisdiction	NFIP Participant	CRS Class	Current Floodplain Management Ordinance/Court Orders	Date Adopted
City of Hill Country Village				
City of Hollywood Park	Yes	B	N/A	N/A
City of Leon Valley	Yes	B	Floodplain Management Ordinance	1974 (amendments as needed up to year 2000)
City of Olmos Park	Yes	A	Answered that they have no ordinance.	
City of Selma	Yes	A	N/A	N/A
City of Somerset	Yes	A	Answered that they have no ordinance.	N/A
City of Universal City	Yes	A	Flood Damage Prevention Ordinance	June 1989, amended December 1995
Comal County	Yes	C	Floodplain Management Ordinance	1991
City of Bulverde	Yes	A	Floodplain Management Ordinance	Unknown
Frio County	Yes	A	None	N/A
City of Pearsall	Yes	A	N/A	N/A
City of Fredericksburg	Yes	A	N/A	N/A
City of Goliad	Yes	B	Floodplain Management Ordinance	April 19, 1986

Jurisdiction	NFIP Participant	CRS Class	Current Floodplain Management Ordinance/Court Orders	Date Adopted
Guadalupe County				
City of Cibolo	Yes	A	N/A	N/A
City of New Berlin	No	No hazard area	N/A	N/A
City of Seguin	Yes	C	Chapter 54 of City Code	N/A
City of Karnes City	Yes	A	Flood Damage Prevention Ordinance	April 9, 1985
City of Runge	Yes	A	Flood Damage Prevention Ordinance	No answer
Kerr County	Yes	B	N/A	N/A
City of Kerrville	Yes	B	Flood Damage Prevention Ordinance #98-16	1998
City of Castroville	Yes	A	Flood Damage Prevention Ordinance	N/A
City of Hondo	Yes	B	N/A	N/A
City of Natalia	Yes	A	Answered that they have no ordinance.	N/A
City of Floresville	Yes	A	Floodplain Ordinance 151, Amendment 196	December 17, 1987; May 9, 2002
City of Poth	Yes	A	None	No answer

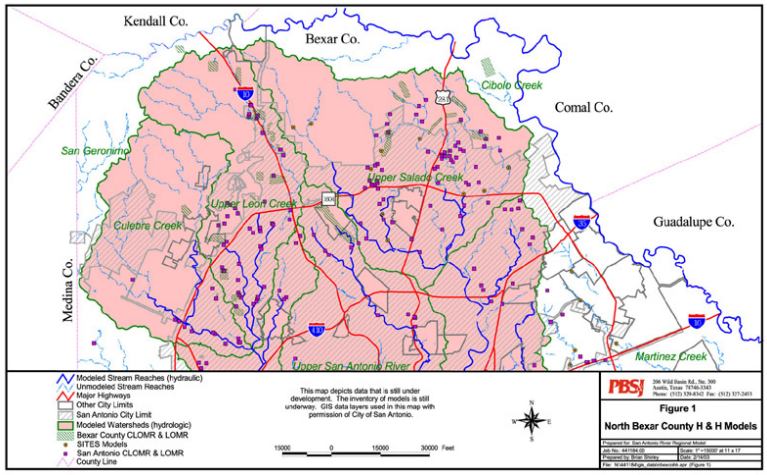
Community Assistance Visits

State and federal floodplain management officials occasionally perform Community Assistance Visits (CAVs). A CAV is performed to review the local floodplain management program and note any deficiencies. AACOG officials sent a letter to FEMA requesting information on CAVs conducted over the past 15 years for the participating jurisdictions. FEMA responded that they could not provide this information because of limited manpower and because community files are purged on a regular basis.

SPECIAL PROJECTS IN THE AACOG REGION

San Antonio River Basin Regional Modeling Project

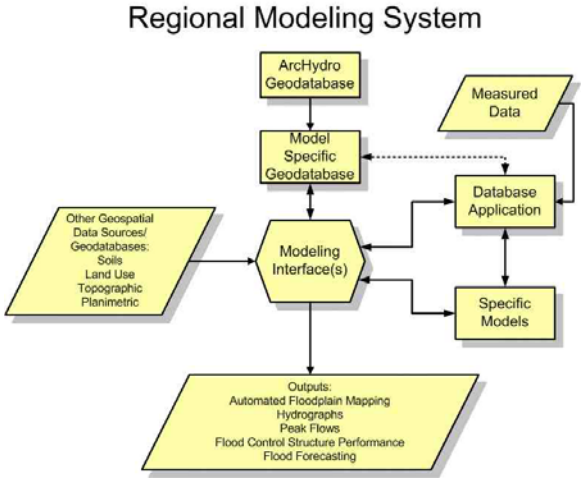
Client: San Antonio River Authority
Contact Person/Phone Number: Mr. Steve Graham/ (210) 227 1373
Completion Date: Scheduled for June 2003
Project Description: PBS&J's Water Resources and Information Solutions Divisions are presently providing engineering and GIS services to the San Antonio River Authority (SARA) for development of a regional watershed modeling system framework for the 4,000-square-mile San Antonio River Basin. The modeling system and overall regional program is a joint effort between the City of San Antonio, Bexar County, and SARA and will be used to better manage and control flooding and water quality issues in Bexar County and the entire basin. This effort is the initial phase in a three-year program focused on development of a GIS-based watershed modeling system that will include quantity and quality capabilities. As part of the overall work effort, the PBS&J Team will inventory, review, assess and make recommendations related to existing studies and maps, as well as hydrologic, hydraulic, and water quality models for all sub-watersheds in the 100-mile-long river basin. Another key element of the project has been to develop procedures for establishing watershed geodatabases using the Arc Hydro data management system. This system provides spatial, time and flow linkages between the HEC-RAS and HEC-HMS models. PBS&J will also develop a future program work plan that will include, among other items, digital mapping, water quantity and quality modeling, remote sensing, and flood alert and river crest forecasting.



The Bexar County portion of the work is being performed through a cooperative regional approach that was recently initiated to implement a consistent, unified and equitable flood control, drainage and storm water program (The Regional Management Program) for the citizens of Bexar County. The goal of this program is to improve the quality of life, protect life and property, and provide safe transportation during heavy rain and flood events. The Regional Management Program will address both water quality and water quantity issues. SARA has been tasked to do the regional planning and prioritization of

flood control projects in the entire basin with special attention and coordination within Bexar County and the City of San Antonio.

The regional modeling system being developed by the PBS&J Team will employ innovative and efficient modeling and GIS procedures. To assist in developing such procedures, the Project Team is working with Dr. David Maidment of the University of Texas and Dr. Francisco Olivera of Texas A&M. These professors are assisting PBS&J with incorporating Arc Hydro capabilities and model/data linkages into the modeling system. The modeling system is be used by SARA, the City of San Antonio, Bexar County and other parties/entities to analyze the impacts of proposed development, evaluate and prioritize capital improvement projects, establish flood alert and river cresting prediction procedures as well as develop and update Federal Emergency Management Agency (FEMA) flood maps. Major sub-basins within the San Antonio River Watershed include the Medina River, Leon Creek, Salado Creek, the Olmos/Upper San Antonio River and Cibolo Creek.



Although contracting with SARA, PBS&J is communicating and coordinating with other entities such as the U.S. Army Corps of Engineers (USACE), Natural Resource Conservation Service (NRCS), National Weather Service (NWS), FEMA, Texas Department of Transportation (TxDOT), Texas Commission of Environmental Quality (TxCEQ), San Antonio Water Systems (SAWS), Bexar Metropolitan Water District, and various suburban cities in Bexar County. PBS&J has also led the creation of local focus groups for hydrology/hydraulic modeling, water quality modeling and GIS system evaluations. These focus groups meet every two to three weeks to discuss project initiatives and progress as well as provide input to the ultimate decision makers at SARA, the City of San Antonio and Bexar County. Additionally, PBS&J has made, and will continue to make presentations to citizen groups and elected officials.

The project's basic services include the following major tasks:

- Inventory all relevant models and data within Bexar, Medina, Bandera, Wilson, Karnes and Goliad counties that pertain to water quality and water quantity including digital elevation models (DEMs), aerial surveys, orthoquad photos, GIS data, rain gauge locations and data, river gauge locations and data, HEC-1, HEC-HMS, HEC-RAS, GEO-RAS, HSPF, BASINS and previous water quality and quantity studies and master plans;
- Review existing models and data for geographical limits, scope of work, consistency between similar model types and general standardization (or lack thereof);
- Investigate the technical feasibility of linking existing and proposed models spatially; where data fields are shared on a GIS platform such as ArcHydro, EquIS, or other GIS interface products;
- Recommend software, hardware, and remote-sensing architecture required to carry out the project vision of a dynamic, real-time, GIS-based model that is continuously updated and can be used as a tool to evaluate proposed development, revise FEMA maps, and prioritize capital projects through benefit-cost analysis, determination of dependent relationships between projects and other factors to assist decision making in assessing the technical attributes of projects;

- Make technical recommendations as to the best strategy to improve flood alert and river cresting forecasting in the entire San Antonio River Basin, including the potential need of additional rain and river stage/flow gauges;
- Recommend areas within the basin where additional or revised models and/or terrain data will be required due to issues of adequacy or compatibility of current information;
- Develop the program and modeling standards for design and usage of the regional water quantity and water quality models, as well as the GIS database;
- Attend all public meetings, citizen group meetings, and design meetings as deemed necessary by the Management Committee; and
- Interface and coordinate with other governmental entities as required.

Design of a Regional Storm Water Detention Facility for the Leon Creek Watershed at Culebra Road and Loop 410 - San Antonio, Texas

Client: City of San Antonio, Texas
100 Military Plaza
San Antonio, TX 78205
Client Contact: Dean Bayer, P.E.
Contact Phone Number: (210) 207-6939
Completion Date: Construction to be completed in early 2004
Construction Cost: $3 million

As part of the City of San Antonio's initiative to establish a regional storm water detention program in the Leon and Olmos Creek watersheds, PBS&J was selected to assist the city in the design of flood control associated with developing multi-objective facilities that also provide recreational, water quality and/or other benefits. The city anticipates that this new program will provide an attractive alternative to using onsite detention facilities throughout their metropolitan area.

PBS&J has completed the planning and engineering design phases for a multi-objective detention facility within the Leon Creek watershed near the intersection of Loop 410 and Culebra Road. Construction for the facility is scheduled for completion in early 2004. The site area being considered offers between 100 and 120 acres of an abandoned quarry to be utilized as a large regional storm water detention facility while maintaining its present function as a testing area for the land owner. Due to the configuration of the site, the off-channel detention facility will flood only during significant runoff event generated from the more than 170 square mile upstream watershed area. Complex hydrologic (HEC-1) and hydraulic (HEC-RAS—steady and unsteady flow) analyses were performed in evaluating the facility's effectiveness in reserving its flood storage capacity for only high flows to maximize the potential for reducing downstream flooding during large flood events.

The design phase included extensive coordination with city staff and the property owner to ensure that the facility will meet the multi-objective needs of the city and respect the ongoing research needs and commercial concerns of the impacted properties. The facility design consists of earthen berms, outfalls with flapgates, floodwalls, an adjustable height inflow weir wall, grading, and associated channel modifications.

A primary design goal of the project was to minimize any impacts to valuable habitat and environmental features at the site. Design of the channel modifications was optimized to provide the required flow conveyance and needed berm fill material while minimizing the environmental impacts along Leon Creek. Numerous wetland areas were identified and protected with the strategic placement of the improvements. U.S. Army Corps of

Engineers permitting was accomplished with a nationwide permit. Archaeological investigations revealed a buried prehistoric site within the project area. Numerous design modifications were made to prevent disturbance of this archaeological site while allowing the facility to function to its maximum potential. All permitting with the Texas Historical Commission was performed while keeping the project on schedule. Permitting was also coordinated with the Texas Department of Transportation due to facility features along and within the Loop 410 right-of-way.

2003 Proposed Regional Capital Improvement Program Projects List
Prepared by: San Antonio River Authority
Study Completed: April 2003

Details regarding the 56 proposed regional capital improvement program projects list for Bexar County and the City of San Antonio are found in Appendix C.

Assessing the Effectiveness of Past Studies, Projects and Programs

The AACOG area has been affected by many natural hazard events. This has caused millions of dollars in damages and has taken hundreds of lives. However, this has also provided the AACOG Region a stream of funding to help develop mitigation projects throughout the region. The effectiveness of the studies, projects and programs listed above can be determined in a variety of ways. The HMGP projects are required to indicate a positive benefit-cost return so it can be ascertained that each of those projects is a value to the region. It is difficult to gauge the effectiveness of other projects, such as public education and outreach, but any effort to reduce the effects of natural hazards on property and population should be considered a positive step in the right direction.

CONCLUSIONS ON LOCAL CAPABILITY

The capability of county and local governments in the planning area varies greatly. Generally speaking, the counties that responded to the survey tended to score higher than municipalities. The results of the *Local Capability Assessment Survey* also indicate that the municipalities within the Bexar County/San Antonio metropolitan area have a moderate capability while some of the surrounding counties and municipalities, particularly those in the rural hill country and south of San Antonio possess lesser capabilities. Additional factors to consider include the physical location and wealth of participating municipalities. Several smaller jurisdictions scored high on the capability assessment survey, many of which appear to be suburban communities. It is not clear whether this is due to the level of resources at their disposal or their proximity to larger urban areas, where public expectations regarding governmental services tend to be higher than in rural areas.

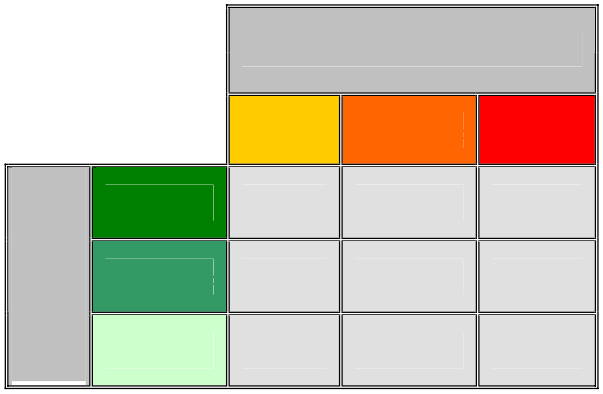
Perhaps one of the most significant survey findings is the existence of several planning programs and tools already in use across the AACOG area. However, many of the processes and tools do not incorporate hazard mitigation practices. For example, planning is widely applied to response-related activities via the use of emergency operations plans, continuity of operations plans, radiological emergency plans and SARA Title III planning. As a result, counties and local governments are familiar with the concept of planning and it has been institutionalized across the region. Therefore, an important regional consideration in this plan should be to work with counties and municipalities to apply this planning experience to hazard mitigation. The AACOG Regional Mitigation Action Plan provides the vehicle to begin this process. However, in order to succeed, it will require a widespread educational effort to clearly articulate the benefits of participating in and sustaining the mitigation

planning process. One of the best ways to achieve buy-in and long-term success is to identify and implement achievable actions. This is done when actions are clearly tied to existing hazard risk and local capabilities.

Linking the Capability Assessment, the Risk Assessment, and the Mitigation Strategy

The conclusions of the *Capability Assessment* and *Risk Assessment* serve as the foundation for a meaningful hazard mitigation strategy. During the process of identifying the goals, objectives and mitigation actions, each jurisdiction must consider not only their level of hazard risk but also their existing capability to minimize or eliminate that risk. **Figure 5-3** represents a simple matrix that illustrates each jurisdiction's hazard risk in comparison to their overall capability.

Figure 5-3. Risk/Capability Matrix



In jurisdictions where the overall hazard risk is considered to be HIGH, and local capability is considered LIMITED, then specific mitigation actions that account for these conditions should be considered. This may include less costly actions such as minor ordinance revisions or public awareness activities. Further, if necessary, specific capabilities may need to be improved in order to better address recurring threats. Similarly, in cases where the hazard vulnerability is LOW and overall capability is HIGH, more emphasis can be placed on actions that may impact future vulnerability such as guiding development away from known hazard areas.

MITIGATION STRATEGY

INTRODUCTION

This portion of the Plan outlines the AACOG region's overall strategy to reduce their communities' vulnerability to the effects of natural hazards. This section has been separated into the following three distinct topics:

- Mitigation Goals and Objectives;
- Identification and Analysis of Mitigation Measures; and
- Mitigation Action Plan.

The Mitigation Objectives are designed to support and correspond directly with the Community Goals established in Section 2, and were developed to provide participating local governments with a set of measurable, mid-range targets (two to five years). Each objective is numbered (i.e., "1.1"), with the first digit representing the corresponding Community Goal.

The Mitigation Actions are short-term, specific measures to be undertaken by the participating local governments in order to achieve the identified objectives. Most of these actions are also hazard-specific. Each action identifies the objective(s) it is intended to achieve, includes some general background information to justify the proposed action, and provides measures to assure successful and timely implementation.

Each participating local government has developed a Mitigation Action Plan that is specific to that jurisdiction. Texas Division of Emergency Management and Federal Emergency Management Agency regulations require that each jurisdiction participating in the multi-jurisdictional planning process develop identifiable action items specific to that particular jurisdiction.

Also important to note is that each Mitigation Objective and Mitigation Action is designed to be performance-based, making it easier for the participating local governments to measure the Plan's progress over time and during the Plan's future evaluations. It is expected that while the Community Goals established in Section 2 may remain the same for an extended period of time, the objectives and actions included in this section will be updated and/or revised through regular enhancements to this Plan.

MITIGATION GOALS AND OBJECTIVES

Guiding Principles

During the first community meetings, five (5) areas of particular concern were identified. The community responses were then grouped into ten (10) broad categories, which all participants agreed should become the guiding principles of the Plan. They are: Communication and Coordination; Financial Resources; Technical Assistance; Training; Planning; Education and Public Participation; Critical Facilities; Infrastructure and Utilities; Weather Warning Systems and Hazard identification Technologies; and Environmental Concerns.

- **Communication and Coordination**
  Communication was identified as a major concern among almost all workshop participants. Participant concerns centered on the utilization of standardized equipment and radio frequencies during emergency response missions. With an inability to communicate with each other, emergency responders often duplicate efforts and respond to emergencies in a "haphazard" manner.

- **Financial Resources**
  Many participants indicated that limited financial resources impede their ability to develop comprehensive emergency management programs. In the past, communities have received only minimal financial and technical assistance from federal and state agencies. Some communities even indicated that mitigation opportunities have been lost because they lacked the required twenty-five (25) percent local match for a federal grant.

- **Technical Assistance**
  Workshop participants indicated that they need technical assistance to enhance their administrative capabilities, particularly in the area of grant writing. The inability to develop grants raises a concern about the participating jurisdictions' ability to implement mitigation projects (structural and non-structural). To address this issue, suggestions were made to pool resources for grant applications and work through regional institutions such as the AACOG. A regional approach would allow multiple jurisdictions to benefit and receive financial and technical assistance.

- **Training**
  The development of in-house technical capabilities for emergency response and recovery was mentioned as a major concern. Many communities thought that there should be a two-tier approach to technical assistance programs. The first tier of training would be focused on training full-time employees, while the second tier would focus on volunteer staff. Training programs suggested include: command and control operations, hazardous materials response, administrative training such as grant writing and technical training focused on the use of information technologies such as geographic information systems (GIS).

- **Planning**
  Counties were very vocal about their inability to regulate development. Historically, there have been very few attempts to coordinate planning and development efforts between county and municipal jurisdictions. Suggestions were made to strive in linking municipal planning efforts with countywide development initiatives.

- **Education and Public Participation**
  There was widespread interest in education initiatives as an avenue to increase the public's involvement in hazard mitigation planning. Suggestions included the introduction of public educational campaigns through the media, direct public outreach through community groups, and the introduction of hazard education programs and/or classes in public schools.

- **Critical Facilities**
  Participants raised questions about regional shelter capacity, specifically in terms of knowing whether or not communities had adequate shelters to service populations. Of particular concern are special needs populations such as elderly citizens or individuals with ailments and/or disabilities.

- **Infrastructure and Utilities**
  Workshop participants expressed concern about power outages during severe weather events and subsequent delays in utility restoration. It was suggested that the support of the electric and gas company be harvested for this hazard mitigation initiative. Concerns also centered on the inadequacy of infrastructure to support growing populations, especially surrounding certain municipal jurisdictions.

- **Weather Warning Systems and Hazard Identification Technologies**
  Related to the area of communications discussed previously, there exists a general lack of severe weather warning systems (radar) throughout the region. County and city officials have mentioned that warning systems and sirens, especially when placed in strategic locations throughout the city, would enhance the capability of emergency management personnel to warn citizens of threatening weather conditions. Interest was also expressed in GIS and other decision support technologies that would allow communities to embark on the process of identifying and mapping high hazard areas.

- **Environmental Concerns**
  Among a wide range of environmental concerns are, at the top of the list, environmental issues related to the increase of subdivision developments and lack of regulatory control. These developments have (arguably) negative impacts on the environment, particularly in the loss of natural habitat and increased surface water run-off during heavy rainfalls. Also of concern is the protection of critical areas, especially those that have a potential to contaminate recharge zones or aquifers.

From these ten (10) guiding principles, the following goals were established:

Goal #1—Increase regional emergency preparedness, response and recovery capability.

- Objective 1.1—Ensure that emergency services organizations are prepared and have the capability to detect and promptly respond to emergency situations.
- Objective 1.2—Maximize intergovernmental coordination on the effective use of emergency response resources during response, including vital communications between multiple agencies in emergency situations.
- Objective 1.3—Ensure that infrastructure, equipment and support systems are maintained and/or upgraded to support emergency services response and recovery operations.

Goal #2—Build capacity for hazard mitigation at the county and municipal level through technical and financial assistance programs.

- Objective 2.1—Promote partnerships between AACOG, counties and municipalities to identify federal and state programs that provide financial assistance to help attract funds for mitigation projects and programs.
- Objective 2.2—Promote partnerships between AACOG, counties and municipalities to identify federal and state programs that provide technical assistance, such as training funds and training services for mitigation projects and programs.
- Objective 2.3—Maximize the use of available hazard mitigation grant programs to protect vulnerable populations and structures in participating jurisdictions.

Goal #3—Reduce the impact of natural disasters on populations and private property.

- Objective 3.1—Promote partnerships between AACOG, counties and municipalities to encourage and facilitate coordination of planning and development initiatives, particularly on developments of regional impact.
- Objective 3.2—Increase the county and municipal control over development, especially in high hazard areas.
- Objective 3.3—Implement programs that seek to remove residential structures from high hazard areas.
- Objective 3.4—Develop adequate and consistent development review boards to provide enforcement of ordinances and codes within and between jurisdictions to ensure that all new construction is completed using hazard resistant design techniques.
- Objective 3.5—Implement natural resource protection projects that, in addition to minimizing hazard losses, also preserve, restore or otherwise benefit and/or properly manage the functions of natural systems.
- Objective 3.6—Implement projects that involve the construction of structures designed to reduce the impact of a hazard, such as dams, levees, floodwalls, retaining walls, safe rooms, etc., or such structural modifications as the elevation or relocation of bridges, the anchoring of manufactured housing, or a retrofit of an existing building.

Goal #4—Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.

- Objective 4.1—Develop outreach programs focused on increasing public education to increase awareness of hazards and their associated risks.
- Objective 4.2—Promote partnerships between AACOG, counties and municipalities to continue to develop a regional approach to identifying and implementing mitigation actions.
- Objective 4.3—Promote partnerships between AACOG, counties and municipalities to monitor and publicize the effectiveness of mitigation initiatives implemented in the community.
- Objective 4.4—Develop outreach programs focused on increasing participation in mitigation programs by business, industry, institutions and community groups.

Goal #5—Reduce the potential impact of natural disasters on critical facilities and infrastructure.

- Objective 5.1—Reduce the vulnerability of critical facilities (schools, shelters, police, fire stations, and other institutions) that are important to the community.
- Objective 5.2—Reduce the vulnerability of buildings and facilities used for routine government operations.
- Objective 5.3—Reduce the vulnerability of public and private medical and health care facilities in the community.
- Objective 5.4—Reduce the vulnerability of lifelines (transportation facilities and systems, water and sewer systems, telecommunication systems and facilities) serving the community.

- Objective 5.5—Ensure that critical facilities and lifelines will be constructed and/or retrofitted to minimize the potential for disruption during a disaster.
- Objective 5.6—Local governments will strive to involve the private sector, especially utility companies, in participating in hazard mitigation planning efforts.

Goal #6—Increase regional capabilities to mitigate the effects of natural hazards.

- Objective 6.1—Enhance the local governments' capability to conduct hazard risk assessments, demonstrate funding needs, and track mitigation activities.
- Objective 6.2—Enhance the local governments' ability to notify the public at risk and provide emergency instruction during a disaster.
- Objective 6.3—Address data limitations needed for hazard identification and risk assessment (definition of hazards, identification of hazard areas, and vulnerabilities).
- Objective 6.4—Promote natural hazard studies and the development of data to support mitigation strategies for those hazards that are a threat throughout the region.

The goals and objectives of this Plan reflect similar goals to those found in the State of Texas Mitigation Plan and those of the National Flood Insurance Program. This similarity is not intentional, due to the fact that neither of those sets of goals was presented to members of the Regional Hazard Mitigation Team prior to their independent determinations. This approach was purposeful in fostering an environment that did not manipulate the goal-making process in any particular direction based on preceding determinations. It is, however understandable that the goals established through these three separate efforts are similar because of the similar purposes of the NFIP, the State of Texas Mitigation Plan, and the AACOG Regional Mitigation Action Plan.

IDENTIFICATION AND ANALYSIS OF MITIGATION MEASURES

In formulating this Mitigation Strategy, a wide range of activities were considered in order to help achieve the goals of the community and to lessen the vulnerability of the AACOG area to the effects of natural hazards. In general, all of these activities fall into one of the following broad categories of mitigation techniques.

Available Mitigation Techniques

1. **Prevention**
   Preventative activities are intended to keep hazard problems from getting worse. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventative activities include:
   - Planning and zoning;
   - Open space preservation;
   - Floodplain regulations;
   - Storm water management;
   - Drainage system maintenance;
   - Capital improvements programming; and
   - Shoreline/riverine/fault zone setbacks.
2. **Property Protection**
   Property protection measures protect existing structures by modifying the building to withstand hazardous events, or removing structures from hazardous locations. Examples include:
   - Acquisition;
   - Relocation;
   - Building elevation;
   - Critical facilities protection;
   - Retrofitting (i.e., windproofing, floodproofing, seismic design standards, etc.);
   - Insurance; and
   - Safe rooms.
3. **Natural Resource Protection**
   Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their mitigative functions. Such areas include floodplains, wetlands and dunes. Parks, recreation or conservation agencies and organizations often implement these measures. Examples include:
   - Floodplain protection;
   - Beach and dune preservation;
   - Riparian buffers;

- Fire resistant landscaping;
- Fuel breaks;
- Erosion and sediment control;
- Wetland preservation and restoration;
- Habitat preservation; and
- Slope stabilization.

4. **Structural Projects**
   Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event. They are usually designed by engineers and managed or maintained by public works staff. Examples include:
   - Reservoirs;
   - Levees/dikes/floodwalls/seawalls;
   - Diversions/Detention/Retention;
   - Channel modification;
   - Beach nourishment; and
   - Storm sewers.
5. **Emergency Services**
   Although not typically considered a "mitigation technique," emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:
   - Warning systems;
   - Evacuation planning and management;
   - Sandbagging for flood protection; and
   - Installing shutters for wind protection.
6. **Public Information and Awareness**
   Public Information and awareness activities are used to advise residents, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:
   - Outreach projects;
   - Speaker series/demonstration events;
   - Hazard map information;
   - Real estate disclosure;
   - Library materials;

- School children education; and
- Hazard expositions.

Mitigation Techniques for the Alamo Area

In considering the appropriate mitigation techniques for the participating local governments to undertake, the Mitigation Advisory Committee reviewed the three (3) background studies provided as appendices to this Plan. Following this review and a group discussion, the following matrix was completed by the committee in order to target the Plan's priorities for proposed mitigation actions:

		X			
	X	X	X	X	
		X			
		X			
	X				
	X	X	X	X	X

Alamo Area Mitigation Actions

The mitigation actions proposed for the Alamo Region local governments to undertake are listed on the pages included in *Appendix A*. Each action has been designed to achieve the goals and objectives identified through this Mitigation Action Plan.

Each action should be considered to be a separate project/program. By identifying project/program requirements, the AACOG Mitigation Action Plan will help lay the framework for participating communities to engage in distinct actions that will reduce their vulnerability and risk. Below is the form used to collect and formulate the mitigation actions for each jurisdiction, along with the instruction issued for its completion.

Mitigation Action	

Instructions for completing worksheet:

a. Community Name: Be sure to identify your community's name.

b. Action Item: Identify specific actions that, if accomplished, will reduce vulnerability and risk in the impact area. Actions should match mitigation goals and objectives.

c. Hazard(s): The hazard(s) the action attempts to mitigate.

d. Objective(s) Addressed: Identify which objective(s) is/are addressed by the defined action.

e. Lead Agency/Department Responsible: Identify the local agency, department or organization that is best suited to accomplish this action.

f. Estimated Cost: If applicable, indicate what the cost will be to accomplish this action. This amount will, of course, have to be estimated until actual final dollar amounts can be determined.

g. Funding Method: If applicable, indicate how the cost to complete the action will be funded. For example, funds may be provided from existing operating budgets (General Revenue), or from a previously established contingency fund or (Contingency/Bonds), or a cost-sharing federal or state grant, etc. (External Sources).

h. Schedule: Indicate when the action will begin, and when the action is expected to be completed. Remember that some actions will require only a minimum amount of time, while others may require a long-term continuing effort.

i. Priority: Indicate weather the action is a 1) High priority—short-term immediate—reducing overall risk to life and property; 2) Moderate priority—an action that should be implemented in the near future due to political or community support or ease of implementation; 3) Low priority—an action that should be implemented over the long term that may depend on the availability of funds.

Again, it is important to note that these mitigation actions are specific measures to be undertaken by the city or county. It is expected that this component of the Plan will be the most dynamic as it will be used as the primary indicator to measure the Plan's progress over time and will be routinely updated and/or revised as it is implemented and incorporated by the jurisdictions.

PLAN MAINTENANCE PROCEDURES

The *Plan Maintenance Procedures* section discusses how the mitigation strategy will be implemented by participating jurisdictions and how the Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in the hazard mitigation planning process.

IMPLEMENTATION

Each jurisdiction participating in this Plan is responsible for implementing specific mitigation actions as prescribed in the *Mitigation Strategy* section (Section 6). Each action has been assigned to a specific person or local government office that is responsible for implementing that specific action. Because each jurisdiction has specific mitigation actions that will be implemented, they have adopted their locally specific Mitigation Strategy section of the Plan separately. As a result of this process, the individual jurisdictions may update that specific section of the Plan without meeting with the remainder of the AACOG Executive Mitigation Committee. Separate adoption of locally specific actions is also required so that each jurisdiction is not held responsible for the action(s) of every other jurisdiction involved in the planning process.

For each identified action, a funding source has also been listed that may be used when the jurisdiction begins seeking funding for implementation of the action. Also, an implementation time period, or a specific implementation date, has been assigned to each action to serve as incentive for seeing the action through to completion and as a gauge to determine if actions are being implemented in a timely fashion.

It will be up to each participating jurisdiction to determine additional implementation procedures beyond their Mitigation Action Plan. This includes integrating the Plan into other planning documents, processes or mechanisms such as comprehensive or capital improvement plans, where appropriate.

EVALUATION AND ENHANCEMENT

Periodic revisions and updates of the Plan are required to ensure that the goals and objectives for AACOG are kept current, taking into account potential changes in hazards vulnerability and mitigation priorities. More importantly, revisions may be necessary to ensure that the Plan is in full compliance with federal regulations and state statutes. This portion of the Plan outlines the procedures for completing such revisions and updates.

Five-Year Plan Review

The Plan will be reviewed every five (5) years to determine whether there have been any significant changes in the AACOG region that might affect the Plan. Increased development, increased exposure to certain hazards, the development of new mitigation capabilities or techniques, and changes to federal or state legislation are examples of changes that may affect the condition of the Plan. This review also gives community officials an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting those losses avoided.

The five-year update will be coordinated by AACOG through the Regional Emergency Preparedness Advisory Committee at which time all local amendments should be incorporated into the Regional Plan. Each jurisdiction is encouraged to make yearly reviews and minor changes without approval from the AACOG REPAC (see Local Plan Amendment Process below).

Plan Monitoring

Table 7.1. Local Points of Contact for Plan Monitoring and Updating

Atascosa Co.	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Charlotte	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Christine	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Lytle	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Pleasanton	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Jourdanton	EMC	830.769.2029	830.767.2600	711 Oak Street	Jourdanton	78026
Bandera Co.	EMC	830.612.3335	830.251.3335	685 Lookout Dr	Lakehills	78063
Bandera	EMC	830.612.3335	830.251.3335	685 Lookout Dr	Lakehills	78063
Bexar Co.	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
China Grove	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Fair Oaks Ranch	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Grey Forest	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Helotes	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Somerset	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Saint Hedwig	EMC	210.335.0300		203 W. Nueva, Suite 302	San Antonio	
Alamo Heights	EMC	210.824.1281	210.828.3006	6116 Broadway	San Antonio	78209
Balcones Heights	EMC	210.825.0773		3300 Hillcrest Dr.	San Antonio	78201
Castle Hills	EMC	210.342.2341	210.342.4525	209 Lemonwood Dr.	San Antonio	78213
Converse	EMC	210.658.2322	210.658.2478	407 S. Seguin	Converse	78109
Hill Country Village	EMC	210.494.3671	210.490.8645	116 Aspen Lane	San Antonio	78212
Hollywood Park	EMC	210.494.3111	210.494.9745	#2 Mecca Dr.	Hollywood Park	78232
Kirby	EMC	210.661.2612				
Leon Valley	EMC	210.684.3219	210.684.6988	6460 El Verde	Leon Valley	78238
Live Oak	EMC	210.653.9140	210.653.2766	8001 Shin Oak	Live Oak	78233
Olmos Park	EMC	210.824.3281	210.826.8006			
San Antonio	EMC	210.207.8580	210.207.7971	115 Auditorium Circle	San Antonio	78205
Selma	EMC	210.651.9150		9375 Corporate Dr.	Selma	78154
Shavano Park	EMC	210.492.1111	210.492.5884	99 Saddletree Dr.	San Antonio	78231
Terrell Hills	EMC	210.824.7401		5100 N. New Braunfels	San Antonio	78209
Universal City	EMC	210.659.0333	210.659.7062	2160 Universal City Blvd	Universal City	78148
Windcrest	EMC	210.655.0022	210.655.8776	8601 MidCrown	Windcrest	78239
Comal County	EMC	830.608.8656	830.620.3410	199 Main Plaza	New Braunfels	78130
Bulverde	EMC	830.608.8656	830.620.3410	199 Main Plaza	New Braunfels	78130
Garden Ridge	EMC	830.608.8656	830.620.3410	199 Main Plaza	New Braunfels	78130
New Braunfels	EMC	830.608.8656	830.620.3410	199 Main Plaza	New Braunfels	78130
Frio County	EMC	210.824.1281	210.825.2062	500 E. San Antonio, #5	Pearsall	78061
Dilley	EMC	210.824.1281	210.825.2062	500 E. San Antonio, #5	Pearsall	78061

Jurisdiction	Title	Work Phone	Fax	Address	City	Zip
Pearsall	EMC	210.824.1281	210.825.2062	500 E. San Antonio, #5	Pearsall	78061
Gillespie County	EMC	830.990.2024	830.997.3918	126 W. Main St.	Fredericksburg	78624
Fredericksburg	EMC	830.990.2024	830.997.3918	126 W. Main St.	Fredericksburg	78624
Goliad County	EMC	361.645.1729	361.645.3655	305 N. San Patricio	Goliad	77963
Goliad	EMC	361.645.1729	361.645.3655	305 N. San Patricio	Goliad	77963
Guadalupe County	EMC	830.303.4188	830.303.4064	307 W. Court St.	Seguin	78155
Cibolo	EMC	830.303.4188	830.303.4064	307 W. Court St.	Seguin	78155
Marion	EMC	830.303.4188	830.303.4064	307 W. Court St.	Seguin	78155
New Berlin	EMC	830.303.4188	830.303.4064	307 W. Court St.	Seguin	78155
Santa Clara	EMC	830.303.4188	830.303.4064	307 W. Court St.	Seguin	78155
Seguin	EMC	830.401.2312	830.401.2358	211 N. River St.	Seguin	78155
Schertz	EMC	210.659-9062	210.659-8356	Drawer I 1400 Schertz Pk	Schertz	78
Karnes County	EMC	830.583.3534	830.583.4042	307 Graham Rd	Kenedy	78119
Falls City	EMC	830.583.3534	830.583.4042	307 Graham Rd	Kenedy	78119
Karnes City	EMC	830.583.3534	830.583.4042	307 Graham Rd	Kenedy	78119
Kenedy	EMC	830.583.3534	830.583.4042	307 Graham Rd	Kenedy	78119
Runge	EMC	830.583.3534	830.583.4042	307 Graham Rd	Kenedy	78119
Kerr County	EMC	830.257.8449	830.257.8455		Kerrville	78028
Ingram	EMC	830.257.8449	830.257.8455		Kerrville	78028
Kerrville	EMC	830.257.8449	830.257.8455		Kerrville	78028
Medina County	EMC	210.541.0505	210.541.0565	10221 Desert Sands, Suite 111	San Antonio	78216
Castroville	EMC	830-931-0234	830-931-0232	10500 Airport Rd.	Castroville	78009
Devine	EMC	210.335.2187				
Hondo	EMC	830.426.5353	830.741.5814	1101 16th St.	Hondo	78861
La Coste	EMC	830.985.9494	830.762.9431	PO BOX 112	La Coste	78039
Natalia	EMC	210.541.0505	210.541.0565	10221 Desert Sands, Suite 111	San Antonio	78216
Wilson County	EMC	830.393.7348	830.393.7319	1420 Third St.	Floresville	78114
Floresville	EMC	830.393.7348	830.393.7319	1420 Third St.	Floresville	78114
Lavernia	EMC	830.393.7348	830.393.7319	1420 Third St.	Floresville	78114
Poth	EMC	830.393.7348	830.393.7319	1420 Third St.	Floresville	78114
Stockdale	EMC	830.393.7348	830.393.7319	1420 Third St.	Floresville	78114

Disaster Declarations

Following a disaster declaration, the Plan will be revised by each effected jurisdiction to reflect lessons learned or to address specific circumstances arising from the changing conditions surrounding subsequent disaster events.

Reporting Procedures

The results of the five-year review should be summarized in a report prepared for the AACOG Board of Directors. The report will include an evaluation of the effectiveness and appropriateness of the Plan, and will recommend, as appropriate, any required changes or amendments to the Plan. The report will also include an evaluation of implementation progress for each of the proposed mitigation actions, identifying reasons for delays or obstacles to their completion along with recommended strategies to overcome them.

Local Plan Amendment Process

Participating counties and municipalities can amend their Mitigation Actions at any time. An amendment to the Plan should be initiated only by the local governing body, either on its own initiative or upon the recommendation of the chief elected official, planner, emergency management official, or local Hazard Mitigation Teams or Hazard Mitigation Team leaders.

Minor revisions and clarifying changes can be made by the local governing body without going through the public participation and adoption process. Examples of these changes include:

- Minor spelling and grammatical corrections; and
- Minor corrections to statistics, dates and calculations.

CONTINUED PUBLIC INVOLVEMENT

Public input was an integral part of the completion of this Plan and will continue to be essential as this Plan grows and changes. As is the case with any officially adopted plan or ordinance, any significant change to this Plan shall require a public hearing.

Other efforts to involve the public in the maintenance, evaluation and revision process will be made as necessary. These efforts may include:

- Advertising meetings of the Hazard Mitigation Planning Committee in the local paper, on public bulletin boards and/or in city and county office buildings;
- Utilizing local media to update the public of any maintenance or periodic review activities taking place;
- Utilizing city and county Web sites to advertise any maintenance or periodic review activities taking place; and

- Keeping copies of the Plan in all public libraries within the county.

The Texas Division of Emergency Management or members of the AACOG Planning Team may also provide suggestions.

LOCAL
MITIGATION ACTIONS

The following mitigation actions follow the goals and guidelines set forth in Section 6, *Mitigation Strategy*.

The Local Mitigation Action Plans are organized alphabetically by individual jurisdiction. Generally speaking, mitigation actions are categorized by priority (high, moderate or low) within each jurisdiction. This was done in order to standardize the presentation of information and make the action plans user-friendly. Mitigation actions listed within each prioritization category are not rank ordered. The following municipalities submitted local Mitigation Action Plans:

Alamo Area Council of Governments 3
Atascosa County 4
City of Charlotte 6
City of Christine 7
City of Jourdanton 8
City of Lytle 9
City of Pleasanton 10
City of Poteet 12
Bandera County and City of Bandera 13
Bexar County 23
City of Alamo Heights 26
City of Balcones Heights 30
City of Castle Hills 32
City of China Grove 34
City of Converse 36
City of Fair Oaks Ranch 38
City of Grey Forest 42
City of Helotes 44
City of Hill Country Village 49
Town of Hollywood Park 50
City of Kirby 53
City of Leon Valley 54
City of Live Oak 57
City of Olmos Park 58
City of San Antonio 59
City of Selma 67
City of Shavano Park 68
City of Somerset 72
City of Terrell Hills 75
City of Universal City 77
City of Windcrest 80
Comal County 83
City of Bulverde 86
City of Garden Ridge 87
City of New Braunfels 88
Frio County 89
City of Dilley 90
City of Pearsall 92
Gillespie County/City of Fredericksburg 94
Goliad County and City of Goliad 96

Guadalupe County 98
City of Marion 101
City of New Berlin 102
City of Schertz 113
City of Sequin 117
Karnes County / Cities of Falls City, Karnes City, Kenedy and Runge 119
Kerr County/Cities of Ingram and Kerrville 124
Medina County 126
City of Castroville 129
City of Devine 134
City of Hondo 135
City of La Coste 137
City of Natalia 139
Wilson County 140
City of Floresville 145
City of La Vernia 148
City of Poth 150
City of Stockdale 153

Note: The funding sources listed for each mitigation action are merely suggestions. They are based on knowledge of the various grant sources but should not be considered an exhausted source of grant funding for implementing hazard mitigation actions. For more information on potential grant funding sources please use the following resources:

Catalog of Federal Domestic Assistance: www.cfda.gov

Grants.gov: www.grants.gov

Texas State Grants Team: www.governor.state.tx.us/divisions/stategrants

Alamo Area Council of Governments

Objective(s) Addressed:	Technical Assistance: Goal #2
Hazard(s) Addressed:	Specifically flooding and other hazards to some degree
Priority (High, Medium, Low):	High
Estimated Cost:	$120K-150K
Potential Funding Sources:	Pre-Disaster Mitigation Program - Department of Homeland Security
Lead Agency/Department Responsible	Alamo Area Council of Governments and participating jurisdictions (possible partnership with a River Authority)
Implementation Schedule:	Dependant on funding

There are currently six counties in the region that do no have digital flood data (Gillespie, Frio, Atascosa, Wilson, Karnes and Goliad). Some of them have no GIS in place at all. AACOG has been working to upgrade the capabilities of local governments in the region.

As discussed in the Vulnerability Assessment Section of this Plan (4-3: page 7), the complexity of analyzing detailed flood risk for such a large planning area which encompasses numerous jurisdictions is extremely difficult. It is important to note that this initial risk assessment is based on aggregated data, where available and represents a base-level assessment for the region as a whole. This was an attempt to get everyone started on the same level. Additional work will be done on an ongoing basis to enhance, expand and further improve the accuracy of the baseline established here and enhance the level of detail provided in future plan updates. The proposed action listed above will greatly help communities in the region reach this goal.

