



MEETING NOTES

File No: 5214.25.08

Meeting Date: November 10, 2023

SUBJECT: Debrief from 2023 Wildfires: Impacts on Water Systems

ATTENDEES: Zee Marcolin & Stephen Hidas (Regional District North Okanagan),
Dawn Williams & Mike Rojem (Glenmore Ellison Improvement District),
Rob Hillis (West Kelowna),
Mike Mitchell (District of Lake Country),
Kevin Van Vliet (City of Kelowna),
Anna Warwick Sears & Corinne Jackson (Okanagan Basin Water Board)

1. MEETING AGENDA

- Each Utility's experience during recent fire seasons:
 - Planning completed before
 - Response – what went well, what did not
 - EOC experiences
 - Unexpected issues water managers should know
 - Public sprinklers on roofs – opinions if good or bad (or is there a good way to incorporate into response), is there a consistent message for all water purveyors or is this set by each water utility/community
- Moving forward as unfortunately there will be a next time – how can we be better prepared and do better during response?
- OBWB goal/bigger picture: wants to do outreach and develop set of best practices for the public (up for discussion, not a plan or request at this stage)
- Another meeting?

During the meeting, each Water Utility representative provided an overview of “the good, the bad and the ugly” of the emergency response from the Okanagan wildfires of 2023 (and 2020) with discussion arising to expand on specific topics. The goal of the meeting was to develop water utilities focused strategies for an improved response in the future.

2. IMPACTS FROM WILDFIRE WATER UTILITIES NEED TO PLAN FOR

The following is a compilation of common themes that Water Utilities need to be aware of for wildfire response, a more detailed list is provided below:

- Water losses that can occur during a fire impacting reservoir levels, water pressure and water availability for fire fighters
 - Internal plumbing burning when buildings burn causing uncontrolled leaks at each site
 - Improper use of hydrants
 - Public sprinklers on roofs (especially when done on mass – i.e. entire neighbourhoods)

- Loss of communication towers (are typically located at high elevation in wildfire risk areas)
- If water utilities are not at the EOC or the EOC is not aware of the complexities of water operations, avoidable incidents can occur impeding response. (i.e. power gets turned off, transmission and reservoirs drain for a multiple of reasons, no water in hydrants, etc.)

3. THE GOOD, THE BAD AND THE UGLY

The following provides a brief of incidents that occurred during the 2020 and 2023 wildfire responses with the sole purpose to examine what went well and where water utilities can plan for improvements.

What Went Well

- Having redundancy in communication systems
- Water utilities operations staff being involved at the field response team and managers in the EOC - issues are addressed in a timely manner, concerns regarding impacts to utilities are brought to the table and avoidable issues don't arise
- Having a satellite EOC at an offsite location for utilities to direct actions but that is in direct and constant contact with the EOC. For municipalities, this would include water, sewer and roads personal.
- Local fire chief informing the public of water related messages i.e. that if they put up sprinklers, not to turn them on.

Lessons Learned and Where Improvements can be Made

- Disconnection with EOCs (common theme)
 - Not contacting water utility personnel before things are an emergency or not receiving timely updates
 - Assumption that water will run no matter what
 - Not being made aware of incoming threats so that water utilities could plan a response beforehand such as:
 - switching sources (from power reliant pump stations to gravity sources)
 - setting up redundant infrastructure,
 - having portable generators on hand where they need to be,
 - notifying all operators & water personal that they may be called
 - Dealing with chlorine gas cylinders before as during the fire being a scramble
- Operators in fire zones without training (HR not being happy)
- Water facilities running out of water (water mains, reservoirs, etc.) from:
 - Power being turned off as a precautionary in areas without consulting water utilities resulting in systems depressurizing and reservoirs draining
 - Facilities with no back up power and no UPS (or old ones with faulty batteries)
 - Burnt buildings – burning of internal plumbing causing water to leak uncontrollably until operators could attend to turn the curb stop off
 - Improper use of hydrants
- Not enough notice to deal with chlorine gas tonners
- Cavitation of prv's from high water flow from hydrant use
- Communication towers burning. Without comms, needed to man major facilities (pump station & UV) with an operator 24/7.

- Cellular blind spots. Field operators could talk to each another on the cell phone and needed to communicate through the office (other utilities have radios available but need to be cautious about what saying as monitored by the public)
- Hydrant left open by fire fighters.
- Hydrant use by unauthorized personal draining the transmission main. i.e Member of the public with enough knowledge to open a hydrant thinking they are protecting their property and bleeding out the hydrant. This being observed by fire fighters and wildfire personnel and not notifying the water utility to stop them.
- Fire fighters not knowing how to open certain hydrants (only finding out once water utility contacted them about another issue)
- UPS running out of juice so not getting alarms, most have 2 to 12 hr before running out
- Sprinklers on roofs:
 - Billing – people want credit for water used for sprinkling their roof
 - CBC promoting roof sprinklers without direction from water utility or fire fighters and refusing to listen that it was not a good thing.
 - Complaint from Wild fire – people cause water damage to their own home from sprinklers which is not covered by insurance and many try to sue the Wild fire service.

