ESF #4 After-Action Report

on

Availability and Use of Incident Management Teams for Hurricane Harvey Response when the Nation was at Preparedness Level 5

March 16, 2018

Preface

Texas is no stranger to hurricanes.   Almost without fail, each decade brings a major storm to the Texas coast. The state still holds the record for the most fatalities when a hurricane that hit Galveston in 1900 killed 6,000 to 12,000 people. The devastation was so horrible there was no way to know exactly how many succumbed to the storm.

Each time a hurricane rips the landscape, we learn more lessons about how to protect our people and property. Rita hit Texas as a Category 3.   Three million people were evacuated and 59 of those died. As we learned the need to have evacuation plans and routes identified and open early. Then came Hurricane Ike in 2008 where 85 people lost their lives. Ike left $30 billion in damage and we learned a little storm can pack a big punch. In 2017, Texas met Harvey. This storm came to Texas as if it planned to stay. Harvey holds several records with three landfalls, $190 billion in damages, 89 deaths and 50 inches of rain. We learned that every agency needs to be better prepared for the unusual and unexpected.

Hurricanes are not the only threats to our lives and property.   In 2011, a wildfire in Bastrop, Texas burned over 1600 homes and took two lives.   Wildfires tore across the Texas panhandle in 2017. Three people died in the flames as they attempted to save their livestock.   Hundreds of thousands of acres burned, livestock were lost along with many homes.

These are just a few of the disasters that challenge Texas' public, policy makers and responders. What we have learned is that responders have to be supported by the public and those making the policies if they are going to evacuate, rescue, and provide care for those injured or left homeless.   That requires an organization in place that will anticipate and standup when that impending threat is present.

Since 2003 and following the terrorist attacks of September 11, 2001, it was determined by the President that incident management teams (IMTs) are that organizing element that supports the people on the ground. Without a team in place, responders find themselves on their own and unable to the do the job at hand.

During Harvey, The Lone Star State IMT along with the State's Regional All-Hazard IMTs stood up to manage response to Harvey. But, as the reality set in of what the storm had done and was continuing to do with the relentless rain, more IMTs were needed.

The Texas A&M Forest Service and the Texas Division of Emergency Management found themselves reaching out to other states and agencies like Oklahoma, Virginia, Wisconsin, Fire Department of New York, Federal Interagency Blue/Gold IMT, South Carolina, North Carolina, and Arizona. It was apparent there was a need for more IMT capability within Texas at the State, county and local levels. We are thankful to those states and organizations that did provide IMT support in the face of this disaster even though the nation was at Preparedness Level 5, due to the wildland incidents.

It is the sincere hope of those contributing to this report that the reader will come to understand the need to develop IMTs within every local jurisdiction in the nation and to have a national system to share those as needed.   This is a critical piece of this State's and the Nation's capability to respond in the face of a disaster. Without the direction and support to develop IMTs, disasters will gain the upper hand as more people cover our landscapes.

Paul Hannemann: Incident Response Department Head; Texas A&M Forest Service

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Acknowledgement

Without long hours of work by several dedicated individuals in the collection and formulation of the facts surrounding Hurricane Harvey, this report would not have been possible.

A special thank you goes out to James Fortner, Jeff Gardner of the U. S. Forest Service and Thomas Murray of the U.S. Fire Administration along with Randall Collins, President of the All-Hazard Incident Management Team Association (AHIMTA) and EMC for the City of EL Segundo, CA for their input, development and support of this report. Their understanding of the National Response Framework and involvement with the Emergency Service Function for Firefighting provided valuable insight in the reports development.

Thanks also goes to David Gerboth of the San Diego Fire Rescue for his dedication to improving emergency management response through incident management team development. His input was critical to completing this report.

My utmost appreciation goes to the folks that coordinated and ordered the IMTs that served the State of Texas prior to and after landfall of Hurricane Harvey. These individuals included members of the Texas A & M Forest Service Incident Response Department and Planning & Preparedness Department which included Charles "Boo' Walker, Cynthia Foster, Shawn Whitley, Don Hannemann, Malinda Fry, Meredith McNeil, Lance Isenhour, Jordan Smith, Greg Beard and Billy Terry.

Ultimately, Mike Geesling and Bruce Woods deserve recognition for their tireless work in pulling the pieces into a final report.

Finally, many thanks to Texas A & M Forest Service Associate Director and Fire Chief Mark Stanford for his encouragement to develop the information and data to put this report together and then his review of the final product.

Paul Hannemann: Incident Response Department Head; Texas A&M Forest Service

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EXECUTIVE SUMMARY

Introduction

The U.S. Forest Service received a mission assignment from the Federal Emergency Management Agency (FEMA) to provide Fire Assistance and Emergency Management Planning support for Hurricane Harvey response efforts at the request of the Texas A&M Forest Service (TFS). This report documents the Emergency Support Function 4 (ESF #4) incident management efforts in the state of Texas.

TFS is the responsible agency for ESF #4 in Texas and coordinates response efforts with the Texas Division of Emergency Management (TDEM) to achieve the goals of preparedness, mitigation, response and recovery to incidents. Chapter 418 of the Texas Government Code assigns TDEM specific responsibilities for carrying out a comprehensive all-hazard emergency management program for the State and assisting cities, counties and state agencies in implementing their own emergency management programs.

On a national level, the U.S. Forest Service is the coordinator for ESF #4 (Appendix A). As such, the U.S. Forest Service, through its vast network of cooperative agreements with state and local cooperators, assists with mobilizing both firefighting and incident management resources.

TFS has a long history of providing wildland fire and incident management training to responders across Texas. TFS introduced the Incident Command System (ICS) to Texas in the 1980's and provided incident management teams (IMTs) in 1984. TFS is the responsible agency in providing IMTs for the State of Texas.

In order to improve the ability of TFS to respond and manage large scale incidents, a decision was made to review the actions taken in regards to emergency response and incident management for Hurricane Harvey which made landfall on the Texas coast on August 25, 2017. TFS supported TDEM by staffing seven (7) District Disaster Committees (DDC). This support included ordering, mobilizing, resource tracking and situational updates. The TFS Lone Star State IMT (LSSIMT), multiple other IMTs, and multiple other single resources supported incident response operations throughout the affected areas of the state.

The findings and recommendations in this report will detail what successes and best management practices can be incorporated into future responses to incidents so that

> **Disaster Districts**
>
> Disaster Districts are the State's regional emergency management organizations that serve as the initial source of state emergency assistance for local governments. A Chairman, who is the local Texas Highway Patrol commander, directs each District. Disaster District Committees, consisting of state agencies and volunteer groups that have resources within the District's area of responsibility, assist the Disaster District Chair in identifying, mobilizing, and deploying personnel, equipment, supplies, and technical support to respond to requests for emergency assistance from local governments and state agencies. Disaster District chairs may activate and commit all state resources in their area of responsibility to aid requesters, except that activation of the National Guard or State Guard requires prior approval by the Governor.

IMT capacity can be increased and IMTs can be better prepared to manage a wide variety of incident types.

Objectives

In order to properly review how IMTs were mobilized and used for the response to Hurricane Harvey and to ensure that the findings and recommendations contained within this report prove useful in organizing responses to future major incidents, the following objectives were developed to guide this report's authors.

- Describe the situation and decision-making process that resulted in the need to request IMTs.
- Describe the actions that TFS took in accordance with the hurricane response plan to utilize IMTs.
- Demonstrate how All-Hazards Incident Management Teams (AHIMTs) filled gaps assisting emergency management officials with addressing critical needs for incident management due to shortages of IMTs resulting from National Preparedness Level 5 (PL5).

Emergency and Major Disaster Declarations

The Robert T. Stafford Disaster Relief and Emergency Assistance Act authorize the President—acting through FEMA—to issue *emergency* or *major disaster* declarations. Emergency declarations allow FEMA to provide Federal assistance for emergency measures that protect property, public health, and safety. Major disaster declarations make available additional recovery assistance that Federal agencies provide to state, local, and tribal governments, survivors, and certain nonprofit organizations.

- Determine areas of improvement for more efficient utilization of IMTs and provide recommendations.

OVERVIEW OF THE STORM AND THE AFFECTED AREA

Disasters in Texas

Hurricanes, fires, floods and tornadoes have always been a part of the Texas landscape. The early settlers of Texas discussed prairie fires, tornados, and hurricanes as disasters that swept the land with little warning (Roth, 2010). Hurricanes have been recorded in Texas as early as the year 1557 (Roth, 2010). Prior to Harvey, the most recent hurricane to strike Texas was Ike in 2008.

There have been 254 federally declared disasters in Texas since 1953, ranking among the top states experiencing the most declared disasters (FEMA 2017). Fires accounted for 154 disaster declarations followed by 36 floods, 20 hurricanes, 20 severe storms and 15 tornadoes for major categories (Federal Emergency Management Agency (FEMA), 2017). Hurricanes can be expected with relative frequency. Any fifty mile segment of Texas coastline may expect a hurricane about every six years (Roth, 2010). The pace of natural disaster is not increasing in Texas, rather the effects are more magnified as population increases. As Texas' population growth continues, the attention given to natural disasters by its inhabitants will increase as well.

A Nationwide review of FEMA data reveals that large scale incidents and disasters have significantly increased in the last 40 years. The following scale, Figure 1, shows the number of federally declared disasters, emergency declarations and fire management assistance grants in five year clusters beginning in 1976 and ending in 2016. In the last five years, the United States is averaging 122 declared incidents a year where it was conversely 54 declarations in the late 1970's. This does not count the non-declared incidents and other incidents that affect jurisdictions locally and regionally that do not qualify for a declaration status but stress local capabilities.

Simultaneously, AHIMTs are taking on more missions as they are used for special events, and non-traditional incident management tasks such as managing logistical staging areas, managing volunteer and donations issues, shelter management, and points of distribution. The situation is evident that the need for AHIMTs is greater than the number of AHIMTs available.
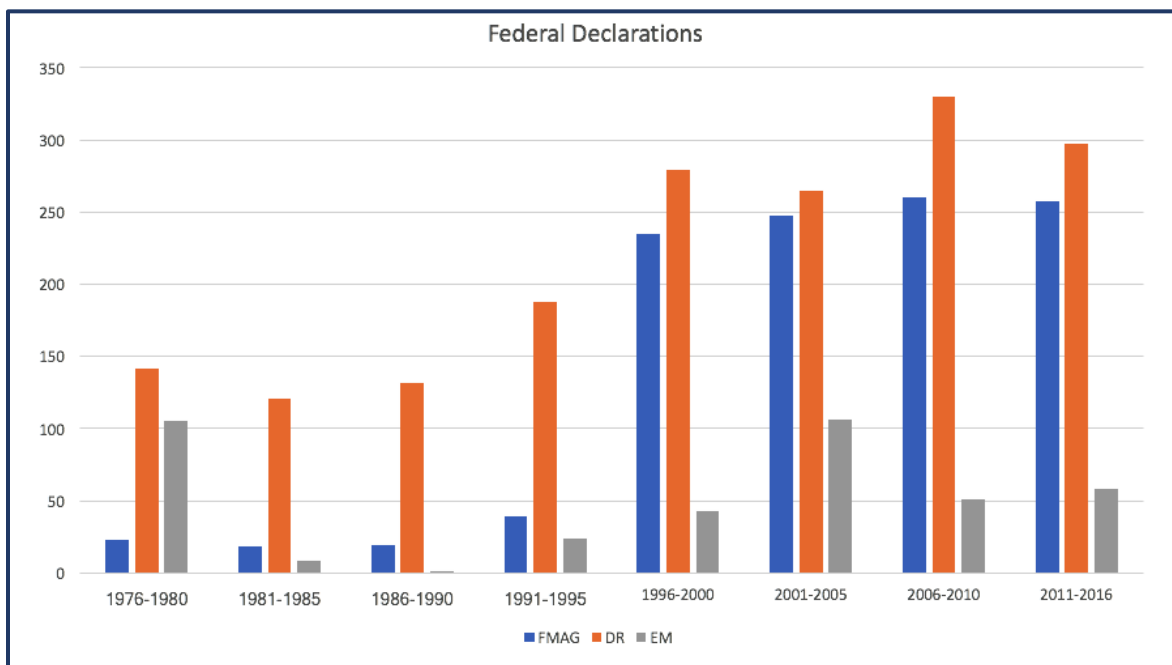
Figure 1 – Federal disaster declarations by year, from 1976 through 2016.   Source – Federal Emergency Management Agency

Affected Area

Hurricane Harvey made landfall near Rockport, a town of less than 10,000 people and about 30 miles along the Texas coast from Corpus Christi. The area affected is referred to as the Texas Coastal Bend and is made up of Aransas, Bee, Brooks, Jim Wells, Kenedy, Kleberg, Nueces, Refugio, and San Patricio counties. It also includes parts of Laguna Madre and North Padre Island, as well as Mustand Island. Corpus Christi is the largest city within the Coastal Bend.

The population of Texas is estimated to be 28,797,290 with 25,566,822 of those persons living in metropolitan areas (Health 2014). The population patterns on the coast is varied. Much of the Texas coast has a rural setting with cities dotting the coast at deep water port locations. Hurricane Harvey came ashore in the rural counties of Aransas and Refugio. The U.S Census Bureau 2010 Census lists Refugio County's population at 7,383 and Aransas County's population at 23,158.

Multiple urban counties were affected as well. Harris County is the most populous county in Texas with 4.5 million residents according to the 2010 Census. Hurricane Harvey ultimately impacted over 8,346,261 Texas residents.

According to information compiled by FEMA, the following major impacts and response actions occurred.
- 19 trillion gallons of rainfall fell on the affected areas
- 80,000 homes had 18 inches of floodwater or more
- 122,331 rescues were conducted
- 5,359 patients were care for by medical care personnel
- 3 million meals and 3 million bottles of water were provided to impacted citizens
- 210,000 pounds of hay was provided for livestock along with 25 tons of pet food

The impacted commercial and industrial centers including Corpus Christi, Houston, Galveston, Beaumont and Port Arthur provide jobs and services needed to support large communities and are vital to keeping the national and global economy running.

The Texas coast has long been a desirable place for residential, commercial and industrial uses. Texas has 11 deep water ports of 30 feet or greater depth and 5 shallow draft ports that handle commercial cargoes (TxDOT, 2015). Texas ports handle 22 percent of the total United States' freight volume. In 2015, more than 563 million tons of cargo moved through Texas ports. Texas ports also receive more than a quarter of all foreign tonnage handled in the United States. Many of the nation's critical industries are located in the coastal areas, including oil refineries, chemical plants, liquid natural gas terminals, manufacturing centers, nuclear power plants and strategic oil reserves.

Two of the nation's Strategic Petroleum Reserve (SPR) locations (Big Hill and Bryan Mound) holding more than half of the United States' emergency oil storage facilities are located within the impact area of the storm.

Brazoria County has the largest integrated petrochemical complex in the western hemisphere built at the Dow Freeport Complex (Dow, 2017). Port Arthur, located about 100 miles east of Houston, is home to the largest oil refinery in the United States with a capacity of 600,000 barrels a day (Motiva, 2017).

More than a thousand miles of railroad track are located in coastal counties connecting industries across the nation. The road network in coastal areas includes I-10, the major east-west interstate corridor for the southern United States; and many highways and roads that provide transportation and infrastructure support.

The coastline of Texas is an attraction for residential purposes as well with 7.4 million residents, roughly one-in-four Texans residing in the 39 counties impacted by the storm. Tourism is a major industry on the Texas coast impacted by Hurricane Harvey. The coastline between Corpus Christi and Beaumont is home to numerous beach communities and parks. The port of Galveston has the only cruise line terminal in Texas.

Timeline and Impacts of Hurricane Harvey

Hurricane Harvey which made landfall on the Texas coastline on August 25, 2017, was a landmark storm for Texas. It was the first Category 4 storm to strike the state since Hurricane Carla slammed into Matagorda Bay in 1961 with winds over 130 mph. Hurricane Harvey objectively produced the most widespread and heaviest flood event in modern Texas history and led to the most tornado warnings issued by the NWS League City office in history.

Hurricane Harvey had the longest timeline of impacts with six days of misery (August 25-30). The first feeder bands and wind arrived on the lower and middle Texas coasts the morning of August 25 while the last rain band did not exit East Texas until the evening of August 30, when Harvey finally made its final landfall near Cameron, Louisiana during the overnight hours. A day-by-day summary follows:
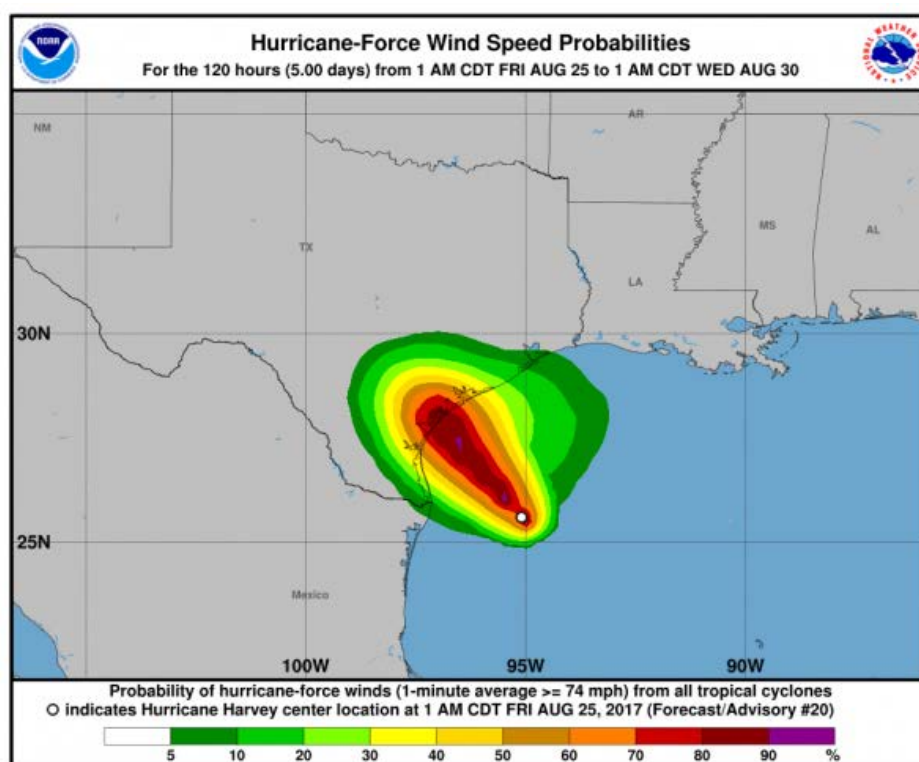
Figure 2 - Wind speed map for Hurricane Harvey. The counties most heavily impacted by the strong winds were Aransas, Calhoun, Refugio, and San Patricio. Source - NOAA National Hurricane Center.

August 23-24:

Hurricane Harvey was a tropical depression on the evening of August 23 with 35 mph sustained winds. At 11 pm CST, Hurricane Harvey was upgraded to a tropical storm with 40 mph sustained winds. By noon the next day, the storm was further upgraded to hurricane status with 80 mph sustained winds. The 10 pm National Hurricane Center (NHC) forecast on August 23 only had the storm at Category 1 status with a projected landfall over the lower TX Coast.

Twelve hours later, the 10 am CST NHC forecast had Hurricane Harvey becoming a Category 3 hurricane closer to Corpus Christi. Landfall occurred only a day later. Hurricane Harvey went from a tropical depression to a Category 4 hurricane in less than 48 hours.

Figure 3- Hurricane Harvey, August 24, 2017, 0700 CDT Tracking Map. Source - NOAA National Hurricane Center

August 25:

Hurricane Harvey made landfall 4 miles east of Rockport at 10 pm CST as a Category 4 with maximum sustained winds of 130 mph and a minimum pressure at 938mb. Hurricane force winds extended 40 miles from the center (Irma's extended over 100 miles). The maximum wind gust was 132 mph at Aransas Pass (TX Coastal Observing Network).

Feeder rain bands and high surf arrived along the lower and middle coasts by late morning ahead of Harvey. Rainfall through the overnight hours totaled over 15" at Victoria. Maximum storm surge occurred at Port Lavaca after midnight at 6.6 feet above ground level.

Figure 4- Hurricane Harvey August 25, 2017, 0700 CDT Tracking Map. Source - NOAA National Hurricane Center.

August 26-27:

Hurricane Harvey stalled by afternoon 45 miles west-northwest of Victoria but maintained hurricane strength until early afternoon, then was downgraded to a tropical storm. Heavy rainfall pushed north and eastward in a zone from south-central Texas (along and east of I-35) eastward through College Station, Huntsville and southward to Houston Metro. Rainfall rates in Bastrop and LaGrange sometimes exceeded 2"/hour and feeder bands from Brazoria to Chambers counties, including Harris County produced 5"/hour rainfall rates by Saturday evening.

Sixty two (62) tornado warnings were issued from the League City National Weather Service office through the 27th of August, and 20 confirmed tornadoes occurred, all EFO or EF1 magnitude. Houston Hobby, Houston Bush, Bastrop, LaGrange, Austin, College Station and Huntsville all broke daily rainfall records both days. Bush airport received over 2 feet of rain over the weekend alone.

