



October 2019

# WILDFIRE DISASTERS

## FEMA Could Take Additional Actions to Address Unique Response and Recovery Challenges

# GAO Highlights

Highlights of [GAO-20-5](#), a report to congressional requesters

## Why GAO Did This Study

In 2017 and 2018, deadly wildfires struck the state of California, tragically resulting in 159 deaths and over 32,000 structures destroyed. FEMA, as the lead federal agency for responding to and recovering from disasters, has obligated about \$2 billion in housing, debris removal, and other assistance following these disasters. According to recent environmental assessments, fire seasons are increasing in length, putting more people and infrastructure at risk.

GAO was asked to assess a range of response and recovery issues related to the 2017 disasters. Specifically, this report addresses (1) the assistance FEMA provided to jurisdictions in response to major disaster declarations stemming from wildfires from 2015 through 2018, (2) selected jurisdictions' perspectives on FEMA wildfire response and recovery efforts, and (3) the extent to which FEMA has identified and addressed key lessons learned. GAO obtained data on FEMA wildfire disaster assistance and statistics on fire damages and fatalities; reviewed key documentation, such as incident action plans and after action reports; and interviewed officials from FEMA headquarters and regional offices, states, and a nonprobability sample of affected local jurisdictions (e.g., counties).

## What GAO Recommends

GAO recommends that FEMA comprehensively assess operations to identify additional updates to policies and procedures that could enhance future wildfire response and recovery efforts. The Department of Homeland Security agreed with our recommendation.

View [GAO-20-5](#). For more information, contact Christopher Currie at (404) 679-1875 or [currie@gao.gov](mailto:currie@gao.gov).

October 2019

## WILDFIRE DISASTERS

### FEMA Could Take Additional Actions to Address Unique Response and Recovery Challenges

#### What GAO Found

For wildfire-related major disaster declarations from 2015 through 2018, the Federal Emergency Management Agency (FEMA)—consistent with its authorities and responsibilities—helped state and local officials obtain and coordinate federal resources to provide for the needs of wildfire survivors and execute recovery efforts. This support totalled over \$2.4 billion and included providing staff to assist at Emergency Operations Centers and establishing Disaster Recovery Centers to coordinate disaster assistance services for survivors. In addition, FEMA provided Public Assistance grant funds to local jurisdictions to help address community infrastructure needs, such as debris removal. FEMA also assigned federal agencies to perform various missions to help with response and recovery—for example, the U.S. Army Corps of Engineers was assigned with contracting for debris removal services in some instances.

Officials from jurisdictions that GAO spoke with described practices that aided in wildfire response and recovery, but also reported experiencing challenges. Specifically, officials in affected areas noted that collaboration between FEMA and California's Office of Emergency Services allowed for timely information sharing, and FEMA's assistance at Disaster Recovery Centers greatly assisted survivors in obtaining necessary services. Among the challenges cited were onerous documentation requirements for FEMA's Public Assistance grant program and locating temporary housing for survivors whose homes were completely destroyed. In addition, the unique challenge of removing wildfire debris led to confusion over soil excavation standards and led to overexcavation on some homeowners' lots, lengthening the rebuilding process.

FEMA has developed an after-action report identifying lessons learned from the October and December 2017 wildfires, but could benefit from a more comprehensive assessment of its operations to determine if additional actions are needed to ensure that policies and procedures are best suited to prepare for future wildfires. The combination of recent devastating wildfires and projections for increased wildfire activity suggest a potential change in FEMA's operating environment. According to *Standards for Internal Control in the Federal Government*, such changes should be analyzed and addressed to help ensure that agencies maintain their effectiveness.

Aerial Photo of Wildfire Damage, Santa Rosa, California, October 11, 2017



Source: Department of Defense. | GAO-20-5

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### Abbreviations

DHS	Department of Homeland Security
DR	Disaster Declaration Number
FEMA	Federal Emergency Management Agency
FMAG	Fire Management Assistance Grant
USACE	U.S. Army Corps of Engineers

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October 9, 2019

Congressional requesters

In 2017, deadly wildfires ravaged both Northern and Southern regions of California resulting in two separate major disaster declarations.<sup>1</sup> Additional California wildfires occurred in 2018, including the Camp Fire in Butte County, which claimed 85 lives, becoming the deadliest wildfire in California history. In total, the wildfires in California that ultimately led to major disaster declarations in 2017 and 2018 resulted in 159 deaths, nearly 1.5 million acres burned, and over 32,000 structures destroyed. To date, the Federal Emergency Management Agency (FEMA)—which is the lead federal agency for responding to and recovering from domestic disasters—has obligated about \$2 billion to assist in response to and recovery from these disasters.

According to recent assessments of wildfire management strategies and climate factors, fire seasons are increasing in length and the occurrence of large fires in the western United States and Alaska is increasing.<sup>2</sup> In addition, human development in and around wildland areas continues to increase, putting more people, structures, and infrastructure at risk of being affected by wildfires. Although historically wildfire disasters are generally a small proportion of the major disaster declarations FEMA

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<sup>1</sup>A major disaster is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which the President determines causes damage of sufficient severity and magnitude to warrant major disaster assistance to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating damage, loss, hardship, or suffering. See 42 U.S.C. § 5122(2).

<sup>2</sup>See Booz Allen Hamilton, *2014 Quadrennial Fire Review Final Report* (Washington, D.C.: May 2015). The Quadrennial Fire Review is a strategic assessment process conducted by the fire management agencies every four years to evaluate current wildland fire management strategies and capabilities against estimates of the future fire environment. The first such review occurred in 2005 and the second in 2009. See also U.S. Global Change Research Program, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA. doi:10.7930/NCA4.2018. The U.S. Global Change Research Program is a federal program mandated by the Global Change Research Act of 1990 that coordinates federal research and investments in understanding the forces shaping the global environment, both human and natural, and their impacts on society. Pub. L. No. 101-606, § 103, 104 Stat. 3096, 3098 (1990).

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supports, assessments from the United States Global Change Research Program and others suggest that demand for FEMA resources to help communities recover from wildfire disasters may increase.

You asked us to review a broad range of issues related to disaster response and recovery following the 2017 disaster season. Because of the devastation caused by wildfires in 2017 and 2018 and the potential for increased wildfire activity in the future, this report addresses:

1. Assistance that FEMA provided to jurisdictions with major disaster declarations from wildfires from 2015 through 2018;
2. Selected jurisdictions' perspectives on FEMA wildfire response and recovery efforts; and
3. The extent to which FEMA has identified and addressed key lessons learned.

To determine the assistance FEMA provided during the major wildfire disasters<sup>3</sup> in our review, we gathered data from 2015 through 2018 from various FEMA databases, including FEMA systems for financial accounting, grants tracking, and gathering of other disaster-related information.<sup>4</sup> These data included the dollar amount of Public Assistance provided to state and local applicants, Individual Assistance provided to survivors, and monies reimbursed to other federal agencies to which FEMA assigned various tasks.<sup>5</sup> We also gathered data through the California Department of Forestry and Fire Protection on acreage burned, structures destroyed, and lives lost and verified these data with officials from this state department. By leveraging information such as data gathered and interviews conducted during other assessments of data reliability from previous GAO reviews, and confirming data with relevant officials from the California state department, we determined that these

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<sup>3</sup>Federal land management agencies generally refer to non-structure fires, other than prescribed fires, that occur in wildland areas as wildland fires. For the purposes of this report, we use the term 'wildfires' to refer to such events, as this is the term that FEMA uses to describe such major disasters.

<sup>4</sup>In addition, we also gathered data on the financial assistance provided by FEMA for all major disaster declarations resulting from wildfires during fiscal years 2009 through 2018. These data are presented in the background section of this report.

<sup>5</sup>Public Assistance includes funds provided to state and local jurisdictions for emergency protective measures and restoration of damaged facilities, among other things. Individual Assistance includes funds provided directly to disaster survivors for housing, medical, or other expenses. See appendix I for more information.

data were reliable for the purposes of our reporting objectives. The six disaster declarations in this review represent the universe of major disaster declarations for wildfires for which FEMA provided both Public Assistance and Individual Assistance from 2015 through 2018. We identified them by reviewing data available on FEMA’s website. We selected this date range to reflect the very active 2017 and 2018 seasons and the years immediately prior, to be able to observe similarities and differences in these experiences. These disaster declarations are listed in table 1.

**Table 1: Wildfire Disasters Covered in the Scope of Our Review**

<b>Federal Emergency Management Agency Major Disaster Declaration (DR) Number</b>	<b>Event / Counties Affected</b>	<b>Incident Date</b>
DR-4240	Northern California Wildfires (Calaveras and Lake Counties)	September 2015
DR-4293	East Tennessee Wildfires (Sevier County)	November 2016
DR-4344	Northern and Southern California Wildfires (Butte, Lake, Mendocino, Napa, Nevada, Orange, Solano, Sonoma and Yuba Counties) <sup>a</sup>	October 2017
DR-4353	Southern California Wildfires, Flooding, Mudflows, and Debris Flows (Los Angeles, San Diego, Santa Barbara and Ventura Counties) <sup>b</sup>	December 2017
DR-4382	Northern California Wildfires and High Winds (Lake and Shasta Counties)	July 2018
DR-4407	Northern and Southern California Wildfires (Butte, Los Angeles and Ventura Counties)	November 2018

Source: Federal Emergency Management Agency. | GAO-20-5

<sup>a</sup>Solano County was approved for Public Assistance only.

<sup>b</sup>Los Angeles and San Diego Counties were approved for Individual Assistance only.

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In addition, we developed fire maps for the six major disasters in our review using open source data from the Homeland Infrastructure Foundation-Level Data website and the U.S. Census Bureau.<sup>6</sup> We also reviewed documents from FEMA, such as timelines of key events, situation reports, and action plans to gather additional descriptive information on efforts to assist local entities in recovering from these disasters.

To identify selected jurisdictions' perspectives on FEMA response and recovery efforts after these wildfires, we interviewed officials from the California Governor's Office of Emergency Services and a nongeneralizable sample of seven affected counties (six in California, one in Tennessee), selected to represent at least one county from every declared disaster in our scope, considering such factors as the extent and nature of the damage.<sup>7</sup> During these interviews, we discussed officials' perspectives on successes and challenges, and potential areas for improvement. We supplemented the information gathered during these interviews during site visits to Napa and Sonoma Counties to meet with county and city officials in-person and observe wildfire-damaged areas and efforts to rebuild neighborhoods damaged or destroyed by the fires. We also gathered additional state and federal perspectives on the August 2018 California wildfires during a site visit to the Joint Field Office in Sacramento, California, and the Shasta County Disaster Recovery Center in Redding, California. While the views of these officials cannot be generalized to represent all jurisdictions affected by wildfires, they provide valuable perspectives on the successful elements of the response and recovery process and particular challenges experienced by local officials.

To determine the extent to which FEMA has identified and addressed key lessons learned, we interviewed officials from FEMA's headquarters responsible for Public Assistance program delivery as well as FEMA's Regions IV and IX, which coordinate assistance in Tennessee and California, respectively. In addition, we reviewed documents such as prior GAO reports, FEMA program guidance, and after action reports. We then compared FEMA's efforts to identify and address lessons learned from

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<sup>6</sup>The Homeland Infrastructure Foundation-Level Data website, made available through DHS, provides National foundation-level geospatial data within the open public domain.

<sup>7</sup>We attempted to contact officials from the Tennessee Emergency Management Agency—Tennessee's lead state agency during emergencies—to discuss their perspectives on the 2016 wildfires in that state, but were unable to reach them for an interview.

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these wildfires with Standards for Internal Control in the Federal Government, which, among other things, provides standards for how management responds to changes in operating environments.<sup>8</sup>

We conducted this performance audit from April 2018 to October 2019 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 that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

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### FEMA's Role in Providing Assistance During and After Wildfires

#### Fire Management Assistance Grants

The activities and resources required to suppress wildfires generally belong to the states and federal agencies with land management missions, such as the U.S. Forest Service and four bureaus (Bureau of Land Management, Bureau of Indian Affairs, National Park Service, and U.S. Fish and Wildlife Service) within the U.S. Department of the Interior. FEMA can provide reimbursement to help support wildfire suppression (e.g., labor costs for overtime or seasonal personnel involved in fire suppression activities). When a wildfire burns on nonfederal lands and threatens to become a major disaster, a state governor or governor's representative may request federal assistance via a Fire Management Assistance Grant (FMAG) administered by FEMA.<sup>9</sup> While the fire is burning, a governor's office can submit a verbal request for an FMAG to the designated FEMA regional office, followed within 14 days by a formal written request.<sup>10</sup> The regional administrator then either approves or

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<sup>8</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

<sup>9</sup>Fire Management Assistance Grants are authorized in Section 420 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. 42 U.S.C. § 5187.