ATASCOSA COUNTY

(CITIES OF CHARLOTTE, CHRISTINE, JOURDANTON, LYTLE, PLEASANTON AND POTEET)

Atascosa County

Objective(s) Addressed:	Reduce flooding of homes and streets
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	Mitigation grant funding from DR 1435 and external sources
Lead Agency/Department Responsible	Atascosa County Emergency Management
Implementation Schedule:	Within 12 months of approval/funding and ongoing

Objective(s) Addressed:	Improve evacuation response time for weather hazards
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	External Sources, Texas Rural Communities, Inc.
Lead Agency/Department Responsible	Atascosa County Emergency Management
Implementation Schedule:	Over the next five (5) years

Atascosa County	
Objective(s) Addressed:	Improve communication/response time
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants (FEMA—All Hazards Emergency Operational Planning, FEMA—Assistance to Firefighters Grant, FEMA—Emergency Operations Center Funding, FEMA Emergency Management Performance Grant)
Lead Agency/Department Responsible	Atascosa County Emergency Management
Implementation Schedule:	Within the next five (5) years

Objective(s) Addressed:	Improve emergency response/evacuation
Hazard(s) Addressed:	Flood, tornados, high winds, hurricane (all-weather)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	Grants (FEMA - Assistance to Firefighters Grant, Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Atascosa County Emergency Management
Implementation Schedule:	Within five (5) years

Objective(s) Addressed:	Improve emergency services and response time
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Grants (Department of Homeland Security - State and Local Domestic Preparedness Exercise and Support, FEMA—All-Hazards Emergency Operational Planning)
Lead Agency/Department Responsible	Atascosa County Emergency Management
Implementation Schedule:	Within five (5) years

City of Charlotte

Objective(s) Addressed:	Reduce flooding of residents, roads, businesses
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 years

Objective(s) Addressed:	Increase water supply to aid in fire fighting as growth occurs
Hazard(s) Addressed:	Drought, fire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$700,000
Potential Funding Sources:	General revenue/External sources (EPA—Drinking Water State Revolving Fund)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 to 15 years

City of Christine

Objective(s) Addressed:	Increase response time in flood and weather events
Hazard(s) Addressed:	Flood and weather hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue/External sources (Texas Rural Communities, Inc., FEMA—Emergency Management Performance Grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next five (5) years

Objective(s) Addressed:	Reduce flooding in low-lying areas that frequently flood
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue/External sources (Texas Water Development Board, future Hazard Mitigation Grant Program or Public Assistance funds)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 years

City of Jourdanton

Objective(s) Addressed:	Improve drainage and reduce flooding
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$75,000
Potential Funding Sources:	Grants (Texas Water Development Board, USDA Rural Development Assistance)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within two (2) years

Objective(s) Addressed:	Improve evacuation and response time
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Grants (FEMA—Assistance to Firefighters Grants, FEMA—Emergency Management Performance Grant)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within three (3) years

City of Lytle

Objective(s) Addressed:	Improve communication and response time
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	Over the next 10 years

Objective(s) Addressed:	Increase water supply capacity during high use/drought
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$500,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 years

Objective(s) Addressed:	Increase response/evacuation time
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 years

City of Pleasanton

Objective(s) Addressed:	Prevent water shortage during times of excess heat
Hazard(s) Addressed:	Drought/fire
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Next four (4) years

Objective(s) Addressed:	Improve evacuation/response time in emergencies
Hazard(s) Addressed:	Multiple Weather hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants (FEMA—Assistance to Firefighters Grant, FEMA—Emergency Management Performance Grant)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within five (5) years

Objective(s) Addressed:	Reduce flooding/poor drainage
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Grant (Texas Water Development Board, future Hazard Mitigation Grant Program, Public Assistance and/or Pre-Disaster Mitigation funds)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within three (3) years

City of Pleasanton	
Objective(s) Addressed:	Reduce flooding and poor drainage
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grant (Texas Water Development Board, future Hazard Mitigation Grant Program, Public Assistance and/or Pre-Disaster Mitigation funds)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within three (3) years

Objective(s) Addressed:	Land use/code enforcement
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	No cost
Potential Funding Sources:	None needed
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Poteet

Objective(s) Addressed:	Increase water supply
Hazard(s) Addressed:	Drought and fire
Priority (High, Medium, Low):	High/Medium
Estimated Cost:	$500,000
Potential Funding Sources:	External sources (EPA—Drinking Water State Revolving Fund)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next 10 years

Objective(s) Addressed:	Increase evacuation and response time for all hazards
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$30,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	Over

Objective(s) Addressed:	Improve monitoring, recording and response time
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General revenue/External sources (FEMA—Assistance to Firefighters Grant, FEMA—Emergency Manage Performance Grant)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Over the next five (5) years

BANDERA COUNTY/CITY OF BANDERA

Note: Bandera County and the City of Bandera developed Mitigation Actions that apply to both the County and the City.

Bandera County and City of Bandera

Objective(s) Addressed:	Emergency Response
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	State and Federal Funds (FEMA) – for more information, visit http://training.fema.gov/EMIWeb/cert/
Lead Agency/Department Responsible	Emergency Operations Center (EOC) and AACOG
Implementation Schedule:	2004/Initial train-the-trainer course has been completed

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	Minimal if any
Potential Funding Sources:	Grants if needed
Lead Agency/Department Responsible	EOC
Implementation Schedule:	Within three (3) years

Bandera County and	
Objective(s) Addressed:	Protect structure from flooding
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Grants (FEMA—Hazard Mitigation Grant Program, Pre-Disaster Mitigation and 406 Mitigation funding)
Lead Agency/Department Responsible	Water/Wastewater or Public Works
Implementation Schedule:	Within two (2) years

Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General Funds/Grants (FEMA - Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Emergency Management Coordinator
Implementation Schedule:	By December 31, 2003

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	Grants/federal funds (FEMA – Firefighters Assistance Grants, Emergency Management Performance Grants, All-Hazard Emergency Management Operational Planning)
Lead Agency/Department Responsible	Emergency Management Coordinator
Implementation Schedule:	2003

Bandera County and	
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	Grants (FEMA – Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2005

Objective(s) Addressed:	Disaster preparedness/prevention
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	External sources/federal funds (FEMA—All-Hazards Emergency Operational Planning)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Federal grants (There are many Department of Homeland Defense and FEMA Training Grants, Emergency Management Institute)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2005

Bandera County and	
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Grants (FEMA—Assistance to Firefighters Grant, FEMA—Emergency Management Performance Grants, All-Hazards Emergency Management Operational Planning)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	None other than staff time and minimal registration fees for training classes
Potential Funding Sources:	Send staff to any State and/or Federal training classes. For more information on FEMA's Emergency Management Institute, visit http://training.fema.gov/EMIWeb/
Lead Agency/Department Responsible	Public Works/EOC
Implementation Schedule:	2005

Objective(s) Addressed:	Emergency preparedness/training
Hazard(s) Addressed:	Multiple hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	None other than staff time
Potential Funding Sources:	None needed
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2005

Bandera County and	
Objective(s) Addressed:	Code and ordinance enforcement
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	None
Potential Funding Sources:	None needed
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Within three (3) years

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	None other than staff time
Potential Funding Sources:	None needed
Lead Agency/Department Responsible	EOC
Implementation Schedule:	Within three (3) years

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	Administrative only
Potential Funding Sources:	Grants/AACOG
Lead Agency/Department Responsible	BCRA
Implementation Schedule:	Incident-determined

Bandera County and	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	Private funding (i.e., Electric Cooperative) – Texas DEM and FEMA have disaster publications available at no charge. To order FEMA publications call 1-800-480-2520.
Lead Agency/Department Responsible	School District Superintendent
Implementation Schedule:	2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Low
Estimated Cost:	$50,000
Potential Funding Sources:	State and federal funding
Lead Agency/Department Responsible	Health Department
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	Private funding (i.e., Electric Cooperative) Texas DEM and FEMA have disaster publications available at no charge. To order FEMA publications call 1-800-480-2520.
Lead Agency/Department Responsible	School District Superintendent
Implementation Schedule:	2004

Bandera County and	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazard
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	Private funding. Texas DEM and FEMA have disaster publications available at no charge. To order FEMA publications call 1-800-480-2520.
Lead Agency/Department Responsible	Electric cooperative
Implementation Schedule:	2004

BEXAR COUNTY*

(CITIES OF ALAMO HEIGHTS, BALCONES HEIGHTS, CASTLE HILLS, CHINA GROVE, CONVERSE, ELMENDORF, FAIR OAKS RANCH, GREY FOREST, HELOTES, HILL COUNTRY VILLAGE, HOLLYWOOD PARK, KIRBY, LEON VALLEY, LIVE OAK, OLMOS PARK, SAN ANTONIO, SELMA, SHAVANO PARK, SOMERSET, TERRELL HILLS, UNIVERSAL CITY AND WINDCREST)

* The following actions entitled "Regional Mitigation Action" address the regional program developed for Bexar County. Because hazards cross municipal boundaries it is beneficial to the entire community to participate in this regional program. Unnecessary duplication among public agencies is reduced, manpower and financial resources are coordinated more effectively, and planning and capital improvement programs are created. See Appendix C for further information on capital improvement projects.

Regional	
Objective(s) Addressed:	The goal of the regional program was to not only offer safer transportation throughout the community during flooding or heavy rains, but to also generally improve the quality of life for the region. This included helping to better protect human lives and their properties.
Hazard(s) Addressed:	Floods and thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	While cost estimates for some of the individual projects are under development, it is estimated to be above $46 million.
Potential Funding Sources:	The Storm Water Utility has issued $46 million in revenue bonds funded through the storm water fee to fund regional flood control and storm water management projects. The bonds will fund 21 of the 34 projects identified. In addition, Regional Projects are under consideration for placement on the General Obligation Bond referendum being developed for November 2004.
Lead Agency/Department Responsible	Bexar County, the City of San Antonio, the San Antonio River Authority, and Suburban Cities
Implementation Schedule:	The following programs and projects have either been implemented or improved as a direct result of the Regional Management Plan: the Salado Flood Retention Dam 15R Phase II Constructions; the Martinez 5 Flood Control Dam Rehabilitation Project; the Pre-Disaster Mitigation Grant, which allowed for this AACOG MAP; the Culebra/Loop 410 Detention Facility, designed to reduce peak discharges downstream of Loop 410; Davis-Lake Desilting; City of San Antonio 2003 Bond Program; and SARA annual debris clean-up program. The following studies are also a result of the Regional Plan: U.S. Army Corps of Engineers Study Efforts and the Medina Watershed and Medina Dam Study. These implementations and improvements will occur over FY 2003-2004, while others are expected to be added over a five-year period.

Regional	
Objective(s) Addressed:	Creation of a proposed Regional Modeling system to push the boundaries of available software and technology and to recommend a system that will allow sufficient flexibility to grow and to take advantage of advances in technology. This software will help to develop water quality models, flood alerts or forecasting, and Capital Improvement Projects prioritization.
Hazard(s) Addressed:	Floods and thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	An estimated cost is about $2.3 million, however, some estimates are still under development
Potential Funding Sources:	A possible source could be a new tax, although this may be inconvenient.
Lead Agency/Department Responsible	Bexar County, the City of San Antonio, and the San Antonio River Authority
Implementation Schedule:	The exact schedule of implementation is still under development, but it will begin July 1, 2003 and span the next five (5) years.

Objective(s) Addressed:	Protect life and property from potential flooding and heavy rains, and prioritize efforts based on the technical merits and benefits to the community
Hazard(s) Addressed:	Floods and thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	$162, 618, 984
Potential Funding Sources:	NRCS, SARA, the Texas Water Development Board, BMA, the City of San Antonio, and Bexar County
Lead Agency/Department Responsible	Bexar County, the City of San Antonio, and the San Antonio River Authority
Implementation Schedule:	Actions will be implemented as funding becomes available

Bexar County

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Bexar County Road and Bridge funds
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project underway. Scheduled for completion in March 2004

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Bexar County Road and Bridge Funds
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is underway. Project advertised May 2003

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	County Road and Bridge Funds (75 percent FEMA reimbursable)
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised October 2003

Bexar County	
Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	County Road and Bridge Funds (75 percent FEMA reimbursable)
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised October 2003

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$5,400,000
Potential Funding Sources:	County Road and Bridge funds
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised January 2004

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$1,000,000
Potential Funding Sources:	County and state funding
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised January 2004

Bexar County	
Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	County and state funding
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised in January 2004

Objective(s) Addressed:	Implement a consistent, unified, and equitable flood control, drainage, water quality, and storm water program for the Citizens of Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$3,000,000
Potential Funding Sources:	This project is funded by the City of San Antonio (Storm Water Drainage fees), Bexar County (Flood Control funds), and SARA (Tax Proceeds and Bonds)
Lead Agency/Department Responsible	The San Antonio River Authority
Implementation Schedule:	This is an ongoing project that consists of a five year plan that is updated in March of each year.

Objective(s) Addressed:	Mitigate flood damage to public property within Bexar County
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$500,000
Potential Funding Sources:	County and private
Lead Agency/Department Responsible	Bexar County Infrastructure Services (Public Works)
Implementation Schedule:	Project is scheduled to be advertised October 2003

City of Alamo Heights

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$130,000
Potential Funding Sources:	General revenue (possibly grants – FEMA – Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2003—2004 and FY 2004—2005

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	External sources – (San Antonio River Authority; United States Army Corps of Engineers – Clearing and Snagging Projects)
Lead Agency/Department Responsible	San Antonio River Authority
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Bonds and grants (FEMA – Assistance to Firefighters Grants, Emergency Management Performance Grants, All-Hazards Emergency Operational Planning Grants)
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	FY 2004—2005

City of Alamo Heights	
Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$75,000,000
Potential Funding Sources:	Bond and external sources (United States Army Corps of Engineers; United States Department of Housing and Urban Development – Community Development Block Grants)
Lead Agency/Department Responsible	City of Alamo Heights Public Works, City of San Antonio, and Texas Department of Transportation
Implementation Schedule:	FY 2005—2006

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding (sewer overflow resulting from heavy rainfall)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	Utility fund (possible Grants: FEMA - Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, Pre-Disaster Mitigation Program, 406 Public Assistance (following federally declared disaster); US Army Corp of Engineers – Small Flood Control Projects
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2003—2004 and FY 2004—2005

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	External sources and general revenue (FEMA—Emergency Management Performance Grant)
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	FY 2003—2004 and FY 2004—2005

Objective(s) Addressed:	Prevention/emergency services
Hazard(s) Addressed:	Flooding (at Olmos Basin area)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2003—2004 and FY 2004—2005

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Tornadoes, hurricanes, thunderstorms, winter storms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	General revenue and grant
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding (in the Corona and Jones Maltzberger area)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	General revenue and external sources (FEMA – Hazard Mitigation Grant Program; United States Department of Housing and Urban Development – Community Development Block Grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000
Potential Funding Sources:	General revenue (possibly grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Emergency services/prevention
Hazard(s) Addressed:	Flooding, tornadoes, hurricanes, thunderstorms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Low
Estimated Cost:	$2,000
Potential Funding Sources:	General Revenue – FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Administration
Implementation Schedule:	FY 2003—2004

City of Balcones Heights

Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Wind from severe storms and tornadoes
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	General Revenue and Grant
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004-2005

Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	General Revenue and External Sources
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004-2005

Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000
Potential Funding Sources:	General Revenue (possibly grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2004-2005

Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Flood related hazardous materials
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Utility Fund (possible grant)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	FY 2003-2004 FY 2004-2005

Objective(s) Addressed:	Objective 4.1
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Low
Estimated Cost:	$2,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Administration
Implementation Schedule:	FY 2003-2004

City of Castle Hills

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$30,000
Potential Funding Sources:	Federal/state grants (FEMA – Assistance to Firefighters Grants, Emergency Management Performance Grants, All-Hazards Emergency Management Operational Planning)
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	Dependant on funds availability

Objective(s) Addressed:	Diversion of flood water runoff to eliminate street flooding
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$450,000—$550,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works in conjunction with outside contractors
Implementation Schedule:	When funding is available

Objective(s) Addressed:	Improve channel adjacent to home, enlarge culverts at Mimosa Drive, enlarge channel between Wisteria and Mimosa Drive
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000—$250,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works/outside contract
Implementation Schedule:	When funding is available

City of Castle Hills	
Objective(s) Addressed:	Structural Projects
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$185,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works/outside contractors
Implementation Schedule:	When funding is available

City of China Grove

Objective(s) Addressed:	Prevention, Natural Resource Protection
Hazard(s) Addressed:	Hazardous Materials, Landslide
Priority (High, Medium, Low):	High
Estimated Cost:	Unknown, but borne by all who have used landfill
Potential Funding Sources:	Added cost to dump trash
Lead Agency/Department Responsible	Texas Commission of Environmental Quality and Environmental Protection Agency
Implementation Schedule:	The sooner the better

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	Hazardous Materials
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000 per set of bunker gear, $10,000 decontamination equipment, $5,000 training materials
Potential Funding Sources:	External sources, grants and contributions since City of China Grove does not have funds (FEMA – Emergency Management Performance Grants, Assistance to Firefighters Grants)
Lead Agency/Department Responsible	China Grove Fire and Rescue
Implementation Schedule:	As funds become available

City of China Grove	
Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Low
Estimated Cost:	Unknown
Potential Funding Sources:	State money
Lead Agency/Department Responsible	Texas Highway Department
Implementation Schedule:	When approved by highway department

City of Converse

Objective(s) Addressed:	Infrastructure/prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Street Department
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure/prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Street Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure/prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Street Department
Implementation Schedule:	2006

City of Converse	
Objective(s) Addressed:	Infrastructure/prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Street Department
Implementation Schedule:	2007

City of Fair Oaks Ranch

Objective(s) Addressed:	Ordinance enforcement
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Enforcement/code enforcement
Hazard(s) Addressed:	Hurricanes
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue/grants
Lead Agency/Department Responsible	Building Inspection or Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention/enforcement
Hazard(s) Addressed:	Drought and heat
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	External/grants
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Fair Oaks Ranch	
Objective(s) Addressed:	Enforcement
Hazard(s) Addressed:	Drought and heat
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	External or grants
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Federal grants (FEMA – All-Hazards Emergency Operational Planning Grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Data collection/emergency services
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	External/grants
Lead Agency/Department Responsible	Emergency Services
Implementation Schedule:	2005

City of Fair Oaks Ranch	
Objective(s) Addressed:	Emergency response/preparedness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants (FEMA – Assistance to Firefighters Grants, Emergency Management Performance Grants)
Lead Agency/Department Responsible	Emergency Services
Implementation Schedule:	2005

Objective(s) Addressed:	Training/preparedness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000
Potential Funding Sources:	FEMA – CD should be available at no or little cost.
Lead Agency/Department Responsible	Building Inspection/Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Management practices and code enforcement
Hazard(s) Addressed:	Flood/all hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Fair Oaks Ranch	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	Grants – Texas DEM and FEMA have publication available at little or no cost. To order FEMA publications call 1-800-480-2520.
Lead Agency/Department Responsible	Public Information
Implementation Schedule:	2005

City of Grey Forest

Objective(s) Addressed:	Structural Projects
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$125,000
Potential Funding Sources:	City General Fund
Lead Agency/Department Responsible	City
Implementation Schedule:	Hopefully in 2004

Objective(s) Addressed:	Structural Project, Prevention
Hazard(s) Addressed:	Wildfire, drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	City General Fund/Water System General Fund
Lead Agency/Department Responsible	City
Implementation Schedule:	Not sure—whenever the City can afford it

Objective(s) Addressed:	Health, safety to all city and county residents in the area. (One mile of Scenic Loop Road is in our City and some of that is only City on one side of the road.)
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Low
Estimated Cost:	$300,000
Potential Funding Sources:	Texas DOT, grants, watershed funds
Lead Agency/Department Responsible	Bexar County
Implementation Schedule:	When money can be allocated

City of Grey Forest	
Objective(s) Addressed:	Structural Projects, Prevention
Hazard(s) Addressed:	Flood—flood waters close the entrance to the City for hours or days and citizens as well as fire, police and EMS vehicles cannot get through
Priority (High, Medium, Low):	Low
Estimated Cost:	$200,000
Potential Funding Sources:	City general fund
Lead Agency/Department Responsible	City
Implementation Schedule:	Not sure—when City can afford to do it

Objective(s) Addressed:	Reduce City infrastructure damage by repeated water running and standing over and on the roads
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Low
Estimated Cost:	$50,000
Potential Funding Sources:	City general fund
Lead Agency/Department Responsible	City
Implementation Schedule:	If and when the City can ever afford it

City of Helotes

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	External/grants (Future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds.)
Lead Agency/Department Responsible	Texas Department of Transportation
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$51,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$49,600
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Helotes	
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$62,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	External sources/grants (Future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds.)
Lead Agency/Department Responsible	Texas Department of Transportation
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$62,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Helotes	
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$18,400
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$29,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$82,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Helotes	
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$54,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$48,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$44,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Helotes	
Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Hill Country Village

Objective(s) Addressed:	Property protection
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium. Council is aware of the problem. No funds have been allocated at this time.
Estimated Cost:	$3,000,000 to $4,000,000
Potential Funding Sources:	Pending funding
Lead Agency/Department Responsible	Public Works with the aid of independent contractors
Implementation Schedule:	Five year plan

Town of Hollywood Park

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$280,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Mayor, City Council and City Engineer
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Mayor, City Council, City Engineer
Implementation Schedule:	If possible, during the year 2003—04 budget

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Mayor, City Council, City Engineer
Implementation Schedule:	If possible, during the 2003—04 budget

Town of Hollywood	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Grant (FEMA – Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program; FEMA publications are available at no cost. Call 1-800-480-2520 for more information.)
Lead Agency/Department Responsible	City Hall
Implementation Schedule:	2005

Objective(s) Addressed:	Property protection
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Grant (FEMA – Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Grant (Texas DEM and FEMA have disaster publication available at little or no cost. To order FEMA publications, contact 1-800-480-2520.)
Lead Agency/Department Responsible	City Hall
Implementation Schedule:	2005

Town of Hollywood	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	Grants (FEMA – Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program; United States Army Corps of Engineers – various mitigation grants; United States Department of Agriculture, Natural Resource Conversation Services – various mitigation grants; United States Department of Housing and Urban Development – Community Development Block Grants; Environmental Protection Agency – various mitigation grants)
Lead Agency/Department Responsible	City Hall
Implementation Schedule:	2006

City of Kirby

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Tornadoes, Thunderstorms, Hurricanes, Winter Storm
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works, City Public Services
Implementation Schedule:	Late 2003, early 2004

City of Leon Valley

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	External sources and bonds (United States Army Corps of Engineers)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$161,000
Potential Funding Sources:	Bonds and grant (Future FEMA – Hazard Mitigation Grant Program and/or Public Assistance funds)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$153,000
Potential Funding Sources:	Bonds and grant (Future FEMA – Hazard Mitigation Grant Program and/or Public Assistance funds)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Leon Valley	
Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Bonds and grant (United States Army Corps of Engineers; future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds; Texas Water Development Board)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2006

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$2,000,000
Potential Funding Sources:	Bonds and grant (United States Army Corps of Engineers; future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds; Texas Water Development Board)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2008

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$6,000,000
Potential Funding Sources:	Grants and general revenue (United States Army Corps of Engineers; future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds; Texas Water Development Board)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2010

Objective(s) Addressed:	Prevention/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Low
Estimated Cost:	$1,000,000
Potential Funding Sources:	Grant and general revenue (United States Army Corps of Engineers; future FEMA Hazard Mitigation Grant Program and/or Public Assistance funds; Texas Water Development Board)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2010

City of Live Oak

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	General revenue, FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Office of Emergency Management
Implementation Schedule:	2003 through 2005

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$0
Potential Funding Sources:	Funded by Bexar Metro 911
Lead Agency/Department Responsible	Police Department and Office of Emergency Management
Implementation Schedule:	2004 (project already underway by Bexar Metro 911)

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Fire Department/Building Department and Planning & Zoning
Implementation Schedule:	2004 through 2005

City of Olmos Park

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$489,600
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Infrastructure Committee
Implementation Schedule:	2004

City of San Antonio

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$1,520,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$5,352,645
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$1,470,500
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$1,146,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$29,908,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$51,454,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2005

City of San Antonio	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$23,521,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$30,178,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$8,646,848
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$3,149,063
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$2,146,559
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$16,108,603
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

City of San Antonio	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$15,621,778
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$8,257,992
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$21,009,526
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$4,885,000
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$29,047,400
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$74,635,000+
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

City of San Antonio	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$10,302,316
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$10,438,325
Potential Funding Sources:	Probable Bond Election
Lead Agency/Department Responsible	City Public Works Department
Implementation Schedule:	2008

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Grants/general revenue. FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Public Information
Implementation Schedule:	2006

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flood, tornado, severe thunderstorms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$500,000
Potential Funding Sources:	Grants (FEMA—Emergency Management Performance Grant, Assistance to Firefighters Grants)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2006

City of Selma

Objective(s) Addressed:	Structural projects
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$1,000,000 +/-
Potential Funding Sources:	External sources (United States Army Corps of Engineers; FEMA – Future Hazard Mitigation Grant Program and/or Public Assistance Funds; Texas Water Development Board)
Lead Agency/Department Responsible	To be determined
Implementation Schedule:	Unknown

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Fire, hazardous materials, flood
Priority (High, Medium, Low):	High
Estimated Cost:	Approx. $300,000 +/-
Potential Funding Sources:	General revenue, external sources
Lead Agency/Department Responsible	To be determined
Implementation Schedule:	2004-2005

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Floods, fires
Priority (High, Medium, Low):	High
Estimated Cost:	$650,000—$800,000
Potential Funding Sources:	General fund
Lead Agency/Department Responsible	Fire department
Implementation Schedule:	2003—2004

City of Shavano Park

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$600,000—$1,000,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$250,000—$300,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$300,000—$400,000 with open channel outfall drain $750,000—$900,000 with underground outfall drain
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$225,000—$275,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

City of Shavano Park	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000—$200,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000—$200,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

City of Shavano Park	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$75,000—$100,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000—$100,000
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000—$300,000 depending on other mitigation projects upstream
Potential Funding Sources:	75% Federal Grant Funds 25% Local Funds (City, Private, State)
Lead Agency/Department Responsible	City Engineer with support from city staff/TxDOT and the Mayor/City Council
Implementation Schedule:	2005

City of Somerset

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Terrell Hills

Objective(s) Addressed:	Provide for unified response and mitigation of incidents
Hazard(s) Addressed:	Improve responses to terrorist threats
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	General fund
Lead Agency/Department Responsible	Fire and Police Departments
Implementation Schedule:	Project started January 2004 anticipate main training completion by November 2004 with continuous refreshers thereafter.

Objective(s) Addressed:	Reduce inflow to drainage facilities and prevent backups to environment
Hazard(s) Addressed:	Flood and Hazardous Materials
Priority (High, Medium, Low):	High
Estimated Cost:	$4,000,000
Potential Funding Sources:	Certificate of Obligation bonds and general fund
Lead Agency/Department Responsible	Street and Sanitation
Implementation Schedule:	Project started February 2004/ anticipate completion by 2007

Objective(s) Addressed:	Increase capacity of current system
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000,000
Potential Funding Sources:	Undetermined/ possibly grant
Lead Agency/Department Responsible	City Manager's Office/ Planning
Implementation Schedule:	Design phase underway, estimated completion 2009

City of Terrell Hills	
Objective(s) Addressed:	Identifying capacity of drainage system and areas covered
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	General Fund
Lead Agency/Department Responsible	City Manager's Office/ Planning
Implementation Schedule:	Ongoing with anticipated completion 2007

Objective(s) Addressed:	Improve technology used by emergency services thus improving service
Hazard(s) Addressed:	Multiple
Priority (High, Medium, Low):	High
Estimated Cost:	None
Potential Funding Sources:	No funding required to conduct internal study
Lead Agency/Department Responsible	Fire and Police Departments
Implementation Schedule:	Project started February 2004/ anticipate completion June 2004

Objective(s) Addressed:	Provide for positive flow of street run-off
Hazard(s) Addressed:	Drainage and Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$600,000
Potential Funding Sources:	General fund
Lead Agency/Department Responsible	City Manager's Office/ Planning
Implementation Schedule:	Project started December 2003/ planned completion May 2004

City of Universal City

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$15,000 for repeater option; $500,000 for 800 trunking option
Potential Funding Sources:	General Fund/Tax Note
Lead Agency/Department Responsible	Universal City Fire Department
Implementation Schedule:	2004 (Planning); 2005 (Completion)

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$15,000
Potential Funding Sources:	General Fund/Tax Note
Lead Agency/Department Responsible	Universal City Fire Department
Implementation Schedule:	2004 (Planning); 2005 (Completion)

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$60,000
Potential Funding Sources:	General Fund/Tax Note
Lead Agency/Department Responsible	Universal City Emergency Management
Implementation Schedule:	2004 (Planning); 2005 (Completion)

Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Fire and public safety
Priority (High, Medium, Low):	High
Estimated Cost:	$800,000
Potential Funding Sources:	General Fund/Tax Note
Lead Agency/Department Responsible	Universal City Fire Department
Implementation Schedule:	2004 (Planning); 2005 (Completion)

Objective(s) Addressed:	Ordinance development and enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000—$35,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Universal City Police Department
Implementation Schedule:	2004 (Planning); 2005 (Completion)

City of Universal City	
Objective(s) Addressed:	Prevention/management practices
Hazard(s) Addressed:	Drought and heat
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety/emergency response
Hazard(s) Addressed:	Thunderstorms, Winter Storms, Tornadoes
Priority (High, Medium, Low):	Low
Estimated Cost:	$35,000—$45,000
Potential Funding Sources:	Tax Note/General Fund
Lead Agency/Department Responsible	Universal City Fire Department
Implementation Schedule:	2003 (Planning); 2004 (Completion)

City of Windcrest

Objective(s) Addressed:	Emergency response
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$3,000—$5,000
Potential Funding Sources:	External sources (Department of Homeland Security – Emergency Operations Center Funding, Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	FY 2003—2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150—$300
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	FY 2003—2004

Objective(s) Addressed:	Emergency response
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$500
Potential Funding Sources:	External sources – for more information, visit http://training.fema.gov/EMIWeb/cert/
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	FY 2003—2004

Objective(s) Addressed:	Emergency response
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000—$35,000
Potential Funding Sources:	External sources (Department of Homeland Security – Assistance to Firefighters Grants, Pre-Disaster Mitigation, Hazard Mitigation Grant Program)
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	FY 2003—2004 (As funds are available.)

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	FY 2003—2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds. FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Infrastructure
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public information
Implementation Schedule:	2005

COMAL COUNTY

(CITIES OF GARDEN RIDGE, BULVERDE AND NEW BRAUNFELS)

Comal County

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding*
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	Reserves
Lead Agency/Department Responsible	Comal County public works
Implementation Schedule:	2004
Notes:	*Dam Access Road washed out during the "Flood of '02," due to the size of the existing culverts and high cfs of waterflow from Canyon Dam Emergency Spillway.

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$75,000
Potential Funding Sources:	Comal County, Bexar Metro 911, Texas Department of Health Bio-Terrorism Grant
Lead Agency/Department Responsible	Comal County Emergency Operations
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding (due to obstruction of water flow)
Priority (High, Medium, Low):	High
Estimated Cost:	No cost to county; all labor would be from inmates of the Texas Department of Corrections
Potential Funding Sources:	Texas Department of Corrections inmates
Lead Agency/Department Responsible	Comal County public works
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	Phase 1: $99,011; Phase 2: $91,574; Total: $190,585
Potential Funding Sources:	Natural Resources Conservation Services (75 percent); Reserves (25 percent)
Lead Agency/Department Responsible	Comal County Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Property protection
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$3,440,000
Potential Funding Sources:	Hazard Mitigation Grant Program or Pre-Disaster Mitigation Program (75 percent); Reserves (25 percent)
Lead Agency/Department Responsible	Comal county public works
Implementation Schedule:	2003

Objective(s) Addressed:	Property protection
Hazard(s) Addressed:	Flooding (along creeks in Comal County and its municipalities)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$43,270,979
Potential Funding Sources:	Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) Program, Unmet Needs Funding, reserves and external sources
Lead Agency/Department Responsible	Comal County public works
Implementation Schedule:	2005
Notes:	*A feasibility study was completed 01/09/01 and revised 05/23/01 with reference to the following five proposed retention dam sites: Dry Comal Creek, Devils Backbone, Elm Creek, Bear Creek and Jacobs Creek.

Objective(s) Addressed:	Public safety/prevention
Hazard(s) Addressed:	Flooding (of low water crossings)
Priority (High, Medium, Low):	Low
Estimated Cost:	$150,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Comal County Public Works
Implementation Schedule:	2005

City of Bulverde

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding (roadway continually washes out during flooding as culverts are too small to handle flow)
Priority (High, Medium, Low):	High
Estimated Cost:	Corp project—$200,000
Potential Funding Sources:	United States Army Corp of Engineers
Lead Agency/Department Responsible	City of Bulverde Public Works
Implementation Schedule:	2004

City of Garden Ridge

Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	Unknown at this time
Potential Funding Sources:	General fund
Lead Agency/Department Responsible	City of Garden Ridge
Implementation Schedule:	Exact schedule of implementation is still under development.

Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Low
Estimated Cost:	Unknown at this time
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	City of Garden Ridge
Implementation Schedule:	Two years

City of New Braunfels

Objective(s) Addressed:	Prevention of flooding
Hazard(s) Addressed:	Flooding (due to obstruction of water flow)
Priority (High, Medium, Low):	High
Estimated Cost:	No cost to county; all labor would be from inmates of the Texas Department of Corrections
Potential Funding Sources:	Texas Department of Corrections inmates
Lead Agency/Department Responsible	Comal County Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	Natural Resource Conservation Services (75 percent); Reserves (25 percent)
Lead Agency/Department Responsible	City of New Braunfels Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$2,000,000+ (Final negotiations are in process for additional structures)
Potential Funding Sources:	Hazard Mitigation Grant Program or Pre-Disaster Mitigation Program (75 percent); Reserves (25 percent)
Lead Agency/Department Responsible	City of New Braunfels Public Works
Implementation Schedule:	2003

FRIO COUNTY

(CITIES OF DILLEY AND PEARSALL)

Frio County

Objective(s) Addressed:	Emergency response
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Frio County Sheriff's Office
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Road & Bridge
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Frio County Commissioners Court
Implementation Schedule:	2005

City of Dilley

Objective(s) Addressed:	Emergency response/public safety
Hazard(s) Addressed:	Terrorism
Priority (High, Medium, Low):	High
Estimated Cost:	$11,000 (cameras) $75,000 (suits)
Potential Funding Sources:	Seeking federal grant funds and will consider cost sharing (Department of Homeland Security – Emergency Management Performance Grants)
Lead Agency/Department Responsible	Police Department/Public Works (cameras) Police Department/Fire Department (suits)
Implementation Schedule:	2005

Objective(s) Addressed:	Emergency response
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Frio County Sheriff's Office/Dilley Police Department
Implementation Schedule:	2005

Objective(s) Addressed:	Ordinance enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Zoning Board
Implementation Schedule:	2005

Objective(s) Addressed:	Enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Zoning Board
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Pearsall

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Pearsall Police Department/Frio County Sheriff's Office
Implementation Schedule:	2005

Objective(s) Addressed:	Ordinance enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Zoning Board
Implementation Schedule:	2005

Objective(s) Addressed:	Enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General
Lead Agency/Department Responsible	Zoning Board
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention of flooding
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

GILLESPIE COUNTY

(CITY OF FREDERICKSBURG)

Gillespie County/City of Fredericksburg

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	HAZMAT
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	Grants/cost sharing
Lead Agency/Department Responsible	TxDOT/Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	None other than staff time unless consultant is required to draft ordinance
Potential Funding Sources:	General revenue/cost sharing
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	General revenue/cost sharing
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Gillespie County/City of	
Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2006

Objective(s) Addressed:	Codes
Hazard(s) Addressed:	Fire
Priority (High, Medium, Low):	Medium
Estimated Cost:	None other than staff time
Potential Funding Sources:	None needed
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	Grant (Department of Homeland Security – All-Hazards Emergency Operational Planning, Emergency Management Performance Grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

GOLIAD COUNTY

(CITY OF GOLIAD)

Note: Goliad County and the City of Goliad developed Mitigation Actions that apply to both the County and the City.

Goliad County and City of Goliad

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$190,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Goliad County Precinct 2
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000—$15,000
Potential Funding Sources:	External sources (FEMA - Assistance to Firefighters Grants, Emergency Management Performance Grant)
Lead Agency/Department Responsible	Office of Emergency Management
Implementation Schedule:	2004

	Raise low water crossing at Walker Road above flood level, in order to remove 25 residents from harm's way.
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$7,161
Potential Funding Sources:	External sources. FEMA - Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, Pre Disaster Mitigation Program, 406 Public Assistance (following federally declared disaster); US Army Corp of Engineers – Small Flood Control Projects
Lead Agency/Department Responsible	Goliad County Precinct 1
Implementation Schedule:	2004

	Raise road bed above flood level at low water crossing at Franke Road at Perdido Creek to remove 75 residents from harm's way.
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$140,000
Potential Funding Sources:	External sources (FEMA - Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, Pre Disaster Mitigation Program, 406 Public Assistance (following federally declared disaster); US Army Corp of Engineers – Small Flood Control Projects)
Lead Agency/Department Responsible	Goliad County Precinct 4
Implementation Schedule:	2004

GUADALUPE COUNTY
(CITIES OF MARION, NEW BERLIN, SCHERTZ AND SEGUIN)

Guadalupe County

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Wildfire
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	Grants (National Fire Academy, various Department of Homeland Security training opputunities)
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	Grants (Texas Water Development Board, FEMA – Emergency Management Performance Grants)
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2005

Guadalupe County	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Permit fees
Lead Agency/Department Responsible	Engineering
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Mitigation Action 6	
Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	Grant
Lead Agency/Department Responsible	Water and Wastewater
Implementation Schedule:	2004

Guadalupe County	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazard
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2006

Guadalupe County	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$500
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Building Inspection
Implementation Schedule:	2005

Guadalupe County	
Objective(s) Addressed:	Public safety/emergency response
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

City of Marion

City of Marion	
Objective(s) Addressed:	Protection
Hazard(s) Addressed:	Hazardous Materials
Priority (High, Medium, Low):	High
Estimated Cost:	$30,000
Potential Funding Sources:	Possible external sources
Lead Agency/Department Responsible	Utilities
Implementation Schedule:	Completed 2005

City of New Berlin

City of New Berlin	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$250
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Development fees
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$1,500
Potential Funding Sources:	Grant
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$500
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Tornadoes, hurricanes, thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	$1,000
Potential Funding Sources:	Permit/general funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Code enforcement/public safety
Hazard(s) Addressed:	Tornadoes, hurricanes, thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	$1,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Inspections
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Code enforcement
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$500
Potential Funding Sources:	Grant
Lead Agency/Department Responsible	Building Department
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Private funding
Lead Agency/Department Responsible	Public Information
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Drought
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Fire
Implementation Schedule:	2005

Objective(s) Addressed:	Emergency services/public awareness
Hazard(s) Addressed:	Wildfire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$500
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Wildfire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2005

Objective(s) Addressed:	Prevention/emergency services
Hazard(s) Addressed:	Wildfire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Grants/bonds
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2005

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Federal grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2005

City of New Berlin	
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Grants (United States Army Corps of Engineers – Floodplain Management Services, Texas Water Development Board)
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety/management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Engineering
Implementation Schedule:	2004

City of New Berlin	
Objective(s) Addressed:	Public safety/infrastructure
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Road/bridge
Implementation Schedule:	2006

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Management practices/ordinance enforcement
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,500
Potential Funding Sources:	Development fee
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of New Berlin Mitigation Action 24	
Objective(s) Addressed:	Ordinance enforcement
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,500
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Land use
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Planning
Implementation Schedule:	2005

Objective(s) Addressed:	Land use/ordinance enforcement
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1500
Potential Funding Sources:	Development fee
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of New Berlin Mitigation Action 27	
Objective(s) Addressed:	Training/emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	The Emergency Management Institute is available to local officials at no cost. For more information visit http://training.fema.gov/EMIWeb/
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety/prevention
Hazard(s) Addressed:	Tornadoes, hurricanes, thunderstorms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Tornadoes, hurricanes, thunderstorms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000
Potential Funding Sources:	Permit fees
Lead Agency/Department Responsible	Permits
Implementation Schedule:	2004

City of Schertz

Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Tornadoes, thunderstorms
Priority (High, Medium, Low):	High
Estimated Cost:	$30,000
Potential Funding Sources:	Community donations and general revenue
Lead Agency/Department Responsible	Fire Department
Implementation Schedule:	2004

	Explore methods and sources for the installation of one or more streamflow gauges on Cibolo Creek between existing gauges at Selma and Boerne.
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	Start date: October 1, 2003

	Develop interagency communication plan.
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	2004

City of Schertz	Develop emergency information Web page to include hazard warnings, road closures, shelter location and status, situation reports, special needs registration, etc.
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Information Technology (IT) Department
Implementation Schedule:	2004

	Install dedicated weather monitoring equipment and software in communications center and Fire Department.
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Flooding, tornadoes, hurricanes, thunderstorms, hail
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,000—$5,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	Start date: October 1, 2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General Revenue
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	Start date: October 1, 2004

City of Schertz Mitigation Action 7	
Objective(s) Addressed:	Code enforcement
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Community Development
Implementation Schedule:	Start date: October 1, 2004

Objective(s) Addressed:	Infrastructure/prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Hazard Mitigation Grant Program (HMGP)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure/prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$30,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Community Development
Implementation Schedule:	October 1, 2003

Objective(s) Addressed:	Infrastructure/prevention/public safety
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	Start date: April 1, 2004

City of Sequin

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	Grant
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004

Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$75,000
Potential Funding Sources:	External
Lead Agency/Department Responsible	City of Seguin
Implementation Schedule:	2003—2004

Mitigation Action 3	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	External
Lead Agency/Department Responsible	City of Seguin
Implementation Schedule:	2004

City of Seguin Mitigation Action 4	
Objective(s) Addressed:	Infrastructure
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	High
Estimated Cost:	$1,000,000
Potential Funding Sources:	External
Lead Agency/Department Responsible	City of Seguin
Implementation Schedule:	2004

KARNES COUNTY

(CITIES OF KARNES CITY, KENEDY, RUNGE AND FALLS CITY)

Note: The following actions apply to all jurisdictions in the County. There are no specific actions for each jurisdiction because they all participated in the process with the County and agreed to these actions as a group.