Flash flooding, area flooding and river flooding were at record levels in many counties. Meanwhile, Hurricane Harvey began a slow cyclonic loop yet still was only 20 miles east of Victoria at 10 pm CST Sunday maintaining the heavy rain shield in generally the same geographic area both days.
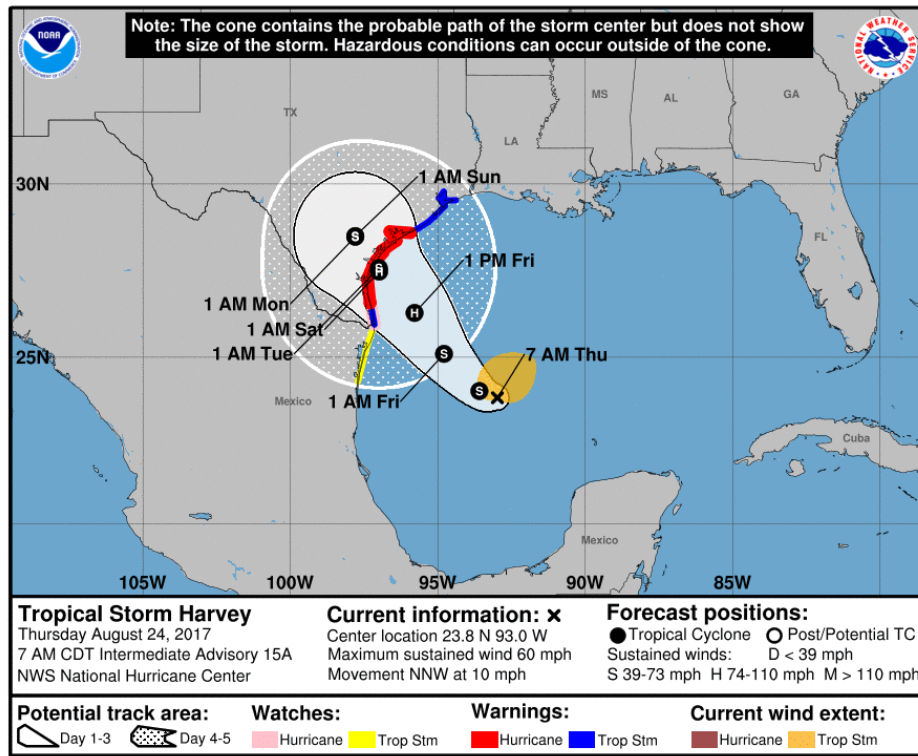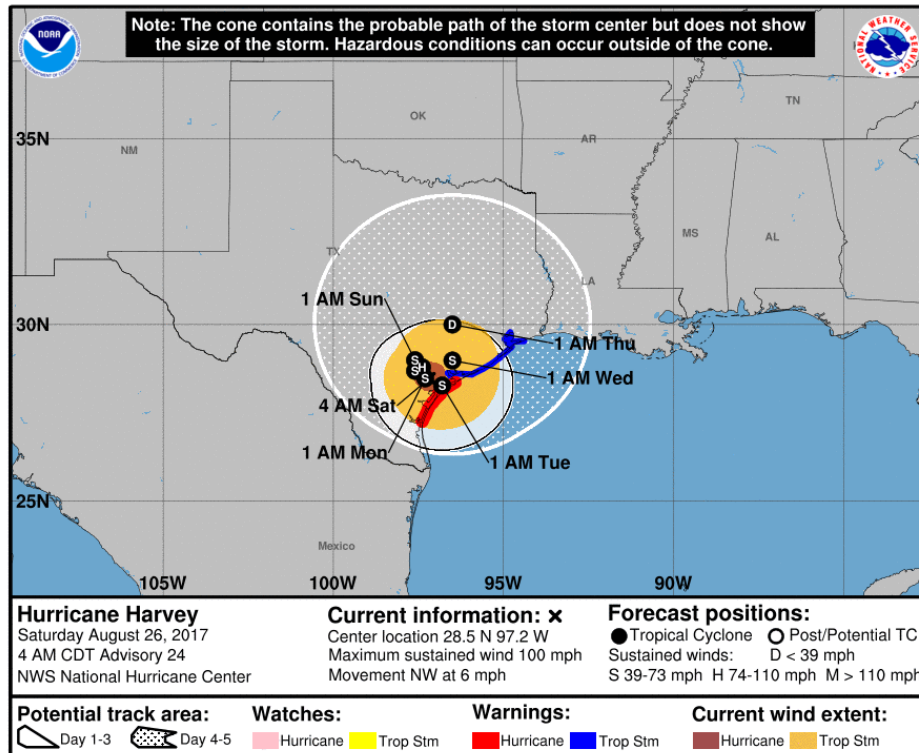
Figure 5 - Hurricane Harvey August 26, 2017, 0400 CDT Tracking Map. Source - NOAA National Hurricane Center.

August 28-29:

Tropical storm Harvey continued a slow southeast drift on Monday, August 28, reaching the Gulf waters Monday night, turning northeast Tuesday towards the southwest Louisiana coast. Harvey marginally strengthened while over the Gulf with maximum sustained winds of 50 mph. The heaviest rain translated east and south, with lighter rain ending on the northern fringe from east of Austin to College Station Monday night, and across the Houston Metro area on Tuesday.

Heavy rains persisted just south and east of Houston Metro through Monday night, then extended into the Golden Triangle area of Beaumont-Port Arthur Monday through Tuesday. After 12 pm CST Monday, between 4-6 inches of rain fell down the I-45 corridor in Houston, but was much heavier eastward. Beaumont received 26.03 inches of rain on Tuesday August 29, an all-time record and added 5.52 inches the day before.

Major water way flooding occurred across the Upper Coastal Plains with all rivers from the Guadalupe to the Brazos, San Bernard, Trinity, Neches and Sabine plus the west Houston bayous all running at major flood stage. Significant low lying and areal flooding occurred.
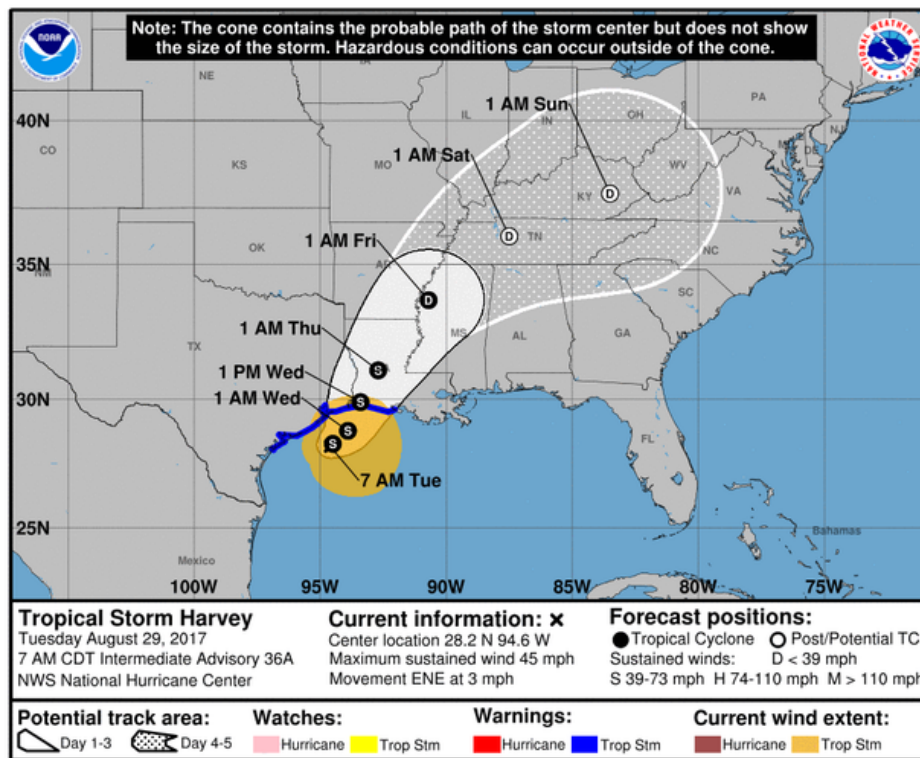
Figure 6 - Hurricane Harvey August 29, 2017, 0700 CDT Tracking Map. Source - NOAA National Hurricane Center.

August 30:

Harvey made a second landfall in Cameron parish, Louisiana but the heavy rain shield was on the west side. Heavy rain persisted over East Texas through the afternoon with Beaumont picking up another 2.97 inches and between 2 to 6 inches in counties bordering the Sabine River. The heavy rainfall upstream fueled additional flooding on the Neches and Sabine rivers, putting Beaumont and Port Arthur underwater (began on the 28th).

Major refineries and water treatment plants were shut down leading to gas and drinking water shortages. Hurricane Harvey's rain shield finally exited East Texas on Wednesday evening leading to the first rain-free day statewide on Aug 31.
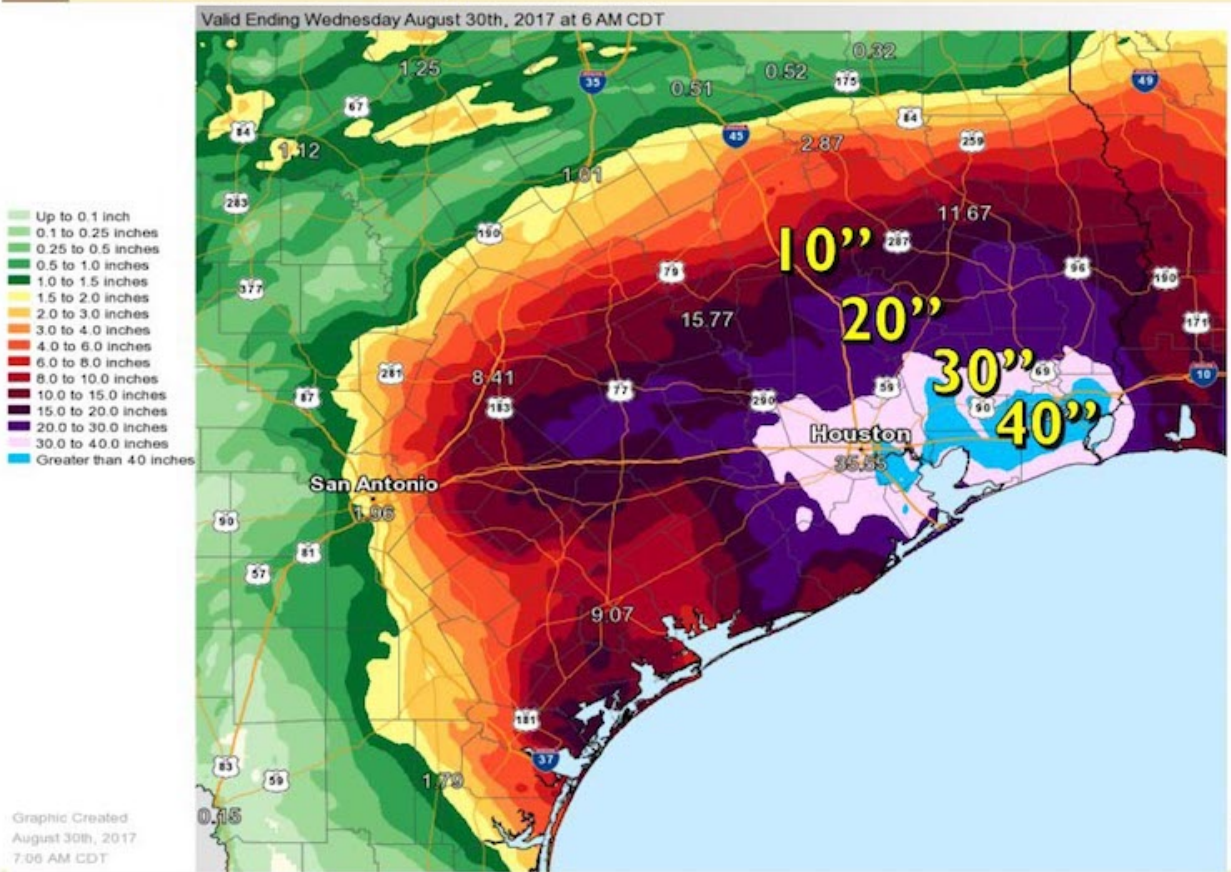
Figure 7 – Map of total rainfall amounts from Hurricane Harvey. Source: National Weather Service.

Hurricane Harvey was a unique storm. Instead of moving inland and farther away from the coast, Harvey stalled over south and southeast Texas for days, producing catastrophic devastating and deadly flash and river flooding. Southeast Texas suffered the brunt of the heavy rainfall, with some areas receiving more than 40 inches of rain in less than 48 hours. Cedar Bayou in Houston received a storm total of 51.88 inches of rainfall which is a new North American record.

All of this excessive precipitation resulted in significant river flooding over the Guadalupe River and the Garcitas and Coleto Creeks. Near major flooding was observed on the Copano Creek near Refugio, with moderate flooding on the Mission River. Other rivers and creeks over the eastern half of South Texas saw rises, but most did not exceed flood stage. (National Weather Service (NWS), 2017)

Table 1 - Hurricane Harvey Rainfall Totals by Texas County	
	Inches
CEDAR BAYOU AT FM 1942	51.88
CLEAR CREEK AT I-45	49.40
DAYTON 0.2 E	49.23
MARYS CREEK AT WINDING ROAD	49.20
BEAUMONT/PORT ARTHUR	47.35
SANTA FE 0.7 S	46.70
PASADENA 4.4 WNW	45.74
HORSEPEN CREEK AT BAY AREA BLVD	45.60
SOUTH HOUSTON 4.0 SSW	44.91
BERRY BAYOU AT FOREST OAKS BLVD	44.80
BERRY BAYOU AT NEVADA	44.44
FRIENDSWOOD 2.5 NNE	44.05
LITTLE VINCE BAYOU AT BURKE RD	43.52
HOUSTON WEATHER FORECAST OFFICE	43.38
LEAGUE CITY 2.7 NE	43.32
WEBSTER 0.4 NW	43.32
LNVA CHEEK CANAL AT DITCH 407	43.11
LITTLE CEDAR BAYOU AT 8TH ST	42.32
ARMAND BAYOU AT GENOA-RED BLUFF RD	42.16
TURKEY CREEK AT FM 1959	42.12
BOONDOCKS RD AT TAYLORS BA	41.86
ARMAND BAYOU AT PASADENA LAKE	41.20
TAYLOR LAKE AT NASA ROAD 1	40.44
SH 124 AT HILLEBRANDT BAYOU	38.18
MAHAW BAYOU AT ENGLIN RD	37.75
JACINTO CITY	37.60
HUNTING BAYOU AT LOOP 610 EAST	37.00
TELEPSEN	36.60
MAHAW BAYOU AT BRUSH ISLAND ROAD	36.53
FIRST COLONY 4 WSW	36.34
BEAMER DITCH HUGHES RD	36.32
LA PORTE 1 N	36.24
BAYTOWN 2 NW	35.64
MOUNT HOUSTON	35.60
HOUSTON/CLOVER FIELD	33.37
HOUSTON/INTERCONTINENTAL	31.26
KATY 6 NE	31.23
HOUSTON/WILL HOBBY	27.88
HOUSTON/D.W. HOOKS	27.01
GALVESTON/SCHOLES	22.84
COLLEGE STATION 2 SSW	19.64
VICTORIA 3.8 NW	15.60
AUSTIN 4 SSE	10.28
CORPUS CHRISTI 3.6 S	6.23

INCIDENT MANAGEMENT IN THE STATE OF TEXAS

TFS was created as the Office of State Forester in 1915 under the Agricultural and Mechanical (A&M) College of Texas, which is now the Texas A&M University System. The original bill to create a forestry agency under an independent state board or commission was met with stiff opposition in the Texas Legislature. A re-written bill placed the office of the state forester under Board of Directors of the A&M College of Texas. The bill passed and was signed into law on March 31, 1915. (Famous Trees of Texas, 1984). For more than 70 years, the agency was predominantly an east Texas forestry and fire response agency, serving the needs of forest land owners, researchers and the wood products industry.

TFS is one of six state forestry agencies in the nation organized under a land grant university. TFS has an authorized strength of 501 personnel. These personnel are organized into three divisions: Forest Resource Development (FRD); Forest Resource Protection (FRP) and Finance and Administration (FIAD) with 55 offices across the state. Personnel from all divisions assist with fire and IMT response.

> **History and Background of IMTs**
>
> Following World War II, returning veterans applied command and control methodologies in managing response to hazards. In 1970, Firefighting Resources Organized for Potential Emergencies (FIRESCOPE) was formed and began developing what has become known as the Incident Command System (ICS). With ICS in use, next came formalized wildland incident management teams (IMTs). For more information on IMTs, see the "History and Background of Incident Management Teams (IMTs) in the Appendix on Page A-36

Texas faces significant threats from wildfires, hurricanes, tornadoes, and flooding. Few states have the number of natural hazards to prepare for, and respond to, than Texas. Their experience with large numbers of significant wildfires prompted Texas to be a leading state in the establishment of AHIMTs. TFS was instrumental in introducing the Incident Command System (ICS) to Texas in the early 1980's, and in 1984, TFS formed the first IMTs in Texas (State of Texas, 2010).

The loss and subsequent recovery operation of the Columbia Shuttle disaster quite possibly solidified the need for AHIMTs. As a nation mourned, the TFS IMT lead local, state, and federal resources in one of the largest search and recovery operations ever to be accomplished (Donahue, 2003). This provided many lessons learned that would be applied to the Texas AHIMT program in years to come. Major findings of the Columbia Shuttle recovery operation lessons learned and best practices, and their applicability to all-hazards response included:

- IMT's were confident in their abilities to manage incidents, but felt local authorities were not as confident.
- There was confusion of funding streams and resource ordering authority.
- The importance of a competency-based qualification system as the basis for team membership was highlighted.
- It was identified that training, qualifications, and performance standards specific to all-hazards incidents should be developed.
- Jurisdictional ownership and unwillingness to delegate authority hampers the ability of IMTs to operate and navigate such issues that should be within their ability to address.

The TFS IMTs' success in managing this incident was a foundational moment to the development of an AHIMT program in Texas. The TFS leadership was invited to participate in U.S. Fire Administration's (USFA) initial development of its AHIMT program in 2003 and was instrumental in assisting USFA with development of the national program.

In 2005, TFS formed the regional AHIMT program in Texas. This made Texas a pioneering state in the AHIMT movement. In 2006, Governor Rick Perry required the development of eight regional AHIMTs as a matter of executive order. Meanwhile, TDEM requested TFS to be the lead state agency for incident management and TFS was ultimately provided legislative authority for coordinating the AHIMT program for the state. TDEM designates a portion of grant funding received through the U.S. Department of Homeland Security to TFS for use in training AHIMTs. This level of institutionalization is rarely, if ever, seen in other state statutes.

> **Texas Education Code – EDUC § 88.122. INCIDENT MANAGEMENT TEAMS.**
>
> (a) The Texas Forest Service may support the state's all-hazard response operations by:
>
>   (1)   Providing incident management training to Texas Forest Service personnel and other state, local, and volunteer responders to develop and enhance the all-hazard response capability of this state; and
>
>   (2)   Maintaining incident management teams to respond to all-hazards events, including natural man-made, and planned events.
>
> (b) An incident management team maintained under this section may consist of Texas Forest Service employees and other state, local, and volunteer responders.
>
> (c) The Texas Forest Service may mobilize an incident management team for a wildfire response operation.
>
> (d) Under the direction of the Texas Division of Emergency Management, the Texas Forest Service may mobilize an incident management team to provide incident support for state, disaster district, or local jurisdiction operations.
>
> Added by Acts 2011, 82nd Leg., R.S. Ch. 52 (S.B. 646), Sec. 10, eff. September 1, 2011

These teams adopted the USFA-developed AHIMT O-305 course as the standard training for AHIMTs and adopted a competency-based qualification system similar to that of the wildland services with position task books (PTBs). Each AHIMT was formed with 14 positions with a depth of three qualified individuals in each position. The teams were placed into action as early as 2007.

Texas has a total of 18 AHIMTs available for assignment. These IMTs are operating at different levels of maturity. These AHIMTs are made up of multiple disciplines pulled from various agencies at the local government level. The Texas State Legislation appropriates funding to TFS for management of the AHIMT program. The first intent of building an AHIMT program was to have increased capacity at the local level with the additional benefit of having increased capacity at a state level.

TFS hosts the Lone Star State Type II IMT (LSSIMT) responds to all-hazard and wildland fire incidents. TFS supplements AHIMT members on the LSSIMT to provide added training for local responders. These IMTs deliver additional incident management capacity and provide additional training opportunities in their local communities.

The partial listing of incidents provided below highlight responses provided to the TFS AHIMT program to develop and enhance their teams' experience and qualifications.

- Texas Wildfire Fire Responses, 2008
- Alon Refinery Fire, 2008
- Southeast Texas Flooding, 2008
- Yearning for Zion Compound Raid 2008
- Hurricane Dolly, 2008
- Hurricane Gustav, 2008
- Hurricane Ike, 2008
- Texas Fire Responses 2009
- Strategic National Stockpile Receipt and Distribution, 2009
- Super Bowl XLV, 2011
- New Mexico Little Bear Wildfire Re-entry Support, 2102
- Granbury Tornado, 2013
- West Fertilizer plant explosion, 2013
- Texas Motor speedway Duck Commander 500, 2014
- Ice Storm, 2015
- Dallas Ebola response, 2016
- Super Bowl LI, 2017
- Hurricane Harvey, 2017

RESPONSE TO HURRICANE HARVEY

Major Natural Disasters Occurring Simultaneously

On August 10, 2017, the National Preparedness Level (PL) was raised from PL4 to PL5 by the National Multi-Agency Coordinating Group (NMAC). See Appendix B for a copy of the NMAC memorandum. The decision to move from PL4 to PL5 depicted the complexity that fire managers were encountering to assure that adequate firefighting and incident management resources were available for protection of life, property and the nation's natural resources.

When the PL is increased, it reflects a high degree of wildfire activity, a major commitment of fire resources, and the probability that sever conditions will continue for at least a few days. Following the August 10 increase to PL5, NMAC issued NMAC Correspondence 2017-24, National Resource and Preparedness Situation, dated August 21, 2017 (Appendix C). This memorandum stated that no resource capability could be made available for response to non-fire incidents.