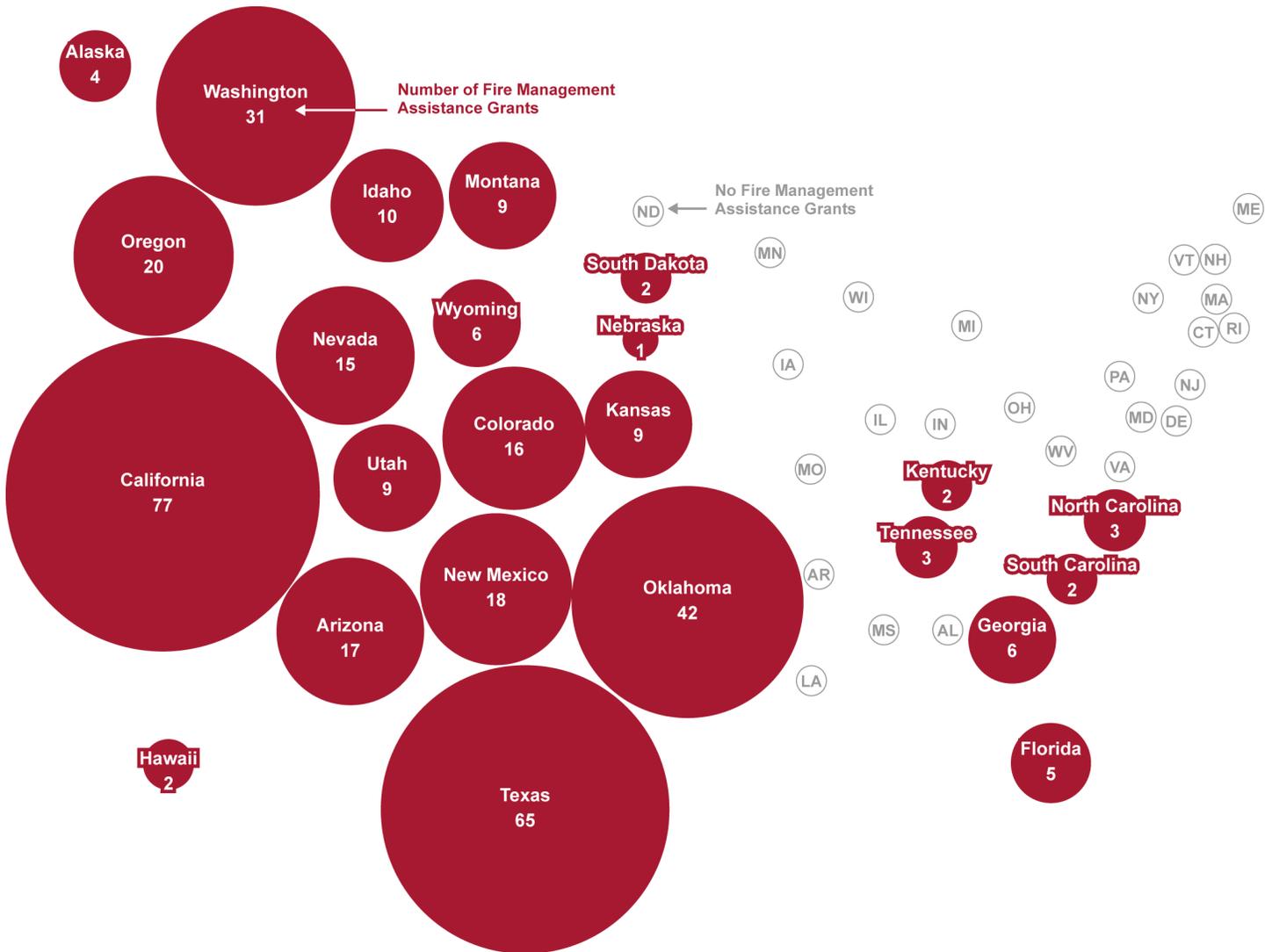
<sup>10</sup>FEMA is divided into ten geographic regions across the United States and its territories. Each region is led by a regional administrator.

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denies the request after consulting with relevant officials from the U.S. Forest Service or bureaus within the U.S. Department of the Interior about technical aspects of the fire. Eligible FMAG costs include, among other things, equipment and supplies, labor costs, travel and per diem, temporary repairs of damage caused by firefighting activities, mobilization and demobilization of resources, and limited costs of pre-positioning fire prevention or suppression resources.

From fiscal years 2009 through 2018, FEMA awarded 374 FMAGs totaling \$952,318,049. The average FMAG during this timeframe was about \$2.5 million. The state of California received the majority of those grant funds—over \$543 million. Figure 1 below illustrates the states that received FMAGs during this 10 year period, figure 2 provides annual FMAG totals, and figure 3 provides a breakout of the dollars distributed by state for this same 10 year period.

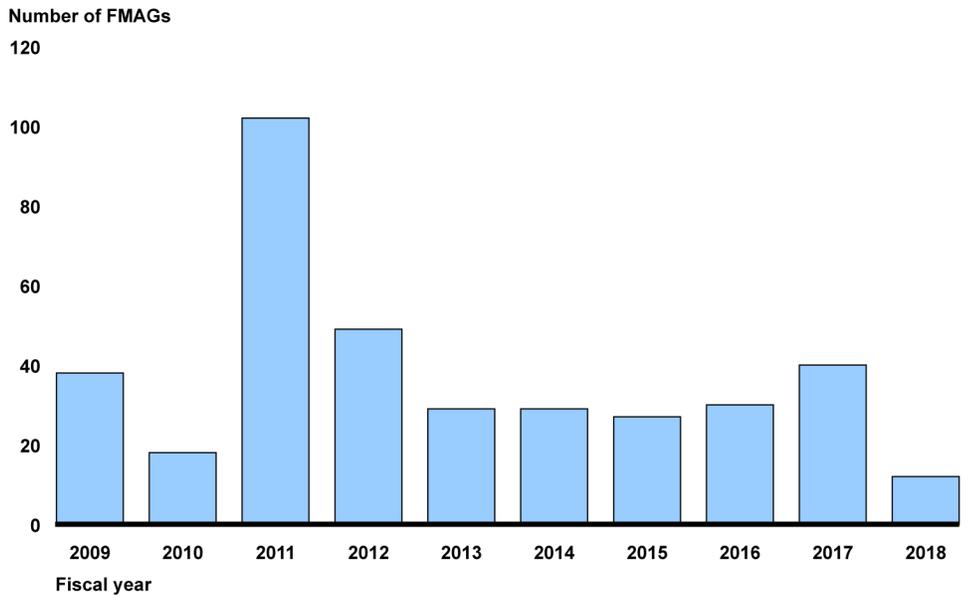
**Figure 1: Fire Management Assistance Grants Approved by State, Fiscal Years 2009 through 2018**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

Note: Data shown is current as of May 3, 2019.

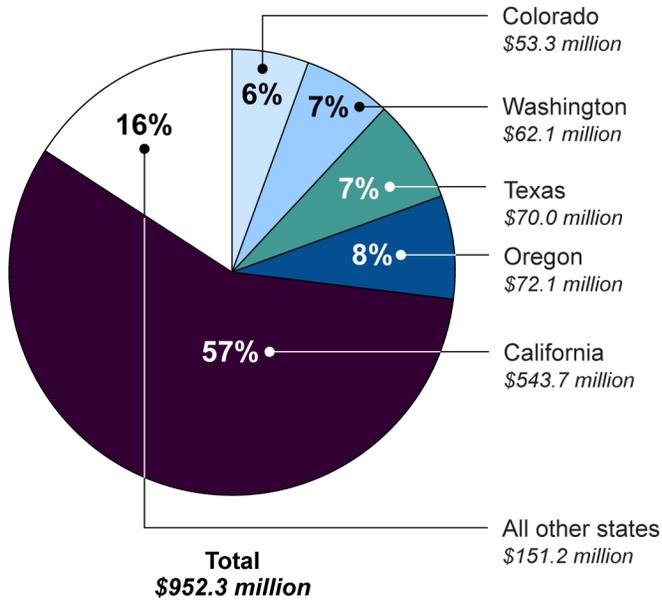
**Figure 2: Annual Fire Management Assistance Grant Totals, Fiscal Years 2009 through 2018**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

Note: Data shown is current as of May 3, 2019.

**Figure 3: Fire Management Assistance Grant Funds Awarded by State, Fiscal Years 2009 through 2018**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

Note: Data shown is current as of May 3, 2019. Percentages may not add up to 100 due to rounding.

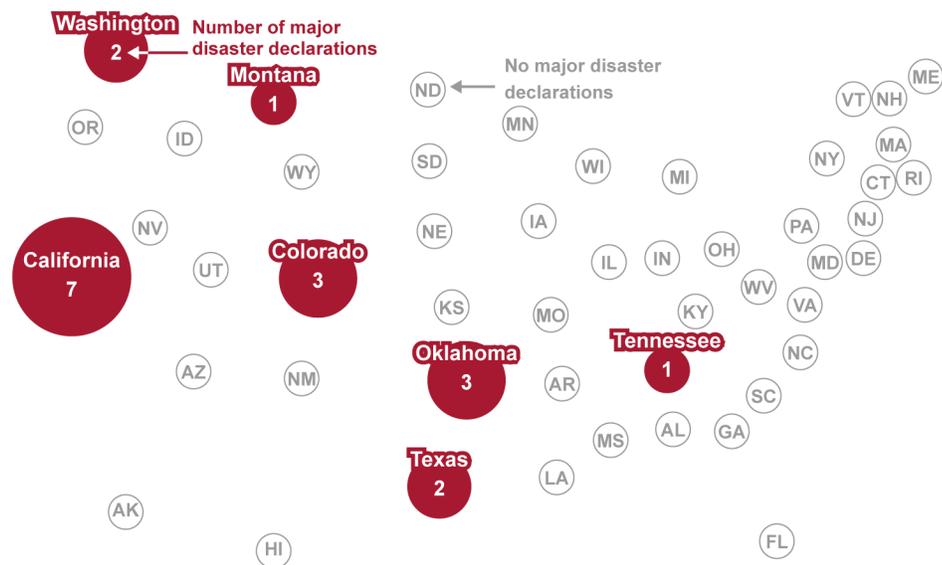
## Major Disaster Declarations

If a wildfire increases in size and intensity in a manner that overwhelms the ability of state, tribal, territorial or local governments to respond and recover effectively, a state or tribal government can request and the President can approve a major disaster declaration, as with other types of disasters (e.g., a hurricane or flood).<sup>11</sup> A disaster declaration is the primary mechanism by which the federal government gets involved in funding and coordinating response and recovery activities. Under the *National Response Framework*, the Department of Homeland Security (DHS) is the federal department with primary responsibility for coordinating disaster response, and within DHS, FEMA has lead

<sup>11</sup>42 U.S.C. § 5170.

responsibility.<sup>12</sup> From fiscal years 2009 through 2018, a total of 19 major disasters were declared as a result of wildfires. Figure 4 shows the number and locations of these major disaster declarations.

**Figure 4: Major Disaster Declarations Resulting from Wildfires by State, Fiscal Years 2009 through 2018**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

Note: This figure does not include the Northern and Southern California wildfire disaster of 2018, as this disaster was declared in November 2018, after fiscal year 2018 ended.

Once a major disaster is declared, FEMA can provide funds for response and recovery efforts through the Disaster Relief Fund<sup>13</sup> and coordinate other federal support through the *National Response Framework's* 14

<sup>12</sup>The *National Response Framework* is the part of the National Preparedness System established in Presidential Policy Directive 8 that is to be used to manage any type of disaster or emergency response, regardless of scale, scope, and complexity. Specifically, this framework covers actions to save lives, protect property and the environment, stabilize communities, and meet basic human needs following an incident. Response also includes the execution of emergency plans and actions to support short-term recovery. Department of Homeland Security, Federal Emergency Management Agency, *National Response Framework, Third Edition* (Washington, D.C.: June 2016).

<sup>13</sup>The Disaster Relief Fund is the primary source of federal disaster assistance for state and local governments when a disaster is declared.

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Emergency Support Functions.<sup>14</sup> Federal assistance following a major disaster declaration includes the following:

**Individual Assistance:** FEMA's Individual Assistance programs provide assistance directly to individuals and households, as well as state, local, tribal, and territorial governments to support individual survivors. This assistance covers necessary expenditures and serious needs that cannot be met through insurance or low-interest loans, such as temporary housing assistance, counseling, unemployment compensation, or medical expenses. See appendix I for a further description of FEMA's Individual Assistance program.

**Public Assistance:** FEMA's Public Assistance program provides supplemental federal disaster grant assistance to state, local, tribal, and territorial governments and certain types of private nonprofit organizations for debris removal, emergency protective measures, and the restoration of disaster-damaged, publicly-owned facilities and the facilities of certain private nonprofit organizations. The eligibility rules outline the types of damage that can be reimbursed by the federal government and steps that federal, state, and local governments must take in order to document eligibility. If the debris on private property is determined to be so widespread that it threatens the health, safety, or economic recovery of the community, FEMA may determine that debris removal from private property, including contaminated soil, is eligible for reimbursement under the Public Assistance program. An applicant (a state, territorial, or tribal government) may contract for debris removal. Alternatively, if an applicant lacks the capability to perform or contract for debris removal, the applicant may request that the federal government perform the work. In such cases, FEMA may task another federal agency, typically the U.S. Army Corps of Engineers (USACE), to perform or contract the work by issuing a mission assignment (see description below). See appendix I for a further description of FEMA's Public Assistance program.

**Mission Assignment to Other Agencies:** FEMA can fulfill disaster response needs through mission assignments—work orders it issues to

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<sup>14</sup>Emergency Support Functions are the federal government's primary coordinating structure for building, sustaining, and delivering response capabilities.

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another federal agency to provide a service or other response need.<sup>15</sup> For example, FEMA may request medical teams from the Department of Health and Human Services and logistical support from the Department of Defense.<sup>16</sup>

**Hazard Mitigation Grant Program:** This program is designed to improve disaster resilience—the ability to prepare and plan for, absorb, recover from, and more successfully adapt to disasters—during recovery. The program funds a wide range of projects, such as use of non-combustible materials on new and existing homes to mitigate risk from future wildfires, adding shutters to windows to prevent future damage from hurricane winds and rains, and rebuilding culverts in drainage ditches to prevent future flooding damage.

Table 2 below shows money obligated for Individual Assistance, Public Assistance, mitigation efforts, operations (including mission assignments), and administrative costs for the 19 major disaster declarations resulting from wildfires from fiscal years 2009 through 2018.

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<sup>15</sup>See 42 U.S.C. § 5170a(a)(1). The Stafford Act authorizes the President to direct any federal agency, with or without reimbursement, to utilize its authorities and the resources granted to it under federal law in support of state and local response efforts. This tasking authority, delegated to the FEMA Administrator, is carried out through a mission assignment.

