



# **PERFORMANCE AUDIT REPORT**

## **Kansas Wildfire Management: Evaluating the Adequacy of Kansas' Wildfire Suppression System**

**A Report to the Legislative Post Audit Committee  
By the Legislative Division of Post Audit  
State of Kansas  
June 2018**

# Legislative Division of Post Audit

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June 20, 2018

To: Members, Legislative Post Audit Committee

This report contains the findings, conclusions, and recommendations from our completed performance audit, *Kansas Wildfire Management: Evaluating the Adequacy of Kansas' Wildfire Management System*. The audit was requested by Representative John Carmichael, Representative Kyle Hoffman, Representative Melissa Rooker, Representative Steven Becker, Representative Ken Rahjes, Representative Troy Waymaster, Representative Boyd Orr, and Senator Tom Hawk. The audit team included Andy Brienzo, Heidi Zimmerman, Amanda Schlumpberger, and Daniel McCarville. Chris Clarke was the audit manager.

Legislative Post Audit Committee Rule 3-3 requires the Legislative Post Auditor to notify the committee if an audited agency responds negatively to the findings or recommendations in the report. In its formal response, the Kansas Forest Service concurred with most of the report's findings and recommendations. However, the Adjutant General's Department and the Office of the State Fire Marshal disagreed with and provided additional information and context for some of the report's findings. More information on this can be found in Appendix A on page 27 of the report.

We would be happy to discuss the findings, conclusions, and recommendations presented in this report with any legislative committees, individual legislators, or other state officials.

Sincerely,

Justin Stowe  
Legislative Post Auditor

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# Kansas Wildfire Management: Evaluating the Adequacy of Kansas' Wildfire Suppression System

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## ***Background Information***

During 2016 and 2017, record-breaking wildfires burned hundreds of thousands of acres in Kansas and placed significant demands on the state's local fire districts. For example, the 2017 Starbuck wildfire that took place in Clark, Comanche, and Meade counties burned about 500,000 acres and caused losses of over \$50 million in livestock, fencing, and economic impact. In addition, Kansans lost numerous homes and structures in this fire and the simultaneous Highlands wildfire in Reno County.

Many state and local entities are involved in wildfire suppression, including the Kansas Division of Emergency Management within the Adjutant General's Department, Office of the State Fire Marshal, Kansas Forest Service within Kansas State University, county emergency managers, local fire districts, and several other state and local entities. Each entity's specific role is defined in state law and the Kansas Response Plan, which is drafted by the Kansas Division of Emergency Management and adopted by the governor. The Kansas Forest Service, which provides forestry and wildfire management services, maintains four unstaffed fire engines and employs four certified wildfire management staff and two mechanics.

On April 12, 2017, Governor Sam Brownback signed House Bill 2140, which allowed Kansas to enter the Great Plains Interstate Fire Compact. This compact is an agreement between Colorado, Nebraska, New Mexico, North Dakota, Saskatchewan, South Dakota, and Wyoming to make firefighting resources available to one another during emergencies. Further, membership in this compact makes the resources owned by the states, provinces, and territories in other regional compacts available to Kansas.

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## ***Objectives, Scope, and Methodology***

On July 31, 2017, the Legislative Post Audit Committee approved a request from Representative John Carmichael, Representative Kyle Hoffman, Representative Melissa Rooker, Representative Steven Becker, Representative Ken Rahjes, Representative Troy Waymaster, Representative Boyd Orr, and Senator Tom Hawk for an audit of Kansas' wildfire suppression system. This performance audit answers the following question:

- 1. Is Kansas' wildfire suppression system adequately designed and resourced to effectively suppress wildfires?**

To answer this question, we identified best practices available through several sources, including the U.S. Forest Service, National Wildfire Coordinating Group, and Federal Emergency Management Agency. We also reviewed information on how Great Plains states comparable to Kansas are structured, including North Dakota, Oklahoma, South Dakota, and Texas. We chose these states because they have landscapes and precipitation levels similar to Kansas and experience similar types of wildfires. We interviewed officials from these states and reviewed documentation they provided. Nebraska officials did not respond to our attempts to contact them, so we could not include them in our sample.

To determine how Kansas' wildfire suppression system compared to national and regional benchmarks, we reviewed state law and the Kansas Response Plan. We also interviewed officials and reviewed documentation and data from the Kansas Legislative Research Department, Office of Revisor of Statutes, Division of Emergency Management within the Adjutant General's Department, Office of the State Fire Marshal, Kansas Forest Service, Division of the Budget, and Kansas State University. Further, we interviewed officials from five local fire districts and two county emergency management departments who had been involved in suppressing the 2016 Anderson Creek and 2017 Starbuck wildfires. As part of this work, we assessed the controls the Office of the State Fire Marshal and Kansas Forest Service have in place to ensure the wildfire data they maintain are accurate, complete, and useful for managing Kansas' wildfire suppression system. However, deficiencies in these data prevented us from using them in our work.

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***Compliance with  
Generally Accepted  
Government Auditing  
Standards***

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.



## Overview of Wildfire Suppression in Kansas

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### ***Kansas Wildfires Have Become More Frequent and Severe in Recent Years***

**Wildfires have many causes and primarily burn dry vegetation.** Wildfires can also burn structures such as houses, barns, and fences, and can result in both human and animal deaths. Wildfires are started in numerous ways, including lightning strikes, arson, sparks from vehicles, or prescribed burns escaping control. Many wildfires remain small and are relatively easily contained, but some grow rapidly and require significant suppression efforts and resources. Kansas is typically at highest risk for wildfires from mid-February through mid-April when weather conditions (primarily high winds and low humidity) are optimal for fires.

**A recent study found both the number and sizes of Great Plains wildfires have increased significantly between 1985 and 2014.** A 2017 University of Nebraska study found the number of wildfires in the Great Plains region increased by about 400% from 1985 to 2014. Additionally, the total number of acres burned annually increased by about 400% during these years. The study noted several reasons for these increases, including:

- drought and frequent high-risk weather conditions combined to create ideal conditions for wildfires.
- increases in the number of game ranches and the practice of planting crops without first tilling the land has subsequently increased the amount of vegetation available to fuel wildfires.
- expanding communities have resulted in more homes located near vegetation, which has increased the fuel available for wildfires.

Because these factors are not likely to change soon, Kansas will likely remain at high risk for severe wildfires.

**The two largest Kansas wildfires in the last 50 years occurred in 2016 and 2017 and caused significant damage to several Kansas counties.** These wildfires occurred in south central and southwest Kansas and were both the result of fires starting in northern Oklahoma and spreading into Kansas. The prevailing weather conditions, high fuel loads from recent strong growing seasons, and the prevalence of highly combustible and invasive red cedar trees contributed to the damage these fires caused.

- **The Anderson Creek fire burned 313,000 acres in Barber and Comanche counties in March 2016.** This fire killed at least 750 cattle and destroyed at least 11 homes and 2,700 miles of fence. County officials estimated the fire caused at least \$30 million in total damage, and Barber County officials spent about \$1.5 million in county and federal funds on suppression efforts. Comanche County did not report its suppression costs.

- **The Starbuck fire burned 509,000 acres in Meade, Clark, and Comanche counties in March 2017.** This fire killed one person and at least 4,000 cattle and destroyed 26 homes and 3,700 miles of fence. State and county officials estimated the fire caused at least \$50 million in total damage and cost at least \$700,000 to suppress, although some counties may not have reported their suppression costs.

In comparison, the third-largest recorded Kansas wildfire burned 38,000 acres, destroyed one business, and damaged two homes in Stanton County in 2011.

The damage estimates from the two largest fires likely are understated. Not all counties provided damage estimates for these fires, local officials could not quantify the value of personal property (such as clothing and furniture) lost in destroyed homes, and state and local officials generally did not estimate the costs related to repairing damaged roads, power lines, and cell towers.

***Local Authorities Are Primarily Responsible for Suppressing Wildfires, but State and Federal Agencies Can Play a Supporting Role***

**In Kansas, local authorities are primarily responsible for wildfire suppression.** Local fire districts are generally the first to respond to wildfire reports. Outside urban and suburban areas, these districts consist largely of volunteer firefighters. If a local fire district cannot suppress a wildfire, county officials can request additional resources from neighboring counties, including those across Kansas’ borders. Many counties use mutual aid agreements to facilitate this assistance.

**Multiple state agencies play a supporting role when local authorities ask for help.** County officials can request state assistance if they determine they cannot suppress a wildfire on their own. State agencies cannot intervene until local officials ask them to because of Kansas’ “home rule” doctrine, which provides local authorities substantial autonomy in how they manage their affairs. Further, local officials retain jurisdictional authority throughout the entire emergency. Multiple state agencies may assist local jurisdictions when requested:

- **The Kansas Division of Emergency Management (KDEM) determines whether the state needs to respond and activates the Kansas Response Plan accordingly.** KDEM is located within the Adjutant General’s Department and operates the state emergency operations center. KDEM holds principal responsibility for coordinating the state response to emergencies of any kind in Kansas. This includes developing and coordinating a statewide mutual aid system to provide resources to counties without preexisting agreements or that require additional resources beyond what is available through these agreements. KDEM can also request the deployment of other states’ emergency response resources to Kansas through the Emergency Management Assistance Compact.

- **The Office of the State Fire Marshal coordinates firefighting resources but does not help fight wildfires.** As the primary and coordinating agency for the Kansas wildfire suppression system, the Fire Marshal helps staff the state emergency operations center during wildfires and acts as a liaison between local authorities and the state. The Fire Marshal also coordinates the delivery of firefighting resources available through the state and communicates with federal officials as necessary.
- **The Kansas Forest Service can provide firefighting resources and professional wildfire management services and request federal and other states' firefighting resources.** The Forest Service is located within the Kansas State University Research and Extension program and owns a limited amount of firefighting equipment. It also provides certified wildfire management staff to support both the state emergency operations center and local officials. Only the Forest Service can order firefighting resources from either the U.S. Forest Service or other states through the Great Plains Interstate Fire Compact.

Other state agencies may also provide support during wildfires using their specialized resources. For example, the Kansas Highway Patrol may provide law enforcement support, the Kansas Department of Transportation may provide heavy equipment useful for wildfire suppression (e.g., bulldozers, road graders), or the Kansas National Guard may use its helicopters to provide aerial firefighting support.

**Federal agencies play a supporting role when state authorities ask for help.** For example, the Federal Emergency Management Agency (FEMA) is KDEM's federal counterpart and offers logistical and coordination support. However, FEMA mostly provides financial assistance to help cover wildfire suppression expenses and, in some instances, may help fund disaster recovery. Additionally, the Department of Defense can provide life and property protection assistance using resources such as those available through the U.S. Army Reserve. Finally, the U.S. Forest Service can provide incident management teams, firefighters, aircraft, and other specialized firefighting equipment and personnel upon the Kansas Forest Service's request.

