NOTICE

The United States Government and the State of Texas do not endorse products or manufacturers. Trade or manufacturers’ names appear herein solely because they are considered essential to the object of this report.
Texas saw a record-setting number of wildfires in 2010 and 2011. Personnel from the Texas Department of Transportation (TxDOT) are often called upon to provide support in responding to wildfires, and the number of requests has increased dramatically over the past few years. TxDOT developed a draft Guidance Document for Wildfire Response, but personnel are frequently asked to perform services not specifically addressed in that document. TxDOT took advantage of the recent increase in wildfire response experiences to document the lessons learned from wildfire events and study the role of TxDOT in the mitigation, containment, and response to wildfires. The objective of this research project was to develop a protocol to help TxDOT effectively respond to wildfire situations that may occur in the state, and to present the protocol in the form of “Best Practices” based on information gathered from many sources both within TxDOT and from agencies outside the department. Using the information collected, researchers developed a training course for TxDOT personnel who deal with wildfire situations. A pilot course was presented to the Project Monitoring Committee, and based on feedback from that pilot course, six training modules were developed to present as training for TxDOT supervisors, assistants, and district safety coordinators. A significant and repeated finding is that TxDOT employees are not expected to fight fires directly and have no such responsibilities. Emphasis on employee safety is paramount.

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**Abstract**

Texas saw a record-setting number of wildfires in 2010 and 2011. Personnel from the Texas Department of Transportation (TxDOT) are often called upon to provide support in responding to wildfires, and the number of requests has increased dramatically over the past few years. TxDOT developed a draft Guidance Document for Wildfire Response, but personnel are frequently asked to perform services not specifically addressed in that document. TxDOT took advantage of the recent increase in wildfire response experiences to document the lessons learned from wildfire events and study the role of TxDOT in the mitigation, containment, and response to wildfires. The objective of this research project was to develop a protocol to help TxDOT effectively respond to wildfire situations that may occur in the state, and to present the protocol in the form of “Best Practices” based on information gathered from many sources both within TxDOT and from agencies outside the department. Using the information collected, researchers developed a training course for TxDOT personnel who deal with wildfire situations. A pilot course was presented to the Project Monitoring Committee, and based on feedback from that pilot course, six training modules were developed to present as training for TxDOT supervisors, assistants, and district safety coordinators. A significant and repeated finding is that TxDOT employees are not expected to fight fires directly and have no such responsibilities. Emphasis on employee safety is paramount.
Best Practices for TxDOT on Handling Wildfires

by

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Research Report Number 0-6735-2
Research Project Number 0-6735

Texas Tech Center for Multidisciplinary Research in Transportation

Texas Tech University

Performed in Cooperation with the
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# Table of Contents

**Disclaimers** ............................................................................................................................................... v  
**Table of Contents** ........................................................................................................................................ vi  
**List of Figures** ........................................................................................................................................... vii  

**Chapter 1 Introduction and Project Summary** ......................................................................................... 1  
  Summary of Interim Report ................................................................................................................................. 1  
  Changes in Project ............................................................................................................................................. 3  

**Chapter 2 Discussion of Pilot Workshop** ................................................................................................. 5  

**Chapter 3 Training Workshop Modules** .................................................................................................. 7  
  Introduction ....................................................................................................................................................... 8  
  Organization and Communication ................................................................................................................... 10  
  Resources and Equipment ............................................................................................................................... 12  
  Safety ............................................................................................................................................................. 14  
  Documentation and Data Collection ............................................................................................................. 16  
  Training Programs .......................................................................................................................................... 18  

**Chapter 4 Conclusions and Recommendations** .................................................................................... 21  
  Conclusions ...................................................................................................................................................... 21  
  Recommended Best Practices ......................................................................................................................... 21  

**References** .................................................................................................................................................... 25  

**Appendices**  
  Appendix A. Presentation for Pilot Workshop .......................................................................................... A-1  
  Appendix B. Handouts for Pilot Workshop ................................................................................................. B-1  
  Appendix C. Training Modules .................................................................................................................. C-1
List of Figures

Figure 1. Fire Detections for First to 220th Day of 2010 and 2011.......................................................1
CHAPTER ONE
INTRODUCTION AND PROJECT SUMMARY

Summary of Interim Report

Texas saw a record-setting number of wildfires in 2010 and 2011. The maps shown in Figure 1 compare locations where fire ignitions were detected in 2010 and 2011.

Figure 1. Fire Detections for First to 220th Day of 2010 and 2011
Personnel from the Texas Department of Transportation (TxDOT) are often called upon to provide support in responding to wildfires. In a typical year, the requests for TxDOT support are relatively few. However, the number of requests has increased dramatically over the past few years. TxDOT developed a draft Guidance Document for Wildfire Response, but personnel are frequently asked to perform services not specifically addressed in that document. TxDOT decided to take advantage of the recent increase in wildfire response experiences to document the lessons learned from wildfire events and study the role of TxDOT in the mitigation, containment, and response to wildfires. The objective of this research project was to develop a protocol to help TxDOT effectively respond to wildfire situations that may occur in the state, and to present the protocol in the form of “Best Practices” based on information gathered from many sources both within TxDOT and from agencies outside the department. Using the information collected, researchers developed a training course for TxDOT personnel who deal with wildfire situations and will conduct four regional training workshops.

To accomplish the research objectives, the research team reviewed literature pertinent to wildfire response. Researchers reviewed a number of manuals and documents pertaining to the emergency operations associated with wildfire response in Texas. Literature review included the following:

**The Texas Administrative Code (The State of Texas, 2011),** which stipulates the responsibilities and the authority of state and local government agencies to effectively respond to emergency situations.

**Chapter 418 (Emergency Management) of the Texas Government Code (The State of Texas 2011),** which requires that emergency management in the state be conducted according to an organized government structure.

**Chapter 421 (Homeland Security) of the Texas Government Code,** which requires that the Governor shall direct homeland security in the state and develop a statewide homeland security strategy.

Researchers also met and met with and interviewed TxDOT personnel from several districts to gather information on their experience with wildfire response, as well as with personnel from
TxDOT Maintenance Division Emergency Management Coordinator’s Office and outside agencies including the Texas Forest Service (TFS), Texas Department of Public Safety (DPS), the National Weather Service (NWS), Texas Parks and Wildlife Department and local government agencies. The interim report, 0-6735-1, presented information collected during Task 1 of the research.

**Changes in Project**

Scheduling the four regional workshops encountered difficulties because of training facilities availability and conflicts in personnel schedules. Other TxDOT personnel were added to the research management team and after reviewing the research findings determined the regional workshops should be enhanced to become a recognized training course for TxDOT employees. The Project Manager suggested the training follow a format similar to the one used for the implementation project5-9044, “Winter Weather Management and Operations Curriculum Development and Instruction.” Accordingly, the research team modified the five sections developed for the Pilot Workshop into six training modules included in the appendices and with the following titles:

- Module 1. Introduction
- Module 2. Organization and Communication
- Module 3. Resources and Equipment
- Module 4. Safety
- Module 5. Documentation and Data Collection
- Module 6. Training Programs
CHAPTER TWO
DISCUSSION OF PILOT WORKSHOP

The original intent of the research project was to collect information related to handling wildfires in Texas by reviewing literature relevant to TxDOT and other organization involvement, interviewing those organizations including personnel from ten TxDOT districts, and presenting four regional workshops on findings from the research project. Once presentation materials were developed for the workshops, a pilot workshop was presented to the Project Monitoring Committee (PMC) for their review and approval. The research team presented the workshop materials in the following sections:

Section 1. Overview of Research Project
Section 2. What We Learned
Section 3. Emergency Management in Texas Tech University
Section 4. Resources for Emergency Response
Section 5. Best Practices.

Presentation slides were printed and given to the 30 attendees along with a variety of handout materials. Comments and suggestions from the PMC were recorded from discussions during the presentations as well as written comments collected at the conclusion of the Pilot Workshop. The PowerPoint Slides used in the pilot workshop, along with the handouts are presented in Appendix A of this report.
CHAPTER THREE
TRAINING WORKSHOP MODULES

Scheduling the four regional workshops encountered difficulties because of training facilities’ availability and conflicts in personnel schedules. Other TxDOT personnel were added to the research management team and after reviewing the research findings determined the regional workshops should be enhanced to become a recognized training course for TxDOT employees. The Project Manager suggested the training format follow a format similar to the one used for the implementation project 5-9044, “Winter Weather Management and Operations Curriculum Development and Instruction.” Accordingly, the research team modified the five sections developed for the Pilot Workshop into six training modules included in the appendices and with the following titles:

Module 1. Introduction
Module 2. Organization and Communication
Module 3. Resources and Equipment
Module 4. Safety
Module 5. Documentation and Data Collection
Module 6. Training Programs

These modules are designed to allow TxDOT Maintenance Supervisors and crews responding to wildland fire events to accomplish six objectives.

1. Identify the role of TxDOT in wildland fire response.
2. Plan for command and control of wildland fire incidents.
3. Organize the resources and equipment necessary for a proper response from TxDOT.
4. Plan to ensure safety of TxDOT personnel.
5. Explain the procedure for proper documentation and data collection.
6. List relevant training programs.

The training modules are designed in such a way as to help TxDOT crews responding to wildland fires to accomplish these goals. Each of the training modules consists of various pieces of information. These include normal informative slides, in-class exercises to improve learning
(Green Sheets), video clips, reference materials, and summaries. Each training module is followed by learning assessment exercises (Pink Sheets) used to ensure that the necessary information has been conveyed properly. Course instructors will issue these assessments and grade them accordingly.

This chapter provides a brief overview of each of the six training modules, listing relevant topics, learning objectives, reference materials, Green Sheets, and Pink Sheets.

**Module 1. Introduction**

This module covers the following topics:

- Course overview
- Course organization
- Lessons learned from district interviews

The learning objectives for this module are:

1. Explain TxDOT’s role in wildland fire response.
2. List best practices in handling wildland fires.

The reference materials for this module include:

1. A video from John A. Barton, P.E.

The Green Sheets for this module ask students to do the following:

1. Think about and jot down at least three safety considerations specific to TxDOT wildland fire management operations (individual assignment).
2. Meet with the people around you (3 to 4 persons) and discuss your ideas.

The summary topics for this course are:

- TxDOT’s primary goal is the safety of its employees.
- Maintaining communication and a chain of command during a wildland fire incident is critical.
- TxDOT employees must understand their role during wildland fire response.

The Pink Sheet for this module is shown on the following page.
1. The primary reason TxDOT Administration has sponsored this wildland fire resource management training is:
   A. To avoid criticism regarding TxDOT’s current wildland fire response practices.
   B. To improve TxDOT’s ability to protect life and property during a wildland fire.
   C. Because wildland fire training is now required by legislative mandate.
   D. To improve its reputation amongst citizens of Texas.

2. Which of the following safety topics apply to wildland fire response?
   A. Personal protective equipment
   B. Heavy equipment operation
   C. Employee safety issues
   D. All of the above

3. When should TxDOT employees respond to a wildland fire event?
   A. As soon as the employee learns of the event
   B. When contacted for help by a local fire department
   C. If the fire threatens the property of a TxDOT employee
   D. When notified to do so by the Chair of the DPS

4. Who should use TxDOT resources at a wildland fire event?
   A. Authorized firefighting personnel
   B. Local law enforcement
   C. TxDOT personnel
   D. All of the above
Module 2. Organization and Communication
This module covers the following topics:

- Texas State Emergency Management structure
- Texas Emergency Assistance Channels
- Texas Division of Emergency Management Regional Coordinators
- Texas A&M Forest Service resources
- Other agencies involved in wildfire response

The learning objectives for this module are:

1. Know what resources the state uses in responding to wildland fire incidents.
2. Understand what role TxDOT plays in the response to wildland fire incidents.
3. List what agencies TxDOT may interact with during a wildland fire response.
4. Locate important state resources on a map.

The reference materials for this module include:

- A video detailing material storage and handling

The Green Sheets for this module ask students to do the following:

- List what other agencies are likely to interact with TxDOT personnel when responding to a wildland fire.
- Jot down ideas for discussion.

The summary topics for this course are:

1. Texas responds to wildland fires with various state resources.
2. TxDOT is not a primary response unit, but rather responds to wildland fire incidents as part of a tiered system.
3. There are a number of other agencies with whom TxDOT may interact during a wildland fire incident.

The Pink Sheet for this module is shown on the following page.
1. Which of the following agencies are involved in statewide emergency management?
   A. The Governor’s Office of Homeland Security
   B. State Emergency Management Council
   C. Texas A&M University Forest Service
   D. All of the above

2. Within what framework does TxDOT have to work when directed by the DDC to serve in emergency incidents?
   A. Safety Operations
   B. Emergency Event Management
   C. National Incident Management System (NIMS)
   D. Emergency Response Procedure

3. Which of the following agencies is the state appointed fire and emergency response agency?
   A. Texas Department of Emergency Management (TDEM)
   B. Texas Intrastate Fire Mutual Aid System (TIFMAS)
   C. Texas Incident Coordination Center (TICC)
   D. Texas A&M Forest Service
   E. None of the above

4. Which is the most trained and experienced Incident Management Team (IMT) type?
   A. Type I
   B. Type V
   C. Type IV
   D. Type 0
Module 3. Resources and Equipment
This module covers the following topics:

- Situation awareness
- Information resources
- Heavy equipment

The learning objectives for this module are:

1. List sources of information for wildland fire response.
2. Know heavy equipment available for wildland fire response.

The reference materials for this module include:

- “Dozer Boss” instructions.
- Information relating to types of bladed heavy equipment.

The Green Sheets for this module ask students to do the following:

- Answer the question, “Do TxDOT crews use appropriate hand signs?”
- Answer the question, “How can a TxDOT crew responding to a wildland fire improve communication using heavy equipment?”

The summary topics for this course are:

1. TxDOT employees engaged in responding to wildland fire incidents should be aware of information regarding weather, safety hazards, etc.
2. Heavy equipment operators should follow standard protocols for vehicle operation during wildland fire response.

The Pink Sheet for this module is shown on the following page.
1. Which of these is not a good source of information for wildland fire response?
   A. FEMA
   B. Farmer’s Almanac
   C. TICC
   D. NOAA

2. What information can you gather from the NWS website that may be applicable to wildland fire response?
   A. Fire weather
   B. Thunderstorm information
   C. Daily weather maps
   D. All of the above

3. Which of these maps can you acquire from the TICC website?
   A. Fuel types
   B. Traffic patterns
   C. Soil types
   D. Military bases

4. What sort of resources can you find on the Texas A&M Forest Service website?
   A. Organizational services
   B. Communication services
   C. Predictive services
   D. None of the above
Module 4. Safety

This module covers the following topics:

- Personal protective equipment (PPE)
- Communications
- Training
- Situational safety
- Additional safety concerns

The learning objectives for this module are:

1. Know what PPE you need when responding to a wildland fire situation.
2. Know the new regulations regarding communication at a wildland fire situation.
3. Identify limitations to radio communications at a wildland fire site.
4. Understand various situation risks involved in wildland fire response.

The reference materials for this module include:

- Brochures of PPE.
- The Texas Statewide Interoperability Channel Plan (accessed at http://tsiec.region49.org/)
- “6 Minutes for Safety” Lessons Learned

The Green Sheets for this module ask students to do the following:

- Answer the question, "Why is it important to wear the proper PPE?"
- Answer the question, "Why do we sometimes fail to have or wear proper PPE?"
- Answer the question, “How will the changes to radio operation protocols affect communications at a wildland fire event?”
- Answer the question, “What situational hazards have I encountered in the field?”
- Answer the question, “Did I respond properly?”

The summary topics for this module are:

1. TxDOT employees should have appropriate clothing, PPE, and equipment when responding to a wildland fire.

2. TxDOT employees may encounter numerous situational safety hazards when responding to wildfires and should know how to address these hazards.

The Pink Sheet for this module is shown on the following page.
1. Which of these pieces of Personal Protective Equipment should you have when responding to a wildland fire?
   A. Eye protection
   B. Heavy gloves
   C. Tall boots
   D. All of the above

2. How many Narrowband interoperable radio channels does the Texas Statewide Interoperability Channel Plan (Change No. 14) require?
   A. 21
   B. 20
   C. 24
   D. 18

3. Which of these factors affect radio communications?
   A. Bird migration patterns
   B. Diesel engines
   C. Antenna polarization
   D. None of the above

4. What temperatures can be expected within a vehicle entrapped by a fire?
   A. Below 100 degrees
   B. Between 100 and 150 degrees
   C. Between 150 and 200 degrees
   D. Over 200 degrees
Module 5. Documentation and Data Collection

This module covers the following topics:

- Current TxDOT methods of data collection
- TxDOT Crossroads MNT website
- TxDOT EOC website
- Other methods of data collection

The learning objectives for this module are:

1. Know how to fill out a Daily Activity Report (DAR) to collect data from a wildland fire situation.
2. Understand how to use the TxDOT MNT website.
3. Understand how to use the TxDOT EOC website.
4. List other data collection resources available.
5. Know how to fill out a DAR for a wildland fire response event.

The reference materials for this module include:

- 6 Minutes for Safety Lessons

The Green Sheets for this module ask students to do the following:

- Answer the question, “Do we currently debrief after incidents?”
- Answer the question, “Why or why not?”