<sup>16</sup>While the Department of Defense's primary mission is to defend the nation, the department is often asked to play a prominent role in supporting civil authorities and must be prepared to provide rapid response when called upon during disasters and declared emergencies (both natural and human-caused). The Department of Defense provides such support through its Defense Support of Civil Authorities mission.

**Table 2: Federal Emergency Management Agency Obligations for Major Disaster Declarations Resulting From Wildfires, Fiscal Years 2009 through 2018**

Dollars in thousands

Program or Activity	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total, 2009-2018
Public Assistance	30,994	2,502	19,194	42,428	66,751	16,297	36,212	235,672	26,945	478,798	955,793
Individual Assistance	5,352	254	7,270	13,844	2,999	226	3,073	21,830	9,091	76,934	140,872
Mitigation <sup>a</sup>	—	1,245	525	4,029	13,600	5,988	12,416	11,776	10,737	17,798	78,114
Operations <sup>b</sup>	—	—	—	206	—	19	-5	2,283	323	1,140,600	1,143,426
Administration <sup>c</sup>	6,524	1,344	5,549	23,940	6,964	5,353	8,162	29,770	9,401	74,867	171,874
<b>Totals</b>	<b>42,870</b>	<b>5,345</b>	<b>32,538</b>	<b>84,447</b>	<b>90,314</b>	<b>27,883</b>	<b>59,858</b>	<b>301,331</b>	<b>56,497</b>	<b>1,788,997</b>	<b>2,490,080</b>

Source: Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Mitigation includes obligations made under the Hazard Mitigation Grant Program stemming from these major disasters.

<sup>b</sup>Operations includes obligations for mission assignments to other federal agencies providing eligible emergency work or debris removal services, as well as urban search and rescue operations where applicable.

<sup>c</sup>Administration includes obligations for costs that support the delivery of disaster assistance, such as workforce salary and travel costs, rent and security expenses for field operation locations, and mission assignments to other federal agencies providing operational support, among other things.

## Other Federal Roles and Responsibilities for Wildfires

The U.S. Forest Service within the Department of Agriculture and the Bureau of Indian Affairs, Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service within the Department of the Interior, are responsible for managing wildfires on federal lands.<sup>17</sup> Wildfire management consists of three primary components:

1. **Preparedness** involves acquiring and positioning firefighting assets.
2. **Suppression** involves selecting among strategies to extinguish or contain a fire, with the aim of protecting firefighters and public safety and using the minimum resources necessary.
3. **Fuels Reduction** involves acting in advance of wildfires to manage vegetation with the aim of reducing the intensity, severity, or negative

<sup>17</sup>GAO has issued reports examining the roles of federal agencies in wildland fire management and federal-nonfederal collaboration in reducing the risk of wildland fires. See *Wildland Fire Management: Agencies Have Made Several Key Changes but Could Benefit from More Information about Effectiveness*, GAO-15-772 (Washington, D.C.: Sept. 16, 2015); *Wildland Fire Risk Reduction: Multiple Factors Affect Federal-Nonfederal Collaboration, but Action Could Be Taken to Better Measure Progress*, GAO-17-357 (Washington, D.C.: May 10, 2017).

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effects of a wildfire. We are currently reviewing federal fuel reduction efforts, and how those efforts consider community protection, and plan to issue a report on the subject later this year.

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## State Efforts and Assistance Available for Fighting Wildfires

State forestry agencies and other nonfederal entities—including tribal, county, city, and rural fire departments—have primary responsibility for managing wildfires on nonfederal lands, and share responsibility for protecting homes and other private structures. When a wildfire occurs on nonfederal lands and begins to exceed the state or local entity’s ability to effectively respond to the wildfire, the state or local entity may seek assistance from neighboring jurisdictions, typically through prescribed mutual aid agreements. For example, during wildfires in California in October and December of 2017, the California Governor’s Office of Emergency Services used the California fire and rescue and law enforcement mutual aid systems, along with the national Emergency Management Assistance Compact to mobilize and organize a large number of emergency services.<sup>18</sup> In total, according to California Governor’s Office of Emergency Services, over 400 state and local government and 200 out-of-state fire departments sent engines, crews, and other assets to assist the local firefighting efforts. When a state or local jurisdiction needs further firefighting assistance, it may request additional support through Geographic Area Coordination Centers overseen by the National Interagency Fire Center.<sup>19</sup> Once a Geographic Area Coordination Center has exhausted the resources it can provide, it can turn to the National Interagency Coordination Center within the National Interagency Fire Center for further assistance.

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<sup>18</sup>An Emergency Management Assistance Compact is an all-hazards, all-discipline mutual aid compact that allows states to send personnel, equipment, and commodities to assist with response and recovery efforts in other states.

<sup>19</sup>The National Interagency Fire Center is an interorganizational group overseen by representatives from the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, FEMA, and the National Association of State Foresters. The center serves as the focal point to coordinate national mobilization of fire suppression resources. It is divided into 10 Geographic Area Coordination Centers and headquartered in Boise, Idaho.

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## FEMA Provided Assistance to Help Wildfire-Affected State and Local Jurisdictions Consistent with Its Role in the National Response and Recovery Frameworks

For wildfire disaster declarations from 2015 to 2018, FEMA provided a variety of assistance to state and local emergency management officials consistent with roles and responsibilities in the *National Response Framework and National Disaster Recovery Framework*.<sup>20</sup> Specifically, FEMA helped these jurisdictions by reimbursing some fire suppression costs, supporting state-led efforts to coordinate the response and provide for the immediate needs of displaced survivors, and helping localities plan and execute recovery. FEMA has obligated over \$2.4 billion to assist in response to and recovery from these disasters to date.

As previously discussed, although states and other federal agencies have primary responsibility for fire suppression, some state and local fire suppression costs are eligible for reimbursement through FMAGs. Most wildfire-affected states and localities in our scope received this kind of fire suppression support from FEMA initially in the form of the FMAGs. As the fires ultimately led to major disaster declarations, any funding that FEMA would have provided through the FMAGs were ultimately provided under Public Assistance as part of the declaration.

To support state-led response and provide for the immediate needs of displaced survivors, FEMA deployed staff to assist in state Emergency Operations Centers and secured needed resources for mass care—such as cots to help with temporary sheltering, according to state officials.<sup>21</sup> In addition, FEMA assigned federal agencies to perform various missions to help with disaster response. For example, the Environmental Protection Agency provided hazardous material cleanup of damaged properties, and USACE provided public works services, such as contracting for debris removal.

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<sup>20</sup>The *National Response Framework* describes the roles and responsibilities and coordinating structures for delivering the core capabilities needed in response to a disaster. It includes capabilities for fire suppression, operational coordination, and mass care services, among others. The *National Disaster Recovery Framework* provides context for how the whole community works together to restore, redevelop, and revitalize health, social, economic, natural, and environmental fabric. It describes capabilities that are separate from but related to the capabilities in the National Response Framework, including health and social services, infrastructure systems, and housing, among others.

<sup>21</sup>Emergency Operations Centers are locations where staff from multiple agencies typically come together to address imminent threats and hazards and to provide coordinated support to incident command, on-scene personnel, and other Emergency Operations Centers. These centers may be fixed locations, temporary facilities, or virtual structures with staff participating remotely.

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As response activities continued and recovery began, FEMA and the state emergency management agencies established Joint Field Offices, which are temporary field offices established to coordinate federal and state efforts in disaster response and recovery, and provided resources to help individual disaster survivors with community services and housing needs. For example, following wildfires in November 2018—including the Camp Fire in Butte County—FEMA provided over \$55 million to survivors to reimburse them for the cost of temporary lodging and rentals after their homes were destroyed. In addition, FEMA provided funding and support to local jurisdictions to help address community infrastructure needs. For example, FEMA obligated money to pay for wildfire debris removal from public property as well as from private property, given the widespread effect on the community of toxic fire debris.<sup>22</sup>

Also to support recovery, in coordination with state and local entities, FEMA established and staffed Disaster Recovery Centers, which are facilities or mobile offices where survivors can go for information about FEMA programs or other disaster assistance programs. Representatives from the relevant state agencies, FEMA, U.S. Small Business Administration, volunteer agencies, and other agencies were at the centers to answer questions about and help survivors apply for disaster assistance and low-interest disaster loans for homeowners, renters, and businesses.

Finally, to assist local jurisdictions with longer-term recovery, FEMA provided assistance to some locally-led long-term recovery activities designed to address housing and other survivor needs in the community. Table 3 shows the amount of assistance FEMA provided for each of the six major disasters that we reviewed, and Appendix II provides a more detailed breakdown of each major disaster, including a map of each disaster, the number of structures that were destroyed, and mission assignment data.

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<sup>22</sup>The debris left by wildfires can be toxic, as it may contain structural ash, hazardous building materials such as asbestos, and high concentrations of heavy metals, including lead. Special precautions are required for removal of toxic wildfire debris.

**Table 3: Summary of Federal Assistance Obligated for Major Disasters Resulting from Wildfires, 2015 through 2018, as of March 31, 2019**

<b>Wildfires</b>	<b>Mission Assignments</b>	<b>Individual Assistance</b>	<b>Public Assistance</b>	<b>Dollar Totals</b>
Northern California, September 2015	4,803,051	30,417,072	236,314,405	<b>271,534,528</b>
East Tennessee, November 2016	331,459	3,617,470	3,835,218	<b>7,784,147</b>
Northern and Southern California, October 2017	1,039,949,927	63,686,111	344,428,160	<b>1,448,064,198</b>
Southern California, December 2017	111,231,776	9,717,190	152,424,826	<b>273,373,792</b>
Northern California, July 2018	588,000	12,906,928	74,613,904	<b>88,108,832</b>
Northern and Southern California, November 2018	138,098,016	178,969,864	\$8,389,555	<b>325,457,435</b>
<b>Total</b>	<b>1,295,002,229</b>	<b>299,314,635</b>	<b>820,006,068</b>	<b>2,414,322,932</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

## Multiple Jurisdictions Reported FEMA Practices that Aided in Wildfire Response and Recovery, But also Experienced Challenges

State and local officials we spoke with reported practices that aided in wildfire response and recovery and also experienced challenges that arose in multiple jurisdictions across different disasters.

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## Jurisdictions Noted Specific Actions that Aided Response and Recovery Efforts

**FEMA and State Collaboration** When asked what worked well, officials from three out of the six California counties told us that FEMA and the California Governor’s Office of Emergency Services collaborated effectively during response and recovery efforts.<sup>23</sup> For example, one of the three counties reported that when posing questions or concerns to the California Governor’s Office of Emergency Services, they were able to quickly obtain answers or further information and get help navigating complex issues. As we reported in 2018, according to officials in the California Governor’s Office of Emergency Services and FEMA, they have developed a strong relationship with each other over time, which helps both agencies deliver consistent, unified information to stakeholders and disaster survivors.<sup>24</sup>

**Services Provided to Disaster Survivors** Local officials also praised FEMA’s role in helping to set up and operate Disaster Recovery Centers. Officials in four of the six California counties that we interviewed noted that FEMA was quick to send staff to assist local jurisdiction staff and disaster survivors at the facilities established to provide assistance, such as Local Assistance Centers (generally activated by the county in the immediate wake of a disaster to provide government services to survivors) and Disaster Recovery Centers established by FEMA. For example, one of these counties noted that FEMA had staff available at their Local Assistance Center to support requests for Individual Assistance and other items shortly after the disaster was declared, and the county received positive feedback from the public about the varied types of support provided by experienced staff at their Local Assistance Center.

Officials in one of the counties mentioned above, as well as FEMA officials, cited as good practices efforts to bring together local and state providers of governmental services to provide a variety of assistance in one place. For example, FEMA credited one county for their efforts in

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<sup>23</sup>We interviewed officials from six counties in California and one in Tennessee.

<sup>24</sup>GAO, *2017 Hurricanes and Wildfires: Initial Observations on the Federal Response and Key Recovery Challenges*, [GAO-18-472](#) (Washington, D.C.: Sept. 4, 2018).

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partnering with a local mental health service provider to offer mental health counseling on site at a Disaster Recovery Center, as opposed to referring individuals to such services off site.

Similarly, one Disaster Recovery Center we visited in California included representation from a number of different state agencies, such as the state's contractors' licensing board, insurance regulators, department of employment opportunities, and franchise tax board. Officials explained that being able to access a variety of state services in a Disaster Recovery Center can be particularly helpful for fire survivors, as they may have evacuated their homes with very little notice and lost all their identifying documentation to the fire.

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## Jurisdictions Experienced a Number of Response and Recovery Challenges

State and county officials described challenges that were present in several of the wildfire disaster declarations that we reviewed. Some of these challenges—such as a complex Public Assistance application process or FEMA staff turnover—are not specific to wildfires and could also affect recovery efforts after a hurricane, flood, or other natural disaster. Some challenges were more specific to and further complicated by the nature of wildfire disasters. These challenges include the complexity and scale of fire debris removal, shortage of temporary housing for wildfire survivors, and lack of local experience dealing with the magnitude of the wildfires encountered in 2017 and 2018.

## Complexity and Timeframes for FEMA Public Assistance Applications

Officials in three of the seven counties we met with said that the onerous and confusing documentation required when applying for Public Assistance grants was a challenge. For example, an official from one county told us that the Public Assistance guidance in effect at the time his county was recovering from disaster contained conflicting information, though he believed this issue has since been resolved.

Officials in two counties also described difficulty meeting the deadlines for application submission, especially while managing the other demands of disaster response and recovery. We have previously reported on challenges with FEMA's administration of the Public Assistance program, including effectively overseeing and staffing the program, among other things.<sup>25</sup> Officials from FEMA's Public Assistance Division acknowledged

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<sup>25</sup>GAO, *Disaster Assistance: Opportunities to Enhance Implementation of the Redesigned Public Assistance Grant Program*, [GAO-18-30](#) (Washington, D.C.: Nov. 8, 2017).