Karnes County / Cities of Falls City, Karnes City, Kenedy and Runge

Objective(s) Addressed:	Objectives 5.1 – 5.6
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Karnes County HMT
Implementation Schedule:	Complete by September 2003

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Karnes County HMT
Implementation Schedule:	2005

Karnes County	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000 (Communications upgrade study) $300,000 (Communication equipment setup) $30,000 (Communication for HMT)
Potential Funding Sources:	External sources/grants
Lead Agency/Department Responsible	Karnes County HMT and Karnes County Sheriff's Office
Implementation Schedule:	2004

Objective(s) Addressed:	Ordinance enforcement/data acquisition
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$20,000 (Study) $2,500,000 (Phase 1) $TBD based on study (Phase 2)
Potential Funding Sources:	External sources/FEMA and state grants
Lead Agency/Department Responsible	Karnes County HMT in cooperation with county and city officials, residents and the San Antonio River Authority
Implementation Schedule:	Study Q1 2005 based on SARA study; 2005—2006

Karnes County	
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Hurricanes
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000, (Highway 181)* $5,000 (Training)
Potential Funding Sources:	Texas Department of Transportation; General Revenue; and the American Red Cross (training for employees and volunteers)
Lead Agency/Department Responsible	Karnes County HMT and Karnes County
Implementation Schedule:	FY 2004—2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	High winds
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	External sources/grants
Lead Agency/Department Responsible	Karnes HMT
Implementation Schedule:	2004

Objective(s) Addressed:	Prevention/management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Karnes County HMT supporting San Antonio River Authority
Implementation Schedule:	2005—2010

Karnes County	
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	River Authority
Implementation Schedule:	2005

Objective(s) Addressed:	Data collection
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Objectives 1.1 – 1.3; 2.1 – 2.3; 3:1; 4.1 – 4.4; 5.1 – 5.6; 6.1 – 6.4
Hazard(s) Addressed:	Thunderstorms, tornadoes, hurricanes
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	External source
Lead Agency/Department Responsible	Karnes County HMT, Karnes County, Runge, Falls City and Karnes City
Implementation Schedule:	2005

Karnes County	
Objective(s) Addressed:	Objectives 1.1 – 1.3; 2.1; 2.3
Hazard(s) Addressed:	Earthquakes, sinkholes and landslides
Priority (High, Medium, Low):	Low
Estimated Cost:	$10,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Karnes County HMT and Karnes County
Implementation Schedule:	2005

Kerr County/Cities of Ingram and Kerrville

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards (tornado, flooding)
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	Grant (Emergency Management Performance Grants, Firefighters Assistance Grants, All-Hazards Emergency Operational Planning)
Lead Agency/Department Responsible	Project share/EOC
Implementation Schedule:	2005

	Implement floodway cleaning program.
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flood
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Ordinance development/enforcement
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Kerr County/Cities of	
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

MEDINA COUNTY

(CITIES OF CASTROVILLE, DEVINE, HONDO, LACOSTE AND NATALIA)

Medina County

Objective(s) Addressed:	Preparedness
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	Very High
Estimated Cost:	$75,000—100,000
Potential Funding Sources:	Grants/general revenues (Department of Homeland Security - Emergency Operations Center Funding, Emergency Management Performance Grants, All-Hazard Emergency Management Operational Planning)
Lead Agency/Department Responsible	Medina County
Implementation Schedule:	FY 2003

Objective(s) Addressed:	Prevention/emergency services/mgmt practices
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	Very High
Estimated Cost:	$100,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Medina County
Implementation Schedule:	2003 to September 2004

Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	Very High
Estimated Cost:	$150,000
Potential Funding Sources:	Grants (Department of Homeland Security – Assistance to Firefighters, Emergency Management Performance Grants)
Lead Agency/Department Responsible	Medina County
Implementation Schedule:	2003 to Spring 2004

Objective(s) Addressed:	Preparedness/emergency services
Hazard(s) Addressed:	All hazards (floods, tornadoes, storms)
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000—$150,000
Potential Funding Sources:	Grants/general revenue (FEMA - Emergency Management Performance Grants, Firefighters Assistance Grants)
Lead Agency/Department Responsible	Medina County
Implementation Schedule:	2003 to Spring 2004

Objective(s) Addressed:	Public safety/awareness
Hazard(s) Addressed:	Storms, tornadoes, floods
Priority (High, Medium, Low):	Medium
Estimated Cost:	$2,500—$5,000
Potential Funding Sources:	General Revenues/Contributions
Lead Agency/Department Responsible	Medina County
Implementation Schedule:	2003 to 1st Quarter of 2004

City of Castroville

Objective(s) Addressed:	Preparedness/emergency services/public safety
Hazard(s) Addressed:	Flooding, severe storm, tornadoes
Priority (High, Medium, Low):	High
Estimated Cost:	$35,000
Potential Funding Sources:	General revenue/contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Spring 2004

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$555,000
Potential Funding Sources:	Contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule of implementation is still under development, but project is currently being designed to being in October/November 2003

Objective(s) Addressed:	Infrastructure/public safety
Hazard(s) Addressed:	Erosion
Priority (High, Medium, Low):	High
Estimated Cost:	$6,000,000
Potential Funding Sources:	General revenues/contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact Implementation schedule is still under development

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms, erosion
Priority (High, Medium, Low):	High
Estimated Cost:	$450,000
Potential Funding Sources:	Contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Fall 2003 to Spring 2004

	Implement storm water drainage project at Lower La Coste Rd.
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms, erosion
Priority (High, Medium, Low):	High
Estimated Cost:	$225,000
Potential Funding Sources:	Contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Fall 2003 to Spring 2004

Mitigation Action 6	
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms, erosion
Priority (High, Medium, Low):	High
Estimated Cost:	$60,000
Potential Funding Sources:	General Revenue/external source (Natural Resource Conservation Service – Watershed Protection and Flood Prevention Program, Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, US Army Corp of Engineers – Small Flood Control Projects, Pre Disaster Mitigation Program, 406 Public Assistance (following federally declared disaster)
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Fall 2003 to Spring 2004

City of Castroville Mitigation Action 7	
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms, erosion
Priority (High, Medium, Low):	High
Estimated Cost:	$1,500,000
Potential Funding Sources:	Unknown at this time
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule still under development

Objective(s) Addressed:	Preparedness/prevention/ emergency services/ public safety
Hazard(s) Addressed:	Flooding, severe storms
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	Unknown at this time (United States Army Corps of Engineers – Floodplain Management Services, Texas Water Development Board)
Lead Agency/Department Responsible	USGS/City of Castroville
Implementation Schedule:	Exact schedule still under development

Objective(s) Addressed:	Infrastructure/prevention
Hazard(s) Addressed:	Flooding, infrastructure damage
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Contingency/Bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule still under development

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, Sever Storms, Erosion
Priority (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	Contingency/bonds
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Fall 2003 to Spring 2004

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms
Priority (High, Medium, Low):	Medium
Estimated Cost:	Unknown at this time
Potential Funding Sources:	Unknown at this time
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule still under development

Objective(s) Addressed:	Preparedness/prevention/public safety
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	Medium
Estimated Cost:	$85,000
Potential Funding Sources:	General revenue/external sources (FEMA- Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program, Assistance to Firefighters Grants, Emergency Management Performance Grants)
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule underway, but expected time is one year.

Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding, severe storms
Priority (High, Medium, Low):	Medium
Estimated Cost:	$700,000
Potential Funding Sources:	Unknown at this time.
Lead Agency/Department Responsible	City of Castroville
Implementation Schedule:	Exact schedule still under development

City of Devine

Objective(s) Addressed:	Public awareness/prevention
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	Grants – Both TX DEM and FEMA have disaster publications available at no charge. To order FEMA publications contact 1-800-480-2520.
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Objective(s) Addressed:	Preparedness/emergency services/public safety
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	Grants/general revenue (FEMA – Assistance to Firefighters Program, Emergency Management Performance Grants, All-Hazards Emergency Operational Planning, Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Hondo

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	Multiple
Priority (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	City of Hondo
Implementation Schedule:	Six to eight months after project begins

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	Multiple
Priority (High, Medium, Low):	High
Estimated Cost:	$80,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management and Police Department
Implementation Schedule:	Pending funding – within 2 years

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	Multiple
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	Grants
Lead Agency/Department Responsible	Emergency Management and Police Department
Implementation Schedule:	Pending funding

Objective(s) Addressed:	Emergency Services
Hazard(s) Addressed:	Multiple
Priority (High, Medium, Low):	High
Estimated Cost:	$75,000
Potential Funding Sources:	Grants – general fund
Lead Agency/Department Responsible	City of Hondo
Implementation Schedule:	By 2004

City of La Coste

City of LaCoste	Clean Pole Cat Creek.
Objective(s) Addressed:	Prevention/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Mitigation Action 2	
Objective(s) Addressed:	Preparedness/emergency services/public safety
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of LaCoste	
Objective(s) Addressed:	Preparedness/emergency services/public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	Grants (United States Army Corps of Engineers – Floodplain Management Services, Texas Water Development Board, Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program)
Lead Agency/Department Responsible	Unknown at this time
Implementation Schedule:	Exact schedule still under development

Mitigation Action 4	
Objective(s) Addressed:	Prevention/training/management practices
Hazard(s) Addressed:	HAZMAT/ train derailment
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	Grants (FEMA – Assistance to Firefighters, Emergency Management Performance Grants, Hazardous Materials Assistance Program)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of LaCoste	
Objective(s) Addressed:	Prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Bonds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

	Implement program to clean city waterways.
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Bonds/grants (Texas Water Development Board, Natural Resources Conservation Services)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Natalia

	Implement a multi-hazard public awareness program.
Objective(s) Addressed:	Public awareness/prevention
Hazard(s) Addressed:	Multi-hazard
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	Grants – Texas Division of Emergency Management and FEMA have disaster publications available free of charge. FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Mitigation Action 2	
Objective(s) Addressed:	Preparedness/emergency services/public safety
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	Grants/general revenue (Emergency Management Performance Grants)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

WILSON COUNTY

(CITIES OF FLORESVILLE, LA VERNIA, POTH AND STOCKDALE)

Wilson County

	Update flood elevation levels to the 500-year floodplain of San Antonio lower river basin in rural parts of the county.
Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	Funding acquired by SARA through taxing local jurisdictions within their region
Lead Agency/Department Responsible	This is a project being done by the San Antonio River Authority.
Implementation Schedule:	2006

Objective(s) Addressed:	Objective 1.2
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	Grants (FEMA - Firefighters Assistance Grants, Emergency Management Performance Grants, All-Hazards Emergency Operational Planning)
Lead Agency/Department Responsible	Cooperative effort between Wilson County and the cities of Floresville, Poth, Stockdale and LaVernia. May be coordinate through Emergency Management.
Implementation Schedule:	2005

Objective(s) Addressed:	Objective 6.2
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$55,000
Potential Funding Sources:	Grants (Emergency Management Performance Grants, Firefighters Assistance Grants)
Lead Agency/Department Responsible	Emergency Management/911
Implementation Schedule:	2005

Objective(s) Addressed:	Objective 1.1
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$1,500 (initial cost)
Potential Funding Sources:	General revenue/grants (FEMA - Emergency Management Performance Grants, Firefighters Assistance Grants)
Lead Agency/Department Responsible	Cooperative effort between the county, cities and school districts within the county. May be coordinate through Emergency Management.
Implementation Schedule:	2005

	Develop flood hazard information by collecting information, high water marks, and conduct engineering studies to develop the 100-year and 500-year flood elevation levels.
Objective(s) Addressed:	Objectives 6.1; 6.3; 6.4
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Engineering
Implementation Schedule:	2005

Wilson County Mitigation Action 6	
Objective(s) Addressed:	Objective 1.1; 1.2
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	Training is available at no charge; Tabletop, functional and full-scale exercises have variable costs depending on the number of departments involved and if they are volunteer or paid
Potential Funding Sources:	General revenue/grants
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2005—2006

Mitigation Action 7	
Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000,000
Potential Funding Sources:	External sources and general fund
Lead Agency/Department Responsible	Roads & Bridges
Implementation Schedule:	Wilson County participates in the Texas Department of Transportation Systems Bridge Replacement Program. One project is currently in progress. The FY 2003 Off Systems Bridges were approved for replacement. Wilson County is in the process of obtaining estimates and approval on the waiver projects that will serve as the county's 10 percent match to this program. 2004

Objective(s) Addressed:	Preparedness/infrastructure
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	Varies per water utility company (from $26,300 to $78,000)
Potential Funding Sources:	External sources, grants
Lead Agency/Department Responsible	Water utility companies
Implementation Schedule:	Depends on funding

Objective(s) Addressed:	Data collection
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	Medium
Estimated Cost:	$1,500
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2005

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Grant/bond (United States Army Corps of Engineers – Clearing and Snagging Projects)
Lead Agency/Department Responsible	City/County Public Works
Implementation Schedule:	2005

Wilson County	
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	External sources (Texas Water Development Board, Natural Resources Conservation Service – Watershed Protection and Flood Prevention Program, United States Army Corps of Engineers – Small Flood Control Projects)
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

Wilson County	**Implement a communication network with upstream jurisdictions to facilitate early warning of flood hazards.**
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Grants (FEMA – All-Hazards Emergency Operational Planning and Emergency Management Performance Grants)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

	Improve regional notification by coordinating with neighboring jurisdictions.
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	Grants (Emergency Management Performance Grants, Pre-Disaster Mitigation Program, Hazard Mitigation Assistance Program)
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

City of Floresville

City of Floresville	Acquisition of low lying area(s) in downtown Floresville.
Objective(s) Addressed:	Land use
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000—$450,000
Potential Funding Sources:	General fund and external sources
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2009

Objective(s) Addressed:	Objective 1.2 and 1.3
Hazard(s) Addressed:	All
Priority (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	General fund and external sources – FEMA Assistance to Firefighters Grant, Emergency Management Performance Grant
Lead Agency/Department Responsible	Police Department w/FEMA
Implementation Schedule:	2009

Objective(s) Addressed:	Objective 6.1
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$25,000/cost share
Potential Funding Sources:	General fund and external sources (possibly Economic Development Administration or FEMA Pre-Disaster Mitigation funds or Flood Hazard Mapping Program)
Lead Agency/Department Responsible	To be determined
Implementation Schedule:	2008

	Develop storm water management plan.
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Fire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

Objective(s) Addressed:	Objective 3.6
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$25,000
Potential Funding Sources:	Water and Sewer Fund
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Floresville Mitigation Action 7	
Objective(s) Addressed:	Objective 5.4
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Water and Sewer Fund
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	Ongoing, on at least a yearly basis

City of La Vernia

Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	External sources (FEMA and ORCA)
Lead Agency/Department Responsible	Mayor's Office and Public Works
Implementation Schedule:	Work will begin immediately upon award of grant funds from FEMA and ORCA, applied for in 2001(2004)

Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	External sources (FEMA and ORCA)
Lead Agency/Department Responsible	Mayor's Office and Public Works
Implementation Schedule:	2004. Work will begin immediately upon award of grant funds from FEMA and ORCA, applied for in 2001

Mitigation Action 3	
Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	External sources (FEMA and ORCA)
Lead Agency/Department Responsible	Mayor's Office and Public Works
Implementation Schedule:	2004. Work will begin immediately upon award of grant funds from FEMA and ORCA, applied for in 2001

City of La Vernia	
Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$41,485
Potential Funding Sources:	San Antonio River Authority General Funds
Lead Agency/Department Responsible	Mayor's Office and the San Antonio River Authority
Implementation Schedule:	July—August 2004

Mitigation Action 5	
Objective(s) Addressed:	Objective 3.5
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$90,000
Potential Funding Sources:	External source – Texas Clean Rivers Program, TCEQ Soil and Water Conservation Program, Texas Water Development Board
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	2004

Objective(s) Addressed:	Objective 6.2
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$90,000
Potential Funding Sources:	External sources
Lead Agency/Department Responsible	Police Department
Implementation Schedule:	2005

City of Poth

Mitigation Action 1	
Objective(s) Addressed:	Management practices
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Poth	
Objective(s) Addressed:	Emergency services
Hazard(s) Addressed:	All hazards
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants. FEMA – All Hazards Emergency Operational Planning and Emergency Management Performance Grants.
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

City of Poth	
Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Thunderstorms, tornadoes
Priority (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	External/grants – Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program – Department of Homeland Security terrorism grants could also be used to develop a shelter plan.
Lead Agency/Department Responsible	EOC
Implementation Schedule:	2004

Mitigation Action 4	
Objective(s) Addressed:	Public awareness
Hazard(s) Addressed:	All hazard
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General fund/private funding. FEMA publications can be ordered by contacting 1-800-480-2520.
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2004

City of Poth	
Objective(s) Addressed:	Training
Hazard(s) Addressed:	All hazard
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Grants (Department of Homeland Security and FEMA training grants). For more information on the National Emergency Training Center (NETC) and the Emergency Management Institute (EMI) please visit http://training.fema.gov/EMIWeb/
Lead Agency/Department Responsible	Fire/Police Departments
Implementation Schedule:	2004

Objective(s) Addressed:	Public safety
Hazard(s) Addressed:	Tornadoes, winter storms, thunderstorms, hurricanes
Priority (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	Public Works
Implementation Schedule:	2005

City of Poth	
Objective(s) Addressed:	Public safety/prevention
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	Low
Estimated Cost:	$3,000—$5,000
Potential Funding Sources:	General revenue
Lead Agency/Department Responsible	SARA and City Maintenance Crew
Implementation Schedule:	October 2003

City of Stockdale

Mitigation Action 1	
Objective(s) Addressed:	Objectives 3.2, 3.5, 3.6; 5.4
Hazard(s) Addressed:	Flooding
Priority (High, Medium, Low):	High
Estimated Cost:	$750,000—$2,000,000
Potential Funding Sources:	General revenue/grants (United States Army Corps of Engineers - Clearing and Snagging Projects, Texas Water Development Board)
Lead Agency/Department Responsible	Emergency Management
Implementation Schedule:	2004. As soon as funding is available (a Phase 1 project has been started but is awaiting permit from the U.S. Army Corp of Engineers

Mitigation Action 2	
Objective(s) Addressed:	Objective 1.3
Hazard(s) Addressed:	Fire
Priority (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	General funds
Lead Agency/Department Responsible	City Water and Fire Department
Implementation Schedule:	January—August 2004

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the ***Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000***, published by FEMA, dated March 2004. This Plan Review Crosswalk is consistent with the *Disaster Mitigation Act of 2000* (P.L. 106-390), enacted October 30, 2000 and *44 CFR Part 201 – Mitigation Planning, Interim Final Rule* (the Rule), published February 26, 2002. This Crosswalk also incorporates Texas Planning Standards for Mitigation (*Checklist P* items P29-P52). You must refer to *Checklist P* for a detailed explanation of the numbered Texas Standards.

Texas Plan Review Process: Guidance on the plan review process can be found in Mitigation Job Aid #5 that is on the DEM website: www.txdps.state.tx.us/dem/documents.htm#mitigation.

Note: The Part 3 Multi-Hazard Planning Guidance can be found at the following website: www.fema.gov.fima/planning_toc4.shtm

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, reviewers may want to put an N/A in the prerequisite box for single jurisdiction plans.

States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		✓
B. Does the plan address the **impact** of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. **Required Revisions:** • Include a description of the impact of floods and earthquakes on the assets. **Recommended Revisions:** • This information can be presented in terms of dollar value or percentages of damage.	✓	
		SUMMARY SCORE	✓	

Local Mitigation Plan Review and Approval Status

Jurisdiction: Alamo Area Council of Governments	**Title of Plan:** Regional Mitigation Action Plan	**Date of Plan:** January 2004 – Revised June 2004
Local Point of Contact: Don McFarland	**Address:** 8700 Tesoro Drive, Suite 600 San Antonio, Texas 78217	
Title: Criminal Justice Manager for Emergency Preparedness		
Agency: Alamo Area Council of Governments – Regional Emergency Preparedness Advisory Committee		
Phone Number: 210-362-5200	**E-Mail:** dmcfarland@satx.rr.com	
Regional Liaison Officer Reviewer:	**Region:**	**Date:**
GDEM Mitigation Section Reviewer:	**Title:**	**Date:**
FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region 6		
Plan Not Approved		
Plan Approved		
Date Approved		

	NFIP Status*				
Jurisdiction:	**Y**	**N**	**N/A**	**CRS Class**	**RL Category**
1. Atascosa County	X				
2. Charlotte		X			
3. Christine		X			
4. Jourdanton	X				
5. Lytle	X				
6. Poteet	X				

Jurisdiction:	NFIP Status*				
	Y	N	N/A	CRS Class	RL Category
7. Pleasanton	X				
8. Bandera County	X				
9. Bandera	X				
10. Bexar County	X				
11. Alamo Heights	X				
12. Balcones Heights	X				
13. China Grove	X				
14. Castle Hills	X				
15. Converse	X				
16. Fairs Oaks Ranch	X				
17. Grey Forest	X				
18. Helotes	X				
19. Hill Country Village	X				
20. Hollywood Park	X				
21. Kirby	X				
22. Leon Valley	X				
23. Live Oak	X				
24. Olmos Park	X				
25. San Antonio	X				
26.Selma	X				
27. Shavano Park	X				

Jurisdiction:	NFIP Status*				
	Y	N	N/A	CRS Class	RL Category
28. Somerset	X				
29. Terrell Hills	X				
30. Universal City	X				
31. Windcrest	X				
32. Comal County	X				
33. Bulverde	X				
34. Garden Ridge	X				
35. New Braunfels	X				
36. Frio County	X				
37. Dilley	X				
38. Pearsall	X				
39. Gillespie County	X				
40. Fredericksburg	X				
41. Goliad County	X				
42. Goliad	X				
43. Guadalupe County	X				
44. Marion	X				
45. New Berlin		X	X		
46. Schertz	X				
47. Sequin	X				
48. Karnes County	X				

Jurisdiction:	NFIP Status*				
	Y	N	N/A	CRS Class	RL Category
49. Falls City	X				
50. Karnes City	X				
51. Kenedy	X				
52. Runge	X				
53. Kerr County	X				
54. Ingram	X				
55. Kerrville	X				
56. Medina County	X				
57. Castroville	X				
58. Devine	X				
59. Hondo	X				
60. Lacoste	X				
61. Natalia	X				
62. Wilson County	X				
63. Floresville	X				
64. Lavernia	X				
65. Poth	X				
66. Stockdale	X				
67. San Antonio River Authority					

*** Notes:** **Y = Participating** **N = Not Participating** **N/A = Not Mapped**

Repetitive Loss Category Definition: Category A = zero (0) RL properties; Category B = at least one (1) but less than (ten) 10; Category C = 10+
Community Rating System Class information: http://www.fema.gov/pdf/nfip/manual10_03/19cr1003.pdf

Jurisdiction:

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted.

Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a **"Needs Improvement"** score.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
Adoption by the Local Governing Body: §201.6(c)(5) **OR**		
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND**		
Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	N	S
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)		

Risk Assessment	N	S
Identifying Hazards: §201.6(c)(2)(i)		
Profiling Hazards: §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)		

Mitigation Strategy	N	S
Local Hazard Mitigation Goals: §201.6(c)(3)(i)		
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)		
Implementation of Mitigation Actions: §201.6(c)(3)(iii)		
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	N	S
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)		
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)		

State Requirements: See pages 11 and 12

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED ☐

PLAN APPROVED ☐

See Reviewer's Comments

PREREQUISITE(S)

Adoption by the Local Governing Body (page 3-2 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

***Requirement §201.6(c)(5)*:** *[The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).*

Texas Standard: P46

Element	Location in the Plan (section & page number)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Has the local governing body adopted the plan?	The Plan will be adopted once FEMA approval is granted.			
B. Is supporting documentation, such as a resolution, included?	This will be provided upon adoption after FEMA approval.			
		SUMMARY SCORE		

Multi-Jurisdictional Plan Adoption (Page 3-3 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

***Requirement §201.6(c)(5)*:** *For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.*

Texas Standards: P30, P46

Element	Location in the Plan (section & page numbers)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan indicate the specific jurisdictions represented in the plan?	Section 1, Page 3 Table 1-1			
B. For each jurisdiction, has the local governing body adopted the plan?	The Plan will be adopted once FEMA approval is granted.			
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	This will be provided upon adoption after FEMA approval.			
		SUMMARY SCORE		

Multi-Jurisdictional Planning Participation (page 3-4 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

***Requirement §201.6(a)(3)*:** *Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.*

Texas Standard: P30, P37

Element	Location in the Plan (section & page number)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan describe **how** each jurisdiction participated in the plan's development?	Section 1, Page 3 and Section 2, throughout			
		SUMMARY SCORE		

PLANNING PROCESS: *§201.6(b): An open public involvement process is essential to the development of an effective plan.*

Documentation of the Planning Process (Page 3-6 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:*
(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): *[The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Texas Standards: P29, P30, P37, P38, P39, P40, P41, P42.03, P42.04, P42.06, P42.07, P42.10

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan provide a narrative description of the process followed to prepare the plan?	Section 2, throughout			
B. Does the plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Section 2, Page 8			
C. Does the plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Section 2, Page 5 through 9			
D. Was there an opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other	Section 2, Page 9 and 10			

interested parties to be involved in the planning process?				
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Section 2, Page 3 and 4 and Section 5 throughout			
		SUMMARY SCORE		

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

Identifying Hazards (page 3-10 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the type … of all natural hazards that can affect the jurisdiction.*

Texas Standards: P31, P34, P36.01 to .07

Element	Location in the Plan (section & page #	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include **a description** of the types of **all natural hazards** that affect the jurisdiction? If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a Satisfactory score. Consult with the State Hazard Mitigation Officer to identify applicable hazards that may occur in the planning area.	Section 4, throughout			
		SUMMARY SCORE		

Profiling Hazards (Page 3-13 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(i): *[The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.*

Texas Standards: P35, P49

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the risk assessment identify the **location** (i.e., geographic area affected) of each natural hazard addressed in the plan?	Section 4.2, new maps added on pages 4-14, 20 and 23			
B. Does the risk assessment identify the **extent** (i.e., magnitude or severity) of each hazard addressed in the plan?	Section 4.2, new maps added on pages 4-14, 20 and 23			

C. Does the plan provide information on **previous occurrences** of each hazard addressed in the plan?	Section 4.2, throughout			
D. Does the plan include the **probability of future events** (i.e., chance of occurrence) for each hazard addressed in the plan?	Section 4.3, throughout			
		SUMMARY SCORE		

Assessing Vulnerability: Overview (page 3-17 of the Part 3 FEMA Planning Guidance)

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Texas Standards P36.01 to .07

Element	**Location in the Plan** (section & page #)	**Reviewer's Comments**	**SCORE**	
			N	**S**
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Section 4.2 and 4.3			
B. Does the plan address the **impact** of each hazard on the jurisdiction?	Section 4.2			
		SUMMARY SCORE		

Assessing Vulnerability: Identifying Structures (Page 3-19 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(ii)(A): *The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area … .*

Texas Standards P36.01 to .07

Element	**Location in the Plan** (section & page #)	**Reviewer's Comments**	**SCORE**	
			N	**S**
	Section 4.3			
	Section 4.3			
		***3*SUMMARY SCORE**		

Note: A "Needs Improvement" score on this requirement (shaded areas above) will not preclude the plan from passing.

Assessing Vulnerability: Estimating Potential Losses (Page 3-22 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(ii)(B): *[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate … .*
Texas Standards: P36.01 to .07

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
	Section 4.3			
	Section 4.3			
		SUMMARY SCORE		

Assessing Vulnerability: Analyzing Development Trends (Page 3-25 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*
Texas Standard: P32

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
	Section 3, pages 20-22			
		SUMMARY SCORE		

Note: A "Needs Improvement" score on these requirements (shaded areas above) will not preclude the plan from passing.

Multi-Jurisdictional Risk Assessment (Page 3-27 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

Texas Standards: P36.01 to .07

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	Section 4.3, new table added on pages 23-26.			

SUMMARY SCORE		

MITIGATION STRATEGY: *§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

Local Hazard Mitigation Goals (Page 3-30 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Texas Standard: P43
Note: Two websites to obtain information on State and NFIP Goals: (1) www.txdps.state.tx.us/dem/documents.htm#mitigation (2) www.fema.gov/nfip

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards? (**GOALS** are long-term; represent what the community wants to achieve, such as "eliminate flood damage"; and are based on the risk assessment findings.)	Section 6, page 3-5			
		SUMMARY SCORE		

Identification and Analysis of Mitigation Actions (Page 3-32 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(3)(ii): *[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*

Texas Standards: P44, P51
Guidance on P51: Discuss the process you would use to identify new measures

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan identify and analyze a **comprehensive range** of specific mitigation actions and projects for each hazard?	Section 8			
B Do the identified actions and projects address reducing the effects of hazards on **new** buildings and infrastructure?	Section 8			
C. Do the identified actions and projects address reducing the effects of hazards on **existing** buildings and infrastructure?	Section 8			
		SUMMARY SCORE		

Implementation of Mitigation Actions (Page 3-36 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Texas Standards: P44, P50

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the mitigation strategy include how the actions are **prioritized**? (For example, is there a discussion of the process and criteria used?)	Section 8			
B. Does the mitigation strategy address how the actions will be **implemented and administered**? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	Section 8			
C. Does the prioritization process include an emphasis on the use of a **cost-benefit review** (see page 3-36 of *Multi-Hazard Mitigation Planning Guidance*) to maximize benefits?	Section 8			
		SUMMARY SCORE		

Multi-Jurisdictional Mitigation Actions (page 3-41 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(3)(iv): *For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

Texas Standard: P44

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include at least one identifiable **action item** for each jurisdiction requesting FEMA approval of the plan?	Appendix A			
		SUMMARY SCORE		

PLAN MAINTENANCE PROCESS

Monitoring, Evaluating, and Updating the Plan (page 3-44 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(4)(i): *[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

Texas Standards: P47, P48

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe the method and schedule for **monitoring** the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)	Section 7, pages 2 through 4			
B. Does the plan describe the method and schedule for **evaluating** the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)	Section 7, page 1			
C. Does the plan describe the method and schedule for **updating** the plan within the five-year cycle?	Section 7, page 1			
		SUMMARY SCORE		

Incorporation into Existing Planning Mechanisms (Page 3-47 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(4)(ii): *[The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

Texas Standards: P45, P42.06, 42.07

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?	Section 5 and 6			
B. Does the plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?	Section 7			
		SUMMARY SCORE		

Continued Public Involvement (page 3-49 of the Part 3 Multi-Hazard Mitigation Planning Guidance)

Requirement §201.6(c)(4)(iii): *[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.*

Texas Standard: P47

Element	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan explain how **continued public participation** will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Section 7			
		SUMMARY SCORE		

TEXAS STANDARDS THAT EXCEED 44CFR SECTION 201.6

STANDARD	Location in the Plan (section & page #)	Reviewer's Comments	SCORE N	SCORE S
P33: Identify communities designated for special consideration because of minority or economically disadvantaged populations. Explain the State and/or federal designations for each identified community. **Note:** The following is the explanation from 44CFR Section 201.2 - *Small and impoverished communities means a community of 3,000 or fewer individuals that is identified by the State as a rural community, and is not a remote area within the corporate boundaries of a larger city; is economically disadvantaged, by having an average per capita annual income of residents not exceeding 80 percent of national, per capita income, based on best available data; the local unemployment rate exceeds by one percentage point or more, the most recently reported, average yearly national unemployment rate.*	Section 3	**Note: This is important. When it comes to funding for PDM projects, for communities that have been designated as "Small and Impoverished", the federal share/local match is 90/10 versus 75/25. This was in the PDM FY 03 Guidance.**		
P52: Identify the name, phone, fax, and email address of the person (s) that conducted the review and date prepared				

and submitted to DEM.				

TEXAS STANDARDS THAT EXCEED 44 CFR REQUIREMENTS

P42 series: Identify and assess the effectiveness of previously implemented mitigation measures and of current mitigation-related policies, plans, practices, and procedures. The purpose of this series is to assess what is being done and has been done and use it as a tool in developing new mitigation strategies and measures.

Element	Location in the Plan (section and page #)	Reviewer's Comments	SCORE N	SCORE S
42.01: Hazard Mitigation Grant Program projects	Section 5, page 11 and 12			
42.02: Public Assistance program projects	Section 5, page 12 and 13			
42.05: Actions and projects funded under: • Project Impact • Pre-Disaster Mitigation • Hurricane-Property Protection Mitigation	Section 5, page 15			
42.08: Current building and fire codes • Date and type of code • Inspection/permit process • Numbers & qualification of inspectors • Number & explanation of permit variances for past 12 months	Section 5, page 17-20, Appendix D			
42.09: Floodplain Management Ordinances/Orders • Date adopted • Explain inspection/permit process • Numbers & qualification of floodplain administrators & staff • Number of inspections • Number of permits approved • Number & explanation of why permit variances were allowed for past 12 months	Section 5, page 21-25 Appendix D			
P42.11 Findings/results of Building Code Effectiveness Grading Report (BCEGS). Include date of report and score.	Section 5, pages 20 and 21			

Matrix A: Profiling Hazards

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required**.

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each ***applicable*** *hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes	N	S	N	S	N	S	N	S
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coastal Erosion	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Dam Failure	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Extreme Heat	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hailstorm	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Land Subsidence	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Severe Winter Storm	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tsunami	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

Legend:
§201.6(c)(2)(i) Profiling Hazards
A. Does the risk assessment identify the location (i.e., geographic area affected) of each hazard addressed in the plan?
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?
C. Does the plan provide information on previous occurrences of each natural hazard addressed in the plan?
D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?

Jurisdiction:

Matrix B: Assessing Vulnerability

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each requirement. **Completing the matrix is not required**.

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each ***applicable*** *hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Note: Receiving an N in the shaded columns will not preclude the plan from passing.

To check boxes, double click on the box and change the default value to "checked."

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	§201.6(c)(2)(ii) Assessing Vulnerability: Overview	A. Overall Summary Description of Vulnerability		B. Hazard Impact											
	Yes		N	S	N	S		N	S	N	S		N	S	N	S
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Coastal Erosion	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Dam Failure	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Earthquake	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Extreme Heat	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Hailstorm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Land Subsidence	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Severe Winter Storm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Tsunami	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Wildfire	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Other _____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
_____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Other _____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

Does the plan include an overall summary description of the jurisdiction's vulnerability to each hazard?

Does the plan address the impact of each hazard on the jurisdiction?

Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?

B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

A. Does the plan estimate potential dollar losses to vulnerable structures?

B. Does the plan describe the methodology used to prepare the estimate?

Matrix C: Identification and Analysis of Mitigation Actions

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each ***applicable*** *hazard. An "N" for any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
	☐	☐	☐
Coastal Erosion	☐	☐	☐
	☐	☐	☐
Dam Failure	☐	☐	☐
	☐	☐	☐
Earthquake	☐	☐	☐
	☐	☐	☐
Extreme Heat	☐	☐	☐
	☐	☐	☐
Hailstorm	☐	☐	☐
	☐	☐	☐
Land Subsidence	☐	☐	☐
	☐	☐	☐
Severe Winter Storm	☐	☐	☐
	☐	☐	☐
Tsunami	☐	☐	☐
	☐	☐	☐
Wildfire	☐	☐	☐
	☐	☐	☐
Other _____	☐	☐	☐
_____	☐	☐	☐
Other _____	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

Legend:
§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions
A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?

Sample for the P42 series Texas Standards (Completing this matrix is not required)

EFFECTIVENESS ASSESSMENTS
FOR THE
(Do one of these worksheets for each jurisdiction covered by the plan)

TEXAS STANDARD	COMMENT/ASSESSMENT
P42.01: Hazard Mitigation Grant Program Grant projects	See Note 1. Has a database that contains completed mitigation projects.
P42.02: Public Assistance program projects	See Note 2
P42.03: Corps of Engineers studies, plans and projects	See Note 5
P42.04: Texas Water Development Board plans, studies and/or projects	See Note 4
P42.05: Actions and projects funded under Project Impact, Pre-Disaster Mitigation, Hurricane-Property Protection Mitigation	See Note 1. Has a database that contains completed mitigation projects.
P42.06: Current master drainage and storm water management	Note: Obtain this information from the jurisdictions
P42.07: Current comprehensive and capital improvement plans	Note: Obtain this information from the jurisdictions
P42.08: Current building and fire codes. • Date and type of codes in use, • Describe inspection/permit process, • Number & qualifications of inspectors, • Number of building starts and inspections for the past 12 months	Note: Obtain this information from the jurisdictions
P42.09: Current floodplain management ordinances/court orders. • Identify dates adopted and explain inspection/permit process • Numbers and qualifications of floodplain administrators • The number of inspections and permits approved • The number and explanation of why permit variances were allowed during the past 12 months.	Note: Obtain this information from the jurisdictions
P42.10: Community Assistance Visits (CAVs), flood insurance studies or other technical assistance reports/findings. • Identify type and date of current floodplain maps, • Repetitive Loss Category • Participation in the Community Rating System.	See Notes 3, 6, 7, and 8. Also, the CRS class is required information on Page 1 of the Crosswalk. Definition of "Repetitive Loss Category also on Page 1 of the Crosswalk.
P42.11: Findings/results of Building Code Effectiveness Grading. Include date of report and score received.	See Note 9

Points of Contact and websites to obtain information on the P42 Series

1. Mitigation Projects: Mary Evan, 512-424-2397 or mary.evan@txdps.state.tx.us. David Larner, 512-424-2423 or david.larner@txdps.state.tx.us
2. Public Assistance: John Latham 512-424- 5057 or john.latham@txdps.state.tx.us. Jerry Ferguson 512-424-5349 or jerry.ferguson@txdps.state.tx.us
3. CAVs, CRS, NFIP: Mike Howard at Texas Commission on Environmental Quality. 512-239-6155 or mhoward@tceq.state.tx.us
4. Texas Water Development Board: Gilbert Ward 512-463-6418 or gward@twdb.state.tx.us
5. Corps of Engineers: Fort Worth District: 817-866-1326, press "0" to speak to a person. Galveston District: 409-762-6300
6. Repetitive Loss Category: http://training.fema.gov/emiweb/crs/m7s1main.htm (gives the definition)
7. NFIP: http://www.fema.gov/cis/tx.pdf (has information on floodplain maps dates)
8. Community Rating System: http://www.fema.gov/pdf/nfip/manual10_03/19cr1003.pdf
9. Building Code Effectiveness Grading: www.isomitigation.com/bcegs1.html

2003 PROPOSED REGIONAL CAPITAL IMPROVEMENT PROGRAM PROJECTS LIST

Prepared for:

BEXAR COUNTY

And

CITY OF SAN ANTONIO

Prepared by:

SAN ANTONIO RIVER AUTHORITY

APRIL 2003

SUMMARY

No.				Project	Benefits	Estimated Cost
Leon Creek Watershed						
1	C			French Creek Buyout (North of Prue Road)	Buyout Properties in floodplain, reestablish drainage low	$ 430,388
2	C			French Creek Buyout (South of Prue Road)	Buyout Properties in floodplain, reestablish drainage low	$ 5,840,433
3	C	BX		South Hausman Phase 1 Low Water Crossing	Provide access during the 100-year storm	$ 3,828,772
4	C	BX		Valleyview Acres Buyout	Buyout Properties in floodplain, reestablish drainage low	$ 3,500,000
5	C		W	W. Hausman - Huntsman to Babcock	Provide access during the 100-year storm	$ 4,502,000
6	C	BX	W	Ingram Road Low Water Crossing	Provide access during the 100-year storm	$ 14,652,000
7	C	BX	W	Timberhill/Wurzbach Low Water Crossing	Provide access during the 100-year storm	$ 5,825,424
8	C	BX		Prue Road Phase I Low Water Crossing	Provide access during the 100-year storm	$ 2,000,000
9	C	BX		Plumnear Buyout	Buyout Properties in floodplain, reestablish drainage low	$ 337,000
10		BX		Upper Huebner Creek RSWF	Storm water facility to reduce downstream peaks	$ 1,613,161
11		BX	W	Culebra Pond RSWF	Storm water facility to reduce downstream peaks	$ 2,000,000
12				Leon Creek and French Creek RSWF	Storm water facility to reduce downstream peaks	$ 1,500,000
13		BX		West Commerce - Pinn to Military Low Water Crossing	Provide access during the 100-year storm	$ 2,000,000
					Total	**$ 48,029,178**
Medina Creek Watershed						
1		BX	W	Applewhite Road at Medina River	Provide all Weather access on Applewhite Road	$ 308,000
2		BX	W	FM 1937 at Medina River	Provide all Weather access on FM 1937	$ 1,500,000
3		BX	W	Gross Lane at Medina River	Provide all Weather access on Gross Lane	$ 550,000
4		BX	W	Cagnon Road at Medina River	Provide all Weather access on Cagnon Road	$ 4,350,000
5		BX	W	Jungman Road at Medina River	Provide all Weather access on Jungman Road	$ 520,000
6				Hilltop Acres Subdivision Buyout	Buyout Properties in floodplain, reestablish drainage low	$ 2,861,232
7		BX	W	O'Brien Road at Polecat Creek	Provide all Weather access on O'Brien Road	$ 548,000
8		BX	W	Cagnon Road at Polecat Creek	Provide all Weather access on Cagnon Road	$ 320,000
9	C	BX	W	Pearsall Road at Elm Creek	Provide all Weather access on Pearsall Road	$ 189,000
10			W	Hollowell Road at Polecat Creek	Provide all Weather access on Hollowell Road	$ 550,000
11		BX		Jackell Road at Unnamed Tributary to Elm Creek	Provide all Weather access on Jackell Road	$ 525,000
12		BX		Quintana Road at Live Oak Slough	Provide all Weather access on Quintana Road	$ 424,858
13		BX	W	Kinney Road at Live Oak Slough	Provide all Weather access on Kinney Road	$ 424,858
14				Covel at Medio Creek	Provide all Weather access on Covel Road	$ 1,500,000
15				Talley Road at Tributary to Medio Creek	Provide all Weather access on Talley Road	$ 424,858
16	C	BX		Ravensfield Road Bridge/Road Construction	Provide all Weather access on Ravensfield	$ 1,700,000
					Total	**$ 16,695,806**

SUMMARY

San Antonio/Olmos Creek Watersheds

1		B	W	Secure Quarry Site in the Shavano Park Area	Flood Reduction / aquifer recharge benefits	$	10,000,000
2	C			Rock Creek Channel and Outfall repair	Channel Rectification and repair of existing outfall, reduce frequent flooding	$	6,000,000
3		B		410 Olmos creek by West avenue channel repiars	Major distruction of existing channel after the july 2002 event repiars needed	$	2,000,000
4	C			Zarzamora Creek from Culebra to Laven	Flood Plain Restoration and Rectification	$	4,000,000
5				Zarzamora Creek Tributary A from Zarzamora Conflunce to 410	Flood Plain Restoration and Rectification	$	6,000,000
6	C			Military Drive Channel - Military Drive to Wagner	Concrete line an existing grass lined channel	$	9,000,000
7	C			Barbara Drive Drainage	Create FIS and reduce frequent flooding along Waring street and Barbara	$	6,000,000
8	C	B		Commercial Tributary from the confluence with Six Mile Creek to May	Frequent and major flooding	$	17,000,000
9				Sleepy Hollow and Orsinger Buyout	Buyout Properties in floodplain, reestablish drainage low	$	3,000,000
10				Mulberry at Catalpa-Pershing	Reduce flooding along Broadway Street	$	3,000,000
11				Broadway and Millrace Intersection	Reduce flooding along Broadway Street	$	3,000,000
12				Symphony Lane Drainage	a number of home impacted during the 100 year event adjacent to the channel	$	1,000,000
					Total	**$**	**70,000,000**

Salado Creek Watershed

1	C			Beitel Creek Enviromental Restoration-Channel Rectification	Removeal of Illegal 205,000 cy of Fill in Channel	$	2,555,000
2		B		Mid Beitel Creek Adjacent to Garden Court East Subdivision	Channel rectification and Buyout	$	2,900,000
3			W	Jones Maltsberger Low Water Crossing Replace at Mud Creek	Provide all Weather access on Jones Maltsberger	$	1,000,000
4			W	Salado Creek Low Water Crossing replacement at West Avenue	Provide all Weather access on West Avenue	$	2,500,000
5			W	Jones Maltsberger Low Water Crossing Replace at Elm Creek	Provide all Weather access on Jones Maltsberger	$	1,000,000
6			W	Panther Creek Low Water Crossing Replacement at West avenue	Provide all Weather access on West Avenue	$	1,500,000
7	C	B		Wheatly Heights Buyout and Salado Creek Greenway Development	Purchase remaining propoerties and development of Green way	$	450,000
8	C			Henderson Pass Low Water Crossing	Provide all Weather access on Henderson Pass	$	3,734,000
					Total	**$**	**15,639,000**

Cibolo Creek Watershed

1				Re Establish Ox Bow on Cibolo at D.S. of Schaffer road	Channel rectification	$	3,000,000
2		B	W	Schaefer Road Bridge Flood Proofing	provide all weather access.	$	2,555,000
3		B	W	Bulverde Road at Cibolo Creek LWC	Provide all Weather access on Bulverde	$	1,500,000
4		B	W	Blanco Road at Cibolo Creek LWC	Provide all Weather access on Blanco	$	1,200,000
5		B	W	Smithson Valley at Cibolo LWC	Provide all Weather access on Smithson Valley	$	2,000,000
6		B	W	Trainer Hale at Woman Hollering Creek LWC	Provide all Weather Access	$	1,000,000
7		B	W	Abbott Road at Martinez Creek LWC	Provide all Weather Access	$	1,000,000
					Total	**$**	**12,255,000**

C - COSA BOND LIST
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Total All Watersheds $ 162,618,984

STATEMENT OF CLARIFICATION

This list was prepared from information given by the City of San Antonio and Bexar County. Engineering judgment, from the best available data, was used including the City of San Antonio and Bexar County Project Lists, the 1999 BCFAR, and Watershed Committee Lists.

Upstream and downstream dependency on the proposed projects cannot be evaluated in all cases due to a current lack of hydrologic and hydraulic models.

Leon Creek Watershed

Leon Creek Watershed

Proposed CIP List 2003

No.				Project	Benefits		Estimated Cost
1	C			French Creek Buyout (North of Prue Road)	Buyout Properties in floodplain, reestablish drainage low	$	430,388
2	C			French Creek Buyout (South of Prue Road)	Buyout Properties in floodplain, reestablish drainage low	$	5,840,433
3	C	BX		South Hausman Phase 1 Low Water Crossing	Provide access during the 100-year storm	$	3,828,772
4	C	BX		Valleyview Acres Buyout	Buyout Properties in floodplain, reestablish drainage low	$	3,500,000
5	C		W	W. Hausman - Huntsman to Babcock	Provide access during the 100-year storm	$	4,502,000
6	C	BX	W	Ingram Road Low Water Crossing	Provide access during the 100-year storm	$	14,652,000
7	C	BX	W	Timberhill/Wurzbach Low Water Crossing	Provide access during the 100-year storm	$	5,825,424
8	C	BX		Prue Road Phase I Low Water Crossing	Provide access during the 100-year storm	$	2,000,000
9	C	BX		Plumnear Buyout	Buyout Properties in floodplain, reestablish drainage low	$	337,000
10		BX		Upper Huebner Creek RSWF	Storm water facility to reduce downstream peaks	$	1,613,161
11		BX	W	Culebra Pond RSWF	Storm water facility to reduce downstream peaks	$	2,000,000
12				Leon Creek and French Creek RSWF	Storm water facility to reduce downstream peaks	$	1,500,000
13		BX		West Commerce - Pinn to Military Low Water Crossing	Provide access during the 100-year storm	$	2,000,000
					Total	**$**	**48,029,178**

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Leon Creek-1

Proposed CIP List

- **<u>French Creek Buyout (North of Prue Road)</u>**

- Description:
- Buyout all the homes that are in the floodplain along French Creek, north of Prue Road, along South Hausman Road.

