# CUWA Joint Workshop on Wildfire Impacts Wildfire Incident Checklists

June 10, 2021

This document is one of the outcomes of a workshop held on November 12, 2020 with the CUWA Water Quality and Emergency Operations Committees and CUWA staff. It is intended to be a resource for water agencies preparing or responding to wildfires in the source watershed or near treatment and distribution facilities.

CUWA agencies are committed to advancing reliable, high-quality water supplies for the state's current and future urban water needs in a cost-effective manner for communities, the environment, and the economy. As stewards of public health, CUWA agencies remain committed to providing high-quality, safe drinking water to their consumers through wildfire emergencies by following the key strategies outlined below.

- 1. **Maintain year-round water quality protections** that include source water protection, water treatment strategies tailored to water quality and potential changes in quality, routine water quality monitoring from water sources to customer taps, and compliance with drinking water regulations and recommendations. In addition, CUWA agencies are committed to maintaining a high level of communication with public and regulatory agencies, and other emergency response organizations.
- 2. **Prepare to face wildfires emergencies** through investments in alternative water sources, robust, redundant and flexible treatment processes and distribution networks, developing extensive water quality database to capture deviations from baseline levels, keeping up with staff training and team preparedness, and adopting vetted contingency and emergency plans.
- 3. Enhance response actions to wildfire events through increased water quality monitoring, adapting water treatment strategy based on monitoring results, providing the community with timely updates on adaptive measures taken by the water agency, maintaining infrastructure, and protecting integrity of infrastructure that could be impacted by fires.
- 4. **Continuously improve future wildfire response** by further developing response plans, addressing fire suppression chemicals that may be introduced, proactively coordinating with local and State fire response teams, and communicating these actions with customers

These key strategies are reflected in the tables below, which present actions to take before, during, and after a wildfire event. These tables are adopted from the article "Mitigate Wildfire Impacts on Drinking Water Quality and Operations" published in the June 2021 edition of OpFlow.

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Table 1. Actions to Take Before a Fire Event		
Water Source and Treatment	Distribution System	
Power Supply           • Test emergency generators under load periodically, confirm the duration the generator can run before it will need to be refueled, and ensure sufficient fuel availability.           • Identify the types of power available at each facility and the presence of power generators.           • Include the information in a SCADA system.           • Determine plant capacity if operating on generator power.           • Determine which equipment isn't on the circuits energized by the backup generator.           Chemical Supply           • Identify vehicle capabilities (size, fuel requirements, terrain constraints, etc.) to reach critical infrastructure.           • Ensure a sufficient supply of water treatment chemicals, assuming higher amounts of chemicals may be needed to account for changing water quality.           • Establish a list of contacts or relationships with vendors who can provide additional chemical feed. <b>Flexibility/Remote Operations</b> • Identify alternate water sources and make arrangements in case they're needed (e.g., intertie). Consider whether the same sources are available during a drought.           • Develop atternate/redundant design, treatment, and operation if a facility is lost.           • Develop remote operation and surveillance strategies (e.g., install cameras).           • Prepare maps of critical facilities that can be made available to emergency responders.           • Include the participation of GIS staff in the Emergency Operations Center plan.           Water Quality           • Est	<ul> <li>Power Supply</li> <li>Test emergency generators under load periodically confirm the duration the generator can run before it will need to be refueled, and ensure sufficient fuel</li> <li>availability.</li> <li>Develop pre-rental/ procurement/deployment plan and agreements for generators, which may become sparse during emergencies.</li> <li>Plan facility shutdowns to occur outside of fire season.</li> <li>Water Quality</li> <li>Identify potential impacts that a wildfire near the water source(s) could have on distribution system water quality if the treatment processes can't adapt (or can't adapt quickly enough).</li> <li>Assess impacts of losing a pressure zone on ability to meet demand and preserve water quality.</li> <li>Prepare pressure rezoning plans if possible, using a GIS, hydraulic modeling, or other available tools.</li> <li>Create response plans (e.g., booster chloramination stations), tank mixing, tank cycling, transfer of water across pressure zones, etc.</li> <li>Secure the availability and rapid delivery of additional portable mixers and booster chloramination stations if needed.</li> <li>Ensure distribution system storage water levels are adequate to meet fire flows (e.g., system storage targets may need to be higher during fire season), flushing flows if required, and evaluate the impact of residence time in storage facilities on water quality.</li> <li>Exercise intertie valves and ensure they're operational during emergencies.</li> </ul>	<ul> <li><u>Coordination and Colla</u></li> <li>Research other loca</li> <li>Ensure clear lines of relevant officials.</li> <li>Embed local fire de concerns are factor are documented.</li> <li>Invite emergency as planning exercises</li> <li>Request safety data and include the key Water systems are compounds) fire ref</li> <li>Establish confident ingredients, includi</li> <li>Ensure agency staft danger), which may</li> <li>Create agreements disinfected betwee from other reservoit water bodies.</li> <li>Work with electricit interruptions.</li> <li>Reduce access to ref</li> <li>Have staff participa</li> <li>Review expectation</li> <li>Establish communi interties.</li> <li>Create customer no source change or fref</li> </ul>