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that the complexity of the program has been a challenge for local officials in recent years. The officials pointed to the development of a new Public Assistance delivery model as the key initiative to address these challenges. This new delivery model, which includes a new information portal designed to improve local officials' ability to upload and submit information, was intended to clarify program requirements, improve operations, and respond to previously-identified challenges, according to FEMA officials. FEMA introduced the new model in California during the recovery phase of the 2017 wildfires.

Officials from two of the selected counties stated that the new information portal eased the process of submitting documentation for FEMA review. In 2017, we reported on the historical challenges with FEMA's Public Assistance program and identified additional challenges with the roll-out of the new delivery model, including the need to determine its staffing needs for supporting rollout of the system and strengthen controls over the information system being used.<sup>26</sup> California officials we spoke with also noted that in order for the new delivery model to be used efficiently, it would be helpful for FEMA to provide additional training to stakeholders who use the system. According to FEMA officials, FEMA provided a number of training sessions on the new model to California stakeholders between August 2017 and April 2019.

#### Frequent Turnover of FEMA Staff

Officials in three of the seven selected counties told us that frequent rotations of FEMA staff during disaster response and recovery was disruptive. For example, after working with state and local officials following a disaster, the rotations of FEMA staff resulted in having to re-share information that was already provided to FEMA, as well as inconsistent advice or interpretation of FEMA guidelines. FEMA officials acknowledged that ensuring continuity following staff turnover has long been an issue in multiple complex disaster environments. They noted a number of reasons why a staff member in a position might turn over. For example, according to FEMA officials, the disasters in 2017, including Hurricanes Harvey, Irma, and Maria, as well as the California wildfires, required FEMA management to redeploy response personnel from one

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<sup>26</sup>GAO-18-30. We made five recommendations to FEMA. As of July 2019, FEMA has implemented one of them by establishing controls over its Public Assistance case tracking system (also known as FAC-Trax). The other four—that FEMA 1) complete a workforce staffing assessment, 2) establish testing criteria for its Public Assistance case tracking system, 3) standardize hazard mitigation planning at joint field offices, and 4) develop performance measures and objectives for its new delivery model—remain open.

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## Complexity and Scale of Wildfire Debris Removal

disaster to the next. We have reported on multiple FEMA workforce challenges in prior work and continue to observe workforce challenges in our ongoing work.<sup>27</sup> We are currently reviewing how FEMA deploys and trains staff to meet disaster mission needs and plan to report early in 2020.

Debris removal is an important first step in the disaster recovery process, allowing communities to expedite the recovery process by restoring accessibility to public services and space, while ensuring public health and safety in the aftermath of a disaster. Debris removal posed several challenges for state and local jurisdictions affected by the wildfires. Wildfires typically leave no remaining structure, and the resulting ash contains contaminants that must be carefully removed, wrapped, and disposed of before survivors can move back to their properties. This can make the wildfire debris removal process costlier and more complicated than for other types of disaster debris. California's Department of Resources, Recycling, and Recovery typically handles debris removal after local disasters in the state, but it did not have the capacity to handle the high volume of debris caused by the 2017 Northern California wildfires. As a result, the state asked FEMA to assign USACE with the debris removal mission.

According to local officials, there was some confusion over how much contaminated soil should be removed from some properties. Specifically, in some cases, USACE removed more soil than necessary at home sites in an attempt to "scrape" the soil deeply enough to remove all possible contaminants at the site; however, this did not take into account that some contaminants, such as arsenic, occur naturally in the soil. As a result, some property owners were left with large over-excavated pits on their property that needed to be filled in before rebuilding could occur. Figure 5 shows a property site that, according to local officials, had been excavated below the foundation of the home and thus needed to be refilled with soil, complicating the rebuilding effort. In addition, officials from one county stated that USACE staff rotations made it difficult for state and local officials to communicate debris removal options clearly

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<sup>27</sup>Although FEMA has taken action to address several of GAO's workforce-related recommendations since 2016, such as developing preliminary models of staffing needs across various programs including Public Assistance, a number of recommendations remain open. For a summary of prior and ongoing work related to FEMA workforce challenges, see GAO, *Emergency Management: FEMA Has Made Progress, but Challenges and Future Risks Highlight Imperative for Further Improvements*, [GAO-19-617T](#) (Washington, D.C.: June 11, 2019).

both internally and to the public, leading to confusion among some survivors about their best options for debris removal.

**Figure 5: Excavated Residential Property Site, Napa, California**



Source: GAO. | GAO-20-5

In 2018 and 2019, we reported on issues with contracting for wildfire debris removal. We found that USACE's debris removal contracts, while broad enough to cover any type of debris, had been used primarily to manage hurricane debris removal and did not address issues posed by wildfire debris removal.<sup>28</sup> We also found that miscommunication at the federal level resulted in differing expectations between USACE and state and local officials about debris removal work to be performed, such as the types of structures to be removed from private property and acceptable soil contamination levels. According to USACE officials, they relied on FEMA to manage communication with states and localities and to identify and manage expectations about the scope of work to be performed. We recommended, among other things, that FEMA take the lead to work together with USACE to revise the mission assignment policy and related guidance to better incorporate consideration of contracting needs and to

<sup>28</sup>GAO, *2017 Disaster Contracting: Action Needed to Better Ensure More Effective Use and Management of Advance Contracts*, [GAO-19-93](#) (Washington, D.C.: December 2, 2018), and *2017 Disaster Contracting: Actions Needed to Improve the Use of Post-Disaster Contracts to Support Response and Recovery*, [GAO-19-281](#) (Washington, D.C.: April 24, 2019).

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Shortage of Temporary  
Housing for Wildfire Survivors

ensure clarity of contracting-related coordination responsibilities. DHS concurred with this recommendation and reported that it will take steps—such as development of mission assignment project management tools and training for mission assignment work—to implement it.

According to DHS's 2017 National Preparedness Report, providing effective and affordable temporary housing for disaster survivors has been a longstanding and continuing challenge.<sup>29</sup> Wildfires pose an additional challenge because in contrast to disasters such as hurricanes or floods where there may be a substantial portion of a home left standing, and property may be habitable after the most dangerous debris is removed, wildfires generally destroy entire structures and leave a pile of contaminated debris and soil. This kind of damage requires a lengthier clean-up and necessarily precludes survivors from occupying the property until state and local officials declare the lot safe for habitation.

In the meantime, one of FEMA's responsibilities under the Mass Care, Emergency Assistance, Temporary Housing and Human Services Emergency Support Function is to help displaced disaster survivors with access to temporary housing. This has posed challenges for some of the counties we spoke with, most notably in select Northern California communities. In particular, officials in two California counties noted that vacancy rates are very low in these areas, and there were few places to house survivors who were either waiting to rebuild on their property or had been living in rental properties that were destroyed. In addition, in one California county there have been a limited number of potential sites available (such as commercial parks or group sites) to place transportable temporary housing units. According to FEMA, several factors limited the number of commercial or group sites available for such housing units, including limited space for the housing units, contaminated utilities, and challenges with local jurisdictions responsible for deciding whether and where to place group sites.

According to FEMA officials, the nature of fire debris affects the array of post-disaster housing options that FEMA can offer through its Individual Assistance program. For example, although FEMA can provide replacement assistance for destroyed homes and repair assistance for homes with damage that can be repaired, the complete destruction of

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<sup>29</sup>Department of Homeland Security, *National Preparedness Report* (Washington, D.C.: Aug. 28, 2017).

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homes due to fires significantly lengthens the recovery processes. Rental assistance and lodging reimbursement are limited by lack of access to rental properties, and the use of manufactured housing units is limited by lack of group sites that meet requirements, including adequate space for such units and access to utilities (e.g., potable water not contaminated by fire damage). See Appendix I for more information on this program.<sup>30</sup>

FEMA officials acknowledged that providing housing for survivors has long been a challenge for the agency. They also acknowledged that several of FEMA's housing tools are less relevant to wildfires versus other disasters (as discussed above). According to FEMA, the agency is currently reviewing various aspects of its housing mission to better identify ways to address some of these challenges.

#### Lack of Experience with Large-Scale Wildfires

Officials from two of the counties we spoke with said that their lack of experience in response to and recovery from wildfires of the magnitudes encountered was very challenging. Officials from one of those counties stated that they did not have the knowledge or skill-set needed at the local level to best identify response and recovery needs and relied heavily on FEMA and California's Governor's Office of Emergency Services for resources and training in these areas.

Officials from another county stated that neither they nor FEMA were accustomed to the level of destruction in a rural area, which created challenges identifying resources and processes to remove damaged trees from private property, storing the volume of downed trees, and maintaining the few roads available for hauling debris.

Officials from another county in California described being unprepared when they were tasked with collecting duplicate payments for private property debris removal after survivors received their insurance benefits. Residents who participated in the private property debris removal program who were paid out of FEMA's Public Assistance program, and subsequently also received an insurance benefit for debris removal, were required to repay the federal government for the duplicate benefit. According to these county officials, they were not aware that collection would be their responsibility until about 2 years after the initial debris removal took place. The officials noted that the administrative burden for

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<sup>30</sup>We previously reported on FEMA's housing challenges following the 2017 disaster season. See [GAO-18-472](#).

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identifying the affected homeowners and the amount owed and then collecting the payments was significant, and taxed their administrative capacity. They said they wished they had been aware sooner that they would have to absorb this duty, so they could put systems in place. According to FEMA and state officials, however, these requirements were included in FEMA's Public Assistance Program and Policy Guide, which states that local governments are responsible for implementing private property debris removal, including the requirement to collect and reimburse FEMA for any duplicate benefits. Nevertheless, the confusion described by the county government illustrates the difficulty jurisdictional officials with little previous wildfire experience can have navigating complex program rules while simultaneously confronting the disaster aftermath.

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## FEMA Has Identified Lessons Learned from 2017 Wildfires but Could Further Benefit from a Comprehensive Assessment of Its Operations, Policies, and Procedures

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### FEMA Has Prepared an After-Action Report for 2017 California Wildfires

In June 2019, FEMA Region IX—which provides disaster assistance in California—finalized the after-action report for the October and December 2017 wildfire disasters in Northern and Southern California.<sup>31</sup> FEMA's 2017 wildfire after-action report offered response and recovery lessons learned from both the challenges identified and successful practices.<sup>32</sup> Some, but not all, of these were mirrored in our interviews with California

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<sup>31</sup>FEMA Region IX Continuous Improvement Program, *2017 California Wildfires and Mudslides After Action Report* (June 11, 2019).

<sup>32</sup>After major disasters occur, FEMA's standard practice is to prepare an after-action report that identifies areas for improvement and potential best practices identified during response and recovery.

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jurisdictions that were affected by recent wildfires. Among its findings, the 2017 wildfire after-action report identified several areas for improvement. For example, FEMA's immediate activation of the Transitional Sheltering Assistance program and lack of a unified information system to track applicants' eligibility for all Individual Assistance programs at the time of the wildfires resulted, in some instances, in applicants receiving sheltering benefits inappropriately (i.e., receiving Transitional Sheltering Assistance benefits despite their residence being undamaged).<sup>33</sup> One potential action to address this challenge identified in the report was to add information on Transitional Sheltering Assistance program applicants into the database that FEMA uses to track disaster information to ensure those applicants have access to all benefits and reduce the potential for duplication. FEMA officials have stated that since the 2017 wildfires, policy changes have been made to address this issue, including adding Transitional Sheltering Assistance program applicant data to the information system used to track eligibility for all Individual Assistance programs.

In addition, FEMA reported that the typical contracts USACE had in place for debris removal were not designed to address the nature (i.e., fire-related debris) and scope of work required, particularly with respect to private property debris removal. The agencies worked together to rapidly scope the statements of work for the debris removal contracts to provide services to survivors, but FEMA ultimately found that the contract requirements lacked detail and clarity, resulting in additional costs. USACE prepared its own after-action report after the 2017 wildfires, which also identified challenges with the scope of its debris removal contracts and the mission assignment task orders, and planned to incorporate lessons learned in future debris removal contracts.

According to FEMA Region IX officials, many of the issues regarding debris removal stemmed from not having documented processes in place to govern wildfire debris removal specifically. In its after-action report, FEMA identified potential actions to address these challenges—such as developing standard operating procedures in coordination with USACE for fire debris removal—to correct these and other identified areas for improvement. According to USACE officials, FEMA subsequently

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<sup>33</sup>FEMA's Transitional Sheltering Assistance program provides temporary lodging assistance for survivors who are not able to return home for an extended or indeterminate period of time following a disaster. Under this program, disaster survivors may be eligible to stay in hotel or motel lodging for a limited period of time and have the cost of the room and taxes covered by FEMA.

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provided funds through a 2018 wildfire disaster declaration to USACE to develop such standard operating procedures. USACE officials told us they had shared these procedures with FEMA and stated that the procedures will help guide future wildfire private property debris removal operations.

The 2017 after-action report also identified a number of strengths and best practices during 2017 wildfire response and recovery efforts in California. For example, the report noted that collaboration and pre-existing relationships between federal and state personnel helped to overcome knowledge gaps about certain programs and improved survivor outcomes (such as the placement of temporary housing units based on work done by an interagency task force). In addition, Facebook provided FEMA with pre- and post-disaster survivor locations (provided voluntarily by the survivor) that helped identify where survivors were located after the wildfires. Using this information, FEMA then worked with the state and private sector in order to help plan for short- and long-term housing solutions.

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## FEMA Could Improve Its Preparation for Potential Effects of Heightened Wildfire Risks by Assessing Its Operations, Policies, and Procedures

*Standards for Internal Control in the Federal Government* state that management should identify, analyze, and respond to significant changes that could impact its internal control system, which would include actions established through policies and procedures.<sup>34</sup> Agency management, therefore, should analyze the effect of identified change on policies and procedures and revise such policies and procedures—and other elements of its internal control system—on a timely basis to maintain effectiveness.