U.S. Forest Service and officials with other agencies expressed concern for several years about the probability of a major hurricane impacting the eastern United States at the same time as heightened wildfire activity in the western United States. Consideration had been given to this potential by examining alternative sources of response resources, primarily pulled from state and local emergency response agencies that could be used in lieu of federal wildland resources.

When ESF #4 was activated on August 25, 2017, at the National Response

> **National Multi-Agency Coordination Group**
>
> The National Multi-Agency Coordination Group (NMAC) establishes Preparedness Levels throughout the calendar year to help assure that firefighting resources are ready to respond to new incidents. Preparedness Levels are dictated by fuel and weather conditions, fire activity, and resource availability.
>
> The five Preparedness Levels range from 1 to 5, with 5 being the highest level. Each Preparedness Level has specific management directions. At PL5, additional response resources are needed, and military assets as well as resources from foreign countries may be mobilized.

Coordination Center (NRCC) as a result of Hurricane Harvey, FEMA officials were made aware of NMAC Correspondence 2017-24 and as a result, expressed concern about the ability of ESF #4 to provide response resources including, but not limited to IMTs. Concerns were also brought forth by the State of Texas to the U.S. Forest Service about the potential effects of this NMAC correspondence on ordering critical resources to assist TFS in its mission to respond to the crisis created by Hurricane Harvey.

On August 28, 2017, The National Multi-Agency Coordinating Group (NWCG) issued NMAC Correspondence 2017-27 titled, National Resource and Preparedness Situation. This memo stated that due to the severe wildfire situation in the Northwest, Northern Rockies, and California, and being at Preparedness Level 5 (PL5), the following national resource capability was available for response to non-fire incidents.

- 0 - Area Command Teams
- 0 - Type 1 Incident Management Teams
- 0 - Type 2 Incident Management Teams
- 0 - 4390 Communications Systems
- 0 - Handheld Programmable Radios
- 0 - Mobile Catering Units
- 0 - Mobile Shower Units
- 0 - Incident Support Cache Vans
- 0 - 20-person crews

Due to ongoing concerns about providing resources to assist with non-fire incidents, NMAC issued a third memorandum, NMAC Correspondence 2017-29, on August 31, 2017. In this memorandum, NMAC provided background and clarification on the August 28 memorandum, NMAC Correspondence 2017-27, to assure agencies that the member agencies of NMAC, including federal wildland fire agencies and many state and local governments have, and will continue to provide assistance in support of hurricane response. The memorandum further emphasized that wildland fire management personnel in all agencies and at all levels of

government will continue to identify resources that can be made available for hurricane response efforts as well as wildfire.

Post landfall on August 25, it became clear that IMTs were going to be needed to maintain the operational coordination capability needed in the consequence management phase of this disaster. It was at this time that the TFS began identifying available resources to order based on need resulting from situational awareness and requests for assistance. As previously documented, federal IMTs were largely unavailable due to the National Preparedness Level being at PL5. Therefore, IMTs were sought via ESF #4 and EMAC based on known networks to TFS leadership. Once IMTs were identified and mobilized, they were assigned to the highest need areas.

In some cases, IMTs that were requested and activated received a mission change after mobilization. The assignments were issued based on verbal mission analysis and IMTs' capabilities. TFS showed great decisive, adaptive, and intuitive actions which ensured an effective and successful response. In some situations, due to changing conditions and extended travel times, an IMT with more robust capabilities was provided an assignment that could have been met with a smaller IMT.

Resource Ordering and Mobilization Process

When resources are ordered to support response operations following a major disaster within the State of Texas, the requesting agency initiates the order using a State of Texas Assistance Request (STAR). STARs can be initiated locally, regionally, or by the TDEM State Operations Center (SOC). If resources are not available within a region, then the local emergency management coordinator can request the Texas Department of Public Safety (DPS), Disaster District Committee Chair (DDC Chair) to address the needs for the affected jurisdictions within that Disaster District through a STAR. STARs that are unable to be filled at the DDC level are submitted to the SOC for processing.

The SOC is located in Austin, Texas, and has responsibility for the statewide coordination of emergency management activities. It fulfills assistance requests from the DDCs, provides statewide situational awareness, tracks costs associated with the disaster response and coordinates with other states and FEMA for resources that state agencies or private contracts are unable to provide. At the SOC, requests for IMT resources are forwarded to TFS for filling.

STAR requests for IMT resources are routed from the TFS Emergency Operations Center (EOC) located in College Station, to the Texas Interagency Coordination Center (TICC), located in Lufkin, Texas. The Coordination Center is jointly staffed and operated by TFS the U.S. Forest Service, and the U.S. Fish and Wildlife Service (USFWS). The TICC coordinates the ordering of additional out-of-state and national IMT resources, maintains resource availability status, and coordinates activation of firefighting resources to support interstate mutual aid response operations. TICC, in accordance with the National Interagency System Mobilization Standards Guide, attempts to fill orders with TFS or federal wildland fire management agencies in Texas (TFS, 2017).

If the request cannot be fulfilled, the request is passed to the Southern Area Coordination Center (SACC) in Atlanta, Georgia. If the request cannot be filled by the 13 southern states (Texas,

Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Kentucky, Virginia, North Carolina, South Carolina, Georgia and Florida as well as the U.S. Virgin Islands and Puerto Rico), SACC sends the request to the National Interagency Coordination Center (NICC) in Boise, Idaho, for processing at the national level.

Geographic Area Coordination Center (GACC)

A GACC is the physical location of an interagency, regional operation center for the effective coordination, mobilization, and demobilization of emergency management resources. A GACC serves federal, state, and local wildland fire agencies through logistical coordination of resources throughout the geographic area, and with other geographic areas, as well.

Geographic Area Coordination Centers (GACC) such as SACC as well as the NICC were established to primarily support resource needs for wildland fire suppression. There is currently not a dedicated capability within the wildland ordering system for ordering non-wildland response resources such as AHIMTs. These GACCs are able to assist in a limited capacity with ordering non-wildland resources that are statused in ROSS.

As a result, there are a few state-level master cooperative agreements put in place with the U.S. Forest Service that enable a finite number of AHIMTs to be ordered through ROSS.

The NICC is the focal point for coordinating the mobilization of resources for wildland fire and other incidents throughout the United States. The NMAC at NIFC prioritizes and allocates resources when there are critical shortages of national resources such as Type 1 hand crews, airtankers, or Type 1 Incident Management Teams (IMTs).

The NMAC is comprised of representatives from the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Forest Service, USFWS, FEMA-USFA, and the National Association of State Foresters.

On August 25, 2017, the President signed a Disaster Declaration (Appendix H) and the NRCC was activated to a Level 1, its highest level, as well as activating all Emergency Support Functions (ESFs) and the Regional Response Coordination Center (RRCC) for FEMA Region 6, located in Denton, Texas. With ESF #4 activated at both the NRCC and RRCC, the U.S. Forest Service as the Primary Agency for ESF #4 was able to assist TFS in identifying IMTs available for mobilization.

Incident Management Team Ordering

According to the TDEM SOC Hurricane Playbook, there is no pre-determined number of out-of-state incident management teams that are needed for any category of hurricane. The State of Texas and TFS was challenged due to a faulty planning assumption. The assumption is that weather forecasts will give longer than 120-hour warning of an imminent impact of a hurricane. The State of Texas therefore has a 120-hour timeline of action items and trigger points to complete before the storm makes landfall. Hurricane Harvey formed and presented a storm track shorter than the 120-hour timeframe, putting Texas on an expedited timeline for hurricane preparations.

As TFS officials watched the storm come into the Gulf of Mexico, they began preparing for a hurricane, although there was not a clear indication of where and when a hurricane would make landfall. Preparations were based on the TDEM SOC Hurricane Playbook.

Under Texas Government Code, Chapter 418, Emergency Management, the TFS is provided responsibility to mobilize IMTs under the direction of Texas Department of Emergency Management (TDEM) to provide support for state, disaster district, or local jurisdiction operations. This provision has been in effect since September 1, 2011.

As outlined in the Overview section of this report, Hurricane Harvey did not provide much advance notice before it developed into a major hurricane and struck the coastline. Due to forecast limitations, 120 hours is typically the most advance warning available prior to the onset of hazardous conditions. In the case of Hurricane Harvey, TFS and other emergency response agencies did not have the typical 120 hours to fully plan and prepare. Additionally, Hurricane Harvey was not a normal type of hurricane and given its slow movement coupled with heavy rain led to an increased need for additional response resources, including IMTs. Hurricane Harvey made landfall as a Category 4 storm, turned back into the Gulf, and then came back onto land, bringing extreme rainfall and flooding.

The TFS Lone Star State IMT was in place at San Antonio to manage an LSA. TFS mobilized the Wichita Falls IMT to stand up and manage a County Staging Area (CSA) for county and state response resources at Ford Park in Beaumont, Texas. Other Texas IMT resources were unavailable due to individual team members being assigned as single resources to assist response operations or being engaged in firefighting support. The single resources from various state IMTs were used to support operations at Disaster District Committees (DDC) and a county JIC, for example.

On August 26, 2017, TFS received more requests for IMTs from the SOC than could be filled with state IMT resources. Before out of state resources were considered, the local AHIMTs were first surveyed for utilization. At this point, TFS made a decision to order several IMTs through the Emergency Assistance Compact (EMAC), including the Tulsa Oklahoma AHIMT, Oklahoma State AHIMT, Virginia AHIMT, South Carolina Regional AHIMT (Pee Dee), New York State AHIMT and the Fire Department of the City of New York (FDNY) AHIMT.

The order for the FDNY AHIMT was not completed through EMAC. A decision was made to order the FDNY IMT under an ESF #4 Mission Assignment (MA) on August 27.

Table 2 - Incident Management Team	Order
Northern Arizona	ESF #4
Blue/Gold	ESF #4
Virginia Department of Forestry	ESF #4
Fire Department New York	ESF #4
Wisconsin DNR-Forestry	ESF #4
North Carolina Forest Service	ESF #4
South Carolina Forestry Commission	ESF #4
New York State IMT	EMAC
Oklahoma State IMT #1	EMAC
Oklahoma State IMT #2	EMAC
Pee Dee RIMT – South Carolina	EMAC
Virginia NCR/Hampton Roads IMT	EMAC
Rio Grande AHIMT	TX State
Wichita Falls AHIMT	TX State
Lone Star State IMT - TFS	TX State
Capital Area/South Plains AHIMT	TX State

Additional orders were placed through ESF #4 for IMTs from the Virginia Department of Forestry (VDOF) and South Carolina Department of Forestry on August 27. Additionally, an order was placed for a Southern Area interagency Type 2 IMT on August 27 under the ESF #4 Mission Assignment (MA) 4 (Appendix B). On August 31, orders were placed for IMTs from the states of Wisconsin, North Carolina, and Arizona under the ESF #4 MA (Appendix C).

A total of five (5) IMTs were ordered via EMAC. The largest factor in the decision to order IMT resources through EMAC versus ESF #4 was based on the NMAC Correspondence 2017-24, National Resource and Preparedness Situation, dated August 21, 2017. A secondary factor in ordering the teams through EMAC, was that these particular IMTs were associated with state or local agencies that did not have a cooperative agreement with the U.S. Forest Service, thus not allowing them to be ordered through ROSS under an ESF #4 MA.

TFS used three forms of ordering in a multi-ordering point system to acquire IMT resources during the Hurricane Harvey response.

- State of Texas AHIMTs and the Lone Star State Type 2 team were ordered via the SOC and then passed on to the TFS Emergency Operations Center (EOC) for activation through ROSS.

- All out-of-state wildland IMTs and the FDNY AHIMT were approved for activation through the SOC and then passed on to the FEMA Region 6 RRCC to be approved and ordered through ESF #4. Once approved, the TFS Emergency Operations Center placed their resource order in ROSS.

- Out-of-state AHIMTs were ordered via ESF #4 if they were covered by a cooperative agreement with the U.S. Forest Service. For those out-of-state AHIMTs not covered by cooperative agreements, they were ordered through EMAC.

Resources ordered via ROSS under an ESF #4 MA had no notable issues or problems in their activation and dispatch process. Resources ordered via EMAC did have some minor glitches and delays, but none that were significant or inhibited response efforts or mission assignment of the IMTs. TFS is a unique organization that can utilize ROSS, or through TDEM and the Governor's office, make EMAC requests. Many other states are not as proficient in both systems, especially in support of all-hazards assignments.

Determining Assignments for IMTs

Once it was determined that multiple Resource Staging Areas (RSAs) would need to be stood up and IMTs would be used for their management, TFS had to make decisions on what type of IMT would meet the needs of each particular mission. Although there are no hard and fast rules in the Texas State Hurricane Response Plan, based on previous hurricane responses, the TFS protocol was to order a Type 2 IMT to manage an RSA. In addition to the RSA mission, a couple of local governments requested assistance with emergency planning from an IMT. This mission could be met with a smaller IMT and did not involve the management of any RSAs.

Given the fact that the National Preparedness Level (PL) was at PL5 and that all national Type 1 and 2 IMTs were already committed on wildfire assignments in the western United States, additional options had to be considered. When looking at what type of IMT would best fit the

mission, TFS determined the local government emergency planning need was definitely a fit for an AHIMT. In regards to how to manage the RSAs, TFS decided to bring in the FDNY IMT (Type 2) to manage an RSA in Houston. Since the FDNY AHIMT was associated with a large city fire department, they were considered well suited to set up and manage the RSA at NRG Stadium in Houston and assist the TFS Type 3 IMT with managing the RSA at the Academy Distribution Center in Katy. The larger size and capabilities of the FDNY IMT allowed them to manage both RSAs simultaneously.

The LSSIMT, a TFS Type 2 IMT, was used to manage the Rellis Logistics Staging Area (LSA) located in Bryan after being relieved by the Oklahoma State AHIMT to assist the City of Rockport emergency management officials. The only other Type 2 IMT available for assignment, the Southern Area Blue/Gold IMT was used to manage the Ford Park RSA in Beaumont. All other RSAs were managed with Type 3 IMTs from state forestry agencies or AHIMTs from other states.

Texas AHIMT Assignments

Appendix I provides a detailed listing of all of the IMTs along with their incident locations and assignments.

Multiple Texas AHIMTs members were provided assignments during the early stages of Hurricane Harvey making landfall supporting the DDCs. The Rio Grande AHIMT was assigned to set up a staging area for Fort Bend County. Wichita Falls AHIMT's original order was to establish a staging area for Jefferson County, which later morphed into the Ford Park RSA.
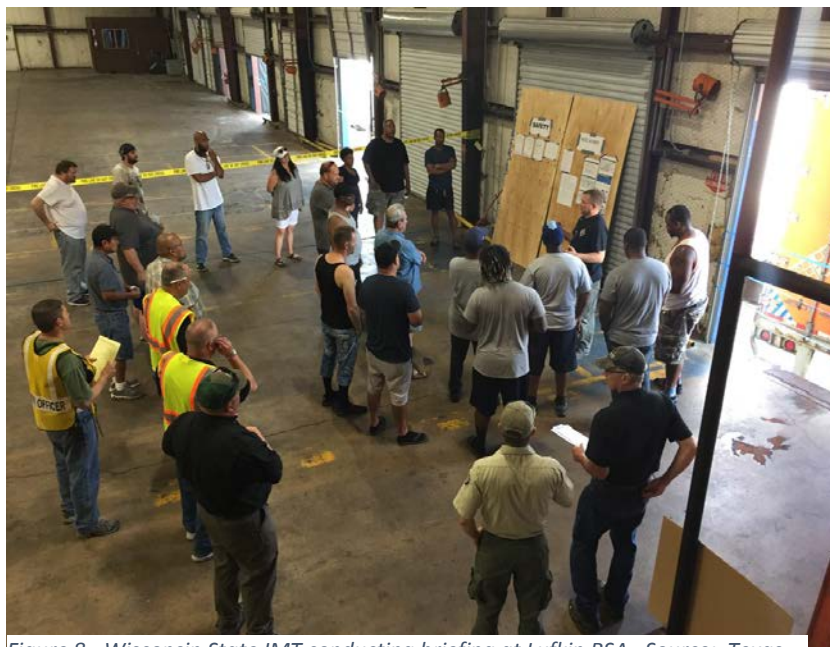
Figure 8 - Wisconsin State IMT conducting briefing at Lufkin RSA. Source: Texas A&M Forest Service

The Alamo Area AHIMT worked in the San Antonio area managing a LSA. They were not ordered with a STAR because they were working within their home area. They also stood up the Alamo Regional Coordination Center.

Two members of the North Central Texas AHIMT assisted the Garland DDC with oversight of the sheltering operations within the Dallas-Fort Worth metro area. The Capital Area AHIMT worked in Austin managing flood response and standing up a shelter. The Piney Woods AHIMT managed a shelter at Nacogdoches.

Mission of Out-of-State IMTs during Hurricane Harvey Response

There were two primary uses of IMTs following the landfall of Hurricane Harvey, resulting in two Mission Assignments (MA) being approved by FEMA. The first MA issued, MA4, was for IMTs to operate Resource Staging Areas (RSAs) (Appendices J and K). The second MA issued, MA5, provided for IMTs to assist local governments with planning services (Appendix G).

RSAs are established as receiving and distribution points to supply commodities to CSAs, Shelter Hubs, or Points of Distribution (POD) to provide life-sustaining resources to evacuees and survivors. Per the Texas State Hurricane Plan, TFS supports up to four (4) RSAs. Depending on the location and magnitude of an incident, additional RSAs may be established.

- Ford Park – Beaumont
- Reliant – NRG Stadium – Houston
- Brookshires – Lufkin
- HEB Distribution Center - Weslaco

The RSA provides a designated location where commodities are shipped and received and distributed to each CSA and ultimately the PODs. The site manager should designate a potential helicopter landing zone in close proximity to the RSA capable of accepting 3-4 helicopters at a time. An RSA will be established and operational within 24 hours following reentry. As the situation dictates, the state will push an initial allocation of commodity handling equipment and commodities to an RSA within the affected area. State agencies such as TFS with responsibility for managing RSAs

Figure 9 - Fire Department New York IMT managing the RSA at Katy, Texas

must ensure they have planned for sufficient personnel to staff an RSA. RSAs, CSAs, and PODs will remain open and functional until the infrastructure and the local economy can sustain the region, county and/or affected city's populations.

A POD is an area selected and operated as temporary staging for distribution of basic commodities to citizens following a disaster. The need for a POD is based on lack of infrastructure to support normal distribution of food, water, or other supplies. PODs are set up as continuous drive-through sites at which the public does not get out of the their vehicle; rather they drive through the site where volunteers load resources into the trunks of cars and the public can obtain information.

The Texas State Hurricane Plan directs that PODs will be established within 12 hours after the RSA has been established. Unlike the RSAs, local government officials will release the PODs' physical addresses to the local media. PODs will deactivate when infrastructure is restored to the areas serviced through the PODs.

