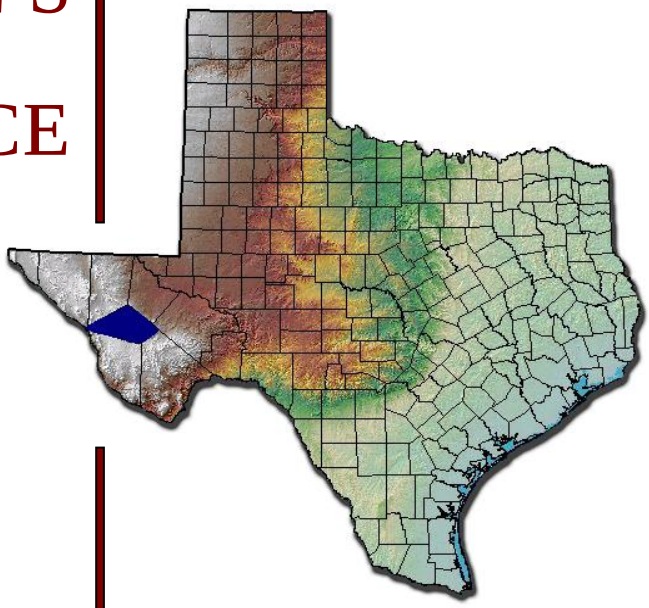
STATE FIRE MARSHAL'S OFFICE



Fire Safety Evaluation

University of Texas
McDonald Observatory &
Fort Davis Volunteer Fire Department

May 2004

Texas Department of Insurance
Austin, Texas

Foreword

The State Fire Marshal's Office has conducted this Fire Safety Evaluation in support of the University of Texas McDonald Observatory and the Fort Davis Volunteer Fire Department's fire safety and prevention activities.

The evaluation is intended to promote the importance of effective fire safety program planning, implementation and assessment. These efforts must be sustained by a progressive, planned maintenance, optimizing the initial investment for those critical improvements.

Finally, effective communication and the formation of partnerships are critical and must remain the cornerstone of a successful fire-safe environment. The State Fire Marshal's Office encourages the University of Texas and the Fort Davis Volunteer Fire Department to continue its efforts in fire safety awareness education for the residents and visitors to Jeff Davis County.

The State Fire Marshal's Office is committed to the success of these efforts. We believe that, working together, all Texans can benefit from cooperative fire safety and prevention programs.

Respectfully Submitted,

G. Mike Davis
State Fire Marshal

Executive Summary

In December 2003, the State Fire Marshal's Office (SFMO) received requests from the Fort Davis Volunteer Fire Department (VFD) and the University of Texas (for the McDonald Observatory) to conduct a fire safety evaluation within the Jeff Davis County service area of the Fort Davis Volunteer Fire Department, including the McDonald Observatory Complex.

The evaluation focused on structures, water availability, transportation issues, and potential fire hazards. The team also assessed fire suppression capabilities within the service area.

Major recommendations relating to tactical and strategic enhancements in fire safety and suppression capabilities include:

- *Fort Davis VFD strategic planning* – The SFMO is recommending that the Fort Davis VFD engage in formal strategic planning for capital items. The department should establish an obsolescence plan for all fire-fighting vehicles. This will ensure that vehicle replacement funding can be sought before equipment becomes critically deficient.

- *Replacement of Fort Davis VFD Obsolete Fire Engines* – The primary fire engine used to protect lives and property in the Fort Davis VFD service area is nearly forty year's old. Parts for the pumper are no longer available and the unit cannot be relied upon in the county's mountainous terrain.

- *Funding for Fort Davis VFD Operations, equipment and maintenance* – Due to the limited financial resources available to the Fort Davis VFD, the SFMO recommended an aggressive pursuit of state and federal grants in addition to supporting the county's decision to create an Emergency Services District (ESD). County officials have scheduled an election on the ESD issue in September 2004.

- *Wildland Fire Planning and Education* – This critical piece of the evaluation centered on the application of the Texas Forest Service's Wildland/Urban Interface protocols to the McDonald Observatory. The SFMO team observed that vegetation on Mt. Locke presented a major fire risk and urged the University to immediately implement these protocols. The University and Texas Forest Service have developed a plan and began its implementation in May 2004.

- *McDonald Observatory Fire Protection Equipment* - The McDonald Observatory does not have a main fire engine capable of sustaining an attack on a fire. Without such, the Observatory's substantial campus, as well as the lives of residents, staff and visitors, are put at risk from fire. The SFMO has

recommended that the University procure a new Class A Pumper for use at the Observatory. The procurement should be made in consultation with the Texas Forest Service and the Fort Davis VFD.

- *McDonald Observatory Fire Brigade Capabilities* - The Observatory is underserved by the existing fire brigade. There is no capability for attack of a major structure fire. Ft. Davis VFD response is 17 miles away and must traverse steep grades to reach the Observatory. Adequate fire suppression coverage demands stationing adequate equipment at the Observatory with trained staff to operate the equipment and attack a fire. The SFMO recommends several options, including that the McDonald Observatory Fire Brigade merge resources with the Fort Davis VFD. By becoming a component of the Fort Davis VFD, a formal organizational structure, including command, training and procedures, would enhance fire protection capabilities at the Observatory.

Upon request, SFMO staff will assist county and university officials during the development and implementation phases of any fire safety or fire suppression enhancement projects.

Acknowledgements

Jeff Davis County Government

☆

Fort Davis Volunteer Fire Department

☆

McDonald Observatory
University of Texas at Austin

☆

Texas Forest Service

☆

Fort Davis Historical Site
U.S. Department of the Interior

☆

Davis Mountains State Park
Texas Parks & Wildlife Department

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TEXAS DEPARTMENT OF INSURANCE
STATE FIRE MARSHAL'S OFFICE
AUSTIN, TEXAS

Fort Davis Volunteer Fire Department
&
The University of Texas McDonald Observatory

Fire Safety Evaluation

Introduction

In December 2003, the State Fire Marshal's Office (SFMO) received requests from the Fort Davis Volunteer Fire Department (VFD) and the University of Texas (for the McDonald Observatory) to conduct a fire safety evaluation within the Jeff Davis County service area of the Fort Davis Volunteer Fire Department, including the McDonald Observatory Complex. Letters requesting assistance are located in the Appendix I. This evaluation includes:

- Facilitating dialogue between various Jeff Davis County stakeholders;
- Conducting a fire safety evaluation of Fort Davis VFD Service area, including structures, water availability, transportation issues, and potential fire hazards;
- Conducting an evaluation of fire suppression capabilities within the service area; and
- Making recommendations relating to tactical and strategic enhancements in fire safety and suppression capabilities in this area.

In addition to this effort, the Fort Davis VFD has requested assistance in preparing a federal grant application relating to its fire suppression capability.

This evaluation does not assess any risks associated with a fire-related disruption of services at the McDonald Observatory or issues associated with the general availability of water in this arid portion of the state. Further, this evaluation does not address the historical and cultural values associated with the Indian Lodge at the Davis Mountains State Park, Fort Davis Historical Site or the McDonald Observatory that could be adversely impacted by a structural or wildland fire.

This document represents the primary deliverable for this project. SFMO staff will continue to consult with the stakeholders during the development and implementation phases of any fire safety or fire suppression enhancement projects.

Authority

The Texas Government Code provides the statutory authority for the State Fire Marshal's Office. Provisions of Chapter 417 form the basis for this fire safety evaluation. These are:

Chapter 417.004 - General Powers and Duties

> §417.004(c) - The state fire marshal may make or encourage studies of fire protection, including fire administration.
>
> §417.004(d) - The state fire marshal may conduct research to improve fire protection and fire administration and may stimulate research by public and private entities for that purpose.
>
> §417.004(e) - The state fire marshal may, on the request of a public or nonprofit entity with duties related to fire protection, advise or assist the entity in relation to those duties.

A copy of Chapter 417, Texas Government Code is located in the Appendix II.

Fire Safety Evaluation Methodology

The evaluation was conducted utilizing available records of the Fort Davis Volunteer Fire Department, the University of Texas at Austin, and reports and statistics from a variety of sources detailing the resources of the University and Ft. Davis Volunteer Fire Department. An evaluation team was sent to Jeff Davis County to assess the condition of equipment, condition of structures, wildland fire hazards, and other resources and concerns. The evaluation team interviewed the principals and inspected equipment, structures and infrastructure.

Jeff Davis County Demographic Profile

- ***Size – 2,265 square miles***
- ***Population – 2,211***
- ***Population Density - .097 people per square mile***

School Age	530 (24%)
Over 65	353 (16%)

Within Cities and Balance of County

Place Name	Estimated Population
Valentine	185
Ft. Davis (unincorporated)	1,050
Total, In-City	**1,235**
Balance of Jeff Davis County	**976**

- ***Housing Occupancy – 896***

  Owner-occupied 628 (70%)
  Renter-occupied 268 (30%)
  (includes seasonal and recreational housing)

  Note: Jeff Davis County census information indicates 1,420 total housing units. 896 (63%) are occupied and 524 (36%) are vacant.

- ***Average Household Size***

  Owner-occupied 3.34 persons
  Renter-occupied 2.51 persons

  Source: All population demographics, U.S. Census Bureau Internet Web Site

- ***Public Schools***

District Name		District City	District Enrollment
Ft. Davis ISD		Fort Davis	341
Valentine ISD		Valentine	66
Source: Texas Education Agency Internet Web Site			

- ***Special Business Demographics***

  Hotels/Motels
  - 19 properties reporting payment of state hotel/motel tax
  - 211 rooms
  - smallest – 1 room
  - largest – 39 rooms

  Source: Texas State Comptroller Internet Web Site

The Urban-Wildland Interface

The Texas Forest Service, a component of the Texas A & M University System, has promulgated a set of standards and recommendations for mitigating the dangers of wildland fires. An abstract of these standards and recommendations are listed in Appendix III.

Figure 1 – Housing Area Showing Dense Vegetation

The Texas Forest Service defines the "urban wildland interface" as the geographical area where combustible homes are mixed with combustible vegetation. While Jeff Davis County has several such interfaces, one in particular is especially notable due to the combination of combustible homes and combustible vegetation with mountainous terrain. McDonald Observatory, operated by the University of Texas, exhibits all "problem" characteristics associated with the interface.

The density of evergreen trees and high grasses in proximity to the buildings creates the danger of fire spreading from building to building. Operations of the Observatory could be halted or severely compromised by either a loss of infrastructure caused by wildfire or by wildfires in the area. Valuable research equipment can be adversely affected by smoke and particulate matter originating from area wildfires. Most importantly, the safety of staff, residents and visitors are put at risk by wildfires.

Jeff Davis County Fire Safety Evaluation

Jeff Davis County is a sparsely populated (.97 people per square mile) area characterized by West Texas mountains and inter-mountain areas. While the population of the county is 2,211, the annual number of visitors to the county is estimated at over 500,000. Most visitors come to Jeff Davis County to visit McDonalds Observatory, Ft. Davis Historical Site, and the Indian Lodge in Ft. Davis State Park.

The following fire safety profiles were taken from observations in more populated areas.

Fort Davis

The town of Fort Davis is an unincorporated community and is the county seat of Jeff Davis County. There are approximately 77 businesses in the community including the County Courthouse of Jeff Davis County. Local business' consists of a multitude of occupancies. There are several bed & breakfast overnight facilities, campgrounds, shops, and surrounding ranches. Based on random selection of buildings that were surveyed, the most common forms of fire protection included battery-operated smoke detection and portable fire extinguishers.

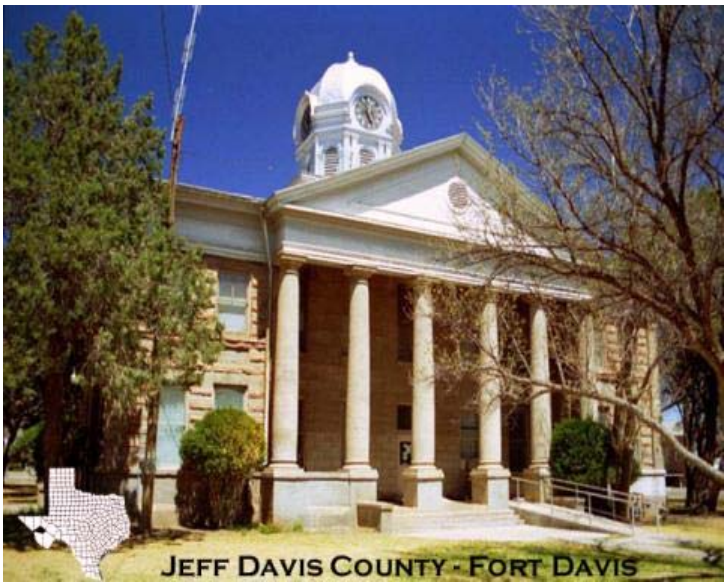

Figure 2 - Jeff Davis County Courthouse

Most lodging owners demonstrated a routine check for the regular maintenance and operation of battery-operated smoke detection. The majority of business owner's throughout the area were not cognizant that portable fire extinguishers were required to be inspected and or serviced.

McDonald Observatory

The McDonald Observatory, operated by the University of Texas at Austin (UT), is located on the adjacent peaks of Mount Locke (altitude 2,070 meters) and Mount Fowlkes (altitude 1,980 meters) in the Davis Mountains approximately 15 miles west of Fort Davis in Jeff Davis County. The mountains are covered with native growth of Juniper and other indigenous plants of the trans-Pecos region of Texas.

Mount Locke and Mount Fowlkes

The McDonald Observatory consists of a complex community of buildings with a variety of occupancies. The buildings include Observatory instrumentation buildings, support buildings, residential structures, and a multi-residential building identified as the "Astronomer's Lodge." Thirty-four single-family dwellings are provided by UT for permanent and transient staff. Plans are in place to increase the number of telescope facilities. Utilization of the Astronomer's Lodge is expected to increase as the Observatory plans to open the lodge to the public. Several national and international universities participate in research at the Observatory. The United States Air Force is

planning an installation at the site. Several federal and state agencies have radio and other equipment stationed on the site.