The summary topics for this course are:

1. TxDOT has protocol and software for data collection.
2. There are several other resources available for collecting, discussing, and disseminating data and information related to wildland fire incidents.

The Pink Sheet for this module is shown on the following page.
1. Which of these methods are currently used by TxDOT districts for data collection for wildland fire events?
   A. Emails and Sharepoint
   B. Phone calls
   C. Pay stubs
   D. All of the above

2. What is the name of the TxDOT Intranet web platform for data collection
   A. Crossroads
   B. Crosspoint
   C. Dropbox
   D. Outlook

3. How are wildfires listed on the TxDOT EOC website?
   A. By county
   B. By district
   C. By name
   D. By task number

4. Which website allows you to report unsafe activities at a wildland fire?
   A. Safesource
   B. Safenet
   C. Crossroads
   D. Dropbox
Module 6. Training Programs
This module covers the following topics:

- Getting training for wildland fire response

The learning objectives for this module are:

1. Understand what training courses are available to improve your abilities to respond to wildland fires.
2. Know how to find and register for these training courses.

The reference materials for this module include:

- ICS Management Characteristics Documents

The Green Sheets for this module ask students to do the following:

- Answer the question, “What additional training would be beneficial for TxDOT personnel responding to a wildland fire?”

The summary topics for this course are:

1. Numerous training courses are available to better equip you in responding to wildland fires.

The Pink Sheet for this module is shown on the following page.
1. Which of these are common terminologies established by ICS?
   A. Organization Functions
   B. Resource Descriptions
   C. Incident Facilities
   D. All of the above

2. Which of the following is not a method of managing by objectives?
   A. Developing strategies based on overarching incident objectives.
   B. Documenting results to measure performance and facilitate corrective actions.
   C. Issuing assignments and strategies when an incident is in progress.
   D. Establishing overarching incident objectives.

3. A Manageable Span of Control is _______ to effective and efficient incident _________.
   A. Key/ management
   B. Critical/ strategy
   C. Key/ response
   D. Crucial/ implementation
   E.

4. What does chain of command refer to?
   A. The individuals subordinate to an incident commander
   B. The orderly line of authority within the ranks of the incident management organization.
   C. The complicated branches of authority within the ranks of the incident management organization.
   D. None of the above.
Conclusions

Researchers documented lessons learned by the Texas Department of Transportation (TxDOT) during the record-setting wildland fires of 2011. Although TxDOT has no responsibilities in providing direct firefighting support during a wildland fire event, the agency serves a critical role in the Texas State Emergency Management system by providing various levels of support during the event as designated local resources are exhausted. Researchers contacted and interviewed personnel from twelve TxDOT Districts, the TxDOT Maintenance Division, the Texas A&M Forest Service, the Department of Public Safety, and the National Weather Service to identify both common and unique support provided by TxDOT during wildland fire events. In addition to traffic control devices, TxDOT is commonly called upon to provide equipment and operators for dozers, maintainers, fuel trailers, water trailers and various other vehicles. Rarely is TxDOT involved in mop-up activities. Provisions typically requested include vehicle fuel and water. A significant and repeated finding is that TxDOT employees are not expected to fight fires directly and have no such responsibilities. Emphasis on employee safety is paramount.

Recommended Best Practices

Based upon findings from the study and guidance from the Project Director and Project Management Committee, the following recommendations are submitted. The recommendations have been grouped into appropriate categories.

A. General Recommendations
   a. TxDOT’s role should be clearly defined and provided to TxDOT employees through routine training.
   b. TxDOT personnel should meet and become acquainted with emergency response personnel from outside agencies to enhance communication during emergencies.
c. Employees should ensure proper documentation for information associated with wildfire events by following appropriate procedures to complete daily activity reports (DARs) for activity and cost tracking.

d. TxDOT should ensure that all personnel and equipment have the most appropriate communication equipment which is consistent with the Texas Statewide Interoperability Channel Plan.

e. TxDOT must keep updated county topographic, utility, pipeline, and road maps.

B. Notification/Request for District Assistance during a Wildland Fire Event

a. Emphasis must be made that the Director of Maintenance (DOM) or the Director of Operations (DOO) is the point of contact (POC) for District wildland fire response activities.

b. Procedure for notifying Districts of Governor’s and Presidential Proclamations should be formalized.

C. Communication and Documentation Related to a Wildland Fire Event within TxDOT

a. TxDOT personnel must be prepared to use Compass MMS to:
   i. Record data on TxDOT resource utilization during wildland fire response, and
   ii. Generate reports for reimbursement requests

b. Advanced briefing and de-briefing practices must be established.

D. Communication with Outside Agencies

a. Lines of communication with outside agencies must be clarified.

b. Emphasis must be made that the Director of Maintenance (DOM) is the point of contact (POC) for District wildland fire response activities.

E. TxDOT Resource Utilization during Wildland Fire Events

a. Clear guidelines must be established regarding provision and record-keeping of fuel to vehicles involved in wildland fire response.

b. Employees must refer to Emergency Fueling Guidelines published by MNT.

c. Employees must refer to HR Manual §2 Ch. 10 for policy on leave for volunteer firefighters.

d. Emphasize needs to be placed on effective collection, recording and reporting of information to enable timely filing for reimbursement.
F. TxDOT Responsibilities to Ensure Employee and Public Safety
   a. TxDOT employees are not firefighters and should stay out of harm’s way
   b. Supervisor should monitor local weather conditions during a wildland fire event
to alert employees
   c. Employees must have access to standard fire-protection equipment (Nomex suits,
etc.)

G. Advanced Preparation, Readiness, and Training
   a. Equipment must be kept pre-loaded, positioned, and ready for deployment
      whenever possible
   b. Weather reports and TFS notifications must be monitored

H. Existing Resources/Guidance from TxDOT and Other Agencies
   a. Guidance document must be updated
   b. Employees should take advantage of training opportunities from TAMFS and
      other agencies
   c. One emergency response manual, including a section for wildland fire response,
      is needed for consolidation of instruction and guidelines currently available within
      TxDOT.
   d. A standard practice checklist for DOM and MS should be developed
REFERENCES


What We Learned

TxDOT Interviews

- Districts (10)
  - Abilene
  - Amarillo
  - Austin
  - Beaumont
  - Childress
  - El Paso
  - Fort Worth
  - Lubbock
  - Odessa
  - San Angelo
  - Corpus Christi & Pharr (phone interviews)
- Maintenance Division

Other State Agencies Interviewed

- Department of Public Safety
  - Division of Emergency Management
- Texas Forest Service
  - Asst. Fire Chief, West
  - RFC, Lubbock
  - RFC, Wichita Falls
- Texas Parks & Wildlife

Local Agencies Interviewed

- Bastrop County
- Garza County & City of Post Emergency Management Coordinator
- King County
- Lubbock City Fire Department
- Potter & Randall County Emergency Management

National Weather Service Lubbock Office

- Science & Operations Officer
- Senior Forecaster

TxDOT Interview Questionnaire

- Advanced preparation
- Notification/Request for services to a TxDOT District
- Communication related to an event within TxDOT
- Communication with outside agencies
- TxDOT responsibilities to ensure employee/public safety
- Resource utilization by TxDOT during wildfire events
- Information from recent wildfires
- Effectiveness of current training
- Comments on existing resources/guidance
Advance Preparation

Common Responses

- Do not respond until notified by DPS
- Director of Maintenance (DOM)/ Director of Operations (DOO) receives official notice
- DOM/ DOO contacts Maintenance Supervisor

Notification/Request for TxDOT Services

Common Responses

- TxDOT does not engage off the ROW until officially directed by DDC.
- Director of Maintenance (DOM) is the official Point of Contact (POC) for the District.
- Equipment typically requested: dozers, motor-graders, fuel trailers, water trailers, and sign trailers.
- Districts typically have 1-6 requests for assistance annually. One District responded to 50 fires in 2011.
- Governor’s Emergency Disaster Proclamations reach Districts through Maintenance Division and the media.

Communication Related to an Event Within TxDOT

Common Responses

- DDC directs DOM to respond to an event, and the DOM then notifies the Maintenance Supervisor(s).
- Involvement of other TxDOT offices varies by district.
- DOM authorizes resource utilization requests.
- Many districts use Daily Activity Reports (DARs) and Microsoft SharePoint to collect data on events.
- Coordination between Districts handled DOM to DOM.
- TxDOT public notification duties include traffic control and updating Highway Condition Report (HCR).
- Advanced briefing/debriefing differ between Districts.

Communication with Outside Agencies

Common Responses

- TxDOT has no formal responsibility for public notification of wildfire events.
- Districts typically coordinate with DDC, DPS, TFS, local governments, TCEQ, and utility companies during a wildfire event.
- Interaction with other agencies outside of a wildfire event is key to effective response during an event.
- There is no standard statewide protocol for interacting with outside agencies during a wildfire event.

TxDOT Resource Utilization during Events

Common Responses

- Equipment typically used by TxDOT during an event includes: dozers, motor-graders, fuel trailers, water trailers, sign trailers, and traffic control devices.
- Only TxDOT personnel use TxDOT resources.
- The number of TxDOT personnel deployed during a wildfire event varies significantly by District and event size, although teams are typically small.
- The number of volunteer firefighters employed by a TxDOT District varies greatly.

- Volunteer firefighters who are TxDOT employees may be approved for personal leave during an event.
- The amount of TxDOT fuel given to outside agencies varies by District and fire size.
- In addition to fuel, water is the resource most commonly distributed during an event.
- Districts have various individuals assigned by the DOM responsible for filing for reimbursement. Few districts have filed for and/or received reimbursement.
**TxDOT Responsibilities to Employee/Public Safety**

- TxDOT employees are not firefighters and should stay out of harm’s way.
- Districts do not use fire safety equipment/ Personal Protective Equipment.
- TxDOT works with the DPS to ensure public safety by deploying traffic control.
- Detailed local maps are a beneficial resource if spotters are not available.

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**Advanced Preparation, Readiness & Training**

- Districts try to keep equipment pre-loaded and ready to deploy whenever possible.
- Districts often watch weather reports and try to stay aware of TFS notifications.
- Districts typically have no formal staging protocols.

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**Existing Resources/Guidance for Wildfire Response**

- Districts identified the need for detailed statewide guidance for wildfire response.
- TxDOT Maintenance Operations Manual should also be updated.
- TxDOT requires FEMA IS training. Additional training resources are available through TFS.
Wildfires in Texas and the TxDOT Role
Gilbert Jordan,
Representing the Director of Maintenance Division

Historic 2011 Texas Wildfire Season
- In 2011, the proportion of total national acres that burned in Texas: 47.6%.
- Ten-year U.S. national average acres burned: 6,872,228.

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<th></th>
<th>2010</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td>Wildfire events</td>
<td>14,371</td>
<td>29,540</td>
</tr>
<tr>
<td>Impacted Acreage</td>
<td>493,088</td>
<td>3,978,201</td>
</tr>
</tbody>
</table>

2011 Texas Wildfire Statistics
- 6 of 10 largest wildfires in Texas history occurred in 2011

<table>
<thead>
<tr>
<th>Name of Fire</th>
<th>Acres Burned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooper Mountain Ranch</td>
<td>162,625</td>
</tr>
<tr>
<td>Deaton Cole</td>
<td>175,000</td>
</tr>
<tr>
<td>Rock House</td>
<td>314,444</td>
</tr>
<tr>
<td>Southeast Texas Complex</td>
<td>104,818</td>
</tr>
<tr>
<td>Swenson</td>
<td>126,593</td>
</tr>
<tr>
<td>Wildcat</td>
<td>159,308</td>
</tr>
</tbody>
</table>

- Major Wildland Urban Interface Fires
  - Bastrop County Complex, PK Complex, Tanglewood

- Annual Number of Acres Nationally
- 2010 Texas Wildfire Statistics

<table>
<thead>
<tr>
<th>Category</th>
<th>Statistic</th>
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</thead>
<tbody>
<tr>
<td>Number of wildfires</td>
<td>30,547</td>
</tr>
<tr>
<td>Fatalities</td>
<td>10</td>
</tr>
<tr>
<td>Acreage</td>
<td>3,993,716</td>
</tr>
<tr>
<td>Homes Saved</td>
<td>39,413</td>
</tr>
<tr>
<td>Homes Lost</td>
<td>3,947</td>
</tr>
<tr>
<td>Other Structures Saved</td>
<td>13,027</td>
</tr>
<tr>
<td>Other Structures Lost</td>
<td>2,792</td>
</tr>
</tbody>
</table>
Research Background

- Recent years have been record-setting for wildfires in Texas
- TxDOT has responded to many critical situations
- The purpose of this project was to document lessons learned during the recent wildfire events
- Best practices were identified
- Best practices presented in the form of
  - Regional training workshops
  - TxDOT Wildfire Response Handbook (to be published)

The purpose of this ongoing project is to document lessons learned during the recent wildfire events

TxDOT Project Director
- Darwin Lankford (CHS)

Project Monitoring Committee (PMC)
- Brian Crawford (ABL)
- Ron Gilbert (CHS)
- Gilbert Jordan (MNT)
- Ted Moore (LBB)
- Michele Regis (OCC)
- Richard Schiller (FTW)
- Mike Taylor (AMA)
Research Tasks

1. Collect Information Related to Handling Wildfires in Texas
2. Complete Interim Report
3. Prepare Training Materials
4. Deliver Regional Training Workshops
5. Publish Draft TxDOT Wildfire Response Handbook
6. Deliver Additional Training (Materials) and Reports as Needed

Research Project 0-6735
Best Practices for TxDOT on Handling Wildfires

TechMRT Research Team

▪ Phillip T. Nash, Research Supervisor
▪ Sanjaya Senadheera, Researcher
▪ Micah John Beierle, Researcher (TTU Natural Resource Management)
▪ Wesley Kumfer, Doctoral Student
▪ Dannia Wilson, Graduate Student

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>9:30-9:45</td>
</tr>
<tr>
<td>2</td>
<td>Emergency Management in Texas</td>
<td>10:05-10:25</td>
</tr>
<tr>
<td></td>
<td>Break</td>
<td>10:25-10:35</td>
</tr>
<tr>
<td>3</td>
<td>What We Learned</td>
<td>10:35-11:05</td>
</tr>
<tr>
<td>4</td>
<td>Resources for Emergency Response</td>
<td>11:10-11:45</td>
</tr>
<tr>
<td></td>
<td>Lunch (on your own)</td>
<td>11:45-1:15pm</td>
</tr>
<tr>
<td>5</td>
<td>Recommended Best Practices</td>
<td>1:15-2:45pm</td>
</tr>
<tr>
<td></td>
<td>Break</td>
<td>2:45-3:00pm</td>
</tr>
<tr>
<td></td>
<td>Panel Discussion</td>
<td>3:00-3:45pm</td>
</tr>
<tr>
<td>6</td>
<td>Workshop Wrap-up/Assessment</td>
<td>3:45-4:00pm</td>
</tr>
</tbody>
</table>
Texas State Emergency Management (EM)
- Covered in Ch. 418 (Emergency Management) and Ch. 421 (Homeland Security) of Texas Govt. Code

Agencies Involved in Statewide EM
- The Governor’s Office of Homeland Security
- State Emergency Management Council (SEMC)
- Div. of Emergency Management (TDEM), Texas DPS
- Texas Forest Service (TFS)

Texas State Emergency Management
- Texas uses a “tiered” approach to wildfire response and suppression.
- Local fire departments and counties are the first responders.
- State response activated as wildfires or conditions exceed the local ability to control.
- If State resources are deemed insufficient, out-of-state agencies are called upon.

The Governor’s Office of Homeland Security
The Director of the Governor’s Office of Homeland Security serves as the
- Director of the Governor’s Division of Emergency Management (GDEM), and as
- Chair of the State Emergency Management Council (SEMC)

The SEMC has been authorized to issue directives that are necessary to effectively follow the Texas Disaster Act (Ch. 418, Govt. Code)
TX Division of Emergency Management (TDEM) Regional Coordinators

- TDEM shall prepare and maintain a state emergency management plan.

![TDEM Regional Coordinators Map](http://www.txdps.state.tx.us/dem/FieldResponse/RegStateCoordMap.pdf)

TDEM District Coordinators

![TDEM District Coordinator Map](http://www.txdps.state.tx.us/dem/FieldResponse/DistCoordMap.pdf)

Texas Forest Service (TFS) Regional Fire Coordinators

![TFS Regional Fire Coordinators Map](http://ticc.tamu.edu/Documents/Home/RFC_Map_with_Title.pdf)

TFS Texas Fire Resource Availability Map

![TFS Fire Resource Availability Map](http://tfsfrp.tamu.edu/wildfires/resources.png)

Five Types of Emergency Incidents

These are rated by complexity.