Under the Texas State Hurricane Plan, four (4) PODS may be established per county affected by a disaster. This would equate to one POD per precinct in each county. These PODs would be staffed by the Texas Army National Guard. Any additional PODs are the responsibility of the county to manage and staff. A total of 41 PODs were set up and operated during the response.
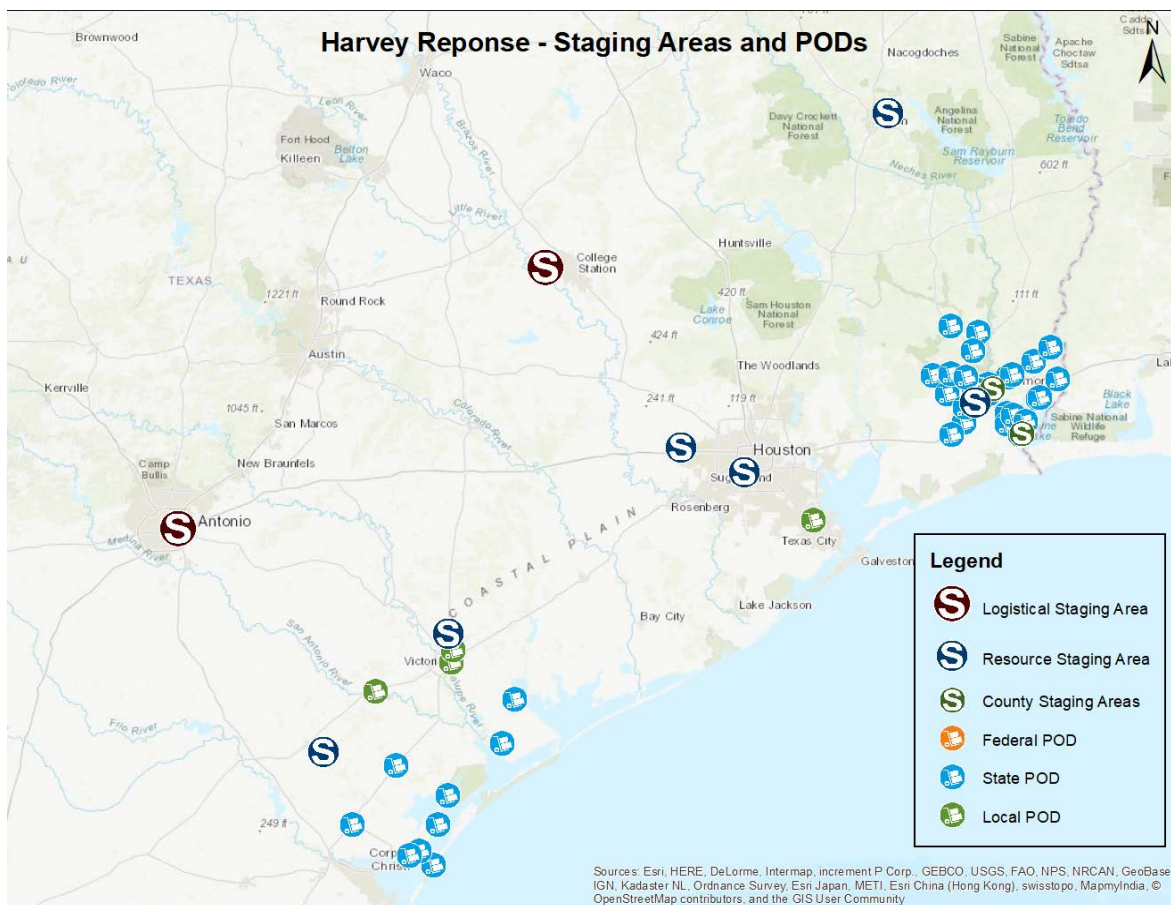
Figure 10 -- Resource Staging Areas (RSA) and Logistical Staging Area (LSA) established for Hurricane Harvey response. Source - Texas A&M Forest Service

A total of six (6) RSAs were established within the areas impacted by Hurricane Harvey. The RSAs were located at the following locations:

- Ford Park RSA– Beaumont
- Reliant RSA– NRG Stadium – Houston
- Academy RSA – Katy
- Beeville RSA – Beeville
- Pioneer RSA – Victoria
- Lufkin RSA - Lufkin
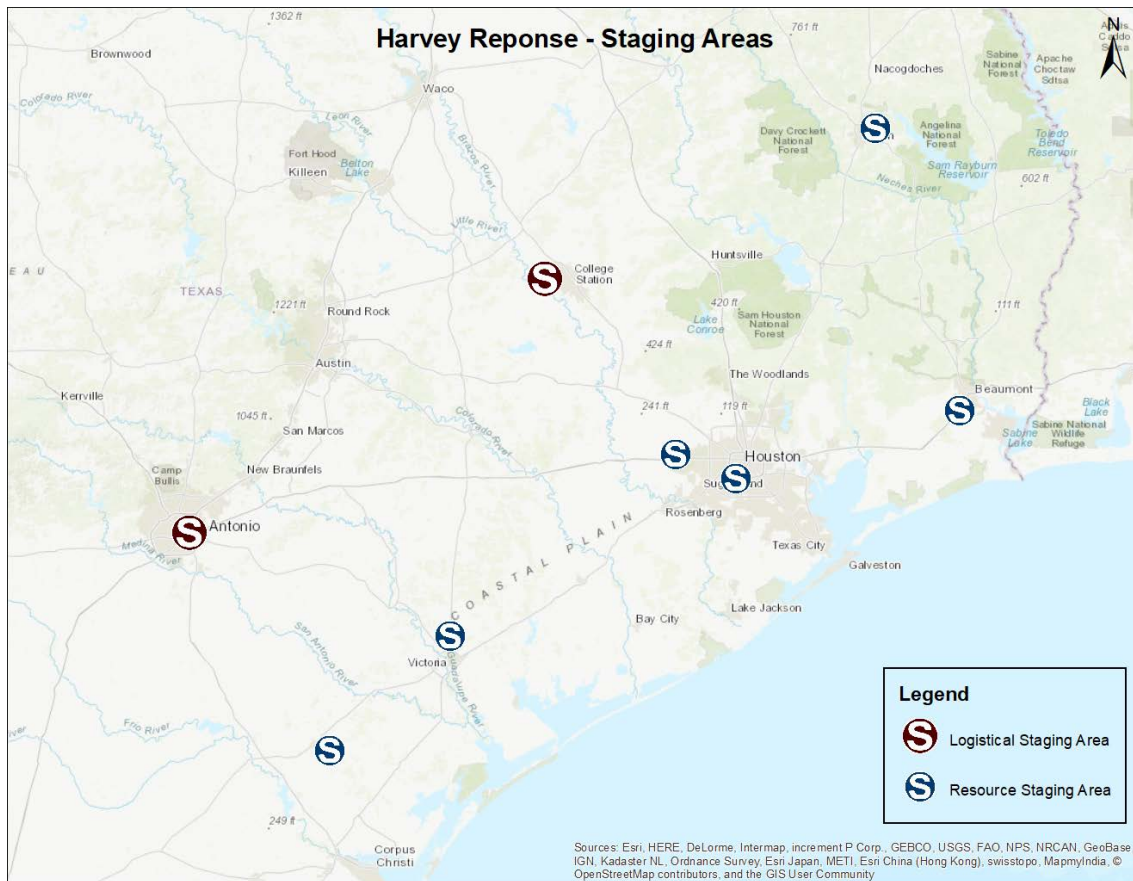
Figure 11 - Point of Distribution (POD) locations established for Hurricane Harvey response. Source - Texas A&M Forest Service

The location of an RSA depends upon required support of, and proximity to the CSAs, PODs and product demand.

A Logistical Staging Area (LSA) was originally established at San Antonio and kept in full operation for approximately two (2) weeks. The San Antonio LSA was managed by the Alamo Area AHIMT with limited assistance from TFS. Due to more focus being put on the needs associated with east Texas, a LSA was established at the Texas A&M University's RELLIS campus in Bryan, Texas. The facility at San Antonio continued to support the RELLIS LSA. An LSA can be used for warehousing commodities, equipment and supplies which can be shipped out to the RSAs. Additionally, an LSA can serve as a location from which response teams such as search and rescue, utility crews and debris management teams can be staged.

Generally, neither state forestry Type 3 IMTs or AHIMTs are provided training on how to manage RSAs and LSAs. TFS offers the Type 3 AHIMT Training Course (O-305) for its AHIMTs. The final exercise within the O-305 course is a hurricane scenario that includes setting up a distribution/staging area at the county level. The AHIMT Association has conducted staging area manager courses at two of their recent annual conferences. As part of the Complex Incident Management Course (CIMC), there is a hurricane exercise, but not as extensive as the one contained in the O-305 course. Within the federal IMT arena, there is not much focus placed on training for incidents such as hurricanes.

Table 3 – IMTs with Locations and Assignments			
Team	Method	Location	Assignment
Rio Grande AHIMT (TX)	State	Rosenberg	Ft. Bend Staging Area
Wichita Falls AHIMT (TX)	State	Beaumont	Ford Park RSA
Lone Star State, Type 2 (TX)	State	Rockport / College Station	Government Support / RELLIS LSA
Capital Area/South Plains AHIMT (TX)	State	Jasper/Newton County	EOC Support
South Carolina IMT, Type 3	ESF #4/ROSS	Jefferson County	EOC Support
North Carolina IMT, Type 3	ESF #4/ROSS	Beaumont	DDC Support
Wisconsin IMT, Type 3	ESF #4/ROSS	Lufkin	Lufkin RSA
FDNY Team, Type 2 (NY)	ESF #4/ROSS	Katy	Academy RSA
Virginia Team, Type 3	ESF #4/ROSS	Beeville	Beeville RSA
Blue/Gold Team, Type 2 (SACC)	ESF #4/ROSS	Beaumont	Ford Park RSA
Northern Arizona IMT, Type 3	ESF #4/ROSS	Bridge City	EOC Support
Virginia/NCR, AHIMT	EMAC	Nacogdoches	Shelter support
Pee Dee AHIMT (SC)	EMAC	Garland	Shelter Support
Tulsa, Oklahoma AHIMT	EMAC	Victoria	Pioneer RSA
Oklahoma State, AHIMT	EMAC	Rockport	Local Government Support
New York State IMT, Type 3	EMAC	Beaumont	Ford Park RSA

IMT Oversight and Coordination

The TFS Emergency Operations Center (EOC) in College Station also served as a mobilization/demobilization site for out-of-state IMTs. All out-of-state IMTs, except the North Carolina Division of Forestry IMT, sent either all of their team or team leadership to College Station to receive an in-briefing, delegation of authority, and mission assignment.

The North Carolina IMT did not come to College Station because it was not logistically reasonable to do so. The disaster conditions prohibited travel from Beaumont, so the team would have had to go excessively out of their way to make it to College Station to receive their briefing, only to turn around and return to Beaumont. The North Carolina IMT was in-briefed via telephone.

Other IMTs would have had to go to College Station then backtrack back to their assignment location after their in-briefing. In those instances, only team leadership was sent to College Station for a briefing, leaving other team members in staging near their respective assignment locations.

All out-of-state IMTs received an agency representative (AREP) from the TFS to accompany the team. The AREP became a critical component to incident management team success as AREPS were able to caution the team of local politics, educate the team as to state policies and procedures, make introductions to local leaders, and serve as a conduit to the agency administrator with TFS.

The TFS leadership at the EOC in College Station conducted a daily call during the early afternoon hours with all IMT ICs. This call also included representatives from FEMA's Region 6 RRCC, SACC, and the SOC. A morning conference call was also completed with representatives from all DDCs and IMTs to coordinate planning, personnel staffing issues and other critical concerns.

Three (3) ESF #4 liaisons worked with the IMTs ordered through ESF #4 MAs. The liaisons spent time in the field with each IMT on a rotating basis to ensure that questions were answered and that IMTs understood issues such as ordering supplies and equipment. One ESF #4 liaison worked in College Station at the TFS EOC to provide support to TFS and maintain communications with the RRCC and SACC.

At the end of their assignments, many IMTs also demobilized through College Station, conducting a close-out and after-action review (AAR). In other instances, the agency administrator traveled to the IMT's assignment location to conduct a close-out and AAR. TFS ensured that the AAR process included best practices and lessons learned.

CONCLUSION

Operational coordination is a core capability listed in the National Preparedness Goal and is subsequently woven into the National Response Framework (NRF). It is one of three core capabilities that spans across all five mission areas and the only one that encompasses all emergency support functions. Operational coordination is the establishment and sustainment of a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities. Operational coordination, at its essence, is the implementation of the ICS on incident scenes. It defines how incidents are organized, managed, and mitigated. It is the primary mission of AHIMTs (Appendix L for History of IMTs).

Operational coordination is arguably the single most important core capability and AHIMTs provide that resource. Nonetheless, there is no dedicated ESF for operational coordination or command and management. Grant guidance lacks mandates or to fund the development and sustainment of such resources. Programmatically speaking, there is more ambiguity in the provision of command and management resources (AHIMTs) than there is in any other area of the NRF. In the one area where leadership, chain-of-command, and organization needs to be self-evident, there is a lack of clarity, definition, funding, and targeted development. These issues contribute to there being reduced numbers of qualified AHIMTs available for mobilization during major disaster response operations such as experienced with Hurricane Harvey.

Provided that the National Preparedness Level (PL) was at PL5 and federal resources were extremely limited, State and local agencies with IMT capabilities were able to fill the void, and assist TFS with qualified and capable IMTs. It was effectively demonstrated from the response to Hurricane Harvey that State and local IMTs, including AHIMTs, can adapt to virtually any assignment they are provided, whether it involves managing an RSA, LSA or providing planning support to local government officials. All needs for IMTs were met.

The following section provides a series of findings and recommendations that should be considered by all levels of governments and professional organizations to improve how IMTs are ordered, mobilized, and used during all-hazard incidents. These findings and recommendations are broken down by national and state-level considerations.

The national findings and recommendations consider issues that impact how IMTs are used, or should be used, in response to an all-hazard incident throughout the United States and its territories. The Texas state-level findings and recommendations are more specific to improving the development, training, and use of IMTs within the State of Texas, but can be considered by other states.

NATIONAL FINDINGS AND RECOMENDATIONS

Finding 1: Number of incident management teams available for deployment through EMAC or ESF #4.

A comprehensive team census is important because currently there is no baseline data. It is unknown whether there is 150 IMTs or 500 IMTs. It is unknown how many of those teams are three deep in personnel or only one deep. It is unknown whether those personnel are on multiple teams. It is unknown what qualifications, if any, are being used to determine performance and competency capability.

Recommendation:

A national AHIMT/IMT census will determine the baseline for other plans and analysis and establishing a vision for team development or consolidation. A census would also be the first step in achieving effective coordination between teams for preparedness and response activities.

Finding 2: Gap analysis of incident management teams

To date, there has never been a comprehensive national gap analysis completed for IMTs. There are a recommended number of wildland teams in the Evolving Incident Management (EIM) report (NWCG, 2011), which implies a gap analysis was done. It is doubtful that the EIM report took into account local and regional needs, nor a comprehensive look at the wildland and all-hazards needs combined.

Recommendation:

A gap analysis is the comparison of actual performance with potential or desired performance or need; that is the 'current state' versus 'desired future state'. In order to develop a proper national force structure of IMTs, an analysis needs to be done to determine how many kinds and types of incident management teams are needed to be developed and compare that to how many teams already exist. This gap analysis will need to take into account local, state, and federal hazard and vulnerability assessments, incident specific gap analyses, and desired capability. A gap analysis would also provide preliminary data that can be utilized for determining equipment and training needs.

Finding 3: Location, size, and typing of AHIMTs

There is currently no national guidance on location, size and typing of AHIMTs.

Recommendations:

As a result of a gap analysis, guidance should be established that assists in defining the location, size, and typing of AHIMTs. Guidance can be based on the gap analysis to define appropriate locations, size and typing of teams to be established in each state and local jurisdictions. This guidance should take into account, at the minimum, geographic size, population, and vulnerability (Threat x Risk x Consequence = Vulnerability).

Finding 4: Ensure assigning appropriate resources with IMTs to accomplish the mission assignment.

During the Hurricane Harvey response, TFS provided many out-state IMTs with specialized positions such fork lift operators and aviation specialists to work at RSAs. This allowed RSAs to begin operation in a more timely fashion.

Recommendation:

Assigned IMTs need to be resourced with the appropriate single resources or labor forces that support the mission of the IMT. IMTs are for managing an incident, and should be given the resources that enable them to achieve the assignment.

Finding 5: Nationwide incident management team ordering system.

The National Incident Management System (NIMS) recommends the use of resource management systems to support ordering, mobilizing, dispatching, and demobilizing resources. Currently, there is no single management system that meets these needs for AHIMTs.

Recommendation:

An appropriate management system should be web-based and made available to IMT Incident Commanders, administrative support personnel, and other personnel who need it for mobilizing resources. This will assist in reducing multi-point ordering complexities, such as those that occurred in Texas during hurricane Harvey. Although ROSS was designed for ordering of wildland resources, there are methods to enter non-red carded resources into the system. Perhaps the revision and or replacement of ROSS could incorporate more AHIMT positions. The EMAC system called Mutual Aid Support System (MASS) could be an option, but is not widely accessible and or easily updateable.

Finding 6: Dedicated federal funding

A review of the 2017 Homeland Security Grant Program Notice shows that priorities, emphasis, and requirements of the funding are to support state, local, and tribal efforts to prevent terrorism and other catastrophic events and to prepare the nation for the threats and hazards that pose the greatest risk to the security of the United States. States are to use the funding to enhance terrorism preparedness and the 32 core capabilities of the National Preparedness Goal across the five mission areas. The grants are intended to be risk-driven, capabilities-based, and geared toward high-priority needs relating to terrorism preparedness. Furthermore, the grants emphasize the need for NIMS compliance and implementation and that resources and capabilities developed must be readily deployable to support EMAC. The grants require that 25% of the allocated funding be dedicated to law enforcement terrorism prevention activities.

Few, if any, other resources parallel IMTs in this regard. IMTs support state, local, and tribal responses to all-hazards. IMTs implement frontline operational coordination which is arguably the single most important core capability listed in the National Preparedness Goal (NPG). IMTs implement a core capability that spans across all mission areas and all ESFs. AHIMTs encompass the whole of community since they are multi-disciplined and designed for all-hazards. IMTs supports preparedness against all risks. IMTs are a capability-based resourced that is proven through a performance and competency-based system.

Some IMTs have dedicated state or local funding or have been provided consistent funding via homeland security grants in the past. Those are the exception rather than the rule.

Recommendation:

Similar to the law enforcement terrorism prevention activities, IMTs should be prioritized to receive dedicated funding from the homeland security grant program.

Finding 7: Mission assignment, typing, and incident complexity analysis

In the all-hazards environment, the incident complexity, size, and scope are not so clear. For instance, Hurricane Harvey which would be typed as a Type 1incident, had 39 counties affected and an untold number of municipalities, all with authority over the cascade of incidents that the hurricane caused within their respective borders. Therefore, a single county may have had flooding, looting, search and rescue, fires, hazardous materials spills, and power outages to manage. An all-hazards complexity analysis should place more emphasis on size of jurisdiction, assigned resources, size of population, mission, and impact to the jurisdiction rather than type of incident. An AHIMT may be assigned to just a small part of a larger incident supporting a local jurisdiction rather than assigned to the whole incident that would be more commonplace on a fire. For instance, a type 3 IMT that conducts a wildland fire incident complexity analysis determines that as a fire becomes larger in complexity, they order a type 1 or 2 IMT with additional capabilities.

Additional confusion exists around the typing of AHIMTs. The USFA technical assistance program indicates AHIMTs are type 3. AHIMTA's Interstate Incident Management Team Qualification System (IIMTQS) has no statement as to type, but was developed with a type 3 organization in mind, even though some jurisdictions consider themselves type 1 or type 2.

Recommendation:

The AHIMT community should clarify AHIMT typing, especially as existing teams continue to seek higher training, size, and experience. Standards should be defined which fully address the capabilities of a particular AHIMT. Additionally, a mission assignment analysis should be developed for ordering IMTs. Development of AHIMT typing standards and assignment analysis should be completed with input from all partner agencies and groups involved with the AHIMT program.

Finding 8: AHIMT training for self-sustainment.

It was noted by team members that self-sustainment should be improved. It was also expected and noted in mission assignments.

Recommendation:

AHIMTs operating in post hurricane, tornado, flood, or other significantly damaging area should know the basics of austere living. Developing and conducting training in field living skills will teach IMTs the basics of field sanitation, hygiene, operating generators, eating, and other challenges they could encounter in austere conditions. This will result in better morale, and safer and healthier living conditions for team members and assigned resources. These conditions can

be integrated into operational readiness exercises and in training sessions the issue of austere conditions should be clearly communicated to AHIMTs.

Finding 9: **All-hazards mission training**

The utilization of AHIMTs is growing due to their versatility and adaptability. AHIMTs are not only being assigned to incident command posts for typical incident management operations, nor are they only being assigned to support emergency operations centers. AHIMTs are now being tasked with managing staging areas, mobilization centers and points of distribution to name just a few. Many incident management personnel that responded to Hurricane Harvey had completed the TFS Staging Area Managers course. These same individuals were on teams that managed staging areas during the incident. They acknowledged that the course had been essential to their success. Some other teams worked with military personnel and had trouble understanding military processes.

Recommendation:

Encourage AHIMTS to work with their states or localities to conduct various training scenarios. AHIMTs could provide an introductory or awareness exercise based on lessons learned, that indoctrinates AHIMT personnel to a variety of missions an AHIMT could be assigned. Also suggest that AHIMTs work with their National Guard elements to discuss their command and control functions so that both have an understanding of how each entity functions during an emergency.

Finding 10: **Awareness and Outreach**

Some local jurisdictions generally lack an acute understanding of the availability, capabilities and processes associated with IMTs. IMTs are versatile in their mission capabilities and have established ordering processes.

Recommendation:

Education of local elected officials and emergency managers is essential to ensure that appropriate incident management resources are requested to meet the specific needs of the local government body. More emphasis by federal, state and local IMT community, including professional IMT associations should be placed on having city/county leadership and emergency management officials understand the capabilities of incident management, funding mechanisms, local and state incident management needs, qualification systems, and ordering processes.

Finding 11: **Track Type 3 wildland IMTs**

The NICC monitors the resource status of the Type 1 and Type 2 IMTs for the purposes of strategic preparedness level 5. The NICC does not monitor type 3 IMTs, however, type 3 IMTs are monitored at some of the GACCs. It became clear during this incident, that Type 3 IMTs have a contribution of capability to be made to interstate response. While these teams are intended for regional or local response, they fill a gap in disaster response, and therefore need to be monitored as to status and location the same as the larger teams.

Recommendation:

The NICC should start monitoring all the availability of Type 3 IMTs in the same manner as they do for Type 1 and Type 2 IMTs.

Finding 12: Advanced training for IMTs

IMTs that had taken or received more advanced incident management courses and position specific courses had an easier time adapting to the unique tasks that IMTs were called upon to complete during the Hurricane Harvey response. Numerous IMT members who responded to Hurricane Harvey indicated that they had completed the O-305 AHIMT Incident Management Team Course. However, they also indicated that the advanced training such as the Complex Incident Management Course (CIMC); S-420 Command and General Staff; and position specific courses were significant to their achievement of the mission.

Recommendation:

Advanced courses should be emphasized, made more widely available, and implemented in more training programs nationally. These advanced courses should include more emphasis on management of all-hazard incidents.

Finding 13: Local agency representative with out-of-state IMTs

During Hurricane Harvey response, TFS provided an agency representative to each of the out-of-state IMTs. This proved to be a best practice. The practice of using a tenured TFS employee to serve as an agency representative as a force enabler to the IMT because: the representative can introduce the team to local officials; caution the IMT to local politics and issues; assist with indoctrinating local officials as to the capability, purpose, and proper employment of the IMT; and act as a communication tool with the TFS chain-of-command.

Recommendation:

This best practice needs to be continued in incidents of the future by the host agency embedding a tenured employee with each out-of-state IMT.

Finding 14: Financial Support

Several incident management teams assigned during Hurricane Harvey needed to financially support portions of the incident due to damaged infrastructure, interrupted supply chains, incident prioritization and lack of clearly defined ordering point. IMTs expressed concern regarding reimbursement for purchased supplies and services. Finance rules seemed to change by the day up to and including demobilization. Several teams lacked logistical and financial support.

Recommendation:

During the in-briefing it needs to be clearly defined what the purchasing guidelines and ordering points are for the assigned incident management teams. Provide preauthorization for anticipated support and ensure documentation for reimbursement. Specify and define self-sufficiency prior to team assignment.

