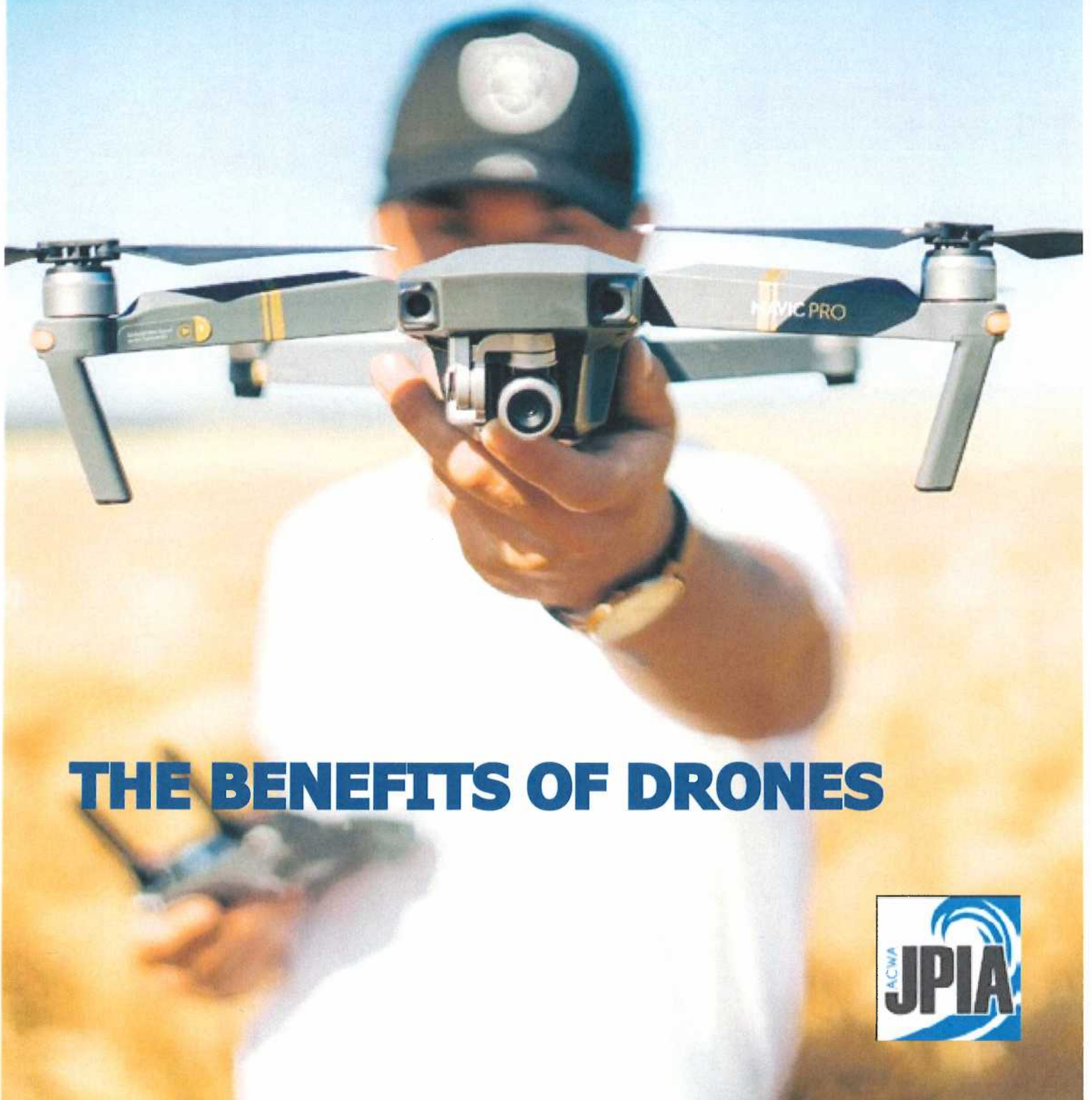


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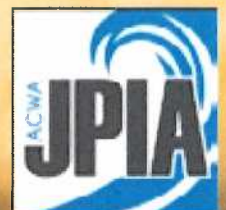
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ACWA JPIA Risk Management for the Water Industry



## THE BENEFITS OF DRONES





## Post Fire Slope Inspection

### The Benefits of Drones

In the mid-1930s, the British Royal Air Force used a radio-controlled drone for target practice for British pilots. Many believe this to be the first use of drones. Prior to using drones, crewed aircraft would tow gliders for target practice. So, drones were developed to prevent humans from getting hurt. Fast forward to current times, we now have so many types of drones that it is hard to wrap our heads around what type of drone to get or how it can help us in our daily jobs.