Astronomer's Lodge

The McDonald Observatory's Astronomer's Lodge is a two-story dormitory composed of concrete block exterior construction with wood shingle roofing. It is primarily used for the lodging of visiting astronomers. The building is equipped with the following fire protection features: fully automatic sprinkler system, fire alarm system, manual pull stations, audio/visual devices, and hard-wire smoke detectors throughout the facility. The dormitory corridors are equipped with emergency lighting, illuminated corridor exit signs, and the doors to the sleeping rooms and corridors are equipped with self-closing devices. Numerous trees and vegetation surround the building. Several trees make contact with the building.

Director Quarters

The Director Quarters is a two-story single-family house with battery-operated smoke detectors and a portable fire extinguisher. Numerous trees and vegetation surround the building. Several trees make contact with the building.

Visitor Center

The Visitors Center is a large building consisting of a gift shop, assembly area, café, offices, and meeting/education rooms. The facility is equipped with a complete automatic sprinkler system, fire alarm system with manual pull stations, audio/visual devices, emergency lighting, illuminated exit signs, panic hardware, and portable fire extinguishers.

Telescope Domes

Figure 4 - Telescope Dome

The Observatory has five different telescope domes 30", 36", 82", 107", and HET Dome. The 82" 107" and HET are equipped with fire alarm panels, manual pull stations, audio/visual devices, and emergency lighting units. Due to the operation of telescope rooms, and the required low light levels associated with the effective use of the telescopes, exit signs and associated markings are self-illuminating, enabling building occupants to clearly identify a path to safely evacuate the building in the event of a fire.

Residential Housing

There are thirty houses rented to McDonald Observatory staff, owned, and operated by the University of Texas. These houses are equipped with hard-wired or battery-operated smoke detectors located in the living quarters of the house and portable fire extinguishers.

Figure 5 - Vegetation Against Structure

Resident houses are single-family wooden frame construction with wood siding and wood shingles. Most of the houses have numerous trees leaning against the houses. These residential houses also have a large amount of combustibles stored near the buildings. Some of the items stored near the houses are Bar-B-Que cookers, and propane tanks. Some of the houses are in need of general clean-up inside and outside the buildings.

McDonald Observatory Water Supply System

The water system at McDonald Observatory consists of two wells at the bottom of the mountain. These wells use electric pumps and do not have backup power.

The pumps initially fill two holding tanks with a combined capacity of 39,000 gallons. Water is pumped from the holding tanks 1,470 feet up the mountain, via a 2" line, ultimately filling two tanks on top with a combined capacity of 82,000 gallons. The 2" line flows at 20 gallons per minute at a pressure of 680 pounds per square inch. Water from these tanks serves the Transient Quarters and observatories at the top of Mt. Locke. Water from these tanks is fed, via gravity, to two additional tanks (combined capacity of 72,000 gallons) that serve the residential area, Mt. Fowlkes and visitor's center.

The water distribution system at the top of the Observatory consists of 4" to 6" water mains. Fire hydrants are installed on the system. The amount of water available for fire suppression, combined with the normal daily consumption, may be inadequate depending on the severity of a fire.

McDonald Observatory has not been rated for a public protection classification. Since the Observatory fire service is not an official fire department, the Observatory would use a PPC class of 10 because the area is more than five miles from a recognized fire station.

Fire Brigade, Fire Suppression, Apparatus, and Equipment

- Organization / Personnel - McDonald Observatory does not have an organized fire brigade. Although there are approximately one dozen volunteer fire

brigade members, only three or four have been trained in fire suppression techniques. These personnel work at the Observatory and respond to fire emergencies at the Observatory.

- Station – McDonald Observatory has a three bay station with restroom and storage facilities. This facility was built within the past 20 years and protects equipment from the weather.

- Protective Gear & Equipment – McDonald Observatory bunker gear and self contained breathing apparatus (SCBA's) are fairly new and compliant with NFPA standards. Through a cost share program with the Texas Forest Service, the Observatory was able to get this equipment at substantial savings.

- Training – The McDonald Observatory fire brigade has one meeting a month which generally focuses on maintenance of the trucks. There is not a formal, ongoing training program focusing on fire prevention or fire (structure or wildfire) suppression.

- Communications - The emergency notification system to alert responders works off the telephone system. Telephones ring at 16 different individual homes. If an emergency is reported, the caller would dial an internal phone number that rings at multiple responders' residences. There is no typical emergency call alert system in place such as voice pagers, two-way radios or an audible warning system. Not all of the responders at the Observatory have two-way radios.

- Call Volume – McDonald Observatory experiences a fairly low call volume and most of the emergency calls are medical responses (average 12 per year). The fire calls at the Observatory are very low with only a few minor fires in the past few years. There have been wildfires around the Observatory in recent years causing the Observatory to close due to the smoke.

- Apparatus stationed at McDonald Observatory:

Figure 6 - Brush Truck 1 – 1979 Kaiser 5 Ton, 125GPM Pump, 1200 gallon water,150' of pre-connected hose, Unit does carry some foam (MDC 10)

Brush Truck 2 – 1979 Kaiser 5 Ton, 125GPM Pump, 1200 gallon water,150' of pre-connected hose, Unit does carry some foam (MDC 20)

Figure 7 – Mini-Pumper –1985 Chevy; 250 GPM Pump, 300 gallons of water, pump has not been tested, carries 250' of 2 ½" hose, unit is considered the "front line" attack truck for structure fires and lacks adequate equipment for what would be considered a Class A Engine

Fort Davis National Historic Site

The Fort Davis National Historic Site consists of approximately 60 buildings of varying occupancy types. The Site is a restored/reconstructed U.S. Army fortification on the location of the original Ft. Davis and is maintained to provide a historic replication of the old west frontier fort. The Visitors Center (Enlisted Men's Barracks) has been retrofitted with a full automatic sprinkler and fire alarm system. This particular building has the

Figure 8 - Fort Davis Historical Site

highest rate of indoor traffic by the public and is also used as an office area by park staff. Other occupancies such as the officer's quarters, barracks, post chapel, are screened and locked against entry because of the historical nature and dilapidated condition of the buildings. Therefore, these structures are considered special occupancies and are not equipped with special features of fire protection. The majority of these buildings are composed of ordinary construction with mud brick exteriors. This facility is located on Hwy 118 in Fort Davis and has annual estimated 60,000 visitors per year.

Davis Mountains State Park

Figure 9 - Davis Mountains State Park

Davis Mountains State Park, 2,708 acres in size, is located in Jeff Davis County, four miles northwest of Fort Davis. It is operated by the Texas Parks and Wildlife Department. The Civilian Conservation Corps (CCC) accomplished original improvements in 1933. The park has been open to the public in since the late 1930s; formal campground facilities were added in 1967. The northern half of the park, north of State Highway 118, has been designated as the Limpia Canyon Primitive Area, a special use area. Currently, the Limpia Canyon P.A. includes 10 miles of backcountry hiking trails with primitive campsites and a secured

parking area. Developed facilities south of State Highway 118 include restrooms with and without showers; campsites with water; campsites with water and electricity; campsites with water, electricity, sewer, and cable TV connection; a group picnic area with tables, an outdoor amphitheater (capacity 200); picnic sites; a playground; an interpretive center (staffed by volunteers); 9 miles of hiking trails (not including the Limpia Creek Primitive Area); and a Texas State Park Store. The park accommodates approximately 400,000 visitors per year.

Indian Lodge

Within Davis Mountains State Park is the Indian Lodge, built by the (CCC) during the early 1930s. Indian Lodge has 39 rooms, a restaurant, and a swimming pool (for Indian Lodge guests only), meeting rooms, a Texas State Park Store, and 24-hour staffing.

Figure 10 - Indian Lodge at State Park

The Indian Lodge is located on Park Road 3 inside the Davis Mountains State Park. The facility has a newly constructed lodging building equipped with hard-wired smoke detection and audio/ visual devices connected to a fire alarm system. The older sections of the facility are currently being renovated in phases. The older buildings currently have battery-operated smoke detectors in the rooms to be replaced with new detectors hardwired into the existing fire alarm system. Each hotel building is composed of a concrete/stucco exterior with wooden interior support beams and members. Portable fire extinguishers are placed at around the exterior of the building. The Indian Lodge has approximately 41,000 visitors per year.

The Prude Guest Ranch

The Prude Guest Ranch is located approximately six miles west of Fort Davis, on State Highway 118. This privately-owned facility consists of 35 motel rooms, 8 family cabins, and 18 bunk houses which are rented out for general overnight stays and large scale functions. The ranch has a main dining facility containing a commercial cooking extinguishing system. Each sleeping room is equipped with battery-operated smoke detection and a fire escape plan diagram. Portable fire extinguishers are located on the outside of the buildings. Emergency lighting and exit signs are currently being installed. The Prude Ranch has an estimated 25,000 visitors per year.

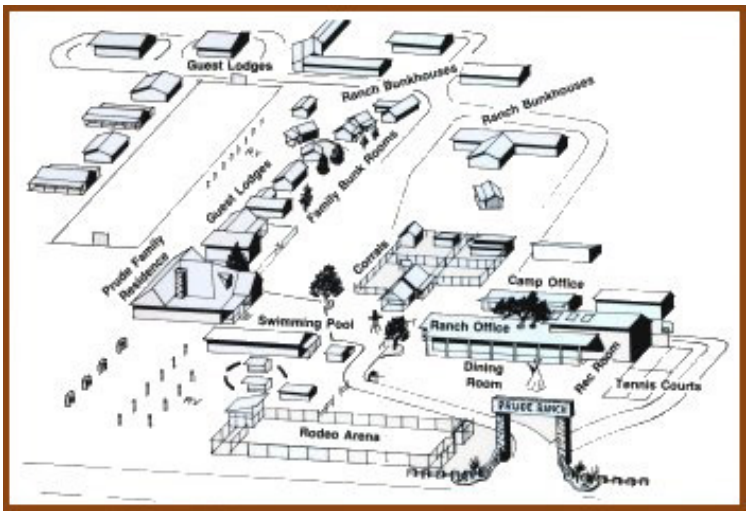

Figure 11 - Prude Guest Ranch Layout

Dirks/Anderson Elementary School (Ft. Davis ISD)

Fort Davis Elementary School (grades E – 6) consists of three educational buildings with classrooms and offices and a gymnasium building. The facility has a fire alarm system with manual pull stations, audio devices, marked exit signs, and portable fire extinguishers. There are no meals prepared within the facility. This school in located adjacent to downtown Ft. Davis on Hwy118. Approximately 150 students and 18 faculty and staff members occupy the school.

Fort Davis High School (Ft. Davis ISD)

Fort Davis High School (grades 7 - 12) consists of three educational buildings with classrooms and offices and a gymnasium building. The facility has a fire alarm system with manual pull stations, audio/visual devices, marked exit signs, and portable fire extinguishers. There are no meals prepared within the facility. Approximately 153 students and 24 faculty and staff occupy the school.

Sullivan Care Home

The Sullivan Care Home is located on Hwy 118 North in Fort Davis, is currently the only personal home health care facility within Fort Davis. This facility is a one-story home and provides care for 3-4 residents, which does not require the facility to have a fire alarm system. The facility is not currently required to maintain a license issued by the Texas Department of Human Services. Hard-wired smoke detectors are located in the common areas; however, sleeping rooms are not equipped with smoke detection.

Note: This facility has recently decided to substantially increase the number of occupants.

The High Frontier, Inc.

The High Frontier, Inc. is a Residential Treatment Center used for ages 11 – 18. Currently, approximately 84 students and 50 staff utilize this facility. The facility is a rooming and lodging facility providing alternative care and education. Features of fire protection include a fire alarm system with smoke detection, manual pull-stations, audio/visual devices, illuminated exit signs, emergency lighting, and portable fire extinguishers. The new Falcon Dormitory was recently inspected by the State Fire Marshal's Office and found to be equipped with a new fire alarm system consisting of smoke detection, manual pull stations, audio/visual devices, illuminated exit, emergency lighting, illuminated exit signs, and portable fire extinguishers.

Retail Service Stations

There are two gas stations located in Fort Davis. The station located across from County Court House has 3 above ground storage tanks and 1 above ground propane tank. The tanks are not properly separated and there is no fence surrounding the tanks. Above Ground Storage Tanks (AST's) are installed less than two inches apart, shell-to-shell. Spacing between tanks is required for the application of cooling hose streams in case of a fire and to permit regular inspections and maintenance. Tanks storing gasoline shall be separated by a distance of not less than 3 feet. The existing spill control dike around the tanks is not adequate to contain a leak or spill. The dike must have a capacity equal to at least 100% of the capacity of the largest tank. A rupture of either tank could lead to a loss of product.

Texas Department of Transportation

There is a general TXDOT roadside facility located on south Fort Davis Hwy. 118, which is a regional field office for TXDOT and includes a vehicle maintenance facility.

Buffalo Trail Scout Ranch

Buffalo Trail Scout Ranch is approximately 9,500 acres and is located 37 miles from Fort Davis. It is used for overnight camping by scout units with longer periods in the summer. In addition to Summer Camp, there are opportunities to experience planned horse cavalcades and weekend camping for Scout units. There are fifteen buildings at the camp and no fire protection for structures or wildfire is provided. Ranch staff and volunteers are trained in emergency evacuation procedures and hold regular meetings with visiting unit leadership to ensure emergency procedures are communicated.

Bloys Camp

Since 1890, the Bloys Camp Meeting (or Bloys Cowboy Camp Meeting) has met annually at Skillman's Grove in the Davis Mountains. Bloys is a campsite which is used for five days of the year in August. The camp is organized and operated by the Bloys

Camp Meeting Association. The camp is a cowboy camp meeting experience for religious groups. There are two tabernacles (capacity 1,200 persons) and approximately 405 other structures. The camp has no fire protection.

Mitre Peak Girl Scout Camp

Located on Hwy 118, this camp is approximately 15 miles from Fort Davis. The camp has 27 structures.

Fort Davis VFD Fire Suppression Evaluation

The Fort Davis Volunteer Fire Department has one, centrally-located fire station and is formally organized under Texas law. Other county fire departments/brigades are located in Valentine, Davis Mountain Resort (only other organized department), and at the McDonald Observatory but are not available for general fire suppression within the community of Fort Davis.