Finding 15: Liaison for IMTs Ordered via ESF #4

During the Hurricane Harvey response, ESF #4 assigned liaisons to work with the IMTs ordered through ESF #4 MAs. The FDNY IMT was assigned a full time liaison, while one liaison floated between the other IMTs. During the close-outs for the IMTs, feedback was provided by the teams that these liaisons proved very beneficial in resolving questions and issues.

Recommendation:

Working with the host agency, ESF #4 should consider assigning experienced liaisons to work with all IMTs ordered through ESF #4 MAs.

Finding 16: Referring to AHIMTs as IMTs

It was readily apparent during the response to Hurricane Harvey that the organizations referred to as AHIMTs and those referred to as IMTs were able to function at the same level and deliver the same outcomes.

Recommendation:

Discontinue the use of the title "AHIMT", and refer to all incident management teams as IMTs.

STATE OF TEXAS FINDINGS AND RECOMMENDATIONS

Finding 1: Predictive analysis for resource planning

During the preparedness phase, the State of Texas should analyze, assess, and identify resource needs (including IMTs) with respect to response operations and a particular category storm. Currently in the TDEM SOC Hurricane Playbook at 96 hours prior to landfall TFS is to designate IMT and forward coordinating element leads.

Recommendation:

Recognize that the timelines provided within the Playbook are not dynamic to the tasks that are assigned. The timeline maybe compressed for the incident due to changing conditions of the storm. The SOC needs to allow the TFS more latitude in ordering IMTs based on the expected impacts of a particular category storm.

Finding 2: Local jurisdictions and DDCs utilization of IMTs.

IMT members indicated they spent excessive time and effort educating local personnel where they were assigned about the uses and capabilities of an IMT. IMTs are less effective when their capabilities are misunderstood or improperly employed. It is clear by the history of utilizing IMTs in Texas, and the expanded use of more out-of-state IMTs, that IMTs will continue to be a major part of disaster response.

Recommendation:

TFS could provide educational information regarding IMT purpose and functions into existing emergency workshops and courses targeting elected officials and emergency management coordinators.

Finding 3: Mission Ready Packages for DDC, RSA, and LSA

Hurricane Harvey was a Type I incident that impacted a large geographic area of Texas. Hurricane Harvey produced a large demand to fill positions to manage DDCs, RSAs and LSAs. Filling demands for incident management positons for DDCs, RSAs, and LSAs was based on TFS overhead experience. TFS has developed mission ready packages for staging areas, planning sections and AHIMTs.

Recommendation:

TFS should work closely with DDCs and IMTs within the state of Texas to make them aware of existing mission ready packages. TFS should also develop mission ready packages for operating RSAs and LSAs and include these in the TDEM SOC Hurricane Playbook.

Finding 4: Mission assignment flexibility

Mission assignments changed for several IMTs between the time of mobilization and their arrival in Texas. IMTs may have been given mission assignments for tasks that they have never attempted before. IMTs were reassigned for purposes better aligned with their capability.

Recommendation:

Mission assignments should continue to be a deliberate process. Sustainment training could be conducted to ensure operation readiness, flexibility and adaptability of IMTs. Sustainment training could be conducted through operational readiness exercises.

Finding 5: In-briefing at TFS headquarters.

Out-of-state IMTs received in-briefings at TFS headquarters before deployment. Mission assignments, situational status, Texas governance, delegation of authority and Leader's Intent were shared with the teams.

Recommendation:

It was demonstrated that having out-of-state IMTs report to TFS headquarters for an in-briefing was a best practice. College Station appears to be a good location for hurricane deployments given its location to coastal communities. Catastrophic incidents in central or west Texas may require another identified site. If mission changes occur after out-of-state IMTs have departed their parent state, they should be given an opportunity to re-supply or equip in College Station (or other location) prior to moving out to their assignment. This may mean the establishment of a cache of equipment in College Station and an alternate location. IMTs could also make purchases locally and seek reimbursement under EMAC and ESF #4.

Appendices

Emergency Support Function #4 – Firefighting Annex

ESF Coordinator:	**Support Agencies:**
Department of Agriculture/Forest Service Department of Homeland Security/Federal Emergency Management Agency/U.S. Fire Administration	Department of Commerce Department of Defense Department of Homeland Security/U.S. Coast Guard Department of Homeland Security/Federal Emergency Management Agency/U.S. Fire Administration Department of the Interior Department of State Environmental Protection Agency
Primary Agency:	
Department of Agriculture/Forest Service	

INTRODUCTION

Purpose

Emergency Support Function (ESF) #4 – Firefighting provides Federal support for the detection and suppression of wildland, rural, and urban fires resulting from, or occurring coincidentally with, an all-hazard incident requiring a coordinated national response for assistance.

Scope

ESF #4 coordinates firefighting activities and provides personnel, equipment, and supplies in support of local, state, tribal, territorial, and insular area agencies involved in wildland, rural, and urban firefighting operations.

RELATIONSHIP TO WHOLE COMMUNITY

This section describes how ESF #4 relates to other elements of the whole community.

Local, State, Tribal, and Territorial

Firefighting is an inherently local responsibility. Local fire resources often receive assistance from other fire departments/agencies through established mechanisms identified in local mutual aid agreements. Further assistance can be obtained through an established intrastate mutual aid system. If additional assistance is required, firefighting resources can be requested from other jurisdictions through processes established under mutual aid agreements, state-to-state or regional compacts, or other agreements. If the governor of the affected state has declared an emergency, firefighting resources may be requested through the Emergency Management Assistance Compact (EMAC). If the President has declared an emergency or major disaster under the Stafford Act, firefighting resources may also be requested through ESF #4. Using existing authorities and agreements, ESF #4 can mobilize wildland and structure firefighting resources from across the country, as well as from several foreign countries, through the national firefighting mobilization system to incidents anywhere in the United States.

Emergency Support Function #4 – Firefighting Annex

Except where specified in agreements or through a formal delegation of authority, assisting firefighting resources report to and become part of the command structure of the requesting jurisdiction.

Coordination with and support of local, state, tribal, territorial, and insular area fire suppression organizations is accomplished through the state (or equivalent) forester, state fire marshal, state emergency management agency, or other appropriate state, tribal, territorial, or insular area agency or tribal fire suppression organization. Responsibility for situation assessment and determination of resource needs lies primarily with the local Incident Commander.

Shortages of critical firefighting resources are adjudicated at the lowest jurisdictional level.

Many firefighting agencies provide additional functions such as emergency medical services, technical rescue, and hazardous materials response. During a Federal response, these resources may support multiple ESFs in support of different core capabilities.

Private Sector/Nongovernmental Organizations

Private sector and nongovernmental organizations resources for firefighting support are mobilized through standard contract procedures.

Federal Government

All requests for wildland or structural firefighting resources through ESF #4 will be coordinated through the existing national firefighting mobilization system managed by the Department of Agriculture (USDA) Forest Service.

USDA Forest Service will coordinate at the national and regional levels with the Federal Emergency Management Agency (FEMA); appropriate state, tribal, territorial, and insular area agencies; and cooperating agencies on all issues related to response activities.

FEMA/U.S. Fire Administration will coordinate with appropriate state, tribal, territorial, and insular area agencies and local fire departments to expand structural firefighting resource capacity in the existing national firefighting mobilization system, and provide information on the protection of emergency services sector critical infrastructure.

Specific information on Federal Government actions is described in the following sections.

CORE CAPABILITIES AND ACTIONS

ESF Role Aligned to Core Capabilities

The following table lists the response core capabilities that ESF #4 most directly supports along with the particular ESF #4 actions related to each of these core capabilities. Though not listed in the table, all ESFs support the following core capabilities: Planning, Operational Coordination, and Public Information and Warning.

Emergency Support Function #4 – Firefighting Annex

Core Capability	ESF #4 – Firefighting
Fire Management and Suppression	• Provides wildland and structure firefighting resources to local, state, tribal, territorial, insular area, and Federal agencies in support of firefighting and emergency operations. • Provides command, control, and coordination of resources (to include incident management teams, area command teams, and multi-agency coordination group support personnel) to local, state, tribal, territorial, insular area, and Federal agencies in support of firefighting and emergency operations. • Provides direct liaison with local, state, tribal, territorial, or insular area emergency operations centers (EOCs) and fire chiefs in the designated area, as appropriate. • Provides support to enhance the resilience of local, state, tribal, territorial, and insular area firefighting agencies.
Situational Assessment	• Obtains an initial fire situation and damage assessment through established intelligence procedures; determines the appropriate management response to meet the request for assistance. • Analyzes each request before committing people and other resources; ensures employees will be provided with appropriate vaccinations, credentials, and personal protective equipment to operate in the all-hazard environment to which they are assigned; and ensures that all employees involved in all-hazard response will be supported and managed by an agency leader, agency liaison, or interagency incident management team. • Ensures that an all-hazard incident-specific briefing and training are accomplished prior to task implementation. This preparation will usually occur prior to mobilization where incident description, mission requirements, and known hazards are addressed. Key protective equipment and associated needs for tasks that employees do not routinely encounter or perform will be identified.
Infrastructure Systems	• Provides expertise and personnel to assist with assessment of emergency services sector critical infrastructure.
Operational Communications	• Provides radio communications systems to support firefighters, law enforcement officers, and incident response operations.

Agency Actions

Primary Agency	Actions
Department of Agriculture (USDA)/Forest Service	• Coordinates Federal firefighting activities. This function is accomplished by mobilizing firefighting resources in support of local, state, tribal, territorial, and insular area wildland, rural, and urban firefighting agencies nationwide. • Provides qualified ESF #4 personnel to serve at the national and regional area levels during Stafford Act incidents. • Provides support personnel at the national, regional, and incident levels. • Requests assistance from supporting agencies as necessary to accomplish ESF #4 responsibilities. • Provides logistics support through the appropriate Geographic Area Coordination Center and/or National Interagency Coordination Center for mobilizing resources for firefighting. • Assumes full responsibility for suppression of wildfires burning on National Forest System lands and joins in a unified command with the local jurisdiction on incidents threatening National Forest System lands. • Provides and coordinates firefighting assistance to other Federal land management; state forestry; and local, tribal, territorial, and insular area fire organizations as requested under the terms of existing agreements and the National Response Framework (NRF). • Arranges for and provides direct liaison with local, state, tribal, territorial, and insular area EOCs and fire chiefs in the designated area, as appropriate, to coordinate requests for firefighting assistance in structural or industrial fire detection, protection, and suppression operations.

Support Agency	Actions
Department of Commerce	• Provides fire/weather forecasting as needed, from the National Interagency Fire Center in Boise, Idaho, or from a nearby National Weather Service Forecast Office under the terms of existing interagency agreements. • Provides urban and industrial hazard analysis support through the Building and Fire Research Laboratory of the National Institute of Standards and Technology. • Provides fire/weather support under the terms of the National Agreement for Meteorological Services in Support of Agencies with Land Management and Fire Protection Responsibilities. • Provides forecasts of the dispersion of smoke in support of planning and response activities.

Support Agency	Actions
Department of Defense (DOD)	• Assumes full responsibility for firefighting activities on DOD installations. • Supports firefighting operations on nonmilitary lands with personnel, equipment, and supplies under the terms of the current interagency agreement between DOD, USDA, and DOI, including the arrangement of liaisons as required. **U.S. Army Corps of Engineers** • Provides contracting services through ESF #3 to urban and rural firefighting forces to obtain heavy equipment and/or demolition services to suppress incident-related fires as needed.
Department of Homeland Security	**FEMA/U.S. Fire Administration** • Provides qualified ESF #4 personnel to serve at the national and regional area levels during Stafford Act incidents. • Establishes liaison with EMAC personnel on governor-to-governor requests for firefighting resources to ensure the ESF#4 primary agency and appropriate support agencies are aware of any firefighting resources provided through EMAC. • Assists with identification of local structure fire resources not currently available through the existing national firefighting mobilization system, and assists with incorporating these resources into the system. • Provides contact with appropriate fire service organizations/associations at the national level to ensure any actions by these organizations relative to disaster planning, preparedness, or response are coordinated with the ESF #4 primary agency and other appropriate support agencies. • In conjunction with the ESF #4 primary agency and other appropriate support agencies, provides direct liaison with local, state, tribal, territorial, and insular area EOCs and fire chiefs in the designated area, as appropriate. • Disseminates information and provides subject matter experts to improve infrastructure protection efforts within the emergency services sector. • Provides assistance with assessment of impacted emergency services sector critical infrastructure. **U.S. Coast Guard** • Provides marine firefighting assistance, as available, commensurate with each unit's level of training and the adequacy of available equipment. • Assumes responsibility and direct authority for safeguarding ports and may exercise Federal control over vessels, ports, harbors, and waterfront facility operations and vessel movements as deemed necessary.

Support Agency	Actions
Department of the Interior	• Assumes full responsibility for fighting wildfires burning on lands within its jurisdiction and joins in unified command with the local jurisdiction on incidents threatening lands within its jurisdiction. • Assists the USDA/Forest Service in managing and coordinating firefighting operations. • Provides firefighting assistance to other Federal land management; state forestry; and local, state, tribal, territorial, and insular area fire organizations as requested under the terms of existing agreements and the NRF. • Provides qualified ESF #4 personnel and support personnel at the national, regional, and incident levels during Stafford Act incidents. • In conjunction with the ESF #4 primary agency and other appropriate support agencies, provides direct liaison with local, state, tribal, territorial, and insular area EOCs and fire chiefs in the designated area, as appropriate.
Department of State	• Coordinates with foreign governments on identification and movement to the United States of assets and resources for firefighting assistance. • Coordinates with foreign states concerning offers of support, gifts, offerings, donations, or other aid.
Environmental Protection Agency	• Provides technical assistance and advice in the event of fires involving hazardous materials. • Provides assistance in identifying an uncontaminated, operational water source for firefighting. • Provides assistance in identifying critical water systems requiring priority restoration for firefighting. • Provides technical assistance on issues concerning the impacts of firefighting chemicals on wastewater treatment facilities.
Other Organizations	• State forestry organizations in most states are responsible for wildland firefighting on non-Federal lands. • Local fire departments are typically responsible for structural firefighting. Local, state, tribal, territorial, and insular area governments, including state forestry organizations and local fire departments, may assist other local, state, tribal, territorial, and insular area government and Federal agencies in firefighting operations through existing agreements. • Private sector resources are mobilized through standard contract procedures.

National Preparedness Levels

The National Multi-Agency Coordination Group (NMAC) establishes Preparedness Levels throughout the calendar year to help assure that firefighting resources are ready to respond to new incidents. Preparedness Levels are dictated by fuel and weather conditions, fire activity, and resource availability.

The five Preparedness Levels range from 1 to 5, with 5 being the highest level. Each Preparedness Level has specific management directions. As the Preparedness Levels rise, more federal and state employees become available for fire mobilization if needed.

Preparedness Level 1
Geographic Areas accomplish incident management objectives utilizing local resources with little or no national support.
- Conditions are not favorable to support significant wildland fire activity in most geographic areas.
- Resource capability is adequate with little or no mobilization of resources occurring through the National Interagency Coordination Center.
- Potential for emerging significant wildland fires is expected to remain minimal.

Preparedness Level 2
Active Geographic Areas (GA's) are unable to independently accomplish incident management objectives. Resource capability remains stable enough nationally to sustain incident operations and meet objectives in active GA's.
- Significant wildland fire activity is increasing in a few geographic areas.
- Resources within most geographic areas are adequate to manage the current situation, with light to moderate mobilization of resources occurring through the National Interagency Coordination Center.
- Potential for emerging significant wildland fires is normal to below normal for the time of year.

Preparedness Level 3
Mobilization of resources nationally is required to sustain incident management operations in the active Geographic Areas (GA's). National priorities established as a necessary measure to address the heavy and persistent demand for shared resources among active GA's.
- Significant wildland fire activity is occurring in multiple geographic areas, with Incident Management Teams (IMTs) actively engaged.
- Mobilization of resources through the National Interagency Coordination Center is moderate to heavy.
- Potential for emerging significant wildland fires is normal for the time of year.

- **Preparedness Level 4**

Shared resources are heavily committed. National mobilization trends affect all Geographic Areas (GA's) and regularly occur over larger and larger distances. National priorities govern resources of all types. Heavy demand on inactive/low activity GA's with low levels of activity for available resources.

- Significant wildland fire activity is occurring in multiple geographic areas; significant commitment of Incident Management Teams.
- NICC increasingly engages GACCs in an effort to coordinate and fill orders for available resources.
- Potential for significant incidents emerging in multiple GA's indicates that resource demands will continue or increase.

Preparedness Level 5

National mobilization is heavily committed and measures need to be taken to support GA's. Active GA's must take emergency measures to sustain incident operations.

- Full commitment of national resources is ongoing.
- Resource orders filled at NICC by specifically coordinating requests with GACCs as resources become available.

Potential for emerging significant wildland fires is high and expected to remain high in multiple geographic areas

National Wildfire Preparedness Moves to Highest Level

Boise, Idaho - The National Multi-Agency Coordinating Group (NMAC) is raising the National Fire Preparedness Level (PL) to its highest point, PL-5, effective at 4 p.m. Mountain Daylight Time on August 10, 2017. The PL ranges from one, indicating minimal activity, to five, which signals very high activity.

NMAC, which consists of top federal and state fire managers, sets the national PL. The raised preparedness level reflects a high degree of wildfire activity, a major commitment of fire resources, and the probability that severe conditions will continue for at least a few days.

"A significant amount of initial and extended attack and large fire activity has occurred over the past several days as a result of lightning storms that have intensified local and geographic response," said Dan Buckley, chair of NMAC. "Given the continuing hot and dry weather and the increase in fire activity in the western U.S., the decision to move to Preparedness Level 5 depicts the complexity that fire managers are encountering to assure that adequate firefighting resources are available for protection of life, property and our nation's natural resources."

During periods of high wildfire activity, when assets are stretched thin, federal, tribal, state and local partners work together to prioritize wildfires so that those threatening life, property and valuable natural and cultural resources receive assets as quickly as possible. Professional wildfire managers adapt their strategies and tactics based on the assets that they receive and do the very best they can to suppress unwanted wildfires effectively and efficiently.

Wildfire activity has escalated in recent days after thunderstorms, many with little or no moisture, moved across parts of California, Oregon, Washington, Idaho and Montana, sparking hundreds of new fires. To date, 40,845 wildfires have burned over 6 million acres in the United States this year. In comparison, the amount of wildfires is slightly below the ten-year average of 44,000. However, the ten-year average for the amount of acres burned is 2.8 million acres higher than the 4.2 million acre average.

During PL-5, further assistance from the military, beyond what is already in use, and international resources may be considered and requested, and agency personnel in other positions may be activated for fire duty, but no decisions have been made concerning those steps. In 2015, 200 soldiers from the 17th Field Artillery Brigade based out of Fort Lewis, Washington were assigned to fires in Washington for 30 days and Canada, Australia, and New Zealand provided personnel and aircraft to support fire suppression efforts primarily in the Northern Rockies and Northwest.

The last time that the National Preparedness Level was raised to 5 was on August 13, 2015. The National Preparedness Level remained at PL-5 for 24 days until it was dropped to 4 on September 6, 2015. This is the fifth time that PL-5 has been reached since 2007.

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National Multi-Agency Coordinating Group

3833 South Development Avenue; Boise, ID 83705

NMAC Correspondence 2017-24   August 21, 2017

To: ESF4 Coordinators

From: National Multi-Agency Coordinating Group

Subject: National Resource and Preparedness Situation

Currently we are at national Preparedness Level 5 with a high volume of large fire activity in the Northwest, Northern Rockies, and California. Additionally, initial attack and large fire occurrence continues in the Great Basin, Rocky Mountain and Southern Areas.

Support of ongoing incidents as well as initial attack is requiring a sustained level of national support with all resources. This should continue through September.

No resource capability can be made available for response to non-fire incidents.

/s/ Dan Buckley
NMAC Chair

National Multi-Agency Coordinating Group

3833 South Development Avenue; Boise, ID 83705

NMAC Correspondence 2017-27   August 28, 2017

To: ESF4 Coordinators

From: National Multi-Agency Coordinating Group

Subject: National Resource and Preparedness Situation

Currently we are at national Preparedness Level 5 with a high volume of large fire activity in the Northwest, Northern Rockies, and California. Additionally, initial attack and large fire occurrence continues in the Great Basin, Rocky Mountain and the rest of the geographic areas.

Support of ongoing incidents as well as initial attack is requiring a sustained level of national support with all resources. This should continue through the end of September.

The following national resource capability is available for response to non-fire incidents.

    0   Area Command Teams
    0   Type 1 Incident Management Teams
    0   Type 2 Incident Management Teams
    0   4390 Communications Systems
    0   Handheld Programmable Radios
    0   Mobile Catering Units
    0   Mobile Shower Units
    0   Incident Support Cache Vans
    0   20 person crews

We will continue to monitor our national resource capability on a regular basis.

/s/ Dan Buckley
NMAC Chair

National Multi-Agency Coordinating Group

3833 South Development Avenue; Boise, ID 83705

NMAC Correspondence 2017-29   August 31, 2017

To: Geographic Area Coordinating Group Chairs and ESF4s

From: National Multi-Agency Coordinating Group

Subject: National Emergency Response Situation
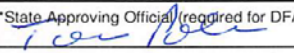
The current national emergency management situation is one that none of us have experienced. Ongoing wildland fire activity has placed us at national Preparedness Level 5 with a high volume of fire activity in multiple geographic areas for weeks. At the same time, a major hurricane has made landfall and delivered a record amount of rainfall to a large area of the Southeastern U.S., affecting millions of Americans. It appears likely that the wildland fire situation could worsen in the near term and persist for most of September. Undoubtedly the response and recovery actions associated with Hurricane Harvey and its aftermath will last even longer. Our hearts, thoughts and prayers are with all emergency responders and members of the public who have been impacted by these natural disasters. We remain dedicated to helping as much as we can, wherever we can.