- Type V incident
- Type IV incident
- Type III incident
- Type II incident
- Type I incident

Increase in intensity

TFS developing teams to handle different types of incidents. Currently there are multiple Type III & one Type II Team

Agencies Responsible for Coordinating Wildfire Response in Texas

- TDEM Disaster District Committees (DDCs)
- Texas Intrastate Fire Mutual Aid System (TIFMAS)
- National Wildfire Coordination Group (NWCG)
- Texas Forest Service (TFS)
When directed by DDC to serve in emergency incidents, TxDOT plays a critical role in public guidance during emergency incident occurrence and has to work within the NIMS framework.
What We Learned

**TxDOT Interviews**
- Districts (10)
  - Abilene
  - Amarillo
  - Austin
  - Beaumont
  - Childress
  - El Paso
  - Fort Worth
  - Lubbock
  - Odessa
  - San Angelo
- Corpus Christi & Pharr (phone interviews)
- Maintenance Division

**Other State Agencies Interviewed**
- Department of Public Safety
  - Division of Emergency Management
- Texas Forest Service
  - Asst. Fire Chief, West
  - RFC, Lubbock
  - RFC, Wichita Falls
- Texas Parks & Wildlife

**Local Agencies Interviewed**
- Bastrop County
- Garza County & City of Post Emergency Management Coordinator
- King County
- Lubbock City Fire Department
- Potter & Randall County Emergency Management

**National Weather Service Lubbock Office**
- Science & Operations Officer
- Senior Forecaster

**TxDOT Interview Questionnaire**
- Advance Preparation
- Notification/Request for services to a TxDOT District
- Communication related to an event within TxDOT
- Communication with outside agencies
- TxDOT responsibilities to ensure employee/public safety
- Resource utilization by TxDOT during wildfire events
- Information from recent wildfires
- Effectiveness of current training
- Comments on existing resources/guidance
Advance Preparation
Common Responses
- Do not respond until notified by DPS
- Director of Maintenance (DOM)/ Director of Operations (DOO) receives official notice
- DOM/ DOO contacts Maintenance Supervisor

Notification/Request for TxDOT Services
Common Responses
- TxDOT does not engage off the ROW until officially directed by DDC.
- Director of Maintenance (DOM) is the official Point of Contact (POC) for the District.
- Equipment typically requested: dozers, motor-graders, fuel trailers, water trailers, and sign trailers.
- Districts typically have 1-6 requests for assistance annually. One District responded to 50 fires in 2011.
- Governor’s Emergency Disaster Proclamations reach Districts through Maintenance Division & the media.

Communication Related to an Event Within TxDOT
Common Responses
- DDC directs DOM to respond to an event, and the DOM then notifies the Maintenance Supervisor(s).
- Involvement of other TxDOT offices varies by district.
- DOM authorizes resource utilization requests.
- Many districts use Daily Activity Reports (DARs) and Microsoft SharePoint to collect data on events.
- Coordination between Districts handled DOM to DOM.
- TxDOT public notification duties include traffic control & updating Highway Condition Report (HCR).
- Advanced briefing/debriefing differ between Districts.

Communication with Outside Agencies
Common Responses
- TxDOT has no formal responsibility for public notification of wildfire events.
- Districts typically coordinate with DDC, DPS, TFS, local governments, TCEQ, and utility companies during a wildfire event.
- Interaction with other agencies outside of a wildfire event is key to effective response during an event.
- There is no standard statewide protocol for interacting with outside agencies during a wildfire event.

TxDOT Resource Utilization during Events
Common Responses
- Equipment typically used by TxDOT during an event includes: dozers, motor-graders, fuel trailers, water trailers, sign trailers, and traffic control devices.
- Only TxDOT personnel use TxDOT resources.
- The number of TxDOT personnel deployed during a wildfire event varies significantly by District and event size, although teams are typically small.
- The number of volunteer firefighters employed by a TxDOT District varies greatly.

TxDOT Resource Utilization during Events
Common Responses
- Volunteer firefighters who are TxDOT employees may be approved for personal leave during an event.
- The amount of TxDOT fuel given to outside agencies varies by District and fire size.
- In addition to fuel, water is the resource most commonly distributed during an event.
- Districts have various individuals assigned by the DOM responsible for filing for reimbursement. Few districts have filed for and/or received reimbursement.
**TxDOT Responsibilities to Employee/Public Safety**

Common Responses

- TxDOT employees are not firefighters and should stay out of harm’s way.
- Districts do not use fire safety equipment/ Personal Protective Equipment.
- TxDOT works with the DPS to ensure public safety by deploying traffic control.
- Detailed local maps are a beneficial resource if spotters are not available.

**Research Project 0-6735**

**Best Practices for TxDOT on Handling Wildfires**

---

**Advanced Preparation, Readiness & Training**

Common Responses

- Districts try to keep equipment pre-loaded and ready to deploy whenever possible.
- Districts often watch weather reports and try to stay aware of TFS notifications.
- Districts typically have no formal staging protocols.

**Existing Resources/Guidance for Wildfire Response**

Common Responses

- Districts identified the need for detailed statewide guidance for wildfire response.
- TxDOT Maintenance Operations Manual should also be updated.
- TxDOT requires FEMA IS training. Additional training resources are available through TFS.
Safety First – No Exceptions

Resources for Emergency Response

- Information Resources
- Heavy Equipment
- Personal Protective Equipment (PPE)
- Communication Equipment
- Training Resources

Information Resources
- Training & Education, Experience, Each Other
- TxDOT
- FEMA
- TFS
- TICC
- NOAA/NWS

Situation Awareness
- Information
- Objective(s)
- Previous Fire Behavior
- Communication
- Weather Forecast
- Who’s in Charge
- Local Factors
Resources for Emergency Response  
- Information Resources -

- TxDOT
  - TFS
  - Mitigation
  - Predictive Services
    - Fuel Reduction
    - Law Enforcement
    - Wildfire Preparedness
    - Protect your Home
    - Protect Your Community
    - Protect Your Wildlands
    - Prevent Wildfires
  - Rapid Initial Response
  - All Hazard Response
  - Training
  - Wildland Fires
  - Local Capacity Building
  - Planning & Preparedness
  - Emergency Operations
  - Texas Interagency Coordination Center
  - TIFMAS

- FEMA
  - TFS: Predictive Services
  - Outdoor Burns Bans

- TFS: Predictive Services

- Resources for Emergency Response  
- Information Resources -
  - http://crossroads.org/mnt/
Resources for Emergency Response
- Information Resources -

- TFS

- TICC:

- TICC: Fuels/Fire Danger

- TICC: Incident Response
Research Project 0-6735
Best Practices for TxDOT on Handling Wildfires

Resources for Emergency Response
- Information Resources -

- Meso-West

- NOAA/NWS: Fire Weather

- NOAA/NWS: Fire Weather
Resources for Emergency Response
- Information Resources -
  • NOAA/NWS: Fire Weather

Resources for Emergency Response
- Heavy Equipment -
  • Dozer Boss (DOZB)
  • Strike Team Leader Dozer (STLD)
  • Strike Team Leader Tractor/Plow (STPL)

All now replaced by
  • Heavy Equipment Boss (HEQB)

Resources for Emergency Response
- Heavy Equipment -

Guidelines for maximum percent slope
  • 75% downhill maximum
  • 55% uphill maximum
  • 45% sidehill slope

Resources for Emergency Response
- Heavy Equipment -

Types of Blades
  • Straight Blade – can be angled to push soil to wither side of the dozer
  • ‘U’ Blade – used for pioneering fireline and is often followed by a straight blade
  • Brush Blade – best use is pioneering in brush, clearing and piling slash, mop-up work, and certain rehabilitation work
  • V Blade – Best in swampy ground and is also good for pioneering through dense stands of small diameter fuels

There is much more on Heavy Equipment such as:
  • safety zone and escape route considerations
  • watershed considerations
  • special considerations
  • use, terminology, and maintenance

For more information contact your TFS Regional Fire Coordinator.
Resources for Emergency Response - Personal Protective Equipment

All firefighters shall be equipped with personal protective clothing defined by NWCG or Interagency Specific Standards [NWCG#008-2010]. This includes:

- fire resistant shirt and pants or coveralls,
- helmet,
- eye protection,
- heavy-duty leather gloves,
- 8” tall lace-up leather boots, and
- a fire shelter.

If firefighting involves time away from the apparatus then a backpack with personal equipment and at least 2 quarts of drinking water is recommended.

These do not include all options and are not specific for one provider. Note: not all providers or manufacturers are equal in quality. All items are from http://www.firecache.com.

- fire resistant shirt and pants or coveralls,
- helmet,
- eye protection,
- heavy-duty leather gloves,
- 8” tall lace-up leather boots, and
- a fire shelter.

- fire resistant shirt and pants or coveralls,
- helmet,
- eye protection,
- heavy-duty leather gloves,
- 8” tall lace-up leather boots,
- a fire shelter.

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- 8” tall lace-up leather boots, and
- A fire shelter.

These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.

- Hearing protection

Information gathered from TxDOT Districts

- Few have fire shelters and those that do lack training in their use.
- Few have access to Nomex clothing during events.
- One district has initiated the use of cloth face covers during fire events to reduce particulate inhalation.

Current Resources in Development by TxDOT

- Two emergency response trailers equipped with
  - Nomex coveralls
  - Helmets/face shields
  - Fire Shelters

Resources for TxDOT Personnel to consider

- Change of clothes (all cotton)
- Glasses/Sun glasses
- Gloves
- Boots

Texas Statewide Interoperability Channel Plan

http://tsiec.region49.org/

Most vehicles have radios which comply with the TSICP.

Note was made that in some areas with rough terrain communication is often broken.

Blackberries

2012 changes

- Removed Digital P25 requirements
- Removed reference to P25 compliance by 2015

| Texas Law 1 | TXCALL1D |
| Texas Law 2 | TXCALL2D |
Resources for Emergency Response
- Communications -

**Texas Statewide Interoperability Channel Plan**

- TxDPS recommended radio programming
- 21 VHF Narrowband (NB) interoperable channels
- 2 State of Texas VHF NB interoperability calling channels
- 8 VHF wideband

---

**Texas Statewide Interoperability Channel Plan**

- These will VHF narrowband interop. frequencies will replace wideband interop. Jan 1, 2013
- 21 VHF Narrowband (NB) interoperable channels
- 2 State of Texas VHF NB interoperability calling channels
- 8 VHF wideband

---

Resources for Emergency Response
- Training -

- National Incident Management System (NIMS)
  - [http://www.fema.gov/emergency/44m/NIMSTrainingCourses.shtm](http://www.fema.gov/emergency/44m/NIMSTrainingCourses.shtm)

---

**Texas Statewide Interoperability Channel Plan**

- These will VHF narrowband interop. frequencies will replace wideband interop. Jan 1, 2013
- 21 VHF Narrowband (NB) interoperable channels
- 2 State of Texas VHF NB interoperability calling channels
- 8 VHF wideband

---

Resources for Emergency Response
- Training -

- TFS

---

Resources for Emergency Response
- Training -

- TICC
  - [http://icc.tamu.edu/Training/TrainingMain.htm](http://icc.tamu.edu/Training/TrainingMain.htm)
Recommended Best Practices

General Recommendations

- TxDOT’s role should be clearly defined
- Socialize with emergency response personnel from outside agencies to enhance communication during emergencies
- Maintain good communication channels within TxDOT
- Keep updated county topographic, utility, pipeline and road maps

Notification/Request for District Assistance during a Wildfire Event Recommendations

- Emphasize DOM as the focal point for District wildfire response activities.
- Formalize procedure for notifying Districts of Governor’s and Presidential Proclamations.

Communication Related to a Wildfire Event within TxDOT Recommendations

- Prepare to use Compass MMS to
  - record data on TxDOT resource utilization during wildfire response, and
  - generate reports for reimbursement requests
- Establish advanced briefing and de-briefing practices.

Communication with Outside Agencies Recommendations

- Clarify lines of communication with outside agencies
- DOM is the District point-of-contact with outside agencies for wildfire response

TxDOT Resource Utilization during Wildfire Events Recommendations

- Establish clear guidelines on providing and record-keeping of fuel to vehicles involved in wildfire response
- Refer to Emergency Fueling Guidelines published by MNT
- Refer to HR manual § 2 Ch. 10. for policy on leave for volunteer firefighters.
- Emphasize effective collection and recording of information to enable timely filing for reimbursement
TxDOT Responsibilities to Ensure Employee and Public Safety

Recommendations

- TxDOT employees are not firefighters and should stay out of harm’s way.
- Supervisor should monitor weather conditions during a wildfire event to alert employees
- Have access to standard fire-protection equipment (Nomex suits, etc.)

Advanced Preparation, Readiness & Training

Recommendations

- Keep equipment pre-loaded, positioned and ready for deployment whenever possible
- Monitor weather reports and TFS notifications

Existing Resources/Guidance from TxDOT and Other Agencies

Recommendations

- Update guidance document
- Take advantage of other training opportunities available from TFS and other agencies
- One emergency response manual including a section on wildfire response is preferred
- Develop standard practice checklists for DOM and MS
Appendix B
Handouts for Pilot Workshop
<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Time</th>
<th>Presenter</th>
<th>Names (Pilot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>9:30-9:45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>District Welcome</td>
<td>9:30-9:32</td>
<td>DE</td>
<td>Phil Nash (for DE)</td>
</tr>
<tr>
<td></td>
<td>Wildfires in Texas and the Role of TxDOT</td>
<td>9:32-9:35</td>
<td>MNT</td>
<td>Gilbert Jordan (for Dir/MNT)</td>
</tr>
<tr>
<td></td>
<td>Introduction of the Research Project</td>
<td>9:35-9:40</td>
<td>PD</td>
<td>Darwin Lankford</td>
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<tr>
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<td>Texas Firestorm Video</td>
<td>9:40-9:55</td>
<td>TFS/NWS Video</td>
<td>Phil Nash</td>
</tr>
<tr>
<td></td>
<td>Research Approach</td>
<td>9:55-10:05</td>
<td>TechMRT</td>
<td>Phil Nash</td>
</tr>
<tr>
<td>2</td>
<td>EM in Texas</td>
<td>10:05-10:25</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>State EM Structure</td>
<td>10:05-10:15</td>
<td>TechMRT</td>
<td>Sanjaya Senadheera</td>
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<tr>
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<td>TxDOT EM Structure</td>
<td>10:15-10:25</td>
<td>TxDOT</td>
<td>Gilbert Jordan (TxDOT EMC)</td>
</tr>
<tr>
<td></td>
<td><strong>Break</strong></td>
<td><strong>10:25-10:35</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>What We Learned</td>
<td>10:35-11:05</td>
<td></td>
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<td>Current TxDOT Practices</td>
<td>10:35-10:55</td>
<td>TechMRT</td>
<td>Phil Nash</td>
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<td>Lessons Learned from 2011</td>
<td>10:55-11:10</td>
<td>TechMRT</td>
<td>Phil Nash</td>
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<tr>
<td>4</td>
<td>Resources for Emergency Response</td>
<td>11:10-11:45</td>
<td></td>
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<tr>
<td></td>
<td><strong>Lunch</strong></td>
<td><strong>11:45-1:15</strong></td>
<td></td>
<td>Will be served for the pilot</td>
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<tr>
<td>5</td>
<td>Best Practices</td>
<td>1:15-3:45pm</td>
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<tr>
<td></td>
<td>Recommended Best Practices</td>
<td>1:15-2:00pm</td>
<td>TechMRT</td>
<td>Phil Nash</td>
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<tr>
<td></td>
<td>Fire Basics, Equipment and Training</td>
<td>2:00-2:45pm</td>
<td>TechMRT</td>
<td>Micah-John Beierle (TTU NRM)</td>
</tr>
<tr>
<td></td>
<td><strong>Break</strong></td>
<td><strong>2:45-3:00pm</strong></td>
<td></td>
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<tr>
<td></td>
<td>Panel Discussion</td>
<td>3:00-3:45pm</td>
<td>Panel</td>
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<td>6</td>
<td>Workshop Wrap-up and Assessment</td>
<td>3:45-4:00pm</td>
<td>TechMRT</td>
<td>Phil Nash</td>
</tr>
</tbody>
</table>
TxDOT Emergency
Operations Information
### Best Practices for TxDOT on Handling Wildfires

#### Regional Training Workshops

---

**Home - TxDOT EOC Website - Windows Internet Explorer**

- **File**
  - Edit
  - View
  - Favorites
  - Tools
  - Help

- **Welcome Ted T. Moore**

---

**TxDOT EOC Website**

- **View All Site Content**
  - Documents
    - Shared Documents
    - Template
  - Lists
    - Contacts
    - Tasks
    - Wildfire Task Numbers
    - Wildfire Resources Committed (List)
    - DFW Tornado Resources Committed
  - Discussions
    - General Discussion
    - Task Number Formats
  - Surveys
    - Hurricane Alex Resources Committed
    - Hurricane Alex After Action Review
  - Recycle Bin

---

**Home - Winter Storm Plans**

- **EOC site for State Response planning, reporting, and information**

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task ID</td>
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</tr>
<tr>
<td>There are no items to show in this view of the &quot;Tasks&quot; list. To create a new item, click &quot;Add new item&quot; below.</td>
<td></td>
</tr>
<tr>
<td>Add new item</td>
<td></td>
</tr>
</tbody>
</table>

---

**Announcements**

- **NEW METHOD FOR REPORTING RESOURCES COMMITTED!!!**
  - 4/19/2011 3:30 PM
  - By Brandye P. Munn
  - Please view the webinar on new reporting procedures for reporting Resources Committed by clicking here or click Wildfire Resources Committed (List) to go straight to the new list.
  - Add new announcement

---

**Events**

- There are currently no upcoming events. To add a new event, click "Add new event" below.
  - Add new event

---

**Local intranet | Protected Mode: Off**

3:12 PM
5/16/2012
What is the format for disaster task numbers?

Task numbers should be formatted so that an alpha character is in the first and third columns, and numeric characters should be in the second, fourth, fifth and sixth columns.