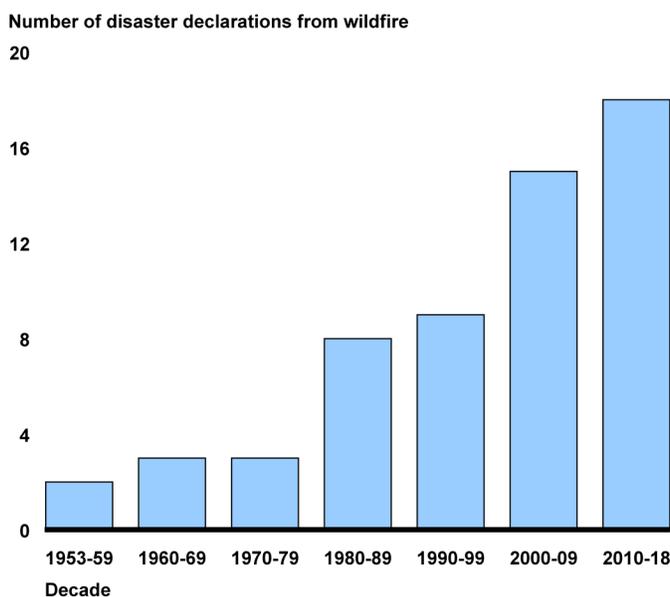
The combination of back-to-back devastating wildfire seasons in California, overall upward trends in wildfire disaster declarations, and several factors that point to increased likelihood of severe wildfire activity in the future suggest a change that may have significant impacts on FEMA's operating environment. As shown in figure 6, from 1953 to the present, the number of major disaster declarations from wildfires has increased in nearly every decade since 1950 and most dramatically in the last two decades. During Congressional testimony from March 2018, FEMA's Region IX Administrator stated that fire season has changed from covering spring through early fall to a now year-round event, and

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<sup>34</sup>[GAO-14-704G](#).

that the unprecedented impacts from the 2017 wildfire season would linger for years to come.

**Figure 6: Major Disaster Declarations from Wildfire, 1953-2018**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

Land use practices and climate trends increase the likelihood that severe and intense wildfires will affect people and communities. As we have described in previous reports, land use practices over the past century have reduced forest and rangeland ecosystems' resilience to fire. Land use practices like fire suppression and timber harvesting have contributed to abnormally dense accumulations of vegetation. These accumulations can fuel uncharacteristically large or severe wildfires. At the same time, development occurring in and around wildlands—an area often called the wildland-urban interface—has increased, placing more people, businesses, and infrastructure at risk. The wildland-urban interface contains 46 million single-family homes, representing about 40 percent of single-family homes in the United States. According to the *2014 Quadrennial Fire Review*, 60 percent of new homes built in the United States since 1990 were built in the wildland-urban interface. As the footprint of human activity and settlement into the wildland-urban interface expands, the risk of fire exposure to people and property is expected to increase further.

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In addition, changing climate conditions, including drier conditions in certain parts of the country, have increased the length and severity of wildfire seasons, according to many scientists and researchers. For example, in the western United States, the average number of days in the fire season increased from approximately 200 in 1980 to approximately 300 in 2013, according to the *2014 Quadrennial Fire Review*.<sup>35</sup> According to the U.S. Global Change Research Program's 2018 National Climate Assessment, warmer and drier conditions have led to a greater incidence of large forest fires (fires with an area greater than 386 square miles) in the western United States and Alaska, a trend expected to continue as climate warms and the fire season gets longer.<sup>36</sup>

Despite these trends and projections, FEMA does not plan to comprehensively assess operations to determine whether and how policies and procedures might need to change to better respond to changing operational conditions. According to FEMA officials, they had not considered conducting this kind of review, because they believe their existing mechanisms—specifically after-action reporting, the continuous improvement process, and program specific mechanisms such as the Public Assistance Change Control Tool—will allow them to incorporate relevant lessons into policies and procedures.<sup>37</sup>

According to FEMA officials, after a major disaster, FEMA's standard practice is to identify areas for improvement and develop lessons learned that can improve FEMA planning and policy and support national preparedness by preparing an after-action report which is required by FEMA policy. FEMA has a continuous improvement program which serves as the overarching process by which it identifies and responds to

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<sup>35</sup>Booz Allen Hamilton, *2014 Quadrennial Fire Review Final Report* (Washington, D.C.: May 2015).

<sup>36</sup>U.S. Global Change Research Program, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA. doi:10.7930/NCA4.2018.

<sup>37</sup>According to FEMA officials, in addition to its after-action reporting process, FEMA also maintains a Public Assistance Change Control Tool during recovery operations to identify suggested changes to Public Assistance policies, procedures, and systems and to enable FEMA to quickly implement corrective actions. FEMA staff and external stakeholders such as state officials can use the tool to submit suggestions for improving the Public Assistance program. FEMA officials said they have received over 170 submissions related to the 2017 and 2018 wildfires and have implemented over 50 of them (as of June 2019).

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operational lessons learned identified in after-action reporting.<sup>38</sup>

According to FEMA officials, FEMA headquarters reviews all completed after-action reports to identify any areas for improvement that may need to be addressed through changes in policies and procedures.

Although the continuous improvement process and its reliance on after-action reporting offers the opportunity to incorporate discrete lessons learned into select policies and procedures, there are some limitations in its ability to offer a comprehensive assessment of its internal controls in light of the strong potential that wildfire disasters will continue to increase. By its nature, after-action reporting captures select issues at a specific time and in a specific place, but it is not a dedicated effort to assess how various policies and procedures may need to be changed to better respond to changing operational conditions. For example, in our discussions with fire-affected jurisdictions, we noted that some programmatic or policy challenges were specific to or made more difficult by the nature of wildfires, such as the complexities of debris removal and difficult housing missions. A comprehensive review of internal controls, such as policies, procedures, and training, may shed light on aspects of FEMA's operations—well tested over the years in hurricane and flood situations—that could be adapted for greater responsiveness to the wildfire environment, helping to ensure attention to a broad range of issues in addition to those that might be noticed in a specific time and place through after-action reporting.

In light of the potential for high-impact wildfires to become more frequent, a dedicated effort to comprehensively assess operations could help FEMA better ensure that its management controls—such as policies, procedures, and training—are as well designed as possible to respond to the unique challenges.

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## Conclusions

Devastating wildfires have exacted a large human and financial toll in recent years, with 159 lives lost and \$2 billion obligated by FEMA in response during the major disasters of 2017 and 2018. FEMA has provided support personnel and resources to affected state and local jurisdictions to aid in wildfire response and recovery efforts. Given some reports of projected increase in risk from wildfires—as well as the

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<sup>38</sup>We are currently conducting a more targeted review of FEMA's continuous improvement process and will report on FEMA's timeframes for completion of after-action reports, among other things, in 2020.

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challenges we have noted in providing housing, conducting debris removal operations, and other areas—comprehensively assessing agency operations in response to and recovery from wildfires to determine if any actions or changes to agency policies and procedures are needed could provide guidance or insight for communities that may be affected in the future. Comprehensively identifying, analyzing, and responding to the significant operating changes posed by wildfires, as recommended in internal control standards, could provide FEMA with an opportunity to better ensure the nation is ready to address the unique challenges posed by increased large-scale wildfires.

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## Recommendation for Executive Action

We recommend that the FEMA Administrator comprehensively assess operations to identify any additional updates to its management controls—such as policies, procedures, or training—that could enhance future response and recovery from large-scale and severe wildfires. (Recommendation 1)

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## Agency Comments and Our Evaluation

In August 2019, we requested comments on a draft of this report from the Departments of Agriculture, Defense, Interior, and Homeland Security. The Departments of Agriculture and Defense had no formal or technical comments. In September 2019, FEMA and the Department of the Interior provided technical comments, which we have incorporated as appropriate. In addition, DHS provided an official letter for inclusion in the report, which can be seen in appendix III, stating that it concurred with our recommendation. DHS's letter describes a number of ongoing and planned actions that it plans to leverage in addressing our recommendation. These actions include, among other things, the use of sheltering and housing field teams to support states' efforts to house disaster survivors; continued updates to direct housing guidance; developing guidance for the use of FEMA-issued, state-administered direct housing grants authorized by the Disaster Recovery Reform Act of 2018;<sup>39</sup> and development of a project to analyze and improve capabilities and identify areas of innovation in response to wildfire disasters. DHS anticipates that these efforts will be put into effect by December 2020. We will continue to monitor DHS and FEMA's efforts in addressing our recommendation.

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<sup>39</sup>See 42 U.S.C. § 5174(f).

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We will send copies of the final report to the Secretaries of the departments mentioned above, the FEMA Administrator, and appropriate congressional committees. If you or your staff have any questions about this report, please contact me at (404) 679-1875 or [curriec@gao.gov](mailto:curriec@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Other key contributors to this report are listed in appendix IV.



Chris P. Currie  
Director  
Homeland Security and Justice

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*List of Requesters*

The Honorable Michael B. Enzi  
Chairman  
Committee on the Budget  
United States Senate

The Honorable Ron Johnson  
Chairman  
The Honorable Gary C. Peters  
Ranking Member  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Rand Paul, M.D.  
Chairman  
Subcommittee on Federal Spending Oversight and Emergency  
Management  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Marco Rubio  
Chairman  
Committee on Small Business and Entrepreneurship  
United States Senate

The Honorable Bennie G. Thompson  
Chairman  
Committee on Homeland Security  
House of Representatives

The Honorable Elijah E. Cummings  
Chairman  
The Honorable Jim Jordan  
Ranking Member  
Committee on Oversight and Reform  
House of Representatives

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*List of Requesters Continued*

The Honorable Peter DeFazio  
Chairman  
The Honorable Sam Graves  
Ranking Member  
Committee on Transportation and Infrastructure  
House of Representatives

The Honorable Maxine Waters  
Chairwoman  
Committee on Financial Services  
House of Representatives

The Honorable Nydia M. Velázquez  
Chairwoman  
Committee on Small Business  
House of Representatives

The Honorable Al Green  
Chairman  
Subcommittee on Oversight and Investigations  
Committee on Financial Services  
House of Representatives

The Honorable Emanuel Cleaver, II  
House of Representatives

The Honorable Michael T. McCaul  
House of Representatives

The Honorable Gary J. Palmer  
House of Representatives

The Honorable Ann Wagner  
House of Representatives

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# Appendix I: Federal Emergency Management Agency (FEMA) Individual Assistance and Public Assistance Programs

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## Individual Assistance

FEMA's Individual Assistance programs provide assistance directly to individuals and households, as well as state, local, tribal, and territorial governments to support individual survivors. This assistance covers necessary expenditures and serious needs that cannot be met through insurance or low-interest loans, such as temporary housing assistance, counseling, unemployment compensation, or medical expenses. FEMA provides this assistance through seven different programmatic areas, with a substantial amount of the assistance coming from the Individuals and Households Program.

### *Individuals and Households Program*

The Individuals and Households Program provides financial assistance and direct services to eligible individuals and households who have uninsured or underinsured necessary expenses and serious needs. Individuals and Households Program assistance is intended to meet basic needs and supplement recovery efforts and is not a substitute for insurance. The Individuals and Households Program consists of two forms of assistance: Housing Assistance and Other Needs Assistance.

- **Housing Assistance:** Housing assistance may be provided in the form of financial assistance, direct assistance, or a combination of the two. Financial assistance may include lodging expense reimbursement for time spent at hotels or other temporary lodging, rental assistance, and home repair or replacement assistance. Direct housing assistance may be provided when applicants are unable to use rental assistance due to a lack of available housing resources. This type of assistance may include the repair and lease of multi-family housing units—such as apartments—for temporary use by applicants, direct lease assistance, or the provision of transportable temporary housing units, such as recreation vehicles or manufactured housing units. Transportable temporary housing units can be placed on private sites, commercial sites or on group sites. Commercial sites are existing manufactured home sites with available pads that FEMA may lease. Group sites require additional approval when housing needs cannot be met by other direct temporary housing options. They may include publicly-owned land with adequate available utilities.
- **Other Needs Assistance:** This consists of financial assistance for other expenses and serious needs caused by the disaster. Some

Other Needs Assistance is only provided if an applicant does not qualify for a Small Business Administration disaster loan<sup>1</sup>; this assistance would include personal property, moving and storage, and transportation assistance. Other types of Other Needs Assistance can be provided regardless of SBA loan qualification, including funeral, medical, dental, and child care assistance, and other miscellaneous items.

#### *Mass Care and Emergency Assistance*

This program provides life-sustaining services to disaster survivors immediately before a potential incident, during the response phase, and during the beginning of post-disaster recovery. Services provided include sheltering, feeding, distribution of emergency supplies, support for individuals with disabilities and others with access and functional needs, reunification services for adults and children, support for household pets and service/assistance animals, and mass evacuee support.

#### *Disaster Case Management*

This program provides supplemental federal financial assistance to states, territories, tribal governments, or private nonprofit entities in order to provide the services of a case manager to a disaster survivor. Through this service, a case manager assists a survivor with developing a disaster recovery plan for meeting his or her unmet needs.

#### *Crisis Counseling Assistance and Training Program*

This program provides supplemental funding to eligible state, territorial, tribal, or local governments, and non-governmental organizations to assist disaster-impacted individuals and communities in recovering from the major disasters through the provision of community-based outreach and psycho-educational services.

#### *Disaster Legal Services*

This program provides legal aid to survivors who qualify as low-income through an agreement with the American Bar Association. The service is

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<sup>1</sup>The Small Business Administration provides low-interest, long-term loans to help applicants with personal property, transportation, and moving and storage expenses incurred due to a declared disaster.

limited to cases that would not normally incur legal fees, such as assistance with insurance claims or recovery or reproduction of legal documents lost in the disaster.