Fort Davis Water Supply

The water is supplied to Fort Davis from a private water corporation. The water system for Fort Davis consists of one 94,000 gallon water tank which feeds 6" and 8" water mains. Four wells feed the storage tank with three, 4" lines and one 6" line. Other water lines throughout the town are generally 2" to 6" in size. There are plans for future improvements for the water system including a new 50,000 gallon tank with booster pump with 3,800 feet of additional water lines and in 2007, replacement of 33,130 feet of water lines within the area with more fire hydrant locations.

Fort Davis VFD

- Organization – The Fort Davis Volunteer Fire Department is the only organized fire department for the county. The department holds monthly business and training meetings and is working on developing standard operating guidelines. Fort Davis VFD is incorporated and established as a non-profit entity (501c3 Status). To supplement fire suppression services, Jeff Davis County has entered into a Tri-County Mutual Aid agreement with Brewster and Presidio County for mutual aid responses in the area.

- Fire Station – Fort Davis VFD utilizes a five-bay station with living quarters, training rooms, and offices. This facility, first occupied in the spring of 2002, houses all apparatus of Fort Davis VFD. The station also houses two ambulances operated by Jeff Davis County EMS. Response time to the immediate area (town of Fort Davis and Historic Site) from the station is approximately five minutes. Response time to the McDonald Observatory is estimated at up to one hour (depending on the equipment and level of response).

- Personnel - Fort Davis VFD has 31 members with approximately 25 active fire fighters. Fort Davis relies on personnel from the McDonald Observatory to assist with calls in the area.

- Training – Training is conducted on a routine basis. The department frequently hosts training sponsored by the Texas Engineering Extension Service and Texas Forest Service. Each summer, the department sends members to the annual fire school at Texas A&M University when funds are available.

- Personal Protective Equipment – Each member of the fire department has recently received new firefighting gear and equipment which meets or exceeds nationally recognized standards. Recently-acquired self-contained breathing apparatus and radios have been funded by grants through the Texas Forest Service or the Rio Grande Council of Governments.

- Call Statistics – Fort Davis VFD makes approximately 55 (range is 42 to 87) incident calls a year (predominately vehicle accidents) and approximately 200 EMS calls each year.

- Public Protection Classification (PPC) – The Fort Davis VFD underwent an evaluation in May of 1998 resulting in a PPC class 7/9. The purpose of a PPC is to assess the public fire suppression facilities and to develop a rating for fire insurance purposes. The Fire Suppression Rating Schedule is used to measure the major elements of a community's fire suppression system. These measurements are then developed into a PPC number on a relative scale from 1 to 10, with 10 representing less than the minimum recognized protection.

  All property located within 1,000 feet of a fire hydrant and within five miles of a fire station use Class 7. All property not located within 1,000 feet of a fire hydrant but within five miles of a fire station, use Class 9. The primary fire engine received very little PPC credit during the 1998 evaluation. The truck would not be creditable today as no parts are available for this model.

- Fire Prevention Activities – The Fort Davis VFD is involved in several different types of fire prevention activities from school visits during fire prevention month, July 4th celebrations, and a video package for fire extinguisher training. The Fort Davis VFD has also published articles concerning the threat of a wildland fire in the local newspaper, Jeff Davis Mountain Dispatch, along with preventative measures for creating a defensible space around a home. The Texas Forest Service conducted a wildland fire forum for the residents of Jeff Davis County in March 2004.

- TEXFIRS – The Fort Davis VFD does not report incidents to the Texas Fire Incident Reporting System, managed by the Texas State Fire Marshal's Office.

- Funding - Fort Davis receives a guaranteed income from the county of approximately $15,000 per year. The other operating funds come from grants and donations. Fort Davis VFD has aggressively pursued alternative funding

sources through multiple types of grants and has been fairly successful at being rewarded except for the major funding requests which have been made for a Class A Engine. Fort Davis has applied for a Class "A" Engine funding over the last three years under the Fire Act Grant currently being administered by the Office of Domestic Preparedness and the US Fire Administration. Each year the request has been denied.

- Communications/Dispatch - Jeff Davis County has a contract with Presidio County for dispatching services. The Council of Governments does distribute Jeff Davis County's 911 funds to Presidio County for dispatching services. The dispatch center has one person on duty at all times. There are two 911 lines that come into the dispatch center. Presidio County Sheriff's Office dispatches for Presidio, Fort Davis, Marfa, & Valentine. Training is conducted on initial hire on the TCIC/NCIC criminal computer system but no ongoing training for dispatchers is given There is no capability for immediate playback of a 911 call of the dispatch center. There is a recording device that records 911 calls and all radio traffic, however, no immediate playback feature is available on this equipment. The center is also connected to a generator which provides immediate backup power. No over-the-phone first aid information is provided.

  Jeff Davis County operates a VHF analog two-way radio system. The system has recently been upgraded to include use of repeaters. Within the next twelve months, the system is scheduled to be upgraded to a digital system. This will permit communications with the Texas Forest Service and other agencies in the county.

- Apparatus

Figure 12 - 1965 Seagrave Engine – 750 GPM Pump, 500 gallons of Water, various hose, and other equipment (Engine 31)

Figure 13 - 2003 Ford Brush Truck – 350 GPM Pump, 400 gallons of water, Minimal equipment (Brush 31)

Figure 14 -1996 Ford – 350 GPM Pump, 360 gallons of Water, (Rescue 31)

Figure 15 - 1970 Kaiser Brush Truck – 350 GPM Pump, 1200 gallons of Water, (Brush 33)

Figure 16 - 1967 GMC Tanker – 350 GPM Pump, 2700 gallons of water, Tanker 31

Figure 17 - 1967 Ford Brush Truck – Unknown pump size; 700 gallons of water; minimal equipment; Compressed Air Foam System (Brush 32)

Issues & Recommendations

Issue #1 – Funding for Fort Davis VFD Operation, Equipment & Maintenance

The Fort Davis VFD receives $15,000 per year from Jeff Davis County for fire protection services. Additional funding for the department operations comes from grants, donations, and gifts. Funding is inadequate to sustain the operation, maintenance and equipment replacement needs of the Department.

Recommendations

- Jeff Davis County should establish an Emergency Service District to provide a fire protection funding stream based on sales tax revenue.

- Jeff Davis County and the Fort Davis VFD should seek and enter into agreements with U.S. Department of Interior (Fort Davis Historic Site), Texas Parks and Wildlife (Davis Mountains State Park), and the University of Texas (McDonald Observatory) to provide financial support for fire protection of their resources.

- The Fort Davis VFD should continue its aggressive pursuit of state/local grant, local fund raising and state/federal loan programs that could benefit fire suppression and prevention capability within its service area.

Issue #2 – Strategic Planning for Fort Davis VFD

The Fort Davis VFD must develop and utilize formal planning to ensure that equipment life cycles are identified. Given the limited funding available to the Fort Davis VFD, it is imperative that long-range budget planning incorporate an obsolescence plan for capital equipment such as fire engines, safety equipment and other high-cost items. Ensuring availability of equipment is paramount in avoiding unnecessary fire-related risks to firefighters, citizens and personal property. While replacement of equipment may not always be predictable, forecasting equipment life cycles will significantly aid in budgeting for needed items.

Issue #3 – Replacement of Obsolete Equipment

The main fire engine utilized by the Department has become obsolete. The engine's age and condition make it unreliable as the main firefighting vehicle in the Department's fleet. Replacement parts are not readily available for this 40 year-old equipment, making repairs both difficult and costly.

Recommendations

- The Fort Davis VFD should replace its main fire engine (1965 Seagraves Pumper) as soon as possible. Note: a federal grant application has been submitted to fund this need.

Issue #4 – Jeff Davis County Fire Marshal Authority

Currently, Jeff Davis County has an appointed volunteer Fire Marshal position. This position is not fully empowered as provided by law. Section 352.011 et. seq., Local Government Code, provides for the appointment and enforcement responsibilities of the County Fire Marshal. These fire protection duties include fire safety inspections, fire investigations, and enforcement of state law and rules.

Recommendations

- The County Commissioner's Court should establish enforcement authority in accordance with state law.

- The Commissioner's Court may, by order, establish any fee connected with plan reviews or fire safety inspections.

The entire text of Section 352, Local Government Code, is included in Appendix IV. This statute covers duties of the County Fire Marshal as well as the fire protection of county residents.

Issue #5 – Fire Incident Reporting

The Fort Davis VFD does not currently participate in the state-wide Texas Fire Incident Reporting System (TEXFIRS). No state-level information is available relating to the activities of this Department.

As such, the Department is not able to request (from the State Fire Marshal's Office or the National Fire Incident Reporting System) activity comparisons from other locations with similar populations or environments. Further, historical data relating to the Department's activities is not readily available, making it more difficult to implement strategic planning for equipment and other resources.

Recommendations

- The Fort Davis VFD should immediately begin reporting fire incidents to TEXFIRS. (Note: A training class on the use of the TEXFIRS reporting software is scheduled for May 2004.)

Issue #6 – Wildland Fire Planning/Education

Jeff Davis County has a high level of risk from wildfires. In the past ten years, the Fort Davis VFD Chief has estimated that over one-quarter of a million acres has been consumed by wildfire. With the high number of visitors to the area that may not be aware of the dangers of wildland fire, a comprehensive education program is critical.

Recommendations

- Jeff Davis County and Fort Davis VFD leadership must ensure that residents and visitors are kept informed of the dangers of wildfire and what must be done to safely evacuate areas affected by a fire.

- A wildfire education program should be implemented utilizing the Office of the County Fire Marshal. The County Fire Marshal should ensure that entities attracting visitors to the area provide adequate fire safety information relating to wildland fires.

- Effective communication, coordination and development of action plans between County officials, the Fort Davis VFD and the Texas Forest Service should continue to be a priority.

- The County Fire Marshal should work with landowners to provide education on effective wildland interface risk avoidance strategies.

- McDonald Observatory employees and UT administration should work with the Texas Forest Service to implement the Wildfire Mitigation Plan provided to Observatory and UT staff on May 12, 2004. A copy of the plan is included as an Appendix to this report.

Issue #7 – Jeff Davis County Underground Water Conservation District

Jeff Davis County is wholly contained within the Jeff Davis County Underground Water Conservation District. As such, access to water, is regulated.

Recommendations

- Because of the general scarcity of water in the west Texas area and the historic and emerging political ramifications relating to access to water, the Fort Davis VFD and McDonald Observatory must actively participate in the development of water resources for fire protection needs.

- Both the Department and Observatory are affected by this water conservation district and are urged to familiarize themselves with the strategic initiatives and regulatory authority of the district.

Issue #8 - McDonald Observatory fire protection equipment

The McDonald Observatory does not have a main fire engine capable of sustaining an attack on a fire. Without such, the Observatory's substantial campus, as well as the lives of residents, staff and visitors, are put at risk from fire.

Recommendations

- Existing equipment should be replaced with either a:

  Class "A" Engine capable of traversing mountain terrain (all wheel drive) and carrying enough water on board to support fire suppression activities. A three-person, commercial cab all-wheel drive engine with a 1,250 gpm pump and at least 750 gallons of water onboard would help mitigate the fire risk at the Observatory.

  or

  Mini-Pumper capable of mounting an initial fire attack. An apparatus (all wheel drive) consisting of a commercial, three-man cab truck with a 750 gpm pump and 500 gallons of water would suffice.

- With either option, the main fire engine will have a limited onboard water supply, therefore, a compressed air foam system should be included to help conserve water, extend the water supply onboard the engine, and offer a more effective fire suppression system.

- The need for any firefighting vehicles should be made in conjunction with the Fort Davis VFD and the Texas Forest Service.

Issue #9 – McDonald Observatory Fire Brigade Capability

The Observatory is underserved by the existing fire brigade. There is no capability for attack of a major structure fire. Ft. Davis VFD response is 17 miles away and must traverse steep grades to reach the Observatory. The response will take at least thirty minutes to one hour depending on equipment and weather conditions. Adequate fire suppression coverage demands stationing adequate equipment at the Observatory with trained staff to operate the equipment and attack a fire.

Recommendations

- The McDonald Observatory Fire Brigade should merge resources with the Fort Davis VFD. By becoming a component of the Fort Davis VFD, a formal organizational structure, including command, training and procedures, would enhance fire protection capabilities at the Observatory. If this recommendation is adopted, Fort Davis VFD and Observatory leadership must communicate and agree on elements of the merger. Included in these discussions must be ownership and maintenance of university-owned equipment, selection and training of Observatory personnel and fire response protocols. State law relating to volunteer firefighters, that are state employees, is located in Article 661.905, Texas Government Code. A copy of this statute is located in Appendix V.

- As an alternative to the above recommendation, the University of Texas may choose to create a formal McDonald Observatory Fire Brigade using the National Fire Protection Association Standard 600 for Industrial Fire Brigades. This alternative will require financial support and personnel policy considerations, as well as a risk/liability assessment.

- Fire prevention awareness programs should be instituted for residents, guests and employees at the Observatory. All resident staff must develop an awareness of the seriousness of wildfire danger and need to be educated on fire prevention around their residences. The University must enforce fire safety and fire prevention activities, including the urban/wildland interface promulgated by the Texas Forest Service.

- Wood shingles on residences should be replaced with fire-rated roofing material.

- The University of Texas should continue to partner with the Texas Forest Service to create and maintain a demonstration project of wildfire urban interface (project commenced in April 04). The University must commit financial and staffing support to maintain interface improvements.

- The Observatory must install an audible area warning notification system for fire/disaster in area. A strategically placed audible warning system (siren) will notify residents, visitors and employees that an emergency situation exists. This system should prompt an evacuation in the event of a disaster.

- An evacuation plan should be developed. Periodic evacuation drills must be monitored to ensure the plan is effective.

- The University of Texas should establish the presence of an on-site Safety Officer. This individual should report to the University of Texas at Austin Environmental Health and Safety Department, to develop and maintain the overall safety program at the Observatory complex. This position would be responsible for the daily inspection and enforcement of UT safety policies and the oversight of all safety programming at the Observatory. The position would also serve as the facilitator with the Ft. Davis VFD and Jeff Davis County for fire and emergency preparedness.

