Wildfire Preparedness for K-12 Schools and Institutions of Higher Education

Wildfires have caused considerable damage and injuries over the past several years. According to the National Interagency Fire Center, 71,499 wildfires burned more than 10 million acres in 2017.[1] These same fires have caused significant disruptions to teaching and learning, including extended school closures. With more communities expanding into the Wildland-Urban Interface—which are lands prone to wildland fires due to conditions such as the amount and type of vegetation—schools and institutions of higher education (IHEs) are becoming more vulnerable and need to prepare for this type of hazard.

Further, children and infants are especially susceptible to environmental hazards caused by wildfires, including fire, smoke, and the byproducts of materials released by burning structures.[2] When wildfires are burning, the greatest risk to children is fire and smoke. After a wildfire, children and young adults are susceptible to environmental hazards such as water and soil contamination.

School emergency management can be addressed through the development of a school emergency operations plan (EOP) that addresses the school safety continuum, including safety, security, emergency management, and preparedness. Planners will address hazards and threats (e.g., wildfire and criminal activity), emergency management functions (cross-cutting activities that may be needed after incidents caused by a variety of threats or hazards, such as accounting for all persons and recovery), and planning basics and principles (e.g., follows a collaborative process; provides for the needs of people with disabilities or access and functional needs). This fact sheet focuses on how schools, school districts, and Institutions of Higher Education (IHEs) can address the hazard of wildfires[3] and provides additional considerations for related emergency management functions and planning basics and principles, all of which aim to keep the school community safe.

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[1] National Interagency Fire Center, Total Wildland Fires and Acres (1926-2017).

[2] American Academy of Pediatrics, Children & Disasters: Wildfires.

[3] According to the National Wildfire Coordinating Group, the full definition of a wildfire is, "An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out."

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Planning for Wildfires

The [Guide for Developing High-Quality School Emergency Operations Plans](#) (*School Guide*) and [Guide for Developing High-Quality Emergency Operations Plans for Institutions of Higher Education](#) (*IHE Guide*) were developed in partnership with six federal agencies with roles and responsibilities in emergency preparedness, including the U.S. Departments of Education (ED); Justice, led by the Federal Bureau of Investigation; Homeland Security, led by the Federal Emergency Management Agency (FEMA); and Health and Human Services. The *Guides* provide planning principles that serve as a foundation for planning efforts and a recommended six-step planning process that is cyclical and ongoing to help schools and IHEs create, review, or revise a high-quality EOP or components of one. When developing activities and programs to address wildfires, a school, school district, or IHE planning team can progress through the six steps as follows.

SIX-STEP PLANNING PROCESS

- **Step 1**: Form a collaborative planning team.
- **Step 2**: Understand the situation.
- **Step 3**: Determine goals and objectives.
- **Step 4**: Plan development (identify courses of action).
- **Step 5**: Plan preparation, review, and approval.
- **Step 6**: Plan implementation and maintenance.

Step 1: Form a collaborative planning team. The planning team should be composed of a core planning team; school and school district/IHE personnel; student or family representatives; and community partners with school safety responsibilities, such as first responders, local emergency management agency, and public health department. If addressing wildfires later in the planning process, the team can seek the input of individuals who have expertise or experience in preparing for wildfires. These individuals may include representatives from local fire agencies, [U.S. Forest Service Regional Office,](#) [state foresters,](#) local groups with a focus on reducing the impact of wildfires on communities (such as [Fire Safe Councils](#) in California), and the mitigation officer from the local office of emergency management.

Step 2: Understand the situation. Here, the planning team identifies hazards and threats to the whole school/higher ed community and their prevalence using a variety of formal and informal assessment tools, evaluates the site's vulnerability to hazards and risk from threats, and prioritizes them for inclusion in the EOP.