#### *Disaster Unemployment Assistance*

This program provides unemployment benefits and re-employment assistance services to survivors under the responsibility of the U.S. Department of Labor. This assistance is only available to survivors who are not eligible for regular state unemployment insurance.

#### *Voluntary Agency Coordination*

FEMA employs Voluntary Agency Liaisons who establish and maintain relationships with voluntary agencies active in response and recovery, coordinate with the National Voluntary Organizations Active in Disaster, provide guidance on donations, and act as subject matter experts in development of long term recovery groups with local community organizations, faith-based groups, and other voluntary organizations.

### **Public Assistance**

FEMA's Public Assistance program provides supplemental federal disaster grant assistance to state, local, tribal, and territorial governments, and certain types of private nonprofit organizations for debris removal, emergency protective measures, and the restoration of disaster-damaged, publicly-owned facilities and the facilities of certain private nonprofit organizations. The Public Assistance program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures. The program—which represents the largest share of federal aid from the Disaster Relief Fund—is administered through a partnership between FEMA and the state, tribal or territorial grantee, which provides funding to local or tribal entities who are the subrecipients of a Public Assistance grant award. The Public Assistance program funds both emergency work and permanent work.

#### *Public Assistance for Emergency Work*

FEMA provides funding for emergency work such as emergency protective measures and debris removal that must be conducted immediately to save lives, protect public health and safety, protect

improved property, or eliminate or lessen a threat of immediate additional damage. This assistance is divided into two categories, described below.

- **Debris Removal (Category A):** Debris removal activities, such as clearance, removal, and disposal, are eligible if the removal is in the public interest based on whether the work eliminates immediate threats to lives, public health, and safety or of significant damage to improved public or private property; ensures economic recovery of the affected community to the benefit of the community at large; or mitigates risk to life and property by removing substantially damaged structures and associated structures. In limited circumstances, based on the severity of the impact of an incident, FEMA may determine that debris removal from private property is eligible under the Public Assistance Program. If debris on private property is so widespread that it threatens public health and safety or the economic recovery of the community, FEMA may provide Public Assistance funding for debris removal from private property.
- **Emergency Protective Measures (Category B):** Emergency protective measures conducted before, during, and after an incident are eligible if the measures: eliminate or lessen immediate threats to lives, public health, or safety; or eliminate or lessen immediate threats of significant additional damage to improved public or private property in a cost-effective manner. Examples of such measures include transporting and pre-positioning equipment, flood fighting, supplies and commodities, evacuation and sheltering, child care, security, or searches to locate and recover human remains.

*Public Assistance for Permanent Work*

Permanent Work is work required to restore a facility to its pre-disaster design (size and capacity) and function in accordance with applicable codes and standards. This assistance is divided into the five categories listed below:

- **Roads and Bridges (Category C)**
- **Water Control Facilities (Category D)**
- **Buildings and Equipment (Category E)**
- **Utilities (Category F)**
- **Parks, Recreational, Other (Category G)**

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# Appendix II: Information on Major Disasters Resulting from Wildfires, 2015 through 2018

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Below are details on the six wildfire disasters selected for our review and the support the Federal Emergency Management Agency (FEMA) provided under the major disaster declarations.

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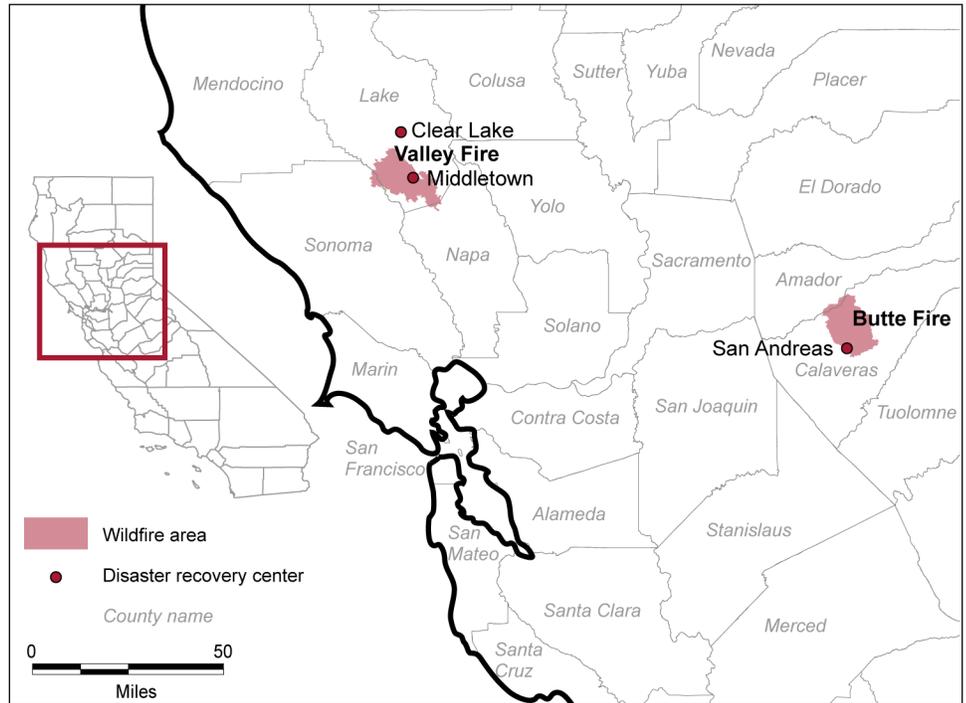
## Northern California Wildfires, September 2015

On September 9, 2015, the Butte Fire began burning across Calaveras County, and on September 12, 2015, the Valley Fire began burning across Lake County. FEMA subsequently approved a Fire Management Assistance Grant (FMAG) for the Butte Fire on September 10, 2015, and an FMAG for the Valley Fire on September 12, 2015.

On September 22, 2015, the President issued a major disaster declaration at the request of the state for Lake County, which was ultimately expanded to include Calaveras County. On September 28, 2015, FEMA—in collaboration with the state and counties—opened two Disaster Recovery Centers in Calaveras and Lake Counties, and on October 2, 2015, FEMA opened a third Disaster Recovery Center in Lake County.

In total, the Valley and Butte Fires burned 146,935 acres, destroyed 2,876 structures, and resulted in 6 deaths. See figure 7 for a map of the fire locations, and tables 4 and 5 for data on FEMA’s mission assignments, Individual Assistance, and Public Assistance support.

**Figure 7: Map of 2015 Northern California Wildfires**



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau. | GAO-20-5

**Table 4: Cost of Mission Assignments per Federal Agency for 2015 Northern California Wildfires, as of March 31, 2019**

Agency / Examples of Services	Dollar Amount of Mission Assignments
Environmental Protection Agency (Provided personnel and equipment for collection and removal of household hazardous waste)	2,731,596
U.S. Army Corps of Engineers (Support for temporary housing through assessment, design, and development of sites for mobile housing units)	1,311,976
Federal Protective Service (Physical security to support response and recovery operations)	630,718
Other Agencies	128,762
<b>Total</b>	<b>4,803,051</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 5: Individual and Public Assistance Dollars Obligated for 2015 Northern California Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	24,561,558
Other Individual Assistance <sup>b</sup>	5,855,514
<b>Total Individual Assistance</b>	<b>30,417,072</b>
<b>Public Assistance</b>	
Emergency Work	226,931,965
Permanent Work	9,382,440
<b>Total Public Assistance</b>	<b>236,314,405</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

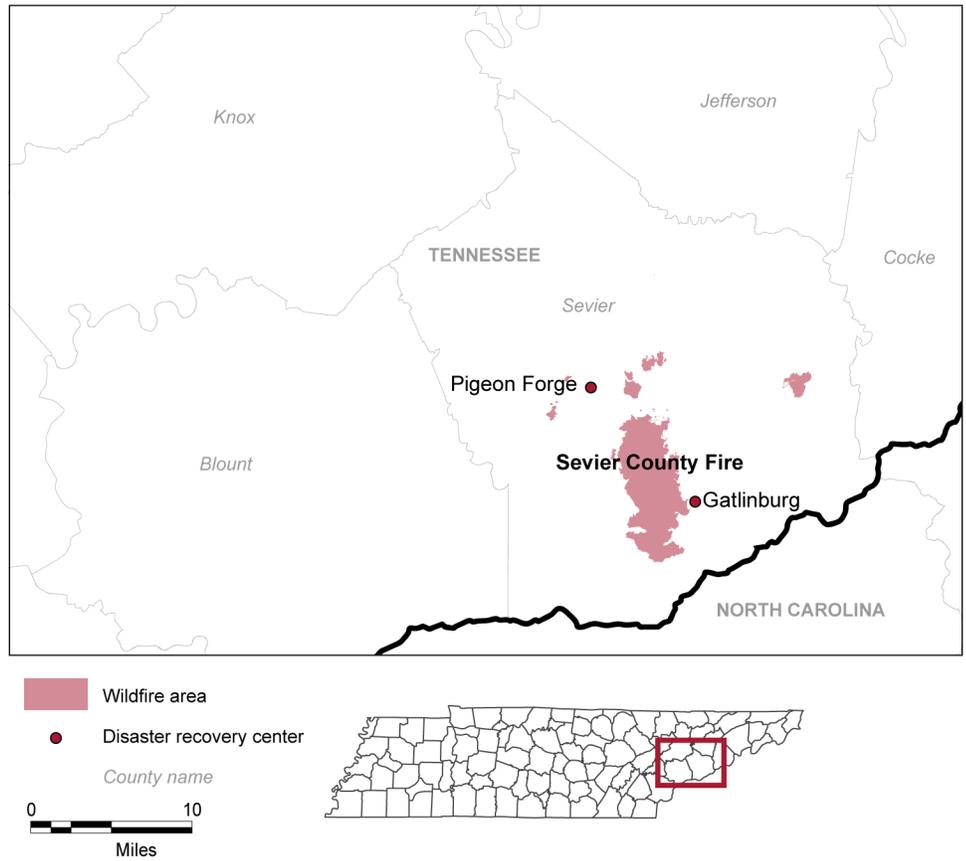
### East Tennessee Wildfires, November 2016

On November 28 2016, strong winds pushed a wildfire—named the Chimney Tops 2 fire—beyond the boundaries of the Great Smoky Mountains National Park and into the surrounding wildland urban interface. The fire primarily spread into Sevier County, Tennessee, which includes the cities of Gatlinburg and Pigeon Forge. That same day, FEMA approved an FMAG for Tennessee to support fire suppression activities.

On December 15, following a request by the governor of Tennessee on December 9, the President issued a major disaster declaration for Sevier County. On December 23 and December 28, FEMA—in collaboration with the state and counties—opened Disaster Recovery Centers in Gatlinburg and Pigeon Forge, respectively.

The Tennessee wildfires ultimately burned approximately 17,000 acres, destroyed 2,545 structures, and led to 14 fatalities. See figure 8 for a map of the fires' location, tables 6 and 7 for data on FEMA's mission assignments, Individual Assistance, and Public Assistance support.

**Figure 8: Map of 2016 East Tennessee Wildfires**



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau. | GAO-20-5

**Table 6: Cost of Mission Assignments by Federal Agency for the 2016 East Tennessee Wildfires, as of March 31, 2019**

Agency / Example of Mission	Dollar Amount
Corporation for National Community Service (Support for volunteer organizations in various activities, such as managing call centers and donated resources or meeting special population needs.)	254,018
U.S. Army Corps of Engineers (Debris clearance and removal from public properties, such as roads and bridges.)	64,366
U.S. Geological Survey (Provided assistance and expertise to state and local jurisdictions to aid in their missions.)	9,224
Other Agencies	3,850
<b>Total</b>	<b>331,459</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 7: Individual and Public Assistance Dollars Obligated for 2016 East Tennessee Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	1,660,169
Other Individual Assistance <sup>b</sup>	1,957,302
<b>Total Individual Assistance</b>	<b>3,617,470</b>
<b>Public Assistance</b>	
Emergency Work	3,835,218
Permanent Work	N/A
<b>Total Public Assistance</b>	<b>3,835,218</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

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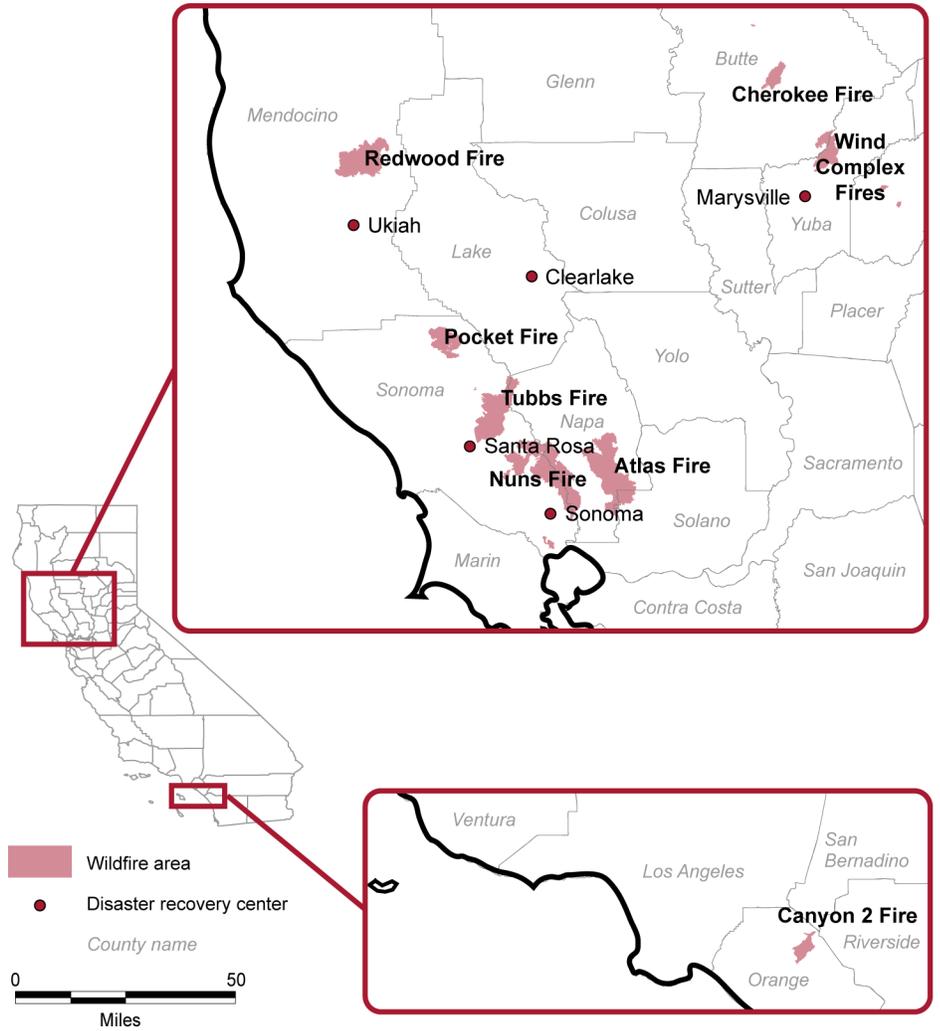
Northern and Southern  
California Wildfires,  
October 2017

On October 8, 2017, multiple fires began burning in northern California, spreading rapidly due to high winds and dry conditions. Among these fires was the Tubbs Fire in Sonoma and Napa Counties, which was, at the time, the most destructive fire in California's history. On October 9, 2017, FEMA approved FMAGs for ten separate fires.