- The McDonald Observatory should upgrade the water supply system to allow for a faster refill rate of the water holding tanks at the top of the mountain.

- An alternative power supply system such as a generator system must be installed to ensure the pumps at the wells and pumping stations benefit from an uninterruptible power source.

- An engineering study of all components of the water system should be conducted by the University and improvements initiated. Note: the firm of LBG-Guyton Associates, a component of Leggette, Brashers, and Graham, Inc., conducted a hydrology study for the McDonald Observatory in the late 1990's. Their conclusions and recommendations were published in a report entitled, "Evaluation of Water Resources of McDonald Observatory." The University should contact this firm to determine what benefit the study may have in enhancing the water supply at the Observatory for increased fire protection availability.

- The University should contact the Far West Water Planning Group (Texas Water Development Board) in El Paso to learn how this group's strategies affect the water supply at McDonald Observatory. Participation in this group's planning efforts may lead to the availability of funds for improvement of the Observatory's water supply system. Information relating to this group is located in the Appendix VI.

Appendices

Appendix I. **Letters Requesting SFMO Assistance**

Appendix II. **Chapter 417, Texas Government Code**

Appendix III. **Texas Forest Service Wildland Interface Protocol & Wildfire Mitigation Plan for McDonald Observatory**

Appendix IV. **Section 352, Local Government Code**

Appendix V. **Chapter 661, Government Code**

Appendix VI. **Far West (Texas) Regional Water Planning Group**

Appendix I

Letters Requesting SFMO Assistance

MILE HIGH VOLUNTEERS
FIRE-RESCUE
VFD
FORT DAVIS FIRE DEPARTMENT

Fort Davis Volunteer Fire Department, Inc.
P.O. Box 811
202 West Court Avenue
Fort Davis, Texas 79734-0811
Phone: 432-426-3900
Fax: 432-426-2908
Email: fortdavisfd@netscape.net

December 8, 2003

Mr. Mike Davis
State Fire Marshal's Office
P.O. Box 149221
Austin, Texas 78714

Dear Mr. Davis,

Please consider this letter our formal request for your office's assistance with facilitating discussions on fire protection issues here in Jeff Davis County in light of the recent potential status change regarding the McDonald Observatory Volunteer Fire Department and its relationship with the University of Texas System. This has turned out to be a complicated issue, one that requires outside assistance and expertise. The more knowledgeable heads we can involve here the better our plan for the future will be. Locally, I have asked Doc Reesing and Paul Loeffler both of Alpine to get involved as seasoned veterans who have dedicated many years to the volunteer fire service.

I look forward to your site visit and our eventual discussion sessions that will lead us toward a comprehensive fire protection plan for Jeff Davis County that will stand the test of time. It has been my evaluation that Jeff Davis County is one of the more complex areas from a fire protection standpoint of any area in Texas. Not only is Fort Davis the highest elevation town in Texas, we have the highest elevation paved road at McDonald Observatory. We thank you in advance for your willingness to get involved.

Respectfully,

Kelly B. Bryan

Kelly B. Bryan
Fire Chief

OFFICE OF THE VICE PRESIDENT FOR EMPLOYEE AND CAMPUS SERVICES
THE UNIVERSITY OF TEXAS AT AUSTIN

P. O. Box 8180 • Austin, Texas 78713-8180
(512) 232-7742 • FAX (512) 232-7720

December 5, 2003

Mr. G. Mike Davis
State Fire Marshal
Texas Department of Insurance
P.O. Box 149221
Austin, Texas 78714-9221

Dear Mr. Davis:

The University of Texas at Austin is encouraged and accepts your offer to facilitate a collaborative effort to reduce the fire safety deficiencies at the McDonald Observatory.
It is our understanding that this collaboration would involve the following items:

1. Assistance in the forthcoming FEMA Fire Safety Grant program.
2. An analysis of the current status and needs of the fire suppression equipment.
3. An analysis of the required fire suppression training for McDonald personnel.
4. Assistance in drafting a mutual aid fire suppression document for McDonald Observatory and the Fort Davis Fire Department.
5. Interaction from your department with the Texas Forestry Service and Texas Parks and Wildlife to determine appropriate interaction from those entities with the McDonald Observatory personnel.
6. Interaction from your department with the Fort Davis Fire Department, McDonald Observatory, and UT Austin Fire Marshal's office.

The University is aware that this is a unique and unusual effort on the part of the State Fire Marshal's Office. The continuation of our combined efforts is an essential element for a fire safe environment for all persons at University of Texas facilities.

We look forward to future opportunities to work with the State Fire Marshal's Office.

Sincerely,

Pat Clubb, Ph.D.

cc: Mr. Kyle Cavanaugh
Mr. Garland Waldrop

COLLEGE OF NATURAL SCIENCES
THE UNIVERSITY OF TEXAS AT AUSTIN
Office of the Dean • Austin, Texas 78712-1199 • (512) 471-3285 • FAX (512) 471-4998

December 15, 2003

Mr. G. Mike Davis
State Fire Marshal
Texas Department of Insurance
P.O. Box 149221
Austin, Texas 78714-9221

Dear Mr. Davis,

The College of Natural Sciences of the University of Texas at Austin accepts your offer to facilitate a collaborative effort to reduce the fire safety deficiencies at the McDonald Observatory.

It is our understanding that this collaboration would involve the following items:

1. Assistance in the forthcoming FEMA Fire Safety Grant program.
2. An analysis of the current status and needs of the fire suppression equipment.
3. An analysis of the required fire suppression training for McDonald personnel.
4. Assistance in drafting a mutual aid fire suppression document for McDonald Observatory and the Fort Davis Fire Department.
5. Interaction from your department with the Texas Forestry Service and Texas Parks and Wildlife to determine appropriate interaction from those entities with the McDonald Observatory personnel.
6. Interaction from your department with the Fort Davis Fire Department, McDonald Observatory, and UT Austin Fire Marshal's office.

The College is aware that this is a unique and unusual effort on the part of the State Fire Marshal's Office. The continuation of our combined efforts is an essential element for a fire safe environment for all persons at University of Texas facilities.

We look forward to future opportunities to work with the State Fire Marshal's Office.

Sincerely,

Mary Ann Rankin, Dean

pc: Kyle Cavanaugh
Pat Clubb
Sheldon Ekland-Olson
Ann Harasimowitz
Peter Riley
Garland Waldrop

Appendix II

Chapter 417, Texas Government Code

CHAPTER 417. Government Code

STATE FIRE MARSHAL

§ 417.001. Definitions

In this chapter:

(1) "Commissioner" means the commissioner of insurance.

(2) "Department" means the Texas Department of Insurance.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1989, 71st Leg., ch. 983, § 2, eff. Jan. 1, 1990; Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.002. Appointment and Tenure

The state fire marshal is appointed by the commissioner. The state fire marshal serves at the pleasure of the commissioner and may be discharged at any time. The state fire marshal shall report to the commissioner.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.003. Status as State-Commissioned Officer

The state fire marshal is a state-commissioned officer and functions in that capacity subject to rules of the commissioner.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.004. General Powers and Duties

(a) The state fire marshal, under the supervision of the commissioner, shall administer and enforce applicable provisions of the Insurance Code and other law relating to the state fire marshal. The commissioner shall perform the supervisory and rule-making functions previously performed by the Texas Commission on Fire Protection under this subsection. The commissioner and the commission shall transfer information between the two agencies as necessary to allow the agencies to perform their statutory duties. The commissioner and the commission may make and adopt by rule memoranda of understanding as necessary to coordinate their respective duties.

(b) The state fire marshal is the chief investigator in charge of the investigation of arson and suspected arson in the state.

(c) The state fire marshal may make or encourage studies of fire protection, including fire administration.

(d) The state fire marshal may conduct research to improve fire protection and fire administration and may stimulate research by public and private agencies for that purpose.

(e) The state fire marshal may, on the request of a public or nonprofit entity with duties related to fire protection, advise or assist the entity in relation to those duties.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.005. Adoption of Rules

The commissioner, after consulting with the state fire marshal, may adopt necessary rules to guide the state fire marshal and fire and arson investigators commissioned by the state fire marshal in the investigation of arson, fire, and suspected arson and in the performance of other duties for the commissioner.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1993, 73rd Leg., ch. 912, § 21, eff. Sept. 1, 1993; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.0051. Fire Prevention and Safety Education

The commissioner, through the state fire marshal, may use pertinent and timely facts relating to fires to develop educational programs and disseminate materials necessary to educate the public effectively regarding methods of fire prevention and safety.

Added by Acts 1989, 71st Leg., ch. 186, § 1, eff. Aug. 28, 1989. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.01, eff. Sept. 1, 1997.

§ 417.0052. Texas Fire Incident Reporting System

The state fire marshal, under the direction of the commissioner, is responsible for maintaining and administering the Texas Fire Incident Reporting System.

Added by Acts 1997, 75th Leg., ch. 1172, § 3.02, eff. Sept. 1, 1997.

§ 417.006. Fire and Arson Investigators

The state fire marshal may commission peace officers to act as fire and arson investigators under his supervision and to perform other law enforcement duties assigned to the commissioner and the state fire marshal by law. The state fire marshal may revoke a peace officer's commission under this section for just cause.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1993, 73rd Leg., ch. 912, § 22, eff. Sept. 1, 1993; Acts 1997, 75th Leg., ch. 1172, § 3.03, eff. Sept. 1, 1997.

§ 417.007. Investigation of Fire

(a) The state fire marshal shall immediately investigate a fire occurring in this state in which property is destroyed if the commissioner directs the investigation or, in the discretion of the commissioner, if the investigation is requested by:

(1) the mayor, fire chief, fire marshal, or police chief of a municipality in which a fire occurs;

(2) a county or district judge, sheriff, county fire marshal, chief or fire marshal of a fire department in an unincorporated area, or county attorney of a county in which a fire occurs;

(3) a fire insurance company interested in a loss or the company's general, state, or special agent;

(4) an insurance policyholder, property owner, or lessee sustaining a fire loss;

(5) a justice of the peace or a constable of a precinct in which a fire occurs; or

(6) officials of a state or federal law enforcement agency or local or special governmental district involved or interested in a fire loss that occurred in this state.

(b) The state fire marshal at any time may enter a building or premises at which a fire is in progress or has occurred and is under control of law enforcement or fire service officials to investigate the cause, origin, and circumstances of the fire. If control of the building or premises has been relinquished, entry must be in compliance with search and seizure law and applicable federal law.

(c) The state fire marshal shall conduct the investigation at the place of the fire and before an insured loss may be paid. The state fire marshal shall ascertain, if possible, whether the fire was caused intentionally, carelessly, or accidentally. The state fire marshal shall make a written report of the investigation to the commissioner.

(d) If the state fire marshal believes that further investigation is necessary, the state fire marshal shall take sworn statements from persons who in his opinion can supply

relevant information and shall have the statements put in writing. The state fire marshal may administer oaths and compel the attendance of witnesses and the production of documents.

(e) If the state fire marshal believes that there is sufficient evidence to charge a person with arson, attempted arson, conspiracy to commit fraud, or another offense related to the matter under investigation, the state fire marshal shall give to the appropriate prosecuting attorney all evidence and relevant information that has been obtained, including the names of witnesses. The state fire marshal shall arrest the person if the person has not been arrested by some other authority. The state fire marshal shall assist in the prosecution of any complaint he files.

(f) The state fire marshal may, in his discretion, conduct or direct the conduct of an investigation in private and may exclude from the place of the investigation persons not needed for the investigation. Witnesses may be separated from each other and not be allowed to communicate with other witnesses until after they have testified.

(g) The state fire marshal may elect to withhold from the public any testimony taken in an investigation under this section.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1989, 71st Leg., ch. 186, § 2, eff. Aug. 28, 1989; Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1172, § 3.04, eff. Sept. 1, 1997.

§ 417.0075. Investigation of Firefighter Fatality

(a) In this section, the term "firefighter" includes an individual who performs fire suppression duties for a governmental entity or volunteer fire department.

(b) If a firefighter dies in the line of duty in connection with a fire-fighting incident in this state, the state fire marshal shall investigate the circumstances surrounding the death of the firefighter, including the cause and origin of the fire, the condition of the structure, and the suppression operation, to determine the factors that may have contributed to the death of the firefighter.

(c) In conducting an investigation under this section, the state fire marshal has the same powers as those granted to the state fire marshal under Section 417.007. The state fire marshal shall coordinate the investigative efforts of local government officials and may enlist established fire service organizations and private entities to assist in the investigation.

(d) The state fire marshal shall release a report concerning an investigation conducted under this section on completion of the investigation.

(e) Not later than October 31 of each year, the state fire marshal shall deliver to the commissioner a detailed report about the findings of each investigation conducted under this section in the preceding year.

(f) Information gathered in an investigation conducted under this section is subject to Section 552.108.

(g) The authority granted to the state fire marshal under this section shall not limit in any way the authority of the county or municipal fire marshal to conduct the county or municipal fire marshal's own investigation into the death of a firefighter within the county or municipal fire marshal's jurisdiction.

Added by Acts 2001, 77th Leg., ch. 846, § 1, eff. Sept. 1, 2001.

§ 417.008. Right of Entry; Examination and Correction of Dangerous Conditions

(a) On the complaint of any person, the state fire marshal, at any reasonable time, is entitled to enter any building or premises in the state.

(b) The state fire marshal shall enter and is entitled, at any time, to enter any mercantile, manufacturing, or public building, place of amusement, or place where public gatherings are held, or any premises belonging to such a building or place, and make a thorough examination.

(c) The state fire marshal shall order the removal of a building or structure or other remedial action if he finds that:

(1) the building or other structure, because of lack of repair, age, dilapidated condition, or other reason, is susceptible to fire and is so located or occupied that fire would endanger persons or property in the building or structure;

(2) a dangerous condition is created by:

(A) an improper arrangement of stoves, ranges, furnaces, or other heating appliances, including chimneys, flues, and pipes with which they are connected, or by their lighting systems or devices; or

(B) the manner of storage of explosives, compounds, petroleum, gasoline, kerosene, dangerous chemicals, vegetable products, ashes, or combustible, flammable, or refuse materials; or

(3) any other condition exists that is dangerous or is liable to cause or promote fire or create danger for fire fighters, occupants, or other buildings or structures.