Note: Task numbers in this format can only be used for non-trackable functions. They can also be used when charging to overhead and off-system accounts.

Example: YOH001-Y (year), O (current fiscal year), H (Hurricane), S (Snow and Ice), F (Flood), T (Tornado) or R (Fire), then an individually assigned series for each location as determined by the district.
### Best Practices for TxDOT on Handling Wildfires
#### Regional Training Workshops

---

**Wildfire Resources Committed (List): New Item**

- **What is your name?** *
- **District/Region/Division you are reporting for?** *
- **Is this report for the entire district/region/division?**
- **Date of Resources Committed:** 5/16/2012
- **Fire Name:**
  - Other
  - Hoover Fire
  - Livermore Ranch Complex
  - McCoy Fire
  - Pinto Ranch Fire
  - Spring Mountain Fire
- **Since your last report, what was the highest number of resources working the disaster at the same time?** (a "snapshot" of what was committed by your DDO at peak response)
- **Personnel:**
  -
- **Dozers:**
  -
- **Maintainers:**
  -
- **Loaders:**
  -
- **Water Trucks:**
  -
- **PCMS:**
  - Portable Changeable Message Signs
- **DMS:**
  - Permanent Dynamic Message Signs
- **Other Vehicles:**
  - Number of other vehicles or trailers used for fire
- **Fuel:**
  - Gallons of fuel to anyone outside of TxDOT
- **Additional Comments:**
  - Any additional information that you have regarding the fire.

---
TxDOT Crossroads MNT Website

- Learn more about the Maintenance Division
- History
- Administration
- Facilities Management Section
- Maintenance Section
- Vegetation Management Section
- Headquarters Building Operations
- Headquarters Security Operations
- Facilities Work Request System

Maintenance Supervisor's Toolbox
Best Practices for TxDOT on Handling Wildfires

Regional Training Workshops

TxDOT is Preparing for 2012 Hurricanes

The TxDOT Emergency Management Coordinator (EMC) is the liaison between the Texas Division of Emergency Management and TxDOT. This position is currently held by Gilbert Jordan.

TxDOT is the primary contact and manager for all emergency situations, including domestic terrorism, wildfires, hurricanes, and any situation that could disrupt transportation in the state.

The EMC also maintains the District and Division Emergency Contact List and is responsible for training related to emergency response and homeland security.

To contact Gilbert Jordan:
Phone: 512-416-3270
Cell: 512-470-4751
E-mail: gilbert.jordan@txdot.gov
Best Practices for TxDOT on Handling Wildfires
Regional Training Workshops

Federal Reimbursement Process

The process of requesting and receiving reimbursements affects many divisions and at some point every district. Since hurricanes Katrina and Rita, the LBB and Governor’s office has become very interested in TxDOT’s expenses and reimbursements due to natural disasters.

In order to gather accurate information, it would be beneficial to understand the process by which federal funds are reported, requested and received. By mapping the current processes and providing understanding of key positions, TxDOT can determine if changes to current processes or practices are necessary.

A workshop was held to document the federal reimbursement process and TxDOT’s role from the time of a disaster through the receipt of funds from either FEMA or FHWA. The following flowcharts and definitions were developed during that workshop.

To contact Gilbert Jordan:
Phone: 512-416-3270
Cell: 512-970-4751
E-mail: gilbert.jordan@txdot.gov
# Best Practices for TxDOT on Handling Wildfires

## Regional Training Workshops

### Federal Emergency Management Agency

**Force Account Labor Summary Record**

<table>
<thead>
<tr>
<th>1. Applicant</th>
<th>2. PA ID</th>
<th>3. PW #</th>
<th>4. Disaster Number</th>
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<tbody>
<tr>
<td>TxDOT</td>
<td>000-U00F7-00</td>
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<td>Dr-1999</td>
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<table>
<thead>
<tr>
<th>5. Location/Site</th>
<th>6. Category</th>
<th>7. Period Covering</th>
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<tr>
<td></td>
<td>B</td>
<td>4/6/11 to 5/3/11</td>
</tr>
</tbody>
</table>

#### Description of Work Performed

Fire Suppression

<table>
<thead>
<tr>
<th>Name</th>
<th>Dates and Hours Worked Each Week</th>
<th>Costs</th>
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<table>
<thead>
<tr>
<th>Job Title</th>
<th>Date</th>
<th>Total Hours</th>
<th>Hourly Rate</th>
<th>Benefit Rate/HR</th>
<th>Total Hourly</th>
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</tbody>
</table>

Total Cost for Force Account Labor Regular Time

Total Cost for Force Account Labor Overtime

---

I certify that the above information was obtained from payroll records, invoices, or other documents that are available for audit.

**Certified**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
</table>

FEMA Form 90-123, NOV 98

B-12
FEDERAL EMERGENCY MANAGEMENT AGENCY
MATERIALS SUMMARY RECORD

1. APPLICANT
   TxDOT

2. PAID ID
   000-U00F7-00

3. PW #
   Leave Blank

4. DISASTER NUMBER
   DR-1999

5. LOCATION/SITE

6. CATEGORY
   B

7. PERIOD COVERING
   4/6/11 to 5/3/11

8. DESCRIPTION OF WORK PERFORMED
   Fire Supressant

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>DESCRIPTION</th>
<th>QUAN.</th>
<th>UNIT PRICE</th>
<th>TOTAL PRICE</th>
<th>DATE PURCHASED</th>
<th>DATE USED</th>
<th>INFO FROM (CHECK ONE)</th>
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</tbody>
</table>

GRAND TOTAL   

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED   TITLE   DATE

FEMA Form 90-124, NOV 98
### Federal Emergency Management Agency

#### Force Account Equipment Summary Record

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<thead>
<tr>
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<td>000-U06F7-00</td>
<td>Leave Blank</td>
<td>DR-1999</td>
<td></td>
<td></td>
<td>4/6/11 to 5/3/11</td>
</tr>
</tbody>
</table>

#### Description of Work Performed

Fire Supressant

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Operator's Name</th>
<th>Dates and Hours Used Each Day</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Date</td>
<td>Total Hours</td>
</tr>
<tr>
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<td></td>
<td>HOURS</td>
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<td>HOURS</td>
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<td></td>
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<td>HOURS</td>
<td></td>
</tr>
</tbody>
</table>

#### Grand Totals

I certify that the above information was obtained from payroll records, invoices, or other documents that are available for audit.

Certified: ________________________________  Title: ________________________________  Date: ________________________________

FEMA Form 90-127, NOV 98
# Federal Emergency Management Agency

## Applicant's Benefits Calculation Worksheet

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. APPLICANT</td>
<td>2. PA ID</td>
<td></td>
</tr>
<tr>
<td>3. DISASTER NUMBER</td>
<td>4. PW #</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fringe Benefits (by %)</th>
<th>Regular Time</th>
<th>Overtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holidays</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacation Leave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sick Leave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worker's Comp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement</td>
<td></td>
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<tr>
<td>Health Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life Ins. Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total in % of annual salary**

**Comments**

---

I certify that the information above was transcribed from payroll records or other documents which are available for audit.

Certified by:  
Title:  
Date:  

FEMA Form 90-128, NOV 98

B-15
### TxDOT Wildfire Preparedness/Mitigation Activities

<table>
<thead>
<tr>
<th>Request or Type of Action</th>
<th>Response Level 3</th>
<th>Response Level 2</th>
<th>Response Level 1</th>
<th>Local Response Activities (Could happen at any response Level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal and wood signs are allowed on ROW as long as they are mounted in compliance with TxDOT standards and at locations agreed upon by TxDOT District Engineer. County will be responsible for ensuring underground utility installations are not affected. Signs are displayed for duration of burn ban only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic and cardboard signs are allowed on ROW as long as they are at locations agreed upon by TxDOT District Engineer. If mounted within the clear zone (typically within 30' of the travel lane), support shall be on the Compliant Work Zone Traffic Control Device List, unless it is installed adjacent to the ROW fence. County will be responsible for ensuring underground utility installations are not affected. Signs are temporary for duration of burn ban only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burn Ban Signs (County provided, maintained and installed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Burn Ban Signs (TxDOT provided, maintained and installed)</td>
<td>No</td>
<td>No</td>
<td>At discretion of District Engineer</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>Portable Changeable Message Signs (County provided and installed)</td>
<td>No</td>
<td>No</td>
<td>At discretion of District Engineer</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>Portable Changeable Message Signs (TxDOT provided and installed)</td>
<td>No</td>
<td>No</td>
<td>At discretion of District Engineer</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>Permanent Dynamic Message Signs displaying wildfire information</td>
<td>No</td>
<td>No</td>
<td>Upon request from the State Operations Center and with approval of TxDOT administration</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>Firebreaks (County provided and installed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Firebreaks (Private entity provided and installed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Firebreaks (TxDOT provided and installed)</td>
<td>No</td>
<td>No</td>
<td>Upon request from the State Operations Center or County Judge, and then only at discretion of District Engineer</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>Request or Type of Action</td>
<td>Response Level 3</td>
<td>Response Level 2</td>
<td>Response Level 1</td>
<td>Local Response Activities (Could happen at any response Level)</td>
</tr>
<tr>
<td>-------------------------------------------</td>
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<td>------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Mowing (County performed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Wildfire is approaching TxDOT ROW and incident Commander considers using highway as firebreak</td>
</tr>
<tr>
<td>Mowing (Private entity performed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Wildfire exists in county</td>
</tr>
<tr>
<td>Mowing (TxDOT performed)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Upon request from the DDC or at discretion of District Engineer</td>
</tr>
<tr>
<td>TxDOT ROWs are mowed at regularly scheduled intervals. The last cycle of the calendar year is generally timed to coincide with the first frost.</td>
<td></td>
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</tr>
<tr>
<td>Fuel (TxDOT provided for volunteer fire departments)</td>
<td>No</td>
<td>No</td>
<td>Upon request from the State Operations Center and only in areas devastated by catastrophic wildfires. At discretion of District Engineer who will ensure fuel is being used to fight wildfires.</td>
<td></td>
</tr>
<tr>
<td>Equipment repairs (TxDOT provided for responders)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Contact Texas Forest Service</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Upon request from the DDC. Generally, TCEQ is responsible for ensuring compliance with environmental regulations in the aftermath of a wildfire.</td>
</tr>
<tr>
<td>Carcass Disposal (TxDOT provided)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Upon Request from the DDC.</td>
</tr>
<tr>
<td>Off ROW assistance (TxDOT provided)</td>
<td>Upon Request from the DDC. TxDOT employees are not trained nor certified as fire fighters. TxDOT assistance will be limited to any task that does not endanger TxDOT lives, such as creating firebreaks, dozing brush, mop-up operations, etc.</td>
<td></td>
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</tr>
<tr>
<td>Off ROW Debris Removal (TxDOT provided)</td>
<td>Upon Request from the DDC.</td>
<td></td>
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</tr>
<tr>
<td>Public Information Services (TxDOT provided)</td>
<td>Always allowed and encouraged. TxDOT public information activities can negate the need for other more expensive methods of information dispersal such as burn ban signs. Public information activities can also target specific audiences, such as a resident county population or just rural residents.</td>
<td></td>
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</tbody>
</table>
### DAILY ACTIVITY REPORT

<table>
<thead>
<tr>
<th>Line No.</th>
<th>Asset ID</th>
<th>Highway</th>
<th>&quot;AMT. OF WORK PBRF.&quot;</th>
<th>Cost Distribution</th>
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#### DAILY TIME

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<th>County</th>
<th>Class</th>
<th>Lane</th>
<th>Direction</th>
<th>Location</th>
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#### Equipment Utilization

<table>
<thead>
<tr>
<th>Line No.</th>
<th>Equipment Name</th>
<th>Stock Unit</th>
<th>Stock Price</th>
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#### Material

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<thead>
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<th>Material Name</th>
<th>Emp Name</th>
<th>Emp Perm</th>
<th>Or D. Sig.</th>
<th>Emp Perm</th>
<th>Emp Perm</th>
<th>Emp Perm</th>
<th>Emp Perm</th>
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</thead>
<tbody>
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Information on Other State Emergency Management Agencies
TX Division of Emergency Management (TDEM) Regional Coordinators

- TDEM shall prepare and maintain a state emergency management plan.

http://www.txdps.state.tx.us/dem/FieldResponse/RegStateCoordMap.pdf
Texas Disaster Districts

<table>
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<tr>
<th>Station</th>
<th>DDC Chair</th>
<th>Phone</th>
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<tbody>
<tr>
<td>1 Amarillo</td>
<td>Capt. Tim Lite</td>
<td>806-468-1310</td>
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<tr>
<td>2 Lubbock</td>
<td>Capt. Bill Schneider</td>
<td>806-472-2710</td>
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<td>3 Wichita Falls</td>
<td>Lt. Alan Troup</td>
<td>940-851-5521</td>
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<tr>
<td>4 Hurst</td>
<td>Capt. Jay Webster</td>
<td>817-299-1311</td>
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<td>5 Dallas</td>
<td>Capt. Michael Lathan</td>
<td>214-881-2155</td>
</tr>
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<td>6 Mt. Pleasant</td>
<td>Capt. Michael Scullin</td>
<td>903-576-2191</td>
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<tr>
<td>7 Tyler</td>
<td>Capt. Audra Livingston</td>
<td>903-939-6031</td>
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<tr>
<td>8 Abilene</td>
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<td>325-795-4020</td>
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<tr>
<td>9 El Paso</td>
<td>Vacant</td>
<td>915-849-4001</td>
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<td>10 Midland</td>
<td>Capt. Michelle Johnson</td>
<td>432-498-2141</td>
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<td>11 San Angelo</td>
<td>Lt. Roger Looke</td>
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<td>Capt. Paul Schulze</td>
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<td>Capt. Derek Rodriguez</td>
<td>281-517-1217</td>
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<td>Capt. Steven Tellez</td>
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<td>956-728-2292</td>
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<td>Lt. Jerome Johnson</td>
<td>830-703-1208</td>
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11/30/2011

B-23
Texas Forest Service (TFS)
Regional Fire Coordinators

http://ticc.tamu.edu/Documents/Home/RFC_Map_with_Title.pdf
TFS Texas Fire Resource Availability Map

http://tfsfrp.tamu.edu/wildfires/resources.png
### Course Catalog

**Narrow Course Selection by Open Academy:** All

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[https://tiwa.tamu.edu/RegSysStudent/Home/ShowCatalogTable.aspx](https://tiwa.tamu.edu/RegSysStudent/Home/ShowCatalogTable.aspx)
State and Regional Maps
National Weather Service (NWS) Offices and Centers associated with Texas Department of Transportation (TxDOT) Region

Legend

- TxDOT Regions
- NOAA/NWS Southern Region (Texas)
  - NWS Weather Offices
    - Amarillo
    - Austin/San Antonio
    - Brownsville
    - Corpus Christi
    - El Paso
    - Fort Worth
    - Houston/Galveston
    - Lake Charles
    - Lubbock
    - Midland/Odessa
    - Norman
    - San Angelo
    - Shreveport
  - NOAA-NWS Offices

Data Sources:
- TxDOT
  - http://www.dot.state.tx.us/local_information/regions/default.html
- NOAA/NWS
  - http://www.nws.noaa.gov/organization.php

Date created: 15-05-2012
P.No.: 0-6735
Author: Beiterle, Micah-John
General vegetative cover types as defined by the USDS, Fire Science Lab, RMRS associated with Texas Department of Transportation (TxDOT) Regions

Legend

- TxDOT Regions
- General Cover Type:
  - 1: Agriculture
  - 2: Grassland
  - 3: Wetlands
  - 4: Desert shrub
  - 5: Other shrub
  - 6: Oak - pine
  - 7: Oak - hickory
  - 8: Oak - gum - cypress
  - 15: Longleaf - slash pine
  - 16: Lobolly - shortleaf
  - 17: Ponderosa pine
  - 25: Pinyon - juniper
  - 27: Barren
  - 28: Water
  - 30: Urban/development/agriculture

NORTH
(Tim Powers)

WEST
(Donna Hill)

SOUTH
(Cathy Floyd)

EAST
(Lisa Gregg)

Data Sources:
TxDOT
http://www.dot.state.tx.us/local_information/regions/default.html
USDS, Fire Science Laboratory, Rocky Mountain Research Station

Date created: 15-05-2012
P:No.: 0-6735
Author: Beierle, Micah-John
Best Practices for TxDOT on Handling Wildfires
Regional Training Workshops

National Weather Service (NWS) Offices and Centers associated with
Texas Department of Transportation (TxDOT) North Region

Legend
- TxDOT North Region
- NOAA/NWS Southern Region (Texas)

NWS Weather Office, Phone Number, Web Address
- Fort Worth, 817-429-2631, http://www.srh.noaa.gov/fwd/

NOAA/NWS Offices

Data Sources:
- TxDOT
  - http://www.dot.state.tx.us/local_information/regions/default.html
- NOAA/NWS
  - http://www.nws.noaa.gov/organization.php

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
Texas Division of Emergency Management (TDEM) Districts, Coordinator, and Contact Number associated with the Texas Department of Transportation (TxDOT) South Region