In our letter dated August 28 we listed the types of resources that are currently unavailable through our national wildfire response system. Unfortunately, these resource shortages are likely to continue for some time; this does not mean, however, that no resources are available to assist with hurricane response. The member agencies of NMAC, including the federal wildland fire agencies and many state and local governments, have provided, and will continue to provide, assistance in support of hurricane response. This assistance is provided through a number of different Emergency Support Functions. Wildland fire management personnel in all agencies and at all levels of government will continue to identify resources that can be made available for hurricane response efforts as well as wildfires.

The United States has an array of robust emergency response capabilities; the present situation is straining our ability to simultaneously respond to all areas of need. We have no doubt that the character and solidarity of emergency responders everywhere will help us overcome this situation in the same ways we have succeeded in the past.

/s/ Dan Buckley
NMAC Chair

DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY MISSION ASSIGNMENT (MA)	See Reverse for Paperwork Burden Disclosure Notice	O.M.B. NO. 1660-0047 Expires March 31, 2014

I. TRACKING INFORMATION (FEMA Use Only)

State TX (Texas) Incident:2017082301-Hurricane Harvey	NEMIS Number 1509-237876
Program Code/Event Number 4332DR-TX: HURRICANE HARVEY	Date/Time Received 09/04/2017 23:37

II. ASSISTANCE REQUIRED ☐ See Attached

Assistance Requested
Amendment #3: Amend to increase funding by $3,000,000 and extend the end date to 9/18/2017 to support IMT's operating the RSA's per email with Mark Courson.

Amendment #2: Amend to change Federal cost share to 100% per FRN#4 of the Presidential Declaration.

Delivery Location Texas A&M Forest Service, 200 Technology Way College Station, TX 77845	Internal Control Number 1855-291582	Date/Time Required 09/04/2017

Initiator/Requestor Name Gisela Ryan-Bunger	24 Hour Phone Number (512) 424-2208	Email Address gisela. ryan-bunger@dps.texas.gov	Date 09/04/2017
Site POC Name KELLER, CHARISSA MAXINE	24 Hour Phone Number	Email Address charissa.keller@fema.dhs.gov	Date 09/04/2017
* State Approving Official (Required for DFA and TA)			Date 9-5-17

III. INITIAL FEDERAL COORDINATION (Operations Section)

Action to:	☒ ESF #: 7 ☐ Other:	Date/Time 09/04/2017 23:29	Priority	☐ 1. Lifesaving ☐ 2. Life sustaining	☒ 3. High ☐ 4. Medium

IV. DESCRIPTION (Assigned Agency Action Officer) ☐ See Attached

Statement of Work
As requested by and in coordination with FEMA, USFS and DOI will provide logistical support to multiple Incident Support Bases (ISBs), Federal Staging Areas (FSAs), or other logistics facility. This support may include, but not limited to set-up, receipt, staging and distribution of truck/trailer combinations.

Your agency must validate the unliquidated MA balance at least annually as stipulated by FEMA to maintain reimbursable authority. Accrual data must also be provided to FEMA no later than the third business day after fiscal quarter end close. Information can be submitted FEMA-Disaster-MA-ULO@DHS.gov

Assigned Agency USFS (U.S. FOREST SERVICE)	Projected Start Date 08/30/2017	Projected End Date 09/18/2017
☐ New or ☒ Amendment to MA #: 4332DRTXUSFS0402	Total Cost Estimate $3,000,000.00	
ESF/OFA Action Officer CYNTHIA FOSTER	Phone No. (979) 218-2313	Email cfoster@tfs.tamu.edu

V. COORDINATION (FEMA Use Only)

Type of MA:	☒ Direct Federal Assistance State Cost Share (0%, 10%, 25%)	☐ Technical Assistance State Share (0%)	☐ Federal Operations Support State Share (0%)

State Cost Share Percent 0.0 %	State Cost Share Amount: $ 0.00
Fund Citation: 2017-06-4332DR-9064-XXXX-2508-D	Appropriation code: 70X0702

Mission Assignment Manager (Preparer) STACY MCMAHON	Date 09/04/2017
** FEMA Project Manager/Branch Director (Program Approval) CHARISSA KELLER	Date 09/04/2017
** Comptroller/Funds Control (Funds Review) HAMRICK, WILLIAM J.	Date 09/05/2017

VI. APPROVAL

*State Approving Official (required for DFA and TA):	Date 9-5-17
**Federal Approving Official (required for all): LAVERM YOUNG JR	Date 09/05/2017

VII. OBLIGATION (FEMA Use Only)

Mission Assignment Number 4332DR-TX-USFS-04	Amount This Action $ 3,000,000.00	Date/Time Obligated 09/05/2017
Amendment Number 03	Cumulative Amount $ 6,000,000.00	Initials: IFMIS

* Signature required for Direct Federal Assistance and Technical Assistance MAs.
** Signature required for all MAs.

FEMA Form 010-0-8, (3/2011)   PREVIOUSLY FF 90-129
Region 6, State TX, 4332DR, MA#1509-237876 (IFMIS Closed), Amendment to MA#1509-237721 as of 09/05/2017   Print Time: 09/05/2017 14:53

DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY **MISSION ASSIGNMENT (MA)**	See Reverse for Paperwork Burden Disclosure Notice	*O.M.B. NO. 1660-0047* *Expires March 31, 2014*

I.	TRACKING INFORMATION (FEMA Use Only)

State TX (Texas) Incident:2017082301-Hurricane Harvey	NEMIS Number 1509-237720
Program Code/Event Number 4332DR-TX: HURRICANE HARVEY	Date/Time Received 09/02/2017 21:03

II.	ASSISTANCE REQUIRED	☐ See Attached

Assistance Requested
Amendment #1: Amend to change Federal cost share to 100% per FRN #4 of the Presidential Declaration.

The Texas Forest Service; Dept. of Planning & Preparedness is requesting personnel to perform logistical/emergency management planning and operational support to declared areas.

Delivery Location Texas A&M Forest Service, 200 Technology Way College Station, TX 77845	Internal Control Number 1855-294581	Date/Time Required 09/02/2017

Initiator/Requestor Name Gisela Ryan-Bunger	24 Hour Phone Number (512) 424-2208	Email Address gisela.ryan-bunger@dps.texas.gov	Date 09/02/2017
Site POC Name MCMAHON, STACY L	24 Hour Phone Number (940) 231-3050	Email Address stacy.mcmahon@fema.dhs.gov	Date 09/02/2017
* State Approving Official (Required for DFA and TA)			Date

III.	INITIAL FEDERAL COORDINATION (Operations Section)

Action to:	☐ ESF #: _____ ☒ Other: _____	Date/Time 09/02/2017 20:51	Priority	☐ 1. Lifesaving ☐ 2. Life sustaining	☒ 3. High ☐ 4. Medium

IV.	DESCRIPTION (Assigned Agency Action Officer)	☐ See Attached

Statement of Work
As requested by the Texas Forest Service with FEMA, USFS and DOI will provide personnel to provide logistical/ emergency management planning and operational support to counties affected by the storm. The support provided may include the following deliverables: Appropriate subject matter experts from State, Local or Federal entities for two week rotations.Utilize USFS, DOI or other Federal agency and State/local resources under

Your agency must validate the unliquidated MA balance at least annually as stipulated by FEMA to maintain reimbursable authority. Accrual data must also be provided to FEMA no later than the third business day after fiscal quarter end close. Information can be submitted FEMA-Disaster-MA-ULO@DHS.gov

Assigned Agency USFS (U.S. FOREST SERVICE)	Projected Start Date 08/30/2017	Projected End Date 09/30/2017
☐ New or ☒ Amendment to MA #: 4332DRTXUSFS0500	Total Cost Estimate $0.00	
ESF/OFA Action Officer MITCH KETRON	Phone No. (423) 534-5794	Email cfoster@tfs.tamu.edu

V.	COORDINATION (FEMA Use Only)

Type of MA:	☒ Direct Federal Assistance State Cost Share (0%, 10%, 25%)	☐ Technical Assistance State Share (0%)	☐ Federal Operations Support State Share (0%)

State Cost Share Percent 0.0 %	State Cost Share Amount: $ 0.00
Fund Citation: 2017-06-4332DR-9064-XXXX-2508-D	Appropriation code: 70X0702

Mission Assignment Manager (Preparer) ARIANNE DERUISE	Date 09/02/2017
** FEMA Project Manager/Branch Director (Program Approval) STACY MCMAHON	Date 09/02/2017
** Comptroller/Funds Control (Funds Review) HAMRICK, WILLIAM J.	Date 09/02/2017

VI.	APPROVAL

*State Approving Official (required for DFA and TA):	Date
**Federal Approving Official (required for all): LAVERM YOUNG JR	Date 09/02/2017

VII.	OBLIGATION (FEMA Use Only)

Mission Assignment Number 4332DR-TX-USFS-05	Amount This Action $ 0.00	Date/Time Obligated 09/02/2017
Amendment Number 01	Cumulative Amount $ 1,800,000.00	Initials: IFMIS

* **Signature required for Direct Federal Assistance and Technical Assistance MAs.**
** **Signature required for all MAs.**

FEMA Form 010-0-8, (3/2011)   **PREVIOUSLY FF 90-129**
Region 6, State TX, 4332DR, MA#1509-237720 (IFMIS Closed), Amendment to MA#1509-237539 as of 09/03/2017   Print Time: 09/03/2017 01:30

Resource Staging Areas (RSA)

Purpose: Resource Staging Areas (RSA) are established as receiving and distribution points to supply commodities to County Staging Areas (CSA), Shelter Hubs, or Points of Distribution (POD) to provide life-sustaining resources to evacuees and survivors.

Trigger: RSAs, CSAs and PODs are established following a disaster in which essential infrastructure and services such as water, wastewater treatment and electric-generating facilities are not functional.

Description:

A warehouse facility or a commodity truck staging area where personnel monitor the inventory of commodities and provide sufficient commodities to multiple CSAs/PODs for distribution to the public.

The key to the success of the CSA and POD systems is the RSA. The RSA provides a designated location where commodities are shipped and received and distributed to each CSA and ultimately the PODs.

Coordinating Entities:

- Texas A&M Forest Service (TFS) (Lead)
- Texas Military Department (TMD)
- TDEM-Logistics
- TDEM Human Services
- TDEM Field Response Personnel
- Salvation Army
- DPS-Texas Highway Patrol (THP)
- Health and Human Services Commission (HHSC)
- All-Hazard Incident Management Teams (AHIMT)

Personnel Assigned to the RSA can include:

- TFS Lone Star State Incident Management Team (LSSIMT)
- TMD Task Force Headquarters Element
- TMD Sustainment Platoon Element
- One (1) TMD Medical Ranger or assigned DSHS medical staff member
- Private Sector Logistics Personnel

STAR Submittals:

- DDC requests activation of RSA and PODs
- TMD Multifunction Platoon
- TFS Incident Management Team

Actions:

- The RSA will be established and operational within 24 hours following reentry.
- As the situation dictates, the state will push an initial allocation of commodity handling equipment and commodities to an RSA within the affected area.
- State agencies included in this attachment must ensure they have planned for sufficient personnel to staff RSAs.
- County personnel are responsible for providing all personnel and equipment to support the CSAs and PODs.
- The weather and level of activities (traffic volume, amount of product distributed, etc.) will dictate personnel shifts at RSAs, CSAs and PODs.
- Reports from the CSAs and PODs to the RSA as outlined in this attachment are essential to determining the number of commodity shipments required as well as establishing when to deactivate the RSA, CSAs and PODs.
- The site manager should designate a potential helicopter landing zone in close proximity to the RSA capable of accepting 3-4 helicopters at a time.
- Human Services Branch will supply commodities for RSA.
- TFS supplies a burn rate/flow plan on commodities.
- TDEM District Coordinators may assist with resource acquisition.
- Refer to the Commodity Distribution Plan in Annex M.

Critical Information:

- TFS supports up to four RSAs:
  - Ford Park- Beaumont
  - Reliant - NRG Stadium - Houston
  - Brookshire's - Lufkin
  - HEB Distribution Center- Weslaco
- RSAs, CSAs and PODs will remain open and functional until the infrastructure and the local economy can sustain the region, county and/or affected city's populations.
- The physical address will not be released to the general public or local media.
- DPS – THP can provide security and escort support.

Timeline:

- **H-116: TFS**-Identify Texas Forest Service management teams for RSAs.
- **H-116: Human Services Branch**-Coordinate pre-landfall RSA locations with TDEM Ops to support shelter hubs.
- **H-116: Human Services Branch**-Mass Care notifies TMD with number of shelter/RSA that will be required.
- **H-96: TMD**-TMD activates personnel to support RSAs, upon request.
- **H-72: TFS**-Confirm Deployment Status of Texas A&M Forest Service IMT Elements.
- **H-60: TFS**-Activate Texas Forest Service Logistics Management IMT's to Logistics/Resource Staging Areas.
- **H-48: TPASS**-Lease sites for RSA(s), as required.
- **H-48: TMD**-Resource Support Areas (RSA) in mission capable status.
- **H-48: Human Services Branch**-Confirm operational status of Resource Staging Areas (RSAs).
- **H-36:** Activate IMT support elements for post-landfall operations.

COMMODITY DISTRIBUTION PLAN
Hurricane Harvey 2017

Summary
1. Purpose
2. Terms
3. Situation and Assumptions
4. Concept of Operations
5. Organization and Assignment of Responsibilities
6. Continuity of Operations

Appendix A: Commodity Ordering Procedures
Appendix B: Recommended Equipment and Supplies for Establishing a RSA
Appendix C: Tips for Operating an RSA
Appendix D: Spreadsheet for Reporting Commodities Distributed and on Hand

SUMMARY

During large-scale disasters, there is a need to receive and distribute basic commodities, including potable water, meals-ready-to-eat, ice, and other consumable items in support of a response and recovery operation.

Resource Staging Areas (RSAs) are the primary support to Points of Distribution (PODs) but also deliver to County PODs, field kitchens, shelters, local government facilities and responders.

The Texas A&M Forest Service (TFS) has developed an RSA outline and physical layout plan and operates the RSAs with Incident Management Teams (IMTs). RSAs have served PODs along affected areas and shelters in various locales across the state during hurricanes, floods and other major emergencies.

The Texas Division of Emergency Management (TDEM), Texas A&M Forest Service, and the Texas Health and Human Services Commission (HHSC) work together to provide the RSA network for the State of Texas, with the Federal Emergency Management Agency (FEMA) providing support from the federal side. The Texas Military Department (TMD) provides support for the state-operated PODs which are located in the affected counties.

I. PURPOSE

The purpose of this document is to outline organizational arrangements, operational concepts, responsibilities, and procedures to open a Resource Staging Area (RSA) and Point of Distribution (PODs) and associated components required to provide basic resources to the public during/after a disaster such as a hurricane, flooding, or other large-scale incident.

II. TERMS

    A. DEFINITIONS

        1. County Staging Area (CSA) – An area selected by a county for the temporary staging of commodities for bulk distribution, following a major incident, to municipalities within a county that are inundated and whose citizens are unable to access a Point of Distribution (POD).

        2. Point of Distribution (POD) – A temporary staging for distribution of basic resources to

the public and, in some cases responders, after a major disaster such as a hurricane, tropical storm, flooding, or other large-scale incident.

3. Resource Staging Area (RSA) – Warehouse facility where personnel document and receive commodities, receive requests from PODs and other points supported by the RSA, provide commodities to those groups, monitor the inventory of commodities and make requests for re-supplying as necessary to maintain the operation.

B. ACRONYMS

CSA	County Staging Area
DC	District Coordinator (with TDEM)
FEMA	Federal Emergency Management Agency
HHSC	Health and Human Service Commission (Texas)
IMT	Incident Management Team
POD	Point of Distribution
RSA	Resource Staging Area
SOC	State Operations Center
TDEM	Texas Division of Emergency Management
TFS	Texas A&M Forest Service
TMD	Texas Military Department

III. SITUATION AND ASSUMPTIONS

A. SITUATION

RSA, CSA and PODs will be established when public utilities have been compromised and local retail establishments are not physically or economically capable of supporting minimal essential resources after a disaster. Each affected county will identify POD locations, and the state of Texas will provide support to a maximum of four (4) POD sites per affected county.

B. ASSUMPTIONS

1. After a major disaster or catastrophic incident, public utilities such as water, wastewater and electric generating facilities will not be functional or at least not to normal capacity.

2. It will be necessary to provide essential resources to those persons that may have remained in their homes or who could not leave the area, and those returning to their homes after a disaster.

3. TDEM will work directly with local elected officials and emergency management personnel to do pre-planning to select RSA, CSA and POD locations prior to the need for these functions.

4. RSAs, CSAs and PODs will function until the public utilities and the local economy can sustain the region. Once retail establishments begin to reopen, the PODs become unnecessary.

5. For planning purposes, the maximum number of PODs that will be operated by state

resources is four (4) per county. The number of RSAs is dependent upon proximity to the PODs and commodity demand.

IV. CONCEPT OF OPERATIONS

A. GENERAL

The state of Texas will push an initial allocation of material handling equipment, medical teams, and commodities to the impacted area, while providing immediate care needs and conducting a reconnaisance of the affected area. State agencies included in this attachment must ensure that they have planned for sufficient resources to staff RSAs, CSAs and PODs for an extended period of time. Reports from the CSA and PODs to the RSA as outlined in this attachment are essential to determine the number of additional shipments of commodities required as well as establishing trigger points for the closing of the PODs, CSA and RSA. The initial reconnaisance teams will be used only until the RSA, CSA and PODs are established.

B. RESOURCE STAGING AREAS (RSAs)

1. Essential to the CSA and POD concept is the RSA. The RSA provides a designated location where commodities are received and distributed to each CSA and the POD. The physical address should not be released to the local media. The RSA will be established as soon as possible following the indication of the need, but no less than within 24 hours following re-entry.

2. Staffing for the RSA will include:

    a. Incident Management Team

    b. Security personnel

    c. Other support personnel as needed

3. Equipment for the RSA (See Appendix B)

C. COUNTY STAGING AREA (CSA)

1. If needed, the CSA will be established after the RSA has been established. Sufficient water, meals-ready-to-eat, and (if feasible for storage) ice supplies will be maintained at the CSA to provide for bulk distribution to jurisdictions within an impacted area. The CSA will be deactivated when power is restored to the areas serviced through the CSA or when road conditions allow residents to access a POD. Operating hours for the CSA will be approximately from 0800-2000.

2. Staffing at the CSA will include:

    a. Site Manager (preferably a Type 3 IMT)

b. County personnel with high profile vehicles. If the county cannot provide personnel and high profile vehicles, assistance will be requested through the Disaster District Chairperson.

c. Medical personnel for state resources assigned to the CSA

3. Equipment for the CSA will include (as a minimum):

a. Forklift and 2 pallets jacks

b. Barricades, cones and signage

c. Portable light sets, pop up canopies

d. Portable toilets and portable hand washing stations

e. Dumpsters and trash bags

f. Safety vests and flashlights

g. One 40 passenger bus for cooling station

h. One fuel truck or fuel tanks for diesel and gasoline

E. POINTS OF DISTRIBUTIONS (PODs)

1. PODs should be established within 12 hours after the RSA has been established. Sufficient water, meals-ready-to-eat and ice supplies will be maintained at the PODs to meet consumption rates. PODs will be deactivated when power is restored to the areas serviced through the PODs. PODs will operate for a 24 hour period on the first day of activation and, beginning on day two from 0800-2000 until deactivated. PODs will be re-supplied as needed.

3. Staffing at a POD will include:

a. Team Lead from the Texas Military Department (TMD)

b. TMD personnel with high profile vehicles

c. Other staffing might include EMS, canteens, etc.

3. Equipment a POD will include:

c. Forklift and 2 pallets jacks

d. Barricades, cones and signage

d. Portable light sets

e. Pop-up canopies or tents

e.   Portable toilets and portable hand washing stations

f. Dumpsters and trash bags

g. Safety vests and flashlights

V. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. ORGANIZATION

Assistance in operating the RSA, CSA and PODs will come from the agencies listed under assignment of responsibilities.

B. COORDINATION AND REPORTING

Commodity flow reports are essential for the operation of the RSA, CSA and PODs. Commodity inventories and flow information should be reported by the CSAs and PODs to the RSA supporting them, at 0800, 1300 and 2000 hours daily. The RSA will report the data to the RSA Support Team assembled at the Texas State Operations Center (SOC) within one hour after receipt of reports from the CSAs and PODs (or at times determined by the RSA Support Team). The RSA Support Team, working with the RSAs staff, will determine kind and quantities of commodities to be ordered for shipment to the RSAs.

C. ASSIGNMENT OF RESPONSIBILITIES

1. Texas A&M Forest Service will:

Provide personnel for RSA operation and supervision, SOC, Disaster District Committee (DDC) and (as requested) local Emergency Operations Centers (EOC) resource tracking and situational awareness.

2. Texas Military Department will:

a. Provide personnel for PODs set up and operation.

3. Texas Division of Emergency Management will:

a. Provide District Coordinator (DC) interface with the DDC

b. Provide DC interface with the local jurisdictions for selection of potential RSA, CSA and POD locations

c. Maintain vendor contracts for RSA, CSA and POD support equipment

d. Provide reports submitted by the RSA to appropriate entities

4. Health and Human Service Commission (HHSC) will:

    a. Provide, through appropriate contracts, water and ice for delivery   to the RSA.

    b. Provide logistics specialists to the RSA, as needed.

    c. Develop a plan for disposition of water and ice for deactivation of the RSA, CSA and PODs.

5. Local Emergency Management Coordinators or Directors will:

    a. Identify CSA and POD locations

    b. Provide personnel and equipment for the CSA

    c. Provide for law enforcement (security) for the CSA (and PODs, were feasible).