(d) The occupant or owner of the building or premises shall immediately comply with an order made by the state fire marshal under this section. The state fire marshal may, if necessary, apply to a court of competent jurisdiction for writs or orders necessary to enforce this section, and the court may grant appropriate relief. The state fire marshal is not required to give a bond.

(e) The commissioner may adopt by rule any appropriate standard developed by a nationally recognized standards-making association under which the state fire marshal may enforce this section, except that standards adopted by rule under this subsection do not apply in a geographic area under the jurisdiction of a local government that has adopted fire protection ordinances that apply in the geographic area.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by Acts 1989, 71st Leg., ch. 186, § 2, eff. Aug. 28, 1989; Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991; Acts 1993, 73rd Leg., ch. 912, § 23, eff. Sept. 1, 1993; Acts 1997, 75th Leg., ch. 1172, § 3.05, eff. Sept. 1, 1997.

§ 417.0081. Inspection of Certain State-Owned Buildings

The state fire marshal, at the commissioner's direction, shall periodically inspect public buildings under the charge and control of the General Services Commission.

Added by Acts 1993, 73rd Leg., ch. 684, § 49, eff. Sept. 1, 1993. Amended by Acts 1997, 75th Leg., ch. 1172, § 3.06, eff. Sept. 1, 1997.

§ 417.0082. Protection of Certain State-Owned Buildings Against Fire Hazards

(a) The state fire marshal, under the direction of the commissioner, shall take any action necessary to protect a public building under the charge and control of the General Services Commission, and the building's occupants, against an existing or threatened fire hazard.

(b) The commissioner and the General Services Commission shall make and each adopt by rule a memorandum of understanding that coordinates the agency's duties under this section.

Added by Acts 1993, 73rd Leg., ch. 684, § 52, eff. Sept. 1, 1993. Renumbered from V.T.C.A., Government Code § 419.0081, and amended by Acts 1997, 75th Leg., ch. 1172, § 3.07, eff. Sept. 1, 1997.

§ 417.0083. Fire Suppression Ratings Schedule

(a) The state fire marshal shall perform duties as directed by the commissioner relating to the department's fire suppression ratings schedule.

(b) The state fire marshal may provide technical assistance to paid fire departments, volunteer fire departments, and local governments responding to the use of the fire suppression ratings schedule.

Added by Acts 1991, 72nd Leg., ch. 628, § 4, eff. Sept. 1, 1991. Renumbered from V.T.C.A., Government Code § 419.901 and amended by Acts 1997, 75th Leg., § 3.08, eff. Sept. 1, 1997.

§ 417.009. Delegation of Authority

(a) If for any reason the state fire marshal is unable to make a required investigation in person, the marshal may designate the fire marshal of the city or town where the investigation is to be made or another suitable person to act for the state fire marshal.

(b) The designated person has the same authority with respect to the investigation as is provided by this chapter for the state fire marshal. The designated person is entitled to compensation as provided by the commissioner.

Acts 1987, 70th Leg., ch. 147, § 1, eff. Sept. 1, 1987. Amended by 1, 1997; Acts 1991, 72nd Leg., ch. 628, § 5, eff. Sept. 1, 1991 by Acts 1997, 75th Leg., ch. 1172, § 3.09, eff. Sept.

§ 417.010. Alternate Remedies

The state fire marshal, in the enforcement of a law that is enforced by or through the state fire marshal, may in lieu of canceling, revoking, or suspending a license or certificate of registration impose on the holder of the license or certificate of registration an order directing the holder to do one or more of the following:

(1) cease and desist from a specified activity;

(2) remit to the commissioner within a specified time a monetary forfeiture not to exceed $10,000 for each violation of an applicable law or rule; and

(3) make restitution to a person harmed by the holder's violation of an applicable law or rule.

Added by Acts 1993, 73rd Leg., ch. 912, § 24, eff. Sept. 1, 1993. Amended by Acts 1997, 75th Leg., ch. 1172, § 3.10, eff. Sept. 1, 1997.

Appendix III

Texas Forest Service
Wildland Interface Protocol
&
Wildfire Mitigation Plan for McDonald Observatory

The Texas A &M University System
Texas Forest Service
Urban-Wildland Interface Fire Safety Policy Abstract

The following Urban-Wildland interface fire safety policies are have been developed by the Texas Forest Service, a division of the Texas A&M University System. Many of these elements affect residents and visitors in Jeff Davis County.

- Create a defensible space of at least 30 feet around houses and outbuildings; closely mow lawns and prune trees. Trees should be spaced widely apart.
- Establish fuel breaks along roadways and between buildings and fields or woodlands.
- Keep mufflers and spark arresters on agricultural equipment in proper working order and watch out for rocks and metal (to avoid sparks resulting from blade contact) when shredding or mowing.
- Monitor hay-baling operations closely, dry hay can ignite within the baler.
- Watch out for sparks when using welding equipment to build fences or repair equipment.
- Avoid driving or parking vehicles in grassy areas where tall, dry grass comes into contact with hot pollution control equipment under vehicles.
- Postpone outdoor burning until area green-ups, check with the local fire marshal to determine if ban on outdoor burning is in effect.
- When debris burning is allowed, establish wide control lines down to bare mineral soil prior to lighting the fire. Burn trash in a burn barrel or other fire-safe receptacle covered with a wire mesh or gird that will help contain burning debris. Stay with the fire until it is out.
- LPG tanks should be far enough away from buildings for valves to be shut off in case of fire. Keep area around the tank clear of flammable vegetation.
- Store gasoline in an approved safety can away from occupied buildings.
- All combustibles such as firewood, wooden picnic tables, boats, stacked lumber, etc. should be kept away from structures.
- Clear roof surfaces and gutters regularly to avoid build-up of flammable materials such as leaves and other debris.
- Remove branches from trees to a height of 15 feet or more.
- In rural areas, clear a fuel break of at least 3 times the fuel length around all structures.
- Assure that building occupants are familiar with exit routes from the building.

Wildfire mitigation plan for
McDonald Observatory
Ft. Davis Texas

The McDonald Observatory property is a 640-acre tract located on Mount Lock. The property has several improvements including observatories, residents, visitor center, maintenance facilities, hotel, and classrooms. These structures are inter-connected by two dead end roads terminating on two separate mountain peaks. In addition to the approximately 100 residents the community has a high student population as well as general tourist visitor ship.

Fuels and Fire Behavior:

The property has three main fuel types. On the east and south aspects fuels are predominantly native grasses with scattered cedar, oaks and pinyon. Anderson fuel models 1 and 2 represent this. Slopes are very steep ranging from 30% to 65%. Fuels in this are will ignite easily and rapid rates of spread can be experienced. Fire intensity can be high but will be of short duration, as fuels will burn out quickly. Localized higher intensities can be experienced in groups of oaks, cedars, and pinyon. On north and west aspects, fuels become heavier and are represented by continuous grass under story with a partially closed to closed canopy of pinyon, cedar, and oak. Anderson fuel models 2, 6, and 9 are represented. Slopes range from a flat grassy plain on the northwest portion of the property to very steep 60% + slopes near the top of the peaks. Fires can ignite easily in the grass types, and under the right conditions can move in to the thick canopy of the tree species. Fire intensities can be very high and fire duration can be long in these heavier fuel types. With the steep slopes and closed canopy the potential exists for torching and crown runs. Triggering points of concern are; relative humidity's below 25%, sustained winds above 10 mph, grasses in a cured state and live woody fuel moistures below 90%.

Interface Areas:

There are several areas of concern on the property. These can be grouped in to three general areas, the main residents area at the lower elevations, the residents and observatories at the upper elevations and the road network. All of these areas have significant interface challenges. The construction materials used in many of the buildings are very receptive to ignition from direct flame contact as well as firebrands and radiant heat. This is true in both the upper and lower areas. Currently a structure risk assessment is being conducted and should continue. This will identify where structures are vulnerable and what specific mitigation actions should be implemented. On completion of the assessment a detailed mitigation plan should be developed for the structures and put in place. In addition to concerns with construction materials the natural fuels in the area pose a threat to the residences and other buildings. This is do in part from the accumulations of grasses next to structures as well as dense volatile canopies in close proximity to structures. Lastly is the concern for high fuel loads along the road network. This is of particular concern on roads that cross the area at mid slope.

Mitigation Recommendations:

There are several mitigation efforts that can be put in place to lesson the risks to the area. An aggressive mowing schedule should be put in place. Grassy areas along roadways and near buildings should be mowed. To make the task more efficient, areas should be mowed after the grasses reach maturity and just before they cure. This will lower the fuel load and make the needed mowing interval longer. Mowing will be a key mitigation effort near the road way and structures on the east and south aspects. A key to protecting individual structures will be in creating defensible space around the structures. A three-zone approach is recommended.

Zone 1- should extend from the edge of the structure out for a distance of 10 feet. Create a none combustible buffer around the structure from the edge of the structure out to three feet. This can be accomplished by using decretive rock or other mulch. This non-combustible strip is intended to prevent fire moving up to the structure and igniting it through direct flame contact. Grass and other vegetation in this area should be kept low and moist. Trees in this area should not have limbs overhanging the structures and should be spaced at least ten feet apart. Lower limbs should be pruned so they are not in contact with surface fuels. Landscaping materials should follow firewise recommendations. For detailed recommendations visit www.firewise.org.

Zone 2- should extend out from zone 1 to a distance of 30 feet. Trees in this area should be on a crown spacing of 8 to 10 feet. Remove all volatile under story brush and prune trees so lower limbs are not in contact with surface fuels.

Zone 3 – should extend out for an additional 30 feet. This area is a transition zone where fuels are modified but the area is blended with the untouched areas. Trees should be spaced on 4 to 6 foot crown spacing. Clumps of trees are ok. Remove 50% of the under story brush in this area the rest can remain for wildlife. An occasional dead wildlife snag can also remain in this area.

These are general guidelines for creating defensible space and can be modified to meet the needs of the homeowner and changing fuel conditions. As structure density increases as in the lower residence areas group defensible space will be of greater benefit.

Lower Residence:

Around all the structures create zones 1 and 2 so the fuels are lessoned through out the community. To the south of the area extend zone 2 recommendations out for a distance of 100 feet in width and the length of the community. See attached map shaded fuel break B. Additionally, make sure there is an out side water hose available for each home that can reach around the entire structure. Inform residents not to store combustible materials next to the home, and to clean roofs, decks, and gutters of derbies at least twice a year.

Upper area:

Create defensible space around structures as outlined above. Insure adequate water supply for this area.

Roadway:

Along the road from the middle Y to the observatory (see map fuel break A):
A shaded fuel break should be created. This will have the area for a distance of 50 feet below the road and 10 feet above the road thinned to Zone 2 recommendations. Cut fuels can be carried down to the road for hauling. Fuels below the road can be cut and dragged down slope out side of the fuel break and loped and scattered. Fuels that are left should be scattered to a height of no more than 24". The intent of this fuel break is to lesson the intensity of an up slope run so it can be stopped at the road prior to it making a run for the upper areas.

General:

In addition to fuels treatment a strong prevention program should be put in place. This will include information programs for the community on fire preparedness and prevention as well as active fire prevention through fire danger postings and if needed restriction on potential ignition sources. IE out door fires, fireworks, etc. Additionally the community may want to make fire prevention and mitigation information available to visitors to the areas through out reach programs at the visitor center. Specific programs can be arranged through the Texas Forest Service.

Thank you for your interest and commitment in making the McDonald Observatory community safer from the threats of destructive wildland fire. We look forward to assisting you with your goal of a Firewise community.

Sincerely:

Bill Davis
Regional Fire Coordinator

Rich Gray
UWI Coordinator

McDonald Observatory
Jeff Davis County
Fire Break A
Fire Break B
County Road
50 Feet Buffer
Fire Breaks
Property Boundary
Produced by the UWI Division of the Texas Forest Service
K. Kilgore UWI/GIS Specialist 512-321-2467
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April 28, 2004

Appendix IV

Section 352, Local Government Code

LOCAL GOVERNMENT CODE - CHAPTER 352

LOCAL GOVERNMENT CODE

CHAPTER 352. COUNTY FIRE PROTECTION

SUBCHAPTER A. PROTECTION OF COUNTY RESIDENTS

§ 352.001. FIRE PROTECTION OF COUNTY RESIDENTS. (a) The commissioners' court of a county may furnish fire protection or fire-fighting equipment to the residents of the county or of an adjoining county who live outside municipalities.

(b) The commissioners' court may:

(1) purchase fire trucks or other fire-fighting equipment;

(2) issue time warrants and levy and collect taxes to pay the principal of and interest on the time warrants as provided by law; and

(3) contract with the governing body of a municipality located within the county or within an adjoining county to use fire trucks or other fire-fighting equipment that belongs to the municipality.

(c) The commissioners' court of a county may contract with an incorporated volunteer fire department that is located within the county to provide fire protection to an area of the county that is located outside the municipalities in the county. The court may pay for that protection from the general fund of the county.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.002. USE OF SURPLUS OR SALVAGE PROPERTY BY VOLUNTEER FIRE DEPARTMENT. (a) In this section:

(1) "Surplus property" means personal property that is in excess of the needs of its owner, that is not required for the owner's foreseeable needs, and that possesses some usefulness for the purpose for which it was intended or for some other purpose.

(2) "Salvage property" means personal property, other than wastepaper, that because of use, time, or accident is so damaged, used, or consumed that it has no value for the purpose for which it was originally intended.

(b) The commissioners' court of a county may contract to supply surplus or salvage property to any incorporated volunteer fire department with which the commissioners court has contracted under Section 352.001.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.003. FIRE PROTECTION IN CERTAIN COUNTIES. (a) For use in protecting bridges, county shops, county warehouses, and other property located outside the municipalities in a county with a population of 350,001 to 449,999, the commissioners court of the county may:

(1) purchase fire trucks and other fire-fighting equipment; and

(2) contract with a centrally located municipality within the county for the operation and maintenance of the equipment.