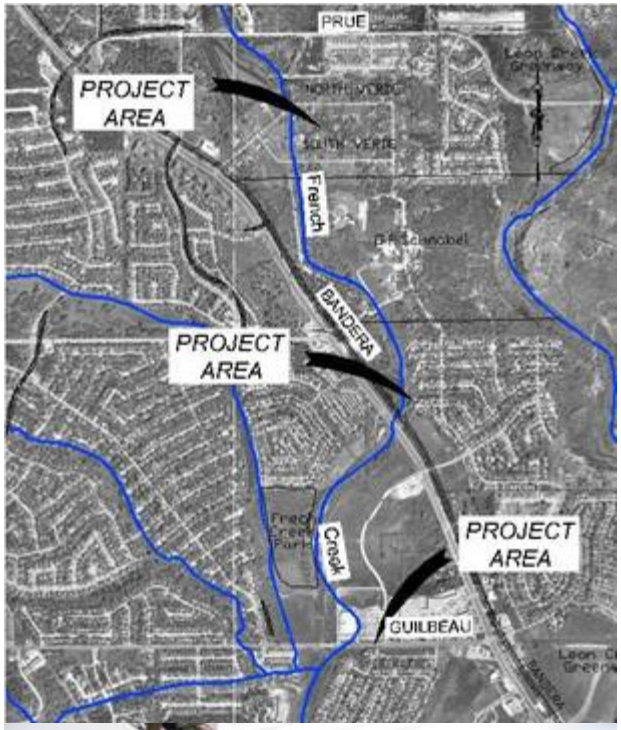
- Justification:
- Due to the rapid development in the area, these properties are now in the floodplain. Downstream crossings of South Hausman and Prue Road have capacities of less than a 10-year frequency.

- Cost:

- $430,388

Leon Creek-2

Proposed CIP List



- **<u>French Creek Buyout (South of Prue Road)</u>**

- Description:
- Buyout all the homes that are in the floodplain along French Creek, south of Prue Road.

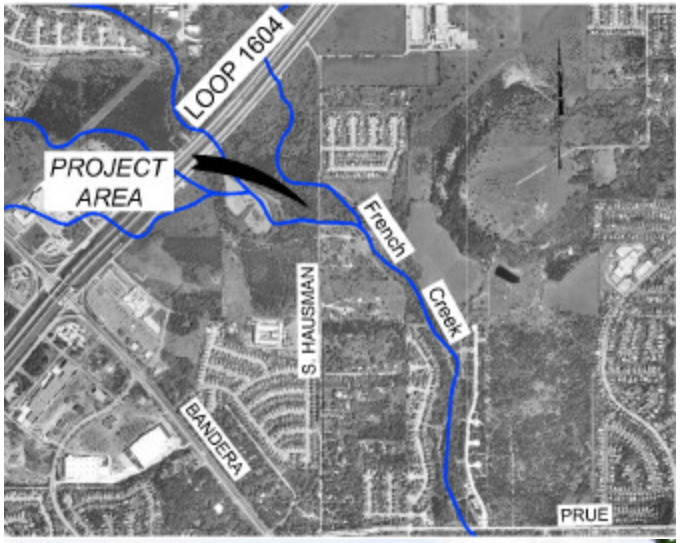
- Justification:
- Due to the rapid development in the area, these properties are now in the floodplain. Downstream crossings of South Verde and Bandera have capacities of a 10-year frequency and Guilbeau has less than a 10-year capacity.

- Cost:

- $5,840,433

Leon Creek-3

Proposed CIP List



- **<u>South Hausman Phase I Low Water Crossing</u>**

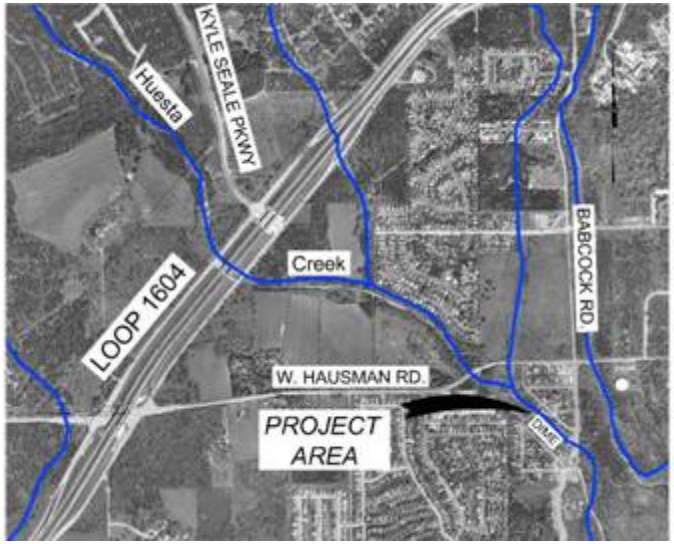
- Description:
- Replace existing low water crossing, by raising the existing road from 920.0 msl-ft to approximately 921.4 msl-ft to accommodate the 14,447 cfs during the 100 year storm.

- Justification:
- This crossing neighbors Steubing Elementary School and regularly floods at approximately a 10-year frequency. This improvement will allow traffic to cross to get to Loop 1604 and improve the safety for students, parents, and teachers during rainfall events.
-
- Cost:

- $3,828,772

Leon Creek-4

Proposed CIP List



- **<u>Valleyview Acres Buyout</u>**

- Description:
- Buyout of 70 residential properties in this mobile home park.

- Justification:
- Huesta Creek cuts right through this subdivision causing a high hazard area. Properties flood at a frequency less than the 10-year event. Residents are subject to severe safety, life, and health issues. The buyout of this area could lead to a storm water facility that could lessen peak discharges from Huesta Creek.

- Cost:

- $3,500,000

Leon Creek-5

Proposed CIP List

- **<u>W. Hausman – Huntsman to Babcock</u>**

- Description:
- Replace existing low water crossing, by raising the existing road from 952.0 msl-ft to approximately 954.3 msl-ft to accommodate the 9,043 cfs during the 100 year storm.

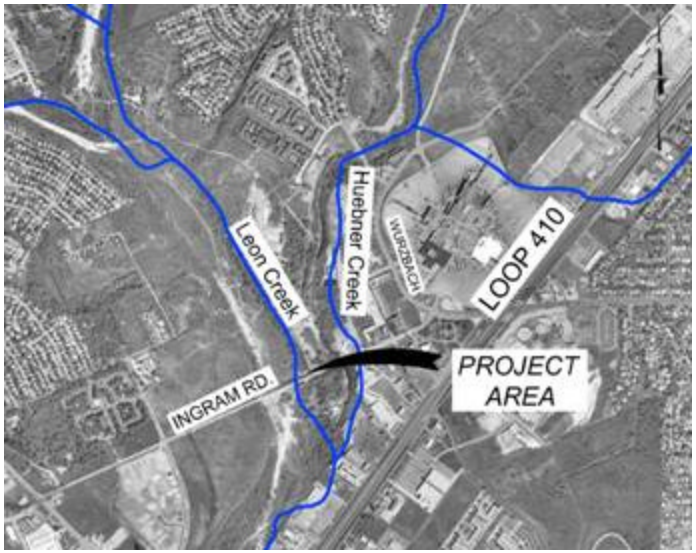
- Justification:
- This crossing is a major thorough fare that currently flood at less than a 10-year event. The improvement would lead to an heavy storm event route to Loop 1604.

- Cost:

- $4,502,000

Leon Creek-6

Proposed CIP List



- **<u>Ingram Road Low Water Crossing</u>**

- Description:
- Replace existing low water crossing, by raising the existing road from 764.0 msl-ft to approximately 765.0 msl-ft and place a 1650' x 80' bridge to accommodate 97,780 cfs during the 100 year storm.

- Justification:
- This crossing occurs on a major thorough fare and just upstream of the confluence of Leon Creek, Huebner Creek, and Huebner Creek Tributary A.
- Cost:

- $14,652,000

Leon Creek-7

Proposed CIP List

- **<u>Timberhill/Wurzbach Low Water Crossing</u>**

- Description:
- Replace existing low water crossing, by raising the existing road from 784.0 msl-ft to approximately 786.9 msl-ft and placing a 1100'x60' bridge or similar to accommodate the 17,262 cfs during the 100 year storm.

- Justification:
- This crossing is a major thorough fare and floods at a frequency of approximately a 10-year event. This improvement would improve access to Loop 410 during heavy rainfall events.

- Cost:

- $5,825,424

Leon Creek-8

Proposed CIP List

- **<u>Prue Road Phase I Low Water Crossing</u>**

- Description:
- Replace existing low water crossing on Prue Road from Laureate to Babcock, by raising the existing road from 911.0 msl-ft to approximately 914.0 msl-ft to accommodate the 4,450 cfs during the 100 year storm.

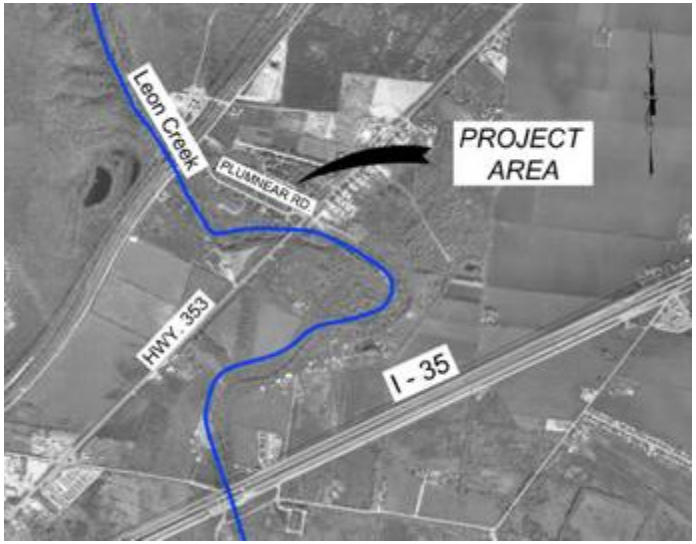
- Justification:
- This crossing regularly floods at less than a 10-year frequency. It is a major thorough fare and provides emergency access to Babcock.

- Cost:

- $2,000,000

Leon Creek-9

Proposed CIP List



- **<u>Plumnear Buyout</u>**

- Description:
- Buyout of three multi-trailer home properties.

- Justification:
- This property regularly has standing water during rainfall events and flooded extensively during the 2002 flood. Downstream crossing of Hwy 353 (New Laredo Hwy.) has a capacity of a 10-year frequency.

- Cost:

- $337,000

Leon Creek-10

Proposed CIP List

- **<u>Upper Huebner Creek RSWF</u>**

- Description:
- Regional Storm Water Facility in Upper Huebner Creek to reduce downstream peaks.

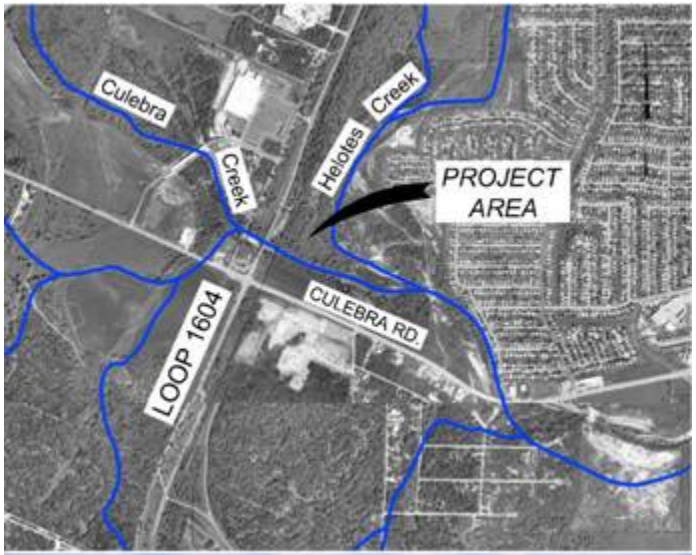
- Justification:
- Downstream crossings of Babcock, Hollyhock, Whitby, and Eckert have capacities between the 10-year and 25-year frequencies. The RSWF would lessen the impact to downstream crossings during heavy rainfall events.

- Cost:

- $1,613,161

Leon Creek-11

Proposed CIP List



- **<u>Culebra Pond RSWF</u>**

- Description:
- Replace existing low water crossing, by raising the existing road from 805.8 msl-ft to approximately 811.0 msl-ft and place 3-5 X 6 MBC or similar to accommodate the 706 cfs during the 100 year storm.

- Justification:
- This crossing is a major thorough fare and accommodates two grade schools in the area. This is a high hazard area. Because of the location of the upstream dam and the possible emergency spillway discharge, the discharge from site 10 located upstream is a rapid increase in water surface elevation.

- Cost:

- $2,000,000

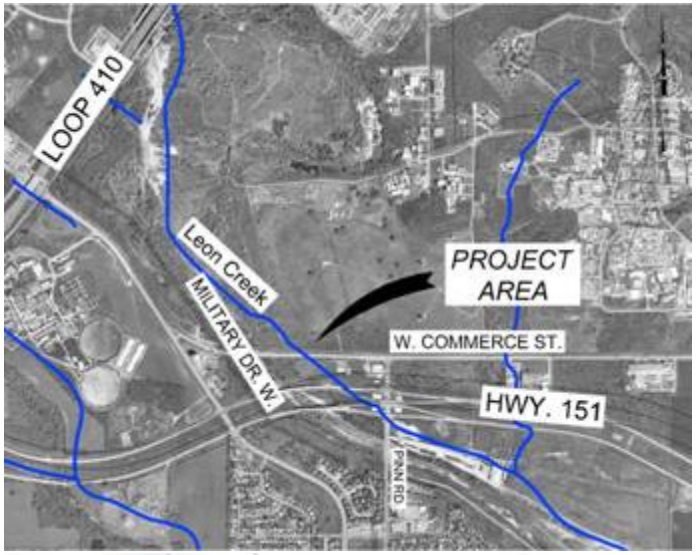
Leon Creek-12

Proposed CIP List

- **<u>Leon Creek and French Creek RSWF</u>**
- Description:
- Regional Storm Water Facility at the confluence of Leon and French Creeks to reduce downstream peaks.
- Justification:
- The hydrograph addition at the confluence from French Creek is 17,899 cfs for the 100-year storm. The RSWF would lessen impacts to the undersized crossing of Grissom Road during heavy rainfall events.
- Cost:
- $1,500,000

Leon Creek-13

Proposed CIP List



- **<u>West Commerce – Pinn to Military Low Water Crossing</u>**

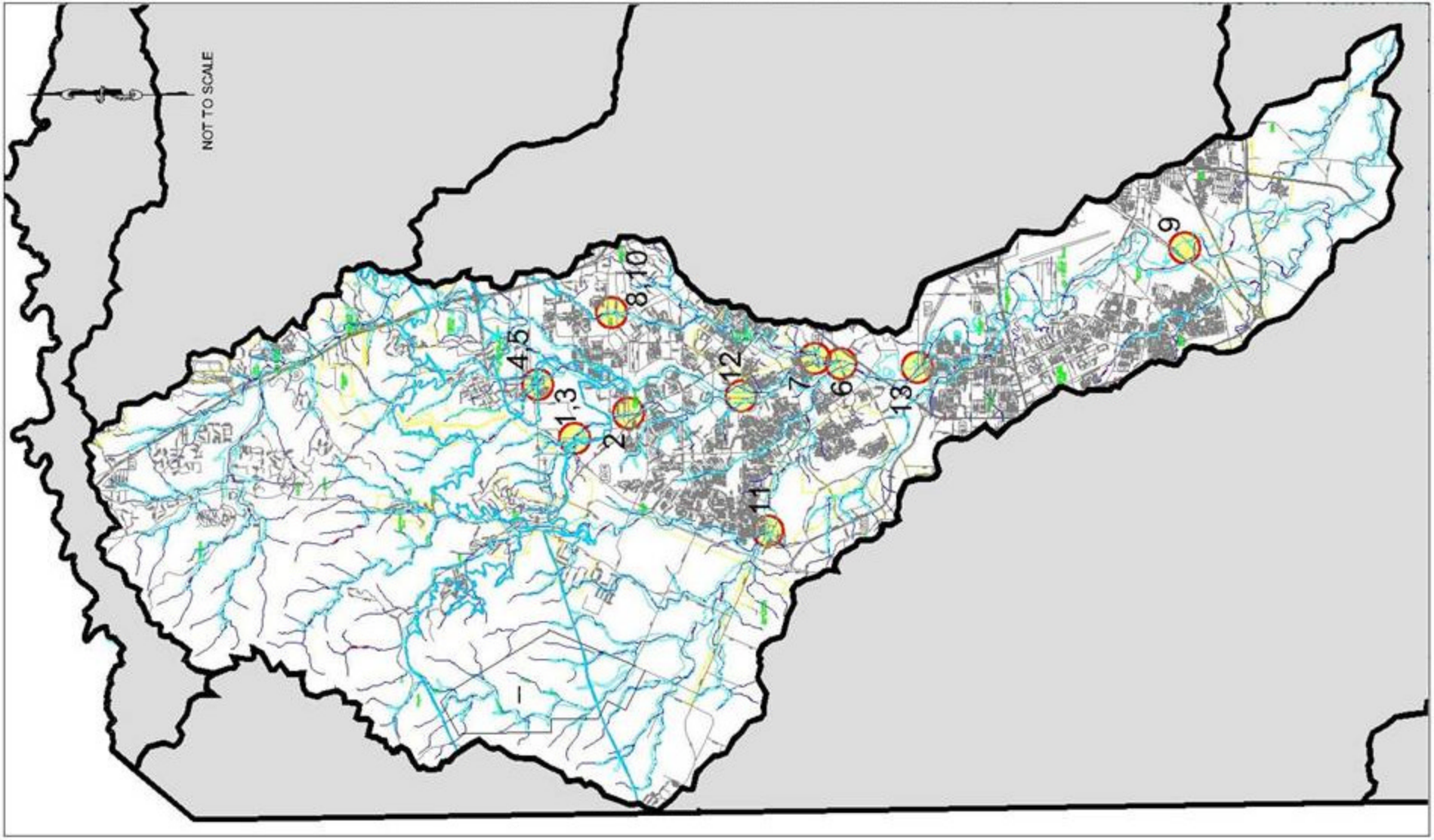
- Description:
- Replace existing low water crossing, by raising the existing road from 805.8 msl-ft to approximately 811.0 msl-ft and place 3-5 X 6 MBC or similar to accommodate the 706 cfs during the 100 year storm.

- Justification:
- This crossing is a major thorough fare and accommodates two grade schools in the area. This is a high hazard area. Because of the location of the upstream dam and the possible emergency spillway discharge, the discharge from site 10 located upstream is a rapid increase in water surface elevation.

- Cost:

- $2,000,000

LEON CREEK WATERSHED



Medina River Watershed

Medina River Watershed

Proposed CIP List 2003

No.				Project	Benefits		Estimated Cost
1		BX	W	Applewhite Road at Medina River	Provide all Weather access on Applewhite Road	$	308,000
2		BX	W	FM 1937 at Medina River	Provide all Weather access on FM 1937	$	1,500,000
3		BX	W	Gross Lane at Medina River	Provide all Weather access on Gross Lane	$	550,000
4		BX	W	Cagnon Road at Medina River	Provide all Weather access on Cagnon Road	$	4,350,000
5		BX	W	Jungman Road at Medina River	Provide all Weather access on Jungman Road	$	520,000
6				Hilltop Acres Subdivision Buyout	Buyout Properties in floodplain, reestablish drainage low	$	2,861,232
7		BX	W	O'Brien Road at Polecat Creek	Provide all Weather access on O'Brien Road	$	548,000
8		BX	W	Cagnon Road at Polecat Creek	Provide all Weather access on Cagnon Road	$	320,000
9	C	BX	W	Pearsall Road at Elm Creek	Provide all Weather access on Pearsall Road	$	189,000
10			W	Hollowell Road at Polecat Creek	Provide all Weather access on Hollowell Road	$	550,000
11		BX		Jackell Road at Unnamed Tributary to Elm Creek	Provide all Weather access on Jackell Road	$	525,000
12		BX		Quintana Road at Live Oak Slough	Provide all Weather access on Quintana Road	$	424,858
13		BX	W	Kinney Road at Live Oak Slough	Provide all Weather access on Kinney Road	$	424,858
14				Covel at Medio Creek	Provide all Weather access on Covel Road	$	1,500,000
15				Talley Road at Tributary to Medio Creek	Provide all Weather access on Talley Road	$	424,858
16	C	BX		Ravensfield Road Bridge/Road Construction	Provide all Weather access on Ravensfield	$	1,700,000
					Total	**$**	**16,695,806**

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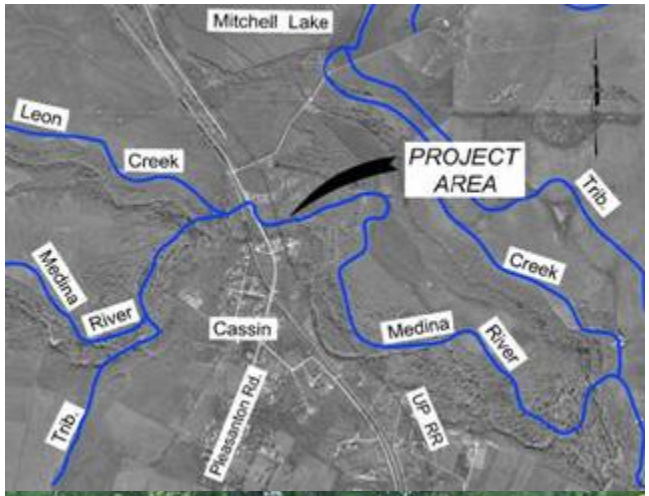
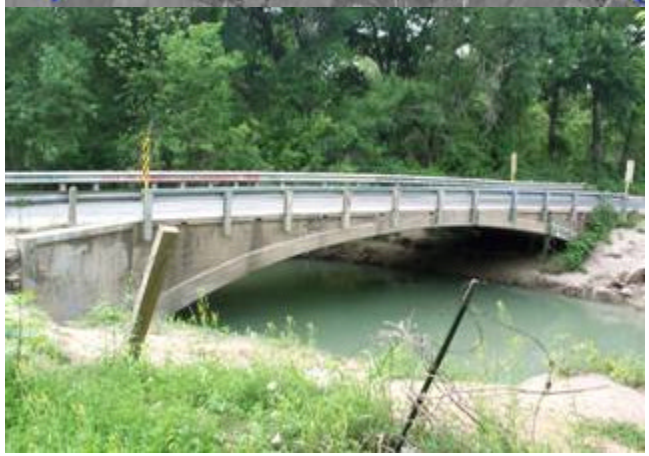
Medina River-1

Proposed CIP List





- **<u>Applewhite Road at Medina River</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

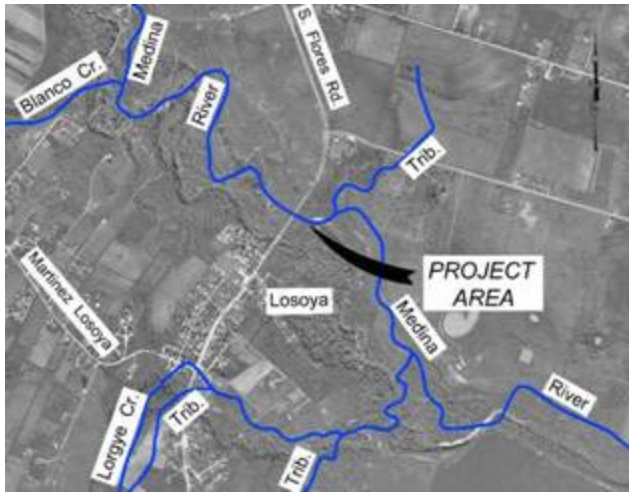
- Justification:
- The crossing is highly used and poses a safety during heavy rainfall events.

- Cost:

- $308,000

Medina River-2

Proposed CIP List



- **<u>FM 1937 at Medina River</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

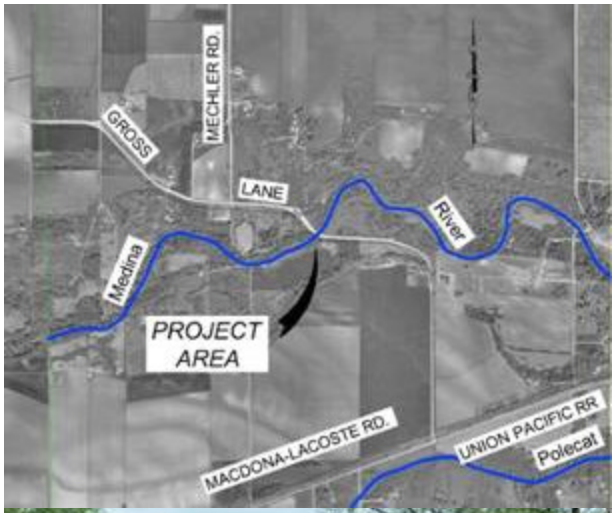
- Justification:
- This crossing has not had a detailed study, but as seen by the photograph the crossing is built in a low and could pose a safety hazard during heavy rainfall events.

- Cost:

- $1,500,000

Medina River-3

Proposed CIP List



- **<u>Gross Lane at Medina River</u>**

- Description:
- Raise road to provide all-weather access.

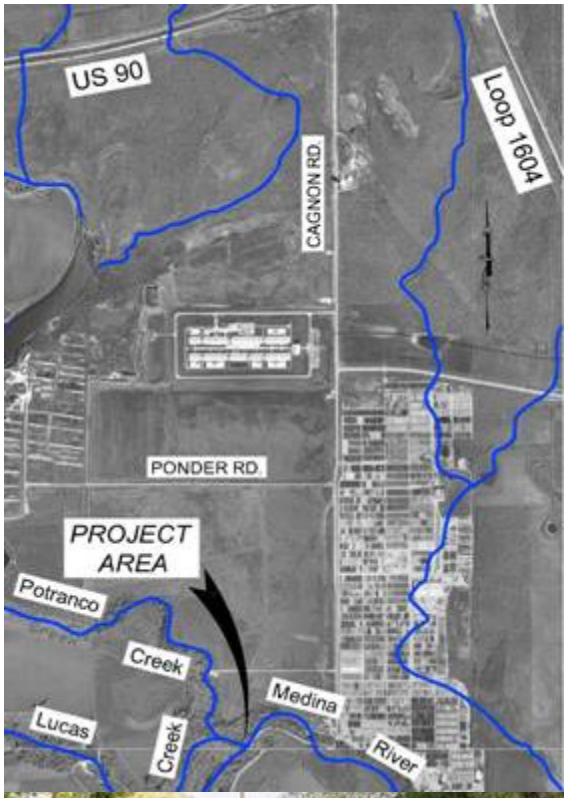
- Justification:
- The bridge is built below the normal pool elevation, thus posing an everyday safety hazard.

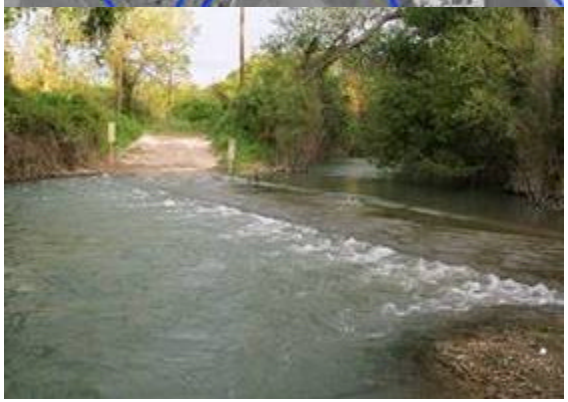
- Cost:

- $550,000

Medina River-4

Proposed CIP List





- **<u>Cagnon Road at Medina River</u>**

- Description:
- Raise road to provide all-weather access.

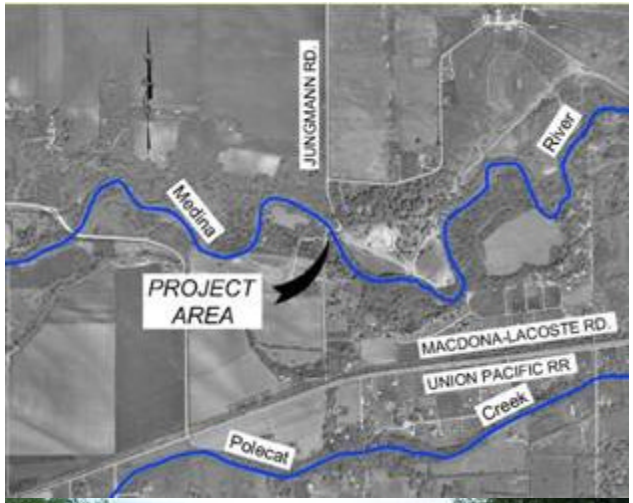
- Justification:
- The bridge is built below the normal pool elevation, thus posing an everyday safety hazard.

- Cost:

- $4,350,000

Medina River-5

Proposed CIP List



- **<u>Jungman Road at Medina River</u>**

- Description:
- Construct bridge crossing.

- Justification:
- The bridge has been washed away from repeated heavy flows.

- Cost:

- $520,000

Medina River-6

Proposed CIP List

- **<u>Hilltop Acres Subdivision Buyout</u>**

- Description:
- Buyout all the homes in the 100-year floodplain.

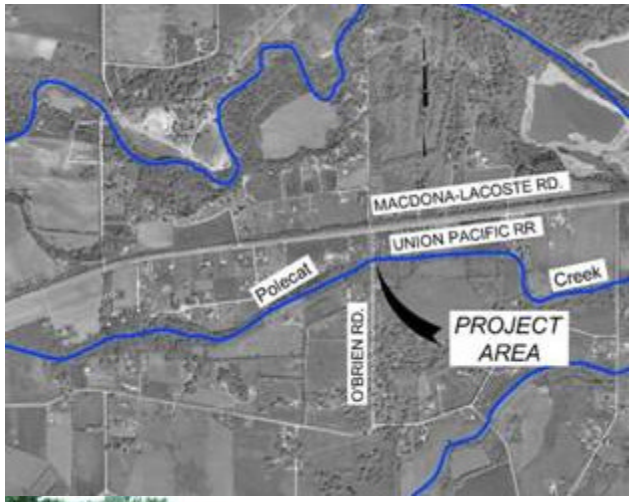
- Justification:
- The residents in this subdivision have had repeated losses during heavy storms due to its proximity to Medio Creek and elevation. The elevation of some of the subdivision provides less than a 10-year level of protection.

- Cost:

  $2,861,232

Medina River-7

Proposed CIP List



- **<u>O'Brien Road at Polecat Creek</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

- Justification:
- The crossing does not have a detailed study, but it is used regularly by residents in the area and does provide access to major roads during heavy rainfall events.

- Cost:

- $548,000

Medina River-8

Proposed CIP List

- **<u>Cagnon Road at Polecat Creek</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

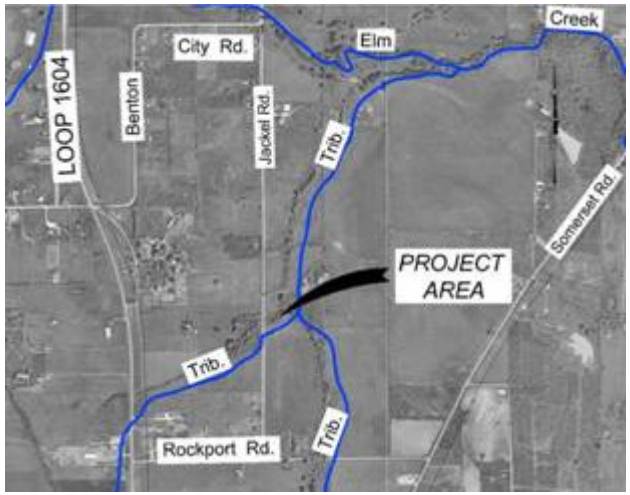
- Justification:
- The crossing does not have a detailed study, but it is used regularly by residents in the area and does provide access to major roads during heavy rainfall events.

- Cost:

- $320,000

Medina River-9

Proposed CIP List



- **<u>Pearsall Road at Elm Creek</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

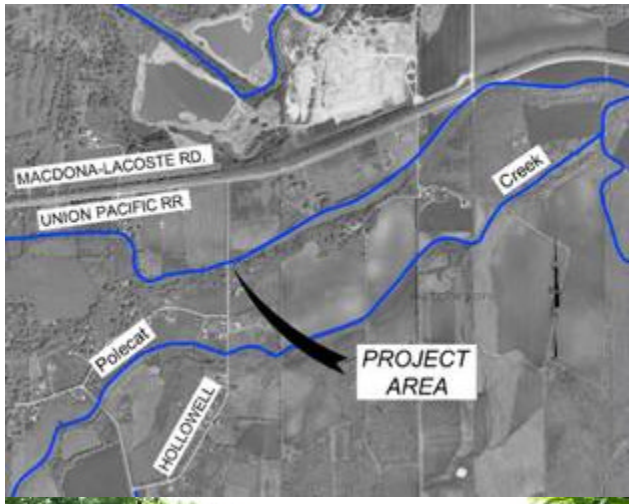
- Justification:
- The roadway is used as a major thoroughfare for the Cities of Atascosa, Kirk, and Macdona and poses a safety hazard during heavy rainfall events.

- Cost:

- $189,000

Medina River-10

Proposed CIP List



- **<u>Hollowell Road at Polecat Creek</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

- Justification:
- The crossing does not have a detailed study, but it is used regularly by residents in the area and does provide access to major roads during heavy rainfall events.

- Cost:

- $550,000

Medina River-11

Proposed CIP List

- **<u>Jackell Road at Unnamed Tributary to Elm Creek</u>**

- Description:
- Raise road to provide high storm frequency access.

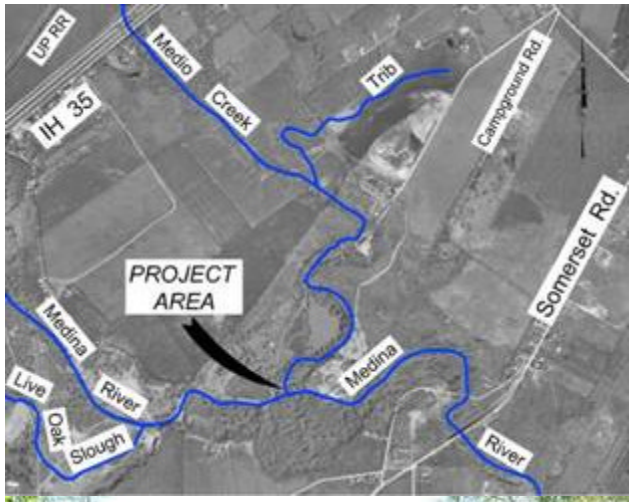
- Justification:
- The crossing does not have a detailed study, but it is used regularly by residents in the area and does provide access to major roads during heavy rainfall events.

- Cost:

- $525,000

Medina River-12

Proposed CIP List



- **<u>Quintana Road at Live Oak Slough</u>**

- Description:
- Raise road to provide high storm frequency access.

Justification:

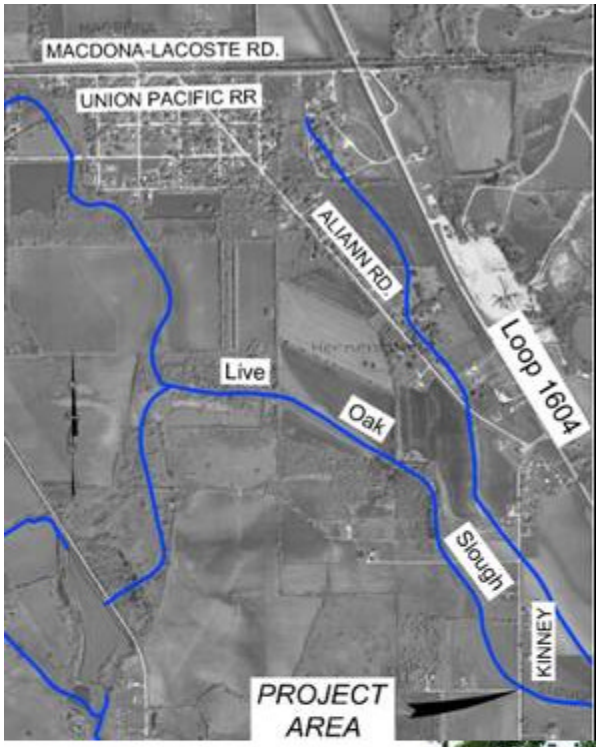
- The roadway is used as a major thoroughfare for the City of Von Ormy and poses a safety hazard during heavy rainfall events.

- Cost:

- $424,858

Medina River-13

Proposed CIP List



- **<u>Kinney Road at Live Oak Slough</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

- Justification:
- The crossing does not have a detailed study, but it is used regularly by residents in the area and does provide access to major roads during heavy rainfall events.

- Cost:

- $424,858

Medina River-14

Proposed CIP List

- **<u>Covel at Medio Creek</u>**

- Description:
- Raise road to accommodate higher frequency storm event.

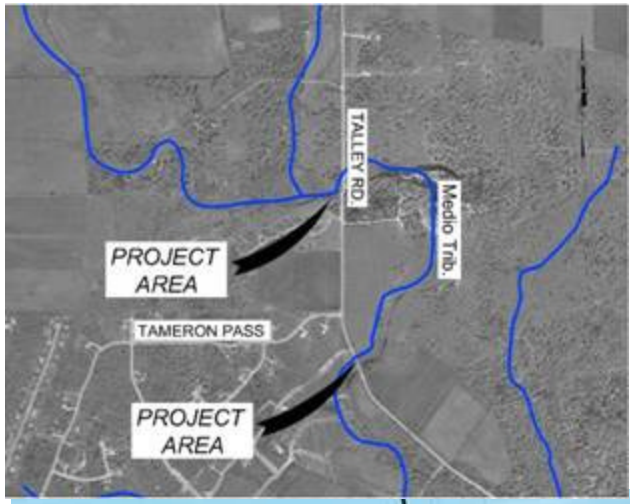
- Justification:
- The crossing is highly used and poses a safety during heavy rainfall events.

- Cost:

- $1,500,000

Medina River-15

Proposed CIP List



- **<u>Talley Road at Tributary to Medio Creek</u>**

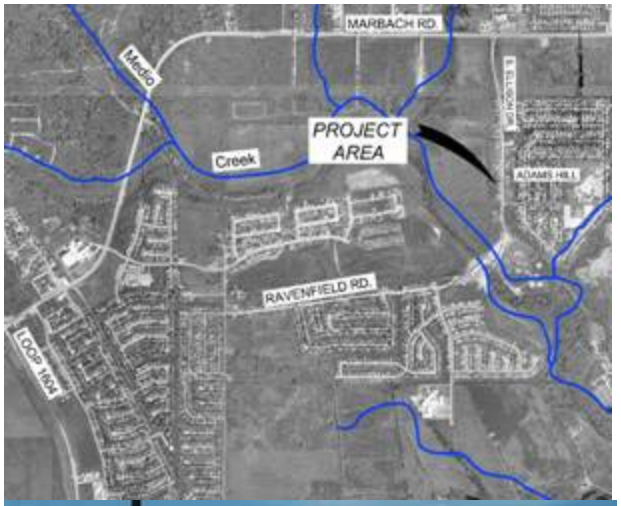
- Description:
- Raise road to accommodate higher frequency storm event.

- Justification:
- The crossing is highly used and poses a safety during heavy rainfall events.

- Cost:
- $424,858

Medina River-16

Proposed CIP List



- **<u>Ravenfield Road Bridge/Road Construction</u>**

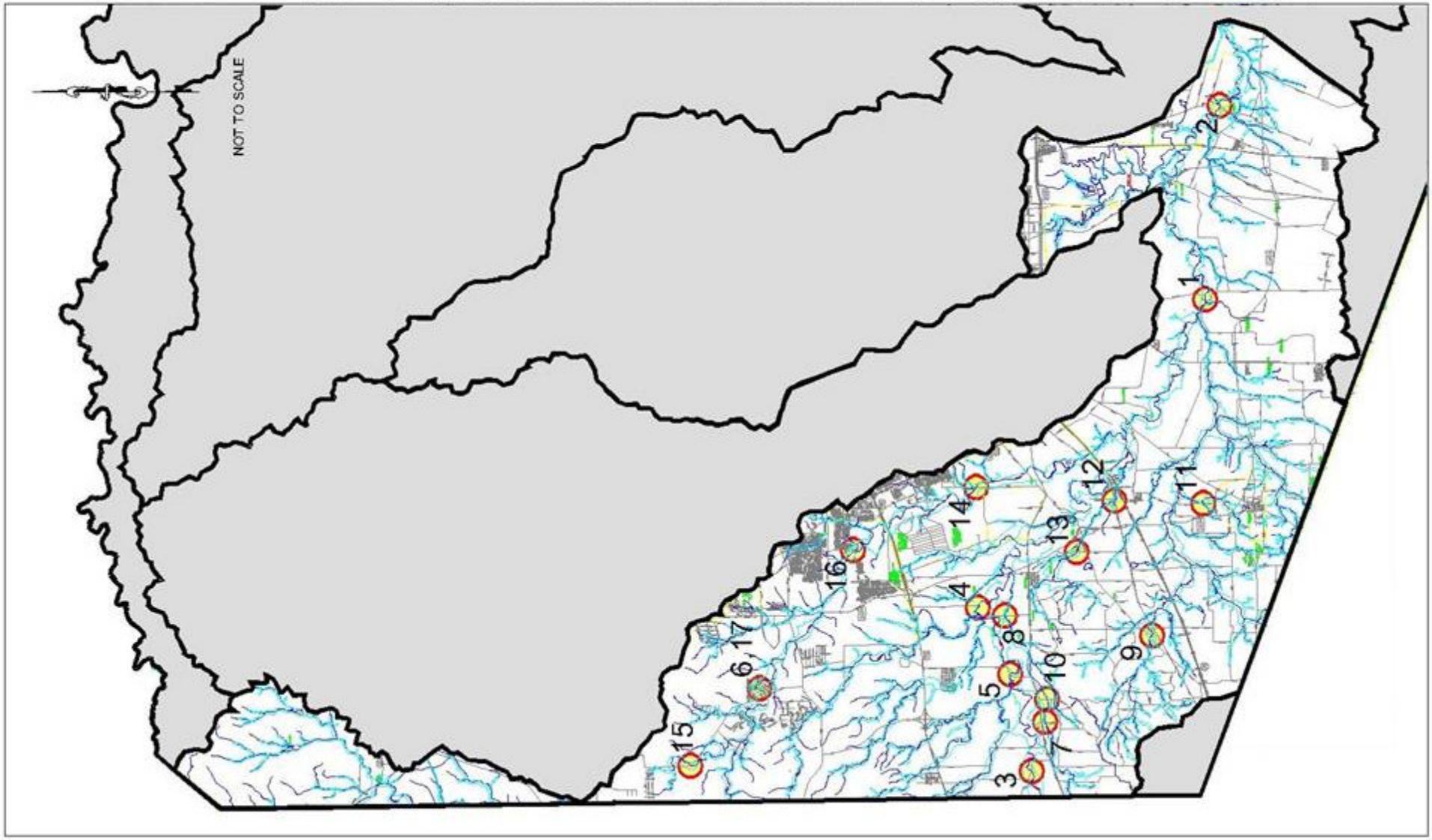
- Description:
- Raise road to accommodate higher frequency storm event.

- Justification:
- The crossing is used regularly by residents in the area and provide access to major roads during heavy rainfall events.