For a better understanding of the risk from wildfires in their area, schools and IHEs can search FEMA's database of [Fire Incidents for States and Counties](#). The database provides a list of reported fires, including outdoor fires. The risk of wildfire at a specific site, however, will depend on factors such as the nature of vegetation—and how far it is from structures—

construction materials of buildings, and the topography of the site and surrounding area. To learn about their vulnerability to wildfires, planning teams can seek the input of their community partners, and especially the local fire department and emergency management agency. These groups regularly conduct their own assessments to better understand the local community's vulnerabilities and risks, and will likely have access to their own wildfire planning tools.

Schools and IHEs can also conduct a site assessment to gauge the safety, security, accessibility, and emergency preparedness of their buildings, facilities, and grounds. IHE and school planning teams can use the REMS TA Center's SITE ASSESS, which is a tool that can be downloaded to mobile devices, for this purpose. The tool also allows users to save photographs of the location, which may be useful after an emergency or disaster to document the condition of buildings before an emergency occurred for insurance purposes.

Step 3: Determine goals and objectives. The planning team then determines goals and objectives to achieve the best outcome for before, during, and after each prioritized hazard or threat, as well as cross-cutting functions.

Goals are the team's broad vision of what the team wants to accomplish in response to the hazard or threat. When developing goals to address wildfires, three possible goals could be as follows:

- **Before**: Prevent a wildfire from occurring on the campus.
- **During**: Identify and take protective measures to protect the health of the whole school community, including students, faculty, staff members, families, and visitors.
- **After**: Ensure proper cleanup of the site.

Objectives are specific measurable actions that are necessary to achieve the goals. Using the *During* goal as an example, possible objectives could include the following:

- **Objective 1.1**: Monitor the indoor and outdoor environmental conditions of the school and its grounds.
- **Objective 1.2**: Work with public health department to identify unsafe environmental conditions.
- **Objective 1.3**: Monitor the health of students, staff members, and faculty, especially those with disabilities or access and functional needs.

Step 4: Plan development. In this step, the planning team identifies courses of action for accomplishing each of the previously identified objectives to address the what, who, when, where, why, and how. For example, a planning team may address "Objective 1.1: Monitor environmental conditions" by determining who would be responsible for monitoring

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conditions, which conditions (e.g., indoor and outdoor air quality, location of wildfire), how often conditions would be noted, and from what sources.

As planning teams identify their goals, objectives, and courses of action, they should consider the recommendations outlined below. (More considerations are provided in the section below.) These are based on lessons learned from the 2017 and 2018 California wildfires.

Before a wildfire:

Schools, school districts, state education agencies (SEAs), and IHEs

- Develop agreements for the use of emergency resources, such as vendors who provide remedial services, relocation sites, and transportation during and after a disaster. School and IHE planning teams should also consider that the local jurisdiction may ask that the school's campus (or resources, such as school buses) be used to support the broader community and its members who have been affected by a wildfire, especially if the campus hasn't been impacted. In some instances, the public may be instructed to meet at the site (e.g., as an evacuation site or to take shelter). Planning teams should identify what area(s) of the site would be used, for how long, what resources would be needed to support the efforts, and what additional protections may need to be put in place to protect students and minimize disruption to the learning environment (e.g., clearly identifying where shelter residents can access mass care support, and increasing security).

- Determine what environmental conditions would necessitate a campus closure and reopening, in collaboration with local community partners such as the public health department. Factors that need to be taken into consideration include state requirements, outdoor air quality, indoor air quality, the degree to which students would be exposed to poor air quality going to/from the campus, and—for the K-12 community—what additional services schools provide some or all of its students (e.g., meals, health services) and how closures would affect these students.

- Build a coping and support program for day-to-day use that may be scaled to use during response to or recovery from a potential emergency or disaster.

- Review functional annexes that may be activated in a wildfire, including
  - *Continuity of Operations*
    - Have essential services been identified? Have essential employees been identified?
    - Are you able to continue payroll offsite?
    - Are detailed procedures available in the office? Do they include roles and responsibilities for staff? Are backup persons listed in case the person with

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primary responsibility is unable to fulfill that role? For example, are there instructions for how to shut down the HVAC system?