(b) In a county with a population of less than 20,000 and a property valuation of more than $100 million according to the most recently approved county tax rolls, the commissioners' court of the county may:

(1) contract with the governing bodies of municipalities in the county for the furnishing by the municipalities of fire protection outside the municipalities; and

(2) appropriate funds to pay the municipalities.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.004. AGENCY; LIABILITY. (a) In this section, "furnishing fire protection" includes traveling to or from a fire.

(b) The act of a person who, in carrying out a county's authority to provide fire protection, furnishes fire protection to a county resident who lives outside the municipalities in the county, including the act of a person who is a regular employee or fire fighter of a municipality, is considered to be the act of an agent of the county.

(c) A municipality is not liable for the act of its employee in fighting fires outside the municipality under a contract between the commissioners' court of the county and the governing body of the municipality.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.005. CONTRACTUAL PROVISION OF FIRE-FIGHTING EQUIPMENT OR SERVICES. (a) This section applies to a county with a population of 350,000 or more.

(b) By an order or resolution passed by majority vote, the governing body of a municipality that has a volunteer fire department recognized by the State Board of Insurance may petition the commissioners' court to furnish fire-fighting equipment to the municipality. The commissioners' court may contract with the petitioning governing body to furnish the equipment if the governing body shows that the municipality is eligible to receive the service and benefit of the equipment by compliance with this section.

(c) A group of at least 25 county residents who live in an unincorporated community in the county, who are qualified to vote in a county bond election, and who have organized or will organize within a reasonable time a volunteer fire department recognized by the State Board of Insurance may petition the commissioners court of the county to furnish fire-fighting equipment to the group. The commissioners' court may contract with the petitioning residents to furnish the equipment.

(d) The commissioners' court may provide the fire-fighting equipment for the use and benefit of the petitioner under a contract subject to the conditions that the petitioner shall:

(1) furnish a satisfactory place in which to keep the equipment;

(2) pay all the costs of operating the equipment; and

(3) furnish the personnel necessary to operate the equipment.

(e) The county shall keep the fire-fighting equipment in good working order and make all necessary repairs or replacements. The commissioners' court shall determine if a repair or replacement is necessary and shall require that repair work, including labor and materials, be provided as much as possible by the court's shops that it designates. The commissioners' court may provide the petitioner with at least one emergency unit of fire-fighting equipment to be used while the regular unit is being repaired or replaced.

The commissioners' court may use an available truck or other equipment if it is unable to acquire a new truck or equipment for the purpose of building or equipping the fire-fighting equipment.

(f) The petitioner is responsible for the safekeeping of the fire-fighting equipment and is liable to the county for any loss through theft, or, if the petitioner is a municipality, through negligence by an officer, agent, or employee of the municipality, or, if the petitioner is a group of county residents, through negligence by one of those residents who handles or operates the equipment.

(g) Before a unit of fire-fighting equipment is delivered to a petitioner, the petitioner must post a bond with good and sufficient surety, payable to the county, in an amount fixed by the commissioners' court that does not exceed the initial cost of the unit of fire-fighting equipment. The bond must be conditioned on payment to the county of the amount of the actual loss to each unit of equipment, or part of a unit, that results from theft or negligence for which the petitioner is liable.

(h) The fire-fighting equipment shall remain in the county. The commissioners' court may inspect the equipment at any time and may repossess the equipment for noncompliance with this section by the petitioner.

(i) For the purpose of fighting fires outside the limits of a municipality, the commissioners' court may contract with any municipality in the county for the use of fire-fighting equipment and the use and service of the equipment by the municipal fire department. The contract shall be on the terms and conditions agreed to by the commissioners' court and the governing authority of the municipality. The commissioners court shall pay the costs of the items covered by the contract from the general fund of the
county.

(j) Fire-fighting equipment purchased by a county for the purpose of furnishing equipment under this section is subject to the competitive bidding requirements applicable to other county purchases.

(k) The commissioners' court shall pay the costs of administering this section from the general fund of the county.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.006. SALE OF USED FIRE PROTECTION OR FIRE-FIGHTING EQUIPMENT TO CERTAIN VOLUNTEER FIRE DEPARTMENTS. (a) In this section, " volunteer fire department" means an association that:

(1) operates fire-fighting equipment;

(2) is organized primarily to provide and actively provides fire-fighting services;

(3) does not pay its members compensation other than nominal compensation; and

(4) does not distribute any of its income to its members, officers, or governing body, other than for reimbursement of expenses.

(b) Notwithstanding Subchapter D, Chapter 263, or other law, the commissioners court of a county may sell used fire-fighting equipment, excluding equipment described in Sections 419.040 and 419.041, Government Code, to a volunteer fire department for eight percent of the original purchase value of the equipment if:

(1) the fire protection or fire-fighting equipment is at least 15 years old and met the National Fire Protection Association standards at the original time of purchase; and

(2) the volunteer fire department provides fire protection to an area within the county.

Added by Acts 2003, 78th Leg., ch. 952, § 1, eff. Sept. 1, 2003.

SUBCHAPTER B. COUNTY FIRE MARSHAL

§ 352.011. CREATION OF OFFICE; TERM. (a) The commissioners' court of a county may establish the office of county fire marshal and provide office facilities, equipment, transportation, assistants, and professional services for that office.

(b) The commissioners' court shall establish the term of office for a county fire marshal for a period not to exceed two years.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.012. QUALIFICATIONS FOR OFFICE. (a) To qualify for office, the county fire marshal must take the oath prescribed by the constitution of this state and post a bond as required by the commissioners court conditioned that the marshal will faithfully and strictly perform the duties of the office.

(b) The county fire marshal may not be directly or indirectly interested in the sale of fire-fighting equipment and may not be engaged in any type of fire insurance business.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.013. INVESTIGATION OF FIRES. (a) The county fire marshal shall:

(1) investigate the cause, origin, and circumstances of fires that occur within the county but outside the municipalities in the county and that destroy or damage property or cause injury; and

(2) determine whether a fire was the result of negligent or intentional conduct.

(b) The commissioners' court of a county, with the advice of the county fire marshal, shall adopt rules and procedures for determining which fires warrant investigation by the county fire marshal. The county fire marshal shall begin an investigation within 24 hours after the receipt of information regarding a fire that warrants investigation under commissioners' court rules and procedures. The 24-hour period does not include a Sunday.

(c) In the performance of official duties, the county fire marshal, at any time of day, may enter and examine a structure where a fire has occurred and may examine adjacent premises.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 2003, 78th Leg., ch. 371, § 1, eff. Sept. 1, 2003.

§ 352.014. RECORD OF INVESTIGATION. The county fire marshal shall keep a record of each fire that the marshal is required to investigate. The record must include the facts, statistics, and circumstances determined by the investigation, including the origin of the fire and the estimated amount of the loss. Each fire department and state or local agency that provides emergency medical services must submit reports requested by the county fire marshal in a timely manner.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 1989, 71st Leg., ch. 1248, § 64, eff. Sept. 1, 1989; Acts 2003, 78th Leg., ch. 371, § 1, eff. Sept. 1, 2003.

§ 352.015. ARSON INVESTIGATION. (a) If the county fire marshal determines that further investigation of a fire or of an attempt to set a fire is necessary, the marshal may:

(1) subpoena witnesses to testify regarding the fire or attempt;

(2) administer oaths to the witnesses;

(3) take and preserve written statements, affidavits, and depositions; and

(4) require the production of an instrument that is pertinent to the investigation.

(b) The county fire marshal shall file in a court of competent jurisdiction a complaint charging arson, attempted arson, conspiracy to defraud, or any other crime against a person the marshal believes to be guilty.

(c) The county fire marshal shall file charges under Section 352.021 in a court of competent jurisdiction against a witness who refuses to cooperate with the investigation.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.016. INSPECTION OR REVIEW OF PLAN FOR FIRE OR LIFE SAFETY HAZARDS. (a) In this section, "fire or life safety hazard" means any condition that endangers the safety of a structure or its occupants and promotes or causes fire or combustion, including:

(1) the presence of a flammable substance;

(2) a dangerous or dilapidated wall, ceiling, or other structural element;

(3) improper electrical components, heating, or other building services or facilities;

(4) the presence of a dangerous chimney, flue, pipe, main, or stove, or of dangerous wiring;

(5) dangerous storage, including storage or use of hazardous substances; or

(6) inappropriate means of egress, fire protection, or other fire-related safeguard.

(b) In the interest of safety and fire prevention, the county fire marshal may inspect for fire or life safety hazards any structure, appurtenance, fixture, or real property located within 500 feet of a structure, appurtenance, or fixture. The marshal shall inspect a structure for fire or life safety hazards if called

on to do so. In the absence of a county fire code, the county fire marshal may conduct an inspection using any nationally recognized code or standard adopted by the state. If

the marshal determines the presence of a fire or life safety hazard, the marshal may order the owner or occupant of the premises to correct the hazardous situation. If ordered to do so, an owner or occupant shall correct the hazardous situation in accordance with the order.

(b-1) In the interest of safety and fire prevention, the county fire marshal shall, if required, and may, if requested, review the plans of a business, single-family residence, multi-family dwelling, or commercial property for fire or life safety hazards.

(c) The commissioners' court by order may authorize the county fire marshal to charge a fee to the owner of a business, a multi-family dwelling, or commercial property for a plan review or inspection conducted under this section in a reasonable amount determined by the commissioners court to cover the cost of the plan review or inspection.

(d) The commissioners court by order may authorize the county fire marshal to charge a fee to the owner of a single-family residence for a plan review or inspection conducted under this section in a reasonable amount determined by the commissioners court to cover the cost of the plan review or inspection, if the plan review or inspection is requested by the owner of the property.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 1989, 71st Leg., ch. 358, § 1, eff. June 14, 1989; Acts 1989, 71st Leg., ch. 760, § 1, eff. Aug. 28, 1989; Acts 1991, 72nd Leg., ch. 851, § 1, eff. Sept. 1, 1991; Acts 2003, 78th Leg., ch. 371, § 1, eff. Sept. 1, 2003.

§ 352.017. PRIVACY OF EXAMINATIONS; SERVICE OF PROCESS. (a) In a proceeding under this subchapter, the county fire marshal may:

(1) conduct an investigation or examination in private;

(2) exclude a person who is not under examination; and

(3) separate witnesses from each other until each witness is examined.

(b) Service of process required by this subchapter shall be made by a peace officer and shall be signed by the county fire marshal or the fire marshal's deputy.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 2003, 78th Leg., ch. 371, § 2, eff. Sept. 1, 2003.

§ 352.018. EFFECT ON CIVIL ACTIONS. (a) An action taken by a county fire marshal in the investigation of a fire does not affect the rights of a policyholder or of any company regarding a loss caused by the fire.

(b) The result of an investigation by the county fire marshal of a fire may not be admitted in evidence in the trial of a civil action brought under the insurance policy.

(c) The statement of an insurance company, the company's officers, agents, or adjusters, or of a policyholder or the policyholder's representative, that is made to the county fire marshal or his representative with respect to the origin or cause or supposed origin or cause of the fire may not be admitted in evidence in or made the basis of a civil action for damages.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.019. COOPERATION WITH OTHER FIRE PROTECTION AGENCIES. (a) The county fire marshal shall enforce all state and county regulations that relate to fires, explosions, or damages of any kind caused by a fire or explosion.

(b) The county fire marshal shall coordinate the work of the various fire-fighting and fire prevention units in the county. On request, the county fire marshal may assist a rural fire prevention district or emergency services district located wholly or partially in the county to accomplish its powers and duties.

(b-1) If the commissioners' court establishes procedures for firefighter certification under Subsection (b), the commissioners' court must ensure that the procedures are at least as stringent as the minimum qualifications set by the Texas Commission on Fire Protection under Section 419.032, Government Code. This subsection does not apply to a volunteer firefighter as defined by Section 419.001, Government Code.

(c) The county fire marshal or the county fire marshal's designee may perform as the incident commander in a major event if the incident commander of the responsible fire department consents. The county fire marshal may not enforce orders and decrees within a municipality in the county unless specifically required to do so by interlocal agreement and may act in a cooperative and advisory capacity there only on request.

(d) The county fire marshal shall cooperate with the state fire marshal to conduct fire prevention and fire-fighting activities or postfire investigations. The county fire marshal shall aid or conduct an investigation in a municipality if requested by the state fire marshal, the municipality, or the fire chief of the municipality.

(e) A county commissioner's court may authorize the fire marshal to provide training programs and operate a training facility for the various fire-fighting and fire prevention units in the county. The county may establish and collect a reasonable fee for the training programs, use of the facility, and services provided by the facility.

(f) The commissioners' court and county fire marshal may jointly adopt voluntary guidelines, including voluntary funding guidelines, for fire departments located in unincorporated areas of the county, including fire departments located within rural fire prevention districts or emergency services districts, regarding participation in the Texas Fire Incident Reporting System (TXFIRS) or the National Fire Incident Reporting System (NFIRS), or both.

The commissioners' court may establish model procedures for voluntary use by the various fire departments in the county with respect to:

(1) emergency incident management;
(2) firefighter certification; and
(3) automatic mutual aid.

(g) If a commissioner's court authorizes a fire marshal to provide training programs and operate a training facility under Subsection (e), the fire marshal must ensure that the training programs and operation of the training facility are at least as stringent as the minimum qualifications set by the Texas Commission on Fire Protection under Section 419.032, Government Code. This subsection does not apply to a volunteer firefighter as defined by Section 419.001, Government Code.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 2003, 78th Leg., ch. 371, § 3, eff. Sept. 1, 2003.

§ 352.020. LIABILITY. The county fire marshal and the assistants and employees of the office are not liable in damages for any acts or omissions in the performance of their duties except in cases of gross negligence or willful malfeasance.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

§ 352.021. CONTEMPT OF FIRE INVESTIGATION PROCEEDINGS. (a) A person commits an offense if the person is a witness in connection with an investigation under Section 352.015 and refuses to be sworn, refuses to appear and testify, or fails and refuses to produce before the county fire marshal any book, paper, or other document relating to any matter under investigation if called on by the marshal to do so.