On October 10, 2017, the President issued a major disaster declaration at the request of the state for seven counties—Butte, Lake, Mendocino, Napa, Nevada, Sonoma, and Yuba. On October 13, 2017, Solano County and Orange County (in southern California) were added to the declaration. In total, the fires included in this disaster declaration burned 240,138 acres, destroyed 8,924 structures, and resulted in 44 deaths.

From October 17 through November 28, FEMA—in in collaboration with the state and counties—established five Disaster Recovery Centers to assist disaster survivors. See figure 9 for a map of the fires' locations, and tables 8 and 9 for data on FEMA's mission assignments (including FEMA's assignment of debris removal responsibilities to the U.S. Army Corps of Engineers), Individual Assistance, and Public Assistance support. Figure 10 provides an aerial snapshot of the destruction in one area of the city of Santa Rosa in Sonoma County.

Figure 9: Map of 2017 Northern and Southern California Wildfires



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau. | GAO-20-5

**Figure 10: Aerial Photograph of Damage from Tubbs Fire, Santa Rosa, California, October 11, 2017**



Source: Department of Defense. | GAO-20-5

**Table 8: Cost of Mission Assignments by Federal Agency for 2017 Northern and Southern California Wildfires, as of March 31, 2019**

Agency / Example of Mission	Dollar Amount
U.S. Army Corps of Engineers (Debris clearance and removal from public properties, such as roads and bridges, and private properties; technical assistance in the form of dam or levee safety engineers; other services.)	955,702,040
Environmental Protection Agency (Cleanup and disposal of hazardous materials such as oil or household hazardous waste; monitoring of public health and safety; other services.)	81,045,000
U.S. Citizenship and Immigration Services (Personnel to support FEMA's response and recovery efforts.)	1,029,000
Other agencies	2,173,887
<b>Total</b>	<b>1,039,949,927</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 9: Individual and Public Assistance Dollars Obligated for 2017 Northern and Southern California Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	34,942,543
Other Individual Assistance <sup>b</sup>	28,743,568
<b>Total Individual Assistance</b>	<b>63,686,111</b>
<b>Public Assistance</b>	
Emergency Work	304,075,528
Permanent Work	40,352,632
<b>Total Public Assistance</b>	<b>344,428,160</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

**Southern California Wildfires, Flooding, Mudflows and Debris Flows, December 2017**

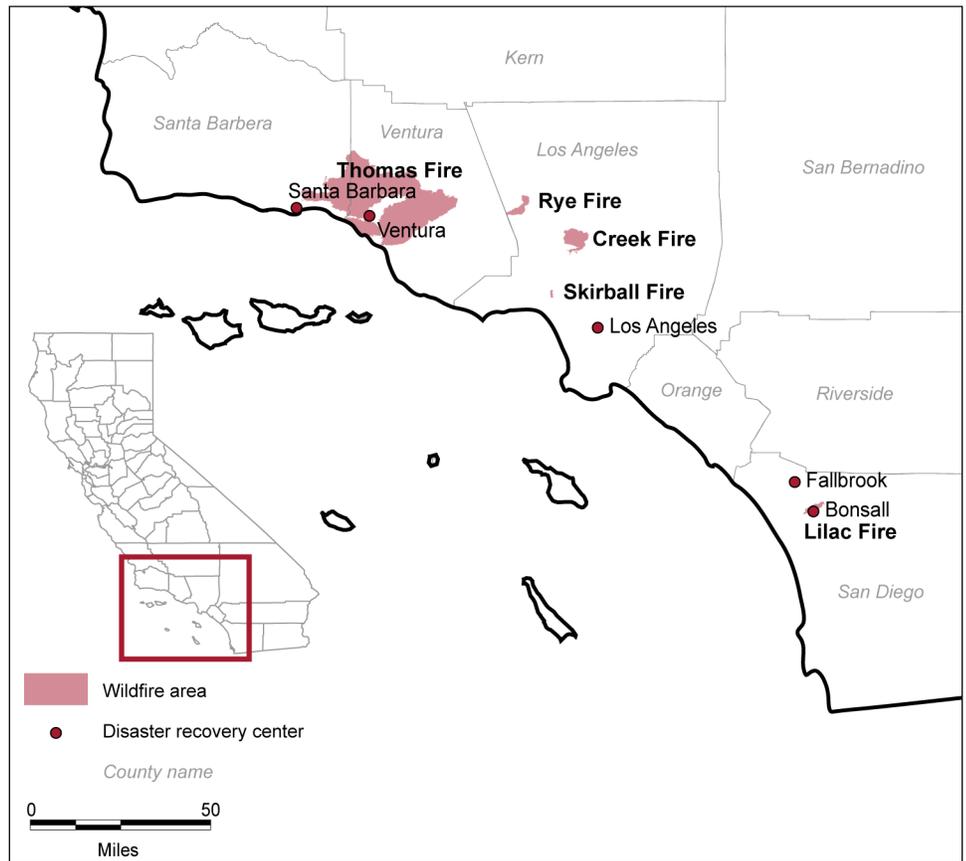
On December 4, 2017, the Thomas Fire started burning in Ventura County. Over the next three days, the Thomas Fire and other wildfires spread rapidly through Ventura and neighboring counties—due in part to the Santa Ana Winds—and FEMA approved a number of FMAGs for these wildfires.

On December 20, the governor of California requested a major disaster declaration for Los Angeles, San Diego, Santa Barbara, and Ventura Counties. The request was approved on January 2, 2018 for Santa Barbara and Ventura Counties for Public Assistance. In the week that followed, heavy rains exacerbated the damages caused by the fires, leading to mudflows and debris flows. On January 10, FEMA expanded the disaster declaration to include the flooding, mudflows, and debris flows related to the wildfires. Five days later, FEMA added Los Angeles and San Diego Counties to the disaster declaration, and granted all four counties eligibility for Individual Assistance, in addition to the Public Assistance eligibility previously approved.

From January 19 through February 5, 2018, FEMA—in collaboration with the state and counties—established five Disaster Recovery Centers to assist disaster survivors. The Southern California wildfires, debris flows,

and mudflows ultimately burned 308,083 acres, destroyed 1,378 structures, and caused 23 fatalities. See figure 11 for a map of the fires' locations, and tables 10 and 11 for data on FEMA's mission assignments, Individual Assistance, and Public Assistance support.

**Figure 11: Map of 2017 Southern California Wildfires**



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau; MapInfo (map). | GAO-20-5

**Table 10: Cost of Mission Assignments per Federal Agency for 2017 Southern California Wildfires, as of March 31, 2019**

Agency / Example of Mission	Dollar Amount
U.S. Army Corps of Engineers (Debris clearance and removal from public properties, such as roads and bridges.)	110,820,000
Federal Protective Service (Provided armed protective security officers to support response and recovery facilities.)	300,000
Environmental Protection Agency (Personnel in support of FEMA response operations.)	50,000
Other agencies	61,776
<b>Total</b>	<b>111,231,776</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 11: Individual and Public Assistance Dollars Obligated for 2017 Southern California Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	4,925,644
Other Individual Assistance <sup>b</sup>	4,791,546
<b>Total Individual Assistance</b>	<b>9,717,190</b>
<b>Public Assistance</b>	
Emergency Work	141,167,013
Permanent Work	11,257,813
<b>Total Public Assistance</b>	<b>152,424,826</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

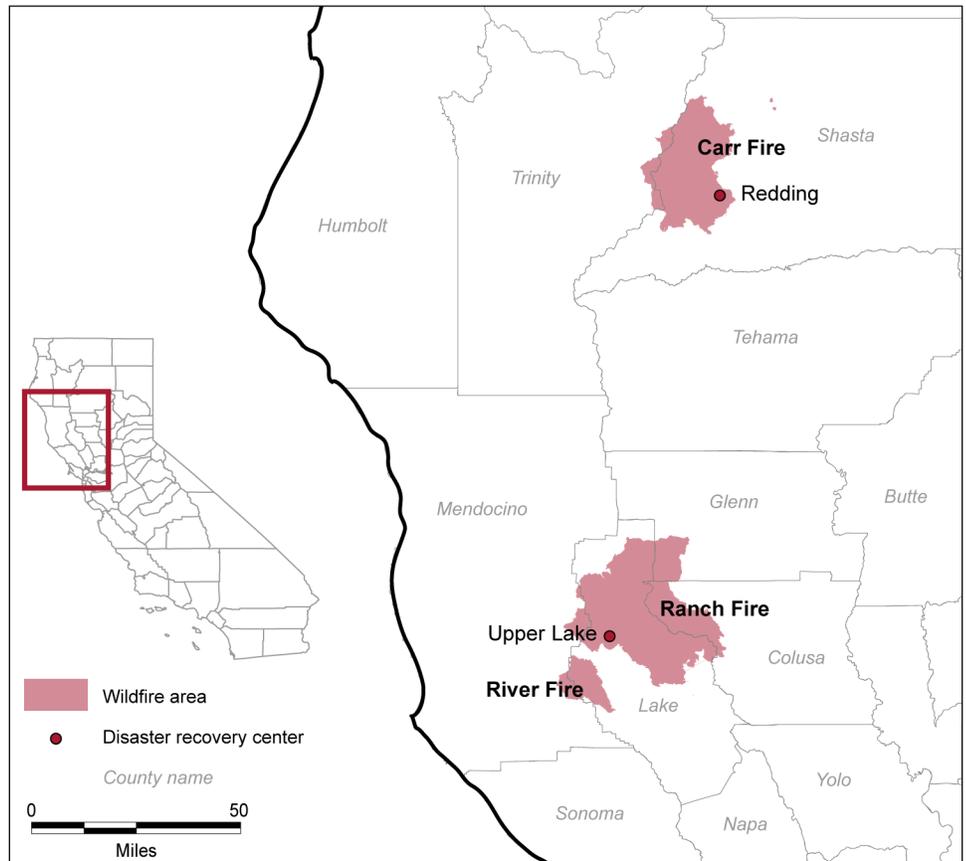
Northern California  
Wildfires and High Winds,  
July 2018

On July 23, 2018, the Carr Fire began burning in Shasta County. On July 27, 2018, the Mendocino Complex Fire, a combination of the River and Ranch Fires, began burning in Lake County. FEMA soon approved FMAGs for these fires. On August 4, 2018, the President issued a major disaster declaration for Shasta County, which was ultimately expanded to include Lake County. On August 9, 2018, FEMA—in collaboration with

the state and counties—established a Disaster Recovery Center in Shasta County, with a second Disaster Recovery Center established in Lake County on August 21, 2018.

One of the wildfires—the Mendocino Complex Fire—was the largest fire in California’s history, burning 459,123 acres. In total, the Carr and Mendocino Complex Fires burned 688,774 acres, destroyed 1,894 structures, and resulted in 4 deaths. See figure 12 for a map of the fires’ locations, and tables 12 and 13 for data on FEMA’s mission assignments, Individual Assistance, and Public Assistance support. Figure 13 shows the aftermath of the Carr Fire in one residential neighborhood.