### Information and Exchange

#### laboration

- cal agencies' emergency response plans.
- of communication with fire department and other first responders and
- epartment staff in Incident Command to ensure water system bred into firefighting plans and potential water supply risk incidents
- agencies and first responders to participate in emergency response s (e.g., create awareness of critical chemical locations).
- ta sheets from local or state firefighting authority on retardants used ey ingredients of these retardants in source water monitoring program. e encouraged to request using non-PFAS (long- or short-chain etardants.
- ntial agreements with fire retardant manufacturers to identify all ding proprietary compounds.
- ff have access to sites during a fire event (unless there is imminent ay require prior communication with fire agencies.
- is with firefighting agencies to ensure airtankers or water bombers are en pickups to prevent introducing invasive species (e.g., mussels) birs, and aim to keep fire retardants a safe distance away from open

ity providers to identify areas potentially impacted by power supply

- recreational areas during power supply interruptions.
- ate in regional emergency briefings.
- ns with essential workers/ disaster responders.
- ents between wholesalers and their retailer systems about information sources) that can or may need to be exchanged during emergencies. y rolling stock agreements.

nication channels with neighboring water systems and systems with

notification lists for water quality changes resulting from emergency from fire.

Distribution System	
wer and activate emergency generators if needed. onitoring throughout the distribution system to rapidly capture any vels. ge tanks to reduce potential for introduction of airborne dust through vents during active smoke/fire near a treated water nation stations in critical finished water reservoirs are operational /low-flow areas in the distribution system. ing, and other tools to assess potential impacts on pressure zones tions (e.g., open zone separation valves).	<ul> <li>Coordination and Collaboration</li> <li>Request mutual aid/assista</li> <li>Communication</li> <li>Notify retail systems of any i</li> <li>Notify county and state Eme</li> <li>Notify regulatory and primate</li> <li>Create clear channels for interpret dissemination to the public</li> <li>As needed and with approva outage, low-pressure, boil-weight</li> </ul>
w Dived na /it	rer and activate emergency generators if needed. nitoring throughout the distribution system to rapidly capture any els. ge tanks to reduce potential for introduction of airborne ust through vents during active smoke/fire near a treated water ation stations in critical finished water reservoirs are operational 'low-flow areas in the distribution system. ng, and other tools to assess potential impacts on pressure zones ions (e.g., open zone separation valves).

Table 3. Actions to Take After a Fire Event		
Water Source and Treatment	Distribution System	
<ul> <li>Water Quality</li> <li>Perform water source assessment after the fire has subsided.</li> <li>Continue to closely monitor water quality at the source and throughout the</li> <li>treatment plant.</li> <li>Initiate monitoring according to a watershed post-fire sampling plan.</li> <li>Adjust treatment processes consistent with any changes in source water quality as well as demand and detention time.</li> <li>Implement erosion control programs.</li> <li>Assess potential long-term impact to water quality and treatment strategy and identify mitigation and long-term adaptation measures that can increase resiliency.</li> <li>Flexibility/Remote Operations</li> <li>Assess whether modifying system operations is necessary if a facility was impacted by the fires.</li> <li>Complete damage assessments.</li> </ul>	<ul> <li>Water Quality</li> <li>Assess damage to distribution system infrastructure.</li> <li>Continue increased water quality monitoring throughout the distribution system until conditions have stabilized. Additional monitoring, including</li> <li>volatile organic chemicals, may be required based on the level of damage.</li> <li>Consider modifying system operations if a facility was impacted by the fires.</li> </ul>	<ul> <li><u>Coordination and Collaborati</u></li> <li>Debrief wildfire response</li> <li>Update relevant plans wit</li> <li><u>Communication</u></li> <li>Notify county and state EC</li> <li>Provide updates to custor</li> <li>Communicate any intermi</li> <li>to state and local regulate</li> </ul>

# Information and Exchange

ance before it's needed.

impacts to water deliveries.

ergency Operation Centers and communicate status periodically. cy agencies.

nternal communication with external affairs and board members for and the media.

al from primacy agency, issue public notices and advisories for water, and/or do-not-drink/use notices.

## Information and Exchange

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e actions and outcomes with any external collaborative agencies. ith lessons learned from wildfire events.

OC of status. mers. nittent changes in water quality tory agencies.