- Cost:

- $1,700,000

MEDINA RIVER WATERSHED



San Antonio River Watershed

San Antonio River Watershed

Proposed CIP List 2003

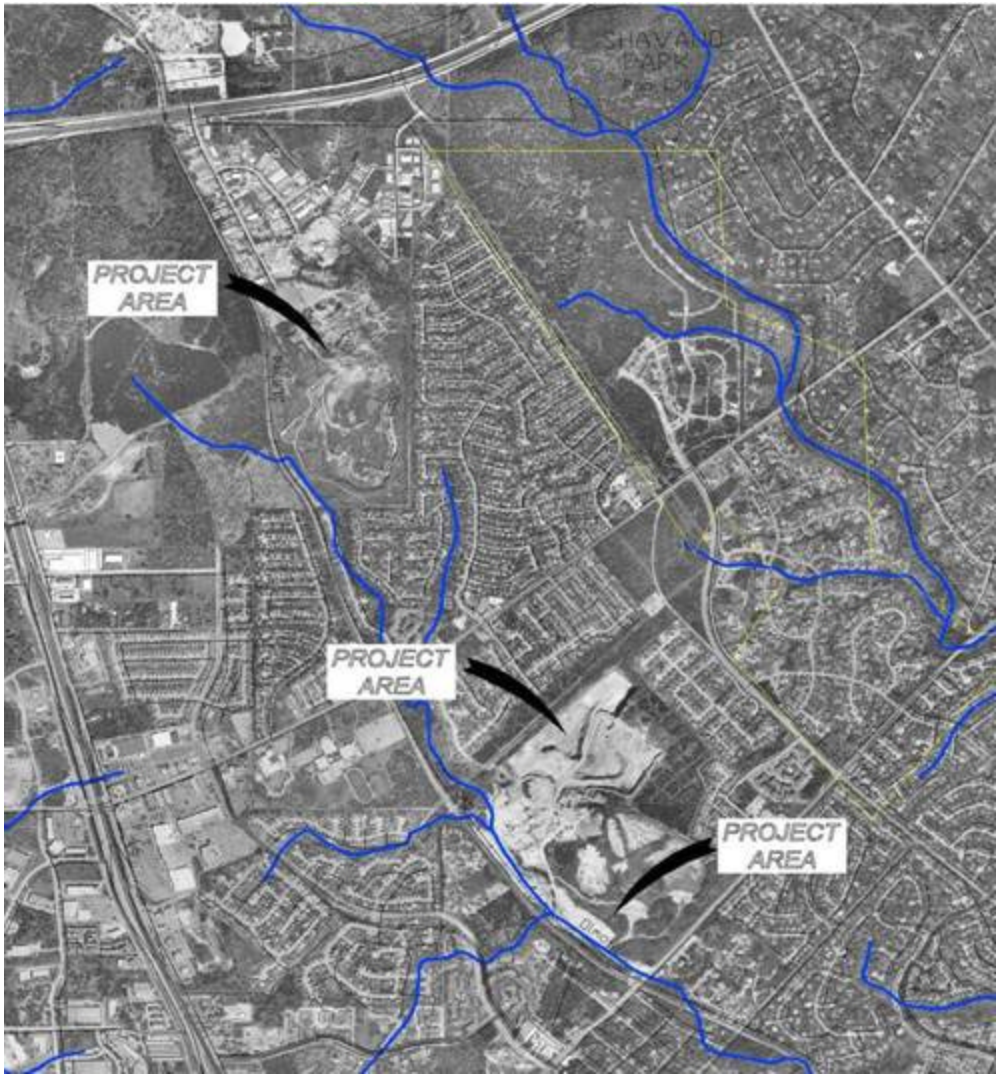
No.				Project	Benefits		Estimated Cost
1		**B**	W	Secure Quarry Site in the Shavano Park Area	Flood Reduction / aquifer recharge benefits	$	10,000,000
2	C			Rock Creek Channel and Outfall repair	Channel Rectification and repair of existing outfall, reduce frequent flooding	$	6,000,000
3		B		410 Olmos creek by West avenue channel repiars	Major distruction of existing channel after the july 2002 event repiars needed	$	2,000,000
4	C			Zarzamora Creek from Culebra to Laven	Flood Plain Restoration and Rectification	$	4,000,000
5				Zarzamora Creek Tributary A from Zarzamora Conflunce to 410	Flood Plain Restoration and Rectification	$	6,000,000
6	C			Military Drive Channel - Military Drive to Wagner	Concrete line an existing grass lined channel	$	9,000,000
7	C			Barbara Drive Drainage	Create FIS and reduce frequent flooding along Waring street and Barbara	$	6,000,000
8	C	B		Commercial Tributary from the confluence with Six Mile Creek to Mayfeild	Frequent and major flooding	$	17,000,000
9				Sleepy Hollow and Orsinger Buyout	Buyout Properties in floodplain, reestablish drainage low	$	3,000,000
10				Mulberry at Catalpa-Pershing	Reduce flooding along Broadway Street	$	3,000,000
11				Broadway and Millrace Intersection	Reduce flooding along Broadway Street	$	3,000,000
12				Symphony Lane Drainage	a number of home impacted during the 100 year event adjacent to the channel	$	1,000,000

Total $ 70,000,000

C - COSA BOND LIST
B - BEXAR COUNTY FLOOD ANALYSIS REPORT
BX - BEXAR COUNTY BOND LIST
W - COUNTY CITIZENS WATERSHED COMMITTEE

San Antonio/Olmos Creek-1

Proposed CIP List



- **<u>Secure Quarry Site in the Shavano Park Area</u>**

- Description:

  Secure the open pit in all the Quarry sites in the Shavano Park area.

- Justification:

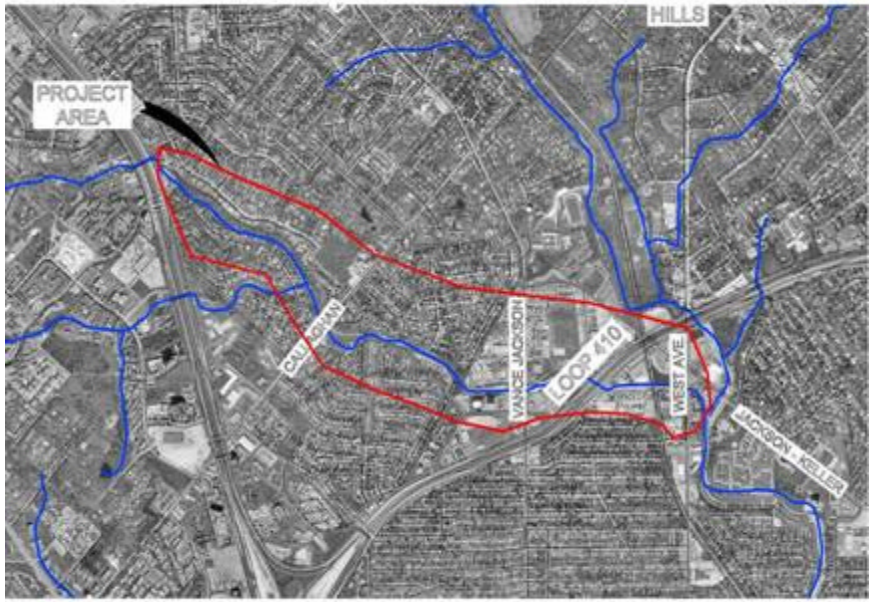
  The benefits to the watershed are multi-fold not only the flow reduction benefits of this storage area, also the location of these pits are over the Edwards Recharge Zone Contributing area.

- Cost:

  $10,000,000

San Antonio/Olmos Creek-2

Proposed CIP List



- **<u>Rock Creek Channel and Outfall</u>**

- Description:

  Channel Rectification, stabilization of channel banks and out fall repairs. Project limits are from IH-10 to West avenue.

- Justification:

  This is a major channel in the upper Olmos Creek area. High velocities along this natural flood way has demolished the existing outfall and eroded the banks of this existing channel. Concrete lining of this channel is needed to increase the efficiency of its conveyance.

- Cost:

  $6,000,000

San Antonio/Olmos Creek-3

Proposed CIP List

- **<u>410 Olmos Creek Channel Repairs</u>**

- Description:

  Repair the channel behind the HEB on West and Jackson Keller

- Justification:

  This channel receives 5,463 cfs in a 100 year event. In previous event the large amounts of runoff have caused failure to the concrete lined channel at the outfall coming from Castle Hills and from under the 410 Highway. The current damaged channel will cause more damage to the rest of the channel structure. TXDOT will need to notified

- Cost:

  $2,000,000

San Antonio/Olmos Creek-4

Proposed CIP List

- **<u>Zarzamora Creek From Culebra to Laven Street</u>**

- Description:

  Flood Plain Restoration and Rectification

- Justification:

  This is a flood prone area, heavy sedimentation has caused conveyance problems all along this flood way. COSA owns land on the west bank of the Zarzamora Creek. Laven Street floods in very low frequency events

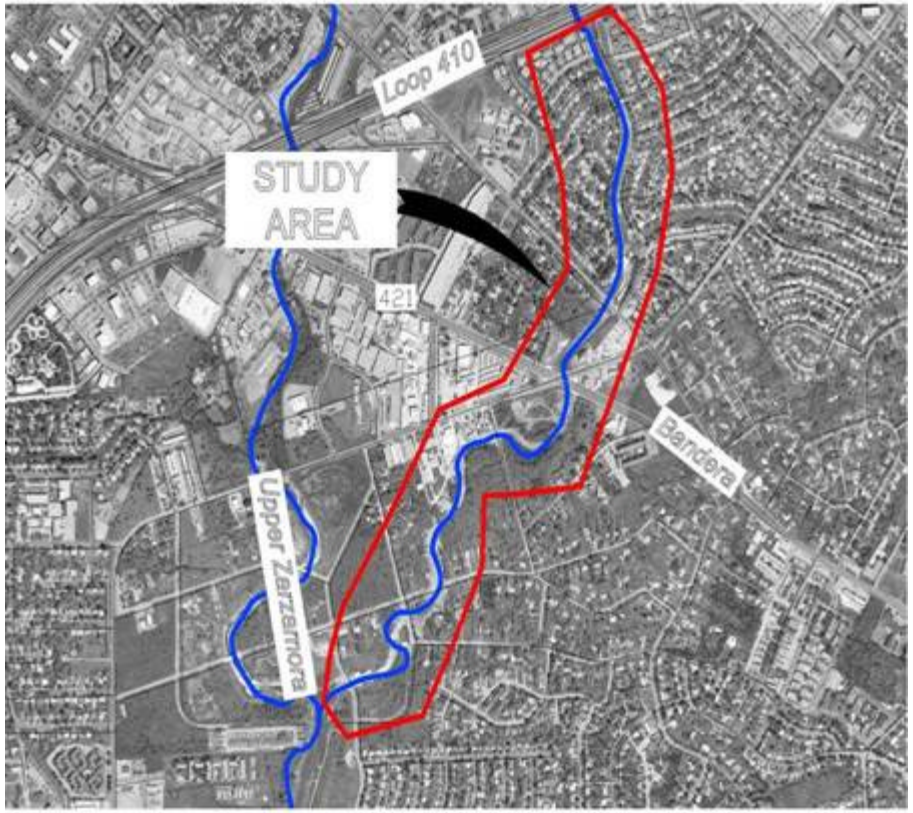
- Cost:

  $4,000,000*

  (Detail Study needed to evaluate full cost)

San Antonio/Olmos Creek-5

Proposed CIP List



- **<u>Zarzamora Creek Tributary A From Zarzamora Confluence to Loop 410</u>**

- Description:

  Study Area, Flood Plain Restoration and Rectification

- Justification:

  This is a flood prone area. Five low water crossing including a major thoroughfare, Callaghan road. Heavy erosion problems exist on this natural low

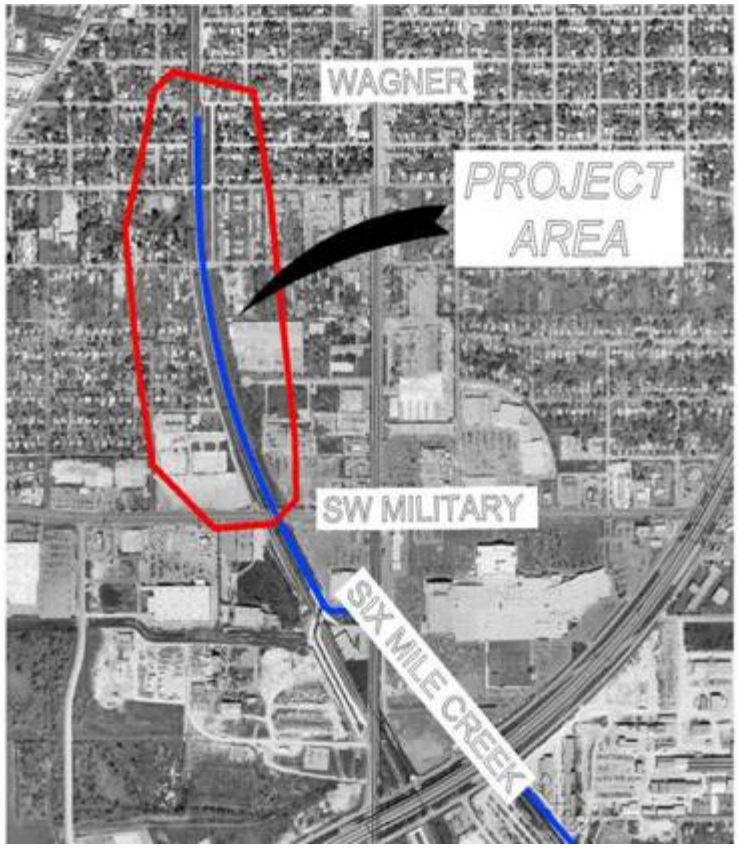
- Cost:

  $6,000,000*

  (Detail Study needed to evaluate full cost)

San Antonio/Olmos Creek-6

Proposed CIP List



- **<u>Military Channel- Military to Wagner</u>**

- Description:
  Concrete lined channel to increase efficiency

- Justification:
  The existing grass lined channel does not contain the existing 100 year flood plain. Flooding occurs at Military, Mayfield, Pyron and Wagner.

- Cost:
  $9,000,000

San Antonio/Olmos Creek-7

Proposed CIP List

- **<u>Barbara Drive Drainage Project</u>**

- Description:

  Open channel needed along Waring and Barbara Drive

- Justification:

  A history of flooding in this area. A number of homes along Waring and Barbara are flooding on a regular basis. No FIS in for this area. A detail study will be needed. Potential for buyouts for channel widening.

- Cost:

  $6,000,000

San Antonio/Olmos Creek-8

Proposed CIP List

- **<u>Commercial Tributary from the Confluence with Six Mile Creek to Mayfield.</u>**

- Description:

  This area is subject to much flooding. The natural low crosses a number of residential streets including a diagonal crossing at the intersection of Commercial and Formosa

- Justification:

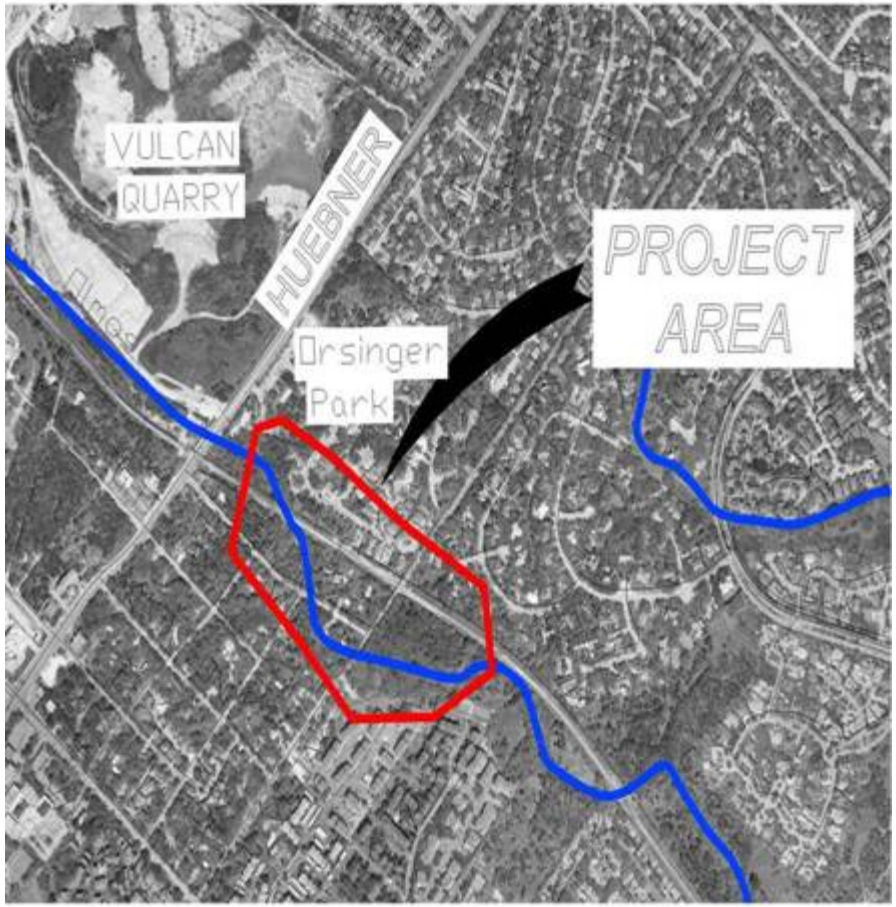
  The current 100 year flow at this area is 4,549 cfs

- Cost:

  $17,000,000

San Antonio/Olmos Creek-9

Proposed CIP List



- **<u>Sleepy Hollow and Orsinger Buyout</u>**

- Description:

  Buyout of 15 properties in the flood plain

- Justification:

  This is a flood prone area. Frequent flooding. This area is directly downstream of the Vulcan Quarry. Securing a conservation or inundation easement needed at the quarry site. This buyout is necessary even if the esm't is obtained no significant channel exists. If Vulcan Quarry is not obtained major channel work will need to be done.

- Cost:

  $3,000,000*

  (Depending on the acquisition of the quarry sites)

San Antonio/Olmos Creek-10

Proposed CIP List

- **<u>Mulberry at Catalpa-Pershing Channel</u>**

- Description:

  Replace Box Culvert with bridge structure capable of passing the existing 100 year flows.

- Justification:

  These two Box Culvert Crossing on this Concrete lined channel contribute to the overall flooding of Broadway. The current 100 year flows are 2,600 cfs. By replacing these structures this can be “in-kind” service to the US COE SACIP Improvements.

- Cost: $3,000,000

San Antonio/Olmos Creek11

Proposed CIP List

- **<u>Broadway and Millrace Intersection.</u>**

- Description:

  Replace Box Culvert with bridge structure capable of passing the existing 100 year flows on Catalpa-Pershing and build a underground drainage system under Broadway to drain flow on street.

- Justification:

  These two Box Culvert Crossing on this Concrete lined channel contribute to the overall flooding of Broadway. The current 100 year flows are 2,600 cfs. By replacing these structures this can be “in-kind” service to the US COE SACIP Improvements. The under ground system we help reduce the flooding along street.

- Cost: $3,000,000

San Antonio/Olmos Creek12

Proposed CIP List

- **<u>Symphony Lane Drainage</u>**

- Description:

  KBR is finalizing a drainage study that looks at possible mitigation project in this area. It is expected that cost associated with a capital improvement project in this area will be jointly funded by COSA, BC and possibly SARA

- Justification:

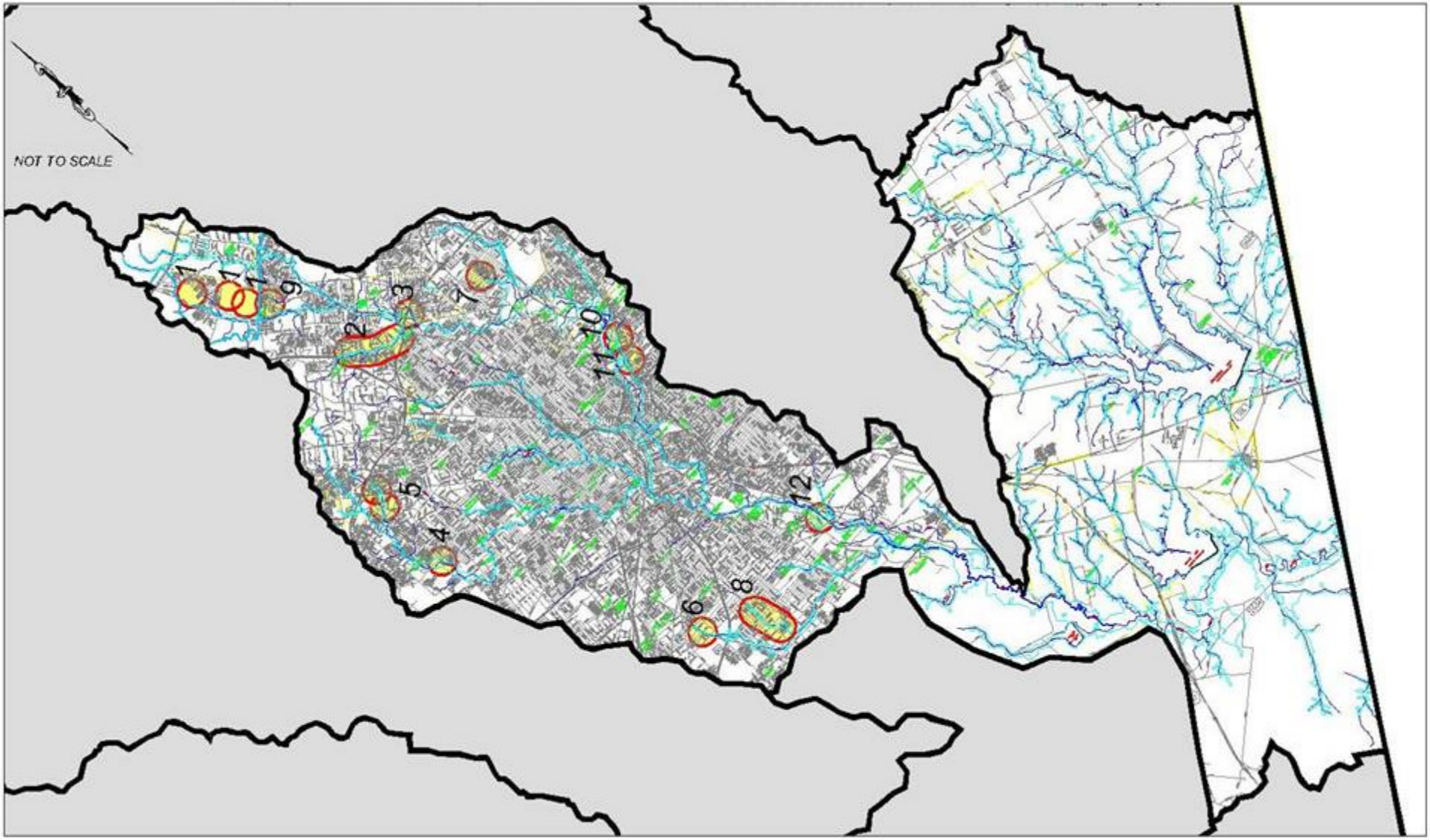
  This area flooding in heavy rains. Current studies show water surface elevation has increase from 5 to 6 feet due to upstream development.

- Cost:

  $1,000,000*

  *(depending on KBR findings)

SAN ANTONIO RIVER WATERSHED



Salado Creek Watershed

Salado Creek Watershed

Proposed CIP List 2003

No.				Project	Benefits		Estimated Cost
1	C			Beitel Creek Enviromental Restoration-Channel Rectification	Removeal of Illegal 205,000 cy of Fill in Channel	$	2,555,000
2		B		Mid Beitel Creek Adjacent to Garden Court East Subdivision	Channel rectification and Buyout	$	2,900,000
3			W	Jones Maltsberger Low Water Crossing Replace at Mud Creek	Provide all Weather access on Jones Maltsberger	$	1,000,000
4			W	Salado Creek Low Water Crossing replacement at West Avenue	Provide all Weather access on West Avenue	$	2,500,000
5			W	Jones Maltsberger Low Water Crossing Replace at Elm Creek	Provide all Weather access on Jones Maltsberger	$	1,000,000
6			W	Panther Creek Low Water Crossing Replacement at West avenue	Provide all Weather access on West Avenue	$	1,500,000
7	C	B		Wheatly Heights Buyout and Salado Creek Greenway Development	Purchase remaining propoerties and development of Green way	$	450,000
8	C			Henderson Pass Low Water Crossing	Provide all Weather access on Henderson Pass	$	3,734,000
					Total	**$**	**15,639,000**

C - COSA BOND LIST
B - BEXAR COUNTY FLOOD ANALYSIS REPORT
BX - BEXAR COUNTY BOND LIST
W - COUNTY CITIZENS WATERSHED COMMITTEE

Salado Creek-1

Proposed CIP List

•**Beitel Creek Environmental Restoration- Channel Rectification**

•Description:

Removal of illegal 205,000 cy of fill

•Justification:

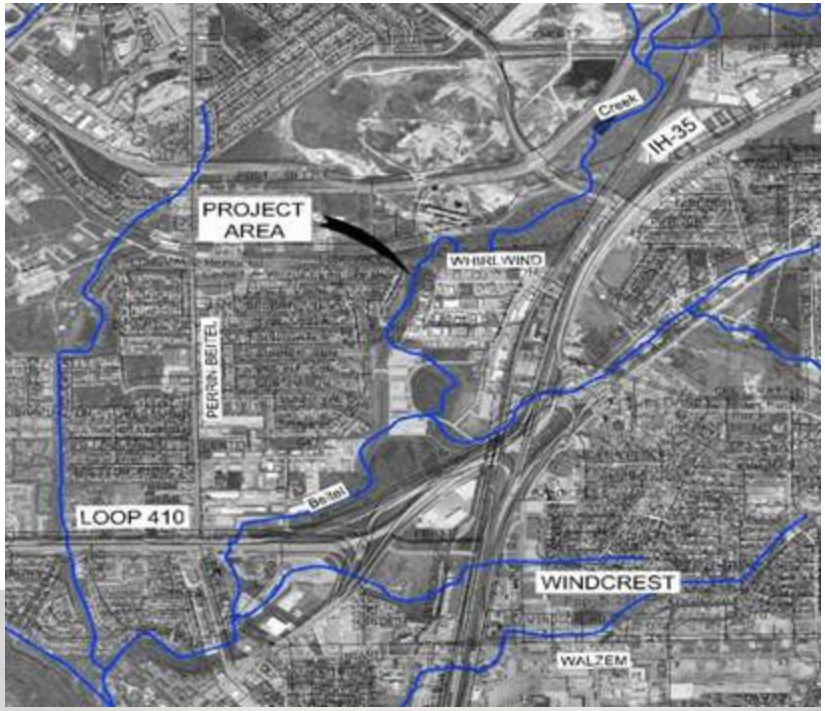
This is to restore the flood plain.

•Cost:

$2,555,000

Salado Creek-2

Proposed CIP List



•**<u>Mid Beitel Creek Adjacent to Garden Court East Subdivision</u>**

•Description:

4,000 feet of channelization and property buyout.

•Justification:

15 residential and commercial structures impacted along Morgan street and Cobb Street.

•Cost:

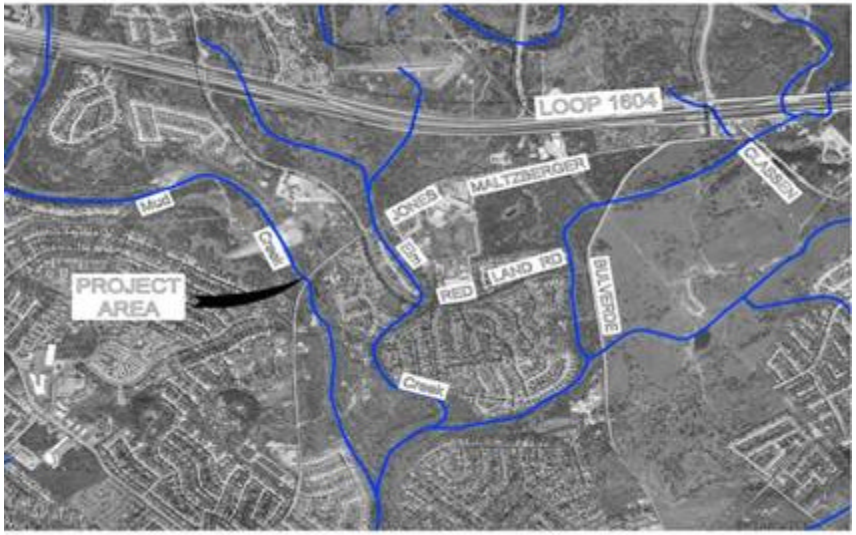
$2,900,000

•Channel work

•Buyouts

Salado Creek-3

Proposed CIP List



- **<u>Jones Maltsberger Low Water Crossing Replacement at Mud Creek</u>**

- Description:

  Replace existing low water crossing, to accommodate the 706 cfs during the 100 year storm.

- Justification:

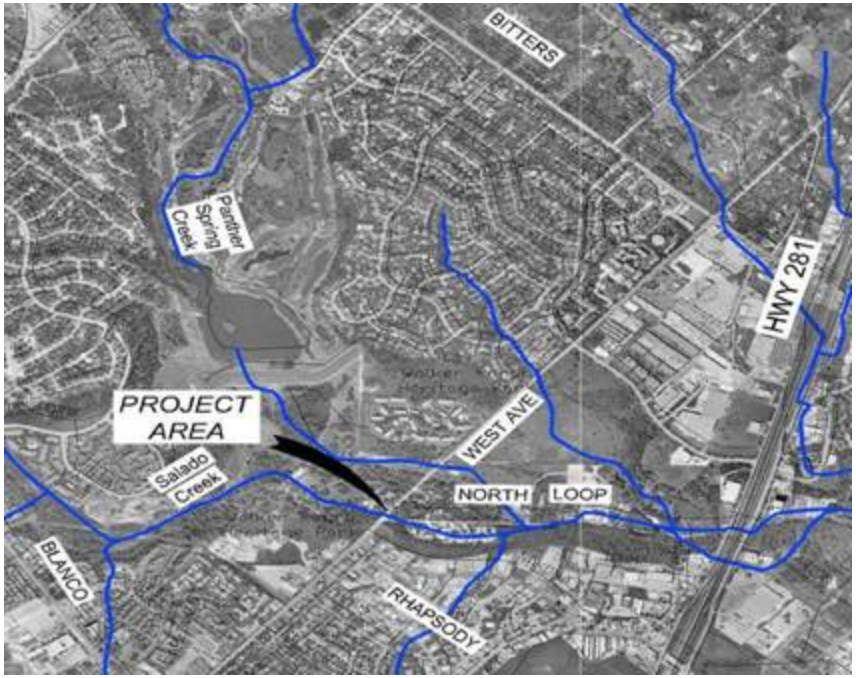
  This crossing is a major thorough fare and accommodates two grade schools in the area. This is a high hazard area. Because of the location of the upstream dam and the possible emergency spillway discharge, the discharge from site 10 located upstream is a rapid increase in water surface elevation.

- Cost:

  $1,000,000

Salado Creek-4

Proposed CIP List



•**<u>Salado Creek Low Water Crossing Replacement at West Avenue</u>**

•Description:

Salado Creek LWC at West Avenue, bridge and buyout. * Coordinate project with the Wurzbach Parkway Project.

•Justification:

West avenue, a major thoroughfare, receives 29,709 cfs uncontrolled from the Salado Creek. This LWC is a few hundred feet from the Salado and Panther Creek confluence. Although this drainage area peaks 10 hours prior to Panther Creek, due to Site7. This uncontrolled discharge from Salado Creek effects at lease 13 different structures in the immediate area. This road is heavily used and becomes a major hazard

•Cost:

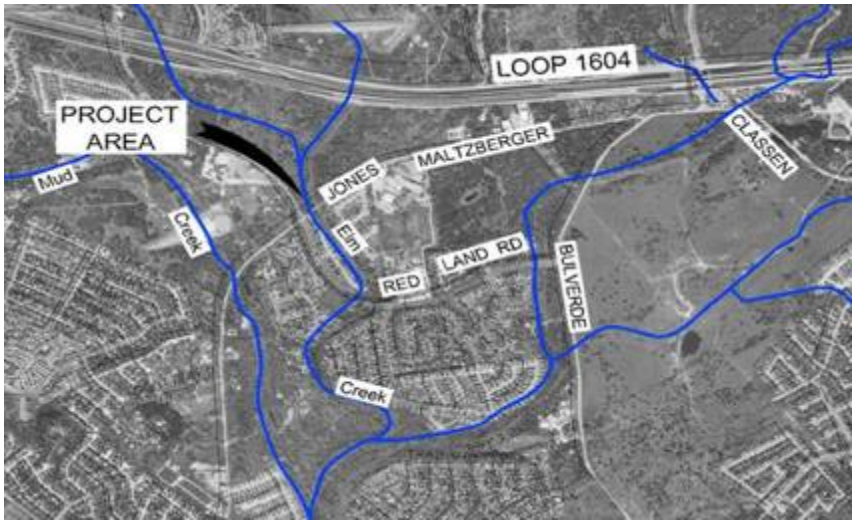
$2,500,000

•Bridge structure

•Buyouts

Salado Creek-5

Proposed CIP List



•**<u>Jones Maltsberger Low Water Crossing Replacement at Elm Creek</u>**

•Description:

Replace existing low water crossing, to accommodate the 2,455 cfs during the 100 year storm. This improvement should be done even if the Site 11 improvements are made, the drainage area that contributes to this LWC has a runoff peak time faster than that from Site 11

•Justification:

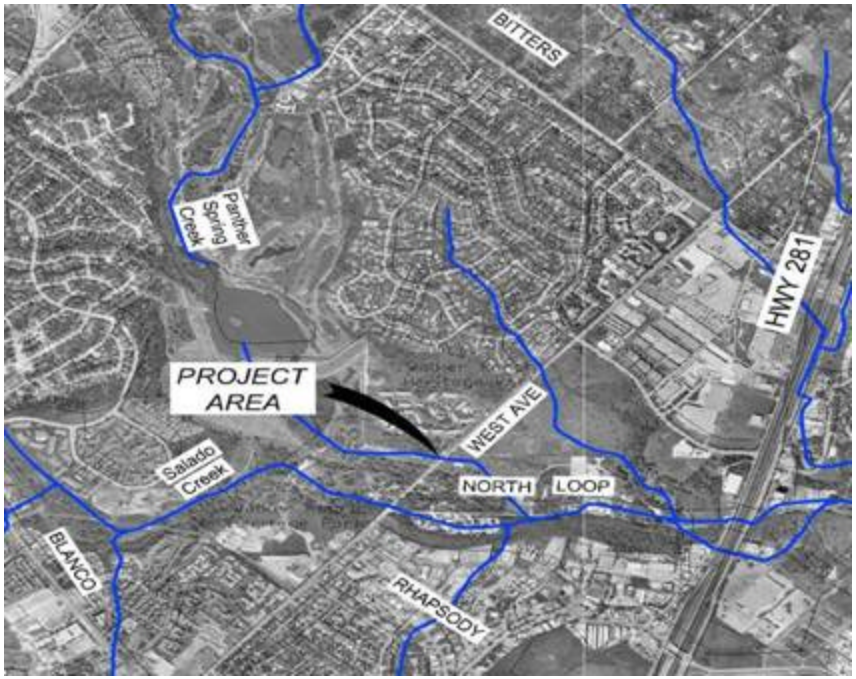
This crossing is a major thorough fare and accommodates two grade schools in the area. This is a high hazard area. Because of the location of the upstream dam and the possible emergency spillway discharge, the discharge from site 11 located upstream is a rapid increase in water surface elevation.

•Cost:

$1,000,000

Salado Creek-6

Proposed CIP List



•<u>Panther Creek Low Water Crossing Replacement at West Avenue</u>

•Description:

Panther Creek LWC at West Avenue, bridge and buyout. * Coordinate project with the Wurzbach Parkway Project.

•Justification:

West avenue, a major thoroughfare, receives 891 cfs from the Panther Creek downstream of Site 7. This low water crossing, under West avenue has 1-30” concrete pipe. This LWC is a few hundred feet from the Salado and Panther Creek confluence. This drainage area peaks 10 hours after Salado Creek. This discharge from Panther Creek effects at lease 3 different structures in the immediate area. This road is heavily used and becomes a major hazard

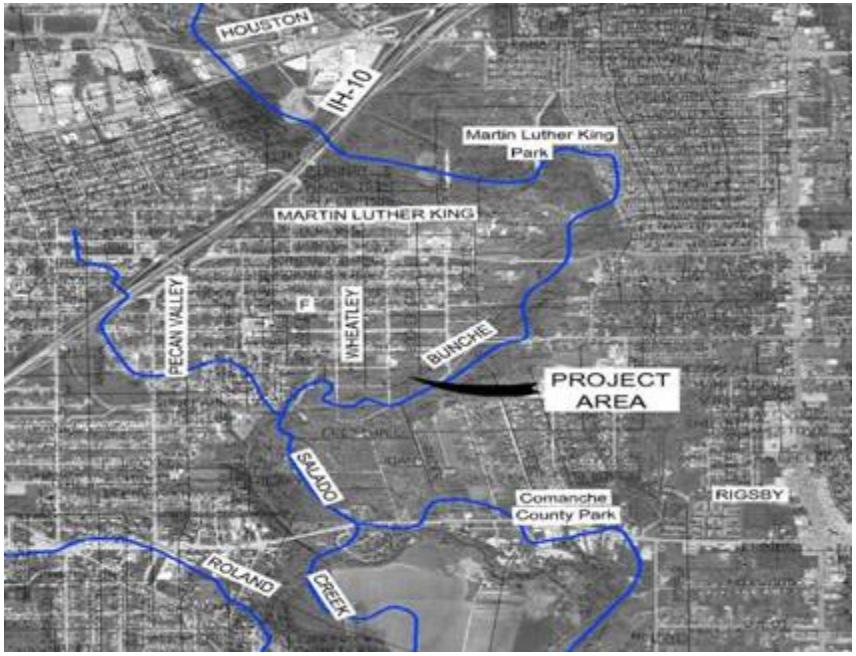
•Cost: $1,500,000

•Bridge structure

•Buyouts

Salado Creek-7

Proposed CIP List



•<u>Wheatley Heights Buyout and Salado Creek Green Way Development</u>

•Description:

The purchase of 6 vacant lots for the Salado Creek Hike and Bike. Green way development is still outstanding on this project.

•Justification:

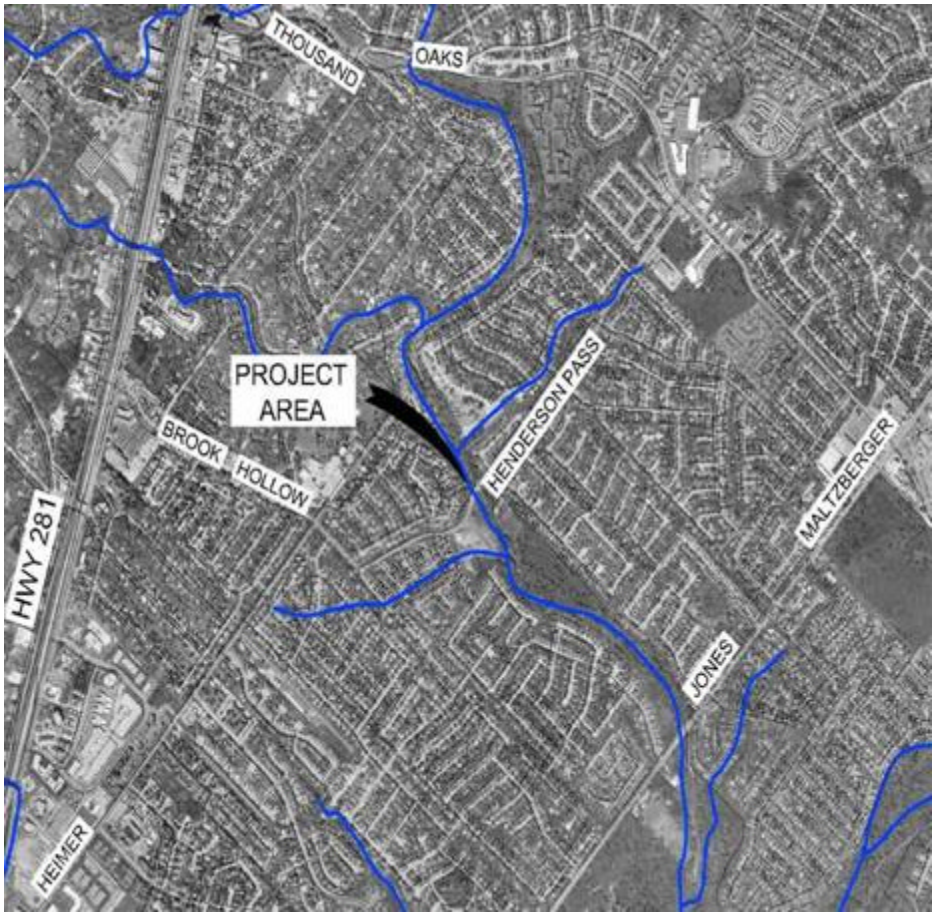
The greenway development has not been done. The once city streets and signage is still in place. This has become a dangerous area for local residence, because of the tree over growth. The area is used by some as a dumping area, because of the available access to the streets adjacent to the creek.

•Cost:

$450,000
•6 vacant lots
•Greenway Development

Salado Creek-8

Proposed CIP List



•**<u>Henderson Pass Low Water Crossing Replacement</u>**

•Description:

Henderson Pass LWC replaced by a bridge on Lorence Creek

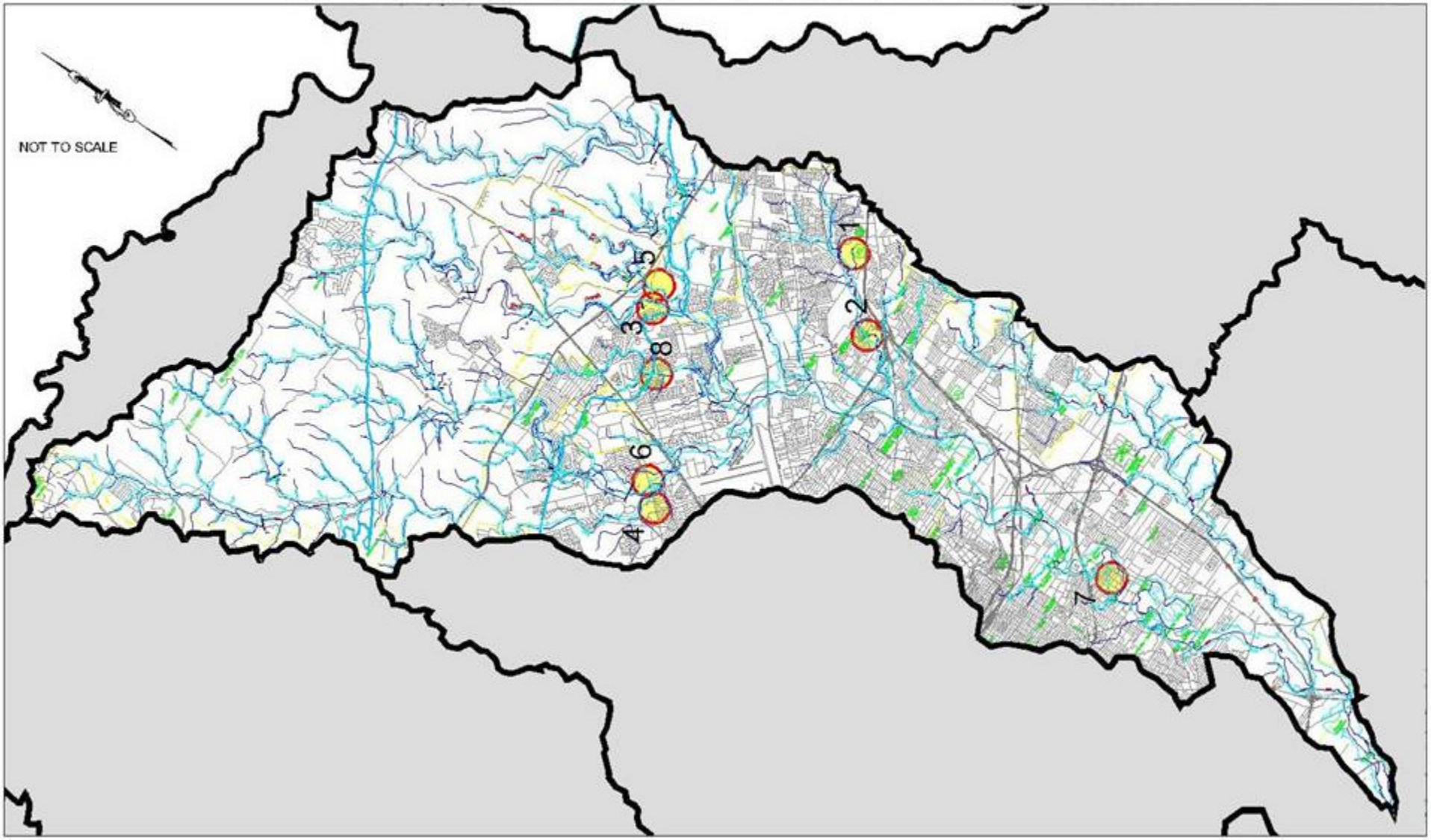
•Justification:

Low water crossing effecting many subdivisions school and business in that area.