At the request of the Kansas Forest Service, officials from the U.S. Forest Service and Texas A&M Forest Service also evaluated Kansas' wildfire suppression system in 2017. Based on interviews with Kansas Forest Service and local officials, they concluded this system had insufficient resources, did not provide sufficient wildfire suppression and mitigation training to local fire districts, and did not foster coordination among the state and local entities involved. They also found support among local fire districts and county emergency managers for an expanded state wildfire suppression system.



## Question 1: Is Kansas' Wildfire Suppression System Adequately Designed and Resourced to Effectively Suppress Wildfires?

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*Kansas' wildfire suppression system is not adequately designed and resourced to effectively suppress wildfires based on best practices and a sample of other states. We compared Kansas' wildfire suppression system to national best practices and systems in other Great Plains states (p. 7). Kansas' wildfire suppression structure generally aligned with best practices except that it relies on three entities instead of one (p. 8). Kansas' wildfire suppression system also has fewer state resources than other Great Plains states (p. 11). Kansas' lack of resources limits the availability of wildfire suppression training (p. 16) and the state's ability to mitigate wildfire damage (p. 17). Further, state and local officials reported education and coordination problems among entities involved in wildfire suppression (p. 19). Finally, the state agencies involved in Kansas' wildfire suppression system do not maintain complete wildfire management data (p. 21). However, some large wildfires are unavoidable even if Kansas improves its wildfire suppression system (p. 22).*

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### ***We Compared Kansas' Wildfire Suppression System to National Best Practices and Systems in Other Great Plains States***

**National best practices address five main areas necessary for effective wildfire suppression.** We reviewed best practices available through the U.S. Forest Service, National Interagency Fire Center, U.S. Fire Administration, National Wildfire Coordinating Group, Federal Emergency Management Agency, and Emergency Management Accreditation Program. We identified key best practices in five areas:

- how states structure their wildfire suppression systems
- the resources states allocate for wildfire suppression efforts
- how states train individuals involved in fighting wildfires
- how states mitigate the risk of, and damage from, wildfires
- how states coordinate wildfire suppression activities

Our review of best practices included the national Incident Command System, which provides a standardized management approach for handling emergencies such as wildfires.

**Other states' systems also provide guidance on how to structure and resource wildfire suppression systems.** We were able to contact four Great Plains states for information on how they structure and resource their wildfire suppression systems: North Dakota, Oklahoma, South Dakota, and Texas. We found it appropriate to compare Kansas to these states for two reasons:

- **Their ecology, weather, and fire patterns are like those in Kansas.** We chose these states because they have similar landscape classifications, land coverages, annual precipitation levels, drought ratings, types of fires, and ratios of structures lost to areas burned during wildfires.
- **Their wildfire suppression structures varied, which let us evaluate how different structures affected each state's conformity with best practices.** In each of these states except South Dakota, the wildfire suppression system's primary agency is the state forest service. South Dakota has a separate wildfire management division. However, like Kansas, the state forest services in North Dakota and Texas are located within state universities, whereas South Dakota and Oklahoma's primary agencies are under their respective state agriculture departments.

We reviewed these four states to both identify additional practices related to effective wildfire management and to help evaluate how well Kansas' wildfire suppression system has been designed and resourced.

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*Kansas' Wildfire  
Suppression Structure  
Generally Aligned with  
Best Practices Except that  
It Relies on Three Entities  
Instead of One*

**Kansas' wildfire suppression system generally follows the overall structure outlined by best practices and the four Great Plains states we reviewed. *Figure 1-1* on the following page shows how Kansas compares to key best practices and the four Great Plains states in our sample. As the figure shows, Kansas had a structure that generally adhered to best practices in several areas.**

- **Kansas and each of our sampled states has a state response plan that outlines its emergency response procedures and designates a primary wildfire suppression agency.** In Kansas, this takes the form of the Kansas Response Plan. The Kansas Division of Emergency Management (KDEM) is ultimately responsible for coordinating state emergency response in Kansas and does so through this plan, which it drafts and submits to the governor for adoption. The Kansas Response Plan consists of numerous emergency support functions outlining the state's resource delivery and management plans for various types of emergencies. KDEM designated the Fire Marshal as the primary and coordinating agency for Kansas' firefighting emergency support function, which covers both wildfires and structure fires.
- **Kansas and three of our four sampled states prioritize local control of wildfire suppression operations.** Best practices suggest a "tiered response," in which the lowest-level jurisdiction handles emergencies and the state assists only when an incident has grown beyond this jurisdiction's capabilities. Kansas follows best practices in this area, as the Kansas Response Plan creates a wildfire suppression system designed to support local authorities during wildfires by coordinating the resources available through the state only when necessary. South Dakota is the single exception among our sampled states because it allows its primary wildfire suppression agency to take unilateral control during wildfires.

**Figure 1-1  
Comparison of Kansas' Wildfire Suppression System to Best Practices  
and Other States' Practices**

Best Practices and Common Practices in Other Great Plains States	Primary Wildfire Suppression Agency				
	ND	OK	SD	TX	KS
	Forest Service, North Dakota State University	Forestry Services Division, Dept. of Agriculture	Wildland Fire Division, Dept. of Agriculture	Forest Service, Texas A&M University	Office of the State Fire Marshal
<b>Structure</b>					
State has a response plan and assigns a primary wildfire suppression agency	✓	✓	✓	✓	✓
State's emergency management agency coordinates the overall statewide response to large-scale emergencies	✓	✓	✓	✓	✓
State uses a tiered response to prioritize local control of wildfire response	✓	✓		✓	✓
Like the federal structure, the state forest service is the primary agency for firefighting emergency support	✓	✓		✓	
<b>Resources</b>					
Primary wildfire suppression agency owns firefighting resources to mobilize	✓	✓	✓	✓	
Primary wildfire suppression agency has direct access to a state emergency fund or can request supplemental funds	✓	✓	✓	✓	✓ (b)
Primary wildfire suppression agency has sufficient state funding to cover the cost of deploying its resources within its own state	✓	✓	✓	✓	
Primary wildfire suppression agency has independent budget authority	✓	✓	✓	✓	✓ (c)
State makes sufficient funding available to shift the financial burden of wildfire response off local jurisdictions and other state agencies	✓	✓		✓	
<b>Training</b>					
Primary wildfire suppression agency has sufficient state resources to offer wildfire suppression training that aligns with national standards	✓	✓	✓	✓	
<b>Mitigation</b>					
Primary wildfire suppression agency has sufficient state funding to preposition resources ahead of wildfires	✓	✓	✓ (a)	✓	
<b>Coordination</b>					
Primary wildfire suppression agency invests in educating and building effective working relationships with local authorities ahead of wildfires	✓	✓	✓	✓	
Primary wildfire suppression agency uses education and outreach to prompt local officials to request state assistance sooner	✓	✓		✓	
(a) The U.S. Forest Service prepositions federal resources stationed at Black Hills National Forest in South Dakota. (b) Only the Kansas Division of Emergency Management (KDEM) has direct access to the state emergency fund. The Office of the State Fire Marshal also has its own limited emergency response fund, however. (c) The Office of the State Fire Marshal has independent budget authority, but the Kansas Forest Service does not. Source: State officials and LPA review of best practices and Kansas' wildfire suppression system.					

**Unlike the other states we reviewed, Kansas distributes its wildfire suppression duties and resources across three agencies.** The federal government designated the U.S. Forest Service as the primary and coordinating agency for the federal firefighting emergency support function. Similarly, three of the four states we reviewed mirrored this arrangement and placed their state forest services in this role.

- **Kansas designates the Fire Marshal as the primary agency for its firefighting emergency support function, but the Forest Service and KDEM each have roles in fire suppression.**

According to the Kansas Response Plan, the Fire Marshal's position as primary and coordinating agency gives it several responsibilities during wildfires, including acting as a liaison with local fire chiefs, coordinating mutual aid assistance, and prepositioning firefighting resources. By contrast, state law (K.S.A. 76-425d) gives the Forest Service authority to assist with wildfire prevention and suppression but no clearly defined responsibilities in wildfire response. The Kansas Response Plan follows suit and makes the Forest Service a supporting agency with assigned responsibilities such as providing wildfire suppression resources and technical assistance. Finally, KDEM is ultimately responsible for emergency response coordination in Kansas and receives state funding and the authority to spend against the state emergency fund for this purpose.

- **Although all three agencies have important responsibilities, none of them receives the resources a primary agency should.**

Combating wildfires requires different methods than those used in structure fires. For example, wildfire suppression frequently involves eliminating fuel ahead of the fire so it cannot continue to spread. Although it has structure fire expertise, the Fire Marshal lacks the Forest Service's unique wildfire expertise and resource access. KDEM receives emergency response funding useful for wildfire response but also lacks the expertise and resource access of the Forest Service.

On the other hand, the Forest Service owns firefighting equipment, can order out-of-state firefighting resources through the U.S. Forest Service and Great Plains Interstate Fire Compact, and employs staff who hold nationally recognized wildfire management certifications from the National Wildfire Coordinating Group. However, its position within Kansas State University means it does not have independent budget authority and does not receive state funding specifically for these responsibilities.

- **By contrast, our sampled states have consolidated their wildfire suppression roles and resources under a single agency.** For example, **Figure 1-2** on pages 12 and 13 compares Kansas' structure to Texas'. We picked Texas because it has a university-based forest service with unique resources and expertise like the Kansas Forest Service's. The Texas A&M Forest Service is Texas' primary firefighting emergency support agency, receives significant state funding for wildfire response, has wildfire expertise and extensive firefighting resources, and has sole access to U.S. Forest Service resources. As the figure shows, Texas' consolidated wildfire suppression system allows for more immediate communication



between local jurisdictions needing assistance and the forest service as the state's primary wildfire suppression agency. In comparison, Kansas' structure splits responsibilities and resources across the three state agencies involved, adding additional steps to state and out-of-state resource deployment during wildfires.

