To The Point
Wildland Fire Emergency Response Plan (WERP)

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Wildland fires occur worldwide with devastating effects. Some areas around the globe, including southern Australia, the western US, Portugal, Spain, Greece, and the south of France, are known for severe wildfires. Climate change has also exacerbated droughts in many areas, prompting more frequent and severe wildland fires, extending the season, and resulting in record destruction and loss.[1]

Oncoming wildfire can spread to commercial buildings as flying embers and firebrands carried through the air land on the structure and ignite combustible building materials, exterior storage, and vegetation surrounding the building, or enter the building through vents, crevices, and openings. As a wildfire approaches, radiant heat can break windows, and combustible building materials may reach autoignition temperature. Finally, a wildfire burning up to structures can have direct flame impingement for fire involvement to the building.

The unfortunate truth is that most businesses do not have a plan to address the impacts of wildfire. The following are some best practice tips to increase the chance of your business surviving a wildfire—by instituting a formal Wildland Fire Emergency Response Plan (WERP).

Objective

A Wildland Fire Emergency Response Plan aims to increase the chance of your business surviving a wildland fire and allow for business continuity of critical operations. It is also, of course, intended to help protect and keep your employees safe. To do this, you need to know your wildland fire exposure.

Consult with local wildfire maps or free geospatial internet sites to determine overall local wildfire risk in the area. Some free examples include the USDA Forest Service[2] and Wildfire Hazard Potential[3] maps, both accessible online. Also, work with your insurance carrier, as your insurer may have access to even more advanced wildland fire modeling tools.

There are more business locations than ever before in the path of wildland fire. It's not just about direct flame contact to your property—it's also necessary to consider prevailing winds that can easily carry thick smoke, embers, and firebrands, all of which easily can travel very far distances from the seat of the fire.

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Roles and Responsibilities

The plan should clearly identify those responsible and accountable within the organization for the WERP and a recovery structure that aligns with all aspects of response. These responses range from immediate tactical emergency response to business recovery and executive-level crisis management.

This allows the teams to focus on their roles and responsibilities in managing incidents while providing a common strategy. Senior leadership should appoint an emergency plan manager to ensure the WERP is integrated with the overall Business Continuity Plan (BCP) and other corporate-wide Disaster Recovery Plans (DRPs).

Senior leaders must clearly align resources, roles, and responsibilities for the emergency plan managers, facilities management, security, and environmental health and safety (EHS) staff. If the building has onsite security, especially for after-hours coverage, the plan should clearly address their role and responsibility. Often, onsite security may well be the first to identify an after-hours wildland fire.

The plan manager should maintain all training records pertaining to the plan; the plan manager is responsible for scheduling routine drills, tests, and evaluations of emergency plans. The WERP manager should also coordinate with local public resources, such as the fire department, to ensure they are prepared to respond to the plan. This includes allowing emergency responders to perform a walkthrough of the facility to pre-plan around hazards onsite. Emergency responder feedback should be incorporated into the WERP.

Emergency plan coordinators sit under the plan manager and should be responsible for implementing the procedures in the WERP in their designated areas of responsibility. The plan should clearly indicate coordinators' names, locations, positions, current phone numbers, alternate names, and contact information.

Be sure all team members have clear procedures and chains of command toward the goal of responding to, and recovering from, the emergency event.

Implementing the Plan

Reporting for fire and wildland emergencies during normal working hours is usually not challenging as employees are on-premise. All fires should be reported to the plan manager as soon as possible. The greater challenge is after-hours and on weekends, holidays, etc. Senior team members and management should coordinate with local fire authorities to ensure they receive the earliest notification of wildland fire possible in their jurisdiction. For example, many wildfire-prone areas deploy early warning notification systems that can provide alerts to any smartphone—at any hour. You can also consider hiring private companies that provide early warning notification services that may help prevent fire and wildland emergencies. Senior WERP managers and team members should consult with local fire authorities to ensure after-hours communication is available quickly.

The plan manager should be prepared to provide special instructions to team members on their roles and responsibilities during the emergency. Formal procedures should include employee notification during an active fire or other emergencies, including normal and after-hours protocols.

Shelter-in-place protocols should be clearly defined. If a wildland fire impacts the surrounding site, and if it is safe to leave, ensure there are clear rules around remote work arrangements until authorities have cleared the event.

Consult with the local authorities to determine if specially trained (critical) staff in facilities, IT, manufacturing, security, etc., may remain onsite to support continuity of operations. Under no circumstances should an employee attempt to manually fight wildland fire themselves. If the site has external fire protection measures to be activated (sprinkler systems, HVAC shut down, etc.), special training should be in place for those unique roles and responsibilities.

Property Preservation Action Items

Consider Building Features:

- Assess the building envelope. The plan should include a review of the building's exterior facade, roof, drains, joints, landscaping, etc., and seek ways to minimize the potential for lodging embers—especially if the structure is fitted with features like rooftop solar photovoltaic panels.
- Look for open gaps in roofs that can be fire-stopped. Roofs should ideally be of non-combustible construction that fits tightly without gaps. Non-combustible tile roofs where gaps exist, such as concrete or clay tiles, can permit embers to lodge. Make sure gutters are clear of leaves and debris.
- Vents can be opportunities for fire embers to penetrate. Vents and drains should be kept clean and screened with a steel wire mesh with a maximum aperture of 1⁄8 inch (2 mm).
- Ensure exterior doors and frames (including loading docks) are tight and constructed to stop firebrands and embers from being blown in through gaps, especially in the gap underneath the door.
- Skylights should be avoided and, if necessary, constructed of wire-reinforced glass. Window glass can melt or shatter under heat loading, and non-combustible shutters can provide a level of protection. Tempered and double-paned insulated glass windows provide another layer of protection.
- Secure all exterior doors and air supply vents (ensure they are closed). Turn off, seal, or disable all fans, heating, and HVAC systems, especially systems that automatically exchange inside air with outside air.
- Exterior fire protection sprinklers/drenchers can be installed to protect external walls, windows, openings, etc. These should be installed to local standards with a reliable water supply.
- Ensure you have a reliable water supply to assist in firefighting efforts. For example, use metal water storage tanks (do not use wooden or plastic tanks) and a diesel-driven pump, or an electric pump(s) with a backup diesel generator.