Legend

- **TxDOT South Region**

**TDEM Regions**

- **District, Coordinator, Contact Number**
  - S2C, David Noah, 979-320-4362
  - 3A, Jorge Jalomo, 956-227-0696
  - 3B, Jose Alejandro,
  - 3C, Brandi Ashby-Fisher, 361-438-6388
  - S4A, Jerry Huffman, 325-513-2618
  - 6, Stephen Gladstone, 210-559-3496
  - 6, Stephen Gladstone, 210-559-3497
  - 6, Stephen Gladstone, 210-559-3498
  - 6B, Jack Doebbler, 512-848-1080
  - 6C, Summer Ray, 210-452-8860
  - S3B, Fernando Perez, 830-776-8773
  - S6C, Alex Camacho, 361-788-3532

Data Sources:
- TxDOT
  - [http://www.dot.state.tx.us/local_information/regions/default.html](http://www.dot.state.tx.us/local_information/regions/default.html)
- TDEM
  - [http://www.txps.state.tx.us/dem/item/00/archives/2011/056No10/articles/article2.htm](http://www.txps.state.tx.us/dem/item/00/archives/2011/056No10/articles/article2.htm)

Date created: 15-05-2012

P.No.: 0-6735

Author: Beierle, Micah-John
Texas Division of Emergency Management (TDEM) Districs, DDC Chairs, and contact number associated with the Texas Department of Transportation (TxDOT) South Region

Legend
- TxDOT South Region
- TDEM Regions
- District, DDC Chair, DDC Contact Number
  - 16, *multiple - see below for list
  - 19, Capt. Orlando Alanis, 956-728-2292
  - 20, Capt. Rhonda Lawson, 361-698-5613
  - 21, Capt. Juan Rodriguez, 956-984-5608
  - 24, Lt. Jerome Johnson, 830-703-1208
  - 10, Lt. Roger Looka, 325-223-5811
  - 12, Capt. Paul Schuize, 512-997-4101
  - 17, Lt. Glen Garrett, 361-578-3400
  - 18, Capt. Steven Tellez, 210-531-2206

*Region II District 16:
  - Houston, Capt. Derek Rodriguez
  - Conroe, Capt. Terry Truett
  - Texas City, Lt. James Reyer
  - Pierce, Lt. Daniel Terronez

Data Sources:
- TxDOT
  - http://www.dot.state.tx.us/local_information/regions/default.html
- TDEM

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
General vegetative cover types as defined by the USDS, Fire Science Lab, RMRS associated with Texas Department of Transportation (TxDOT) South Region

Legend
- TxDOT South Region
- Texas County Boundaries

General Cover Type
1: Agriculture
2: Grassland
3: Wetlands
4: Desert shrub
5: Other shrub
6: Oak - pine
7: Oak - hickory
8: Oak - gum - cypress
15: Longleaf - slash pine
16: Loblolly - shortleaf
17: Ponderosa pine
25: Pinyon - juniper
27: Barren
28: Water
30: Urban/development/agriculture

Data Sources:
TxDOT
http://www.dot.state.tx.us/local_information/regions/default.html
USDS, Fire Science Laboratory, Rocky Mountain Research Station
Published 03/31/2001 - Version 2000

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
Texas Department of Transportation (TxDOT) West Regional Districts

Legend
- TxDOT West Region

TxDOT Districts
- Abilene
- Amarillo
- Childress
- El Paso
- Lubbock
- Odessa
- San Angelo

Data Sources:
TxDOT
http://www.dot.state.tx.us/local_information/regions/default.html

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
Texas Division of Emergency Management (TDEM) Districts, Coordinator, and Contact Number associated with the Texas Department of Transportation (TxDOT) West Region

Legend

- TxDOT West Region
- TDEM Regions

District, Coordinator, Contact Number

- S3B, Fernando Perez, 830-776-8773
- 4A, Dude Speed, 432-416-0063
- 4B, Martin Widtfeldt, 915-261-6289
- 4A, Jerry Huffman, 325-513-2618
- 4B, Dave Marquez, 432-386-6737
- 5A, Colleen O'Neal, 806-548-4344
- 5B, Joe Minshew, 806-316-7832
- 5C, Jim White, 325-260-5691
- S5A, Becky Pursel, 940-882-4030

Data Sources:

TxDOT
http://www.dot.state.tx.us/local_information/regions/default.html

TDEM

Date created: 15-05-2012
P.No.: 0-6735
Author: Bierle, Micah John
Texas Division of Emergency Management (TDEM) Districts, DDC Chairs, and contact number associated with the Texas Department of Transportation (TxDOT) West Region

Legend
- TxDOT West Region
- TDEM Regions
- District, DDC Chair, DDC Contact Number

District, DDC Chair, DDC Contact Number
- 24, Lt. Jerome Johnson, 830-703-1208
- 10, Lt. Roger Looka, 325-223-6811
- 8, Capt. Jay Webster, 915-849-4001
- 9, Capt. Michelle Johnson, 432-498-2141
- 1, Capt. Tim Lite, 806-468-1310
- 2, Capt. Bill Schneider, 806-472-2710
- 3, Lt. Alan Troup, 940-851-5501
- 7, Capt. Douglas Farber, 325-795-4020

Data Sources:
- TxDOT
  - http://www.dot.state.tx.us/local_information/regions/default.html
- TDEM

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
Texas Forest Service (TFS) Regional Fire Coordinators (RFC) associated with the Texas Department of Transportation (TxDOT) West Region

Legend

- TxDOT West Region
- TFS Regions
  - TFS Region
    - Alpine
    - Fort Stockton
    - San Angelo
    - Abilene
    - Canyon
    - Childress
    - Lubbock
    - Wichita Falls
    - Uvalde
- RFC Offices

Data Sources:
- TxDOT
  - http://www.dot.state.tx.us/local_information/regions/default.html
- TFS
  - http://ticc.tamu.edu/Documents/Home/RFC_Map_with_Title.pdf

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
Best Practices for TxDOT on Handling Wildfires

Regional Training Workshops

National Weather Service (NWS) Offices and Centers associated with Texas Department of Transportation (TxDOT) West Region

Legend
- TxDOT West Region
- NOAA/NWS Southern Region (Texas)

NWS Weather Office, Phone Number, Web Address
- NOAA-NWS Offices

Data Sources:
- TxDOT
  http://www.dot.state.tx.us/local_information/regions/default.html
- NOAA/NWS
  http://www.nws.noaa.gov/organization.php

Date created: 15-05-2012
P.No.: 0-6735
Author: Beierle, Micah-John
General vegetative cover types as defined by the USDS, Fire Science Lab, RMRS associated with Texas Department of Transportation (TxDOT) West Region

Legend
- TxDOT West Region
- Texas County Boundaries

General Cover Type
1: Agriculture
2: Grassland
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7: Oak - hickory
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15: Longleaf - slash pine
16: Loblolly - shortleaf
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25: Pinyon - juniper
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Data Sources:
TxDOT
http://www.dot.state.tx.us/local_information/regions/default.html
USDS, Fire Science Laboratory, Rocky Mountain Research Station
Published 03/31/2001 - Version 2000

Date created: 15-05-2012
P.No.: 0-6735
Author: Beterle, Micali-John
2012 Recommended Radio Programming Instructions
2012 Recommended Radio Programming Instructions
For Priority Emergency Interoperability Channels
In the Migration to Narrowband
In compliance with the
Texas Statewide Interoperability Channel Plan (TSICP)

Purpose
To assist agencies with prioritizing VHF/UHF emergency interoperability channels to program in responder radios with limited channel capacity.

Programming Interoperable Channels
There are 21 VHF national narrowband (NB) interoperable channels and two State of Texas VHF narrowband interoperable calling channels. There are eight VHF wideband interoperable channels. What if your portable or mobile radio will only hold 32 channels or less and you must also maintain local channels?

- Determine the channel capacity of the radio, including talk-groups or zones. (If your radio has the capability of multiple talk-groups, there may be more channel capacity than is realized.)
- If the radio has multiple talk-groups/zones, determine the channel capacity of those groups.
- Determine how many local "operable" channels will be needed.
- Determine what disciplines you need to talk to – i.e. LE, EMS, Fire, etc.
- Until 12/31/2012, the wideband "Texas" interoperable channels will continue to be used, so you may need to keep at least some of them.
- Establish a priority list of interoperable channels to keep.

For example, after loading the necessary "operable" channels, the radio is limited to 16 interoperable channels, and the radio belongs to a fire department. Until 12/31/2012, the wideband interoperable channels ("Texas" channels) will continue to be used. Therefore, eight channel slots could be used for them. This will provide the ability to communicate with multiple disciplines in addition to air-to-ground.

VHF Wideband Interoperable Channels
1. TEX LAW1
2. TEX LAW2
3. TEX LAW3
4. TEXFIRE1
5. TEXFIRE2
6. TEXFIRE3
7. TEXMED1
8. TEX AIR2

This shows ALL of the VHF wideband Interoperability frequencies that are used in Texas. These will be replaced with the national narrowband interoperable frequencies on January 1, 2013.

- The radio now has eight more channel slots available. Keeping in mind this radio is with a fire department, if all six of the interoperable VHF NB VFIRE channels were added, that would leave two channel slots. If VCALL10 was added, it could be used in many MCP/Dispatch situations that have narrowband programmed. Of the six VHF NB interoperable repeater pairs, VTAC36 is recommended by the National Interoperability Field Operations Guide (NIFOG) as a preferred channel, and due to the wide frequency
Spacing, it will be the most common one used. This could complete the radio programming for the 16 open channel slots.

- After 12/31/2012, the wideband channels can be replaced with narrowband. The VTAC11-14 generic channels could be the next priority, followed by the other disciplines.

- If the radio belonged to a LE or EMS agency, the interoperable channel emphasis would be less on fire channels and more on those specific to that discipline, or they might include more generic channels.

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These are the VHF narrowband interoperability frequencies that are used nationally and by Texas and will replace the wideband interoperable frequencies on January 1, 2013.

**Multiple Talk-Groups/Zones**

What if your mobile or portable radio had multiple talk-groups/zones, but the maximum number of channels for each one is limited to 16 channels?

- One group, until 12/31/2012, could hold all of the sixteen channels listed in the above example – keeping in mind that the fire channels might be swapped for other disciplines, depending on the application.

- Looking at the above table, another group/zone could hold the first 15 channels (VCALL10-VLAWS2) along with VTAC36. This would provide easier access to all of the channels that might be used on an incident, without having to swap between groups.

- And still another group/zone might be assigned the channels of the bullet point above, but replace VFIRE25 with TXCALL1D. This would still provide multiple fire-specific channels and allow for a statewide mobile-to-mobile calling channel.

**Tips**

- While most of the VHF narrowband interoperable channels indicated they are “tactical,” they can be used as “command,” “staging,” or for other applications as necessary and as determined by the Incident Commander.

- Ensure that the person programming the radio follows precisely the frequency, tone and name of each channel as listed in the Texas Statewide Interoperability Channel Plan. During the 2011 wildfire season many instances came to light where something was different which resulted in no communication between resources.

- When interagency resources check in with your incident, determine their interoperable communications capabilities. From this, a communications plan can be developed and/or assignments made.

- When calling mutual aid resources to your incident, consider having them travel on an interoperable channel that both of you can access. That way you will know how to contact each other should they need to be guided to the ICP, reassigned, etc.

- Practice using interoperable channels on routine incidents/events, and include interagency and inter-discipline resources.
### TSICP Table 1

**VHF 150 MHz Narrowband Interoperability Channels** *(12.5 kHz)*  
**Emission Designators 11K2F3E, 11K3F3E, 11K2G2E**

<table>
<thead>
<tr>
<th>Label</th>
<th>Receive</th>
<th>Transmit</th>
<th>Station Class</th>
<th>CTCSS RX /TX</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCALL10</td>
<td>155.7525</td>
<td>155.7525</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Calling Channel</td>
</tr>
<tr>
<td>VTAC11</td>
<td>151.1375</td>
<td>151.1375</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VTAC12</td>
<td>154.4525</td>
<td>154.4525</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VTAC13</td>
<td>158.7375</td>
<td>158.7375</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VTAC14</td>
<td>159.4725</td>
<td>159.4725</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE21</td>
<td>154.2800</td>
<td>154.2800</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE22</td>
<td>154.2650</td>
<td>154.2650</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE23</td>
<td>154.2950</td>
<td>154.2950</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE24</td>
<td>154.2725</td>
<td>154.2725</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE25</td>
<td>154.2875</td>
<td>154.2875</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VFIRE26</td>
<td>154.3025</td>
<td>154.3025</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel (for Air-to-Ground use)</td>
</tr>
<tr>
<td>VMED28</td>
<td>155.3400</td>
<td>155.3400</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel (and for Air-to-Ground use)</td>
</tr>
<tr>
<td>VMED29</td>
<td>155.3475</td>
<td>155.3475</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VLAW31</td>
<td>155.4750</td>
<td>155.4750</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>VLAW32</td>
<td>155.4825</td>
<td>155.4825</td>
<td>FBT / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Channel</td>
</tr>
<tr>
<td>TXCALL1D</td>
<td>154.950</td>
<td>154.950</td>
<td>FBT / MO</td>
<td>156.7 / 156.7</td>
<td>Mobile-to-Mobile Calling Channel</td>
</tr>
<tr>
<td>TXCALL2D</td>
<td>155.370</td>
<td>155.370</td>
<td>FBT / MO</td>
<td>156.7 / 156.7</td>
<td>(PRI: Calling Channel for State/Federal Aircraft to/from a Base and SEC: VCALL10 backup)</td>
</tr>
</tbody>
</table>

**NOTE:** The sub-audible tones of the following are different:

| VTAC33    | 159.4725 | 151.1375 | FB2T          | CSQ / 136.5  | Tactical Repeater **Secondary 1**        |
| VTAC34    | 158.7375 | 154.4525 | FB2T          | CSQ / 136.5  | Tactical Repeater **Secondary 2**        |
| VTAC35    | 159.4725 | 158.7375 | FB2T          | CSQ / 136.5  | Tactical Repeater **Secondary 3**        |
| VTAC36    | 151.1375 | 159.4725 | FB2T          | CSQ / 136.5  | Tactical Repeater **Preferred 1**        |
| VTAC37    | 154.4525 | 158.7375 | FB2T          | CSQ / 136.5  | Tactical Repeater **Preferred 2**        |
| VTAC38    | 158.7375 | 159.4725 | FB2T          | CSQ / 136.5  | Tactical Repeater **Preferred 3**        |
* Sub-audible tones, matching the transmit tones of the above VHF channels, can be added to the receive side if interference is experienced during an incident.

** In an emergency, additional Department of Defense VHF Repeater Channels (below 150.8 MHz) can be made available through coordination with the Communications Coordination Group (CCG). Please contact the CCG through your local Disaster District Committee. Alternate contact information is: ccg@dps.texas.gov and 512-424-2755.

### TSICP Table 2
**UHF 450 MHz Narrowband Interoperability Channels (12.5 kHz)**
**Emission Designators 11K2F3E, 11K3F3E, 11K2G2E**

<table>
<thead>
<tr>
<th>Label</th>
<th>Receive</th>
<th>Transmit</th>
<th>Station Class</th>
<th>CTCSS RX/TX</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCALL40</td>
<td>453.2125</td>
<td>458.2125</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Calling Channel (Repeater)</td>
</tr>
<tr>
<td>UCALL40D</td>
<td>453.2125</td>
<td>453.2125</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Calling Channel (Direct)</td>
</tr>
<tr>
<td>UTAC41</td>
<td>453.4625</td>
<td>458.4625</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater Channel</td>
</tr>
<tr>
<td>UTAC41D</td>
<td>453.4625</td>
<td>453.4625</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater (Direct)</td>
</tr>
<tr>
<td>UTAC42</td>
<td>453.7125</td>
<td>458.7125</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater Channel</td>
</tr>
<tr>
<td>UTAC42D</td>
<td>453.7125</td>
<td>453.7125</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater (Direct)</td>
</tr>
<tr>
<td>UTAC43</td>
<td>453.8625</td>
<td>458.8625</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater Channel</td>
</tr>
<tr>
<td>UTAC43D</td>
<td>453.8625</td>
<td>453.8625</td>
<td>FX1T / MO</td>
<td>CSQ / 156.7</td>
<td>Tactical Repeater (Direct)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Label</th>
<th>Receive</th>
<th>Transmit</th>
<th>Station Class</th>
<th>CTCSS RX/TX</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCALL40</td>
<td>458.2125</td>
<td>453.2125</td>
<td>FB2T</td>
<td>156.7 / CSQ</td>
<td>Mobile Command Post Calling Channel Base</td>
</tr>
<tr>
<td>UTAC41</td>
<td>458.4625</td>
<td>453.4625</td>
<td>FB2T</td>
<td>156.7 / CSQ</td>
<td>Incident Temporary Repeater Channels</td>
</tr>
<tr>
<td>UTAC42</td>
<td>458.7125</td>
<td>453.7125</td>
<td>FB2T</td>
<td>156.7 / CSQ</td>
<td>Incident Temporary Repeater Channels</td>
</tr>
<tr>
<td>UTAC43</td>
<td>458.8625</td>
<td>453.8625</td>
<td>FB2T</td>
<td>156.7 / CSQ</td>
<td>Incident Temporary Repeater Channels</td>
</tr>
</tbody>
</table>

For additional information, please refer to the revised TSICP at [http://dps.texas.gov/LawEnforcementSupport/communications/interop/index.htm](http://dps.texas.gov/LawEnforcementSupport/communications/interop/index.htm).
ICS Management
Characteristics
ICS Management Characteristics

14 Management Characteristics

- Common Terminology
- Modular Organization
- Management by Objectives
- Incident Action Planning
- Manageable Span of Control
- Incident Facilities and Locations
- Comprehensive Resource Management
- Integrated Communications
- Establishment and Transfer of Command
- Chain of Command and Unity of Command
- Unified Command
- Accountability
- Dispatch/Deployment
- Information and Intelligence Management
Common Terminology

**Common Terminology:** ICS establishes common terminology that allows diverse incident management and support organizations to work together across a wide variety of incident management functions and hazard scenarios. This common terminology covers the following:

- **Organizational Functions:** Major functions and functional units with incident management responsibilities are named and defined. Terminology for the organizational elements is standard and consistent.
- **Resource Descriptions:** Major resources—including personnel, facilities, and major equipment and supply items—that support incident management activities are given common names and are "typed" with respect to their capabilities, to help avoid confusion and to enhance interoperability.
- **Incident Facilities:** Common terminology is used to designate the facilities in the vicinity of the incident area that will be used during the course of the incident.