- Have possible alternate locations been identified to continue instruction, business operations, and deliver special education and related services?
- Have distance learning materials been prepared?

o *Communications and Warning*

- Have you planned with partners for them to share your updates to ensure the whole school community is reached?
- Who is responsible for working with the media (e.g., an assigned Public Information Officer) to ensure coordinated and consistent messaging is provided? Do other staff and faculty members know to refer the media to this point of contact?
- What backup system(s) will be used if telephone lines are down to communicate with internal and external stakeholders? Has a redundant system been set up? What if access to the Internet is lost?

o *Evacuations*

- How would you evacuate the campus during the day? If school buses are to be used, are drivers available and are agreements in place for backup transportation in case school buses are unavailable (e.g., damaged by fire)? For more information, see the REMS TA Center Webinar Emergency Evacuations: Planning for the Whole School Community.

<u>State agencies</u>

- Consider forming a state-level task force that can provide planning and preparedness information, guidance, and support to potentially affected campuses and elevate needs to the state Emergency Operations Center (EOC). Members could represent groups such as FEMA, state emergency management and education agencies, Office of the State Architect, and local departments who can provide input on environmental conditions (such as air and water quality).
- Host continual meetings and engagements to facilitate relationship building.
- Provide training and related practice with exercises.
- Enhance state plans in conjunction with updates at the local levels based on meetings, real-world events, and exercises.
- Provide briefings and recommendations to leadership to inform policy, budget, and programming decisions.
- Establish communication channels for use during emergencies and ensure all stakeholders are familiar with the system(s).
  o Create, and use during steady-state, communication channels and plans for communicating with the whole school community during and after an emergency;
  o Consider strategies to communicate with those who have been evacuated;

- o Identify sites for use during steady state to increase their use during emergencies (e.g., Webpage, Twitter account);
- o Create a communication channel for use with districts and schools to report their status;
- o Establish points of contact with the media to garner their support during and after the possible emergency; and
- o Build relationships with those partners who have responsibilities during and after an emergency.
- Plan for a wide variety of possible needs following a potential fire and pre-establish related agreements and waivers (e.g., agreements for continuing instruction in non-academic buildings; program requirements following long dismissals and modified school days) in collaboration with schools and school districts.

During a wildfire

Schools and school districts/IHEs

- Communicate the needs and status of schools/IHEs to the local EOC and state education agency.
- Communicate school status continually (e.g., 2 to 3 times a day via social media, each morning on website) with students and families, even if to say there is no change in status.

State agencies

- Determine what waivers need to be provided (e.g., to continue instruction in non-academic buildings) in collaboration with SEAs and school districts.
- Relay situational information describing the status of schools and school districts (e.g., the number of campuses closed) to the state (e.g., the state EOC). Information may be relayed via forums such as daily conference calls or email.
- Communicate the prioritized needs of schools and school districts relative to restarting school operations, virtually and in person.

All

- Keep detailed records of the entity's response and recovery, including the events and expenses incurred. Documentation that describes the who, what, when, where, why, and how much for each item of recovery work can help with later reimbursement of expenses.

A recurring theme in most emergencies and disasters is the need for established relationships and effective communication. All educational entities are encouraged to foster relationships with their community partners and one another to facilitate an effective response and recovery. For more information, see the REMS TA Center *Lessons Learned* publication

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[Communication and Collaboration During Natural Disasters: The Lessons Learned From Past Experience](#) that describes lessons learned from the 2007 California wildfires.

Step 5: Plan preparation, review, and approval. In this step a draft EOP is written. Any wildfire-related protocols should comply with state or local regulations or requirements and be integrated into the community's hazard mitigation plan and any local wildfire protection plans. The draft EOP is then circulated to internal and external stakeholders, who have a responsibility in protecting the campus, to obtain feedback. If needed, edits are made based on feedback, and written approval is obtained from the school, school district, or higher ed leadership.