•Cost:

$3,734,000
•BY COSA figures

SALADO CREEK WATERSHED



Cibolo Creek Watershed

Cibolo Creek Watershed

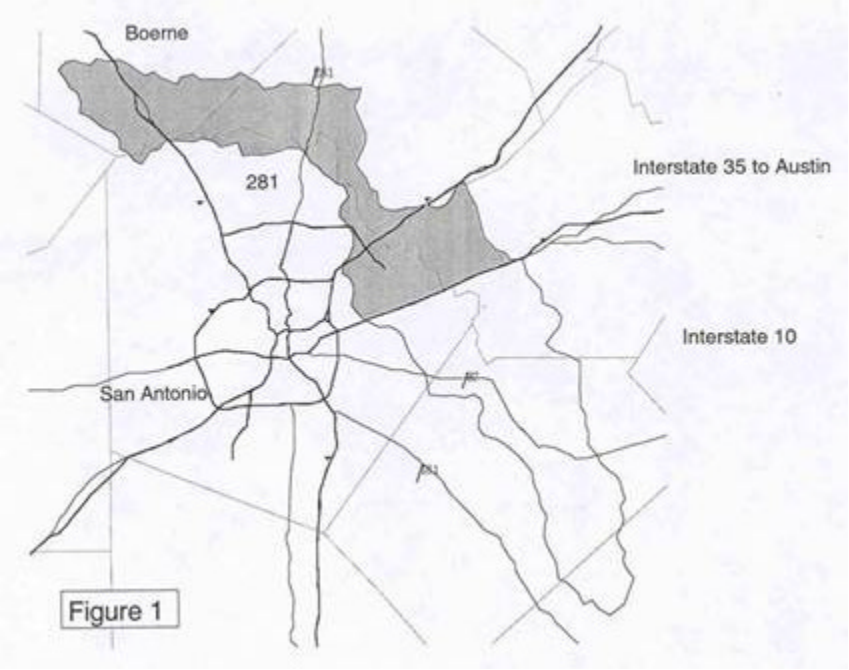
Proposed CIP List 2003

No.			Project	Benefits		Estimated Cost
1			Re Establish Ox Bow on Cibolo at D.S. of Schaffer road	Channel rectification	$	3,000,000
2	B	W	Schaefer Road Bridge Flood Proofing	provide all weather access.	$	2,555,000
3	B	W	Bulverde Road at Cibolo Creek LWC	Provide all Weather access on Bulverde	$	1,500,000
4	B	W	Blanco Road at Cibolo Creek LWC	Provide all Weather access on Blanco	$	1,200,000
5	B	W	Smithson Valley at Cibolo LWC	Provide all Weather access on Smithson Valley	$	2,000,000
6	B	W	Trainer Hale at Woman Hollering Creek LWC	Provide all Weather Access	$	1,000,000
7	B	W	Abbott Road at Martinez Creek LWC	Provide all Weather Access	$	1,000,000
				Total	**$**	**12,255,000**

C - COSA BOND LIST
B - BEXAR COUNTY FLOOD ANALYSIS REPORT
BX - BEXAR COUNTY BOND LIST
W - COUNTY CITIZENS WATERSHED COMMITTEE

Cibolo Creek

Proposed CIP List



- **<u>Cibolo Creek Detention Dam Study – by COE</u>**

- Description

  Reduction of downstream discharge and improvement of aquifer recharge.

- Justification

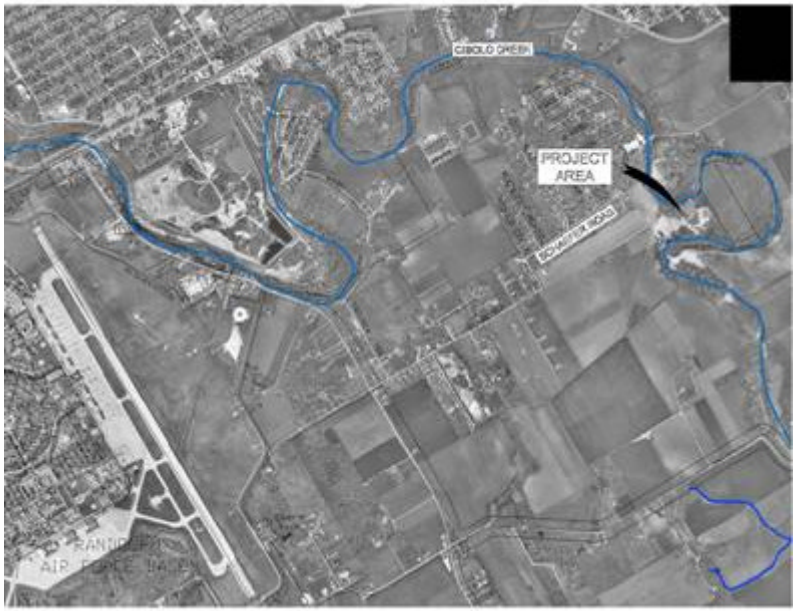
  This study is a joint effort with GBRA, SAWS, SARA and led by the COE

- Cost

  $300,000

Cibolo Creek-1

Proposed CIP List



- **<u>Reestablish Oxbow on Cibolo at Downstream of Schaefer Road</u>**

- Description

  Channel Rectification

- Justification

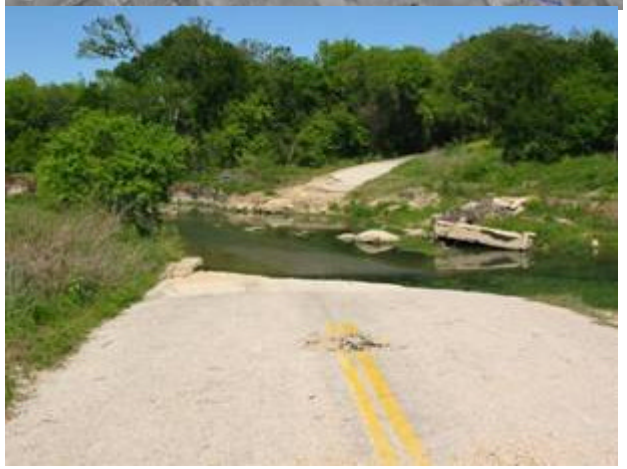
  During 2001 flood oxbow was bypassed and Quarry site in the oxbow was inundated. This has caused increased velocities upstream of channel. Heavy erosion has and will continue to occur if problem continues.

- Cost

  $3,000,000

Cibolo Creek-2

Proposed CIP List



- **<u>Schaefer Road Bridge Flood Proofing</u>**
- Description

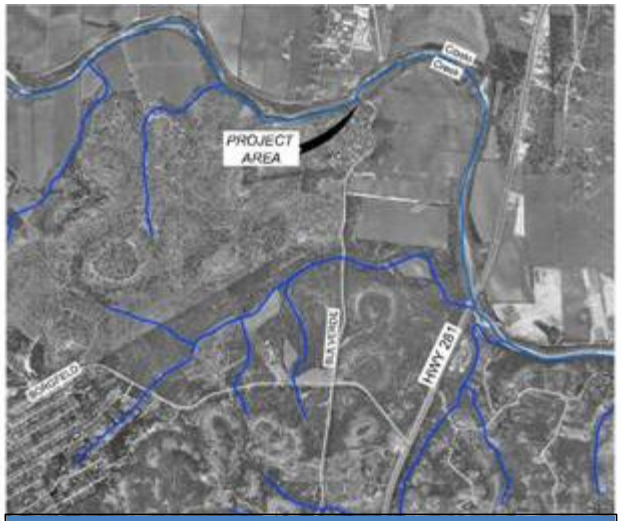
  Provide All Weather Access
- Justification

  Bridge was washed away.
- Cost

  $2,555,000

Cibolo Creek-3

Proposed CIP List



- **<u>Bulverde Road at Cibolo Creek Low Water Crossing</u>**

- Description

  Provide all weather access on Bulverde

- Justification

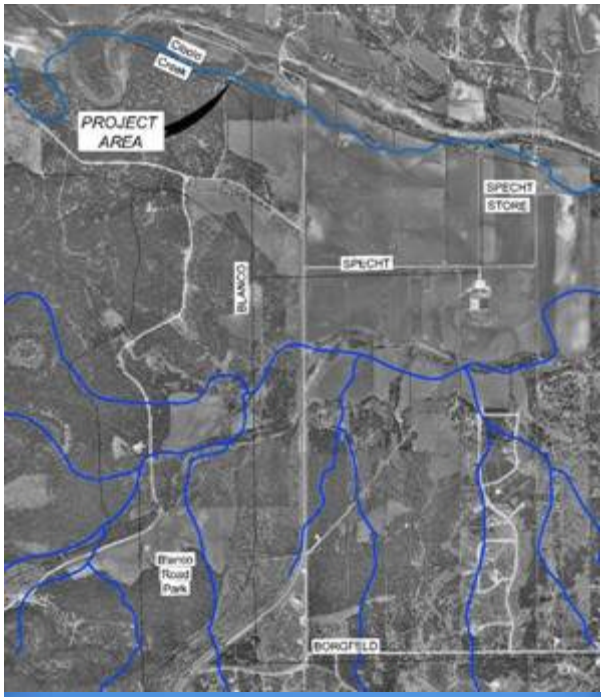
  This low water crossing has no flood protecting. This is a major road, aside from US 281, that provides a high hazard crossing in any frequency event.

- Cost

  $1,500,000

Cibolo Creek-4

Proposed CIP List



- **<u>Blanco Road at Cibolo Creek Low Water Crossing</u>**

- Description

  Provide all weather access on Blanco Road

- Justification

  Major FM crossing. Very hazardous crossing.

- Cost

  $1,200,000

Cibolo Creek-5

Proposed CIP List

- **<u>Smithson Valley at Cibolo Low Water Crossing</u>**

- Description

  Provide all weather access on Smithson Valley

- Justification

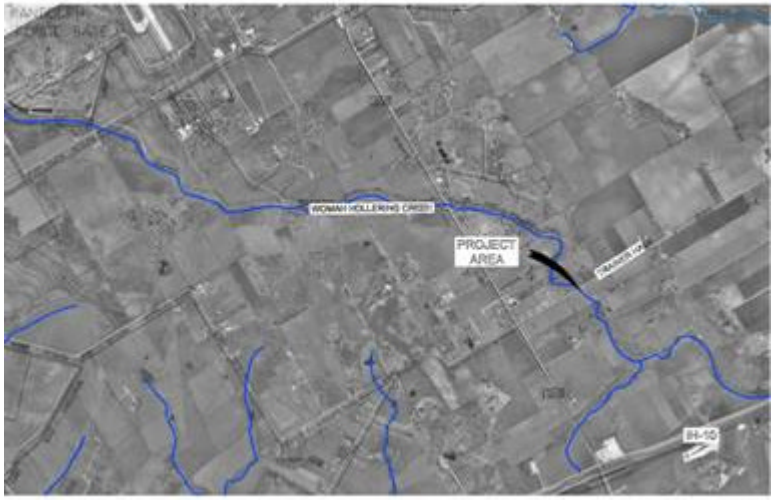
  Dangerous low water crossing because of the fast runoff relief time.

- Cost

  $2,000,000

Cibolo Creek-6

Proposed CIP List



- **<u>Trainer Hale at Woman Hollering Creek Low Water Crossing</u>**

- Description

  Provide all weather access

- Justification

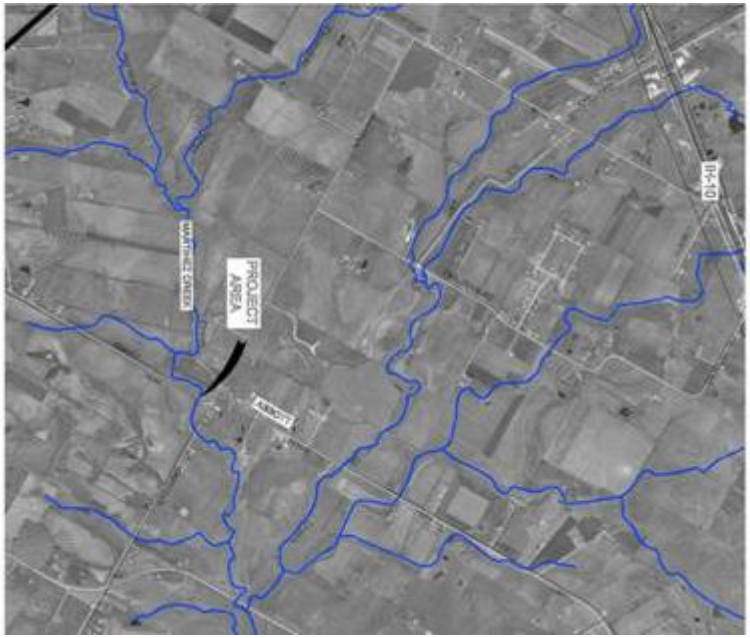
  Aside from IH-10, this is a major road.

- Cost

  $1,000,000

Cibolo Creek-7

Proposed CIP List



- **<u>Abbott Road at Martinez Creek Low Water Crossing</u>**

- Description

  Provide all weather access

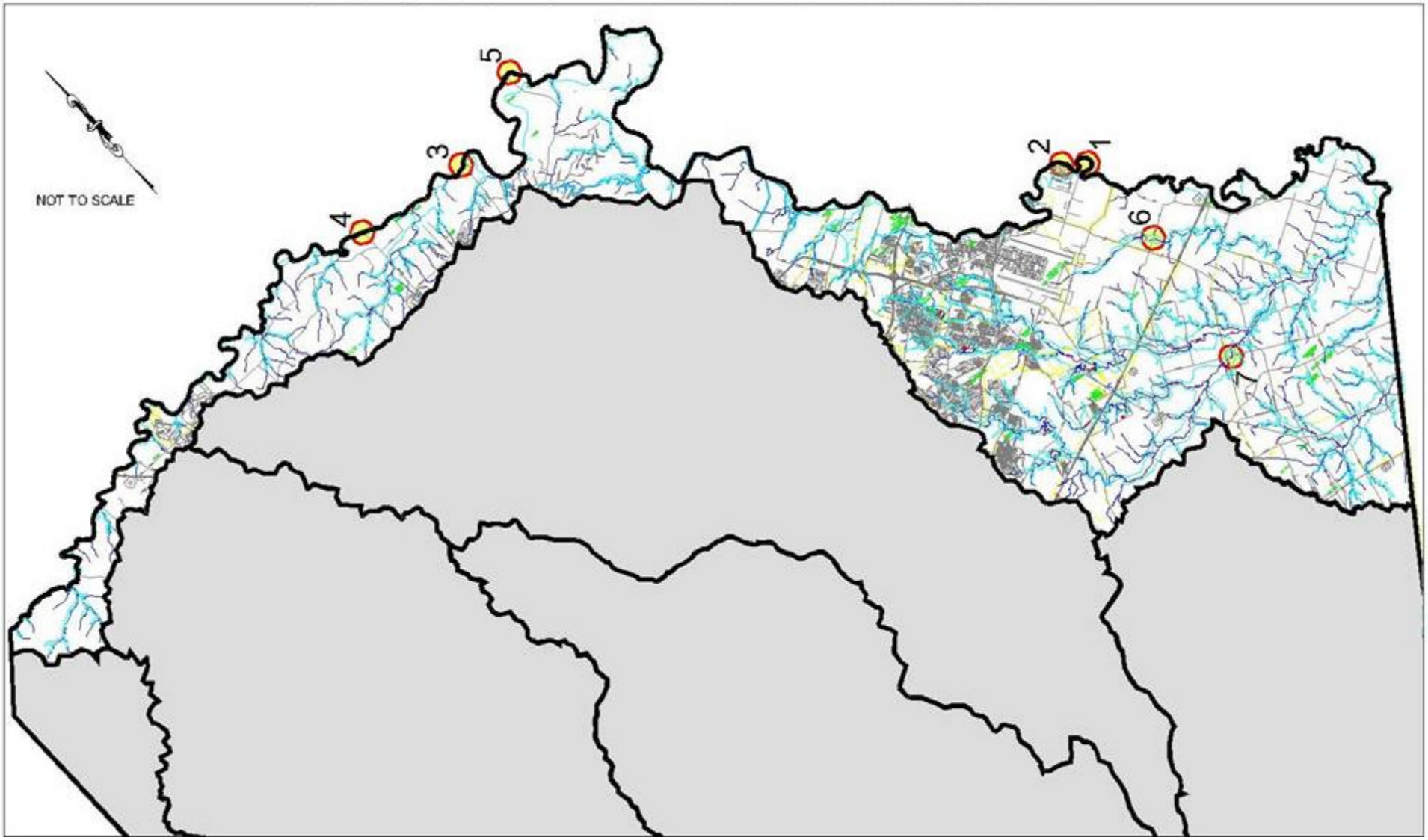
- Justification

  Low water crossing floods often in low frequency events.

- Cost

  $1,000,000

CIBOLO CREEK WATERSHED



AACOG REGIONAL HAZARD MITIGATION PLAN
COMMUNITY WORKSHOP AGENDA

JUNE 26, 27, 2003

1:00 to 1:15 PM

Project Status

- Project Workflow /Progress

1:15 to 1:45 PM

Capability Assessment Findings

- Legal/Policy
- Technical
- Administrative
- Fiscal
- Political

1:45 to 2:15 PM

Risk Assessment Overview

- Regional Overview
- Assets at Risk
- Hazard & Damage Profile
- Economic Vulnerability Assessment

2:15 to 2:30 PM BREAK

2:30 to 3:00 PM

Preliminary Goals and Objectives

- Categories
- Goals and Objectives

3:00 to 5:00 PM

Strategic Planning: Development of Actions

- Group Tabletop
- Homework

AACOG REGIONAL HAZARD MITIGATION PLAN
COMMUNITY WORKSHOP AGENDA

July 1, 2003

Mitigation Workshop 1:00 – 5:00 p.m.

1:00 to 1:15 PM	**Welcome and Introductions**
1:15 to 1:30 PM	**Project Status**
1:30 to 1:45 PM	**Capability Assessment Findings**
1:45 to 2:00 PM	**Risk Assessment Overview**
2:00 to 2:15 PM	**Preliminary Goals and Objectives**
2:15 to 2:30 PM	**Break**
2:30 to 5:00 PM	**Strategic Planning: Development of Actions**
	Group Tabletop

Public Meeting 6:00 – 7:30 p.m.

Mitigation Workshops

Alamo Area Council of Governments
Hazard Mitigation Plan Development Project

Hazard mitigation workshops will be held in conjunction with the public meetings June 26, June 27 and July 1, 2003. The workshops will be working sessions to formulate goals and objectives to mitigate the hazards identified in the risk assessment, and develop a preliminary list of mitigation actions and action plans for each jurisdiction.

Thursday, June 26	**Friday, June 27**	**Tuesday, July 1**
Pleasanton	Kerrville	San Antonio
Pleasanton Fire Station	UGRA Classroom	AACOG Boardroom
217 W. Hunt	125 Lehmann Dr.	8700 Tesoro Dr.

Schedule:

Mitigation Workshop 1:00 PM - 5:00 PM
Public Meeting 6:00 PM - 7:30 PM

Who should attend:
- Each jurisdiction participating in the Hazard Mitigation Plan
- Key stakeholders and interested citizens involved in hazard mitigation planning in their communities.

Questions? Call Don McFarland, AACOG:
(210) 362-5296, dmcfarland@aacog.com

Regional Mitigation Action Plan Update #4

Community Workshops/ Public Input Meetings – June, 2003

Please participate in a Mitigation Workshop and Public Meeting being held in conjunction with development of an AACOG Regional Hazard Mitigation Action Plan. Public notice and participation are required by this grant and by FEMA.

Mitigation Workshops will be held in different parts of the AACOG region from 1:00 p.m. to 5:00 p.m. on the dates and at the locations listed below with Public Meetings scheduled on the same days and at the same locations from 6:00 p.m. to 7:30 p.m.

In order to provide for the optimum discussion, we have grouped the following counties together for these meetings:

NOTE: All Meetings are open to the public and to all jurisdictions. Please attend the meeting at the location and date most convenient for you.

Thursday, June 26, 2003	**Pleasanton Fire Station - 617 W. Hunt Atascosa, Frio, Wilson, Karnes counties**
Friday, June 27, 2003	**Upper Guadalupe River Authority, 125 Lehmann Drive, Kerrville, TX Kerr, Gillespie, and Bandera counties**
Tuesday, July 1, 2003	**AACOG Board Room, 8700 Tesoro Dr., Suite 100, San Antonio, TX Comal, Bexar, Guadalupe, Medina and Goliad counties.**

Please register your attendance by e-mailing or calling
Don McFarland (dmcfarland@aacog.com) at 362-5296 or
Adrienne R. Cohen (arcohen@aacog.com) at 362-5256

The Mitigation Workshop will be working sessions to formulate goals and objectives related to the hazards identified in the risk assessment and to develop a actions/plans for the region area and for each participating jurisdiction. **It is critical that those jurisdictions participating in the development of the plan be represented at the Workshop.** We are encouraging participation by local elected officials, City Managers, Floodplain Administrators, Public Works Directors, planners, Emergency Management Coordinators, Fire Marshals, Police Chiefs,

Sheriffs, County Engineers, Building Officials and Inspectors, and local health officials. Your assistance in notifying these persons is needed and appreciated.

Each Mitigation Workshop will be followed by a Public Meeting to be held from 6:00 p.m. to 7:30 p.m. at each location. The Public Meetings brief local residents on the results of the risk assessment and provide the means by which the public can have input on the identified hazards and the actions being recommended to mitigate the impact of those hazards.

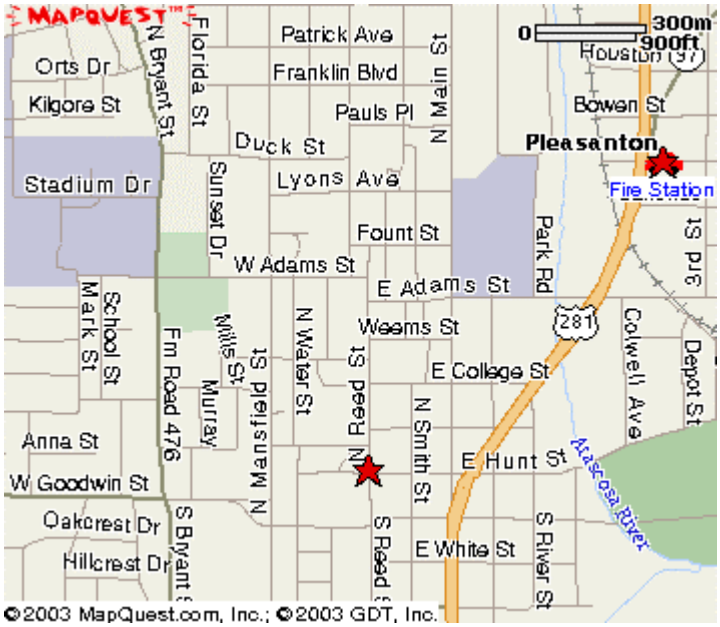
A Public Meeting Notice and a flyer are attached. We encourage you to distribute the public meeting notice and flyer widely within your community and to encourage residents to attend.

Aurora M. Sanchez
Criminal Justice Director
AACOG
210-362-5224
asanchez@aacog.com

DIRECTIONS TO MEETINGS

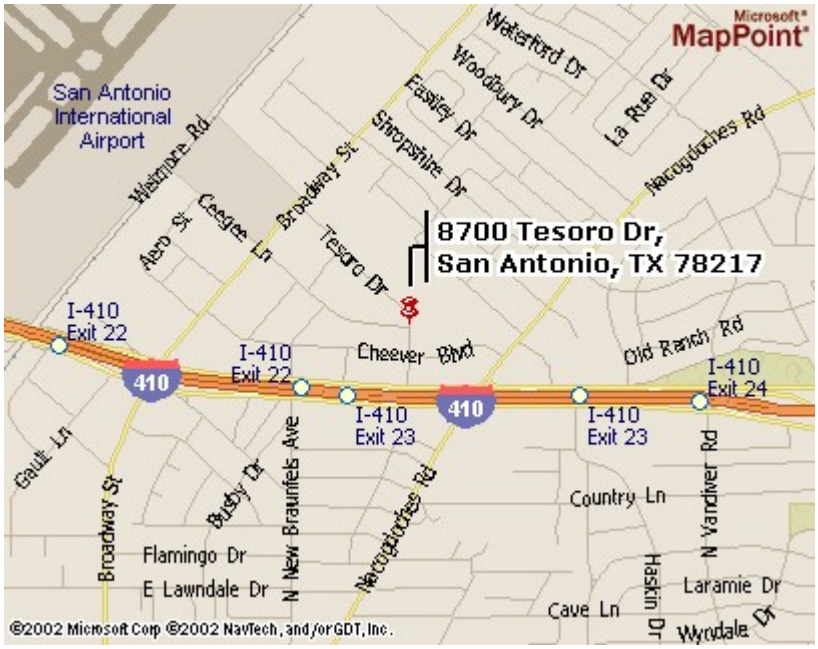
TO PLEASANTON FIRE STATION – 617 W. Hunt

Directions from San Antonio to the Pleasanton Fire Station: Take 37 S. To hwy 97 exit, Turn R. Go to first traffic light and turn left. Go over river bridge to town square and turn R. Go two blocks to fire station on Left.
From Wilson County, come in on 97 and once you go over IH 37 follow the same directions.
From Frio County you come in on 97 from the west. Come into Pleasanton, when you see HEB on the Right turn left beside Hurley Funeral home. Go 3 blocks and turn left to station on the left.

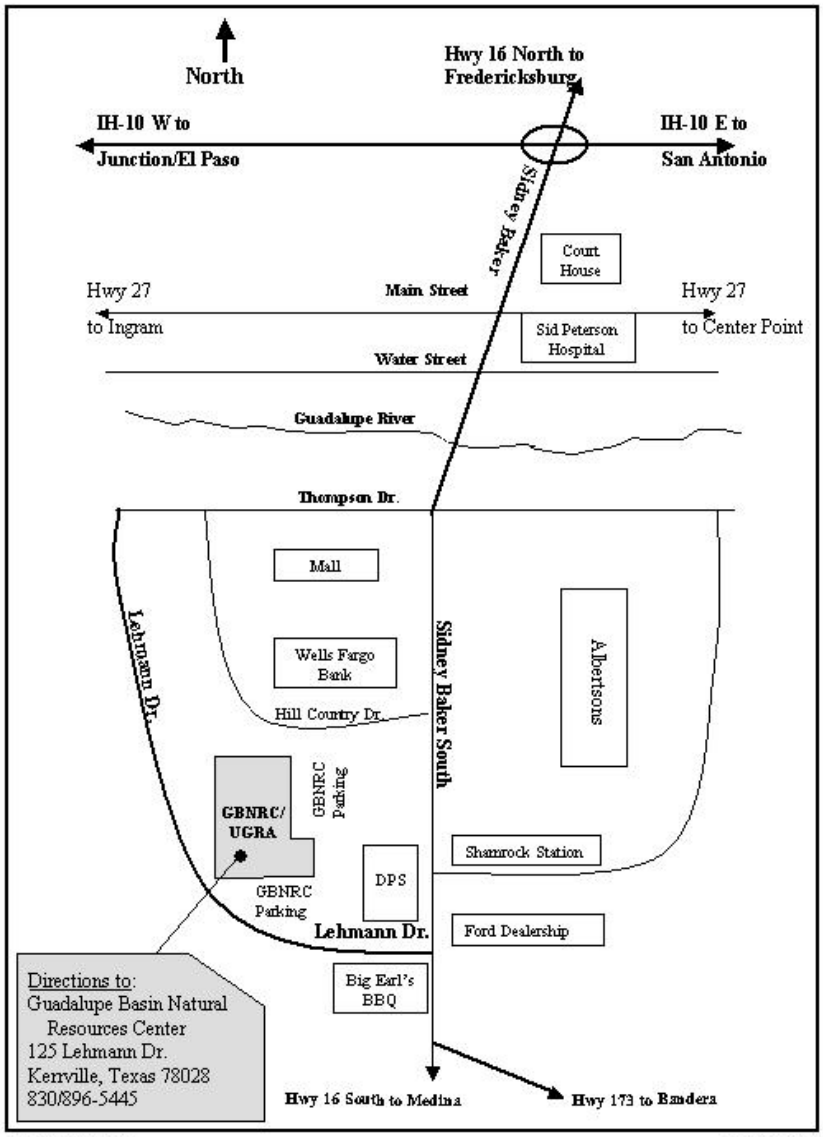


TO AACOG – 8700 Tesoro Dr.

From Austin, take I-35 South. Exit onto Loop 410 West. Take Loop 410 West to Nacogdoches Road. Exit Nacogdoches Road and stay on the access road. Turn right onto Tesoro Drive. If you come to a stoplight at Broadway Street, you have gone too far. There are two large identical multi-window buildings in front and to the right of you. The building on the left houses the AACOG offices. Enter the main glass doors in the front of the building. The Board Room is on the first floor.



TO UPPER GUADALUPE RIVER AUTHORITY in KERRVILLE – 125 Lehmann Dr.



UGRA 01-43-A (03/01)

Map to GBNRC

Alamo Area Council of Governments and Regional Partners
Regional Mitigation Plan Workshops
Thursday and Friday June 26 & 27 and Tuesday July 1, 2003

WORKSHOP MINUTES

A series of Workshops for Regional Mitigation Action Plan was held by AACOG and PBS&J, the selected consultant team. There was also representation from H2O Partners, Inc. a Texas based planning firm that is a subcontractor to PBS&J.

Three sessions were held:

Thursday, June 26, 2003 at Pleasanton Fire Station
Friday, June 27, 2003 at Upper Guadalupe River Authority in Kerrville
Tuesday, July 1, 2003 at AACOG Boardroom, San Antonio

All workshops were held from 1-5 p.m. with a Public Meeting held from 6-7:30 p.m.

Mr. Jeffrey Euwema represented PBS&J. H2O Partners was represented by Ms. Cathy Meek at the Pleasanton meeting; Ms. Jo Ann Howard at the Kerrville meeting and Ms. Laurel C. Lacey at the meeting held at AACOG.

AACOG staff present at all sessions: Don McFarland, Criminal Justice Manager for Emergency Preparedness, Adrienne R. Cohen, Criminal Justice Specialist with Aurora M. Sanchez, Criminal Justice Director and Mr. Al J. Notzon, III, AACOG Executive Director attending the AACOG meeting.

Opening and Introductions

Mr. Mc Farland opened each session and welcomed the representatives and introduced staff and consultants. Those present introduced themselves and indicated which jurisdiction they represented.

Documents Distributed and Deadline Set

The Agenda was presented to each attendee at sign in. The following were distributed to all in attendance and also e-mailed to those who indicated e-mail addresses on the sign in sheet: Local Capability Assessment Annex P, Hazard Mitigation Measures worksheet, Hazard Mitigation Team Members list and AACOG's Goals and Objectives. Those who have any questions can e-mail Mr. McFarland or call him at 210-362-5296. The complete information package will be mailed to those who did not attend.

Deadline - The Capability Assessment Annex P and Mitigation Action Measures must be completed and sent by FAX or e-mail by July 18, 2003 to Don McFarland at dmcfarland@aacog.com or FAX 210-824-5881. Those jurisdictions that do not have e-mail and who do not have the survey in electronic form may type their answers addressing each question in word format.

Presentation Highlights

Mr. Jeffrey Euwema and a representative from H2O Partners conducted the power point presentation and answered questions from the audience.

The power point demonstration followed the outline below:

Project Status

- Project Workflow /Progress

Capability Assessment Findings

- Legal/Policy
- Technical
- Administrative
- Fiscal
- Political

Risk Assessment Overview

- Regional Overview
- Assets at Risk
- Hazard & Damage Profile
- Economic Vulnerability Assessment

Preliminary Goals and Objectives

- Categories
- Goals and Objectives

Strategic Planning: Development of Actions

- Group Tabletop
- Homework

It is very important to have mutual aid agreements or memoranda of understanding signed that commit in writing the extent of assistance between counties/cities. These agreements should be incorporated into the plans and copies sent to AACOG.

The consultants stressed the value of the Regional Mitigation Action plan in helping jurisdictions to plan for future actions. They also stressed the need for coordination and continued review of the document. The plans must be updated every 5 years, however, it would be more beneficial to

update the plan yearly and certainly if something new arises within the year, such as a flood or tornado.

Point of Contact

Participants were asked to verify who the designated point of contact is for their jurisdiction. The designated point of contact will be the individual to whom we will be sending information to via e-mail or fax. It is very important that this person distributes the information to all interested parties and organizations within their jurisdiction.

Strategic Planning

The attendees broke into work groups by jurisdiction and/or county and developed mitigation action plans based on the goals and objectives presented to them. Mr. Jeffrey Euwema with the help of the H2O Partners helped the representative with their planning and mitigation measures and answered any questions that they might have.

Public Hearings

A Public Meeting was held at each location after the workshops. One couple, as well as some of the workshop attendees came to the Public Meeting in Pleasanton. Mr. Euwema gave a brief review of what was presented at the workshop and the questions asked during the workshop. There was no community participation from the Public in Kerrville. The Public Meeting in San Antonio, at AACOG had some of the attendees from the afternoon workshop and the Mayor from Live Oak came since he was not able to come to the afternoon session. Mr. Euwema and Ms. Lacey provided a review of what had transpired at the afternoon workshop and his questions pertaining to his jurisdiction were answered.

- End of Minutes -

PUBLIC NOTICE

The Alamo Area Council of Governments (AACOG), and its partners the City of San Antonio, Bexar County and the San Antonio River Authority will hold a series of Public Hearings in connection with the development of the AACOG Regional Hazard Mitigation Action Plan. This planning project, funded by the Federal Emergency Management Agency, is designed to reduce future damage from natural disasters, streamline the disaster recovery process, and capitalize on Federal funding. The Regional Mitigation Action Plan help localities maintain their eligibility for FEMA funding for any disaster event that may occur after November 1, 2004.

The Public Meetings are designed to brief local residents on the results of the risk assessment and to provide the opportunity for the public to have input on the identified hazards and the actions being recommended to mitigate the impact of those hazards.

Thursday, June 26, 2003	**Friday, June 27, 2003**	**Tuesday, July 1, 2003**
PLEASANTON	KERRVILLE	SAN ANTONIO
6:00 p.m. – 7:30 p.m.	6:00 p.m. – 7:30 p.m.	6:00 p.m. – 7:30 p.m.
Fire Station Meeting Room	Upper Guadalupe River Authority	AACOG Board Room
	125 Lehmann Drive	8700 Tesoro Dr., # 100

Questions should be addressed to Don McFarland, Criminal Justice Manager for Emergency Preparedness, 210-362-5296 or email at dmcfarland@aacog.com or to Adrienne R. Cohen, AACOG, 210-362-5256, or email at arcohen@aacog.com.

Regional Mitigation SIGN IN SHEET
MEETING DATE: June 26, 2003
Pleasanton Fire Station
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City Zip Code	PHONE & Fax
1. Kev Reiley	Karnes Co	KReiley@awesomenet.net	307 Graham Rd	Kenedy TX 78119	8305830402
2. Wanda Reiley	Karnes Co	Kreiley@awesomenet.net	307 Graham	Kenedy Tx 78119	830-583-0402/583/4042
3. Norma Atkinson	Karnes Co	natkin@awesomenet.net	P.O. Bx 127	Kenedy, Tx 78119	830-583-2836
4. Loretta Thiele	Karnes Co.	city-kenedy@hotmail.com	303 W main	Kenedy Tx 78119	830-583-2230/583-2003
5. Sylvia Corter	Karnes Co	scorter@karnesec.net	101 N Panna Maria	Karnes City 78118	8307804519 830 7804431
6. David Carrothers	City of KC	cityofkc@karnesec.net	314 E. Calvert, Karnes City, Tx 78118		8307803422 8307802227
7. LeAnn Hosek	Wilson Co. EMC	leanneme@felpsis.net	1420 Third St, Floresville Tx. 78114		830-393-7348 830-393-7327-fax
8. James L Blair	San Antonio River Auth	jblair@saar-tx.org	100 E Guenther	SAT	210-227-1373
9. Edwin Baker	WCH&PSO City of Stockdale	wcert@felpsis.net	#2 Library Ln Suite 4	Floresville 78114	830-393-7346 (Fax 7359)
10. Albert Gamez Jr	County Commissioner Pct 1	360 Lucio Ln CR128	Floresville TX 78114		m 830-391-0451 - H 830-216-2893
11. Tony Malik		PO Bx 4			
12. Ray Wolff		#2 Library Lane Suit #2	Floresville	Tx 78114	830-393-7304
13. Leonard Rotter		P.O. Box 297	Poth	Tx 78147	
14.					
15.					

Regional Mitigation SIGN IN SHEET
MEETING DATE: June 26, 2003
Pleasanton Fire Station
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City Zip Code	PHONE & Fax
1. Duane DuBose	Kenedy Police Department		303 W. MAIN	Kenedy 78119	(830) 583-2225
2. Randy Jurgajtis	city-Kenedy@hotmail.com		303 W. MAIN	Kenedy Tx 78119	830-583-2230 830-583-2063
3. Gary Pelech	GPELECH@FLORESVILLE.NET		1120 D ST.	Floresville 78114	(830) 393-3105
4. Larry Machost	City of Floresville		1120 D-St	Floresville 78114	(830) 393-3105
Mayor 5. Chrystal Echol	City of Poth		PO Box 579	Poth 78147	no email 830-484-2111
City Secretary 6. Dolore Cordova	City of Jourd.		~~PO Box~~ 1220 Summers Ave.	Jourdanton 78026 TX	830 769-3589
Mayor 7. Adline Pendella	City of La Vernia		PO Box 225	La Vernia 78121	830 779 4541
8. William O Lamb	City of Pleasanton		PO Box 209	Pleasanton, TX 78064	830-569-3867
9. Diana J. Bautista	Atascosa Co.		#1 Courthouse Circle Dr. Suite #101	Jourdanton, TX 78026	830-769-3093 830-769-2349
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11.					
12.					
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Regional Mitigation SIGN IN SHEET
MEETING DATE: June 26, 2003
Pleasanton Fire Station
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City Zip Code	PHONE & Fax
1. Chuck Garris	Atascosa Co. EMC	EMCFM@karnes.net	711 Oak St.	Jourdanton 78026	830-769-2029
2. David Prasifka	Jourdanton Fire	oledave22@hotmail.com	509 Beech St. 78026	Jourdanton	830-767-4645
3. Felipe Leal	Kenedy City Com	Fleal@fwicholas.com			830-583-2622
4. Drew Traeger	Hollywood Park	HWPADMIN@SWBELL.NET			210-494-2023
5. ~~Juan Valdez~~	~~Columbia~~				
6. Don McFarland	AACOG				
7. Adrienne R. Cohen	AACOG.				
8. Cathy Meek		cmeek83@earthlink.net			(281)5650527 ph
9. Jeffrey Euwema	PBS+J, Atlanta, GA				
10.					
11.					
12.					
13.					
14.					
15.					

Regional Mitigation SIGN IN SHEET
MEETING DATE: June 26, 2003
Pleasanton Fire Station
6:00 p.m.-7:30 P.M. Public Meeting

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City Zip Code	PHONE & Fax
1. John German	PBSJ	jlgerman@PBSJ.com	8626 Tesoro Drive, Suite 804	S.A. Tx 78217	2108289494
2. LeAnn Hosek	Wilson Co.	leannema@felpsis.net	1420 Third St.	Flw. Tx 78114	830-393-7348
3. Sylvia Corter	Karnes Co	scorter@karnesec.net	101 N Panna Maria	Karnes City 78118	8307804519 8307804431
4. Ken Reiley	Karnes County	kreiley@awesomenet.net	307 Graham	Kenedy Tx 78119	830 583 0402
5. Wanda Reiley	Karnes Co.	kreiley@awesomenet.net	307 Graham	Kenedy Tx 78119	830-583-0402 830-583-4042
6. James L. Blair	SARA	jblair@sara-tx.org			
7. Sam Lingo			832 Bowen	Pleasanton Tx 78064	830 281 4400
8. Rebecca G. Treviño		rebtrevino@aol.com	107 Cynthia	"	830 281-5722
9. Jose L. Treviño		"	"	"	"
10. Chuck garris	- Atascosa Cty.				
11. Jeffrey Euwama	- PPS+g.				
12. Don McFarland	- AACog				
13. Adrienne R. Cohen	AACog.				
14.					
15.					

Regional Mitigation SIGN IN SHEET
MEETING DATE: June 27, 2003
Upper Guadalupe River Authority
125 Lehmann Drive, Kerrville
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City Zip Code	PHONE & Fax
1. Ralph Dressler	Bandera County FM/EMC	rdressler@texas.net	485 Lockhart Dr Lakehills	78063	830-612-3335/830 257 3335
2. Bobby Jones			345 Hummingbird	78003	830-460-8395
3. Doyle Haner		haner@indian-creek.net	P.O. Box 5 Bandera	78003	830-796-4281
4. Gene Foerster		banderafinancial@stic.net	PO Box 896 Bandera	78003	830-796-3765
5. Shane Merritt	Bandera P.D.	banderapd@stic.net	PO Box 896 Bandera		830 796-3456 / 830 796-4075
6. Linda James	Bandera Co		PO Box 2734	Ba Tx 78003	830-796-7660
7. Casey Poe	Bandera Co	bcra@indian-creek.net	PO Box 2485	Ba Tx 78003	830-796-8343 / 3478 fax
8. Ron Derrick		rderrick@fbgtx.org	126 W Main FB, TX	78624	830-990-2024
9. Doug King		dking@medinaec.com	P.O. Box 224	Vanderpool, TX 78885	830-966-3778
10. Jo Ann Howard		iamanrd3@aol.com	PO Box 160130 Austin, TX	78716	512-328-8444 phone / 512-329-6612 fax
11. Jeffreg Euwema	PPSG.				
12. Don McFarland	AACog				
13. Adrienne R. Cohen	AACog.				
14.					
15.					