Incident response communications (during exercises and actual incidents) should feature plain language commands so they will be able to function in a multijurisdiction environment. Field manuals and training should be revised to reflect the plain language standard.

Modular Organization

**Modular Organization:** The ICS organizational structure develops in a modular fashion based on the size and complexity of the incident, as well as the specifics of the hazard environment created by the incident. When needed, separate functional elements can be established, each of which may be further subdivided to enhance internal organizational management and external coordination. Responsibility for the establishment and expansion of the ICS modular organization ultimately rests with Incident Command, which bases the ICS organization on the requirements of the situation. As incident complexity increases, the organization expands from the top down as functional responsibilities are delegated. Concurrently with structural expansion, the number of management and supervisory positions expands to address the requirements of the incident adequately.
Management by Objectives

**Management by Objectives:** Management by objectives is communicated throughout the entire ICS organization and includes:

- Establishing overarching incident objectives.
- Developing strategies based on overarching incident objectives.
- Developing and issuing assignments, plans, procedures, and protocols.
- Establishing specific, measurable tactics or tasks for various incident management functional activities, and directing efforts to accomplish them, in support of defined strategies.
- Documenting results to measure performance and facilitate corrective actions.

Incident Action Planning

**Incident Action Planning:** Centralized, coordinated incident action planning should guide all response activities. An Incident Action Plan (IAP) provides a concise, coherent means of capturing and communicating the overall incident priorities, objectives, and strategies in the contexts of both operational and support activities. Every incident must have an action plan. However, not all incidents require written plans. The need for written plans and attachments is based on the requirements of the incident and the decision of the Incident Commander or Unified Command. Most initial response operations are not captured with a formal IAP. However, if an incident is likely to extend beyond one operational period, become more complex, or involve multiple jurisdictions and/or agencies, preparing a written IAP will become increasingly important to maintain effective, efficient, and safe operations.
Manageable Span of Control

Manageable Span of Control: Span of control is key to effective and efficient incident management. Supervisors must be able to adequately supervise and control their subordinates, as well as communicate with and manage all resources under their supervision. In ICS, the span of control of any individual with incident management supervisory responsibility should range from 3 to 7 subordinates, with 5 being optimal. During a large-scale law enforcement operation, 8 to 10 subordinates may be optimal. The type of incident, nature of the task, hazards and safety factors, and distances between personnel and resources all influence span-of-control considerations.

Incident Facilities and Locations

Incident Facilities and Locations: Various types of operational support facilities are established in the vicinity of an incident, depending on its size and complexity, to accomplish a variety of purposes. The Incident Command will direct the identification and location of facilities based on the requirements of the situation. Typical designated facilities include Incident Command Posts, Bases, Camps, Staging Areas, mass casualty triage areas, point-of-distribution sites, and others as required.
Comprehensive Resource Management

*Comprehensive Resource Management*: Maintaining an accurate and up-to-date picture of resource utilization is a critical component of incident management and emergency response. Resources to be identified in this way include personnel, teams, equipment, supplies, and facilities available or potentially available for assignment or allocation. Resource management is described in detail in Component III.

Integrated Communications

*Integrated Communications*: Incident communications are facilitated through the development and use of a common communications plan and interoperable communications processes and architectures. The ICS 205 form is available to assist in developing a common communications plan. This integrated approach links the operational and support units of the various agencies involved and is necessary to maintain communications connectivity and discipline and to enable common situational awareness and interaction. Preparedness planning should address the equipment, systems, and protocols necessary to achieve integrated voice and data communications.
Establishment and Transfer of Command

Establishment and Transfer of Command: The command function must be clearly established from the beginning of incident operations. The agency with primary jurisdictional authority over the incident designates the individual at the scene responsible for establishing command. When command is transferred, the process must include a briefing that captures all essential information for continuing safe and effective operations.

Chain of Command and Unity of Command

Chain of Command and Unity of Command:

- Chain of Command: Chain of command refers to the orderly line of authority within the ranks of the incident management organization.
- Unity of Command: Unity of command means that all individuals have a designated supervisor to whom they report at the scene of the incident. These principles clarify reporting relationships and eliminate the confusion caused by multiple, conflicting directives. Incident managers at all levels must be able to direct the actions of all personnel under their supervision.
Unified Command

**Unified Command:** In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability.

Accountability

**Accountability:** Effective accountability of resources at all jurisdictional levels and within individual functional areas during incident operations is essential. Adherence to the following ICS principles and processes helps to ensure accountability:

- Resource Check-In/Check-Out Procedures
- Incident Action Planning
- Unity of Command
- Personal Responsibility
- Span of Control
- Resource Tracking
Dispatch/Deployment

Dispatch/Deployment: Resources should respond only when requested or when dispatched by an appropriate authority through established resource management systems. Resources not requested must refrain from spontaneous deployment to avoid overburdening the recipient and compounding accountability challenges.

Information and Intelligence Management

Information and Intelligence Management: The incident management organization must establish a process for gathering, analyzing, assessing, sharing, and managing incident-related information and intelligence.
List of Acronyms
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR</td>
<td>After Action Review</td>
</tr>
<tr>
<td>AC</td>
<td>Area Commander</td>
</tr>
<tr>
<td>ACA</td>
<td>Alternative Consultation Agreement</td>
</tr>
<tr>
<td>AD</td>
<td>Administratively Determined Pay Plan</td>
</tr>
<tr>
<td>AFF</td>
<td>Automated Flight Following</td>
</tr>
<tr>
<td>AFS</td>
<td>Alaska Fire Service</td>
</tr>
<tr>
<td>AMD</td>
<td>Aviation Management Directorate</td>
</tr>
<tr>
<td>AMR</td>
<td>Appropriate Management Response</td>
</tr>
<tr>
<td>AMRS</td>
<td>All-Hazards Meteorological Response System</td>
</tr>
<tr>
<td>APMC</td>
<td>Agency Provided Medical Care</td>
</tr>
<tr>
<td>APT</td>
<td>Administrative Payment Team</td>
</tr>
<tr>
<td>ARD</td>
<td>Air Resources Division</td>
</tr>
<tr>
<td>ARD</td>
<td>Associate Regional Director</td>
</tr>
<tr>
<td>ASAT</td>
<td>Aviation Safety Assistance Team</td>
</tr>
<tr>
<td>ASCADS</td>
<td>Automated Sorting, Conversion, and Distribution System</td>
</tr>
<tr>
<td>ASM1</td>
<td>Aerial Supervision Module</td>
</tr>
<tr>
<td>ATD</td>
<td>Actual Time of Departure</td>
</tr>
<tr>
<td>BAER</td>
<td>Burned Area Emergency Response</td>
</tr>
<tr>
<td>BAR</td>
<td>Burned Area Rehabilitation</td>
</tr>
<tr>
<td>BAU</td>
<td>Budget Advisory Unit</td>
</tr>
<tr>
<td>BIA</td>
<td>Bureau of Indian Affairs</td>
</tr>
<tr>
<td>BLM</td>
<td>Bureau of Land Management</td>
</tr>
<tr>
<td>BPA</td>
<td>Blanket Purchase Agreement / Business Purchase Agreement</td>
</tr>
</tbody>
</table>
BUYT – Buying Team

C# - Crew Resource Request Number
CA – Community Assistance
CAA – Clean Air Act
CAR – Communities-at-Risk
CAT – Cost Apportionment Team
CBI – Composite Burn Index
CDO – Communications Duty Officer
CE – Categorical Exclusion
CESU – Cooperative Education Studies Unit
CFFP – Cooperative Forest Fire Prevention Program
CFR – Code of Federal Regulations
CIO – Chief Information Officer
CLMS – Claims Specialist
CMMS – Computer Maintenance Management System
CMSY – Commissary Manager
CO – Contracting Officer
COMC – Communications Coordinator
COML – Incident Communication Unit Leader
COP – Continuation of Pay / Chief-of-Party
COR – Contracting Officer Representative
COST – Cost Unit Leader
COTR – Contracting Officer Technical Representative
CPIC – Capital Planning and Investment Control
CREP – Crew Representative
CRM – Crew Resource Management
CTR – Crew Time Report
CWN – Call-When-Needed agreements
CWPP – Community Wildfire Protection Plan

DASHO – Designated Agency Safety and Health Official
DASP – Disaster Assistance Support Program
DAWG – Data Administration Working Group
DCO – Defense Coordination Officer
DIAR – Department of the Interior Acquisition Regulation
DM – Departmental Manual
DMS – Dispatch Messaging System
DO – Director’s Order
DOD – Department of Defense
DOI – Department of the Interior
DOT – Department of Transportation
DRGS – Direct Readout Ground Station
DRM – Data Reference Model
DROT – DOMSAT Receive-only Terminal

E# - Equipment Resource Request Number
EA – Enterprise Architecture
EA – Environmental Assessment
EEERA – Emergency Equipment Rental Agreements
EFT – Electronic Funds Transfer
EFTR – Emergency Firefighter Time Report
EIS – Environmental Impact Statement
ELA – Enterprise License Agreement
EPA – Environmental Protection Agency
EQTR – Equipment Time Recorder
ES – Emergency Stabilization
ESA – Endangered Species Act
ESF – Environmental Screening Form
ESM – Environmental Statement Memorandum
ESR – Emergency Stabilization and Rehabilitation
ETA – Estimated Time of Arrival
ETD – Estimated Time of Departure
ETE – Estimated Time En route

FAAP – NPS Fire and Aviation Applications Portal
FAR – Federal Acquisition Regulation
FAST – Wildland Fire and Aviation Safety Team
FBO – Fixed Base Operator
FEA – Federal Enterprise Architecture
FEAT – Fire Ecology Assessment Tool
FEC – Fire Executive Council
FECA – Federal Employees Compensation Act
FEIS – Fire Effects Information System
FEMO – Fire Effects Monitor
FFS – Federal Financial System
FGDC – Federal Geographic Data Committee
FIREMON – Fire Effects Monitoring and Inventory System
**FISMA** – Federal Information Security Management Act

**FLE** – Fire Line Explosives

**FLSA** – Fair Labor Standards Act

**FMLB** – Fire Management Leadership Board

**FMO** – Fire Management Officer

**FMP** – Fire Management Plan

**FMPC** – Fire Management Program Center

**FMU** – Fire Management Unit

**FOG** – Field Operations Guide

**FONSI** – Finding of No Significant Impact

**FOR** – Fixed Ownership Rate

**FPA** – Fire Program Analysis

**FPU** – Fire Planning Unit

**FRAMES** – Fire Research and Management Exchange System

**FRAWS** – Wildfire Support Remote Automated Weather Station

**FRCC** – Fire Regime and Condition Class

**FS** – Forest Service

**FSC** – Finance/Administration Section Chief

**FTE** – Full Time Equivalency

**FTP** – File Transfer Protocol

**FTS** – Forest Technology Systems

**FUM** – Fire Use Manager

**FUMT** – Fire Use Management Team

**FWS** – Fish and Wildlife Service

**GACC** – Geographic Area Coordination Center
GACG – Geographic Area Coordinating Group
GIS – Geographic Information System or Geospatial Information System
GMAC – Geographic Multi-Agency Coordination Group
GMP – General Management Plan
GOES – Geostationary Operational Environmental Satellite
GPO – Government Printing Office
GPRA – Government Performance Results Act
GPS – Global Positioning System
GS – General Schedule (Pay Plan)
GSA – U.S. General Services Administration
GTG – NWCG Geospatial Technology Group
GVW – Gross Vehicle Weight Rating

HFI – Healthy Forests Initiative
HMGB – Helicopter Manager Single Resource
HUDC – Host Unit Dispatch Center

I&M – Inventory and Monitoring
IA – Initial Attack
IAP – Incident Action Plan
IARR – Interagency Resource Representative
IBC – Incident Business Advisor
IC – Incident Commander
ICC – International Code Council
ICO – Incident Contracting Officer
ICP – Incident Command Post
ICS – Incident Command System
ICS 209 – Incident Status Summary
IDIQ – Indefinite Delivery, Indefinite Quantity
IDT – Interdisciplinary Team
IFP – Incident Finance Package
IFPM – Interagency Fire Program Management
IGO – Intra-Governmental Order
IHC – Interagency Hotshot Crew
IMET – Incident Meteorologist
IMSR – Incident Management Situation Report
IMT – Incident Management Team
INCINET – Incident Network
INJR – Injury Compensation Specialist
IPAC – Intra-Governmental Payment and Collection
IQCS – Incident Qualifications and Certification System
IRAWS – Incident Remote Automatic Weather Station
IRIN – Infrared Interpreter
IRM – Information Resource Management
IRPG – Incident Response Pocket Guide (NFES 1077, PMS 461)
ISO – Incident Support Organization
ISOG – Interagency SEAT Operations Guide
IT – Information Technology
ITIC – Information Technology Investment Council

JCC – Job Corp Center
JFSP – Joint Fire Science Program
JFO – Joint Field Office
JHA – Job Hazard Analysis

LAL – Lightning Activity Level
LCES – Lookouts-Communications-Escape Routes-Safety Zones
LODD – Line of Duty Death
LWOP – Leave Without Pay

M# - Medical Resource Order Number
MAC – Multi-Agency Coordinating Group
MAFFS – Modular Airborne Fire Fighting System(s)
MCAD – Military Crew Advisor
MCR – Human-caused Risk
MIST – Minimum Impact Suppression Tactics
MMA – Maximum Manageable Area
MOA – Memorandum of Agreement
MOU – Memorandum of Understanding
MRE – Meals Ready to Eat
MTBS – Monitoring Trends in Burn Severity

NAAQS – National Ambient Air Quality Standards
NAFRI – National Advanced Fire and Resource Institute
NASF – National Association of State Foresters
NCO – National Contracting Officer
NEPA – National Environmental Policy Act
NFDRS – National Fire Danger Rating System
NFES – National Fire Equipment System
NFP – National Fire Plan
NFPA – National Fire Protection Agency
NFPET – National Fire Prevention Education Team
NFPORS – National Fire Plan Operations and Reporting System
NGO – Non-governmental Organization
NHPA – National Historic Preservation Act
NICC – National Interagency Coordination Center
NIFC – National Interagency Fire Center
NIIMS – National Interagency Incident Management System
NIMO – National Incident Management Organization Teams
NIRSC – National Incident Radio Support Cache
NISC – National Information Systems Center
NITC – National Information Technology Center
NMAC – National Multi-Agency Coordination [Group]
NMAS – National Map Accuracy Standard
NOI – Notice of Intent
NPS – National Park Service
NRCC – National Response Coordination Center
NRF – National Response Framework
NWCG – National Wildfire Coordinating Group
NWFEA – National Wildland Fire Enterprise Architecture

O# - Overhead Resource Request Number
OF – Optional Form
OFDA – Office of Foreign Disaster Assistance

OGC – Office of General Council (USDA)

OMB – Office of Management and Budget

ONPS – Operations of NPS funding

OPF – Official Personnel Folder

OSHA – Occupational Safety and Health Administration

OWCP – Office of Workers’ Compensation Programs

OWDC – Operations and Workforce Development Committee

OWFC – Office of Wildland Fire Coordination

P.L. – Public Law

PAX - Passengers

PII – Personally Identifiable Information

PM – Particulate Matter

PMIS – Project Management Information System

PMS – Publication Management System

PMU – Program Management Unit

POC – Point of Contact

POE – Point of Entry

PPE – Personal Protective Equipment

PRAWS – A non-fire project support Remote Automated Weather Station

PROC – Procurement Unit Leader

PRM – Performance Reference Model

PSD – Prevent Significant Deterioration

PTB – Position Task Book

PTRC – Personnel Time Recorder
PWE – Primary Work Element

QA/QC – Quality Assessment / Quality Control

RAMS – Risk Assessment and Mitigation Strategies
RAO – Regional Aviation Officer
RAWS – Remote Automated Weather Station
RCU – Responsibilities for Computer Use
RFD – Rural Fire Department
RMP – Resource Management Plan
ROD – Record of Decision
ROMAN – Real-time Observation Monitoring and Analysis Network
ROSS – Resource Ordering and Status System
RRCC – Regional Response Coordination Center
RSFWSU – Remote Sensing Fire Weather Support Unit
RSS – Resource Stewardship Strategy
RX – Prescribed (fire)

S# - Supply Resource Request Number
SACS – Shared Application Computer System
SAIT – Serious Accident Investigation Team
SCC – Service-wide Comprehensive Call
SCSEP – Senior Community Service Employment Program
SEAT – Single Engine Air Tanker
SF – Standard Form
S&PF – State and Private Forestry
SHPO – State Historic Preservation Office
SIP – State Implementation Plan
SLA – Service Level Agreement
SME – Subject Matter Expert
SMIS – Safety Management Information System
SMTP – Simple Mail Transfer Protocol
SOP – Standard Operating Procedure
SPOC – Single Point of Contact
STLM – Strike Team Leader - Military
SUA – Satellite User Agreements
SWB – Statement of Work and Budget

T& E – Threatened and Endangered
TA -
TFR - Temporary Flight Restriction
THPO – Tribal Historic Preservation Office
THSP - Technical Specialist
TIME – Time Unit Leader
TMA - Truck- Mounted Attenuator

USC – United States Code
USDA – United States Department of Agriculture
USFA – United States Fire Administration
UTF – Unable to Fill

VOR - VHF Omnidirectional Range
VLAT - Very Large Airtanker

YCC – Youth Conservation Corp
YOYP – You Order You Pay

WASO – Washington Support Office
WCF – Working Capital Fund
WFEWT – Wildland Fire Education Working Team
WFIEB – Wildland Fire Investment Evaluation Board
WFIP – Wildland Fire Implementation Plan
WFLC – Wildland Fire Leadership Council
WFMI – Wildland Fire Management Information System
WFSA – Wildland Fire Situation Analysis
WG – Wage Grade (Pay Plan)
WIMS – Weather Information Management System
WL – Wage Leader
WRCC – Western Region Climate Center
WS- Wage Supervisor
WUI – Wildland Urban Interface
Personal Protective Equipment
Personal Protective Equipment

• All firefighters shall be equipped with personal protective clothing defined by NWCG or Interagency Specific Standards [NWCG#008-2010]. This includes:
  – fire resistant shirt and pants or coveralls,
  – helmet,
  – eye protection,
  – heavy-duty leather gloves,
  – 8” tall laceup leather boots, and
  – a fire shelter.
If firefighting involves time away from the apparatus then a backpack with personal equipment and at least 2 quarts of drinking water is recommended.