**Figure 12: Map of 2018 Northern California Wildfires**



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau. | GAO-20-5

**Figure 13: Aftermath of the Carr Fire in Shasta County’s Residential Neighborhood, Lake Keswick Estates**



Source: GAO. | GAO-20-5

**Table 12: Cost of Mission Assignments per Federal Agency for 2018 Northern California Wildfires, as of March 31, 2019**

Agency / Example of Mission	Dollar Amount
Federal Protective Service (Provided armed protective security officers to support FEMA facilities.)	300,000
U.S. Army Corps of Engineers (Provided support personnel at state emergency operations center, which include support to national or regional coordination centers or other subject matter expertise.)	70,000
Environmental Protection Agency (Provided support personnel to regional coordination center, joint field office or other facilities to support disaster operations. )	48,000
Other agencies	170,000
<b>Total</b>	<b>588,000</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 13: Individual and Public Assistance Dollars Obligated for 2018 Northern California Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	6,166,958
Other Individual Assistance <sup>b</sup>	6,739,969
<b>Total Individual Assistance</b>	<b>12,906,928</b>
<b>Public Assistance</b>	
Emergency Work	74,552,183
Permanent Work	61,721
<b>Total Public Assistance</b>	<b>74,613,904</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

## Northern and Southern California Wildfires, November 2018

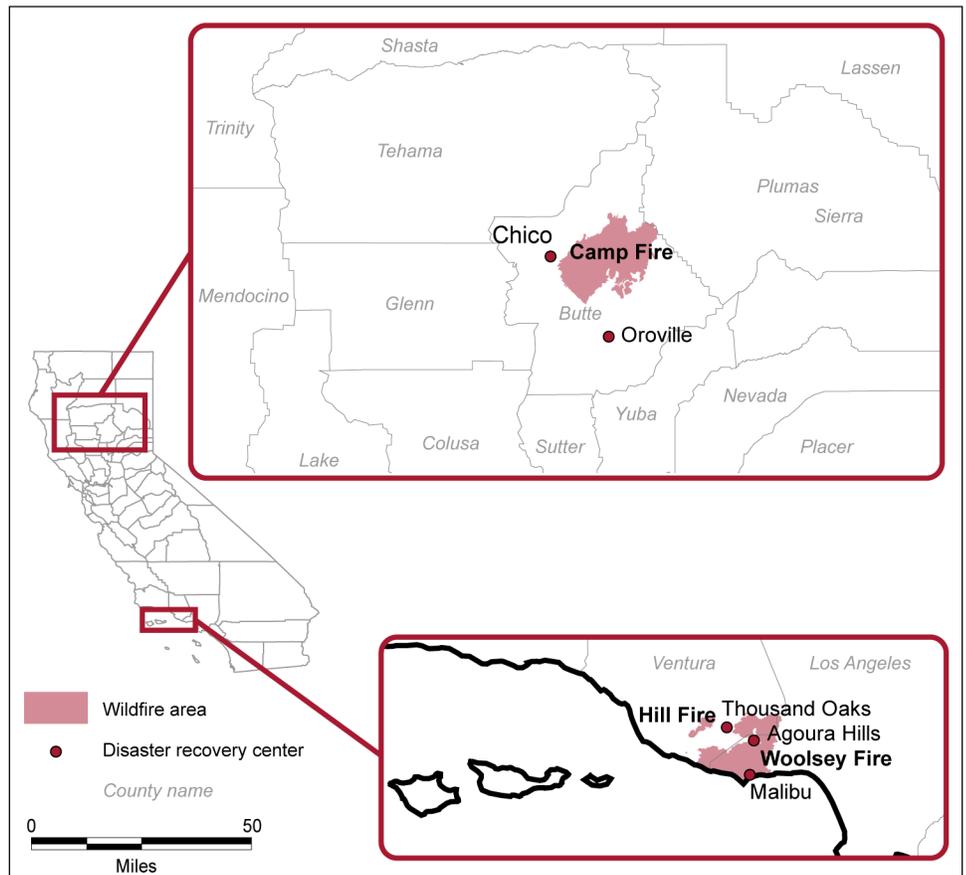
### Information on Fires and Assistance Provided

On November 8, 2018, the Camp Fire struck the city of Paradise in Butte County. According to California’s Department of Forestry and Fire Protection, the Camp Fire grew into the deadliest and most destructive fire in California history, resulting in 18,793 structures destroyed, 153,336 acres burned, and 85 deaths. On the same day two other major fires—the Woolsey Fire in Los Angeles County and the Hill Fire in Ventura County—began.

On November 8-9, FEMA approved FMAGs for these fires, and the President issued a major disaster declaration for these counties on November 12, 2018. FEMA—in collaboration with the state and counties—opened a Disaster Recovery Center in Butte County on November 16 and four other Disaster Recovery Centers in Butte, Ventura, and Los Angeles counties over the next month. In total, the three fires resulted in 20,295 structures destroyed, 254,816 acres burned, and 88 deaths. See figure 14 for a map of the fires’ locations, and tables 14

and 15 for data on FEMA's mission assignments, Individual Assistance, and Public Assistance support.

Figure 14: Map of 2018 Northern and Southern California Wildfires



Source: Homeland Infrastructure Foundation-Level Data fire perimeter data and U.S. Census Bureau. | GAO-20-5

**Table 14: Cost of Mission Assignments per Federal Agency for 2018 Northern and Southern California Wildfires, as of March 31, 2019**

Agency / Example of Mission	Dollar Amount
Environmental Protection Agency (Assessment, identification, collection, and disposal of hazardous wastes)	101,215,000
U.S. Army Corps of Engineers (Site development and construction, including utility installation, for travel trailers or manufactured housing units)	27,067,100
U.S. Department of Health and Human Services (Provided life-saving and life-sustaining health and medical assets, including personnel and associated equipment, in support of wildfire response)	6,838,000
Other agencies	2,977,916
<b>Total</b>	<b>138,098,016</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

**Table 15: Individual and Public Assistance Dollars Obligated for 2018 Northern and Southern California Wildfires, as of March 31, 2019**

Assistance Type	Dollar Amount
<b>Individual Assistance</b>	
Housing Assistance <sup>a</sup>	91,480,689
Other Individual Assistance <sup>b</sup>	87,489,176
<b>Total Individual Assistance</b>	<b>178,969,864</b>
<b>Public Assistance</b>	
Emergency Work	8,389,555
Permanent Work	—
<b>Total Public Assistance</b>	<b>8,389,555</b>

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-5

<sup>a</sup>Housing assistance refers to money obligated for both financial assistance (e.g., lodging expense reimbursement or home repair or replacement assistance) and direct housing assistance (e.g., direct lease assistance or provision of transportable temporary housing units such as recreation vehicles or manufactured housing units).

<sup>b</sup>Other individual assistance includes all other categories of Individual Assistance, such as other needs assistance (reimbursement of expenses caused by the disaster, such as moving or transportation expenses, or funeral, medical, or dental assistance), mass care assistance, crisis counseling, legal services, or unemployment assistance.

# Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security  
Washington, DC 20528



**Homeland  
Security**

September 20, 2019

Chris P. Currie  
Director, Homeland Security and Justice  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Re: Management Response to Draft Report GAO-20-05, "WILDFIRE DISASTERS:  
FEMA Could Take Additional Actions to Address Unique Response and  
Recovery Challenges"

Dear Mr. Currie:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive recognition of help the Federal Emergency Management Agency (FEMA) provided in support personnel and resources to affected state and local jurisdictions to aid in wildfire response and recovery efforts. FEMA remains committed to supporting the United States before, during, and after disasters of all types, while improving the Agency's execution of its fundamental mission of helping people.

Wildfires represent a growing threat to life and property in the United States. In 2017 alone, California faced five of the twenty most destructive wildfires in the State's modern history. The scope and breadth of these disasters necessitated government-wide collaboration; in fact, the response to the 2017 California Wildfires required a greater amount of Department of Defense contracts and mission assignments than the 2017 hurricane response in support of Texas and Florida combined. As noted in the draft report, FEMA is the lead federal agency for responding to and recovering from disasters and, as such, understands its vital role in setting up and operating facilities and coordinating federal resources to provide assistance for both local jurisdictions and disaster survivors.

Although the U.S. Small Business Administration is the federal government's primary source of funding for long-term rebuilding of disaster-damaged private property, FEMA remains committed to developing strong relationships with State, Local, Tribal, and Territorial governments to enhance their collective ability to deliver consistent, unified information to stakeholders and disaster survivors. Along these lines, FEMA is updating its policies and procedures to make its delivery of housing assistance under the Individual Assistance (IA) Program more efficient and effective.

In addition, FEMA's Continuous Improvement Program (CIP) continues to develop lessons learned products while building and maintaining partnerships internally and externally to the Agency. These relationships ensure that key lessons or trends are shared and collectively examined by stakeholders who can make decisions and foster change.

DHS concurs with the recommendation in the draft report. Attached find our detailed response to the recommendation. DHS previously submitted technical comments under a separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,



JIM H. CRUMPACKER, CIA, CFE  
Director  
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: Management Response to Recommendation  
Contained in GAO-20-05**

GAO recommended that the FEMA Administrator:

**Recommendation 1:** Comprehensively assess operations to identify any additional updates to its management controls—such as policies, procedures, or training—that could enhance future response and recovery from large-scale and severe wildfires.

**Response:** Concur.

Housing Challenges Related to Wildfires

FEMA's Office of Response and Recovery (ORR) is currently updating its IA Program policies and procedures to make housing assistance delivery more efficient, effective, and responsive to the challenges relating to wildfires.

*Operating Doctrine for Sheltering & Housing Field Teams:* In order to provide effective regional support and develop sheltering and housing strategies for specific disasters, FEMA created Sheltering and Housing Field Teams (SHFTs). In July 2019, FEMA put these teams into effect. SHFTs are rostered for the 2019 Hurricane Season and available to deploy in response to major events. The SHFTs' primary mission is to work with FEMA Regional staff and FEMA Joint Field Office (JFO) staff to support affected states by developing an integrated Sheltering and Housing Strategy. A Sheltering and Housing Strategy outlines a streamlined suite of sheltering, housing, and case management solutions that promote effective and efficient housing recovery outcomes based on the impacts of the disaster and the needs of the community. Even if a SHFT is not deployed, the JFO IA staff will develop a Sheltering and Housing Strategy with the State to ensure the requested and approved sheltering and housing options meet the needs of disaster survivors.

*Updated Versions of the Direct Housing Guide:* In August of 2017, FEMA ORR developed an operational draft of the *Direct Housing Guide*, which includes standard operating procedures for implementing direct housing assistance (with a focus on the use of Manufactured Housing Units). FEMA ORR is currently updating the *Direct Housing Guide* to consolidate and refine direct housing options (including Recreational Vehicles, Multi-Family Lease and Repair, and Direct Lease). The second version of the *Direct Housing Guide* will also include information on the program functions related to determining initial and continued household eligibility for direct housing. Once the second version is published, FEMA ORR will begin working on the third version of the *Direct Housing Guide* to include procedures for Permanent Housing Construction, an update and consolidation of all remaining direct housing standard operating procedures,

and incorporation of findings from a review of the direct housing organizational structure at the JFO level. FEMA ORR will issue the second version of the *Direct Housing Guide* by December 31, 2019, and the third version by December 31, 2020.

*State-Administered Direct Housing Grant Guide*: The Disaster Recovery Reform Act of 2018, Section 1211, authorizes FEMA to issue grants to states for administering direct housing assistance on FEMA's behalf. As a result, FEMA ORR is developing the *State-Administered Direct Housing Grant Guide* (SADHGG) to help states build disaster housing capability in a manner that addresses hazards (including wildfires) that are common within a particular jurisdiction. States are uniquely positioned to understand, anticipate, and plan for disaster-specific, localized recovery efforts in their respective jurisdictions and to foster relationships with local communities. The SADHGG will contain guidance and templates for developing a disaster housing strategy and administrative plan, and for completing other readiness actions to prepare states to successfully apply for and manage a state-administered direct housing grant. FEMA ORR will issue the SADHGG by September 30, 2019.

#### Continuous Improvement Process and After-Action Reports Related to Wildfires

FEMA's CIP uses a consistent, Agency-wide assessment and corrective action tracking process that:

- Identifies operational strengths, innovations, and areas for improvement by regularly conducting structured and repeatable assessments;
- Ensures the accuracy of findings and recommendations by working with relevant experts;
- Standardizes applicable innovations to improve survivor service delivery; and,
- Assesses completed corrective actions to determine the extent to which the action has addressed the root cause of an issue or whether additional or different action is required.

During disasters, FEMA CIP staff collect data on national, regional, and field priorities that are often focused on examining how policies and procedures are being implemented and where there are best practices or improvements. Employing standard methodologies, this data collection is used to develop After-Action Reports (AAR) such as FEMA Region IX's 2017 California Wildfires and Mudslides AAR. In addition to AARs, the CIP leverages other types of analyses for products such as quick-look reports, issue papers, knowledge snapshots, preparedness capability assessments, summary of findings, and trend analyses. For example, throughout 2018, FEMA CIP deployed staff from headquarters and regions to JFOs to collect data and develop disaster observations. Through these collection efforts, CIP developed over 100 observations covering 20 Major Disaster declarations. CIP staff with support from program offices synthesized the observations into 13 key findings to develop the 2018 Summary of Findings, which identified trends and high-level take-aways presented to Agency leadership. FEMA's

National Preparedness Assessment Division will continue to incorporate wildfire considerations into future trend analyses and key decision-making findings and recommendations.

While developing these types of products and analyses, the CIP connects with the larger analytics community within FEMA (and interagency, if appropriate) to exchange data, share lessons learned, and partner on process improvement. This exchange ensures that information is shared across CIP stakeholders and with the appropriate program or office. For example, the CIP's regional Continuous Improvement Coordinators and headquarters Continuous Improvement Integration Branch routinely collaborate with key program partners like the Public Assistance Process Improvement Team and the Field Operations Directorate's Office of Assessment and Analytics.

Outside of the CIP, FEMA components and others also invest in assessments that promote continuous improvement and innovation. For example, at the FEMA Administrator's request—DHS's Science & Technology Directorate in collaboration with FEMA Regions, the U.S. Fire Administration, and other key stakeholder experts—initiated the Wildland Urban Interface Fire Operational Requirements and Technology Capability Analysis Project to develop findings for improving operational capabilities and to identify areas of innovation in wildland fire incidents.

Estimated Completion Date: December 31, 2020.

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Chris Currie at (404) 679-1875 or [curriec@gao.gov](mailto:curriec@gao.gov)

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## Staff Acknowledgments

In addition to the contact above, the following staff members made significant contributions to this report:

Kathryn Godfrey (Assistant Director), Adam Couvillion (Analyst-in-Charge), Elizabeth Dretsch, Ricki Gaber, Eric Hauswirth, Hannah Hubbard, Tracey King, John Mingus, Ben Nelson, and Kevin Reeves.

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