Regional Mitigatio SIGN IN SHEET
MEETING DATE: June 27, 2003
Upper Guadalupe River Authority
125 Lehmann Drive, Kerrville
6:00 p.m.-7:30 P.M. Public Meeting

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. DON MCFARLAND	AACOG				
2. Jeffrey Eurema	PBS&J				
3. JO Ann Howard	H2O Partners, Inc.				
4. Adrienne R. Cohen	AACOG				
5.					
6.					
7.					
8. WAITED UNTIL 6:30 PM - NO PUBLIC PARTICIPATION					
9.					
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Regional Mitigation SIGN IN SHEET
MEETING DATE: July 1, 2003
AACOG Boardroom
8700 Tesoro Dr., Suite 100, San Antonio
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. Harold Martin	Goliad EMC	goem@tisd.net	305 N. San Patricio	Goliad 77963	0-361-645-1729/Fax:361-645-3655
2. GARY WOPPERT	CITY OF LIVE OAK	gwoppert@ci.live-oak.tx.us	8001 S HIGHWAY DR	LIVE OAK 78233	0-653-9140-379
3. ISABELLE SIEPKETR	CITY OF LIVE OAK	—	12702 WEEPING OAK	LIVE OAK TX 78233	210-599-7557
4. RYAN PRESS	EOC	rpress@satx.rr.com	3135 RENKER	SAN ANTONIO, TX 78212	694-4545 / 694-4577
5. MARTIN RIVAS	FIRE MARSHAL		3402 NUEVA	SAN ANTONIO 78122	335.3030
6. William H. Woodward	Alamo Ht Fire/EMS	bwoodward@ci.alamo-heights.Tx.us	6116 Broadway	San Antonio Tx 78209	210-824-1281
7. " " "	Fire Co. EM	bwoodward@ci.alamo-heights.Tx.us	500 E. San Antonio St., #5	Pearsall, Tx 78061	830-334-3201
8. CAROLYN T. EDGETT	Comal Co. (Bulverde, Garden Ridge, New Braunfels)	cetoje@co.comal.tx.us	199 Main Plaza	New Braunfels, TX 78130	830-608-8658
9. Reggie H Winters	City of LaCoste	cityofLacoste@earthlink.com	11004 S. Front	LaCoste TX 78039	830-985-9494
10. Giles Fontson	Alamo Heights P.D.	gfontson@ci.alamo-heights.tx.us	6116 Broadway Alamo Heights, Tx 78209		822-6133
11. Malcolm KRUEGER	Alamo Hts Fire	6116 BROADWAY			824128
12. Cynthia Rangel	Seguin PD	410 N. Camp	Seguin 78155		830 379 2423 830-401-2312
13. John D SHEPPARD	Seguin	firemarshal@ci.seguin.tx.us	211 N River, Seguin TX 78155		
14. Robert X. Hancock		1202 GENTLE	CASTROVILLE		(931) 5333
15. Columbus Stutes	Terrell Hills	5100 N. New Braunfels	S.A. Tx. 78209		(210) 824-7401

Regional Mitigation SIGN IN SHEET
MEETING DATE: July 1, 2003
AACOG Boardroom
8700 Tesoro Dr., Suite 100, San Antonio
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. Doug Meckel	Leon Valley	lvfd@satx.rr.com	6400 El Verde	San Antonio 78238	(210) 684-3219 FAX (210) 684-6988
2. Rick R. Valdez	Somerset PD	somersetpd@cji.net	7360 E 6th Street	Somerset, TX 78069	210-622-5611 830-429-3409-FAX
3. Glen Outlaw	Schertz EMC	goutlaw@ci.schertz.tx.us			
4. Ralph H. Wiesepape	City of Fair Oaks Ranch		7286 Dietz Elkhorn Rd	Fair Oaks Ranch TX 78015	210-688-0800 OFF 210 688 3565 FAX
5. Brian Dopp	City of Windcrest	pdstx@prodigy.net			210-657-0580
6. Renate Yonke	Universal City	pdstx@prodigy.net			210-657-0580
7. Kevin Riedel	Kirby F.D	KLR803@HOTMAIL	115 Bauman St.	Kirby 78219	(210) 661-2612 (210) 661-8074
8. Javier Garcia	Hollywood Park F.D.	hpfdchief@swbell.net	112 Mecca Hollywood Park TX	78232	(210) 494-3111 ext 30
9. Mike Pickett	SAC	mp1750@satx.rr.com	San A. TX 78247		(210) 490-6406
10. Fritz Bohne	Helotes PD	FRITZBOHNE@AOL.COM	P.O. Box 507	Helotes, TX 78023	2106953087
11. James L. Blair	SARA	jblair@sara-tx.org			227-1373
12. Mike Miller	COSA	mmiller@sanantonio.org	San Antonio TX 115 Auditorium Cir 78205		207-8580
13.					
14.					
15.					

Regional Mitigatio SIGN IN SHEET
MEETING DATE: July 1, 2003
AACOG Boardroom
8700 Tesoro Dr., Suite 100, San Antonio
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. Jay Sikes	SA OEM	jsikes@sanantonio.gov	115 Auditorium Circle	San Antonio, TX 78205	(210) 207-8580 / 207-7971
2. WAYMAN KRUEGER	GUDD. CO	WAYMAN_KRUEGER@YAHOO	2617 N. GUADALUPE	SEGUIN 78155	830 303 4188 X230
3. CHARLES HOFFMAN	COSA	CHOFFMAN@SANANTONIO.GOV.	115 AUDITORIUM	SAT 78205	(210) 207-8580/7971
4. DARYIN WETZ	ALAMO HEIGHTS	DWETZ CI.ALAMOHEIGHTS.TX.US	6116 BROADWAY	SA 78209	824-1281
5. Joe Haynes	City of Alamo Hts	jhaynes@ci.alamoheights.tx.us	6116 Broadway	SA 78209	824-0516
6. Timothy Fouse	CITY OF CASTROVILLE	EMC@CASTROVILLETX.US	10500 AIRPORT RD	CASTROVILLE, TX 78009	830 931-0234
7. Robert M. Adelman	Bexar County S.O.	radelman@bexar.org	203 W. Nueva	SA 78207	335-4620/4609
8. JACK YATES	CITY of CASTROVILLE	jack.yates@castrovilletx.us			830-931-4070
9. Randy Johnwenn	City of MARION	303 S Cent Str	MARION	78124	830 914 2391
10. JOHN BUTRICO	HOLLYWOOD PARK FIRE	hpfd-ac@swbell.net [redacted]	2 MELCA DR.	SA TX 78232	210 494 3111 x32
11. LES LOCKE	BEXAR COUNTY	LLOCKE@BEXAR.ORG	233 N PECOS SUITE 420	SA TX 78207	210 335 6700
12. John German	PBSJ	jlgerman@PBSJ.com	8626 Tesoro Dr, Suite 804,	SA, TX 78217	2108289494
* 13. Rowan P Zachry	City of Ingram	rzach@rtc.com ~~rzach@rtc.com~~	214 Hwy 39	Ingram TX 78025	830 367-2630 830 367 3251
14.					
15.					

Regional Mitigatio SIGN IN SHEET
MEETING DATE: July 1, 2003
AACOG Boardroom
8700 Tesoro Dr., Suite 100, San Antonio
1:00 p.m.-5:00 P.M.

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. Jack Dougherty	Converse	cfire@satx.rr.	709 station st	Converse 78109	658-8900/658-2222
2. Keith Spenrath	Kerrville Kerr County	keithsp@kerrville.org	212 A	Kerrville Tx 78028	830-257-8449
3. Cordon Busch	Kirby	ccb814@yahoo.com	115 Gaiman	Kirby 78219	661-2412/661-8074
4. Susan Rash	Alamo Heights	srash@ci.alamo-heights.tx.us	6116 Broadway	SA 78209	822-3331 822-8197 fax
5. Brian Dopp	Selma	PDSTX@PRODIGY.NET			657-0580
6.					
7.					
8.					
9.					
10. Laurel Lacey	- ~~PBS&J~~ H2O				
11. Jeffrey Eubema	PBS+J				
12. Don McFarland	AACog				
13. Adrienne R. Cohen	AACog				
14. Aurora M. Sanchez	AACog				
15. Al J. Notzon III	AACog				

Regional Mitigation SIGN IN SHEET
MEETING DATE: July 1, 2003
AACOG Boardroom
8700 Tesoro Dr., Suite 100, San Antonio
6:00 p.m.-7:30 P.M. Public Meeting

PLEASE PRINT

NAME	Agency	Email	ADDRESS	City, Zip Code	PHONE & Fax
1. CAROL SEDGETT	COMAL CTY.				
2. James L. BLAIR	SARA				
3. BRIAN DOPP	Selma / Univ. City / Windcrest				
4. Renate Yonke	Univ. City				
5. Henry O. EDWARDS Jr.	MAYOR Live Oak				
6. JOHN GESMAN	PBS&J.				
7.					
8.					
9.					
10.					
11.					
12. Laurel Lacey	H_2O				
13. Jeffrey EUWEMA	PBS&J.				
14. Don McFARLAND	AACOG				
15. ADRIENNE R. Cohen	AACOG.				

Recreated - orig - misplaced.

k → Don → Adrienne
A 7/3/03

AACOG
Alamo Area Council Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Atascosa County

Including the communities of: Pleasanton, Poteet, Jourdanton, Charlotte, Christine

Name of Hazard Mitigation Team Leader: Chuck Garris

Telephone No : 830-769-2029

Fax No : 830-769-2600

E-Mail: emc-fm@karnesec.net

Our local Hazard Mitigation Team met on the following dates:

1-27-03 4-15-03
2-27-03
3-27-03

Public Presentations - Civic Meetings attended: Noon Lions Club

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Chuck Garris	EMC - Atascosa Co.
2.	Diana Baptista	County Judge
3.	Bill Lamb	City Manager - Pleasanton
4.	Johnny Martinez	Public Works - Pleasanton
5.	Don Nix	City Administrator - Jourdanton
6.	Dolores Cordova	City Secretary - Jourdanton
7.	Mike Koelan	Appraisal District - Atascosa Co.
8.	James Roberts	Charlotte School Dist.
9.	Horace Pincher	Mayor - Lytle
10.	Richard Priest	Police Chief - Lytle
11.	Ronnie Lacuesen	Police Chief - Jourdanton
12.	Sharonene Shawver	Dispatcher - Atascosa Co.
13.	Alfredo Aquinaga	Public Works Dir. - Lytle
14.	Walter Stevens	Mayor - Christine
15.	Larry Pippen	City Admin - Poteet

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

07/03/03

AACOG
Alamo Area Council
Of Governments

L → Don
6/30/03

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: _Bandera County and The City of Bandera_____

Including the communities of: Lakehills, Pipe Creek, Medina, Tarpley, Vanderpool + others

Name of Hazard Mitigation Team Leader: Ray Rendon, Cnty Eng.asst. by Ralph Dresser, EMC

Telephone No : 830-796-4524 Cnty Eng.//*830-612-3335 EMC

Fax No : EMC 830-751-3335

E-Mail: EMC rdresser@texas.net

Our local Hazard Mitigation Team met on the following dates:

1."Kick Off " Meeting 24 March 2003 at 11th St Annex, Bandera, Tx. !9:00 to 21:00 ATCH 2
2. Follow-up ____7 April 2003 at 11th St. Annex , Bandera Tx. 19:00 to 21:00 ATCH-3
3. Work shop, 27 May 2003 at 11th St. Annex, Bandera Tx. 19:00 to 21:30_ ATCH-4

Public Presentations - Civic Meetings attended: _Commissioners Court, Mar. & Apr

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	See Attached List of 26 Team member names, Job Title and/or Specialties	ATCH-1
2.		
3.		
4.		
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

RECEIVED 06/30/03 SJ

Hazard Mitigation Team Addresses

Bandera County Sheriff
James Mac Millan
P.O. Box 607
Bandera, Texas 78003
751-3244 (h)

Bandera County EMS
Doyle Haner
P.O. Box 5
Bandera, Texas 78003
562-3281 (h)

Bandera Electric Coop.
Dennis Winright
P.O. Box 667
Bandera, Texas 78003
589-2836 (h)

Bandera ISD
Ms. Renee Schulze
P.O. Box 727
Bandera, Texas 78003
796-7803 (h)

Vanderpool VFD
Doug King dking@medina.com
P.O. Box 234
Vanderpool, Texas 78885
966-3778 (h)

Medina ISD
Randy Moczygemba
P.O. Box 1470
Medina, Texas 78055
589-2855 (w)

Bandera Police Dept.
Chief Shane Merritt
P. O. Box 896
Bandera, Texas 78003
460-7172 (w)

El Paso Field Services
Woody Phillips
20733 Lamm Rd.
Elmendorf, Texas 78112
210-528-2375 (w)
210-495-1784 (h)

Groomer
Martha ~~Gonzales~~
TX. Dept. of Health
P.O. Box 1536
Bandera, Texas 78003
796-7540 (wk)
535-6892 (hm)
(210) 756-0349 (24° pager)

Purple Sage Ranch
Mr. E.J. Jaax
756 Purple Sage Rd.
Bandera, Texas 78003
796-7703 (w) x-6011
796-5995 (C)
796-3737 (FAX)

Bandera County Visitors Bureau
Patricia Moore
Box 171
Bandera, Texas 78003
796-3045 (w)

Bandera Bulletin
Frank Shubert
P.O. Box 697
Bandera, Texas 78003
796-3045 (w)

Environmental Control
Ernest C. Reich
7145 Park Road 37
Lakehills, Texas 78063
751-3575 (w)

TX Department of Trans.
Todd Sandidge
P. O. Box 601
Bandera, Texas 78003
796-4124 (w)

Bandera County
Fire Marshall
Ralph Dresser
685 Lookout Dr.
Lakehills, Texas 78063
612-3335 (h)

Bandera City Mayor
Ms. Denise Griffin
P. O. Box 896
Bandera, Texas 78003
460-7170 (w)

Helping Hands
Ms. Jesse Parks
P.O. Box 1092
Bandera, Texas 78003
796-8300 (w) 09-1
589-2303 (h)

City of Bandera
Mayor Pro Tem
Lynn Palmer
P.O. Box 2015
Bandera, TX 78003
[illegible]

Bandera County
Rural Addressing
Ms. Carey Poe
P.O. Box 2485
Bandera, Texas 78003

Texas Highway Patrol
Damon Derr
P. O. Box 1775
Bandera, Texas 78003
796-4126 (w)

First Baptist Church
Rev. Frank Pullin
P.O. Box 278
Bandera, Texas 78003
796-4171 (w)

Bandera County
Veterans Officer
Bobby Jones
395 Hummingbird Lane
Bandera, Texas 78003
460-8395 (h)

Linda James
P.O. Box 2734
Bandera, Texas 78003
796-3593 (w) HM 796-7662

City of Bandera
Public Works Director
Mr. Mike Cardenas
P.O. Box 896
Bandera, Texas 78003
460-7170 (w)

Maverick Properties
Mr. Ben Nolan
P.O. Box 42
Bandera, Texas 78003
460-8465 (w)

Bandera County
Road & Bridge Dept.
Ray Rendon
P.O. Box 844
Bandera, Texas 78003

Utopia Schools
Ms. Patricia Shafer
P.O. Box 880
Utopia, Texas 78884
966-3339 (w)

ATCH 1

RICHARD A. EVANS
COUNTY JUDGE

REX COX
COMMISSIONER, PREC. 1

RONALD D. BASINGER
COMMISSIONER, PREC. 2

RICHARD KEESE
COMMISSIONER, PREC. 3

DOUG KING
COMMISSIONER, PREC. 4

BANDERA COUNTY

BANDERA COUNTY

500 MAIN STREET

P.O BOX 877

BANDERA, TEXAS 78003

(830) 796-3781 (JUDGE'S OFFICE)

(830) 460-8375 (COMMISSIONER'S)

(830) 796-8323 (FAX)

To:

From: Richard Evans
Bandera County Judge

Subject: Bandera County Emergency Action Plan, Hazard Mitigation Team (HMT)

Bandera County has a most important task facing us this year. The ability of this County to receive FEMA funding assistance for any FUTURE disaster we encounter will be based on our development—AND STATE APPROVAL—THIS YEAR—of our Emergency Action Plan, Annex "P", Hazard Mitigation.

Following our July 02 flooding, Bandera County received 75% of the funding essential for our recovery efforts from FEMA. Our County has been hard pressed to provide the required 25% matching funds. We have been advised no FEMA funds will be available for future assistance to any county that has not developed their Annex "P" Mitigation Plan.

A basic prerequisite to developing our County Annex "P" Mitigation Plan is the formation of a Hazard Mitigation Team (HMT) comprised of prominent local citizens, like you, who have demonstrated their willingness to help Bandera County in the past. These citizens will be joined by others who have knowledge or skills in special areas of interest in our County. The mission of this team will be to "brainstorm" ALL areas of the County where crisis situations might arise from a wide variety of disasters. The team will then develop an "action list" of suggested actions required to lesson or "mitigate" the effects of that crisis. These disasters cover the spectrum from Natural i.e. tornados, flooding or fires to Hazardous Materials Incidents or Terrorists Acts.

Your name has been recommended to me, to be a part of this vital HMT team. I ask you to favorably consider this request to be of service to your fellow citizens in this difficult time.

This team will meet for a "kick-off" meeting on the 24th of March at 7:00 p.m. at the Mauer Annex (12th Street) to further review objectives of the team. About 2 weeks after this meeting, the team will meet again to submit their individual ideas/lists of potential crisis areas. Following these two sessions, the HMT Team will be asked to meet occasionally with other County Teams who will be asked to actually write the Emergency Action Plans, including Annex "P", note; there are 22 such plans required, but the Annex "P" is the critical Plan.

I look forward to seeing you at the meeting.

ATCH-2

HAZARDOUS MITIGATION TEAM
SIGN-IN SHEET
MARCH 24, 2003

NAME	AGENCY	MAILING ADDRESS	E-MAIL ADDRESS	TELEPHONE AND/OR FAX
Frank Schubert	Bandera Bulletin	P.O. Box 692 Bandera 78003	fschubert@indian-creek.net	796-3218 Ph 796-4885 Fax
Carey Roe	Rural Adv	PO Box 2485 Band	bcra@indian-creek.net	796-8343 796-3178
JESSE PARKS	Bandera Helping Hand	PO Box 1092 Bandera	firebrand@TXDSS.com	589-2303
Leon Beaudoanes	9-1-1 Addressing	10101 SH 173 N	beaux2@indian-creek.net	796-7001
Renee Schulze	BISD	PO Box 727	rschulze@banderisd.net	796-62[illegible]
Ernest Reich	Constable	7145 Park Rd 37	Constable@indian-creek.net	751-[illegible]
DENNIS WINRIGHT	BANDERA E C	P.O. Box 667	d.winright@bandera-ec.com	796-6032
MARTHA GROOMER	BANDERA TDH	P.O. BOX 153 Bandera TX 78003	marthagroomer@tdh.state.tx.us	TX 830 796-7510 Fax 830-796-[illegible]44
Bobby D Jones	BCVSO	385 Hummingbird Dr	BANDM7076@Aol.com	830-460-8395
E.J. JAAX	ConocoPhillips - Purple Sage Ranch		E.J.JAAX@conocophillips.com	FAX 830-796-3737
LYNN PALMER	City of Bandera	P.O. Box 2015	LYNNLYNN15@	830-796-7085
SHANON J. LEWIS	El Paso Field Services	4995 SH 16 S Bandera TX 78003	SHANON.LEWIS@ELPASO.com	830-796-4329
Linda James		PO Box 2734 Ba.		796-7662
Ray Rendon Jr.	Road & Bridge	P.O. Box 844	BandR@Indian-Creek.Net	796-4524
Doug King	Commissioner Pct 4	P.O. Box 224 Vanderpool TX 78885	dking@medina.com	830-966-3778

ATCH 2 A

EMERGENCY ACTION PLAN ANNEX P
HAZARDOUS MITIGATION

Monday, April 7, 2003 - 7:00 P.M.
11th Street Courthouse Annex
Located at the corner of 11th and Hackberry Streets
(formerly known as Silver Sage Building)
Bandera

ATCH 3

HAZARD MITIGATION TEAM
SIGN IN SHEET

7 Apr 2003

Cardenas, Mike

Derr, Damon

~~Gonzales~~ Groomer, Martha Martha Groomer

Griffin, Denise / Lynn Palmer for Denise Griffin

Haner, Doyle

Jaax, E.J. E.J. Jaax

James, Linda Linda James

Jones, Bobby Bobby Jones

King, Doug Doug King

Mac Millan, James

Merritt, Shane

Moczygemba, Randy

Moore, Patricia

Nolan, Ben

Parks, Jesse Jesse Parks

Phillips, Woody Sharon J. Lewis EPFS

Poe, Carey Carey Poe

Pullin, Rev Frank

Reich, Ernest Reich III

✓ Rendon, Ray

Sandidge, Todd

Leon Beaumbeanner

Renée Schulze

ATCH 3A

Schulze, Renee RS

Shafer, Patricia

Shubert, Frank

Winright, Dennis

NOTICE

Bandera County Judge's meeting regarding:

EMERGENCY ACTION PLAN ANNEX P
HAZARDOUS MITIGATION

Tuesday, May 27, 2003 - 7:00 P.M.
11th Street Courthouse Annex
Located at the corner of 11th and Hackberry Streets
(formerly known as Silver Sage Building)
Bandera

ATCH 4

AACOG
Alamo Area Council Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Bexar County and Certain Municipalities

Including the communities of: The Unincorporated Area of Bexar County and the Cities of China Grove, Fair Oaks Ranch, Grey Forest, Helotes, St. Hedwig, and Somerset.

Name of Hazard Mitigation Team Leader: Les Locke, Bexar County Engineer

Telephone No : 335-6704

Fax No : 335-6713

E-Mail: LLocke@bexar.org

Our local Hazard Mitigation Team met on the following dates:

April 2, 2003 June 25, 2003
April 10, 2003 July 23, 2003
April 24, 2003

Public Presentations - Civic Meetings attended: July 1, 2003

Our Mitigation Team consists of the following individuals (or their designated representatives).

Name	Title or Employer
1. Les Locke	County Engineer/HMC
2. Yvonne Escamilla	County Public Information Officer
3. Scott Lampright	County Emergency Management
4. Arnold Escobar	County Public Works (Engineering)
5. Renee Green	County Environmental Services
6. Craig Roberts	County Fire Marshal (Code Compliance)
7. Jim Mergele	County Public Works
8. Tom Fletcher	Metropolitan Health District
9. Suzanne Scott	San Antonio River Authority
10. David Wegmann	County Capital Projects Coordinator
11. Val Ruiz	San Antonio Water System

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

AACOG
Alamo Area Council Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Comal County

Including the communities of: New Braunfels, Garden Ridge & Bulverde

Name of Hazard Mitigation Team Leader: Carol J. Edgett, Comal County EMC

Telephone No : 830-608-8656

Fax No : 830-608-2026

E-Mail: cctcje@co.comal.tx.us

Our local Hazard Mitigation Team met on the following dates:
Various components of the Hazard Mitigation Team have met with reference to specific projects by jurisdiction at various times to date in order to analyze, formulate projects and implement projects.

Public Presentations - Civic Meetings attended: Numerous (will document dates and submit. Will have to go through jurisdictions court and council agendas.

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Danny Scheel	Comal County Judge
2. Dib Waldrip	Comal County District Attorney
3. David Renken	Comal County Auditor
4. Tom Hornseth	Comal County Engineer
5. Karon Preiss	Comal County Public Health Nurse
6. Lin Manford	Comal County Fire Marshal
7. Bryan Davis	Comal County Extension Agent
8. John Dumas	Comal County Computer Services
9. Perry Trammel	Fire Chief, Spring Branch Vol. Fire Dept.
10. Shawn Wherry	Fire Chief, Canyon Lake Vol. Fire Dept.
11. Adam Cork	Mayor, City of New Braunfels
12. Chuck Pinto	City Manager, City of New Braunfels
13. Charles Zech	City Attorney, City of New Braunfels
14. (Open)	Financial Officer, City of New Braunfels
15. Joe Lara	Sanitarian, City of New Braunfels

16. Iris Neffendorf — Parks Director, City of New Braunfels
17. Mike Short — City Engineer, City of New Braunfels
18. Frank Robbins — City Planner, City of New Braunfels
19. Roger Biggers — New Braunfels Utilities
20. John Herber — Fire Chief, City of New Braunfels
21. Jason Scharnhorst — Computer Services, New Braunfels
22. Jay Feibelman — Mayor, City of Garden Ridge
23. Nancy Cain — City Administrator, Garden Ridge
24. Scott Wood — Public Works, Garden Ridge
25. Donald Zipp — Fire Chief, Bracken Vol. Fire Dept.
26. Bill Cole — Mayor, City of Bulverde
27. L.D. Lopez — City Administrator, Bulverde
28. Charlie Ivy — Fire Chief, Bulverde Vol. Fire Dept.
29. Tara Brinkkoeter — American Red Cross
30. Tim Horn — Canyon Dam Mgr., Corps. Of Engineers

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

AACOG
Alamo Area Council Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: _____City of Converse/Bexar County_____

Including the communities of: _____

Name of Hazard Mitigation Team Leader: _____Sam Hughes_____

Telephone No : _____(210) 658-5356_____

Fax No : _____(210) 659-0964_____

E-Mail: _____cityhall@conversetx.net_____

Our local Hazard Mitigation Team met on the following dates:
_____June 16, 2003_____ _____July 7, 2003_____
_____July 14, 2003_____ _____
_____ _____

Public Presentations - Civic Meetings attended: _____**None**_____

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. ___Sam Hughes_____	_____City Manager_____
2. ___Laura Arens_____	_____Assistant City Manager___
3. ___Rick Jamison_____	_____Chief of Police_____
4. ___Jack Dougherty_____	_____Fire/EMS Chief_____
5. ___Karl Hoppes_____	____Superintendent Streets_____
6. ___Lupe Perez_____	____Superintendent Water_____
7. ___Gerald Wilson_____	_____Finance_____
8. ___Penny Hieronymus_____	_____City Secretary_____
9. __David Cadena/Alternate_____	_Building Inspector/Code Compliance_
10. __Rex Rheiner/Alternate_____	_____Police Captain_____
11. __Tracy Campos_____	_____Administrative Assistant_____
12. _____	_____
13. _____	_____
14. _____	_____
15. _____	_____

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

AACOG
Alamo Area Council Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Dilley

Including the communities of: N/A

Name of Hazard Mitigation Team Leader: Rudy Olivarez

Telephone No : 830-965-1624

Fax No : 830-965-4386

E-Mail: pw@cityofdilleytx.com

Our local Hazard Mitigation Team met on the following dates:

____Newly formed committee ____No schedule yet

Public Presentations - Civic Meetings attended: N/A

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Paula Pulis	Resident
2.	Soveida Obregon	Resident
3.	Santos Martinez	Police Chief
4.	Donnie Herrera	Fire Chief
5.	Irma Rodriguez	City Secretary
6.	Rene Lozano	Fire Marshall
7.		
8.		
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: **Frio County**

Including the communities of: **City of Pearsall and City of Dilley**

Name of Hazard Mitigation Team Leader: **William Hal Woodward**

Telephone No : **210-415-5588**

Fax No : **210-828-3006**

E-Mail: **bwoodward@ci.alamo-heights.tx.us**

Our local Hazard Mitigation Team met on the following dates:
Has not met officially, mostly discussed issues over the phone

_____ _____

_____ _____

Public Presentations - Civic Meetings attended: _none_____

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. **Judge Carlos Garcia**_____	_Frio County Judge_____
2. Pepe Trevino_____	_City Manager City of Pearsall
3. Felix Arambula_____	_City Manager City of Dilley
4. William Hal Woodward_____	_Frio County EMC
5. Ruben _____	_Public Works City of Dilley
6. Johnny_____	_Public Works City of Pearsall
7. Tinker Ellis_____	_Road & Bridge Frio County
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: __Fredericksburg / Gillespie County_____

Including the communities of: _Fredericksburg, Harper and Stonewall _____

Name of Hazard Mitigation Team Leader: _City – Jerry Bain___County – Judge Mark Stroeher__

Telephone No : _830-997-7521_____830-997-7502_____

Fax No : _830-990-1861_____

E-Mail: _jbain@fbgtx.org_____

Our local Hazard Mitigation Team met on the following dates:
_The City team meets on a weekly basis and talks about mitigation issues once a month. The County team meets and talks about mitigation issues on a quarterly basis.

Public Presentations - Civic Meetings attended: Mitigation issues talked about in a public forum monthly.

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Jerry Bain	Dir. of Public Works
2. Whitey Dietrich	Asst. Dir. of Public Works
3. Alan Saenger	City Engineer
4. Dwayne Boos	County Floodplain Manager
5. Brian Jordan	Dir. of Developement
6. Calvin Ransleben	County Commissioner
7. Billy Roeder	County Commissioner
8. Tony Hawley	Water and Wastewater Super.
9. Ron Derrick	EMC

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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City and County of Goliad

HAZARD MITIGATION COMMITTEE

Harold Gleinser	County Judge
Harold Martin	Emergency Management Coordinator
Richard Delano	Asst. Emergency Management Coordinator
Alonzo Morales	Fire Chief/City Public Works
Darrel Edwards	Precinct 1 Foreman
Lionell Garcia	Precinct 2 Foreman
Terry Karbei	Precinct 3 Foreman
Devin Pantel	Precinct 4 Foreman
John Caldwell	Citizen
Paul Wilcox	Citizen
Benny Martinez	Citizen
Tony Trevino	Goliad Sheriff's Officer

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: **Guadalupe County**

Including the communities of: Cibolo, Marion, New Berlin, Seguin

Name of Hazard Mitigation Team Leader: Larry Timmerman

Telephone No : 830-401-0990

Fax No : 830-401-0998

E-Mail: emc@co.guadalupe.tx.us

Our local Hazard Mitigation Team met on the following dates:
December 12, 2002 _____
_____ _____
_____ _____

Public Presentations - Civic Meetings attended: _____

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Larry Timmermann	Guadalupe County R&B
2. Chief Rick Crespo	Marion Police Dept.
3. Chuck Balcar	Cibolo City Manager
4. Darrell LeBrun	Cibolo, City of
5. Judy Cope	Guadalupe County Commissioner
6. Gil Merkle	New Berlin Council Member
7. Donald Smith	Seguin Planner
8. John D. Sheppard	Seguin Fire Marshal / EMC
9. Mark Green	Guadalupe County R&B
10. Stan Burrier	Guadalupe County Floodplain Adm.
11. Don McFarland	Alamo Area Council of Governments
12. _____	_____
13. _____	_____
14. _____	_____
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Hill Country Village

Including the communities of: N/A

Name of Hazard Mitigation Team Leader: Steven K. Simpson

Telephone No : 210.494.3671

Fax No : 210.490.6082

E-Mail: ssimpson@hcv.org

Our local Hazard Mitigation Team met on the following dates:

_____ _____

_____ _____

_____ _____

Public Presentations - Civic Meetings attended: **City Council Meetings**

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Jesse Velazquez	Public Works
2.	Steven K. Simpson	Fire Marshal
3.	David Harris	City Administrator
4.	Frank Morales	Police Chief
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: TOWN OF HOLLYWOOD PARK

Including the communities of: Hill Country Village

Name of Hazard Mitigation Team Leader: JOHN BUTRICO

Telephone No : 210 494 3111 x32

Fax No : 210 491 9768

E-Mail: hpfd-ac@swbell.net

Our local Hazard Mitigation Team met on the following dates:

03-12-03 01-31-03

8-07-03

Public Presentations - Civic Meetings attended: NONE

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	JOHN BUTRICO	ASST. FIRE CHIEF
2.	BRUCE BENLOR	BUILDING INSPECTOR
3.	JIM PEDRAZA	CITY ENGINEER
4.	JAVIER GARCIA	FIRE CHIEF
5.	DENNIS BLAKE	CITY BOOKKEEPER
6.	Steve Simpson	Fire Marshal / Hill Country Village
7.	Jimmy Arroyo	Public Works
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Members

KARNES COUNTY

	Contact Name	Company Name	Title
A	Atkinson, Norma	City of Kenedy	Council Member
C	Carrothers, David	City of Karnes City	City Administrator
	Cortez, Sylvia	County of Karnes	Special Projects Coordinator
D	DuBose, Duane	City of Kenedy	Police Chief
	Dupnik, Shelby	Karnes County EMS	EMT
	Dziuk, Raymond	City of Falls City	EMC, VFD
F	Ferguson, Tim	Kenedy Fire Dept	Volunteer
G	Garza, Randy	City of Kenedy	Mayor
	Gwosdz, Monica	Tx Dept of Health	TDH - RN
J	Johnson, Will	KCPD	Officer
	Jurgajtis, Randy	City of Kenedy	City Administrator
L	Leal, Felipe	Kenedy / KC LEPC	Council Member
	Leal, Georgia	Tx Dept of Health	TDH Assistant
P	Pawelek, Alfred	Retired County Judge	
R	Reiley, Ken	Hercules	Emergency Management
	Reiley, Wanda	Chamber of Commerce	
	Rios, Fernando	Runge - Karnes Co	Runge EMC / Constable

Officers elected April 3, 2003

Chairperson	Ken Reiley
Vice-chair	David Carrothers
Secretary	Sylvia Cortez

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Ingram / Kerrville / Kerr County

Including the communities of: Kerrville / Ingram / Center Point / Mountain Home / Hunt

Name of Hazard Mitigation Team Leader: Keith Spencer / Rowan Zachary

Telephone No : 830-257-8444 830 367 2636

Fax No : 830 257 8455

E-Mail: Keith Sp @ Kerrville.org.

Our local Hazard Mitigation Team met on the following dates:

July 4, 5, 6, 2002

March 14, 15 2003

Public Presentations - Civic Meetings attended: City Council of Kerrville / Ingram Commissioners Court of Kerr County

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

07/01/03

Kerr County

HAZARD MITIGATION TEAM

The implementation of effective hazard mitigation measures requires utilization of all resources available to this jurisdiction. Multi-disciplined, long-range mitigation planning requires a coordinated team of personnel with administrative, financial, and technical knowledge and expertise in a variety of functional areas that may be needed to achieve mitigation objectives. HMT supporting member agencies and organizations along with their functional areas of responsibility are listed in this appendix. Team members will provide assistance for hazard mitigation activities as required by the HMC. Team members have been selected for all functional areas that are applicable to this jurisdiction and which may require local expertise. Primary responsibility for Team members is to provide mitigation program services for all jurisdictions covered in our emergency management plan, but Team members are also responsible for coordinating and providing assistance to our partners for development, adoption, implementation, and maintenance of our mitigation action plan.

	Title/Agency
Hazard Mitigation Coordinator	City of Kerrville Fire Marshal
Functional Responsibility	
Public Awareness/Education	Kerrville PR/ Kerr County Sheriff/ Ingram City Marshall
Emergency Preparedness and Response	DPS, Kerr County Sheriff, Kerrville Chief of Police, Ingram City Marshall
Disaster Recovery	
Floodplain Management	Ingram Flood Plain Manager/Kerrville Planner
Engineering Services	Kerrville Engineer/ Kerr County Engineer
Damage Assessment	Kerrville Building Inspections/Kerr County Road & Bridge/ Ingram Fire Chief
Volunteer Services	Red Cross
Water Treatment	Kerrville Water Superintendent / TDH/ Aqua Source
Wastewater Treatment	Kerrville Waste Water Superintendent/TDH/ Ingram Osff-DR
Drainage/Flood Control	
Public Health	Kerrville Health Inspector/ TDH/Ingram Heath Official
Legislative Representation/Liaison	Buster Baldwin
Building Codes and Permits	Kerrville Building Inspections/Ingram Code Enforcement Officer
Zoning Regulations	Kerrville Planner / County Judge/ Ingram Mayor
Legal Services	Kerrville, Ingram, Kerr County Attorneys.
Development Planning	Kerrville Planner/ Kerr County Engineer
Subdivision Regulations	Kerrville Planner/County Commissioner/ Ingram Mayor
Fiscal/Funding Resources	KerrvilleFinanceDept/CountyCommissioner/ Ingram Mayor
Tax Assessment	Kerr County Tax Assessor

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Septic Tank/Sanitation Standards	Kerrville WW Superintendent /UpperGuadalupe River Authority/Ingram Public Works/ Ingram OSFF
Environmental Protection	TCEQ
Land Use Planning	Kerrville Planner / County Commissioner/Ingram Mayor
Property Condemnation	Kerrville-BuildingInspections/KerrvilleFire Marshal /Kerr County Road & Bridge/Ingram Marshall
Land Acquisition	County Judge, City Mayors
Historical Preservation	
Parks and Wildlife	Texas P&W/Kerrville Dir of Parks./Ingram Public Works
River Authority	Upper Guadalupe River Authority
Levee/Seawall Management	
Dam Safety/Reservoir Management	Kerrville Water Superintendent/TCEQ
Coastal Zone Management	
Agricultural Recovery Programs	County Agent
Fire and Casualty Insurance	
Flood Insurance	
Wind Insurance	
Drainage District	
Citizen Group(s)	Kerrville Mayor/ Ingram Mayor/County Judge
Business/Industry	Kerrville Chamber of Commerce/ West Kerr County Chamber Of Commerce
Council of Government	
Data Processing Services	Kerrville Information Dept.
Mapping Services	KerrvilleEngineer/KerrCountyRoad& Bridge/Ingram Public Works
GIS Services	
Grant Writing/Management	Kerrville FD Training/
Urban/Regional Planning	
Professional Group(s)	
Neighborhood Association(s)	
Chamber of Commerce	Kerrville Chamber of Commerce/West Kerr County Chamber Of Commerce
Realtors	
Bankers/Lenders	

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Kirby / Bexar

Including the communities of: _____

Name of Hazard Mitigation Team Leader: Bob C. Busch

Telephone No : 661-2100

Fax No : 661-8074

E-Mail: CCB814 @ Yahoo . com

Our local Hazard Mitigation Team met on the following dates:

We are just getting started

ENTERED 06/24/03

Public Presentations - Civic Meetings attended:

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1.	Chief Riedel
2.	Fire Marshal / EMC Busch
3.	Public Works Director Sid
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5298 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Leon Valley

Including the communities of: —

Name of Hazard Mitigation Team Leader: Douglas E. Meeke

Telephone No : (210) 684-3219

Fax No : (210) 684-6988

E-Mail: lvfd@satx.rr.com

Our local Hazard Mitigation Team met on the following dates:

Public Presentations - Civic Meetings attended:

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Pat Wright	City Engineer / Leon Valley
2.	Bob Toom	Safety Director / Perkin Elmer
3.	Walton Dougherty	Citizen / Aelotes
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: The City of Live Oak, Texas

Including the communities of: N/A

Name of Hazard Mitigation Team Leader: *Mr. Scott Wayman*

Telephone No : 210-653-9140, Ext. 261

Fax No : 210-653-2766

E-Mail: swayman@ci.live-oak.tx.us

Our local Hazard Mitigation Team met on the following dates:
June 9, 2003 (First Public Meeting)
Next meeting – July 14, 2003

Public Presentations - Civic Meetings attended: City Council Meeting, March 11, 2003

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Mr. Scott Wayman	Chairperson/Assistant City Manager
2. Mr. Gary Woppert	Emergency Management Coordinator
3. Mr. Richard Middleton	Director of Finance
4. Captain Gerardo Galindo Jr.	Fire Department/Building Official
5. Lieutenant Matthew Malone	Police Department
6. Mr. Roger Aguillon	Utility Superintendent
7. Mr. Ronald McFadden	Public Works Superintendent
8. Mr. Ken Bramble	City Council Member – Place # 3
9. Mrs. Peggy Dawson	Citizen
10. Mrs. Isabelle Siepker	Citizen

Note: Mr. Wayman, the Chairperson is the Director of Planning and Zoning and is also the Flood plain administrator.

The Fire Department is responsible for the building inspections and Captain Galindo is the Chief Inspector.

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

~~Community~~/County Name: MEDINA COUNTY

Including the communities of: NATALIA, LA COSTE, HONDO, DEVINE, CASTROVILLE

Name of Hazard Mitigation Team Leader: _____

Telephone No : _____

Fax No : _____

E-Mail: _____

TEAM IS BEING REORGANIZED -- WILL FURNISH LATER!

Our local Hazard Mitigation Team met on the following dates:

_____ _____

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Public Presentations - Civic Meetings attended: _____

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of New Berlin

Including the communities of:

Name of Hazard Mitigation Team Leader: Kurt A. Strey

Telephone No : 830-914-4980

Fax No : 830-779-2238

E-Mail: KStrey@gvec.net

Our local Hazard Mitigation Team met on the following dates:

have not met yet

Team is newly Appointed

Public Presentations - Civic Meetings attended: GBRA Mitigation Meeting

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Kurt A. Strey	EMC
2.	Jeff Bryant	Council person
3.	Wyatt Kunde	Citizen
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Olmos Park

Including the communities of: _____

Name of Hazard Mitigation Team Leaders: Jim Shipley and (Resident Team Leader) Jay Friedman

Telephone No : (210) 824-3281
Fax No : (210) 826-5008
E-Mail: jshi562563@aol.com

Our local Hazard Mitigation Team met on the following dates:
July 9,2003
Planned Aug. 6, 2003
Planned Aug. 20, 2003

Public Presentations - Civic Meetings attended: Plan public meeting in late August.

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Jim Shipley	City of Olmos Park
2.	Jay Friedman	(Resident) Fulbright & Jaworski LLP.
3.	Barbara Joseph	City of Olmos Park
4.	Howard Dalros	City of Olmos Park
5.	Louis Alcoser	City of Olmos Park
6.	James Ladewig	City of Olmos Park
7.	Sam Dibrell	(Resident) Dibrell, Dotson, & Dibrell
8.	Scott Barr	(Resident) Southwest Exteriors
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: CITY OF SAN ANTONIO

Including the communities of: NA

Name of Hazard Mitigation Team Leader: TOM WENDORF

Telephone No : 207-8024

Fax No : 207-4406

E-Mail: TWENDORF@SANANTONIO.GOV

Our local Hazard Mitigation Team met on the following dates:

Public Presentations - Civic Meetings attended:

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
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If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

07/01/03

CITY OF SAN ANTONIO 1 JULY 03

HAZARD MITIGATION TEAM (HMT)

The implementation of effective hazard mitigation measures requires utilization of all resources available to COSA. Multi-disciplined, long-range mitigation planning requires a coordinated team of personnel with administrative, financial, and technical knowledge and expertise in a variety of functional areas that may be needed to achieve mitigation objectives. HMT supporting member agencies and organizations along with their functional areas of responsibility are listed in this Appendix. Team members will provide assistance for hazard mitigation activities as required by the Hazard Mitigation Coordinator (HMC). Team members have been selected for all functional areas that are applicable to COSA and which may require local expertise.

	Title/Agency
Hazard Mitigation Coordinator	Public Works Director
	Public Works Flood Mitigation Officer
Functional Responsibility	**Title/Agency**
Public Awareness/Education	City Public Information Officer
Emergency Preparedness and Response	Emergency Management Coordinator
Disaster Recovery	Development Services Director
Floodplain Management	Public Works Department
Engineering Services	Public Works Department
Damage Assessment	Development Services Director
Volunteer Services	Salvation Army
Water Treatment	San Antonio Water System
Wastewater Treatment	San Antonio Water System
Drainage/Flood Control	Public Works Director
Public Health	Metropolitan Health District Director
Legislative Representation/Liaison	City Manager's Office
Building Codes and Permits	Development Services Director
Zoning Regulations	Development Services Director
Legal Services	City Attorney
Development Planning	Development Services Director
Subdivision Regulations	Development Services Director
Fiscal/Funding Resources	Finance Director
Tax Assessment	Finance Director
Septic Tank/Sanitation Standards	Metropolitan Health District Director
Environmental Protection	Environmental Services Director
Land Use Planning	Planning Director
Property Condemnation	City Attorney
Land Acquisition	City Manager's Office
Historical Preservation	Planning Director
Parks and Wildlife	Parks and Recreation Dept. Director
River Authority	San Antonio River Authority Liaison
Council of Government	Alamo Area Council of Government
Dam Safety/Reservoir Management	Public Works/TNRCC Liaison
Grant Writing/Management	Finance Director
Urban/Regional Planning	Planning Director
Fire and Casualty Insurance	Finance Director
Flood Insurance	City Attorney/Risk Management

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CITY OF SAN ANTONIO 1 JULY 03

HMT cont.

Functional Responsibility	Title/Agency
Neighborhood Associations	Neighborhood Action Director
Drainage District	Public Works Director
Citizen Group(s)	Economic Development Director
Data Processing Services	Information Services Director
Mapping Services	Information Services Director
GIS Services	Information Services Director
Business/Industry	Economic Development Director
Professional Groups	Economic Development Director
Realtors	Economic Development Director
Bankers/Lenders	Economic Development Director
Chamber of Commerce	Economic Development Director

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: **City of Schertz**

Including the communities of: **City of Schertz**

Name of Hazard Mitigation Team Leader: **Glen Outlaw**

Telephone No : **210-658-7477, ext. 1341**

Fax No : **210-659-8356**

E-Mail: **goutlaw@ci.schertz.tx.us**

Our local Hazard Mitigation Team met on the following dates:

June 23, 2003 July 2, 2003

Public Presentations - Civic Meetings attended: _____

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Glen Outlaw	Fire Marshal/EMC
2. Elroy Friesenhahn	Fire Chief
3. Steve Cantrell	Police Chief
4. Dudley Wait	EMS Adminstrator
5. Amy Madison	Community Development Director
6. Leonard Truitt	Building Official
7. Gail Douglas	Community Services Director
8. Sam Willoughby	Public Works Director
9. Jim Hooks	Flood Plain Administrator
10. David Fluker	Schertz Cibolo Universal City ISD
11. David Dennis	Cibolo Creek Municipal Authority
12. David Burns	Guadalupe Valley Electric Cooperative

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Selma

Including the communities of: _____

Name of Hazard Mitigation Team Leader: Scott Lee

Telephone No : 210-651-9150

Fax No : 210-651-4820

E-Mail: aslselmafd@stic.net

Our local Hazard Mitigation Team met on the following dates:

_____ _____
_____ _____
_____ _____

Public Presentations - Civic Meetings attended: _____

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Scott Lee	Fire Chief
2.	Jim Parma	Mayor
3.	Ken Roberts	City Administrator
4.	Lou Walther	Mayor Pro Tem
5.	Brian Dopp	Phoenix Disaster Services- Consultant
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____
13.	_____	_____
14.	_____	_____
15.	_____	_____

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Terrell Hills

Including the communities of: City of Terrell Hills

Name of Hazard Mitigation Team Leader: Columbus Stutes / Fire Chief__

Telephone No : (210) 824-7401

Fax No : (210) 822-2297

E-Mail: firechief@satx.rr.com

Our local Hazard Mitigation Team met on the following dates:

1-27-03

4-16-03

Public Presentations - Civic Meetings attended:

City of Terrell Hills Council Meeting 1-13-03

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Columbus Stutes	Fire Chief City of Terrell Hills
2.	Larry Semander	Police Chief City of Terrell Hills
3.	Buddy Kuhn	Assistant Fire Chief City of Terrell Hills
4.	_____	_____
5.	_____	_____
6.	_____	_____

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Universal City

Including the communities of: —

Name of Hazard Mitigation Team Leader: Ross Wallace - Fire Chief

Telephone No : 210-659-0333 x 250

Fax No : 210-659-7062

E-Mail: ucfd@world-net.net

Our local Hazard Mitigation Team met on the following dates:

March 4, 2003
March 11, 2003
March 25, 2003

Public Presentations - Civic Meetings attended: April 8, 2003

Our Mitigation Team consists of the following individuals

	Name	Title or Employer
1.	Wesley Becken	Mayor
2.	Ken Taylor	City Manager
3.	John Hatzel	Fire Marshall
4.	Gary Speer	Police Chief
5.	Michelle Mauldin	Director of Engineering Services
6.	Randy Luersmann	Director of Public Works
7.	Brian Dopp	President - Phoenix Disaster Services
8.	Renate Yonkie	GIS Director - Phoenix Disaster Services
9.		
10.		
11.		
12.		
13.		
14.		
15.		