Personal Protective Equipment

• These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  – fire resistant shirt and pants or coveralls,

Strikefore Nomex IIIA
$ 106.25 - $ 138.25

Nomex Brush Pants
$ 167.00 - $ 201.50

Topps Economy Nomex IIIA
$ 233.50 - $ 273.00
Personal Protective Equipment

• These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather
  - 8” tall laceup leather
  - a fire shelter.  Bullard "USRX Series" Helmet
    $ 176.50

Personal Protective Equipment

• These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather
  - 8” tall laceup leather
  - a fire shelter.  Shark Hunter Range Safety Glasses - Bouton
    $ 4.50 - $ 5.75
Personal Protective Equipment

- These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather gloves,
  - 8” tall laceup leather boots,
  - a fire shelter.

North Star 100% Leather Pull-Strap Driver Gloves
$19.50

Personal Protective Equipment

- These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather gloves,
  - 8” tall laceup leather boots,
  - a fire shelter.

Fire Flash Xtream Boot 10in
Uppers NFPA – Haix
$423.00
Personal Protective Equipment

• These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.
  – fire resistant shirt and pants or coveralls
  – helmet,
  – eye protection,
  – heavy-duty leather gloves,
  – 8” tall laceup leather boots,
  – a fire shelter.

New Generation Rev-E Fire Shelter
$ 428.50

Personal Protective Equipment

• These do not include all options and are not specific for one provider. Note: not all providers or manufactures are equal in quality. All items are from http://www.firecache.com.

  – Hearing protection

Zip-Outs Safety Glasses—
PermaFoam, PlugsSafety
$ 7.00

Gel Caps Ear Protection—
Banded, Elvex
$ 4.00
Appendix C

Training Modules
MODULE 1
INTRODUCTION

TXDOT WILDLAND
FIRE MANAGEMENT
Training
Course No.: ??????
ISSUE: ??????

INTRODUCTION
SLIDE 1.2

About the Course
OVERVIEW

• 6.0 hours duration
• Primary audience: “Operations personnel with one to three years of roadway maintenance experience”

INTRODUCTION
SLIDE 1.3

Course Outline
TXDOT WILDLAND FIRE MANAGEMENT TRAINING

Six Learning Modules, approx 1 hour each

1. Introduction
2. Organization and Communication
3. Resources and Equipment
4. Safety
5. Documentation and Data Collection
6. Training Programs

INTRODUCTION
SLIDE 1.4

Instructional Materials
TXDOT WILDLAND FIRE MANAGEMENT

• Student Manual
  – Presentation slides
  – Learning exercises (green sheets)
  – Reference pages (white sheets)
  – Review (pink sheets)
• End-of-Course Exam
• Course Evaluation

INTRODUCTION
SLIDE 1.5

Learning Icons
TXDOT WILDLAND FIRE MANAGEMENT TRAINING

• Digging Deeper/ Food for Thought
• Video Clip
• Reference Material
• Summary and Review

INTRODUCTION
SLIDE 1.6
Instructional Plan

TXDOT WILDLAND FIRE MANAGEMENT TRAINING

• Instructor-led, face-to-face
  - Classroom... presentations, videos
  - Field... fire shelter, hands-on
• Student interaction
• 60 minutes for lunch
• 10-minute breaks, on the hour (+/-)

Do’s and Don’ts

TXDOT WILDLAND FIRE MANAGEMENT TRAINING

**DO’s**
• Be on time
• Participate in group discussion/exercises
• Ask questions!
• Respond to questions when prompted by Instructor
• Help your co-workers
• Be responsible for your learning

**DON’ts**
• Forget to turn off pagers & cell phones or set to vibrate
• Talk among yourselves when the Instructor is talking
• Disrespect others

Meet Your Neighbors

TXDOT WILDLAND FIRE MANAGEMENT TRAINING

• Student introductions
  - Name
  - Maintenance office
  - Years experience
• Instructor introduction
  - Name
  - Training organization
  - Years experience

Learning Objectives

INTRODUCTION

Upon completion of this section, the learner will be able to:
1. Explain TxDOT’S Role in Wildland Fire Management
2. List Best Practices in Handling Wildfires

VIDEO 1.1 (02:00)

TxDOT Wildland Fire Management

SPEAKER

John A. Barton, P.E.
Deputy Executive Director/
Chief Engineer
Texas Department of Transportation
**Key Themes**

**TXDOT ADMINISTRATION PERSPECTIVE**
- Safety
- Careful planning
- Preparation
- Communication
- Service expectations
- Know your responsibilities
- Coordinate efforts
- Work together
- Expectations

---

**Exercise 1.1**

**Wildland Fire Management Safety**

1. Think about and jot down at least 3 safety considerations specific to TXDOT wildland fire management operations (individual assignment).
2. Meet with the people around you (3 to 4 persons) and discuss your ideas.

*Be prepared to discuss your answers (5 minutes).*

---

**What We Learned**

- TXDOT Interviews
  - Districts (10)
    - Abilene
    - Amarillo
    - Austin
    - Beaumont
    - Childress
    - El Paso
    - Fort Worth
    - Lubbock
    - Odessa
    - San Angelo
  - Corpus Christi & Pharr (phone interviews)
  - Maintenance Division

- **Other State Agencies Interviewed**
  - Department of Public Safety
    - Division of Emergency Management
  - Texas Forest Service
    - Asst. Fire Chief, West
    - RFC, Lubbock
    - RFC, Wichita Falls
  - Texas Parks & Wildlife
Local Agencies Interviewed

- Bastrop County
- Garza County & City of Post Emergency Management Coordinator
- King County
- Lubbock City Fire Department
- Potter & Randall County Emergency Management

National Weather Service Lubbock Office

- Science & Operations Officer
- Senior Forecaster

TxDOT Interview Questionnaire

- Advance Preparation
- Notification/Request for services to a TxDOT District
- Communication related to an event within TxDOT
- Communication with outside agencies
- TxDOT responsibilities to ensure employee/public safety
- Resource utilization by TxDOT during wildfire events
- Information from recent wildfires
- Effectiveness of current training
- Comments on existing resources/guidance

Advance Preparation Common Responses

- Do not respond until notified by DPS
- Director of Maintenance (DOM)/ Director of Operations (DOO) receives official notice
- DOM/ DOO contacts Maintenance Supervisor

Notification/Request for TxDOT Services Common Responses

- TxDOT does not engage off the ROW until officially directed by DDC.
- Director of Maintenance (DOM) is the official Point of Contact (POC) for the District.
- Equipment typically requested: dozers, motor- graders, fuel trailers, water trailers, and sign trailers.
- Districts typically have 1-6 requests for assistance annually. One District responded to 50 fires in 2011.
- Governor’s Emergency Disaster Proclamations reach Districts through Maintenance Division & the media.

Communication Related to an Event Within TxDOT Common Responses

- DDC directs DOM to respond to an event, and the DOM then notifies the Maintenance Supervisor(s).
- Involvement of other TxDOT offices varies by district.
- DOM authorizes resource utilization requests.
- Many districts use Daily Activity Reports (DARs) and Microsoft SharePoint to collect data on events.
- Coordination between Districts handled DOM to DOM.
- TxDOT public notification duties include traffic control & updating Highway Condition Report (HCR).
- Advanced briefing/debriefing differ between Districts.
MODULE 1
INTRODUCTION

Communication with Outside Agencies
Common Responses

- TxDOT has no formal responsibility for public notification of wildfire events.
- Districts typically coordinate with DDC, DPS, TFS, local governments, TCEQ, and utility companies during a wildfire event.
- Interaction with other agencies outside of a wildfire event is key to effective response during an event.
- There is no standard statewide protocol for interacting with outside agencies during a wildfire event.

TxDOT Resource Utilization during Events
Common Responses

- Equipment typically used by TxDOT during an event includes: dozers, motor-graders, fuel trailers, water trailers, sign trailers, and traffic control devices.
- Only TxDOT personnel use TxDOT resources.
- The number of TxDOT personnel deployed during a wildfire event varies significantly by District and event size, although teams are typically small.
- The number of volunteer firefighters employed by a TxDOT District varies greatly.

Advanced Preparation, Readiness & Training
Common Responses

- Districts try to keep equipment pre-loaded and ready to deploy whenever possible.
- Districts often watch weather reports and try to stay aware of TFS notifications.
- Districts typically have no formal staging protocols.

Existing Resources/Guidance for Wildfire Response
Common Responses

- Districts identified the need for detailed statewide guidance for wildfire response.
- TxDOT Maintenance Operations Manual should also be updated.
- TxDOT requires FEMA IS training. Additional training resources are available through TFS.
Summary and Review

1. TxDOT’s chief goal is safety.
2. Maintaining communication and a chain of command during a wildland fire incident is critical.
3. TxDOT employees must understand their role during wildland fire response.
Learning Objectives

Upon completion of this section, the learner will be able to:

1. Know what resources the state uses in responding to wildland fire incidents.
2. Understand what role TxDOT plays in the response to wildland fire incidents.

Learning Objectives, cont’d

3. List what agencies TxDOT may interact with during a wildland fire response.
4. Locate important state resources on a map.

Texas State Emergency Management (EM)

- Covered in Ch. 418 (Emergency Management) and Ch. 421 (Homeland Security) of Texas Govt. Code
- Agencies Involved in Statewide EM
  - The Governor’s Office of Homeland Security
  - State Emergency Management Council (SEMC)
  - Div. of Emergency Management (TDEM), Texas DPS
  - Texas Forest Service (TFS)

Texas State Emergency Management

- Texas uses a "tiered" approach to wildfire response and suppression.
- Local fire departments and counties are the first responders.
- State response activated as wildfires or conditions exceed the local ability to control.
- If State resources are deemed insufficient, out-of-state agencies are called upon.
The Governor’s Office of Homeland Security

- The Director of the Governor’s Office of Homeland Security serves as the
  - Director of the Governor’s Division of Emergency Management (GDEM), and as
  - Chair of the State Emergency Management Council (SEMC)

- The SEMC has been authorized to issue directives that are necessary to effectively follow the Texas Disaster Act (Ch. 418, Govt. Code)

State Emergency Management Council (SEMC)

- Adjutant General’s Department
- American Red Cross (ARC)
- General Land Office (GLO)
- Governor’s Division of Emergency Management (GDEM)
- Office of Rural Community Affairs (ORCA)
- Public Utility Commission of Texas (PUC)
- Railroad Commission of Texas (RRC)
- Salvation Army (TSA)
- State Auditor’s Office (SAO)
- State Comptroller of Public Accounts (CPA)
- Texas Animal Health Commission (TAHC)
- Texas Attorney General’s Office (OAG)
- Texas Building & Procurement Commission (BPC)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Commission on Fire Protection (TCFP)
- Department of Aging & Disability Services (TDARS)
- Department of Agriculture (TDA)
- Department of Assisted & Rehabilitative Services (DARS)
- Department of Criminal Justice (TDCJ)
- Department of Community Affairs (TDHCA)
- Department of Criminal Justice (TDCJ)
- Department of Insurance (TDI)
- Department of Protective & Family Services (DFPS)
- Department of Public Safety (DPS)
- Department of State Health Services (DSHS)
- Texas Commission on Fire Protection (TCEQ)
- Texas Education Agency (TEA)
- Texas Engineering Extension Service (TEEX)

TX Division of Emergency Management (TDEM) Regional Coordinators

- TDEM shall prepare and maintain a state emergency management plan.
TFS Texas Fire Resource Availability Map

http://tfsfrp.tamu.edu/wildfires/resources.png

**Five Types of Emergency Incidents**

- These are rated by complexity.
  - Type V incident
  - Type IV incident
  - Type III incident
  - Type II incident
  - Type I incident

  Increase in intensity

- TFS developing teams to handle different types of incidents.

- Currently there are multiple Type III & one Type II Team

**Agencies Responsible for Coordinating Wildfire Response in Texas**

- TDEM Disaster District Committees (DDCs)
- Texas Intrastate Fire Mutual Aid System (TIFMAS)
- National Wildfire Coordination Group (NWCG)
- Texas Forest Service (TFS)

**2011 Resource Mobilization through TICC**

http://ticc.tamu.edu/Documents/Home/TICC_2011_Resources.jpg

**NIMS and TxDOT**

- When directed by DDC to serve in emergency incidents, TxDOT plays a critical role in public guidance during emergency incident occurrence and has to work within the NIMS framework.

**Exercise 2.1**

**TxDOT Wildland Fire Management**

In your Learner Groups, discuss the following question:

1. What other agencies are you likely to interact with personally when responding to a wildland fire?
2. Jot down your ideas for discussion. Be prepared to discuss your answers (2 minutes).
VIDEO 2.2 (01:25)
Material Storage and Handling

CREDIT
“Winter Operations Training Series”
Iowa Department of Transportation
Used with permission.

Summary and Review
1. Texas responds to wildland fires with various state resources.
2. TxDOT is not a primary response unit, but rather responds to wildland fire incidents as part of a tiered system.
3. There are a number of other agencies with whom TxDOT may interact during a wildland fire incident.
Learning Objectives

Upon completion of this section, the learner will be able to:

1. List sources of information for wildland fire response.
2. Know heavy equipment available for wildland fire response.

Resources for Emergency Response

Resources for Emergency Response
- Information Resources

- Training & Education, Experience, Each other

- TxDOT
- FEMA
- TFS
- TICC
- NOAA/NWS
MODULE 3
RESOURCES AND EQUIPMENT

Resources for Emergency Response
- Information Resources -

- FEMA
  http://www.fema.gov/emergency/nims/IncidentCommandSystem.shtm

- TFS
  http://texasforestservice.tamu.edu/main/default.aspx

Resources for Emergency Response
- Information Resources -

- TFS: Resource Protection

- TFS: Predictive Services

Resources for Emergency Response
- Information Resources -

- TFS: Predictive Services

Resources for Emergency Response
- Information Resources -

- TFS

TxDOT 0-6735
Best Practices in TxDOT’s Response to Wildfires
Resources for Emergency Response - Information Resources -

- TICC:
  - Resources for Emergency Response
    - Information Resources
      - http://ticc.tamu.edu/

- TICC: Fuels/Fire Danger
  - Resources for Emergency Response
    - Information Resources
      - http://ticc.tamu.edu/PredictiveServices/FuelsFireDanger.htm

- Meso-West
  - Resources for Emergency Response
    - Information Resources
      - http://mesowest.utah.edu/cgi-bin/droman/mesomap.cgi?state=TX&rawsflag=3

- Texas Wildfire Academies
- National Wildfire Academies
- Training Calendar
- National Training Links
- Predictive Services
  - Fuels/Fire Danger
  - Fire Weather
  - Fire Outlooks
  - Fire Intelligence
  - Preparedness
  - Drought
  - Incident Response
  - Other Links
  - Safety

- Texas Wildfire Academies
- National Wildfire Academies
- Training Calendar
- National Training Links
- Predictive Services
  - Fuels/Fire Danger
  - Fire Weather
  - Fire Outlooks
  - Fire Intelligence
  - Preparedness
  - Drought
  - Incident Response
  - Other Links
  - Safety
Resources for Emergency Response - Information Resources -

- NOAA/NWS: Fire Weather
  - http://radar.srh.noaa.gov/fire/

- NOAA/NWS: Fire Weather
  - http://www.nws.noaa.gov/organization.php

- NOAA/NWS: Fire Weather

- NOAA/NWS: Fire Weather
  - http://www.srh.noaa.gov/maf/?n=top_fire

- NOAA/NWS: Fire Weather
  - http://www.hpc.ncep.noaa.gov/dailywxmap/

- NOAA/NWS: Fire Weather
  - http://www.nws.noaa.gov/organization.php
Resources for Emergency Response - Heavy Equipment -

- Dozer Boss
  DOZB
- Strike Team Leader Dozer
  STLD
- Strike Team Leader Tractor/Plow
  STPL
  All now replaced by
- Heavy Equipment Boss
  HEQB

Resources for Emergency Response - Heavy Equipment -

- Guidelines for maximum percent slope
  - 75% downhill maximum
  - 55% uphill maximum
  - 45% sidehill slope

Resources for Emergency Response - Heavy Equipment -

- Types of Blades
  - Straight Blade – can be angled to push soil to wither side of the dozer
  - 'U' Blade – used for pioneering fireline and is often followed by a straight blade
  - Brush Blade – best use is pioneering in brush, clearing and piling slash, mop-up work, and certain rehabilitation work
  - V Blade – Best in swampy ground and is also good for pioneering through dense stands of small diameter fuels

Resources for Emergency Response - Heavy Equipment -

Exercise 3.1
TxDOT Wildland Fire Management
Individual Assignment

1. Does my crew use these hand signs?
2. How can my crew’s communication when using equipment improve?

Be prepared to discuss your answers (2 minutes).