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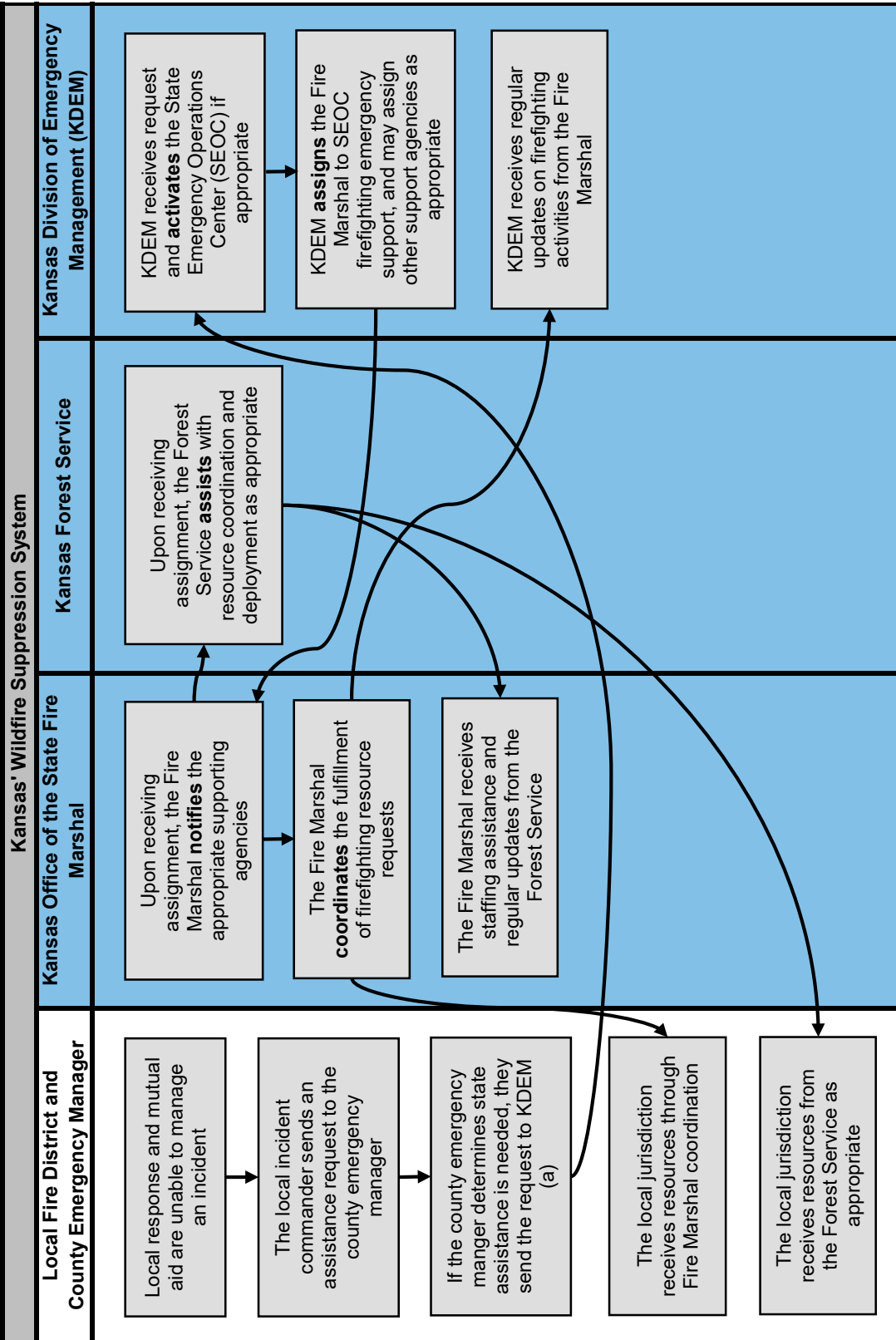
***Kansas' Wildfire  
Suppression System has  
Fewer State Resources  
than Other Great Plains  
States***

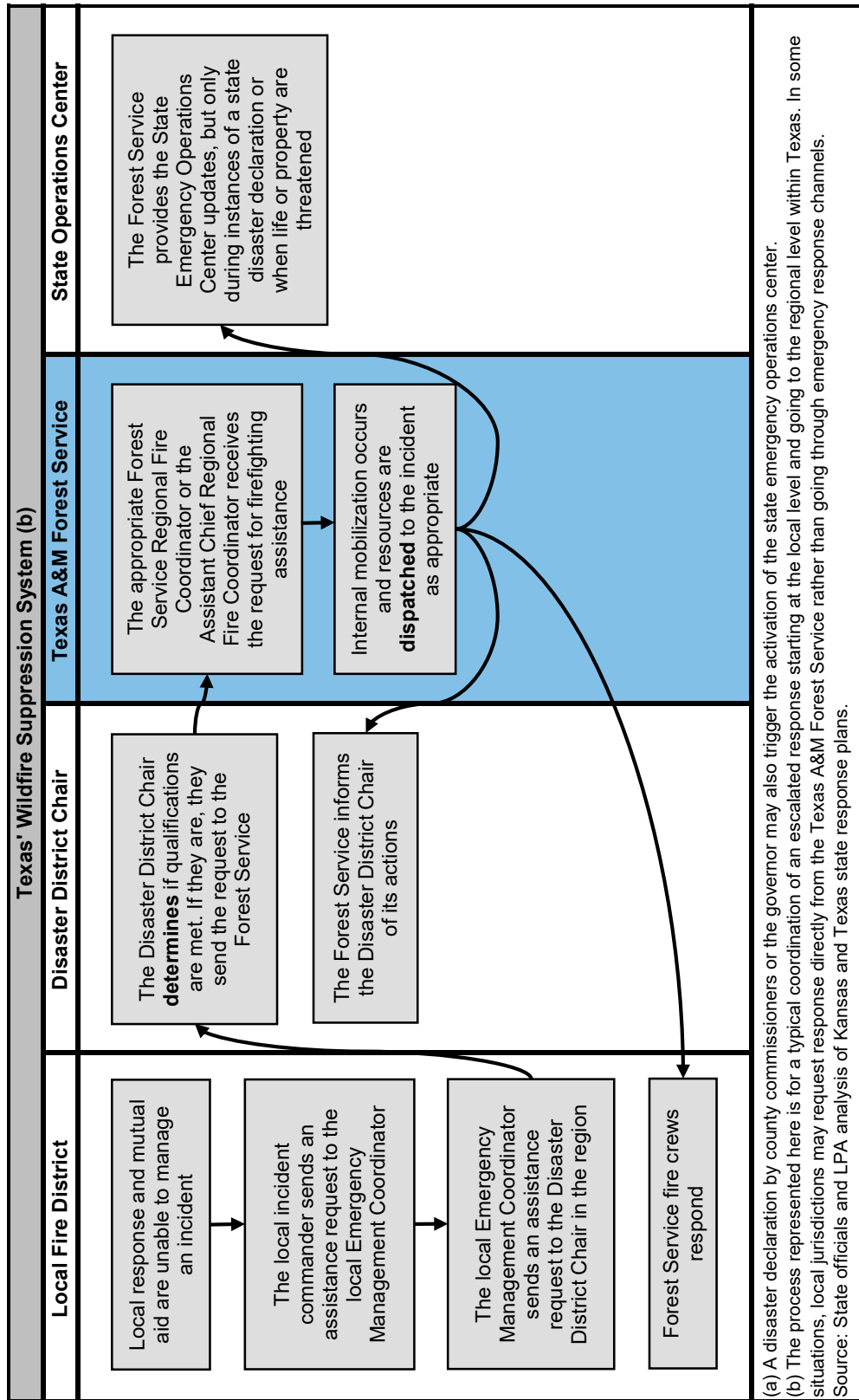
**All four Great Plains states we reviewed devote significant state resources to wildfire suppression, lessening the burden on local jurisdictions.** *Figure 1-3* on page 15 summarizes Kansas' and our sampled states' resources. As the figure shows, each sampled state provides its primary wildfire suppression agency enough funding to maintain firefighting equipment and employ certified wildfire management staff. Additionally, three of these states assist local jurisdictions at no charge, and South Dakota's Wildland Fire Division only charges local agencies after three hours of state assistance. Further, in all four states, state suppression costs are paid from the primary wildfire agency's budget or through deficit spending against a fire or emergency fund. Our sampled states also utilize Fire Management Assistance Grant funding from FEMA to recover some of their wildfire suppression costs, but they do not rely on it to pay for their responses.

**Like our sampled states, Kansas owns firefighting equipment and has an emergency fund to help pay for wildfire suppression responses.** As *Figure 1-1* on page 9 shows:

- **Kansas owns firefighting resources it can mobilize during a wildfire response, but these resources do not belong to the state's primary wildfire suppression agency.** As this figure and *Figure 1-3* on page 15 show, all our sampled states' primary wildfire suppression agencies own firefighting equipment and employ full-time wildfire-certified firefighters and management staff to respond to wildfires. Kansas also owns firefighting equipment and employs wildfire-certified firefighters and management staff, but these resources do not belong to the Fire Marshal as the state's primary agency. The Forest Service has four fire engines, employs four full-time wildfire management staff, and can activate part-time firefighters and management staff when funding becomes available to cover their wages.
- **Like our sampled states, Kansas has emergency funding to help pay for state wildfire response, although such funding is not directly available to the Forest Service.** In most states, this takes the form of a fire or emergency fund against which the primary wildfire suppression agency can charge wildfire suppression expenses. In Texas, the primary agency has the authority to request an additional appropriation from the legislature if its annual budget proves insufficient to cover its wildfire response costs. In Kansas, although KDEM is not the primary agency and does not own firefighting resources, it receives disaster response funding in its annual budget and is the only state agency with access to the state

**Figure 1-2  
Comparison of Kansas' and Texas' Wildfire Suppression Systems**





emergency fund. A separate, smaller emergency response fund is available to the Fire Marshal. The Forest Service does not directly receive any disaster or emergency funding for use during wildfires, although KDEM can help cover its wildfire suppression expenses.

**However, unlike other states, Kansas devotes fewer state resources to wildfire response in several areas.** In conformance with best practices, our sampled states generally emphasize local wildfire response. However, in those states, significant state firefighting resources allow the primary wildfire suppression agencies to fight fires directly, giving them important roles in their states' wildfire responses. Limited state wildfire suppression resources prevent Kansas from following suit. This shifts the financial burden to local jurisdictions and state agencies not otherwise involved in firefighting.

- **Although it is the primary agency for Kansas' wildfire suppression system, the Fire Marshal has no wildfire suppression resources.** The Fire Marshal does not own firefighting equipment or employ certified wildfire management staff. It also does not receive state funding specifically for wildfire management, although it does have access to an emergency response fund separate from KDEM's state emergency fund. The Fire Marshal also does not have the authority to order firefighting resources from out of state. As such, it is unable to engage directly in fire suppression or provide wildfire management support to the state emergency operations center or local officials.
- **The Forest Service has wildfire suppression resources, but limited state funding prevents it from effectively deploying its resources in Kansas.** State resources vary significantly in the states we reviewed, as shown in **Figure 1-3** on the following page. As this figure shows, the Kansas Forest Service has several unique wildfire suppression and management resources but receives less than \$400,000 in total state funding each year, none of which is specifically for wildfire suppression. The Forest Service also does not have direct access to emergency funding during wildfires. As a result, the Forest Service's wildfire management function is primarily funded by federal grants, although it can use some of its limited state funding for this as well.