VI. CONTINUITY OF OPERATIONS

A. COMMODITY CONTROL

Commodities received from FEMA at the RSA shall remain property of FEMA until received by a responsible party operating the RSA. Once received and signed for, those commodities become property of the State of Texas.

FEMA will have representatives at the RSA to help with accountability of the commodities received from FEMA at the RSA.

Some RSAs may be staffed jointly by FEMA and state resources (or resources working for the State of Texas) to help expedite deliveries. Federal and state commodities will be kept separate. FEMA will retain possession of their commodities until the State of Texas (RSA Support Team) requests them and are signed for by the respective RSA staff.

If seals are broken on the rear door of a trailer hauling commodities that have become property of the State of Texas, the commodities cannot be taken back by FEMA.

B. RECORDS

Records of receipt and distribution of commodities received at the RSA, CSA and PODs shall be maintained by the responsible parties at those locations.

Commodities received from FEMA to the RSA shall remain property of FEMA until received by a responsible party operating the RSA. Once received and signed for, those commodities become property of the State of Texas.

FEMA will have representatives at the RSA to help with accountability of the commodities received from FEMA at the RSA.

APPENDIX A.

COMMODITY REQUEST PROCEDURES

1. CSA and POD will communicate directly to their respective RSA for commodities.

    a. This shall include the following:
        i. Identify the CSA, POD or other facility by name or location
        ii. Kind and Quantity of Commodity
        iii. Date and Time Needed
        iv. Location needed
        v. Receiving Point of Contact Name and Phone Number

2. RSA will provide the commodity to the CSA or POD, or other location that is approved as being supported by the state response. IF THRE IS ANY QUESTION AS TO THE LEGITIMACY OF THE REQUEST, CONTACT THE RSA SUPPORT TEAM.

3. CSA and POD will provide inventory amounts on hand to the RSA at periodic intervals each day to determine the rate of consumption.

4. RSA will determine the amount of commodity inventory required to sustain the consumption rate of the CSAs and PODs (and other related facilities/groups) they are supporting.
    a. RSA will contact the RSA Support Team at the SOC to request additional commodities to sustain their inventory requirement.
    b. RSA Support Team can be contacted at:
        i. **512-424-7051 (Direct) or 512-424-2208 and ask for the RSA Support Team**

5. FEMA commodities, received at an RSA and transferred to the state of Texas as inventory for delivery and possible consumption, **shall be signed for by a Texas A&M Forest Service (TFS) employee** either as part of a TFS IMT or imbedded with an IMT operating the RSA for the TFS **and who is on a list of authorized signers submitted by the TFS to TDEM. TDEM will forward this list to FEMA**. Representatives from FEMA and the IMT operating at that RSA shall provide accountability for the transfer of those commodities. Those TFS employees, authorized to sign for the FEMA commodities, can be vetted for FEMA by the RSA Support Team.

6. The RSA Support Team will contact either HHSC staff or FEMA for additional commodities.
    a. HHSC will provide water and ice
    b. FEMA will provide water and meals-ready-to-eat

If seals are broken on the rear door of a transport truck hauling commodities, the commodities cannot be taken back by FEMA.

C. DOCUMENTATION OF COSTS

All departments and agencies will maintain records of personnel and equipment used and supplies expended during operations as a basis for possible cost recovery from a responsible party or insurer or possible reimbursement of expenses by the State or federal government.

D. COMMUNICATIONS

The primary communications between CSA, POD, RSA and SOC will be by telephone/cellular. If these cannot be used, texts, emails, radio, satellite radio/telephone or runner may be required. Amateur radio operators may be able to assist with communications needs.

RECOMMENDED EQUIPMENT and SUPPLIES TO SET UP AN RSA

ITEM DESCRIPTION	QUANTITY	USE NARRATIVE
TRAFFIC CONES	50+ (BASED ON LOT SIZE)	TO USE TO SET UP DRIVING LANES
PORTABLE TABLES	6	TO SET UP CHECK IN, CHECK OUT AND RECEIVING/DISTRIBUTION
CHAIRS	10 or15	TO USE AT CHECK IN, CHECK OUT AND RCD
EZ UP SHELTERS/COVERED SHELTER (SIDES NEEDED IF INCLIMENT WEATHER)	3	TO USE AT CHECK IN, CHECK OUT AND RCD
PORTABLE LIGHT TOWERS W/GENERATOR	6	FOR NIGHT OPS/SECURITY TO USE AT CHECK IN, CHECK OUT AND RCD
SMALL PORTABLE CARGO TRAILER FOR OFFICE USE	1	OFFICE USE-PRIMARILY RCD
SANDBAGS OR CANOPY WEIGHTS	12	FOR USE TO SECURE SHELTERS
PARACORD OR ROPE	1 ROLL OR MIN 150 FT.	TO SECURE SHELTER WEIGHTS
ANTI-FATIGUE MATS	4	TO REDUCE FATIGUE OF PERSONNEL WORKING CHECKPOINTS
UTV OR GAS ENGINE GOLF CART	2+ (BASED ON LOT SIZE)	FOR SHORT RUNS AROUND RSA, LEAD TRUCK IN AND OUT OF RSA, SECURITY CHECKS
BICYCLES	2+ (BASED ON LOT SIZE)	FOR RUNNERS
ICE COOLERS	4+ (BASED ON STAFFING LEVEL)	RESPONDERS HEALTH/SAFETY
BOTTLED DRIKING WATER	5+ CASES (BASED ON STAFFING LEVEL)	RESPONDERS HEALTH/SAFETY
HVY OUTDOOR USE EXTENSION CORDS	3	EQUIPMENT USE
HVY DUTY MULTI-PLUG STRIPS	3	ELECTRONIC AND EQUIPMENT USE
LARGE TRASH CANS W/BAGS	3	TRASH
FLAGGING-MISC COLORS	4 ROLLS	TO FLAG AREAS OF CONCERN OR HAZARDS

FLAGGING-PENANT	3 ROLLS	IDENTIFY PERSONNEL PARKING AND OTHER AREAS
CHAINS	4 TRUCKER STYLE-50ft.	PULL PALLETS
20 X 30 TARPS	5+	TO PROTECT ITEMS FOR INCLIMENT WEATHER
CLIPBOARDS	6+	TO SECURE DOCUMENTS
INK PENS	1 DZ	
COPY PAPER	2 REAMS	
LEGAL PADS	6	
DRY ERASE MARKERS	6	FOR WHITEBOARD/DRY ERASE BOARD
DRY ERASE BOARD	3	TO CAPTURE INFORMATION
DUCT TAPE/BLUETAPE	2 ROLLS	
EASEL PADS	3	CAPTURE INFORMATION
MISC OFFICE SUPPLIES-I.E., STAPLER, PAPER CLIPS, ICS FORMS, ETC.	KIT SUPPLIES	SUPPORT RSA OPS.
LAPTOP COMPUTER	1	EMAILS, CREATING REPORTS
PRINTER, COPIER, SCANNER	1	SUPPORT RSA
INK CARTRIDGES	BASED ON PRINTER	SUPPORT RSA
INCIDENT CELL PHONE	1	FOR RCDM ORDERING/SHIPPING
INTERNET HOTSPOT	1	INTERNET SERVICE FOR RSA
HEAVY DUTY HAND STAPLER	1	SUPPORT RSA OPS
HEAVY DUTY STAPLES	1 LG BOX	SUPPORT RSA OPS
WINDOW CHALK OR NON-PERMANENT MARKER	10	WRITE E NUMBERS ON VEHICLES
PALLET JACK (HAND)	2	MOVING PALLETS AS NEEDED
PALLET TONGS	2 SETS	SUPPORT MOVING PALLETS
2" X 6'X 10' BOARDS	10	RESTS FOR TRAILER JACKS FOR DROPPED TRAILERS
LARGE FORKLIFT-6000 LBS	1	OUTDOOR USE OF LOADING AND UNLOADING OF TRUCKS/EQUIPMENT
SMALL PROPANE FORKLIFT-	1	INDOOR USE FOR WAREHOUSE IF NEEDED
SHORTHAUL TRUCK W/TRAILER	1	FOR DISTRIBUTING AND RECEIVING ITEMS WITHIN RSA OPERATIONS.
SMALL GENERATOR	1+ (BASED ON SIZE OF RSA)	RUN ELECTRONICS/EQUIPMENT

FUEL (GAS/DIESEL)	FUEL SERVICE OR ONSITE FUEL TANKS	MAINTAIN RUNNING OF EQUIPMENT
PLYWOOD 4' X 4'	12	SIGN BLANKS FOR CHECKPOINTS AND COMMODITY TYPE
HI-VIS SPRAY PAINT	6 CANS	FOR SIGNAGE
6 FT T-POSTS	12	SECURE SIGNAGE
T-POST DRIVER	1	SECURE SIGNAGE
SCREW GUN OR HAMMER	1	BUILDING SIGNAGE
SCREWS OR NAILS	2+ PACKAGES (BASED ON NEED)	BUILDING SIGNAGE
WOODEN PALLETS	12	SUPPORTS FOR SIGNAGE
PREBUILT SIGN KIT-WHEN POSSIBLE	1+	INCLUDED SIGNS: RSA CHECK IN, RSA CHECK OUT, ICE, WATER, MRE, TARPS, FACILITY SIGNS, PERSONNEL PARKING, SPEED LIMIT, DRIVERS MUST CHECK OUT SIGNS, MISC.
CORRUGATED POSTERBOARD	4 SHEETS	BUILDING SIGNAGE
STOP SIGNS-HAND HELD	2	TRAFFIC CONTROL
LAW ENFORCEMENT	1+ BASED ON RSA OPERATIONS	SECURITY, DAY AND NIGHT OPS (LOCAL OR TFS)
20 YD. ROLL-ON DUMPSTERS W/SERVICE	2+ (BASED ON SIZE OF RSA)	HEALTH AND SANITATION OF RSA
PORTABLE TOILETS W/SERVICE	5 + (BASED ON SIZE OF RSA) 1 HANDICAP	HEALTH AND SANITATION OF RSA
HANDWASHING STATIONS	2+ (BASED ON SIZE OF RSA)	HEALTH AND SANITATION OF RSA
LARGE PORTABLE STORAGE CONTAINER	1+ (BASED ON EQUIPMENT)	SECURE EQUIPMENT SUCH AS UTV/FORKLIFT IN LOCKED CONTAINER

APPENDIX C

TIPS for OPERATING an RSA

- As trucks come in to "Entrance Only" designated point within RSA, trucks are checked in (See Check-In Sheet). Completed Check-In Sheet will be sent to RCDM for entry into Database.

- All trucks are assigned an "E" number and the corresponding "E" number along with the driver's contact information (i.e., phone number)will be written with a non-permanent marker or chalk in a high visibility location on the truck's windshield for quick identification.

- After Check-in is completed, assigned RSA personnel will guide trucks to assigned commodity parking area (i.e., water, ice, MRE, etc.) to be parked and placed in que for ordering availability.

- Trucked are to be parked in such a manner as to not impact operation and traffic flow of RSA. Example; 30 truck/trailers will be parked in three (3) rows of ten (10) facing one direction with the width of the traffic lane width between rows to allow ease of maneuverability of the truck/trailer. The formula for this is 2/3^{rds} the total length of the truck/trailer combination (est. 53 ft.) or minimum of 35 ft. traffic lane for trucks to be able to pull out. Leave enough room at end of rows for contraflow traffic as both ends.

- Trucks are to pull through to the CHECK OUT area where they are packaged as a single truck or in a convoy to receive 213 Shipping Ticket w/map. The truck will leave RSA location through designated "Exit Only" point. A copy of the completed 213 Shipping Ticket will be sent to RCDM for closeout entry into Database.

APPENDIX D

SAMPLE FORMS

RSA TRUCK/TRAILER CHECK-IN TRACKING FORM

E #_____

CONTRACT TYPE:			
FEDERAL ___	STATE_____	DONATION:_____	DONOR:_____

COMMODITY TYPE:			
ICE____	WATER_____	MRE____	OTHER:_____

DRIVER INFORMATION:	
NAME:	CONTACT #:

TRUCK/TRAILER INFORMATION:	
TRUCK #	TRAILER#

CHECK IN TIME AND DATE:	
TIME:_____	DATE:_____

CHECK OUT TIME AND DATE:	
TIME:_____	DATE:_____

SHIP DESTINATION:	
POD NAME:	POD LOCATION:_____ _____

CHECKED IN

BY:_____

RESCOURCE ORDER SHIPPING RECORD

GENERAL MESSAGE		
TO: R. GRAY 979-218-0000	POSITION:	OPSC
FROM: Mary Leathers Phone Number: 979-200-0000	POSITION:	RCDM
SUBJECT: Beaumont POD	DATE: 3/17/16	TIME: 0900

MESSAGE:	
Issue/Problem/Request: **DELIVER TO:** **Beaumont POD-Ford Park, 5110 IH 10S, Beaumont Texas 77705** **N30.010563 X W94.179824. POC-John Smith 979-444-1111** **2-WATER** **2-ICE** **1-MRE** **NEED BY 3/17/16 AT 1400**	
Date/Time Needed	Camp Swift, Gate 5, Bastrop, Tx
SIGNATURE: M. Leathers	POSITION: Deputy LSC

REPLY:
Action Assigned To:
Action Taken:
SHIPPED: **2-WATER**   **TRUCK NUMBERS:**   **E-14, E-17** **2-ICE**   **TRUCK NUMBERS;**   **E-34, E-50** **1-MRE**   **TRUCK NUMBERS:**   **E-101**   **SHIP DATE/TIME; 3/17/16 AT 1130**

RECEIPT ANT INSTUTIONS	CONFIRMED RECEIPT OF GOODS WITH CALL TO RCDM 979-452-1212 AND FAX COPY OF COMPLETED 213 TO RCDM FAX NUMBER 979458-3333	
DATE:	TIME:	SIGNATURE/POSITION:

TRUCKER's COPY of RESOURCE DELIVERY ORDER

GENERAL MESSAGE			
TO: R. GRAY 979-218-0000		POSITION: OSC2	
FROM: Mary Leathers Phone Number: 979-200-0000		POSITION: RCDM	
SUBJECT: Beaumont POD Request		DATE: 3/17/16	TIME: 0900
MESSAGE:			

Issue/Problem/Request: <u>**TRUCKER'S COPY**</u>

DELIVER TO:

Beaumont POD Ford Park, 5110 IH 10 S, Beaumont Texas 77705

N30.010563 X W94.179824.   POC: John Smith 979-444-1111

1 Truckload Water

NEED BY 3/17/16 AT 1400

Date/Time Needed	Camp Swift, Gate 5, Bastrop, Tx
SIGNATURE: M. Leathers	POSITION: Deputy LSC

REPLY:

Action Assigned To:

Action Taken:

SHIPPED:

1- Truckload Water

TRUCK NUMBER: E-34

SHIP DATE/TIME: 3/17/16 at 1130

RECEIPT ANT INSTUCTIONS	CONFIRMED RECEIPT OF GOODS WITH CALL TO RCDM 979-452-1212 AND FAX COPY OF COMPLETED 213 TO RCDM FAX NUMBER 979458-3333	
DATE:	TIME:	SIGNATURE/POSITION:

APPENDIX E

SPREADSHEET for REPORTING COMMODITIES DISTRIBUTED and ON HAND

(Too large to insert here. See electronic copy in Excel.)

Incident Management Teams						
Team Name	Type	Agency	State	Incident Location	Assignment	Type of Order
FDNY – Team 1	AHIMT	Fire Department New York	NY	1800 N. Mason Rd., Katy	Academy RSA	ESF #4
Northern AZ – Team 7	AHIMT	Arizona Department of Forestry and Fire Management	AZ	1301 West Roundbunch Rd, Bridge City	Assisting with tracking of State, County and Federal resources; producing daily IAP; and gathering intelligence	ESF #4
Blue/Gold – Team 2	2	Southern Area	R8	5115 IH-10 South, Beaumont	Ford Park RSA	ESF #4
South Carolina – Team 3	3	South Carolina Forestry Commission	SC	Jefferson County EOC; 5115 IH10 South, Beaumont	Assisting with tracking of State, County and Federal resources; producing daily IAP; and gathering intelligence	ESF #4
Virginia #1 – Team 4	3	Virginia Department of Forestry	VA	2725 Byrd St., Beeville	Beeville RSA	ESF #4
Wisconsin – Team 5	3	Wisconsin DNR – Division of Forestry	WI	5385 Hwy. 103 East, Lufkin	Lufkin RSA	ESF #4
New York State IMT	3	State Interagency	NY	5115 IH-10 South, Beaumont	Ford Park RSA	EMAC
Oklahoma State #1	3	State Interagency	OK	701 E. Mimosa St., Rockport	Local governmental support	EMAC
Oklahoma State #2	3	City of Tulsa	OK	15455 U.S. 77North, Victoria	Pioneer RSA	EMAC
Pee Dee RIMT	3	Florence County EM	SC	District Disaster Committee (DDC); 350 West IH 30, Garland	Shelter support	EMAC
Virginia #2	AHIMT	National Capital Region/Hampton Roads	VA	3805 N. Stallings, Nacogdoches	Shelter support	EMAC
Rio Grande	3	Regional AHIMT	TX	Nacogdoches	Ft. Bend Staging	State
Wichita Falls	3	Regional AHIMT	TX	Lumberton/Ford Park	Ford Park RSA	State
Lone Star	2	Texas A&M Forest Service	TX	3100 Texas 47, Bryan	RELLIS LSA	State
Capital Area/South Plains	3	Regional AHIMT	TX	Jasper/Newton Counties	EOC support	State

History and background of Incident Management Teams (IMTs)

All Hazard IMTs (AHIMTs)

The history of incident management teams began in the gestation period of the post-World War II era. War veterans that were employed by wildland fire organizations identified the need for command and control and utilized their military experience to develop "Large Fire Organizations" to manage wildfires. This was not an anomaly, as World War II vets applied military command and control methodologies across the board for all hazards. In 1963, a command and control organization was established after the coliseum explosion in Indianapolis (Drabek, 1968). In fact, the grandfather of homeland security was the state and federal civil defense organizations. These organizations born of the military found value in applying their command and management trade to all-hazards incidents beyond the civil defense's intended purpose of nuclear war preparedness and response.

In 1970, Firefighting Resources Organized for Potential Emergencies (FIRESCOPE) was formed and began developing what has become known as the Incident Command System. In 1976, the National Wildlfire Coordinating Group was formed, and along with it, emerged the common consensus for the Incident Command System (ICS) and eventually, formal wildland incident management teams. This was the infancy of incident management teams.
These incident management teams honed their skills on the firelines of wild fires across the country and over the decades. On occasion, these teams were called upon to provide command and management services in all-hazards incidents, mostly resulting from large natural disasters including hurricanes and earthquakes.

It wasn't until the turn of the new millennium that there began to be the gestation period for dedicated all-hazards incident management teams (AHIMTs). The first teams began to emerge, much as a result of the introduction of the support of wildland incident management teams to New York City and the Pentagon in the wake of the 9/11 terrorist attacks. In the aftermath of the attacks and the resulting 9/11 commission report, birth of the United States Department of Homeland Security (USDHS), and the first versions of the newly mandated National Incident Management System, AHIMTs began to form. Followed by USDHS required ICS training to remain eligible for federal grants, the use of ICS across disciplines began to be commonplace.

In 2003, the U.S. Fire Administration (USFA) conducted a focus group to identify a strategy to insert incident management capabilities at the local government level (Texas A&M Forest Service, 2010). This focus group initiated the USFA AHIMT program including a technical assistance office that managed the O-305 AHIMT Course curriculum and trainings, brokered shadowing/training opportunities for developing teams to accompany wildland teams on deployment, and provided guidance in the development process for jurisdictions attempting to establish teams. The Federal Emergency Management Agency (FEMA) was in the process of developing the NIMS All-Hazards Position Specific courses. FEMA also hosted an Incident Management Working Group which served as an advisory committee as well as a development committee for standards and program needs.

As AHIMTs began to multiply as a grass-roots effort at state, regional, and local levels, a well-known training provider, the Incident Management Training Consortium, LLC held the first AHIMT centric symposium in 2008, with the intent to gather members of these AHIMTs and began the process of molding a national AHIMT framework. The symposium was held in Dekalb, IL and the AHIMT phenomena was studied by Dr. Amy K. Donahue who subsequently authored a report that documented the findings from the symposium (Donahue, 2009).

Attendees identified, through a data collection methodology lead by Donahue, generated a list of common issues for AHIMTs. The most significant and unified of which were standards, connections and tools, funding, and training. At that time, there were no national standards. AHIMTs were rather dispersed and secluded across the country, without a great network to share best practices, lessons learned, and cooperative problem solving. Funding was random at best where teams may have been lucky to be awarded USDHS grant funds. Training was also a rare commodity. There were the first editions of the O-305 AHIMT Course. The course was expensive and there were few qualified training providers. Some teams relied upon wildland courses. Others simply relied on the ICS-300 and ICS-400 courses. The NIMS All-Hazards Position Specific courses had not yet been developed, but were in production.

Donahue made the following top 10 recommendations:

1. A national standard that specifies required minimum training, knowledge, and experience should be developed for all AHIMTs and for all positions.
2. A single web-based repository for important information and resources should be created.
3. The federal government should identify a specific, sustainable funding stream for the creation of ongoing support of AHIMTs.
4. USDHS needs to assure that sufficient ICS, team, position specific, and unit-level training opportunities are available to meet credentialing requirements.
5. The federal government should identify and define a lead federal agency to support, fund, and coordinate the AHIMT program
6. USDHS should develop and disseminate a standardized road map that explains the steps in team formation from concept to completion.
7. USDHS should create a national deployment coordination center that tracks all teams nationwide, their capabilities, and their availability for emergency and planned events.
8. A national credentialing working group should be established to resolve issues and concerns related to credentialing.
9. USDHS should ensure that State Homeland Security Strategies include AHIMTs as a state, regional, and local resource.
10. A process for specifying equivalency of training and experience across disciplines should be established.