Planning teams have the flexibility to include information within their EOP that best meets the needs of the school/IHE and community partners who play a role in implementing the plan. However, teams will likely want to include wildfire-related goals, objectives, and courses of action in a separate Wildfire Annex to the EOP. If goals, objectives, and courses of action for before, during, or after a wildfire emergency are identified that would also apply to other emergency incidents (e.g., Communications and Warnings, Recovery), these could be included in separate functional annexes to prevent the unnecessary duplication of information.

Step 6: Plan implementation and maintenance. The EOP is maintained via regular reviews and revised when needed. Further, individuals with roles outlined in the EOP are trained in their responsibilities, and exercises are conducted to test the ability of the school, school district, or IHE to continually prevent, protect, mitigate the effects of, respond to, and recover from a wildfire, while protecting the school or higher ed community from a wide variety of threats or hazards.

Wildfire Preparedness Activities

School, school district, and higher ed preparedness is promoted through the five mission areas of prevention, protection, mitigation, response, and recovery (see the REMS TA Center Webinar [Using the Five Preparedness Missions to Help Ready Your District and School for Emergencies](#) and [fact sheets](#)). As a planning team progresses through the six-step planning process—especially steps three and four—members may want to consider the following with their community partners as they create goals, objectives, and courses of action to address wildfires.

> **Prevention is defined as the actions that schools, school districts, and IHEs take to stop an event from occurring.**

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When thinking about prevention activities, schools or school districts and IHEs can consider the following:

- Educate the whole school/higher ed community on wildfire prevention.
  - Educators have access to Smokey the Bear resources to teach children about wildfire prevention.
  - Children have access to their own Smokey the Bear resources, including information, a coloring page, story maker, and game.
  - For students in grades 6–12, the National Fire Protection Association provides the TakeAction campaign to help prepare themselves, their pets, and horses for wildfires.
- Reduce combustible vegetation around the site through the thinning, treatment, or removal of vegetation that could start or spread a wildfire.

Protection is the ongoing actions schools, school districts, and IHEs take to safeguard the campus, students, teachers, faculty, and staff members from an emergency event.

In order to protect all stakeholders for a school or district or IHE, the following considerations may be helpful:

- Provide training on the National Incident Management System (NIMS), which is the United States' single, comprehensive system for managing domestic incidents, and the Incident Command System (ICS), which is the standardized, on-scene, all-hazards incident management approach that allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. More information on NIMS and ICS is available from the REMS TA Center for schools and IHEs. Included on these Web pages is a document, Key Personnel and NIMS Training for Schools and IHEs, that explains which key personnel are encouraged to receive which NIMS and ICS training based on their role(s) in the overall school/higher ed emergency management program.
- Review the entity's Wildfire Annex and related functional annexes to the EOP. Planning teams should review their EOP at least annually, and after emergency exercises or actual emergencies. In addition to the Wildfire Annex, planning teams should review functional annexes that may need to be activated during a wildfire, such as evacuation; shelter-in-place; accounting for all persons; reunification; communications and warning; recovery; public health, medical, and mental health; and continuity of operations.
- Understand the differences between a *Red Flag Warning* (be extremely careful with open flames), *Fire Weather Watch* (weather conditions could result in extensive wildland fire occurrence or extreme fire behavior), and *Extreme Fire Behavior* (a wildfire is likely to rage out of control). For more information, view the National Weather Service Web page on Understanding Wildfire Warnings, Watches, and Behavior.

- Identify how to receive alerts and the latest information on wildfires and environmental conditions in your area, such as via a National Oceanic and Atmospheric Administration (NOAA) weather radio, FEMA mobile app, and alerts from your local jurisdiction.
- Encourage families to prepare for emergencies, including putting together an emergency supplies kit, family plan (including identifying two routes they could use to evacuate from their neighborhood), and communications plan. Schools and IHEs can also promote state or local wildfire safety initiatives, such as Ready, Set, Go.

Mitigation is the actions schools, school districts, and IHEs take to eliminate or reduce the loss of life, injuries, and property damage from emergencies that cannot be prevented.