(b) An offense under this section is a misdemeanor punishable by a fine of not more than $2,000.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 2003, 78th Leg., ch. 371, § 4, eff. Sept. 1, 2003.

§ 352.022. PENALTY FOR FAILURE TO COMPLY WITH ORDER. An owner or occupant who is subject to an order issued under Section 352.016 commits an offense if that person fails to comply with the order. Each refusal to comply is a separate offense. The offense is a Class B misdemeanor unless it is shown on the trial of the offense that the defendant has been previously convicted two or more times under this section, in which event the offense is a state jail felony.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987. Amended by Acts 2003, 78th Leg., ch. 371, § 5, eff. Sept. 1, 2003.

§ 352.023. EXEMPTION. This subchapter does not apply to a state agency that is authorized to prevent and extinguish forest and grass fires.

Acts 1987, 70th Leg., ch. 149, § 1, eff. Sept. 1, 1987.

SUBCHAPTER C. FIREWORKS

§ 352.051. REGULATION OF RESTRICTED FIREWORKS. (a) For the purposes of this section the following definitions shall apply:

(1) "Restricted fireworks" means only those items classified under 49 C.F.R. § 173.100(r)(2) (10-1-86 edition), as "skyrockets with sticks" and "missiles with fins".

(2) "Drought conditions" shall mean the existence immediately preceding or during the fireworks season of a long-term deficit of moisture creating atypically severe conditions with increased wildfire occurrence as defined by the Texas Forest Service through the use of the Keetch-Byram Drought Index, or when such index is not available, through a comparable measurement which takes into consideration the burning index, spread component, or ignition component for that particular area.

(b)(1) The Texas Forest Service in the ordinary course of its activities shall determine whether drought conditions, as defined under Subsection (a)(2), exist in all or part of any county requesting such determination. The Texas Forest Service shall make

available the measurement index guidelines that determine whether a particular area is in drought condition. Following any determination that such drought conditions exist, the Texas Forest Service shall notify said county or counties when such drought conditions no longer exist.

(2) The Texas Forest Service shall be allowed to take such donations of equipment or funds as necessary to aid in the carrying out of this section.

(c) Upon a determination under this section that drought conditions exist within all or part of a specified county, the commissioners' court of such county by order may prohibit or restrict the sale or use of restricted fireworks in all or a portion of the unincorporated area of the county where drought conditions have been determined to exist. In addition, during the December fireworks season, the commissioners court of a county by order may restrict or prohibit the sale or use of restricted fireworks in specified areas when conditions on rural acreage in the county not under cultivation for a period of at least 12 months are determined to be extremely hazardous for the danger of fire because of high grass or dry vegetation.

(d) To facilitate compliance with an order adopted under Subsection (c), the order must be adopted before:

(1) June 15 of each year for the Fourth of July fireworks season; and

(2) December 15 of each year for each December fireworks season.

(e) An order issued under this section shall expire upon determination as provided under Subsection (b) that such drought conditions no longer exist.

(f) The county may designate one or more areas of appropriate size and accessibility in the county as safe areas where the use of restricted fireworks is not prohibited. The safe area may be provided by the county, a municipality within the county, or an individual, business, or corporation. A safe area may be designated in and provided in the geographic area of the regulatory jurisdiction of a municipality if the activity conducted in the safe area is authorized by general law or a municipal regulation or ordinance. An area is considered safe if adequate public safety and fire protection services are provided to the area. A county, municipality, individual, business, or corporation
is not liable for injuries or damages resulting from the designation, maintenance, or use of the safe area.

(g) A person selling any type of fireworks, including restricted fireworks, in a county that has adopted an order under Subsection (c) shall, at every location at which the person sells fireworks in the county, provide reasonable notice of the order and reasonable notice of any location designated under Subsection (f) as a safe area.

(h) An affected party is entitled to injunctive relief to prevent the violation or threatened violation of a requirement or prohibition established by an order adopted under this section.

(i) A person commits an offense if the person knowingly or intentionally violates a prohibition established by an order issued under this section. An offense under this subsection is a Class C
misdemeanor.

Added by Acts 1991, 72nd Leg., ch. 865, § 1, eff. Sept. 1, 1991. Amended by Acts 1995, 74th Leg., ch. 500, § 1, eff. Aug. 28, 1995; Acts 1997, 75th Leg., ch. 1399, § 1, eff. Sept. 1, 1997; Acts 1999, 76th Leg., ch. 1244, § 1 to 3, eff. Sept. 1, 1999.

Renumbered from § 240.904 by Acts 2001, 77th Leg., ch. 1420, § 12.004, eff. Sept. 1, 2001.

SUBCHAPTER D. OUTDOOR BURNING

§ 352.081. REGULATION OF OUTDOOR BURNING. (a) In this section, "drought conditions" means the existence of a long-term deficit of moisture creating atypically severe conditions with increased wildfire occurrence as defined by the Texas Forest Service through the use of the Keetch-Byram Drought Index or, when that index is not available, through the use of a comparable measurement that takes into consideration the burning index, spread component, or ignition component for the particular area.

(b) On the request of the commissioners' court of a county, the Texas Forest Service shall determine whether drought conditions exist in all or part of the county. The Texas Forest Service shall make available the measurement index guidelines that determine whether a particular area is in drought condition. Following a determination that drought conditions exist, the Texas Forest Service shall notify the county when drought conditions no longer exist. The Texas Forest Service may accept donations of equipment or funds as necessary to aid the Texas Forest Service in carrying out this section.

(c) The commissioners' court of a county by order may prohibit or restrict outdoor burning in general or outdoor burning of a particular substance in all or part of the unincorporated area of the county if:

(1) drought conditions have been determined to exist as provided by Subsection (b); or

(2) the commissioners' court makes a finding that circumstances present in all or part of the unincorporated area create a public safety hazard that would be exacerbated by outdoor burning.

(d) An order adopted under this section must specify the period during which outdoor burning is prohibited or restricted. The period may not extend beyond the 90th day after the date the order is adopted. A commissioner's court may adopt an order under
this section that takes effect on the expiration of a previous order adopted under this section.

(e) An order adopted under this section expires, as applicable, on the date:

(1) a determination is made under Subsection (b) that drought conditions no longer exist; or

(2) a determination is made by the commissioners' court that the circumstances identified under Subsection (c)(2) no longer exist.

(f) This section does not apply to outdoor burning activities:

(1) related to public health and safety that are authorized by the Texas Natural Resource Conservation Commission for:

(A) firefighter training;

(B) public utility, natural gas pipeline, or mining operations; or

(C) planting or harvesting of agriculture crops; or

(2) that are conducted by a prescribed burn manager certified under Section 153.048, Natural Resources Code, and meet the standards of Section 153.047, Natural Resources Code. (g) Any person is entitled to injunctive relief to prevent the

violation or threatened violation of a prohibition or restriction established by an order adopted under this section. (h) A person commits an offense if the person knowingly or intentionally violates a prohibition or restriction established by an order adopted under this section. An offense under this subsection is a Class C misdemeanor.

Added by Acts 1999, 76th Leg., ch. 1435, § 1, eff. Aug. 30, 1999. Amended by Acts 2001, 77th Leg., ch. 1185, § 1, eff. Sept. 1, 2001. Renumbered from § 240.906 by Acts 2001, 77th Leg., ch. 1420, § 12.004, eff. Sept. 1, 2001.

SUBCHAPTER E. GATED MULTI-UNIT HOUSING PROJECTS

§ 352.111. HOUSING PROJECT SUBJECT TO SUBCHAPTER. This subchapter applies only to a multi-unit housing project located outside municipal boundaries in an area not already subject to municipal regulations regarding vehicular or pedestrian gates.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.112. DEFINITION. In this subchapter, "multi-unit housing project" means an apartment, condominium, or town home project that contains two or more dwelling units.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.113. COUNTY AUTHORITY TO REGULATE VEHICULAR OR PEDESTRIAN GATES TO MULTI-UNIT HOUSING PROJECTS. To assure reasonable access for fire-fighting vehicles and equipment, emergency medical services vehicles, and law enforcement officers, a county may require the owner or the owners association of a multi-unit housing project to comply with this subchapter.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.114. LOCKBOX REQUIREMENTS. (a) Each vehicular gate to the multi-unit housing project must have a lockbox within sight of the gate and in close proximity outside the gate. The lockbox at all times must contain a key, card, or code to open the gate or a key switch or cable mechanism that overrides the key, card, or code that normally opens the gate and allows the gate to be opened manually.

(b) If there are one or more pedestrian gates to the multi-unit housing project and no vehicular gate, at least one pedestrian gate must have a lockbox within sight of the gate and in close proximity outside the gate. The lockbox at all times must contain a key, card, code, key switch, or cable mechanism to open the gate.

(c) If different pedestrian gates are operated by different keys, cards, or codes, the lockbox must contain:

(1) each key, card, or code, properly labeled for its respective gate; or

(2) a single master key, card, or code or a key switch or cable mechanism that will open every gate.

(d) Access to a lockbox required by this section shall be limited to a person or agency providing fire-fighting or emergency medical services or law enforcement for the county.

(e) If a gate is powered by electricity, it must be possible to open the gate without a key, card, code, or key switch if the gate loses electrical power.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.115. ADDITIONAL ACCESSIBILITY REQUIREMENTS. (a) In a multi-unit housing project that has one or more vehicular gates:

(1) at least one vehicular gate must be wide enough for fire-fighting vehicles, fire-fighting equipment, emergency medical services vehicles, or law enforcement vehicles to enter; and

(2) at least one driveway apron or entrance from the public right-of-way must be free of permanent obstacles that might impede entry by a vehicle or equipment listed in Subdivision (1).

(b) The county fire marshal or other authority shall waive the vehicular gate width requirements of Subsection (a) for a multi-unit housing project completed before January 1, 2002, if the requirements cannot readily be met because of space limitations or excessive cost. For purposes of this subsection, $6,000 per entrance based on the value of the dollar on January 1, 2000, is considered an excessive cost for expanding gate width and achieving an obstacle-free driveway apron or entrance.

(c) A pedestrian gate in a multi-unit housing project must be located so as to provide firefighters, law enforcement officers, and other emergency personnel reasonable access to each building.

(d) This section does not require a multi-unit housing project to have a vehicular gate or a pedestrian gate.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.116. BUILDING IDENTIFICATION. A county may require each residential building in a multi-unit housing project to have a number or letter in a contrasting color on the side of the building and placed so that the number or letter can be seen from the vehicular driving areas by a responding emergency agency.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.117. COUNTY AUTHORITY TO REQUIRE PERMIT. (a) A county may require the owner or the owners association of a multi-unit housing project to obtain a permit from the county fire marshal or other authority with fire-fighting jurisdiction in the county to ensure compliance with this subchapter.

(b) A permit may be issued under this subchapter only if the requirements of this subchapter and standards adopted under this subchapter are met.

(c) To pay for the cost of administering the permits, the county may collect a one-time fee not to exceed $50 from each person to whom a permit is issued under this section.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.118. SUSPENSION OR REVOCATION OF LICENSE. (a) A permit issued under this subchapter may be suspended or revoked for violation of this subchapter or a regulation adopted under this subchapter after notice and a hearing on a complaint by the county fire marshal or other authority having jurisdiction for fire fighting, emergency medical service, or law enforcement. The hearing shall be held by the commissioners' court of the county or by a person or entity designated by the commissioners' court.

(b) A permit may be reinstated or a new permit issued if each violation that is a ground of the complaint is corrected within the time prescribed by the entity that holds the hearing.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.119. LIMITATION ON SPECIFIC COUNTY STANDARDS. (a) A county may not impose under this subchapter specific standards relating to vehicular gate widths,
obstacle-free driveway aprons or entrances, pedestrian gate locations, or building numbers that exceed the requirements for new multi-unit housing projects contained in the municipal ordinances of:

(1) the municipality within whose extraterritorial jurisdiction the multi-unit housing project is located; or

(2) the municipality nearest, on a straight line, to the boundary of the multi-unit housing project, if the project is not within the extraterritorial jurisdiction of a municipality.

(b) The county fire marshal or other authority with fire-fighting jurisdiction may adopt reasonable standards relating to vehicular gate width, obstacle-free driveway aprons or entrances, pedestrian gate locations, and building numbers if the appropriate municipality described by Subsection (a) has not adopted applicable standards.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

§ 352.120. OFFENSE. A person who violates this subchapter or a regulation adopted under this subchapter in a county that requires compliance with this subchapter under Section 352.113 commits an offense. An offense under this section is a Class C misdemeanor.

Added by Acts 2001, 77th Leg., ch. 111, § 1, eff. Sept. 1, 2001.

Appendix V

Chapter 661, Government Code

GOVERNMENT CODE

CHAPTER 661. LEAVE

§ 661.905. VOLUNTEER FIREFIGHTERS AND EMERGENCY MEDICAL SERVICES VOLUNTEERS. (a) In this section, "emergency medical services volunteer" has the meaning assigned by Section 773.003, Health and Safety Code.

(b) A state employee who is a volunteer firefighter or an emergency medical services volunteer is entitled to a leave of absence without a deduction in salary to attend fire service or emergency medical services training conducted by a state agency or institution of higher education. Leave without a deduction in salary under this subsection may not exceed five working days in a fiscal year.

(c) A state agency or institution of higher education may grant leave without a deduction in salary to a volunteer firefighter or an emergency medical services volunteer for the purpose of allowing the firefighter or emergency medical services volunteer to respond to emergency fire or medical situations if the agency or institution has an established policy for granting that leave.

Added by Acts 1999, 76th Leg., ch. 279, § 19, eff. Sept. 1, 1999. Amended by Acts 2001, 77th Leg., ch. 343, § 1, eff. Sept. 1, 2001.