This limited funding often prevents the Forest Service from deploying its fire engines in Kansas because it is unable to pay the part-time staff needed to operate them. Instead, the Forest Service deploys these resources to fires in other states because the receiving state covers these wages. Similarly, the Forest Service's part-time certified wildfire management staff frequently assist in other states but are generally not deployed within Kansas unless outside funding becomes available to pay them. Such funds are sometimes diverted from federal grants intended for other forestry programs, such as wildfire prevention.

- **The Forest Service's limited state funding stems from its lack of independent budget authority.** As part of Kansas State University's Research and Extension program, the Kansas Forest Service is not

**Figure 1-3  
Summary of State Funding and Resources of Great Plains States' Primary Wildfire Suppression Agencies, Fiscal Year 2018**

Primary Wildfire Suppression Agency	Total State Funding for all Agency Functions (a)			Wildfire Suppression Resources		
	Amount	State Area (Square Miles)	Amount Per Square Mile	Fire Engines	Staff	Other
<b>ND Forest Service, North Dakota State University (b)</b>	\$2,200,000	71,230	\$30.89	5	4 full-time fire management staff and 14 seasonal staff	Other various equipment and vehicles
<b>OK Forestry Services Division, Department of Agriculture (b)</b>	\$6,100,000	69,960	\$87.19	42	84 full-time fire management staff (f)	42 bulldozers
<b>SD Wildland Fire Division, Department of Agriculture (c)</b>	\$1,500,000	78,116	\$19.20	12	8 full-time fire management staff and additional seasonal staff	Several additional vehicles
<b>TX Forest Service, Texas A&amp;M University (d)</b>	\$38,900,000	268,597	\$144.83	18	353 fire management staff, including 267 who participate in firefighting operations	114 bulldozers and other various equipment
<b>KS Forest Service, Kansas State University (e)</b>	\$370,000	82,278	\$4.50	4	4 full-time fire management staff and additional part-time staff	Some all-terrain vehicles

(a) These amounts reflect state appropriations only, and do not account for federal funds or any additional amounts spent during wildfire responses. They also represent the entirety of the amounts these agencies receive for all functions, and therefore are not limited to funding specifically for wildfire management.

(b) LPA estimate

(c) Unlike the other entities listed here, South Dakota's Wildland Fire Division engages only in wildfire management and has no other forestry-related responsibilities.

(d) Fiscal year 2019

(e) Although it is not the primary agency for Kansas' wildfire suppression system, the Kansas Forest Service has wildfire suppression resources and expertise analogous to those of the primary agencies in our sampled states, and therefore provides the most appropriate comparison. Kansas' primary wildfire suppression agency, the Office of the State Fire Marshal, has no wildfire suppression resources.

(f) When fully staffed

Source: State officials and LPA analysis of state budget documentation.

organized as an independent state agency. This prevents it from determining its own budgetary priorities the way state agencies do. Instead, Kansas State University and the Kansas Board of Regents determine its budget priorities, but these entities focus primarily on education and research rather than wildfire response.

**Kansas often requires state agencies and local jurisdictions involved in wildfire suppression efforts to cover their own costs.** State funding is not available to cover local fire districts' costs for securing mutual aid resources, which make up the majority of Kansas' firefighting resources and are therefore critical to wildfire response. Unless the responding jurisdictions waive these costs, the total bill for the county experiencing the wildfire can grow quickly. This also sometimes deters local fire districts from responding to mutual aid requests because doing so is costly and they are not always assured they will be reimbursed.

In addition to securing mutual aid from other local jurisdictions, local officials may also call for state resources during wildfires. Although the Forest Service owns some firefighting resources, it lacks the funds to pay for their use in Kansas. Thus, other state agencies may fulfill such requests. For example, the Kansas Department of Transportation may provide road graders and bulldozers, or the Kansas National Guard may provide helicopters. However, state agencies fulfilling resource requests must generally cover the cost of doing so from their own budgets.

**Kansas state agencies and local jurisdictions must rely on FEMA grants to reimburse their suppression costs, but these funds are not always available.** FEMA's Fire Management Assistance Grants cover 75% of eligible state and local wildfire suppression costs. Many fires do not qualify because they do not threaten enough destruction to constitute a major disaster, including threatening lives and property and potentially causing significant economic impact. Further, not all fires meet the minimum individual fire threshold of about \$200,000 in eligible suppression costs. For fires that do qualify, KDEM officials told us it generally takes a year or more to receive federal reimbursement. This can create a significant financial burden for state agencies and local jurisdictions with limited budgets. Even if a federal grant does eventually cover 75% of eligible costs, the remaining 25% and any costs ineligible for grant coverage can cause financial hardship.

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***Kansas' Lack of Resources Limits the Availability of Wildfire Suppression Training***

**Best practices and our sampled states emphasize the importance of training specific to wildfire suppression.** Nationally, wildland firefighters receive wildfire suppression training consistent with National Wildfire Coordinating Group

standards. As shown in *Figure 1-1* on page 9, the primary wildfire suppression agency in each of our sampled states employs staff holding wildfire certifications who provide wildfire-specific training to firefighters in their states.

**Although it is the primary agency for Kansas' wildfire suppression system, the Fire Marshal does not have the expertise necessary to provide wildfire-specific training.** Fire Marshal staff have structure fire expertise, but do not have wildfire suppression certifications or expertise. Because combating wildfires and structure fires require different methods, the Fire Marshal is unable to provide wildfire suppression training to firefighters like the Forest Service can.

**Kansas Forest Service staff have the expertise, but officials told us they do not currently have the resources to provide adequate wildfire suppression training.** Although Forest Service staff have wildfire suppression certifications and expertise, Forest Service officials reported they lack sufficient staff to accommodate the training requests they receive from local fire districts, which increased after the 2016 Anderson Creek and 2017 Starbuck wildfires. As such, not all local fire districts receive wildfire suppression training.

**State and local officials reported Kansas firefighters do not receive adequate wildfire-specific training and sometimes do not know how to suppress wildfires.** KDEM officials told us volunteer firefighters often do not know how to fight wildfires, and one fire chief from the five local fire districts and two county emergency management departments we interviewed said his firefighters receive their first wildfire suppression training when responding to an actual fire. Some of these local authorities cited the expense of procuring available wildfire-specific training as a barrier to getting it for their volunteer firefighters. Some also told us volunteer firefighters are unable to attend training sessions during the day because of their regular job duties.

Urban and suburban fire districts generally have more resources and are therefore most able to respond to mutual aid requests, but they also do not typically receive wildfire-specific training. As a result, rural fire district officials told us receiving mutual aid assistance from these fire districts during wildfires is not always useful or effective.

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***Kansas' Lack of Resources Limits its Ability to Mitigate Wildfire Damage***

**Wildfire fuel mitigation and firefighting resource prepositioning help limit wildfire damage.** As shown in *Figure 1-1* on page 9, each of our sampled states engages in mitigation

activities. Best practices suggest effective wildfire mitigation may reduce the extent, intensity, and severity of wildfires, making suppression safer and more effective. State and local officials told us wildfire mitigation activities, including removing excess underbrush and invasive red cedar trees, are important to prevent wildfires from growing out of control. Red cedars, which are particularly combustible, contributed to the rapid spread of the 2016 Anderson Creek and 2017 Starbuck wildfires.

Further, damage is done quickly during wildfires, so delays in resource deployment can result in potentially preventable damage. Prepositioning firefighting resources can facilitate quicker response by placing equipment and personnel in areas likely to experience wildfires. State and local officials emphasized the importance of resource prepositioning, and all the states we reviewed have mechanisms for doing so. As shown in *Figure 1-1* on page 9, North Dakota, Oklahoma, and Texas allow state resources to be used for this purpose at no cost to local jurisdictions.

**State and local officials told us Kansas is often unable to conduct sufficient wildfire mitigation activities or preposition resources because of insufficient funding.** This includes mitigation training for firefighters and landowners and prepositioning of local, state, and out-of-state resources.

- **Kansas state and local officials told us firefighters and landowners do not conduct sufficient wildfire mitigation.** The Kansas Response Plan tasks the Forest Service with coordinating fire mitigation strategies with KDEM and the Fire Marshal. However, Forest Service officials told us they do not have enough resources or mitigation education staff to do this. They also reported they sometimes must redirect mitigation funding to help cover their wildfire suppression costs. Other state and local officials also told us insufficient mitigation education, prescribed burn regulations, and the cost of and lack of emphasis on performing wildfire mitigation prevent Kansas from conducting enough wildfire mitigation to keep wildfires from growing out of control.
- **Kansas relies heavily on locally owned resources for wildfire suppression, which are difficult to preposition.** Most local fire districts in Kansas depend on volunteer firefighters who would have to forego wages from their full-time jobs during prepositioning assignments. The state does not provide funding to replace these lost wages. Additionally, equipment necessary for this task represents a substantial investment by local fire districts, who use it primarily to protect their own communities. Sending this equipment to help other jurisdictions incurs additional maintenance and transportation costs while making it unavailable to respond to fires at home.

The Kansas Forest Service owns firefighting equipment and can order out-of-state resources through the U.S. Forest Service and



Great Plains Interstate Fire Compact. Forest Service officials consider out-of-state resources to be among the most efficient for prepositioning because the state does not have to maintain them and can simply order them when necessary. However, the Forest Service does not have sufficient funding to pay the U.S. Forest Service or other states to make these resources available.

- **Forest Service officials said access to the state emergency fund would facilitate resource prepositioning, but KDEM officials opposed this idea.** Forest Service officials told us receiving direct access to the state emergency fund would allow them to order out-of-state resources earlier because they would not have to wait for another agency to offer to pay for them. They told us prepositioning and quicker deployment of these resources would result in less property damage and lower suppression costs overall. However, KDEM officials opposed giving the Forest Service access to the state emergency fund because it would make the fund more difficult to administer, the Forest Service already has access through KDEM to the funding it needs, and they do not believe this funding structure delays out-of-state resource deployment. KDEM officials also noted this would bring the state's mechanism for funding firefighting emergency support operations out of alignment with that used for other types of emergencies.

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***State and Local Officials Reported Education and Coordination Problems Among Entities Involved in Wildfire Suppression***

As *Figure 1-1* shows on page 9, emergency management best practices and our sampled states emphasize a “tiered response” in which the lowest-level jurisdiction handles emergencies. Kansas follows best practices in this area. Best practices also suggest local jurisdictions ask the state for help if local response cannot contain a wildfire within two hours and achieve full control within the first 24 to 48 hours. State officials emphasized the importance of using education and training to help ensure this happens.