Just as the British Royal Air Force eliminated the hazard of pulling gliders for target practice, the water industry can and has looked at ways to eliminate putting employees in hazardous situations. With the use of drones, several JPIA members have effectively found ways to inspect areas, such as on top of reservoirs, that are highly hazardous to employees. Using the hierarchy of controls method of eliminating a hazard and utilizing drones to inspect locations requiring fall protection, eliminates employees having to work at heights. Aside from providing the benefit of eliminating fall hazards while inspecting assets at heights, drones can provide the following benefits to JPIA members:

- Drones can be used to video tape and/or take pictures of difficult to reach sites.
- They can be used to inspect dams and canal looking for potential breaks or hot spots.
- Drones can help with conducting periodic inspections during construction projects.
- They can also be used to help record historical data and map new areas.

- In the event of an emergency, like a wildfire, they can be used to survey potential disaster areas that are difficult to reach by vehicle.

However, if a member plans to use a drone, there are some important steps that need to be taken. Understanding what the drone is needed for will allow an agency to better choose the type of drone to acquire. The drone market has grown tremendously over the last few years and technology advancements such as infrared scanning to look for hot spots, or chemical sensors to identify a potential spill, are several of examples of the technology that can be used with drones. The cost of a drone can easily escalate into thousands of dollars, so it is essential to recognize what needs the agency has for a drone.

### Developing Operating Procedures

Once a drone has been selected, the member should develop a written program that will provide specific procedures on when and how to use a drone. Detailing prohibited uses and areas not to fly is also very important, for example, flying over private or restricted property. The Federal Aviation Administration (FAA) has [specific restrictions](#) when flying near airport airspaces. These restrictions, along with any local restrictions, should be reviewed and annotated in the member's drone program. As with any piece of equipment, a drone will also need to be maintained. Regular maintenance and inspections can keep a drone operating for a long time. A [sample maintenance checklist](#) found on the JPIA's website can be used in conjunction with the manufacturer's



## Reservoir Inspection

recommendations to develop a specific maintenance program to preserve the investment.

Each flight should be documented and any video and/or pictures taken should be logged. An article on [pilotinstitute.com](http://pilotinstitute.com) states that “the FAA very strongly recommends the practice of keeping drone flight logs...” The reason for this is to provide evidence of flight when requested by the FAA or if involved in an incident. Specific items like date, total hours of flight, and location of flight should be documented. Additional [documentation tips](#) and a sample of a [drone logbook](#) can be found on the Commitment to Excellence (C2E) page on the JPIA’s website.

### Staff Training

As a program is being developed, identifying who will be piloting the drone is very important. Any government agency piloting a drone will need to be licensed under the [FAA’s Small UAS Rule \(Part 107\) regulation](#). To determine if a license is required, a member can use the [identification tools](#) the FAA provides to better understand the licensing process. If your agency falls under Part 107, all agency pilots will need to take a written test and complete refresher training every two years. In addition to acquiring a license, the drone being operated by the agency pilots must also be registered with the FAA. As with other helpful tools, the FAA has a [“How to Register Your Drone”](#) link to help with the process.

### JPIA Best Practices

As stated above, there are several required items that need to be completed before implementing a drone into regular operations. Again, the JPIA has developed best practices and provided important links to help our members interested in developing a drone program. Under the Infrastructure Loss Reduction Focus Area of the [JPIA’s Commitment to Excellence Program](#), a member will find the Unmanned Aerial Devices section. This section provides members with best practices in the following areas:

- Planning and Coordination
- Staff Training
- Insurance Coverage

The use of drones provides great benefits and can help in minimizing hazardous situations for employees. Like any other program that is implemented, prior planning will go a long way to develop a sustainable process. Submitting for a [JPIA Risk Control Grant](#) can greatly help in the implementation of a drone program. Lastly, as a member looks to develop or update a drone program, review the best practices found on the JPIA’s website and reach out to a JPIA Risk Control Advisor for assistance. Drones can be an innovative way to enhance operations, help members stay ahead of potential issues, and provide promotional footage for special events and publications.



If an agency already utilizes drones or is looking to develop a program, the following questions can help an organization build a successful drone program:

- What is the goal/purpose for implementing a drone program?
- Is it beneficial to own a drone or contract out?
- Are there personnel who can develop and implement a drone program?
- Who will operate and maintain the drone(s)?
- Have best practices provided under the JPIA's C2E Program been reviewed?
- Has JPIA Member Services been contacted to discuss adding the drone to the Property Schedule?



*Documenting USA locating*

Happy Flying!




*Traffic Control Training - Crews repairing a leak*



*Training and Public Outreach*

**JPIASource**



The *JPIASource* is not intended to be exhaustive. The discussion and best practices suggested herein should not be regarded as legal advice. Readers should pursue legal counsel or contact their insurance providers to gain more exhaustive advice.

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*Pipeline inspection in hard to reach areas.*

Photos: David-Henrichs-Unsplash.com; Beaumont-Cherry Valley Water District