Appendix VI

Far West (Texas) Regional Water Planning Group

Far West Texas
Regional Water Plan

PREFACE

Water is vital to our very existence, for without it, society ceases to function and civil society ceases to exist. The realization of the importance of water is of particular concern in times of diminished supply. Because of problems caused by drought and a rapidly growing population, the State Legislature has sought for many years to insure that there will always be a safe and sufficient supply of water to meet future needs in Texas. At the direction of the Legislature, the Texas Water Development Board (TWDB) has developed a number of statewide water plans. None of these plans, however, have been properly utilized due primarily to the lack of local participation.

Because of severe drought conditions in 1995 and 1996 several communities around the state experienced dangerously low water supplies, and the agricultural industry suffered extreme economic losses. Legislators became keenly aware that the state was unprepared for severe drought conditions. Texas was one of only three western states without a drought plan. With a population projected to double in the next 50 years and the possibility of insufficient water supplies to meet the growing demand, State Legislators took a bold move during the 75th Regular Legislative Session by enacting Senate Bill 1.

Senate Bill 1 (SB 1), the comprehensive water resource planning, management, and development bill, has been described as the most comprehensive revision of Texas water law in the last 30 years. As stated in SB 1, the goal of the State Water Plan is to *provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions, in order that sufficient water will be available at a reasonable cost to insure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of the entire state.*

The TWDB, in coordination with the Texas Natural Resource Conservation Commission (TNRCC) and the Texas Parks and Wildlife Department (TPWD), was charged with providing oversight in the establishment of regional plans developed through local involvement.

The state was divided into 16 regions and voluntary regional planning group members were selected to represent the following water-use categories:

- Agricultural
- Counties
- Electric Generating Utilities
- Environmental
- Industries
- Municipalities
- River Authorities
- Public
- Small Business
- Water Districts

- Water Utilities
- Other categories determined to be appropriate by the regional planning group

Each of the 16 designated regions was to engage in a "bottoms up" approach to developing a 50-year, drought-contingency, water-supply management plan, based on consensus.

The plan provides an evaluation of current and future water demands for all water-use categories, and evaluates water supplies available during drought-of-record conditions to meet those demands. Where future water demands exceed available supplies, alternative strategies are considered to meet the potential water shortages. Upon completion of the regional plans, the TWDB will aggregate the 16 individual plans into a single state plan. Each unique regional plan is required to be developed from a common task outline and must:

- recognize existing state laws and regulations;
- recognize existing water rights and contracts;
- consider existing plans;
- consider water-supply needs for all water-use categories; and
- come to agreement with adjacent regions on water use across regional boundaries.

The Far West Texas Region is made up of Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, Presidio and Terrell Counties. These counties claim some of the most impressive geography and scenic beauty in Texas. This region is home to the Guadalupe Mountains National Park, Big Bend National Park and the contiguous Big Bend Ranch State Park. El Paso, the largest city in the region, is also the nation's largest city on the U.S.-Mexico border. Ciudad Juarez, with a population of 1.5 million, is located across the Rio Grande from El Paso, and shares the same water sources with El Paso.

All seven counties that comprise the planning region lie solely within the Rio Grande River Basin. The Rio Grande not only forms the border between the two countries but is also a vital water-supply source for communities, industries, and agricultural activities adjacent to the river. Water supply in the Rio Grande is controlled primarily by the operations of the Rio Grande Project, which was developed to supply agricultural water in southern New Mexico and West Texas. Other than along the Rio Grande corridor, the region is dependent on ground-water resources derived from several aquifer systems.

Work on the Far West Texas Regional Water Plan was approached along two parallel tracks; (1) an urban track representing the metropolitan portion of El Paso County, and (2) a rural track representing the other six rural counties and the eastern portion of El Paso County. The Regional Planning Group members were appointed evenly to each track team such that each track team was composed of members residing in both areas. Each track team was responsible
for the development of the plan with oversight of tasks and concerns specific to its area. Work developed along the two track approach was integrated at appropriate intervals to ensure a unified, coherent regional plan.

Because of its large population and water demand, as well as the breadth of its previous water planning efforts, the urban track team focused on tasks pertinent to the El Paso County metropolitan area. Key to this track team's planning effort was El Paso's role as the designated regional water supply planner for El Paso County. The rural track focused on issues relevant to

the predominantly rural nature of the remaining counties that characteristically contain small communities located far apart. The distance between cities in the six rural counties, and the disparity between rural and urban interests, are factors that hamper the ability of the region to solve water-supply problems with regional solutions.

The planning decisions and recommendations made in the regional plan will have far reaching and long-lasting social, economic, and political repercussions on each community involved in this planning effort and on individuals throughout the region. Therefore, involvement of the public was accepted initially as a key factor in the success and acceptance of the plan.

Open discussion and citizen input was encouraged throughout the planning process and helped planners develop a plan that reflects community values and concerns. Some members of the public participated almost as non-voting members. To insure public involvement, notice of all regional planning group and track meetings was posted in advance and all meetings were held in publicly accessible locations. Special public meetings were held to convey information on project progress and to gather input on the development of the plan. Prior to submittal of the initially prepared plan to the TWDB, a copy of the regional water plan was provided for inspection in the county clerk's office and in at least one library in each county. Following public inspection of the initially prepared plan, a public meeting was conducted to present results of the planning process and gather public input and comments. To provide a common public access point, an internet web site (**http://24.28.171.253/rio/fwtwpgsplash.htm**) was designed and implemented that contains timely information that includes names of planning group members, bylaws, meeting schedules, agendas, minutes, and important documents.

It is important to understand that this water-planning document is principally a drought contingency plan. As such, the 50-year plan basically recognizes those entities and water-use categories where, under drought-of-record conditions, future demands may exceed the current ability to provide water supplies. These conditions may be the result of insufficient supplies, or could be the lack of necessary infrastructure to treat and deliver water. Water supply and demand volumes reported in the tables are based strictly on these drought-of-record and current infrastructure conditions and, thus, should not be interpreted as expected volumes under average climatic conditions.

The Far West Texas Regional Water Plan consists of the following:

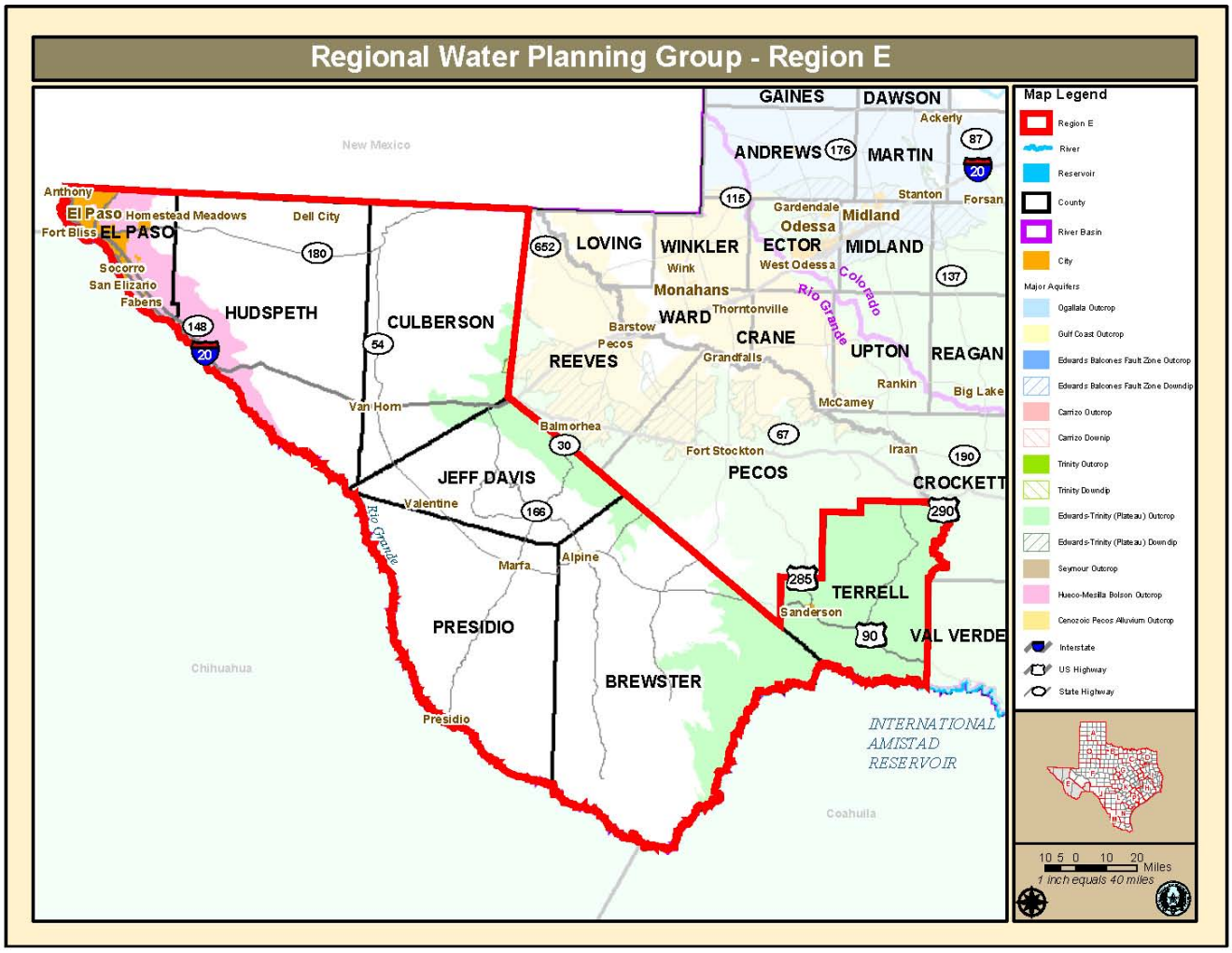
- Regional overview describing relevant water issues
- Current and projected population and water demand
- Evaluation of currently available water supplies
- Determination of water needs based on a demand-supply comparison
- Water management strategies to meet water shortages
- Water management recommendations

The regional water plan presented in this document contains no regulatory mandates, but rather is a set of recommendations based on understanding and compromise. The plan assumes 50-year population and water-demand trends that likely will change over time.

Therefore, the completion and adoption of this plan is only the first generation of a regional water management planning process that must be revised on a continuing basis; SB 1 specifies

that regional plans are to be revised and readopted at 5-year intervals. This plan anticipates more frequent, even continual, review.

Living in an arid climate has conditioned the citizens of this region to regard water planning in a more serious manner than does much of the remainder of the state. Limited water supply options create challenges that will be met by a dedication to the development of innovative solutions.



Map created by C. Archuleta, Texas Water Development Board, Data Resources Division, GIS Section. L:\projects\RIO\TS\carchuleta\Maps_ArcGIS\MXDs

Members of the
Far West Texas Water Planning Group

Executive Committee

Office	Member
Chair	Tom Beard P.O. Box 668 Alpine, TX 79831 Phone: (915) 364-2244 Fax: (915) 364-2446 Email: tombeard@leoncitaranch.com
Vice-Chair	Ed Archuleta
Secretary	Elza Cushing
At-Large	Edd Fifer
At-Large	Tom Brady
Alternate	Becky Brewster
Alternate	Paige Waggoner

Offices

Office	Entity
Administrative	Rio Grande Council of Governments 1100 North Stanton, Suite 610 El Paso, TX 79902 Phone: (915) 533-0998 Fax: (915) 532-9385
Political Subdivision	Rio Grande Council of Governments

Note:
Administrative Office manages records.
Political Subdivision is the entity eligible to apply for State grant funds.

Voting Membership

Interest	Name	Entity	County (Location of Interest)
Public	Elza Cushing	N.A.	El Paso
	Teodora Trujillo	El Paso Inter-religious Sponsoring Organization	El Paso
Counties	Teresa Todd	Presidio County	Presidio
	Kenn Norris	Terrell County Commissioners Court	Terrell
	Jesse Acosta	El Paso County	El Paso
Municipalities	Becky Brewster	Town of Van Horn	Culberson
	Ed Archuleta	El Paso PSB	El Paso
	Ed Drusina	City of El Paso	El Paso
Industries	Howard Goldberg	Supreme Laundry & Cleaners	El Paso
Agricultural	Tom Beard	Rancher	Brewster
Environmental	Thomas Brady	U.T. El Paso	El Paso
Small Businesses	Ralph Meriwether	Private contractor	Brewster
Elec. Generating Utilities	Jim Voorheis	El Paso Electric	El Paso and 2 other counties in region
River Authorities	None in region		
Water Districts	Jim Ed Miller	Hudspeth County Reclamation District	Hudspeth
	Edd Fifer	El Paso County WID #1	El Paso
Water Utilities	Janet Adams	Ft. Davis WSC	Jeff Davis
Groundwater Conservation Districts	Randy Barker	Hudspeth Co. UWCD#1	Hudspeth
	Albert Miller	Jeff Davis Co. UWCD	Jeff Davis
Travel/Tourism	Michael Davidson	Big Bend Tourism Council	Brewster
Economic Development	Paige Waggoner	El Paso International Airport	El Paso
Building/Real Estate	David Etzold	Etzold & Co.	El Paso
Other(s)	Jerry Agan	County Judge, Presidio County	Presidio
	Loretta Akers	State Senator Shapleigh's Office, El Paso	El Paso

Non-Voting Membership

Name	Entity
Raymond Bader	Texas Agricultural Extension Service
Robert Flores	Texas Water Development Board
Filiberto Cortez	Bureau of Reclamation
Mary Helen Follingstad	New Mexico Interstate Stream Commission
Jeff Frank	Texas General Land Office
Ron Glover	Hunt NR, Ltd.
Otila Gonzalez	Plateau WPG (J)
Mike Hobson	Texas Parks and Wildlife Department
Ari Michelsen	Texas A & M Agricultural Research Center at El Paso
Adriana Resendez	International Boundary & Water Commission, Mexican Section (CILA)
Caroline Runge	Region F RWPG
Jack Stallings	Texas Department of Agriculture
Jim Stefanov	International Boundary & Water Commission, American Section
Alberto J. Torres P.	Ciudad Juarez

For more information about this region contact:
Robert Flores – TWDB Regional Planner
(512) 936-2343
robert.flores@twdb.state.tx.us
Or
Barbara Kauffman – RGCOG Project Manager
(915) 533-0998, ext. 121
b.kauffman@riocog.org