**Kansas does not invest in educating and building effective working relationships with local authorities to the same extent as Texas.** To ensure state and local authorities work together effectively and local fire districts call for state assistance early enough, the Texas A&M Forest Service has tasked its regional fire coordinators with educating local districts to ensure they know what resources are available through the state and when they should call for help. As a result, Texas officials reported local fire districts better understand what the state offers and call for state assistance much sooner.

In Kansas, KDEM Regional Coordinators build relationships with county emergency managers through the general (but not wildfire-specific) training they provide. Further, the Forest Service uses its wildfire suppression training and federal excess property program to educate or establish relationships with most local fire districts. The Forest Service does not have the resources to hire regional fire coordinators like Texas, but six such staff are included in its future

growth plan. If approved, these regional staff would have wildfire-specific certifications and expertise, provide wildfire suppression training, establish working relationships with local fire districts before wildfires occur, and provide education on how Kansas' wildfire suppression system works and when to request state assistance.

**Despite state agencies' current coordination efforts, state and local officials told us local jurisdictions do not always know when to call for state assistance or how the state wildfire suppression system is supposed to work.** State and local officials told us local fire districts often try to control wildfires on their own and request state assistance too late, limiting the state's ability to effectively assist their wildfire suppression efforts. In addition, state and local officials reported local fire districts do not necessarily know how Kansas' wildfire suppression system is supposed to work, what resources are available through the state, how much these resources will cost, or when to call for state assistance.

**State and local officials also reported ineffective working relationships among the entities involved in wildfire response.** This includes relationships between local and state officials and among the state entities involved in Kansas' suppression system.

- **Local officials reported ineffective working relationships with the state agencies involved in wildfire suppression.** Kansas' lack of state staff focused on building effective working relationships with local fire districts likely contributed to coordination problems during the state's recent large wildfires. One local fire chief said he did not perceive KDEM and Fire Marshal officials to be wildfire experts and was reluctant to trust them. Other local officials reported initial trust and communication issues with Forest Service staff during the 2016 Anderson Creek wildfire, and estimated this friction caused them to lose a day of firefighting. Finally, local officials told us Forest Service staff ignored local authority during this wildfire by pursuing different types of suppression strategies than they wanted, including allowing more pastureland to burn than local officials believed necessary. Local officials expressed less concern about state agency involvement during the 2017 Starbuck wildfire.
- **State officials involved in the wildfire suppression system also reported ineffective working relationships across state agencies.** KDEM has designated the Fire Marshal as the primary and coordinating agency for state firefighting response, with the Forest Service playing a supporting role. However, KDEM officials told us the Forest Service does not always attend required meetings or communicate with them when deploying resources to wildfires, which complicates coordination efforts. In addition, Fire Marshal officials told us the Forest Service cannot always provide consistent support to the state emergency operations center due to its insufficient staffing. Finally, Forest Service officials told us they feel

their role is sometimes marginalized at the state level despite their unique wildfire suppression expertise.

Because local fire districts play a central role in wildfire suppression and have command authority during emergencies, state and local authorities must coordinate successfully during wildfires. Friction among the entities involved in wildfire suppression could lead to miscommunication and delays, allowing potentially preventable damage to occur.

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***The State Agencies Involved in Kansas' Wildfire Suppression System Do Not Maintain Complete Wildfire Management Data***

**Statute and best practices require Kansas state agencies to maintain data on wildfires and suppression resources.** State law (K.S.A. 48-928) requires KDEM to maintain a register of personnel and equipment available for disaster response, including wildfires. To do this, KDEM tracks local, state, and other resources in an inventory called the Comprehensive Resource Management and Certification System. KDEM and other state officials consider this the state's authoritative emergency response resource inventory, and the state emergency operations center uses it to locate available resources during wildfires. Maintaining such an inventory for wildfire suppression is consistent with best practices, which suggest states maintain detailed mutual aid resource inventories.

State law (K.S.A. 75-1505) also requires the Fire Marshal to keep a record of fires within the state, which it does through the Kansas Fire Incident Reporting System. Collecting wildfire information is useful for planning and prepositioning, as the Texas A&M Forest Service's data-based risk forecasting and resource planning practices demonstrate.

**However, the state agencies responsible for these systems do not require local fire districts to submit relevant data, making the systems incomplete.** This includes both Kansas' inventory of firefighting resources and its fire database.

- **KDEM does not require local fire districts to use its inventory system.** As a result, KDEM staff estimate their inventory includes only about 15% of Kansas' firefighting assets and approximately 30% of Kansas' total emergency resources. To encourage participation, the Forest Service recently modified the terms of its federal excess property program to require local districts to enter any property they receive through this program into KDEM's system.

Further, one county official reported he is reluctant to use KDEM's inventory because it is slower than posting mutual aid requests on social media. Although this method may be sufficient for smaller wildfires without meaningful state involvement, it hampers resource coordination during larger fires. To encourage participation, KDEM has made the system easier to use and tasked its Regional

Coordinators with educating local officials on the inventory's role in effective resource coordination.

- **The Fire Marshal lacks the authority to force local fire districts to submit wildfire data.** Many key fields in the Kansas Fire Incident Reporting System would be useful for managing Kansas' wildfire suppression system, including acres burned, damage caused, and suppression resources required. However, Fire Marshal staff said they lack the authority to force local districts to submit these data.

**As a result, Kansas lacks data important for effective wildfire management.** KDEM staff told us their incomplete resource inventory could delay fulfillment of resource requests during wildfires because it may take more time to locate available resources or resources may be requested from further away than necessary. For example, during the 2017 Highlands wildfire, the state emergency operations center had difficulty locating resources available to fulfill Reno County's resource requests. Further, Kansas' incomplete wildfire data makes it more difficult for state agencies to determine the effectiveness of current policies and identify potential system improvements.

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***Some Large Wildfires Are Unavoidable Even if Kansas Improves its Wildfire Suppression System***

The two largest Kansas wildfires in the last 50 years occurred in 2016 and 2017. The Anderson Creek wildfire burned about 300,000 acres in Barber and Comanche counties, and the Starbuck wildfire burned about 500,000 acres in Meade, Clark, and Comanche counties. Many other smaller wildfires took place simultaneously, complicating the state's responses to these fires.

**Some wildfires are unavoidable regardless of how well a state's suppression system is designed.** Wildfires often break out during times when prevailing weather conditions are conducive to their rapid spread, so it is unlikely all wildfires could be prevented or quickly contained. This is demonstrated by Kansas' two largest wildfires starting in Oklahoma. Although Oklahoma's wildfire suppression system more closely aligns with best practices, it still did not prevent these fires from causing extraordinary damage.

**State and local officials told us improvements to Kansas' current wildfire suppression system likely would not have made much difference during the state's largest wildfires.** State and local officials told us the 2016 Anderson Creek and 2017 Starbuck wildfires would have been too large to effectively suppress by the time they entered the state, even if Kansas' system had aligned more closely with best practices and other states' structures. Although small amounts of damage may have been prevented with additional resources or structural changes, the fires' sizes and the prevailing weather conditions likely would have

prevented substantial damage reductions. This is partially due to high winds that made it unsafe to dispatch important aerial firefighting resources early on.

**However, these fires illustrate the need for states to react quickly before wildfires get out of control.** In alignment with best practices, state and local officials stressed the importance of suppressing fires before they become too large to control. Kansas' experiences with the 2016 Anderson Creek and 2017 Starbuck wildfires demonstrate this, as these fires would not have grown to cause record damage if they had been successfully controlled while still small in Oklahoma.



## Conclusion and Recommendations

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### **Conclusion**

Unlike other Great Plains states, Kansas' wildfire suppression system is relatively fragmented and is further limited by a lack of resources and effective coordination across state and local agencies. The state's primary wildfire suppression agency lacks expertise specific to wildfire suppression and the state entity with this expertise has both a limited role in combating wildfires and few resources. As a result, Kansas' limited wildfire suppression training and mitigation programs do not sufficiently prepare the state for wildfire response. Ineffective working relationships among the entities responsible for wildfire suppression efforts and incomplete management data further hinder adequate wildfire suppression activities. Finally, although changes to Kansas' structure and additional resources may improve Kansas' wildfire suppression system, they would not guarantee all wildfires would be contained as a result.

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### **Recommendations for Legislative Consideration**

1. To address the problems relating to the Kansas wildfire suppression system's fragmented structure and insufficient resources (pp. 8-21), the Kansas Legislature should consider:
  - a. Amending state law to designate a single state entity to lead the state's wildfire suppression system and ensure this state entity has sufficient firefighting equipment, certified firefighters and wildfire management personnel, and state funding to effectively and independently lead the state's wildfire suppression system. This might include:
    - i. educating local authorities on how the state's wildfire suppression system is supposed to work, the resources available through the state during wildfires, and when it is necessary to call for state assistance.
    - ii. coordinating and forming effective working relationships with local fire districts, county emergency managers, and other state agencies in advance of wildfires.
    - iii. providing sufficient wildfire suppression and mitigation training to local fire districts and landowners.
    - iv. prepositioning and deploying local, state, and out-of-state firefighting resources during wildfires.
    - v. supporting both the state emergency operations center and local officials during wildfires.
  - b. If it decides not to amend state law to designate a single state entity to lead the state's wildfire suppression system, the Kansas Legislature should consider requiring the three state entities currently involved in wildfire suppression to provide suggestions on how the existing system might be

improved before the beginning of the 2019 legislative session.

2. To address the problems relating to Kansas' insufficient wildfire management data (pp. 21-22), the Kansas Legislature should consider amending statute to require the Office of the State Fire Marshal to:
  - a. Designate the Kansas Fire Incident Reporting System or another database as the state's official database for wildfire data.
  - b. Strengthen reporting requirements for local fire districts and provide the Fire Marshal the authority to issue penalties for non-compliance.



## APPENDIX A Agency Response

On April 13, 2018, we provided copies of the draft audit report to the Adjutant General’s Department, Office of the State Fire Marshal, and Kansas Forest Service. Their responses are included as this appendix.

In their response letters, the Adjutant General’s Department and Office of the State Fire Marshal disagreed with some of our findings, including the extent to which Kansas’ wildfire suppression system is fragmented compared to other states. They also questioned our use of a 2017 University of Nebraska study and our conclusion that the Office of the State Fire Marshal is the state’s designated lead agency for wildfire suppression efforts. We carefully reviewed the information provided by these agencies and made some minor wording changes, as described below. We did not make substantial changes to our findings, conclusions, or recommendations.

- **The Adjutant General’s Department disagreed with the way we described the differences between the wildfire suppression systems in Kansas and other Great Plains states.** Referring to Kansas’ use of an all-hazards approach to emergency management and designation of a single state entity as the state’s primary firefighting emergency support agency, the Adjutant General’s Department stated, “Kansas does not differ from the other identified states used for comparison in the draft report.” It also said, “This approach does not lend to a ‘fragmented’ structure as stated by the report. Conversely, this structure reflects national frameworks and best practices.”