In 2010, the next significant events for AHIMTs occurred in Denver, CO. Donahue returned to what has become the annual AHIMT symposium to revisit her study of two years prior. She used the opportunity to gather data and write a sequel to her 2009 publication. Donahue's key findings included the three top priorities for AHIMT stakeholders which were:

1. A lead federal program office to support, fund, and coordinate the AHIMT program.
2. A national standard that specifies required minimum training, knowledge, and experience for all IMTs and all positions.
3. Expansion, improvement, and clarification of opportunities to complete task books, including during planned events and field exercises.

Donahue also identified the three biggest barriers to success identified by AHIMT stakeholders, they were:

1. State and local elected and appointed leaders are not aware of and do not understand the value, benefits, advantages, of the use of AHIMTs.
2. There are inadequate opportunities for shadowing.
3. Sustainable funding streams are too limited to provide for ongoing support of AHIMTs. (Donahue, 2011)

In addition to the Donahue updated research, another significant step in the AHIMT movement was the formation of the All-Hazards Incident Management Teams Association (AHIMTA). The AHIMTA originally formed to advocate for AHIMTs and provide an organization to assist in the networking of AHIMT members across the country. Eventually, AHIMTA would take over responsibility for conducting the national AHIMT symposium (beginning in 2012). The AHIMTA works collaboratively with the USFA, the FEMA, and NWCG member organizations on incident management team issues. AHIMTA also took the initiative in establishing a national standard by developing the Interstate Incident Management Team Qualification System (IIMTQS).

One other major friction point in the AHIMT movement is the inherent clash between wildland incident management teams which have matured over four plus decades and the AHIMTs that are in their infancy. Position qualification in the wildland service is a bottom-up process that takes a significant amount of time and training to reach the standards of command and general staff positions on an IMT (NWCG, 2016). The NWCG qualification system requires starting out at the bottom rung of incident command as a firefighter and moving up through the system from strike-team leader, through division supervisor, and ultimately continuing to climb to reach a specified position (NWCG, 2016).

The newly forming AHIMTs have a different problem in order to reach the same fidelity as the wildland teams. There is an absence of bottom up structure that is further complicated by numerous disciplines (police, fire, public health, etc). The challenge is also difficult to recognize and document experience between wildland and all-hazards. Where in the wildland system,

incident action plans and assignments on large fires is easy, experience in all-hazards incidents. have not been documented as thoroughly and no system existed to capture skills and experience in position task books as these responders developed their experience in floods, explosions, and tornadoes. This discrepancy has resulted in an inevitable clash between the mature qualification system of the wildland services and the developing AHIMT system.

The use of AHIMTs and the number of AHIMTs saw tremendous growth between 2010 and 2017. These teams have been used locally for special events, school-shootings, contaminated water supplies, tornadoes, floods, hazardous materials incidents, wildfires, hurricanes, civil disturbance issues, just to name a few. A noticeable uptick in the use of AHIMTs was also noted in hurricanes as can be verified by the Emergency Management Assistance Compact (EMAC), a state-to-state mutual aid agreement. The number of EMAC requests for AHIMTs have grown exponentially through incidents like Hurricane Irene, Hurricane Sandy, Hurricane Matthew, and now Hurricanes Harvey and Irma.

The tremendous growth with no primary organization for leadership and oversight has left the AHIMT community in a state of perplexity. The USFA defines AHIMTs as type three. The AHIMTA focused its standards on a type 3 level, but never defined an AHIMT as a type 3. Meanwhile, established large city AHIMTs have taken additional training and have named themselves type 2 AHIMTs. This is a standard that is not defined anywhere. Adding to the perplexity is a lack of knowledge of where established AHIMTs are and what qualification system they are operating under. The USFA has knowledge of approximately 126 AHIMTs and the AHIMTA has acknowledged approximately 78 in its last membership poll. To add to the puzzlement of AHIMTs, the term all-hazards was often emphasized not only for a team's multi-discipline make-up and ability to respond to a variety of incidents, it was also used as a differentiator between these teams not qualified under the NWCG system and wildland teams. Now as AHIMTs have become commonplace in the U.S. and both wildland and AHIMTs are responding to all-hazards incidents the term all-hazards has lost its distinctions and means different things to different people.

Wildland IMTs

Wildland incident management teams have been operating for nearly 40 years, evolving from the large fire organizations developed after World War II. This system has continued to be honed and refined and has developed very stable and experience incident management teams that have been used primarily for wildfires, but have regularly been assigned to all-hazards incidents, especially those resulting in large federal disaster declarations.

These incident management teams are tiered from type one to three, based on size and experience. Type one teams are the largest and most experienced and type three teams are the smallest and less experienced. There are federally supported type one, two, and three teams. There are also type state supported type one and two teams. There are also regional or municipal type three teams. While the number and type of teams seem to have regular fluctuation and

variability, or varies depending on the source, the national incident management table organization during the time of Hurricane Harvey is believed to be approximately reflected in the following:

Team Type	Number
Area Command Team*	3
NIMO Team**	4
Federal Type 1 IMTs	16
Federal Type 2 IMTs	35
State Type 1 IMTs	9
State Type 2 IMTs	16
Type 3 IMTs	***Unknown
Total	**83**

* Area Command Teams (ACT) determine and implement overall objectives and strategies for incidents, set priorities for the allocation of critical resources, and facilitate the effective use of resources. ACT's manage multiple complex incidents with three or more Type 1, or a combination including Type 2 or Type 3 Incident Management Teams in a geographic or sub-geographic area.

** NIMO (National Incident Management Organization) teams consists of seven members, who are assigned full-time to command and general staff positions. The primary focus of the program is the management of complex wildland fire. NIMO uses a wide range of methods to accomplish this goal.

***The National Interagency Fire Center does not track the number of type 3 teams.

Despite the maturity of this system, in recent years, system leadership within NWCG have recognized an unfolding problem with maintaining the incident management teams due to a number of dynamic issues (NWCG, 2011). One issue is generational resulting from a large retiring baby boomer population and an inadequate number of people in the pipeline ready to move up within the system. Another issue is funding ability as economic issues have inhibited team sustainment. A third issue is the rise in incident management team need as the use of incident management teams have grown and the increased need for command and management due to civil liability, responder safety, and incident complexities have increased. Due to these and other concerns, the NWCG leadership established the Incident Management Organization Succession Planning Team (IMOSPT).

The IMOSPT made several recommendations with significant relevance to the future of incident management (NWCG, 2011). The first of which was to eliminate the distinctions between federal type one and type two teams into just one type of federal incident management team. The IMOSPT also recommended reducing the number of total federal teams to 40 and each of those teams should be provided funding from their home geographic area. The IMOSPT suggested theuse of AHIMTs for non-wildfire specific positions. The IMOSPT report also suggested the

implementation of a crosswalk between wildland training and all-hazards training to the end goal of having a single incident qualification system used for all incident types (NWCG, 2011). The IMOSPT also discussed, but fell short upon recommending that AHIMTs be utilized, especially during times of high operational tempo, for surge capacity in meeting the command and management need for wildland incidents.

In 2012, NWCG appointed a Task Team to develop a Strategic Implementation Plan (SIP) as phase two of what became known as the Evolving Incident Management (EIM) project. Phase three, of the SIP was designed to implement 14 IMOSP recommendations and 11 Overarching Principles. This work was parceled out to eight work units which initiated phase three in 2013.

In 2013 NWCG included 12 FEMA NIMS courses (including a number of All-Hazards position specific training courses) as equivalent and acceptable within the NWCG PMS 310-1 qualification system. Additionally, NWCG position specific instructors were historically recognized as qualified instructors to teach the NIMS ICS All-Hazards position specific training.

In 2015, the EIM project was closed out and outstanding actions were transitioned to various entities within the current national wildland fire governance structure. At that time, the decisions and accomplishments of the EIM project were:

- Decision to maintain Type 1 and Type 2 Qualifications Standards for command and general staff positions.
- Proposed pathways from Type 3 unit leader positions to Type 2 and Type 1 command and general staff positions to improve speed to certification. These are currently being evaluated for inclusion into the 2015 NWCG Wildland Fire Qualification System Guide (PMS 310-1).
- Addition of Type 3 general staff positions in the 2014 310-1.
- Analysis of historical Incident Management Team use to develop recommendations on future numbers, placement, and mobilization of national IMTs.
- Development of a strategy to increase capacity to staff Area Command Teams and expand their mission to include a more strategic role in incident management
- Clarification and completion of single qualification and NIMO units
- Increased coordination across Geographic Areas for trainee assignments
- Analysis and prioritization of recommendations outside NWCG's purview prior to elevation through agency channels

Work was to continue on the following actions:

- Clarify roles and responsibilities for IMT direction, prioritization, and oversight.
- Develop a plan and strategy to increase non-traditional IMT participation (e.g. DOD, USGS, BOR, NRCS).
- Continue to develop and improve NWCG qualification pathways.
- Clarify goals and responsibilities for equitable experience opportunities among IMTs.
- Determine number of IMTs that can be supported.
- Identify and implement IMT mobilization efficiencies.
- Coordinated trainee management to meet national IMT staffing goals.

Since that time, an Incident Management Succession Planning Oversight Group (IMSPOG) has been created to coordinate the work needed to carry on succession planning efforts. IMSPOG action items have included: use of non-traditional all-hazard partners for IMT support; development of a plan to increase non-traditional IMT participation; credentialing individuals based upon the FEMA National Integration Center (NIC) type three organizational work; and, working with the FEMA-NIC working groups to explore collaboration and integration efforts at IMT development while also ensuring wildland fire standards and core competencies are consistent with FEMA-NIC credentialing efforts.

Funding for IMTs

The development and significant growth of AHIMTs nationwide began in the shadows of the terrorist attacks of 9/11 and the birth of the U.S. Department of Homeland Security (DHS). Connected to these events were the unprecedented level of funding that was distributed to states and localities as a means to prepare the country for war against terrorism. As AHIMTs were in extreme infancy from 2001 to 2009, most teams across the country benefitted minimally from these grants. As AHIMTS began to emerge, grants allocations began to diminish. Below is a chart that shows the diminishing amount of congressional funding for the three largest homeland security grants from 2009 to 2017.

Year/Grant		UASI	HSGP	EMPG	Total
2009		$798,631,250	$861,265,000	$306,022,500	$1,965,918,750
2010		$832,520, 000	$842,000,000	$329,799,991	$2,004,319,991
2011		$662,622,100	$526,874,100	$329,140,400	$1,518,636,000
2012		$490,376, 000	$294,000,000	$339,500,000	$ 859,276,000
2013		$558,745,566	$354,644,123	$332,456,012	$1,245,845,701
2014		$587,000,000	$401,346,000	$350,100,000	$1,338,446,000
2015		$587,000,000	$402,000,000	$350,000,000	$1,339,000,000
2016		$580,000,000	$402,000,000	$350,000,000	$1,332,000,000
2017		$580,000,000	$402,000,000	$350,000,000	$1,332,000,000

Homeland Security Funding
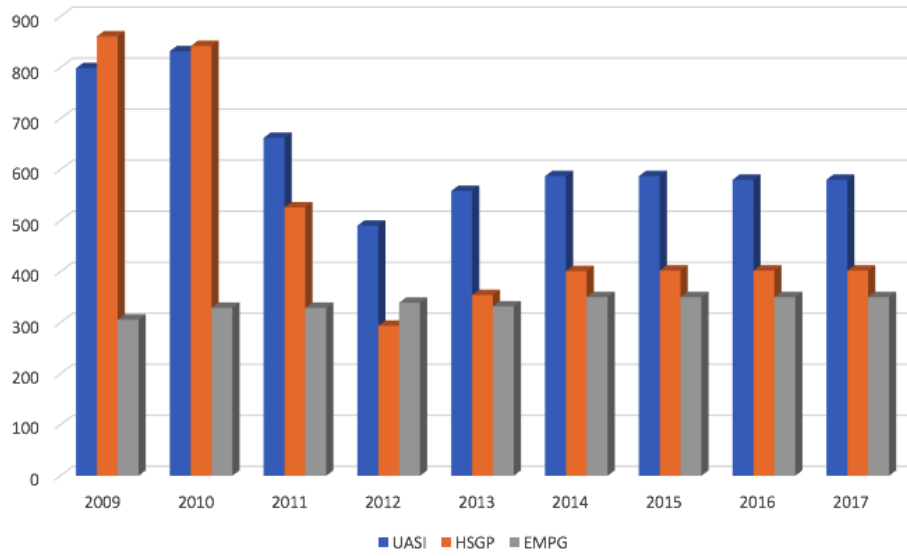
With the approximately 30% decrease from 2009 to 2017, new projects have diminished as states attempt to sustain staffing paid with grants, sustain established projects and programs, and use the grants to pay for higher-end infrastructure projects such as communications systems and city-wide video camera projects. Additionally, 25% of the combined Urban Areas Security Initiative (UASI) Program and Homeland Security Grant Program (HSGP) are required by law to be dedicated to law enforcement terrorism prevention activities. This further inhibits discretionary spending for states to apply funding to incident management programs. It should also be noted that UASI funding is an outlier because it is not evenly distributed. The number of UASI jurisdictions has fluctuated over the years. In 2017, of the $580 million that is spread across 33 urban areas, nearly $458 million (or 79%) goes to only 12 urban areas in five different states.

Acronyms

AHIMT	All Hazard Incident Management Team
AREP	Agency Representative
CSA	County Staging Area
DDC	Disaster District Chair
EFO	Lowest category of tornado damage with minor or no damage
EF5	Highest category of tornado damage with total destruction of buildings
EMPG	Emergency Management Performance Grant
EOC	Emergency Operations Center
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
GACC	Geographic Area Coordination Center
HSGP	Homeland Security Grant Program
ICS	Incident Command System
IMT	Incident Management Team
LSSIMT	Lone Star State Incident Management Team
LSA	Logistical Staging Area
MA	Mission Assignment
NHC	National Hurricane Center
NICC	National Interagency Coordination Center
NIMS	National Incident Management System
NRF	National Response Framework
NMAC	National Multi-Agency Coordination Group
NRCC	National Response Coordination Center
NWCG	National Wildfire Coordinating Group
NWS	National Weather Service
POD	Points of Distribution
RELLIS	Respect*Excellence*Leadership*Loyalty*Integrity*Selfless Service

ROSS	Resource Ordering and Status System
RRCC	Regional Response Coordination Center
SA	Resource Staging Area
SACC	Southern Area Coordination Center
SOC	State Operations Center
STAR	State of Texas Assistance Request
TDEM	Texas Department of Emergency Management
TFS	Texas A&M Forest Service
UASI	Urban Areas Security Initiative
USFS	United States Forest Service

Biographies

Bruce Woods

Bruce Woods serves as the Chief / Department Head for Mitigation and Prevention Department and is a member of the Lone Star State Type II Incident Management Team. Bruce is a graduate of Texas A&M University, Executive Fire Officer from the National Fire Academy and is a Texas Certified Public Manager through the William P. Hobby Center for Public Service at Texas State University. He holds various certifications with the Texas Commission on Fire Protection and is actively engaged in fire service professional associations.

Michael Geesling

Michael Geesling serves as the Chief Response Training Coordinator for the Texas A&M Forest Service and is a member of the Lone Star State Type II Incident Management Team. Prior to his service with TFS he worked as a Law Enforcement Ranger and wildland firefighter with the National Park Service and U.S. Forest Service in New Mexico, Arizona, Alaska, Colorado, California and Louisiana. Michael is a graduate of Northern Arizona University in Flagstaff, Arizona. He resides in College Station, Texas with his spouse and their daughter.

David Gerboth

City of San Diego Fire-Rescue Department Battalion Chief David Gerboth has been a member of the fire service for the past 25 years working throughout California and responding to incidents throughout the country. Chief Gerboth is currently assigned as the Urban Search and Rescue California Task Force 8 and SDFD Technical Rescue Team Program Manager as well as manages the San Diego Urban Area Incident Management Team. David has served as a member of the SDFD Hazardous Incident Response Team, Technical Rescue Team and responded to incidents of national significance as a member of a National Type 1 Incident Management Team. Chief Gerboth has and continues to serve on several committees and working groups including the FIRESCOPE Task Force, California Incident Command Certification System State Task Force / Pace V Committee and the National Wildland Coordinating Group Leadership Subcommittee. David lives in San Diego with his wife and three children.

James Fortner

James Fortner serves as the Cooperative Fire Program Manager for the U.S. Forest Service, located in the Washington Office's Fire and Aviation Management unit. He is responsible for managing the State Fire Assistance and Volunteer Fire Assistance programs, hazardous fuels program budget, and working with partners on national-level collaborations. He is also responsible for the development and management of the templates and guidelines used by state and local governments for developing interagency cooperative agreements for fire protection. Prior to joining the Forest Service in 2010, James served as the Training and Exercise Coordinator for the United States Department of Agriculture's Office of Homeland Security and Emergency Coordination. James has over 29 years of experience in structural firefighting and as an instructor for hazardous materials operations. He is also licensed as an EMT-B and qualified as a Medical Unit Leader.

Randal Collins

Randal Collins is the Emergency Management Coordinator of the City of El Segundo in California. Randal also serves as the President and CEO of the All-Hazards Incident Management Teams Association. He has 19 years of experience in public safety and is a Certified Emergency Manager through the International Association of Emergency Managers. Randal is currently pursuing an Educational Doctorate Degree in Organizational Change and Leadership from the University of Southern California. He holds a Master of Leadership from the University of Southern California. He also graduated with a Bachelor of Science in Law Enforcement from the University of Indianapolis. Originally from Indiana, he has served in emergency management with both the City of Indianapolis and the State of Indiana. Randal was instrumental in establishing the Indiana Incident Management Program and the 11 IMTs in Indiana. Randal is a former police officer, is a Veteran-Marine, the former National Director of American Humane Rescue, and an emergency management specialist with Southern California Edison.

Thomas J. Murray

Thomas J. Murray serves as an Emergency Manager in the Emergency Response Support Branch of the U.S. Fire Administration. He is currently working on a significant project, "Preparing for a National Catastrophic Event", which will be a compilation of fire and emergency service capabilities from across the nation, that are NIMS Typed and have a job title/position qualification and may be potentially available to respond to a catastrophic event.
Tom spent six years with the Pennsylvania Emergency Management Agency managing the State Domestic Preparedness Program grant. The grant provided more than $150M to 67 counties and nine Counter Terrorism Task Forces, to equip fire departments, hazardous materials teams and other first responders. He enlisted in the U.S. Air Force in 1977 and worked crash fire-rescue as vehicle driver and crew chief, later spending much of his career as a Training Officer and fire inspector. For a few years he worked in the Deputy Chief and Fire Chief positions. He was assigned to Eglin AFB, FL; Ramstein, Zweibruecken and Rhein-Main AFBs in Germany, Randolph AFB, TX; Altus AFB, OK and Columbus AFB MS.

Jeff Gardner

Jeff Gardner has BS and MS degrees in Biology/Ecology from Jacksonville State University. He has over 18 years of experience working with the Federal government. He started his federal career with the US Fish and Wildlife Service as an Ecologist and focused on section 7 and environmental contaminants work. In 2001, Jeff transferred to the US Forest Service (Talladega National Forest) as a District Biologist where he focused on the recovery efforts of a small population of red-cockaded woodpeckers. Much of this work focused on habitat improvement projects to restore longleaf pine through timber sales and prescribed fire. For the past 8 years, Jeff has served in a leadership role as a District Ranger on the Manti-La Sal National Forest in Utah and the Chattahoochee-Oconee National Forests in Georgia where he has worked as an Agency Administrator on large wildfires along with many other diverse duties.

Charles "Boo" Walker

Charles "Boo" Walker's in-depth experience in Incident Command Management has placed him on the front lines of numerous all-hazard incidents of national complexity. Walker has served on a National Area Command team as an Area Commander as well as a Type I Operations Section Chief, Safety Officer and Air Operations Branch Director on a Southern Region Type 1 IMT. He has been Texas A & M Forest Service for 39 years serving as IMT Coordinator, Aviation Management Officer, Training Department Head, District Forester, and Forester. "Boo" has taught ICS classes to a wide variety of Local, State, and National Organizations all across the United States since 1985. He is graduate of Stephen F. Austin State University with a BS in Forestry, He has served as a Chairman of both Steering Committees for S-520/S-620 and NASF Complex Incident Management Course. He has helped train numerous Incident Management Teams across the United States and Canadian Provinces.

Paul Hannemann

Paul serves as the Department Head for the Incident Response Department and Chief of Fire Operations for the Texas A & M Forest Services, having started with the Texas Forest Service as a Contract Trainer in 1981. In 1995, he became the first fulltime Regional Fire Coordinator. His previous experience includes being Fire Department Administrator, Shift Commander, and Firefighter for the Fredericksburg TX Fire Department which includes 15 years as a career member and 43 years as a volunteer. He served as the Emergency Management Coordinator for 16 years for Gillespie County and City of Fredericksburg. He served as a Staff Instructor for the Texas A & M Fire School as well as being a Guest Instructor for 37 years. He is currently qualified as a Type I Incident Commander, Type II Plans Section Chief and Logistics Section Chief along with being a Master Firefighter and Level III Fire Instructor. He has served as an Incident Commander on the Lone Star State IMT. Paul is part of the DHS FEMA's All-Hazard Incident Management Team Development Group delivering the All-Hazard IMT and IMT Position-specific training programs across the United States. Paul has a B.S. in Building Construction and a M.Ed. in Industrial Education from Texas A & M University. He is a retired Army Officer after 28 years of service in the Army, Army National Guard and Army Reserve as a Lieutenant Colonel.

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