Resources for Emergency Response - Heavy Equipment -

- There is much more on Heavy Equipment such as:
  - safety zone and escape route considerations
  - watershed considerations
  - special considerations
  - use, terminology, and maintenance

For more information contact your TFS Regional Fire Coordinator.
Summary and Review

1. TxDOT employees engaged in responding to wildland fire incidents should be aware of information regarding weather, safety hazards, etc.

2. Heavy equipment operators should follow standard protocols for vehicle operation during wildland fire response.
Module 4: Safety

TxDOT Wildland Fire Management Training

Course No.: 2801

Learning Objectives

Upon completion of this section, the learner will be able to:

1. Know what PPE you need when responding to a wildfire situation
2. Know the new regulations regarding communication at a wildfire situation

Learning Objectives, cont’d

3. Identify limitations to radio communication at a wildfire site
4. Understand various situation risks involved in wildfire response

Resources for Emergency Response - Personal Protective Equipment

- All firefighters shall be equipped with personal protective clothing defined by NWCG or Interagency Specific Standards (NWCG#008-2010). This includes:
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather gloves,
  - 8" tall laceup leather boots, and
  - a fire shelter.

If firefighting involves time away from the apparatus then a backpack with personal equipment and at least 2 quarts of drinking water is recommended.

Resources for Emergency Response - Personal Protective Equipment

- These do not include all options and are not specific for one provider. Note: Not all providers or manufacturers are equal in quality. All items are from http://www.firecache.com.
  - fire resistant shirt and pants or coveralls,
  - helmet,
  - eye protection,
  - heavy-duty leather gloves,
  - 8" tall laceup leather boots, and
  - a fire shelter.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price Range</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
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<td>Strikefore Nomex IIIA</td>
<td>$105.95 - $138.25</td>
<td>Strikefore</td>
</tr>
<tr>
<td>Nomex IIIA pants</td>
<td>$167.00 - $208.90</td>
<td>Topps Economy</td>
</tr>
<tr>
<td>Nomex IIIA shirt</td>
<td>$233.50 - $273.00</td>
<td>Topps Economy</td>
</tr>
</tbody>
</table>

Bullard “USRX Series” Helmet

- $176.50

- These do not include all options and are not specific for one provider. Note: Not all providers or manufacturers are equal in quality. All items are from http://www.firecache.com.
Resources for Emergency Response  
- Personal Protective Equipment -

- These do not include all options and are not specific for one provider. Note: not all providers or manufacturers are equal in quality. All items are from http://www.firecache.com.
- fire resistant shirt and pants or coveralls,
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Shark Hunter Range Safety Glasses - Bouton $ 4.50 - $ 5.75

North Star 100% Leather Pull-Strap Driver Gloves $ 19.50

Fire Flash Xtream Boot Uppers NFPA – Haix $ 423.00

New Generation Rev-E Fire Shelter $ 428.50

Zip-Outs Safety Glasses—PermaFoam, PlugsSafety $ 7.00

Gel Caps Ear Protection—Banded, Elvex $ 4.00

Information gathered from TxDOT Districts
- Few have fire shelters and those that do lack training in their use.
- Few have access to Nomex clothing during events.
- One district has initiated the use of cloth face covers during fire events to reduce particulate inhalation.
Resources for Emergency Response  
- **Personal Protective Equipment** -

- Current Resources in Development by TxDOT
  - Two emergency response trailers equipped with
    - Nomex Coveralls
    - Helmets/face shields
    - Fire Shelters
- Resources for TxDOT Personnel to consider
  - Change of clothes (all cotton)
  - Glasses/Sun Glasses
  - Gloves
  - Boots

**Exercise 4.1**

*TxDOT Wildland Fire Management*

In your Learner Groups, discuss the following questions:

1. Why is it important to always wear PPE?
2. Why do we sometimes forget to equip proper PPE?

*Be prepared to discuss your answers (2 minutes).*

Resources for Emergency Response  
- **Communications** -

- Texas Statewide Interoperability Channel Plan
  - [http://tsiec.region49.org/](http://tsiec.region49.org/)
- Most vehicles have radios which comply with the TSICP.
- Note was made that in some areas with rough terrain communication is often broken.
- Blackberries

Resources for Emergency Response  
- **Communications** -

- Texas Statewide Interoperability Channel Plan
  - [http://tsiec.region49.org/](http://tsiec.region49.org/)
- 2012 changes
  - Removed Digital P25 requirements
  - Removed reference to P25 compliance by 2015
  - Texas Law 1  TXCALL1D
  - Texas Law 2  TXCALL2D

Resources for Emergency Response  
- **Communications** -

- Texas Statewide Interoperability Channel Plan
  - TxDPS recommended radio programming
  - 21 VHF Narrowband (NB) interoperable channels
  - 2 State of Texas VHF NB interoperability calling channels
  - 8 VHF wideband

Resources for Emergency Response  
- **Communications** -

- Texas Statewide Interoperability Channel Plan
  - These will VHF narrowband interop. frequencies will replace wideband interop. **Jan 1, 2013**
Factors that Affect Radio Communications:
- Knowledge of the radio issued to individuals
- Net control, frequencies
- Line of sight restrictions
- Antenna polarization effect
- Minimizing noise interference
- Wide band vs. narrow band

How to mitigate potential problems
- Implement effective communication procedures
- Give a good comprehensive briefing
- Confirm that relayed information is received, acknowledges, and understood
- Keep a continuous information flow
- Establish emergency check-in procedures
- Provide a minimum of 4 radios per 20-person crew

Five Communication Responsibilities
- Brief others
- Debrief your actions
- Communicate hazards to others
- Acknowledge messages
- Ask if you don’t know

National Incident Management System (NIMS)
- TFS
- TICC
- http://ticc.tamu.edu/Training/TrainingMain.htm

Resources for Emergency Response
- Communications
- Resources for Emergency Response
- Training
Exercise 4.2
TdOT Wildland Fire Management

In your Learner Groups, discuss the following question:

1. How will the changes to radio operation protocols affect communications at a wildland fire event?

Be prepared to discuss your answers (2 minutes).

Resources for Emergency Response - Situational Safety -

- Driving Safety
  - Drive only when well-rested
  - Practice situational awareness
  - Never drive when taking medications that make you drowsy
  - Delegate navigation or communication to the passenger
  - Constantly move your vision to avoid highway hypnosis
  - Avoid eating or drinking
  - Be patient

- Hazardous Materials Encounters
  - Types of hazardous materials
    - Clandestine drug waste
    - Midnight dumping
    - Transportation accidents
  - Self-protection is your first responsibility
  - Respond to all encounters with the three R’s
    - Recognize
    - Retreat
    - Report
  - See OSHA training 1910.120 (q)

- Vehicle Entrapment
  - Using a vehicle during fire entrapment is an option
  - Park the vehicle in an area void of vegetation
  - Park behind a natural barrier
  - Do not park on the downhill side of a road or under power lines or overhanging vegetation
  - Position the crew portion of the vehicle away from the fire
  - Set the parking break, leave the motor running, and keep vehicle lights on
  - Roll up the windows but do not lock the doors
  - Cover windows with fire shelters with reflective material against the window
  - Protect your airway; remain as possible and cover mouth and nose with a dry bandana

- Managing Vehicle Traffic in Smoke
  - Identify location and phone number of local units that have law enforcement and traffic responsibilities
  - Identify important, public roads that may be impacted by smoke
  - Identify adequate equipment and trained personnel to control traffic
  - Identify phone number of radio and television stations that can issue traffic advisories
  - Identify alternate traffic routes
  - Identify traffic routes subject to temperature inversion
Resources for Emergency Response
**- Additional Safety Concerns -**
- Fatigue/Stress
- Heat Disorders
  - Heat cramps
  - Heat exhaustion
  - Heat stroke
- Hydration
  - Dehydration
  - Hyponatremia
- Hypothermia

Resources for Emergency Response
**- Additional Safety Concerns -**
- Power Lines
- Liquefied propane Gas (LPG) Tank Hazards
- Smoke Exposure
- Static Electricity Hazards
- Thunderstorms

Exercise 4.3
**TxDOT Wildland Fire Management**
In your Learner Groups, discuss the following questions:

1. What situational hazards have I encountered in the field?
2. Did I respond properly?
*Be prepared to discuss your answers (2 minutes).*

Summary and Review
1. TxDOT employees should have appropriate clothing, PPE, and equipment when responding to a wildfire
2. TxDOT employees may encounter numerous situational safety hazards when responding to wildfires and should know how to address these hazards
MODULE 5
Documentation and Data Collection

Learning Objectives
Upon completion of this section, the learner will be able to:

1. Know how to use a Daily Activity Report to collect data from a wildfire situation.
2. Understand how to use the TxDOT MMT website for data collection.

Learning Objectives, cont’d
1. Understand how to use the TxDOT EOC website for data collection.
3. List other data collection resources available.

Research Project 0-6735
Best Practices for TxDOT on Handling Wildfires

Documentation and Data Collection
• How do TxDOT districts currently collect data?
  – Emails and Sharepoint
  – Wildfire resource committed notes made by MS emailed to District Office Manager
  – Maintenance Division Database
  – Daily Activity Reports (DARs)
  – Employee diaries, situation reports, equipment and personnel logs

Research Project 0-6735
Best Practices for TxDOT on Handling Wildfires

Documentation and Data Collection
• DARs

Research Project 0-6735
Best Practices for TxDOT on Handling Wildfires

TxDOT Crossroads MNT Website
Documentation and Data Collection

- What other data collection resources are available?
  - Operational Briefings
  - After Action Reviews (AARs)
  - Chainsaw AARs
  - Safenet

Documentation and Data Collection

- Operational Briefings
  - Use the standard checklist printed on the inside cover of the NWCG IRPG
  - Discuss the following topics
    - Situation
    - Mission/Execution
    - Communications
    - Service/Support
    - Risk Management

- After Action Reviews
  - Professional discussion of event with the objective to identify successes and failures
  - Use to get maximum benefit from every incident or project
Documentation and Data Collection

- **After Action Reviews**
  - Part of standard operating procedures
  - Have it ASAP after event
  - Leader facilitates
  - Everyone should participate
  - Pay attention to time
  - Establish clear ground rules
  - End on a positive note

- **Chainsaw AARs**
  - Simple, quicker format of AAR
  - Assemble the team and ask one member:
    - What is one thing that went well?
    - What is one thing that went bad?
    - What is one thing you would do differently?
    - What is one thing you learned?
  - Continue to each member
  - Note comments

- **SAFENET**
  - Form and process for reporting unsafe situations on or off the fireline
  - Filled out any time to report a valid concern about unsafe situations in fire operations, as well as to document corrective action
  - Every new SAFENET is forwarded to the affected agency’s designated list of contacts

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**Exercise 5.1**

**TxDOT Wildland Fire Management**

In your Learner Groups, discuss the following questions:

1. Do we currently debrief after incidents?
2. Why or why not?
   *Be prepared to discuss your answers (2 minutes).*
Summary and Review

1. TxDOT has several built-in programs for data collection.
2. There are several other resources available for collecting, discussing, and disseminating data and information related to wildfire incidents.
MODULE 6
Training Programs

TxDOT Wildland Fire Management Training
Course No.: 2001

Learning Objectives
TxDOT WILDLAND FIRE MANAGEMENT

Upon completion of this section, the learner will be able to:

1. Understand what training courses are available to improve your abilities to respond to wildland fires
2. Know how to find and register for these training courses

Learning Objectives, cont’d.
TxDOT WILDLAND FIRE MANAGEMENT TRAINING

3. Objective 3
4. Objective 4 ...

14 Management Characteristics

- Common Terminology
- Modular Organization
- Management by Objectives
- Incident Action Planning
- Manageable Span of Control
- Incident Facilities and Locations
- Comprehensive Resource Management
- Integrated Communications
- Establishment and Transfer of Command
- Chain of Command and Unity of Command
- Unified Command
- Accountability
- Dispatch/Deployment
- Information and Intelligence Management

Common Terminology

**Common Terminology**: ICS establishes common terminology that allows diverse incident management and support organizations to work together across a wide variety of incident management functions and hazard scenarios. This common terminology covers the following:

- **Organizational Functions**: Major functions and functional units in incident management are named and defined. Terminology for the organizational elements is standard and consistent.
- **Resource Description**: Major resources—manning, personnel, facilities, and major equipment and supply lines—are given common names and are “typed” with respect to their capabilities, to help avoid confusion and to enhance interoperability.
- **Incident Facilities**: Common terminology is used to designate the facilities in the vicinity of the incident area that will be used during the course of the incident.

Incident response communication (during exercises and actual incidents) should focus on plain language commands so they will be able to function in a multilingual environment. Field manuals and training should be revised to reflect the plain language standard.
Modular Organization

Module 6

Training Programs

TxDOT 0-6735

Best Practices in TxDOT's Response to Wildfires

Module 6

Training Programs

TxDOT 0-6735

Best Practices in TxDOT's Response to Wildfires

Incident Action Planning

Incident Action Planning: Centralized, coordinated incident action planning should guide all response activities. An Incident Action Plan (IAP) provides a concise, coherent means of supporting and communicating the overall incident priorities, objectives, and strategies in the context of both operational and support activities. Every incident must have an action plan. However, not all incidents require written plans. The need for written plans and attachments is based on the requirements of the incident and the decision of the Incident Commander. Most initial response operations are captured with a formal IAP. However, if an incident is likely to extend beyond one operational period, become more complex, or involve multiple jurisdictions and agencies, preparing a written IAP will become increasingly important to maintain effective, efficient, and safe operations.

Comprehensive Resource Management

Comprehensive Resource Management: Maintaining an accurate and up-to-date picture of resource utilization is a critical component of incident management and emergency response. Resources to be identified in this way include personnel, teams, equipment, supplies, and facilities available or potentially available for assignment or allocation. Resource management is described in detail in Component III.
Integrated Communications

Integrated Communications: Incident communications are facilitated through the development and use of a common communications plan and interoperable communications processes and architectures. The ICS 205 form is available to assist in developing a common communications plan. This approach links the operational and support units of the various agencies involved and helps to maintain communication continuity and discipline and to enable common situational awareness and interaction. Preparedness planning should address the equipment, systems, and protocols necessary to achieve integrated voice and data communications.

Chain of Command and Unity of Command

Chain of Command and Unity of Command:
- Chain of Command: Chain of command refers to the orderly line of authority within the ranks of the incident management organization.
- Unity of Command: Unity of command means that all individuals have a designated supervisor to whom they report at the scene of the incident. These principles clearly reporting relationships and eliminate the confusion caused by multiple, conflicting directions. Incident managers at all levels must be able to direct the actions of all personnel under their supervision.

Unified Command

Unified Command: In incidents involving multiple jurisdictions, a single jurisdiction with multi-agency involvement, or multiple jurisdictions with multi-agency involvement, Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability.

Accountability

Accountability: Effective accountability of resources at all jurisdictional levels and within individual functional areas during incident operations is essential. Adherence to the following ICS principles and procedures helps to ensure accountability:
- Resource Check-in/Check-Out Procedures
- Incident Action Planning
- Unity of Command
- Personal Responsibility
- Span of Control
- Resource Tracking

Dispatch/Deployment

Dispatch/Deployment: Resources should report only when requested or when dispatched by an appropriate authority through established resource management systems. Resources not requested must refrain from spontaneous deployment to avoid overburdening the recipient and compounding accountability challenges.
Exercise 6.1

TxDOT Wildland Fire Management

Individual assignment:

1. What additional training do you think you should have before responding to a wildfire?

Be prepared to discuss your answers (2 minutes).

Summary and Review

1. Numerous training courses are available to better equip you in responding to wildland fires.

2. Point 2