As noted in the report, Kansas’ use of an all-hazards approach to emergency management and designation of a state entity as the primary agency for the state’s firefighting emergency support function do align with national frameworks, best practices, and other states’ practices. However, Kansas’ placement of the Office of the State Fire Marshal in this role does not. Instead, each of our comparison states placed its state forest service or a specialized wildland firefighting division in this position. Thus, those states have consolidated wildfire-specific expertise, firefighting resources, and an official designation as the state’s primary firefighting emergency support agency within a single state entity.

- **The Adjutant General’s Department told us they believe their exclusive access to the state emergency fund does not delay deployment of out-of-state resources available only through the Kansas Forest Service.** This contrasts with the Kansas Forest Service’s contention that this funding structure does cause delays. We added language to the report to better reflect the Adjutant General’s Department’s position on this issue.
- **The Adjutant General’s Department clarified that only Kansas Forest Service officials disregarded local authority during the 2016 Anderson Creek wildfire, not officials from all three state entities involved in wildfire management.** We confirmed this information and updated our report language to more accurately reflect this.
- **The Office of the State Fire Marshal expressed concern about our use of a 2017 University of Nebraska study outlining increases in the number and severity of wildfires in the Great Plains region.** In its response, the Fire Marshal noted, “Our office had shared the actual Kansas numbers with [the auditors] and I am surprised they were not used.” The Office of the State Fire Marshal did share data on the numbers of wildfires in Kansas and the total acres these fires burned. However, we decided to use the 2017 Nebraska study instead because we had concerns about the reliability of the wildfire data maintained by the Office of the State Fire Marshal, as noted in our report. In addition, the 2017 Nebraska study referenced by the Fire Marshal is from a peer-reviewed journal, which we thought provided credibility to its findings.

- **The Office of the State Fire Marshal told us the report's description of Kansas' wildfire suppression system contradicted itself.** The Fire Marshal agreed with our statement that the Kansas Response Plan creates a wildfire suppression system designed to support local authorities, who maintain jurisdictional authority throughout wildfire emergencies. However, he disagreed with our characterization of the Office of the State Fire Marshal as the primary agency for this system, stating that it contradicted the concept of local authority. The report notes that local officials retain jurisdictional authority during wildfire emergencies because of Kansas' "home rule" doctrine. However, the report also notes that the Kansas Response Plan creates a state-level wildfire suppression system with a specific state entity designated as the primary and coordinating agency for this system. As noted in the Kansas Response Plan and our report, this is the Office of the State Fire Marshal.



**DEPARTMENTS OF THE ARMY AND THE AIR FORCE**

LAND COMPONENT, JOINT FORCES HEADQUARTERS KANSAS  
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April 26, 2018

*Wildfire Management: Evaluating the Adequacy of Kansas' Wildfire Suppression System:*

Mr. Andy Brienzo, Senior Auditor  
Legislative Division of Post Audit  
800 SW Jackson Street, Suite 1200  
Topeka, KS 66612

Dear Mr. Brienzo:

Regarding the Kansas Legislative Post Audit Report *Wildfire Management: Evaluating the Adequacy of Kansas' Wildfire Suppression System*, the Adjutant General's Department, KDEM would like to clarify findings in the report.

The basic premise of disaster management requires that local governments have ultimate control of response operations, with support from their state and federal counterparts.

Pursuant to state law, all counties have established a comprehensive emergency management program, and have designated a county emergency manager. When prudent, counties will activate and request state assistance through their emergency operation centers. Counties will utilize available resources and access mutual aid before requesting state assistance. Any incident that results in large numbers of casualties and/or significant damage to property may result in a request for state assistance. County officials with emergency management responsibilities initiate actions based on the policies set forth in their respective County Emergency Operations Plans (CEOPs). The governor is ultimately responsible for the public safety and welfare of all Kansans. KDEM is the lead agency in *coordinating* emergency operations through all phases of emergency management.

Kansas has over 600 reporting fire departments, with the majority being volunteer departments. There are approximately 25 paid fire departments throughout the state with most located in the eastern one-third of the state. The capability of the various departments vary greatly as some have adequate equipment and personnel while others do not. All jurisdictions within the state participate in the Kansas Mutual Aid System. Although this mutual aid is critical to bringing additional capabilities to bear, providing aid to other communities can be extremely challenging when local jurisdictions are also under the threat of severe weather or wildland fire threat themselves. Additionally, training is difficult for volunteer departments to attend because of their full time employment.

Many local/county jurisdictions do not have a procedure for receiving requests for assistance from local fire chiefs nor do they understand the process for requesting mutual aid or state assistance.

**Local Authorities are Responsible for Suppressing Wildfires, but State and Federal agencies can play a Supporting Role**

Kansas has an all-hazard approach to disaster management and coordination. The Kansas Response Plan outlines the structure for wildland suppression and aligns with national best practices in which one entity coordinates state response to support local efforts. This entity is KDEM through which several agencies provide assistance in their respective disciplines and specialties. Kansas does not differ from the other identified states used for comparison in the draft report.

Based on State statutes, the Kansas Response Plan identifies KDEM as the lead agency in coordinating emergency operations to support local efforts. The Office of the State Fire Marshal (OSFM) is the designated coordinating agency for Emergency Support Function (ESF) #4 Firefighting. Designated as a supporting agency, the Kansas Forest Service (KFS) is to provide technical assistance and resource support to suppress wildland fires.

This approach does not lend to a “fragmented” structure as stated by the report. Conversely, this structure reflects national frameworks and best practices.

As the designated coordinator for ESF #4 Firefighting, the OSFM, along with KDEM coordinates meetings, plans, exercises, training, and other activities with the ESF #4 planning team and other key stakeholders.

Close coordination is maintained with the ESF #4 planning team to determine potential response and recovery support needs as well as the ability to provide support. The Kansas Forest Service along with the following, are support agencies:

- Kansas Department of Health and Environment (KDHE): Division of Environment
- Kansas Department of Transportation (KDOT)
- Kansas Fire Chiefs Association
- Kansas Department of Wildlife, Parks and Tourism (KDWPT)
- Kansas National Guard (KSNG)
- Kansas Division of Emergency Management (KDEM)
- Kansas Highway Patrol (KHP)

Direction and control of State activities are coordinated through the State Emergency Operation Center (SEOC), which serves as the source of all direction and control, including mission assignments, mutual aid, contracts for goods and services, recovery, and incident mitigation activities.

Upon assignment of an ESF #4 Firefighting mission, the ESF primary agency will coordinate with the ESF supporting agencies and route mission assignments to the most appropriate agency. Each agency assigned to ESF #4 will assist in staffing the SEOC as required.

### Comparison to National Best Practices and Systems

Kansas ranks 49th out of 50 states in the percent of public land owed. US Fish and Wildlife or the United States Forest Service under the Department of Agriculture manages the majority of public lands. Oklahoma has 84 full time fire management persons in their State Forest Service; however, they have three times the amount of US Forest Service Land than Kansas.

To compare the resources available in Kansas, you have to look at all ESF capabilities. For instance, KDOT is tasked with providing heavy equipment including bull dozers as a part of their support agency role to ESF #4 and the KSNG is tasked with providing aerial firefighting assets. In addition, there are private agriculture aerial applicators who can be tasked by KDEM.

Oklahoma contains 10 distinct ecological regions, more per square mile than in any other state by a wide margin. Ecosystems range from arid plains to subtropical forests and mountains. North Dakota and South Dakota both receive greater precipitation than Kansas. Additionally, as referenced in this report, *“the 2016 Anderson Creek and 2017 Starbuck wildfires would have been too large to effectively suppress by the time they entered the state, even if Kansas’ system had aligned more closely with best practices and other states’ structures.”*

### US States Land Ownership by Percentage

Rank	State	% that is Public Land	% that is Private Land	Total US Forest Service Land
34	North Dakota	9. 1%	90. 9%	1,105. 77
35	South Dakota	8. 9%	91. 1%	2,012. 43
42	Oklahoma	4. 6%	95. 4%	397. 13
45	Texas	4. 2%	95. 8%	8,178. 60
48	Nebraska	2. 8%	97. 2%	352. 09
49	Kansas	1. 9%	98. 1%	108. 18

### Climate Data (Source: US Climate Data)

State	Average High Temp	Average Low Temp	Average Temp	Average annual precipitation	Average annual snowfall
Kansas	66° F	44. 1° F	55. 05° F	36. 49 inches	18 inches
Oklahoma	72. 2° F	50. 8° F	61. 5° F	36. 46 inches	8 inches
North Dakota	54. 8° F	30. 8° F	42. 8° F	17. 82 inches	50 inches
South Dakota	54. 3° F	31. 3° F	42. 8° F	22. 2 inches	38 inches
Texas	79. 8° F	59° F	69. 4° F	34. 25 inches	Less than 1 inch

### Wildfires by State

#### 2017 (Source: National Interagency Fire Center)

State	Number of Fires	Number of acres burned	Total land area	% burned
Texas	9,827	734,682	171,000,000	. 0042
Oklahoma	1,906	502,625	44,000,000	. 01
South Dakota	1,420	77,386	49,000,000	. 0015
North Dakota	1,086	19,841	44,000,000	. 00045
Kansas	71	476,306	52,000,000	. 01

**2016**

State	Number of Fires	Number of acres burned	Total land area	% burned
Texas	9,300	356,680	171,000,000	. 00208
Oklahoma	1,938	767,780	44,000,000	. 02
South Dakota	1,216	81,561	49,000,000	. 00166
North Dakota	563	4,657	44,000,000	. 000105
Kansas	75	349,829	52,000,000	. 01

**2015**

State	Number of Fires	Number of acres burned	Total land area	% burned
Texas	9,272	184,418	171,000,000	. 00107
Oklahoma	1,309	100,382	44,000,000	. 00228
South Dakota	1,032	72,985	49,000,000	. 00148
North Dakota	726	32,321	44,000,000	. 000734
Kansas	154	53,936	52,000,000	. 001037

**State General Funds (SGF)/Disaster Funds**

SGF allocated for all-hazards, response and recovery activities and operating expenses allocated to KDEM are:

- SGF 15: \$899,769
- SGF 16: \$866,198
- SGF 17: \$892,213

In cases where direct state assistance has been provided to a local jurisdiction or a major federal disaster declaration, special appropriation is made for each disaster following the disaster. These funds do not support KDEM's operating budget, neither are SGF pre-appropriated to KDEM annual budget for disaster response.

KDEM does not charge local jurisdictions costs for response activities when the following are met by the requesting jurisdiction:

- Capability does not exist within the affected county or region;
- County has exhausted all local resources within its jurisdictional boundaries;
- County has exhausted all mutual aid pursuant to state law;
- County has exhausted all contractor support;
- County has made a verbal or written disaster declaration.