4. STRATEGIES FOR WATER UTILITIES TO PREPARE FOR WILDFIRE

Communications/SCADA

- Review your communication infrastructure – where is it, have it mapped and ensure the EOC knows you are reliant on the infrastructure.
- Develop a plan with your IT team for redundancy – what happens if the infrastructure is lost? Is there another location that SCADA can be set up quickly if lost?
- UPS systems – make sure checks are done regularly and before a wildfire is a threat, check batteries and make sure changed routinely
- Have a plan for loss of cell service
- Make sure your operators know how to operate your system without comms (have systems programmed for manual if comms are lost)

Making Connections with EOCs

- Water utilities need to know status of what is happening at all times so can plan for next steps
 - Water utilities are complicated and just because there is a hydrant, water may not come out if water utilities are not consulted
 - Notify when water infrastructure is in the “red/hot zone” (under threat) so can switch to redundant methods
 - Many water utilities have alternative sources but need to know threat of first
 - For larger communities, need to know where the threat is coming from so can have water available for response in that area

Planning for future response – best done when not urgent.

- Document what worked and what should happen next time
- Chlorine gas cylinders – before the next wildfire - have a plan for either getting them out early or do what you need to do to make them safe to with stand a fire burning around them. This includes fire smarting now: preferably being in a fire proof building, no vegetation near the building – clear all trees that could fall on the building and looking for possible trees that if burning could fall on the building, gravel / asphalt completely

surrounding the building for 20 ft, insure no entry ports into building such as vents and soffits, clean gutters and install sprinklers (or have on hand) to wet down the area if a fire comes through.

- Map your critical infrastructure and consider doing a Community Structure Protection Plan (CSPP). A CSPP provides information the fire responders need to use the water system as a tool, identifies where your critical infrastructure is and most importantly, makes that connection between the fire responders and water utilities during the document development stage to discuss strengths and limitations of your system.
- Example CSPP: <https://www.rdno.ca/media/3648>
- Make sure operators are aware of controlled power shut downs and steps to start up pumps and other infrastructure manually
- Develop an Emergency Response Plan for Wildfire specific for your utility – Potential actions to consider during Wild fire Emergency Response for water utilities
 - Who runs the EOC that you would be part of? Get contact names. Make sure they have up to date mapping for you utility
 - Move to manually operating reservoirs to keep reservoirs full (not cycle down)
 - Switch to gravity sources if available as power outages common during wildfires
 - Have an up to date contact list of your large water users (contact early to put on notice to prepare for a shut off if the water is needed elsewhere)
 - If applicable - Notify all large agricultural users directly if there is threat that may be turned off at a moment's notice (need to store water for their essential needs) – get contacts before anything happens as this can take time
 - Operators on hand to shut off curb stops to burnt buildings and direct fire responders
 - Chlorine cylinders – have a plan for either getting them out early or do what you need to do to make them safe to with stand a fire burning around them.
 - Sampling plan if foams are used near a water source (VOC sampling afterwards)

Sprinklers on Roofs

- Develop consistent message about sprinkling on roofs
 - Public sprinkling of roofs generally does not assist fire fighting (unless directly requested by fire department) and could hinder efforts:
 - Uses water that could drain reservoirs and drop pressure with result that hydrants not having sufficient water/pressure to operate
 - Fire fighters use sprinkler systems for about 45 minutes twice per day to create humidity bubble over house/area to move fire away, do not generally need to soak an area (check with wildfire personal for wording)
 - Most insurance companies will not cover damage caused by roof sprinklers (should discuss with your insurance company) and water utility or wildfire will not cover damage either
 - Ask public to purchase a sprinkler kit and leave on the driveway that wildfire personal can use where needed as opposed to putting sprinklers on roofs
- People wanting credit for water used for sprinkling their roof/property – numerous utilities response is that if they could prove that the water was used by wildfire services then would give a credit (i.e. with cameras) and had to be in risk area. Estimate volume based on historic use.
- Sprinkler companies are part of the problem i.e. Wasp has bad communication encouraging people to install sprinklers

Training

- Train your operators to know how to operate the system without comms (SCADA).
- Training for operators “how to operate safety in a fire zone” for example, training as provided by: Darren Hutchinson, Quintech Fire Services Ltd., 1-250-701-7082
darren@quintechfire.com
- Have a primer about the water system for the onboarding of out of town fire responders, remind them on proper use of hydrants
- 101 of water utilities training for fire responders

Communication Tools to prepare before next fire season

- Fact sheet for media to understand potential issues: utilities are complicated, different areas respond differently (avoid misinformation), insurance implications
- Common message for Fire Chiefs and EOC Chief to provide at start of EOC (re sprinklers) – (for use by communities that align to the message)