In addition to building new structures (or rebuilding damaged structures) that meet state and local building codes and standards, school and higher ed facilities staff—with the input from community partners—should take the following actions:

- Identify external building modifications to reduce the potential for fire damage from the use of fire-resistant construction materials and enclosing eaves, fascia, and soffits (which are vulnerable to small pieces of floating, burning wood) with noncombustible material. Additional information is provided in FEMA's Wildfire Hazard Mitigation Handbook for Public Facilities.
- Identify internal building modifications that can lessen the impact of wildfire on occupants (e.g., upgrading the central air system filter). Additional information is provided in the U.S. Environmental Protection Agency (EPA) Wildfire Smoke Factsheet: Indoor Air Filtration.
- Collaborate with the local emergency management agency to better understand the local jurisdiction's hazard mitigation plan, which details risks from natural disasters to the community and strategies for protecting it from future hazards.
- Create a defensible space around the site to help keep wildfire away from buildings and allow space for fire fighters to operate safely to help protect structures. The amount of defensible space needed will depend on factors such as the topography and type of vegetation.

For individuals interested in learning more about mitigation, FEMA offers a free online course, IS-320 Wildfire Mitigation Basics for Mitigation Staff, that describes how wildfires spread, offers instruction on mitigation efforts, and provides additional resources.

Response is activating the emergency plans of the school, school district, or IHE to effectively manage an emergency event, and provide for the immediate safety and needs of students, staff members, teachers, and faculty.

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Educational entities may have a lot of warning about a wildfire that may affect their location, or they may have very little time to respond. In the response phase, schools, school districts, and IHEs should:

- Follow the directions of emergency responders and the local public health department. If the entity is not in immediate danger from a wildfire, officials may recommend the campus shelter-in-place or take other actions (e.g., curtail outdoor activities). Schools and IHEs, however, should be prepared to take other actions, such as evacuate. As always, educational staff members do not have to wait for instructions from local officials to respond—they should do whatever is needed to protect their students, staff members, and faculty.
- Regularly monitor the following:
  - The situation via community partners (e.g., local emergency management and public health department). Air quality may be provided on a state or local government's website or airnow.gov, including its link to current fire conditions. Current fire locations and their perimeters are provided on this U.S. Geological Survey tool. Some areas of the country are also able to sign up for air quality alerts.
  - The health of students, staff members, and faculty, especially those who have respiratory problems. Consider using portable air cleaners in designated rooms. Air quality will probably be better in rooms that have fewer doors and windows.
- Implement ICS, if necessary.
- Provide Psychological First Aid (PFA). PFA is an early, brief, and focused intervention that can help reduce the social and emotional distress of children and adults after traumatic events. More information on Psychological First Aid for Schools (PFA-S), which is an evidence-informed intervention specifically designed to assist students, staff, and families, can be found in a REMS TA Center Web page Psychological First Aid for Schools (PFA-S), *Helpful Hints* publication Psychological First Aid (PFA) for Students and Teachers: Listen, Protect, Connect—Model & Teach, and Webinar Implementing Psychological First Aid (PFA) in School and Postsecondary Settings.
- Plan for managing donations and volunteers. If the school or IHE is directly affected by a wildfire, and especially if the incident garners a lot of media attention, the entity will need to manage volunteers who want to help the school/IHE and/or provide donations. Systems and processes should be identified and created before an incident. More information is provided in this REMS TA Center Webinar and fact sheet.
- Keep families informed about the situation (including resources and psychological support available to them) and campus openings, closings, and delayed opening times.

Recovery is teaming with community partners to assist students, staff members, teachers, and faculty in the healing process, and restore a healthy and safe learning environment following an emergency event.