Finding mutual aid resources to assist local jurisdictions during the past wildland fire seasons has been a challenge, primarily because local jurisdictions were also responding to multiple day, multiple wildland fires within their own jurisdictions and/or under the threat of severe weather. They were not able to release their own resources for fear of putting their own jurisdictions at risk.

The Adjutant General is designated as the Governor's Authorized Representative. The Adjutant General requests State Emergency funds through the normal budget process that is approved by the Kansas Legislature or requests action by the State Financial Council to

release state general fund monies from the state emergency fund if the legislature is not in session. When state agencies are mission assigned by KDEM and incur costs that cannot be absorbed within their departmental budgets, the Adjutant General's Department will submit them to the state legislature for approval. The KFS can submit unfunded mission assignment requests to KDEM for payment.

KDEM is the state agency statutorily charged with coordinating the state's response and recovery based on statutory authorities and the Kansas Response Plan. KDEM applies an all-hazards planning approach to the development of the Kansas Response Plan organized around ESF annexes for specific functions.

Breaking down resource spending between multiple agencies for a specific hazard is contrary to this concept and would create a blurring of responsibilities, questioning of the resource request process, and breakdown in resource coordination. KDEM has concerns with any state agency having deficit spending authority against the state emergency fund. A hazard-specific change such as this allows an opening for mistakes within the resource request process that could create a delay in a life safety or life sustainment protective resource due to confusion. Current processes outlined in the Kansas Response Plan (KRP) do not create delays in KFS resource allocation through the Great Plains Interstate Fire Compact as these requests can be and have been supported by the Adjutant General's Department maintained state fund when approved by the SEOC. Finally, not utilizing a single coordinating point for resource allocation is contrary to national best practices and the National Incident Management System.

KDEM has several options when resources cannot be deployed through statewide mutual aid, through an ESF partner, federal and interstate assistance, and/or through private contracts. These include:

- Emergency Management Assistance Compact (EMAC): is a mutual aid agreement and partnership among states and US Territories to deploy resources when state and local resources are overwhelmed and federal assistance is inadequate or unavailable. Requests for Emergency Assistance Compact (EMAC) assistance are legally binding, contractual arrangements that require soliciting states to be responsible for reimbursing all out-of-state costs. It also places liability for the actions and safety of out-of-state personal on the state requesting assistance.
- Immediate Response Authority: Department of Defense (DoD) assets may provide immediate assistance for life-safety and property protection. Historical examples for wildland fires include the US Army Reserves and Fort Riley Fire Department.
- Direct Federal Assistance: When the State and local government lack the capability to perform or to contract for emergency work under sections 402(4), 403 or 407 of the Robert T. Stafford Act, the governor may request that the work be accomplished by a federal agency. This includes assets from the US Forestry Service (USFS), Department of Defense (DOD), US Army Corps of Engineering (USACE), the Federal Emergency Management Agency (FEMA) and all other federal agencies who can provide resources necessary for responding and recovering to a wildland fire emergency.

**State and Local Officials Reported Education and Coordination Problems among Entities Involved in Wildfire Suppression**

KDEM has strong partnerships with county emergency managers, first responders, state agencies, federal agencies, and non-governmental organizations. Through training, exercises and coordination planning meetings, trust, and relationships are built. The SEOC, including KDEM and the OSFM, do not determine how to respond to a fire. They coordinate resource requests from the local jurisdiction and find the closest resource. As stated in the report, maintaining such an inventory for wildfire suppression is consistent with best practices which suggest states maintain detailed mutual aid resource inventories.

Neither KDEM nor the OSFM were in a command and control role at either of the wildland fires referenced in the report. Officials in Barber County expressed to KDEM that they felt that the Incident Management Team (IMT) that deployed through mutual aid to support the local Incident Commander (Barber County fire chief) left them out of policy discussions and command decisions on the scene.

The after action review pointed out that an individual employed by the KFS acted as the deputy Incident Commander for the IMT, and another individual from the KFS office acted as the Logistics Section Chief. This created confusion insomuch as local officials and others believed that the State was in control of the local response.

After action comments support that the IMT made decisions without including or discussing issues with local officials. Communication and coordination did not exist between the IMT and the Barber County Emergency Operations Center. The IMT was not under the purview of KDEM at the time of the Anderson Creek or Starbuck wildland fires. Through the after action process, the Adjutant General assumed oversight of training, qualifications, and deployment of the IMT. KDEM does not employ the practice of ignoring local officials and executes coordination to support local operations.

**Recommendations:**

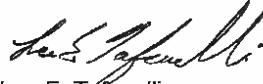
The Adjutant General's Department, KDEM, makes the following recommendations:

1. Review the organizational structures of the OFSM and the KFS and identify opportunities to leverage training and funding while fostering coordination with other state agencies and local entities.
2. With respect to Recommendation #2 in the report, the Kansas Fire Incident reporting System provides a centralized collection of all incidents within the state. It does not assist with locating resources, capabilities, etc. to be used for firefighting.
3. Create a wildland firefighting capability within the KSNG using surplus military equipment. Together with the KDEM, OFSM and the KFS develop a process to identify jurisdictions with local firefighting capability gaps, training needs, public outreach, and mitigation strategies.



The point of contact for this letter is Ms. Angelyn Morgan, Deputy Director Kansas Division of Emergency Management, at 785-646-1403 or by email at [angelynn.t.morgan.nfg@mail.mil](mailto:angelynn.t.morgan.nfg@mail.mil).

Sincerely,



Lee E. Tafaelli  
Major General, Kansas National Guard  
The Adjutant General

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GOVERNOR JEFF COLYER, M.D.  
DOUG JORGENSEN, STATE FIRE MARSHAL

April 30, 2018

Mr. Justin Stowe, Legislative Post Auditor  
Legislative Division of Post Audit  
800 SW Jackson St, suite 1200  
Topeka, Ks 66612

**Formal response to the audit report**  
**"Kansas Wildfire Management: Evaluating the Adequacy of Kansas'**  
**Wildfire Suppression System**

I would first like to start by thanking the audit team for the time and resources they spent in researching and preparing this report. I do however, have some concerns with the information and terminology that is used in the report.

The first item that I need to question is the 2017 University of Nebraska study used on page D-3. This study used mostly satellite imaging for its statistics and that imaging includes all prescribed and controlled burns in the state and some additional types of fires. Over the years cited in the study, prescribed burns have increased and using the prescribed burns and other types of fires as part of the percentage increase of acres burned due to wildfires is very inaccurate. Kansas has far too many prescribed burns to successfully use satellite datasets to determine changes in wildfire numbers. Our office had shared the actual Kansas numbers with Audit and I am surprised they were not used.

The definitions and explanations used to describe the roll of The Office of the State Fire Marshal (OSFM), on page D-5 is accurate in that we are only a coordinating agency that assists The Kansas Department of Emergency Management in assisting to fill requests for assistance from local cities and counties for any type of natural disaster. On page D-8 the report again accurately states that "Kansas follows best practices in this area, as the Kansas Response Plan creates a wildfire suppression system designed to support local authorities during wildfires by coordinating the resources available through the state when only necessary." Then in other parts of the report KDEM and the OSFM are listed as the lead or primary agency responsible for all wildfire responses in the state. The report seems to contradict itself depending on what section you are reading. The lead or primary agency for wildfire response rest at the local level.

On page D-17 the report states- "However, the state agencies responsible for these systems do not require local fire districts to submit relevant data, making the systems incomplete" On the following page it then accurately states that the OSFM lacks the authority to force local fire districts to submit wildfire data. KDEM and the OSFM both lack the authority to have any fire district report to either data base making the first statement misleading and inaccurate.

The U.S. Forest Service and Texas A&M Forest Service study completed in 2017, I believe is flawed and should not have been used in the audit report without some type of clarification. In conversations our office had with the Kansas Forest Service they shared that the survey was done in one and one-half days and that only 4-5 fire chiefs and a couple of emergency mangers were polled. There are over 630 fire chiefs and 100 emergency managers in the state. To use a survey with such a narrow/targeted base when there is also KDEM, OSFM, the State Fire Chiefs Association, the Kansas State Fire Fighters Association, and the State Emergency Managers Association available for input and recommendations is less than accurate and not a true representation of the entire state's perception on wildfire response in Kansas.

My last concern or comment on the audit report is that it does not mention or take into consideration any of the changes or improvements that have been made to the state's wildfire responses for this current season. It does not mention the workshop sponsored by KDEM, OSFM, and the KSF which was held in December of 2017, and addressed and made improvements to some of the concerns this audit points out. It also does not mention the Kansas Fire Service working group under the CEPR which has met and has made recommendations to the wildfire responses in the state. The working group has initiated a new program of identifying and establishing fire response task forces around the state as an added resource for wildland fire response.

With hundreds of wildfires this year none have gotten out of control and all but a couple have been contained or extinguished in just a few hours. This year's responses show that there has been better education of the local fire departments on when and how to request additional resources. It also shows that the state and local communication and coordination have much improved with local agencies requesting resources sooner and KDEM pre-positioning resources based on the predicted weather conditions. There is always room for improvement and I am sure that all the agencies and groups involved will continue to work towards those improvements in the future.

Sincerely,



Doug Jorgensen  
State Fire Marshal

April 24, 2018

Mr. Justin Stowe  
Legislative Post Auditor  
Legislative Division of Post Audit  
800 SW Jackson, Suite 1200  
Topeka, KS 66612- 2212

Dear Auditor Stowe:

Kansas State University's -- Kansas Forest Service (KFS) is delighted to see the state Legislature's focus on what is arguably the State's most rapidly growing hazard -- Wildfires. Pursuant to this interest, I, on behalf of the Kansas Forest Service staff, am writing to express gratitude to the Legislative Post Audit (LPA) investigators for their thorough Wildfire Suppression System report. Throughout our engagement with the audit process we found their questions to be insightful, probing, at times uncomfortable, and always professional and courteous. Further, we believe the states and state programs used for wildfire suppression system comparisons (similar political, climatic, environmental and economic situations, and two state forestry agencies administratively attached to a land grant university) lends credibility to the LPA findings. That might not have been possible if using vastly different states such as California or Florida, despite their well-developed wildfire suppression systems.

As an agency, we have been on a two-year quest to identify how we can apply lessons learned from the 2016 fire season (Anderson Creek), and the multiple major fires of the 2017 season to better serve Kansas' fire departments and the public. This has included internal reviews and, as referenced in the Audit report, a study by national fire experts. The findings of the LPA investigators present nothing that conflicts with other findings, and in many cases directly parallels our internal findings, and those of the outside consultants we engaged. Even prior to the 2016 season, we recognized the likelihood such fires would eventually impact Kansas and used that recognition as the impetus for deploying staff to wildfires across the nation where they could gain suppression and incident management skills and experience and national credentials to better support such events at home.