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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6 → Don
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Of Governments

Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: Wilson County

Including the communities of: Cities of Floresville, Stockdale, Poth and LaVernia

Name of Hazard Mitigation Team Leader: LeAnn Hosek, Wilson County EMC

Telephone No : 830-393-7348

Fax No : 830-393-7327

E-Mail: leannema@felpsis.net

Our local Hazard Mitigation Team met on the following dates:

March 12, 2003
April 9, 2003
June 18, 2003

Public Presentations - Civic Meetings attended: _____

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. LeAnn Hosek, EMC	Wilson County
2. Tom Ortmann	Texas Department of Transportation
3. Joe D. Tackitt, Jr., Sheriff	Wilson County
4. Edwin Baker, Health & Public Safety	Wilson County
5. Fred Wauters, EMC	City of Poth
6. Robert Hyatt, Police Chief and EMC	City of LaVernia
7. Gary Pelech, City Manager and EMC	City of Floresville
8. James Stewart, Sgt.	Texas Depratment of Public Safety
9. Bob Duffield, Administrator	Wilson Memorial Hospital
10. Darlene Wiatrek, President	Stockdale EMS
11. Ken Barber, Asst. Superintendent	Floresville I.S.D.
12. Tony Malik, Mayor	City of Stockdale
13. Kip Workman, Fire Chief	LaVernia VFD
14. Larry Machost, Fire Marshall	City of Floresville
15. Alton Tieken	Floresville Electric Light &Power System
16. Don Stevens, Fire Chief	Floresville VFD
17. Ronnie J. Rye	LaVernia EMS
18. Dawn Thompson, Branch Mgr.	American Red Cross
19. Al Kolodziej, Business Mgr.	Wilson County News
20. Richard Demmer, Operator	Oak Hills Water Supply Corp.
21. Bill LaFrance, General Mgr.	S. S. Water Supply
22. Rodney Wiatrek, Owner	Wiatrek Services
23. Marty Kufus	Wilson County ERT
24. Clay Settje, Volunteer	American Red Cross

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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Hazard Mitigation Team Worksheet

To fulfill the Hazard Mitigation documentation process required by FEMA, please complete this informational worksheet and either email to me or you may bring the completed form to the Regional Meetings.

Community/County Name: City of Windcrest

Including the communities of: —

Name of Hazard Mitigation Team Leader: Brian Dopp

Telephone No : 210-657-0580

Fax No : 210-568-4462

E-Mail: pdstx@prodigy.net

Our local Hazard Mitigation Team met on the following dates:

April 3, 2003 — May 1, 2003
April 10, 2003
April 25, 2003

Public Presentations - Civic Meetings attended: Ø

Our Mitigation Team consists of the following individuals

Name	Title or Employer
1. Jack Leonhardt	Mayor
2. Ronnie Cain	City Manager
3. Richard Frenzel	Director - Bexar Co. Water Dist. 10
4. Rick Pruitt	Police Chief
5. Tom Winn	Fire Chief
6. Phil Sears	Windcrest Resident
7. Byron Vick	Emergency Manager / Fire Marshall
8. Renate Yonke	GIS Director - Phoenix Disaster Services
9. Joe Fabon	Deputy Police Chief
10.	
11.	
12.	
13.	
14.	
15.	

If you have any questions, please contact Don McFarland, Emergency Preparedness Manager, (210) 362-5296 or dmcfarland@aacog.com

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	County	Personal Rating	Commercial Rating	Chose not to participate	No recognized program	No Notes	Not listed	Most Recent Date
Atascosa Co.	**Atascosa**					X		
Charlotte	Atascosa				X			**1996**
Christine	Atascosa					X		
Jourdanton	Atascosa			X				**1996**
Lytle	Atascosa	**7**	**7**					**1996**
Pleasanton	Atascosa			X				**1996**
Poteet	Atascosa				X			**1996**
Bandera Co.	**Bandera**					X		
Bandera	Bandera	**6**	**6**					**1996**
Bexar Co.	**Bexar**					X		
Alamo Heights	Bexar			X				**1996**
Balcones Heights	Bexar	**6**	**6**					**1996**
Castle Hills	Bexar	**6**	**6**					**1996**
China Grove	Bexar					X		
Converse	Bexar	**7**	**7**					**1996**
Leon Valley	Bexar			X				**1996**
Live Oak	Bexar	**5**	**5**					**1999**
Olmos Park	Bexar					X		
Saint Hedwig	Bexar					X		
San Antonio	Bexar	**8**	**8**					**1996**
Selma	Bexar	**5**	**5**					**2002**
Shavano Park	Bexar					X		
Somerset	Bexar					X		
Terrell Hills	Bexar	**7**	**7**					**1999**
Universal City	Bexar	**7**	**7**					**1996**
Windcrest	Bexar				X			**1996**
Elmendorf	Bexar					X		
Fair Oaks Ranch	Bexar					X		
Grey Forest	Bexar					X		
Helotes	Bexar					X		
Hill Country Village	Bexar			X				**1997**
Hollywood Park	Bexar			X				**1996**
Kirby	Bexar					X		
Schertz	Guadalupe	**6**	**6**					**2000**
Comal Co.	**Comal**					X		
Bulverde	Comal					X		

Garden Ridge	Comal					X		
New Braunfels	Comal			X				**1996**
Frio Co.	**Frio**					X		
Dilley	Frio				X			**1996**
Pearsall	Frio			X				**1996**
Gillespie Co.	**Gillespie**						X	
Fredericksburg	Gillespie	**5**	**5**					**2002**
Goliad Co.	**Goliad**						X	
Goliad	Goliad				X			**1996**
Guadalupe Co.	**Guadalupe**						X	
Cibolo	Guadalupe					X		
Marion	Guadalupe			X				**1996**
New Berlin	Guadalupe					X		
Seguin	Guadalupe	**5**	**5**					**2001**
Karnes Co.	**Karnes**						X	
Falls City	Karnes					X		
Karnes City	Karnes			X				**1996**
Kenedy	Karnes				X			**1996**
Runge	Karnes				X			**1996**
Kerr Co	**Kerr**					X		
Ingram	Kerr					X		
Kerrville	Kerr	**5**	**5**					**2002**
Medina Co.	**Medina**					X		
Castroville	Medina	**NR**	**7**					**1996**
Devine	Medina					X		
Hondo	Medina	**8**	**8**					**1996**
La Coste	Medina					X		
Natalia	Medina					X		
Wilson Co.	**Wilson**					X		
Floresville	Wilson	**7**	**7**					**1999**
Lavernia	Wilson					X		
Poth	Wilson				X			**1996**
Stockdale	Wilson	**Not rated**	**9**					**1996**

	Jurisdiction	County	Census 2000 Population	Survey	GCI	HMP	DRP (Annex J)	CLUP	FMP	SMP	EOP	COOP	REP	SARA	TRANS	CIP	REG	HPP	ZO	SO	FDPO	NFIP	CRS	BC	BCEGS	Raw Score	TECH	FISC	ADMIN	POLI	Final Score
1	Stockdale	Wilson	1,398	1		0	2		2		1					1	2		1	1	Y	2		1		13	0	0	1		14
2	**Wilson Co.**	**Wilson**	32,408	1		3					1	1	1	1	1		2			1	Y	2				13	0	0	1		14
3	Lavernia	Wilson	931	1				1	2										1	1	Y	2		1		8	0	0	0		8
4	Floresville	Wilson	5,868	1															1	1		2		1	2	7	0	0	0		7
5	Poth	Wilson	1,850	1													2	1	1	1		2				7	0	0	0		7
6	Devine	Medina	4,140	1		3		1	2	2	1	1	1	1	1		2		1	1		2		1		20	1	0	2	0	23
7	Castroville	Medina	2,664	1		0		1	2	1	1						2	1	1	1	Y	2		1	2	15	1	1	1		18
8	Hondo	Medina	7,897	1	1				2		2								1	1	Y	2		1	2	11	0	0	1	0	12
9	**Medina Co.**	**Medina**	39,304	1		3			2		1						2			1		2				11	0	0	0	0	11
10	La Coste	Medina	1,255	1							1								1	1		2		1		6	0	0	0		6
11	Natalia	Medina	1,663	1				1														2		1		4	0	0	0		4
12	Kerrville	Kerr	20,425	1		3	2	1	2	1	1	1	1	1	1	1	2		1	1	Y	2		1	3	25	1	0	1		27
13	Ingram	Kerr	1,740	1		3	2		2		1						2	1		1	Y	2		1		15	0	0	0		15
14	**Kerr Co**	**Kerr**	43,653	1		3	2						3					1		1	Y	2				12	0	0	2	0	14
15	Boerne	Kendall	6,178			0																2			2	4					4
16	**Kendall Co.**	**Kendall**	15,446			0																2				2					2
17	Kenedy	Karnes	3,487	1		0		1	2	1				1			2			1	Y	2		1		11	0	0	0		11
18	Karnes City	Karnes	3,457	1		0			2		1						2		1		Y	2		1		9	0	0	0		9
19	Falls City	Karnes	591	1		0											2			1	Y	2		1		6	0	0	1		7
20	**Karnes Co.**	**Karnes**	15,446	1		0								1			2			1	Y	2				6	0	0	0		6
21	Runge	Karnes	1,080	1																		2				2					2
22	Seguin	Guadalupe	22,011	1		0		1	2		1	1	1	1	1		2	1	1	1		2		1	3	19	0	1	1		21
23	Schertz	Guadalupe	18,694	1				1	2		1		1		1		2		1	1		2		1	2	15	0	1	1		17
24	Marion	Guadalupe	1,099	1		1	1	1			1	1	1	1	1	1	2					2		1		14	1	0	0	1	16
25	**Guadalupe Co.**	**Guadalupe**	89,023	1		3	2				1		1	1						1		2				11	0	0	1		12
26	New Berlin	Guadalupe	467	1													2		1	1						4	0	0	0	0	4
27	Cibolo	Guadalupe	3,035																			2				2					2
28	**Goliad Co.**	**Goliad**	6,928	1		0	2		2		1	1	1	1	1	1	2	1		1	Y	2				16	0	0	2		18
29	Goliad	Goliad	1,975	1																		2				2					2
30	Fredericksburg	Gillespie	8,911	1		1	1	1		1	1	1	1		1	1			1	1	Y	2		1	3	17	see note	see note	see note		17
31	**Gillespie Co.**	**Gillespie**	20,814	1		3	2	1		1	1	1	1		1	1			0	1	Y	2		1		16	1	1	1		19
32	**Frio Co.**	**Frio**	16,252	1		0	2	2		2	1	1	1	3	1	1						2				16	0	0	1		17
33	Dilley	Frio	3,674	1												1				1		2				4	0	0	0		4
34	Pearsall	Frio	7,157																			2				2					2
35	**Comal Co.**	**Comal**	78,021	1		3	2		2	1	1	1	1	1	1		2			1	Y	2				18	0	1	2		21
36	New Braunfels	Comal	36,494	1		1	2	1	2	1	1	1	1	1	1		2	1	1	1	Y	2		1		20	0	0	1		21
37	Garden Ridge	Comal	1,882	1		1	2	1	2		1	1	1	1	1	1	2		1	1		2		1		19	0	0	0		19
38	Bulverde	Comal	3,761	1		1	2		2		1	1	1	1	1		2		1	1		2		1		17	0	0	0		17
39	Kirby	Bexar	8,673	1		3	2	2	2	2	1	1	1	1	1	1	2		1			2		1		23	0	0	0	1	24
40	Grey Forest	Bexar	418	1		0	1	2	2		1	1	1	1	1		2	1	1	1	Y	2		1		18	0	0	1	sponse on s	19
41	Helotes	Bexar	4,285	1		0	1		2	1	1		1		1		2		1			2		1		13	0	1	1	sponse on s	15
42	Fair Oaks Ranch	Bexar	4,695	1		0	1	2	2	1	1	1	1	1							Y	2		1		13	0	0	0		13
43	Hill Country Village	Bexar	1,028	1		0		1									2		1			2		1		7	0	0	0		7
44	Hollywood Park	Bexar	2,983	1		0													1	1		2		1		5	0	0	1		6

45	Elmendorf	Bexar	664																						**0**					**0**
1	**Bexar Co.**	**Bexar**	1,392,931	**1**		0	2	2	2	2	2	2	3	3	1	1	2			1	Y	2		1		**26**	0	1	2		**29**
2	San Antonio	Bexar	1,144,646	**1**		3	2	1	2	1	1	1	1	1	1	1	2	1	1	1	Y	2		1	2	**25**	1	2	0		**28**
3	Windcrest	Bexar	5,105	**1**		0	2	2	2	2	2	2	3	1	1	1	2		1	1	Y	2		1		**25**	0	0	0		**25**
4	Live Oak	Bexar	9,156	**1**		3	2			1	1	1	1	1	1		2		1	1		2		1	3	**21**	1	1	0		**23**
5	Alamo Heights	Bexar	7,319	**1**		0	2	2	2	2	2	1	1	3		1			1		Y	2		1		**20**	0	0	1		**21**
6	Leon Valley	Bexar	9,239	**1**		3	2	1		2	1		1	1	1	1	2		1	1	Y	2		1		**20**	0	0	1	2	**23**
7	Converse	Bexar	11,508	**1**		1	2		2		1	1	1	1	1		2		1	1		2		1	2	**19**	0	0	1		**20**
8	Selma	Bexar	788	**1**		0	0	2	2	0	1	1	1	1	1	0	0	0	1	1	Y	2		1	3	**17**	0	0	0	0	**17**
9	Olmos Park	Bexar	2,343	**1**		3				1	1	1	1	1	1		2		1	1		2		1		**16**	1	1	1		**19**
10	Universal City	Bexar	14,849	**1**						2	1	1	3	3	1				1	1	Y	2		1	2	**18**	0	0	1		**19**
11	Castle Hills	Bexar	4,202	**1**		1		1	2	1	1		1		1	1			1	1	Y	2		1	2	**16**	1	0	1	0	**18**
12	China Grove	Bexar	1,247	**1**		0	1	2	2	1	1	1	1	1	1		2		1	1	Y	2		1		**18**	0	0	0		**18**
13	Terrell Hills	Bexar	5,019	**1**					2	2	1	1	1	1	1		2		1		Y	2		1	2	**17**	0	0	0	1	**18**
14	Shavano Park	Bexar	1,754	**1**		0		1	2	1	1	2			1	1	2		1	1	Y	2		1		**16**	0	0	0		**16**
15	Balcones Heights	Bexar	3,016	**1**		0		1											1			2		1	2	**7**	0	0	0	1	**8**
16	Somerset	Bexar	1,550	**1**						1							2		1	1		2		1		**8**	0	0	0	0	**8**
17	**Bandera Co.**	**Bandera**	15,004	**1**		0		2	2	2	2	2					2			1		2				**15**	0	0	0		**15**
18	Bandera	Bandera	957	1		0		2	1	1	1	1					2			1		2		1	2	**14**					**14**
19	**Atascosa Co.**	**Atascosa**	38,628	**1**		3	2		2		2	2	3	3	1	1	2	1		1		2				**25**	0	0	0		**25**
20	Lytle	Atascosa	2,383	**1**		1	1	1			1	1	1	1	1							2			2	**12**			0		**12**
21	Jourdanton	Atascosa	3,732	**1**		1	1	1			1	1	1	1	1							2		1		**11**			0		**11**
22	Pleasanton	Atascosa	8,266	**1**		1	1	1			1	1	1	1	1							2		1		**11**			0		**11**
23	Poteet	Atascosa	3,305	**1**		1	1	1			1	1	1	1	1							2				**10**			0		**10**
24	Charlotte	Atascosa	1,637	**1**		1	1	1			1	1	1	1	1											**8**			0		**8**
25	Christine	Atascosa	436	**1**		1	1	1			1	1	1	1	1											**8**			0		**8**

Jurisdiction	NFIP Participant	Current Floodplain Management Ordinance/Court Orders	Date Adopted	Explanation of inspection/permit process	Number of Floodplain Administrator(s) and Staff	Qualifications of Floodplain Administrator(s) and Staff	Number of inspections and permits approved	Number of variances allowed	Explanation of Variances
Atascosa County	Yes	County Court Order	10-Jun-96	The individual must come in with plat and verify that propoerty is outside the floodplain. If they are in, they will not be issued a permit unless they elevate above floodplain.	1	No answer	0	None	NA
City of Charlotte		Floodplain Ordinance	Apr-03	All construction muust have floodplain administrator's approval.	No answer	No answer	No answer	No answer	No answer
City of Christine		NA	NA	NA	NA	NA	NA	NA	NA
City of Jourdanton	Yes								
City of Lytle	Yes	Ordinance #270	10-Jun-02	All applications must go through the floodplain administrator for approval to build.	No answer	No answer	No answer	No answer	No answer
City of Pleasanton	Yes								
City of Poteet	Yes	Floodplain Ordinance	9-Jun-67	No answer	No answer	No answer	No answer	No answer	No answer
Bandera County	Yes	Floodplain Ordinance established in 1978 and updated in 1991.		Development permit required for all new construstion.		Completed FEMA class	225 permits in 2002	None	NA
City of Bandera	Yes	None			1		None	None	NA
Bexar County	Yes	Bexar County Flood Damage Prevention Court Order	Dated May 1, 1987.	A Floodplain Development Permit is required by the Floodplain Administrator for all development in any area within FEMA's Special Flood Hazard Zones.	The County Engineer is the Floodplain Administrator, there is no additional specified staffing for Floodplain administration.	County Engineer	25	No answer	Variances are issued pending a Conditional Letter of Map Revision (CLOMR) approved by FEMA.
City of Alamo Heights	Yes	Flood Damage Prevention and Control, Chapter 7 of the Code of Ordinances		Inspections are performed by Floodplain Administrator in accordance with the provisions listed in the ordinance.	2		2	None	NA

City of Balcones Heights	Yes	Answered that they have no ordinance.					1	0	NA
City of Castle Hills	Yes	No answer to any of the survey questions.							
City of China Grove	Yes	Flood Damage Prevention Ordinance	2/1/1996	City Council is in charge of permitting.	0	NA	None	None	NA
City of Converse	Yes	None	NA	No development is allowed in the floodplain.	Floodplain administrator.	No answer	None	None	NA
City of Elmendorf									
City of Fair Oaks Ranch	Yes	City Ordinance 75-15	1-Oct-02	The project location is reviewed to determine that it is located outside the flood zone before a building permit is issued.	Floodplain administrator.	No answer	None	None	NA
City of Grey Forest	Yes	NFIP Ordinance	Adopted in 1989	According to NFIP requirements and our own requirements as stated in our City Codes, Ordinance #45 zoning ordinance and International Building Code adopted in 2001.	The City has one employee, the City Secretary. As per NFIP ordinance, she is the Floodplain Administrator. There are no other staff members. The building inspector and City Engineer are paid per service.	See previous answer	None	None	NA
City of Helotes	Yes	Floodplain Management Ordinance	9/8/88, amended 10/22/98	Any development is considered on an individual basis by City Council who takes recommendations from City Engineer.	City Engineer, Public Works employee and permit clerk	No answer	One	None	NA
City of Hill Country Village	Yes	Ordinance numbers #769, #800. #801, #843	Originally in 2/17/00 and amended in 11/20/00 and 12/13/01	No answer	No answer	No answer	No answer	No answer	No answer
City of Hollywood Park	Yes	Flood Prevention and Protection	29-Jan-96	Part of Building Permitting process	None	NA	None	None	NA
City of Kirby	Yes	Planning Ordinance	199?	No answer	No answer	No answer	No answer	No answer	No answer
City of Leon Valley	Yes	Floodplain Management Ordinance	1974 (amendments as needed up to year 2000)	Application received. Application reviewed by Floodplain Administrator, Building Inspector and City Engineer. Process can take from 2 days to 2 weeks, depending on number of applications and quality of application. Application is either approved or denied based on available information. Inspections are done periodically as work progresses.	1 Floodplain administrator, 3 Staff	Administrator: Continuing Education at several State approved Floodplain seminars and courses. Staff: Engineering degree, State Building Inspection Liscense	7 permits in last 12 months, 14 inspections in last 12 months	None	NA

City of Live Oak	Yes	Floodplain Ordinance #1022	1/30/1996	All plans approved by the commissions and by ordinance.	1	City Manager/Planning Director	None	None	NA
City of Olmos Park	Yes	Answered that they have no ordinance.							
City of San Antonio	Yes	City of San Antonio Floodplain Ordinances adopted in 1977 and recently incorporated into the Unified Development Code of 2001.	See previous.	COSA UDC requires a Floodplain Development Permit for all types of construction within the floodplain. The Floodplain Development Permit has specific requirements (engineering, design, and construction verification) that must be met.	The Director of Public Works is the Floodplain Administrator for COSA as designated by ordinance. The Storm Water Utility provides staff support through 20+ Storm Water Engineering personnel organized in watershed teams. Additionally, the Storm Water Utility also has an Operational Division with over 260 personnel to execute a planned maintenance schedule for the existing storm water infrastructure.		Unknown. The Storm Water Utility has five positions specific to floodplain and storm water management investigations. There are over 30 construction inspectors assigned to ensure that capital improvements are constructed to meet approved specifications.	Minimal	No answer
City of Selma	Yes	No answer	No answer	Too detailed to include in this survey, contact Building Department for more information.	Engineer and his staff plus building officials.		None	None	NA
City of Shavano Park	Yes	Flood Damage Prevention Ordinance	20-Aug-79	Platting and setbacks controlled through Subdivision and Zoning ordinance. Platting (overseen by city engineer's office), plan review, permit issued or not, inspection and code compliance by code enforcement officer to federal, state and local standards.	2	No answer	Multiple site inspections have occurred in the last 12 months to assess community drainage/flood mitigation issues.	None	NA
City of Somerset	Yes	Answered that they have no ordinance.	No answer	No answer	No answer	No answer	None	3	No answer
City of Terrell Hills	Yes								
City of Universal City	Yes	Flood Damage Prevention Ordinance	June 1989, amended December 1995	Floodplain issue part of building permit application.	2	City Engineer and Director of Engineering Services	None	None	NA
City of Windcrest	Yes	Floodplain Ordinance #385	2000	There are no facilities in the floodplain and no development allowed in the floodplain.	1 Floodplain administrator, 2 Inspectors	None	None	NA	NA

Comal County	Yes	Floodplain Management Ordinance	1991	Plat review, permit, inspection	2	Floodplain Administrator (County Engineer) - Staff member (Certified Floodplain Administrator)	Not tracked	None	NA
City of Garden Ridge	Yes	Floodplain Management Ordinance	Unknown	Plat review, permit, inspection	1		Unknown	None	NA
City of Bulverde	Yes	Floodplain Management Ordinance	Unknown	Plat review, permit, inspection	1		0	None	NA
City of New Braunfels	Yes	Floodplain Management Ordinance	1961	Plat review, permit, inspection	4	Floodplain Administrator (Planning Director)	Unknown	None	NA
	Yes								
Frio County	Yes	None	NA	NA	NA	NA	NA	NA	NA
City of Dilley	Yes	Answered no to all survey questions.							
City of Pearsall	Yes								
	Yes								
Gillespie County	Yes								
City of Fredericksburg	Yes			The City of Fredericksburg lists the 100 year floodplain as open space. Permits for new construction or expansion of existing structures is not allowed. Substantial improvements to existing structures must meet requirement of E.D.P.O. 3.705b	2		None	None	NA
	Yes								
Goliad County	Yes	Floodplain Management Ordinance	19-Apr-96	Require Certificate of Elevation provided by a certified Public Engineer. Reworking entire system at this time.	No	NA	20	None	NA
City of Goliad	Yes	Floodplain Management Ordinance	19-Apr-86	Require Certificate of Elevation provided by a certified Public Engineer. Reworking entire system at this time.	No	NA	No answer	None	NA
Guadalupe County	Yes	Floodplain Management Ordinance	1980	Plan, elevation certificate	Floodplain Manager	No answer	600	None	NA
City of Cibolo	Yes								

City of Marion	Yes	Answered no to this question.	No answer	All development plans are reviewed by a qualified engineer.	1 Floodplain Administrator	No answer	None	None	NA
City of New Berlin	No	NA	NA	NA	NA	NA	NA	NA	NA
City of Schertz	Yes	Article XIII of Unified Development Ordinance	Last amended October 1997	Floodplain limits and data must be shown on any site plan and/or building plan submitted for permitting.	1	Public Works inspector	None	None	NA
City of Seguin	Yes	Chapter 54 of City Code	See attachment (attachment was not submitted)	See attachment (attachment was not submitted)	5	See attachment (attachment was not submitted)	Several hundred	None	NA
Karnes County	Yes		No answer	Currently only verification that building is not in flood zone - it is is in the flood zone, an elevation certificate is required.					
City of Karnes City	Yes	Flood Damage Prevention Ordinance	9-Apr-85	New construction in floodplains must comply with the flood damage prevention ordinance.	None	NA	0	0	NA
City of Kenedy	Yes	Flood Damage Prevention Ordinance	4-Jan-88	Building permit system utilizing floodplain maps. New permits are not issued unless all criteria meet ordinance requirements.	One (1)		2	0	NA
City of Runge	Yes	Flood Damage Prevention Ordinance	No answer	No answer	No answer		No answer	No answer	No answer
City of Falls City	Yes	Flood Damage Prevention Ordinance	1974	New building permit is issued, the floodplain manager is responsible for making the determination if the property is in the flood zone.	Mayor is floodplain manager. City employees (4) are considered part of the staff.		0	0	NA
	Yes								
Kerr County	Yes				One (1)		50-70	Zero	NA
City of Ingram	Yes	Floodplain Ordinance	3/10/1987	Permits approved by Council and Floodplain Administrator	2	No answer	15	No answer	No answer
City of Kerrville	Yes	Flood Damage Prevention Ordinance #98-16	1998	All new construction is checked for areas of SFHA. If in, a survey/site plan must be provided by licensed surveyor or engineer showing the property and new construction to be out of the floodway. Elevation certificates are also required.	3	No answer	400 (due to major flood)	None	NA
Medina County	Yes	Flood Damage Prevention Ordinance	1987				None	None	NA

City of Castroville	Yes	Flood Damage Prevention Ordinance		All new construction must have a verifiable minimum of one foot elevation for finished floor level above the 100-year floodplain.	1 - Floodplain Administrator	No answer	20 inspectons	None	NA
City of Devine	Yes	None		Before a structure is built in an area that is known to flood, they must first obtain a variance from the Planning and Zoning Committee who would then insure that the proposed development does not cause a danger to impede the natural flow of the creek. If approved, it then goes to the Council for either approval or denial.	One		All floodways and drainage areas are inspected during and after all rains in the area.	None	NA
City of Hondo	Yes	Flood Damage Prevention Ordinance	10/11/1977	Restrictions in the floodplain ordinance do not allow for construction in floodplain areas	One floodplain manager and city hall staff	See previous	14	1	April 2003 - 1308 Avenue H - variance allowed after residence foundation raised above floodplain
City of LaCoste	Yes	Flood Damage Prevention Ordinance	1998	Require an elevation certificate then plans must show the first floor elevation being one foot above BFE	1		10	None	NA
City of Natalia	Yes	Answered that they have no ordinance.					None	None	NA
Wilson County	Yes	Flood Damage Prevention Court Order	2/23/1987, last amended 1/4/99	As established by court order - site inspections are not done for every permit applied for. Inspections performed only if compliance is in question.	2	1 engineer and 1 clerk	468	None	NA
City of Floresville	Yes	Floodplain Ordinance 151, Amendment 196	12/17/1987, 5/9/02	No answer	1	No answer			
City of La Vernia	Yes	Floodplain Ordinance (Ordinance 91)	13-Jul-95	No inspection, development permits required for all new or 50% or more remodel.	1	No answer	28	None	NA
City of Poth	Yes	None	No answer	Planning and Zoning Commission considers new building. Building in a know floodplain is restricted.	No answer	No answer	No answer	No answer	No answer
City of Stockdale	Yes	Floodplain Ordinance	5/6/2002	Any one requesting a permit to build in a flood zone area must submit plans to the City Manager. Buildings must be 2 ft above the 100-yeat floodplain.	1	City Manager	No answer	None	NA

Alamo Area Council of Governments
Multi-jurisdictional Hazard Mitigation Plan

Identification of Hazards Unique to Individual Jurisdictions

Jurisdiction: _____

Name: _____

Phone Number: _____

1. Does your jurisdiction have any unique hazards not addressed in the area-wide hazard identification and risk assessment?

   Yes _____ No_____

If you answered "yes" to the question above, please continue and answer the following questions.

2. What is the unique hazard your community faces?

   _____
   _____
   _____
   _____

3. Does this unique hazard have a distinct geographic hazard boundary? If yes, please describe the geographic hazard area.

   _____
   _____
   _____
   _____

4. What are the consequences of this unique hazard to the people and property in your community?

a. How many people are at risk?

_____
_____
_____

b. Are any special populations potentially at risk?

_____
_____
_____

c. How much property is at risk and what type of property is at risk ?

i. What are the estimated number of residential structures at risk and a gross estimate of the dollar value of those structures?

_____
_____

ii. What is the estimated number of commercial structures at risk and a gross estimate of the dollar value of those structures?

_____
_____

iii. What is the estimated number of key and special facilities at risk and a gross estimate of the dollar value of those key and special facilities?

_____
_____

iv. What infrastructure and lifelines are at risk from this unique hazard?

_____
_____

I. GENERAL COMMUNITY INFORMATION

Please provide the following information separately, preferably on not more than three (3) pages.

A. A narrative description of your community, including historical, demographic, cultural and economic information, along with any unique natural or physical features.

B. A brief history of hazards in your community, including the type, date of occurrence and any known impacts.

C. A brief description of current or projected development trends in your community.

D. A general listing of any on-going or completed hazard mitigation projects within your community.

II. HAZARD MITIGATION PLANS, POLICIES AND ORDINANCES

Hazard Mitigation Plan	Yes or No?	Narrative / Explanation
Does your jurisdiction receive Emergency Management Performance Grant Funds? Is so, which ones?		
Does your community have a Hazard Mitigation Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address all natural hazards found in your community, or is it a single-hazard plan? If it addresses a single hazard, what is the hazard?		
Does the plan address human-caused hazards? Human-caused hazards may include technological accidents and acts of terrorism.		
Do you believe the plan would meet the requirements established by the Disaster Mitigation Act of 2000? If no, what elements do not meet the new standards?		
Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Does your community have an established Hazard Mitigation Committee? If so, please provide us with a listing specific outcomes, including plans or projects identified and implemented through the committee.		
Disaster Recovery Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a Disaster Recovery Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address all natural hazards found in your community, or is it a single-hazard plan? If the plan addresses a single hazard, what is the hazard?		
Does the plan address human-caused hazards?		

Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Coastal Zone Management Plan	**Yes or No?**	**Narrative / Explanation**
Does your jurisdiction have a Coastal Zone Management Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address natural hazards, including ways to reduce their impact?		
Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Comprehensive Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a comprehensive or master plan? If so, does the plan address natural and human-caused hazards? Please briefly explain.		
Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Floodplain Management Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a floodplain management / flood mitigation plan? If yes, when was the plan adopted? When was the plan last amended?		
Does the plan contain provisions for relocating, elevating or acquiring structures currently located in the floodplain?		
Does the plan include structural measures such as rebuilding or retrofitting flood-prone structures?		
Are specific properties identified and targeted for future flood mitigation projects?		
Does the plan include reference to the “No Adverse Impact” strategy developed by the Association of State Floodplain Managers?		
Are there adequate building sites located outside the floodplain to satisfy development pressures?		

Does the plan include measures to preserve the floodplain's natural functions?		
Are floodplain management activities conducted in conjunction with neighboring communities or through a regional governing body?		
Are developers informed of the floodplain management regulations before they subdivide land in the floodplain?		
Does the plan address the location of mobile home parks in the floodplain?		
Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Stormwater Management Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a stormwater management plan? If yes, when was the plan adopted? When was the plan last amended?		
Is there a regular maintenance schedule for checking and clearing storm water drains and drainage systems and removing debris from streams and watercourses?		
Are existing culverts and other drainage devices sized properly for the amount of water they must carry during peak discharges?		
Are future planned systems adequately designed to meet storm water drainage demands of the community, factoring in increased development that may increase storm water runoff?		
Does the plan call for the provision of structural measures such as retention and detention facilities that minimize the increases in runoff caused by impervious surfaces and new development?		
Are there restrictions on the amount of impervious surfaces?		
Does your community have a storm water management fee? If yes, what are the generated funds used for?		
Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		

LOCAL CAPABILITY ASSESSMENT QUESTIONNAIRE

Emergency Operations Plan	Yes or No?	Narrative / Explanation
Does your community have an Emergency Operations Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address natural and human-caused hazards?		
Continuity of Operations Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a Continuity of Operations Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address natural and human-caused hazards?		
Radiological Emergency Plan?	**Yes or No?**	**Narrative / Explanation**
Does your community have a Radiological Emergency Plan? If yes, when was it adopted? When was the plan last amended?		
SARA Title III / Hazardous Material Facility Emergency Response Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a Hazardous Material Facility Emergency Response Plan? If yes, when was it adopted? When was the plan last amended?		
Does your community actively participate in a Local Emergency Planning Commission (LEPC)?		
Transportation Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a Transportation Plan? If yes, when was it adopted? When was the plan last amended?		
Does your community consider identified hazards when planning for future roads and bridges?		
Do roads, bridges, or undersized culverts impede water flow regularly in your community?		
Does your community have a plan for an emergency evacuation?		
Are roads designed for adequate evacuation capacity?		

Capital Improvements Plan	Yes or No?	Narrative / Explanation
Does the Capital Improvements Plan restrict the provision or extension of infrastructure into hazard areas?		
Are there site standards requiring the location of critical public facilities outside of hazard areas?		
Are there construction requirements for critical facilities located in hazard areas to ensure they remain operational during and after a hazard event?		
Regional Planning	**Yes or No?**	**Narrative / Explanation**
Does your community participate in regional planning decisions? If yes, please explain.		
Historic Preservation Plan	**Yes or No?**	**Narrative / Explanation**
Does your community have a Historic Preservation Plan? If yes, when was it adopted? When was the plan last amended?		
Does the plan address the protection of historic buildings and sites from natural hazards?		
Zoning Ordinance	**Yes or No?**	**Narrative / Explanation**
Does your community have a Zoning Ordinance? If yes, when was it adopted?		
Does the ordinance restrict the type/density of development in identified hazard areas? If so, please briefly explain.		
Do non-conforming use provisions of the zoning ordinance take into account structures that are damaged by hazards?		
Are any non-conforming use or substantial damage provisions strictly enforced following a disaster?		
Does your community maintain adequate technical and field inspection staff for proper administration and enforcement of the zoning ordinance?		
Has the ordinance proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Subdivision Ordinance	**Yes or No?**	**Narrative / Explanation**

Does your community have a Subdivision Ordinance? If yes, when was it adopted?		
Does the ordinance place restrictions on the subdivision of land in known hazard areas?		
Must all lots have a buildable site that is outside of delineated hazard zones?		
Does the ordinance establish setback requirements from delineated hazard zones?		
Are there provisions for the protection or creation of natural areas, such as wetlands, dunes or natural vegetation as a condition of subdivision approval?		
Has the ordinance proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Flood Damage/Management Ordinance	**Yes or No?**	**Narrative / Explanation**
Does your community have a Flood Damage Prevention Ordinance? If yes, when was it adopted?		
Please provide a description of the current inspection and permitting processes for floodplain management?		
Does your Floodplain management team have an administrator?, If so, How many staff members?		
How many flood inspections have been provided in the past twelve months?		
How many variances have been provided in the last twelve months?. Could you please provide list that includes date, address of property, and reasons for allowing the variance?		
Does your ordinance include a freeboard requirement for all new construction in the floodplain? If so, what is the freeboard requirement?		
Does the ordinance include a cumulative substantial damage provision?		

Does the ordinance incorporate any other regulations that exceed National Flood Insurance Program (NFIP) standards? If so, how?		
Has the ordinance proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain.		
Building Codes, Permitting and Inspections	**Yes or No?**	**Narrative / Explanation**
Has your community adopted a building code? If so, which one?, when was it adopted?		
Does your community diligently enforce the building code, both at the plan approval stage and the site-inspection stage?		
Has your building code been amended? If so, what types?		
Please provide a description of the inspection and permitting processes?		
How many inspectors are used in your jurisdiction?		
Is your inspections department adequately staffed and trained to enforce the building code?		
Are the same rules and practices applied during routine permitting procedures and following a disaster? If they are different, how do they differ?		
Does your community have a temporary building moratorium to put in place following a disaster to stop or slow reconstruction pending a damage assessment?		
Has your community had a Building Code Effectiveness Grading Schedule (BCEGS) report performed by the Insurance Services Office, Inc.? If so, what score was received?		

III. ENVIRONMENTAL PROTECTION MEASURES

Conservation and Natural Resource Protection	**Yes or No?**	**Narrative / Explanation**
Does your community have a riparian or wetlands preservation program? If yes, does the program provide funding for the acquisition and restoration of sensitive habitat areas?		

Do you maintain provisions for protecting natural riparian cover located within a specific distance of a stream or river?		
Park, Greenways and Open Space	**Yes or No?**	**Narrative / Explanation**
Does your community have a program to acquire available land for public recreational use?		
Does your community form partnerships with non-governmental organizations to acquire or otherwise protect hazardous areas? If so, please explain.		
Does your community have an open space or forestry management plan? If so, does the plan address natural hazards (i.e., fire breaks, clearing brush, staging controlled burns, etc.)?		

IV. BUSINESS AND INDUSTRY MEASURES

Private Sector Mitigation	**Yes or No?**	**Narrative / Explanation**
Has the community established any public-private partnership initiatives to address disaster-related issues? If so, please briefly explain.		
Does the community provide training or outreach efforts aimed at educating businesses to prepare for disaster (i.e., structural mitigation measures, insurance coverage, etc.)?		
Does the community provide training for local businesses to develop continuity plans to prepare for disaster?		

V. TECHNICAL, FISCAL, ADMINISTRATIVE AND POLITICAL CAPABILITIES

Technical Capability	**Yes or No?**	**Narrative / Explanation**
Does your community maintain or have access to detailed historical information related to past disasters?		
Does your community maintain or have access to detailed documentation of actions taken to reduce future hazard impacts?		
Does your community maintain a Geographic Information System (GIS)?		
Does your community possess GIS data layers on identified hazards? If so, what type of hazards?		
Does your community use GIS to analyze hazard vulnerability?		

Does your community use FEMA's Hazards US (HAZUS) software? If yes, how is it used?		
Does your community maintain adequately trained staff to manage the GIS?		
How would you classify your community's overall technical capability to implement hazard mitigation strategies (HIGH, MODERATE or LOW).		
Fiscal Capability	**Yes or No?**	**Narrative / Explanation**
Does your community dedicate any local funds to address mitigation-related activities? If yes, please describe.		
How would you classify your community's overall fiscal capability to implement hazard mitigation strategies (HIGH, MODERATE or LOW).		
Administrative Capability	**Yes or No?**	**Narrative / Explanation**
Are mitigation-related activities assigned to a local department's)? If so, which one(s)?		
Is there a high level of intergovernmental cooperation among local departments? Please describe the potential level of cooperation in the context of mitigation-related programs.		
Does your jurisdiction participate in a local emergency management mutual aid program? If yes, has the mutual aid program been used to address mitigation or disaster recovery related issues? Please explain.		
How would you classify your community's overall administrative capability to implement hazard mitigation strategies (HIGH, MODERATE or LOW).		
Political Capability	**Yes or No?**	**Narrative / Explanation**
For cities, is your city a "home rule" or "general law" city under the Texas Government Code?		
For cities, what type of governing body do you have?		
Political capability can be generally measured by the degree to which political leadership is willing to enact policies and programs that reduce hazard vulnerabilities in your community, even if met with opposition. Examples may include guiding development away from identified hazard areas or participating in FEMA's *Project Impact* initiative. Please identify specific examples of these efforts and reference where more documentation can be found.		

Capability Assessment
Annex P
Mitigation Effectiveness Survey

P-42. Identify and assess the effectiveness of previously implemented mitigation measures and of current mitigation-related policies, plans, practices, and programs to include the following:	
P-42.01. Hazard Mitigation Grant Program (HMGP) projects.	
P-42.02. Public Assistance (PA) program projects.	
P-42.03. Corps of Engineers studies, plans, and projects.	
P-42.04. Plans, studies, and projects that received funding from the Texas Water Development Board (TWDB).	
P-42.05. Actions and projects that received federal funding from Project Impact (PI), the Pre-Disaster Mitigation (PDM) program, or annual Property Protection-Mitigation (PP-M) program.	
P-42.06. Current master drainage, and storm water management plans.	
P-42.07. Current comprehensive and capital improvements plans.	
P-42.08. Current building and fire codes. Identify date and type of codes in use and describe inspection/ permit process, number and qualifications of inspectors, and number of building starts and inspections conducted during last twelve month period.	
P-42.9. Current floodplain management ordinance(s) / court order(s). Identify dates adopted and explain inspection/permit process, numbers and qualifications of floodplain administrator(s) and staff, number of inspections and permits approved and the number and an explanation for why permit variances were allowed during the last twelve month period.	
P-42.10. Community Assistance Visit (CAV) report(s), Flood Insurance Studies, or other technical assistance reports/findings. Identify type and date of current floodplain maps, repetitive loss category, and participation in the Community Rating System (CRS).	
P-42.11. Findings/results of Building Code Effectiveness Grading Report (BCEGS). Include date of report and score received.	

Data Collection Tools and Planning Resources

List of Materials

Community Workshops (Series 1)

Community Workshops (Series 2)

- Public Notice
  (public_notice_workshop_series_2)
- Agendas
  (agenda_workshop_series_2a)
  (agenda_workshop_series_2a)
- Flier
  (flier_workshop_series_2)
- Invitation
  (invitation_workshop_series_2)
- Sign-in Sheets
  (sign_in_sheets_workshop_series_2)
- Minutes
  (minutes_workshop_series_2)

Mitigation Team Members

- Hazard Mitigation Team Worksheets

Public Assistance Projects (Information from Texas Division of Emergency Management—hard copy only)

Local Capability Assessment Survey Tool

Follow-up Capability Assessment Tool (Annex P Specific)

AACOG Community Floodplain Program Information

AACOG Community Building and Fire Program Information

Data Collection Tools and Planning Resources

List of Materials

Community Workshops (Series 1)

Community Workshops (Series 2)

- Public Notice
- Agendas
- Flier
- Invitation
- Sign-in Sheets
- Minutes

Mitigation Team Members

- Hazard Mitigation Team Worksheets

Public Assistance Projects (Information from Texas Division of Emergency Management)

Local Capability Assessment Survey Tool

Follow-up Capability Assessment Tool (Annex P Specific)

AACOG Community Floodplain Program Information

AACOG Community Building and Fire Program Information

Appendix E

Plan Adoption