One priority for the school and higher ed communities after a large disaster, such as a wildfire, is to return to a sense of normalcy. The REMS TA Center provides several resources that provide an overview of recovery and detailed considerations for what recovery activities may be needed after an emergency, including a Webinar, downloadable training package, Web page, and resource guide. As with the inclusion of goals, objectives, and courses of action for any threat, hazard, or function, planning teams should identify where information on recovery after a wildfire will be recorded in the plan. If the protocols will likely be used after different emergencies—and are not specific to wildfire recovery—the planning team may decide to put the information in the Recovery Annex of the EOP.

Schools and IHEs in the recovery phase after a wildfire can

- Provide support to students, staff members, and faculty experiencing homelessness, including those temporarily living with family or friends, in hotels, or in other forms of accommodation. ED's National Center for Homeless Education provides a variety of resources and support on the topic, including resources specific to state coordinators and local liaisons.
- Identify available support. Several federal, state, and local organizations and groups may be available to provide recovery support, including
    - Corporation for National and Community Service. This federal agency works with local community partners to improve the lives of fellow citizens through the AmeriCorps and Senior Corps.
    - Voluntary Organizations Active in Disaster or Community Organizations Active in Disaster that may provide support such as long-term counseling and debris clean-up.
- Highlight the recovery process. Schools and IHEs can work with their local media to promote the recovery process. This not only helps shift focus onto positive examples of how the community is recovering, but it can serve as a reminder to the public that there are ongoing needs. The REMS TA Center Helpful Hints document Establishing and Developing Strategic Partnerships with Media Representatives provides suggestions to consider when developing and maintaining positive working relationships with the media.
- Be aware of negative effects of media. Media reports of the incident can cause traumatization or re-traumatization, especially of children, and therefore exposure to news reports should be limited. The National Child Traumatic Stress Network (NCTSN) provides the document Wildfires: Tips for Parents on Media Coverage that describes the effects of media exposure on children and what parents or guardians can do to help.

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- Identify when/how to reenter the site and remove debris. Schools and IHEs affected by a wildfire should contact their local environmental health office for guidance and advice on what initial steps to take. The health office may be able to discuss what options are available for debris removal from a campus, such as schools or IHEs removing the debris themselves, or removal by the state or federal government. The U.S. Centers for Disease Control and Prevention provides the Clean Up After a Disaster Web page that provides information on clean-up topics and educational materials (posters, flyers, stickers, presentation slides, etc.). The EPA provides detailed information on their Dealing with Debris and Damaged Buildings Web page, including how to avoid problems from the use of cleaners, disinfectants, and pesticides; airborne asbestos and lead dust; and other topics. The Occupational Safety and Health Administration provides detailed information on its Wildfires: Response/Recovery Web page on how to address common hazards after a wildfire.

- Provide tailored support and services to meet the social, emotional, and behavioral health needs of students, staff members, and faculty, including the following:
  - Ensure staff members and faculty caregivers have the support they need. The REMS TA Center provides several resources to help faculty and staff better understand and teach others resilience strategies following emergency events, including a free on-site trainings by request, downloadable training package, and Webinar.
  - Provide families information and resources on how to care for their children. The NCTSN provides the fact sheet Parent Guidelines for Helping Children Impacted by Wildfires that describes some of the common reactions children may have toward wildfires and their aftermath, how parents or guardians can help their children, and what caregivers can do to look after themselves.

Additional Resources

The following resources provide additional information on preparing for wildfires:

- Fires and Your Health, EPA. On this Web page, simple steps to help protect your health are provided.

- Public Assistance: Local, State, Tribal and Private Non-Profit, FEMA. Information is provided on this page describing FEMA's Public Assistance grants for activities such as debris removal, the repair and replacement of publicly owned facilities, and emergency protective measures.

- Wildfire Weather Safety, NOAA. On this Web page, information is provided on steps to take before and during a wildfire. Links to other wildfire resources are also provided, such as air quality forecasts and education and outreach materials.

- Your Role in Fire-Adapted Communities: How the Fire Service, Local Officials, and the Public Can Work Together, U.S. Fire Administration. This publication describes how stakeholders can collaborate to help their community become more resilient to wildfires.