During the current spring fire season, we have been able to implement, on a limited basis due to budget and staffing constraints, some of the recommendations contained in our reviews, the consultants' report, and the LPA report. Our interest has always been to develop the best possible wildfire suppression response system for Kansas. As the Audit report is read, studied, and acted upon, we remain committed to that objective, and stand ready and willing to work with any and all parties who share that goal.

Throughout the report the LPA Team repeatedly referenced "**Locals**" (i.e. local fire districts, local authorities, local entities, local jurisdictions, local wildfire response). Pursuant to identifying the roles, responsibilities, and activities of locals, KFS notes that they have worked hand in glove with locals on wildfire activities for 55 years. When KFS' program began only two counties had fire protection outside incorporated communities. Since that point in time we have provided organizational leadership for approximately 80% of the state's fire districts, provided wildfire training opportunities for approximately 80% of the state's ever-changing fire fighters (mostly volunteers), and provided partner Fire districts with about 575, constantly upgraded, motorized vehicles through the Department of Defense's Excess Military Equipment programs. Moreover, since 1978, KFS has transferred federal fiscal resources at the rate of nearly \$400,000 annually to KFS' organized fire districts through the U.S. Forest Service's Volunteer Fire Assistance program. These, one to one or better match funds, have provided personal protective

equipment, communications equipment, water pumps, hoses, reels, hand tools and sundry other articles to Fire Districts and Volunteers customarily regarded as Kansas' first wildfire responders.

On the mitigation front, KFS is a principle partner to the Kansas Prescribed Fire Council, Kansas' Prescribed Burn Associations, Kansas Grazing Lands Coalition and Kansas' Smoke Management Committee. Through these relationships we, over the last few years, have served as the statewide advocate for prescribed fire. Additionally, KFS has partnered with several local group and State agencies to conduct wildfire risk assessments and use those assessments to produce community wildfire protection plans (CWPP). Also, over the last 15 years, KFS has assisted groups write grant proposals, and subsequently implement and administer nearly \$500,000 in wildfire hazard reduction projects. Lastly, KFS' Fire Staff conducts or participates in numerous prescribed fire events each year.

While we understand and agree with the Audit Teams findings of too little wildfire training we note an audience of approximately 13,500 ever changing students scattered amongst about 480 rural fire districts in 105 counties to be the responsibility of one full time equivalent staff person. Translated, that means one of KFS' 4 Fire Staff spends nearly full time maintaining Fire District agreements and managing the state's federal grant resources, another nearly full time on excess military equipment requisition and issuance, another nearly full time on wildfire prevention and mitigation, and the fourth handles training.

An additional comment on a point within the report is the State's emergency fund. During high wildfire periods the State Forester should, at a minimum, have discretionary authority for a portion of the state's emergency fund. Having this right is simply an expanded fiduciary role as daily the State Forester manages public fiscal resources and thus knows and understand the gravity of due diligence, trust and honor. In summary, a "multi-layered permission process" is not an effective way to manage emergencies and could devalue Kansas' membership in the Great Plains Interstate Wildfire Compact.

Alternatively, a means to address potential conflict over access to, or control of the state emergency fund would be for the State to sufficiently fund the Kansas Forest Service's fire operations for purposes of actualizing the fire suppression services the Audit investigators notes KFS can provide but are not funded. If funded to provide such services, the need to access specific emergency funds would likely be rare and could certainly be coordinated with KDEM leadership.

LPA Recommendations	Agency Response
<p align="center"><b>Recommendation 1:</b></p>	<p align="center"><b>Responses 1a and 1b</b></p>
<p><b><i>Recommendations for Legislative Consideration</i></b></p> <ol style="list-style-type: none"> <li>1. "To address the problems relating to the Kansas wildfire suppression system's fragmented structure and insufficient resources (pp. D-8 through D-16), the Kansas Legislature should consider:               <ol style="list-style-type: none"> <li>a. Amending state law to designate a single state entity to lead the state's wildfire suppression system and ensure this state entity has sufficient firefighting equipment, certified firefighters and wildfire management personnel, and state funding to effectively and independently lead the state's wildfire suppression system. This might include:                   <ol style="list-style-type: none"> <li>i. educating local authorities on how the state's wildfire suppression system is supposed to work, the resources available through the state during wildfires, and when it is necessary to call for state assistance.</li> </ol> </li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>• (1a). KFS agrees with the totality of this recommendation. Moreover, we believe the LPA investigators have identified Kansas State University's – Kansas Forest Service as the agency having the necessary experience, training, and expertise to fulfill the lead role. Additionally, we believe the LPA investigators clearly identified KDEM and OSFM as having highly important and valuable roles and we fully support those roles. Cases in point are KDEM's resource tracking, FEMA coordination, and damage assessments, and OSFM's reporting and regulatory functions.</li> </ul>

<ul style="list-style-type: none"> <li>ii. coordinating and forming effective working relationships with local fire districts, county emergency managers, and other state agencies in advance of wildfires.</li> <li>iii. providing sufficient wildfire suppression and mitigation training to local fire districts and landowners.</li> <li>iv. prepositioning and deploying local, state, and out-of- state firefighting resources during wildfires.</li> <li>v. supporting both the state emergency operations center and local officials during wildfires.</li> <li>a. If it decides not to amend state law to designate a single state entity to lead the state's wildfire suppression system, the Kansas Legislature should consider requiring the three state entities currently involved in wildfire suppression to provide suggestions on how the existing system might be improved before the beginning of the 2019 legislative session."</li> </ul>	<ul style="list-style-type: none"> <li>• (1b). Should recommendation (1b) become a necessary step KFS respectfully request the process be a face to face facilitated process.</li> </ul>
Recommendation 2	Response 2
<p>1. "To address the problems relating to Kansas' insufficient wildfire management data (pp. D-17 and D-18), the Kansas Legislature should consider amending statute to require the Office of the State Fire Marshal to:</p> <ul style="list-style-type: none"> <li>a. Designate the Kansas Fire Incident Reporting System or another database as the state's official database for wildfire data.</li> <li>b. Strengthen reporting requirements for local fire districts and provide the Fire Marshal the authority to issue penalties for non-compliance."</li> </ul>	<ul style="list-style-type: none"> <li>• KFS fully endorses this recommendation as we, for years, have supported OSFM's efforts to enhance and improve reporting. Cases in point are making NFIRS reporting a condition for receiving federal pass through grant funds and receiving excess military equipment. The importance of these steps is manifested in many state and national ways including the U.S. Forest Service's use of wildfire incidences as a part of their allocation formula for distributing State Fire Assistance and Volunteer Fire Assistance funds. In that regard, while reporting is not yet at the level any of us want, OSFM's NFIRS program manager has substantially improved what is available.</li> </ul>

Sincerely,



Larry Biles  
State Forester

**APPENDIX B**  
**Glossary of Terms and Definitions**

This appendix defines the terms necessary for understanding Kansas' wildfire suppression system.

**Appendix B**  
**Glossary of Wildfire-Related Terms**

Term	Definition
All-hazards	A term used to describe all types of emergencies, such as wildfires, tornadoes, or municipal water shortages. The opposite of specialization in a certain type of emergency, such as focusing exclusively on wildfires.
Anderson Creek wildfire	A wildfire that burned 313,000 acres in Barber and Comanche counties in March 2016.
Comprehensive Resource Management and Certification System	An inventory of resources and personnel throughout Kansas available to respond to emergencies such as wildfires. This inventory is managed by the Kansas Division of Emergency Management within the Adjutant General's Department. Local and state agencies, as well as private and non-profit partners, can list their resources in the inventory.
County emergency manager	A county official responsible for emergency preparedness, response, and recovery within a county.
Emergency support function	As outlined in the Kansas Response Plan, these establish the structures and strategies for various types of support provided by the state during emergencies. For example, the firefighting emergency support function (ESF #4) designates the primary, coordinating, and support agencies for state response to a fire emergency and outlines their responsibilities.
Fire district	The county, township, or municipal agency responsible for responding to fires.
Fuel load	The supply of flammable material available to a fire. A high fuel load indicates the presence of a large amount of fuel. Wildfire fuels often consist of materials such as trees, brush, and grass.
Great Plains Interstate Fire Compact	An agreement among Colorado, Kansas, Nebraska, New Mexico, North Dakota, Saskatchewan, South Dakota, and Wyoming to make firefighting resources available to one another during emergencies.
Highlands wildfire	A wildfire that threatened Hutchinson, Kansas, in March 2017.
Home rule	Autonomy provided to cities and counties in Kansas by Article 12, Section 5 of the Kansas Constitution and K.S.A 19-101a.
Initial attack	The actions the first resources to arrive at a wildfire take to protect lives and property and prevent further spread of the fire.
Kansas Fire Incident Reporting System	An electronic fire reporting system managed by the Office of the State Fire Marshal. Local fire districts are required to submit data on every call they receive. This information is aggregated by the U.S. Fire Administration.
Kansas Response Plan	An all-hazards plan addressing the structures and strategies for various types of support provided by the state during emergencies, including transportation, communications, firefighting, search and rescue, and public safety.
Mutual aid	Voluntary assistance between fire districts consisting of providing firefighting equipment and personnel during emergencies. The requesting fire district generally pays to use these resources.
Starbuck wildfire	A wildfire that burned 509,000 acres in Meade, Clark, and Comanche counties in March 2017.
State emergency operations center	Kansas' all-hazards emergency management center, operated by the Kansas Division of Emergency Management within the Adjutant General's Department. Staff from multiple state agencies organized according to the Kansas Response Plan's emergency support functions staff the state emergency operations center during emergencies to coordinate the state's response.
Tiered response	Emergencies such as wildfires should be handled by the lowest-level capable jurisdiction.
Wildfire	An out-of-control fire in a principally rural area that burns plants such as trees, brush, and grass and can also destroy structures or cause human and animal deaths. Also called a wildland fire.
Wildfire management	A broad discipline focused on successfully managing wildfires, including reducing wildfire risk and responding to wildfires.
Wildfire mitigation	A discipline focused on reducing wildfire risk, including limiting the likelihood of wildfires and their potential for damage. Successful mitigation reduces wildfire intensity by reducing fuel loads, making suppression efforts safer and more effective.
Wildfire suppression	A discipline focused on putting out wildfires, including containing, controlling, and extinguishing them.



## APPENDIX C

### Cited References

This appendix lists the studies and best practices we reviewed to develop the findings and conclusions included in this report.

1. Communicator's Guide for Wildland Fire Management: Fire Education, Prevention, and Mitigation Practices. (2017, January). *National Interagency Fire Center*.
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