Consider Site and Business Continuity:

- Consideration around increasing security patrols and fire watch activities during "Red Flag" conditions.
- Be sure to plan around building access during civil authority and road closures. Plan this with your local authority before the wildland fire event. Depending on conditions, you may not have access to your business during a severe emergency event.
- Emergency power such as generators must be part of the plan to ensure they are properly load tested and maintained, with formal procedures for starting them automatically and manually. Ensure uninterrupted power is provided to critical systems and equipment.
- Smoke intrusion into the facility can result in severe loss even though the fire is miles away. Aim to prevent and mitigate smoke intrusion into the facility, including procedures for shutting down HVAC and air handling units quickly in an emergency. Dampers, manual or automatic, within systems can add an additional level of protection. Alternatively, for sensitive interior operations requiring functional air handling systems, ample supplies of high-efficiency air filters should be available.
- Today, remote monitoring and control of HVAC systems are available with internet-enabled Building Management Systems (BMSs). Ensure the plan considers the potential need for remote-controlled HVAC to address after-hours events whereby employees do not have physical access.
- For sensitive interior operations involving clean rooms, data centers, healthcare, and life sciences occupancies—consider formal plans and testing around interior air recirculation to positively pressurize the building, help reduce smoke ingress, and explore options to achieve this remotely.
- Consider agreements with third-party private firefighting services to stage and prepare hose lines and other resources such as fire-retardant foams and gels during "Red Flag" conditions when there is a fire threat.

Prioritize Defensible Space & Vegetation Management:

- Maximize defensible space by creating a clearance zone around buildings, outdoor structures, and yard storage by removing trees and shrubs so there is no continuous canopy of the vegetation around the site.
- Maintain a minimum of 100 ft (30 m) clearance zone from a shrub/grassland exposures and 330 ft (100 m) from a woodland or forest exposures. Depending upon fuel types and sloping topography, these distances may need to be increased. Additionally, separation distances may vary by law or ordinance.
- Landscape plantings and soil control measures (mulch, bark, pine needles, etc.) within 5 ft (2 m) of building walls should be non-combustible. Concrete pavement and asphalt, and to a lesser degree, landscaping without dead vegetation or soil and moisture control minimize the possibility of fire ignition.
- Grass around the facility should remain trimmed and irrigated. Dead tree limbs and tree limbs lower than 6 ft (1.8 m) should be pruned. Tree limbs should not be permitted to overhang buildings.
- Clients in proximity to wildfire-prone areas should move docked trailers away from the building during active (nearby) wildfire events, as far away from the building footprint as possible, to maximize defensible space.
- Avoid combustible yard storage, which can ignite and expose the building (such as idle pallet storage). Use non-combustible shipping containers to store combustible outdoor storage. If unavoidable, separate yard storage as far as possible, but at least 50 ft (15 m) away.

Employee Safety

If employees cannot safely leave the facility, the plan manager should notify senior leadership that shelter-in-place is necessary. Formal communication procedures should be detailed, determining a safe assembly location.

Roll calls for all employees should be performed and reported to the plan manager or coordinator. During any shelter-in-place, the coordinators should monitor reports for further instructions from authorities when it is safe to leave the building.

Emergency evacuation escape route plans should be posted throughout the facility. If a fire or emergency alarm is sounded or instructions for evacuation are given, all employees should immediately leave the building at the nearest exit and meet at a designated assembly area.

If evacuation of the premises is necessary, some operations may need securing to prevent further danger or damage (such as securing records, shutting down equipment, preventing the release of hazardous materials, etc.). The plan should designate which people may remain in the building to secure property and equipment for the prescribed amount of time. Critically, all people remaining behind to shut down critical systems or utilities must be capable of recognizing when to abandon the operation or task and follow escape routes to the assembly area.

Training & Evaluation

Lastly, regular training on the WERP is essential to its success. The plan should be integrated into new hire orientation, and additional training should be provided when there are any changes to the plan or facility. Minimally, there should be annual training on the WERP. Items for review during the training should include:

- Vegetation management and housekeeping
- Fire prevention practices
- Fire extinguisher locations, usage, and limitations
- Threats, hazards, and protective actions
- Means of reporting fires and other emergencies
- Names of WERP manager and coordinators
- Updated contact information and phone numbers
- Individual responsibilities
- Alarm systems
- Escape routes and procedures
- Emergency shut down procedures
- Procedures for accounting for employees and visitors
- Sheltering-in-place
- WERP availability

Fire and emergency evacuation drills should be conducted annually and coordinated with the Facilities, Security, EHS, and other necessary emergency response teams. Additional drills should be conducted if physical properties change, processes change, or otherwise.

Ongoing evaluation of the WERP is necessary as part of the broader Business Continuity Plan (BCP). The plan should be a living document, striving towards constant improvement.

References

1. **Wildfires and Climate Change**, https://www.c2es.org/content/wildfires-and-climate-change/
2. **USDA Forest Service**, https://wildfirerisk.org/
3. **Wildfire Hazard Potential**, https://wildfirerisk.org/wp-content/uploads/2020/09/WRC-US-Wildfire-Hazard-Potential-202009.pdf

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