

# A Helpful View

KPUD flies drones to help crews identify issues quickly

In 2019, Klickitat PUD adopted the use of unmanned aerial systems—more commonly known as drones—as part of a proactive maintenance program. Drones are used for infrastructure and

rights-of-way inspections and outage response. They help reduce risks, control costs, increase efficiency and improve the overall reliability of our system.

KPUD pilots work

year-round throughout our service territory, responding to outages and inspecting the critical infrastructures that provide power, water and sewer services to our customers. Inspections take place in rural and incorporated areas.

The PUD attempts to notify customers who may be affected by scheduled operations.

However, many assessments are time-sensitive, and notifications cannot always be completed. In incorporated areas,

KPUD also notifies the governing authority. Keep in mind that if KPUD does not have an accurate phone number on file, we are not able to contact those customers.

KPUD's drone pilots are certified under the Federal Aviation Administration's Part 107 Small UAS pilot program. The rigorous safety qualifications include more than 15 hours of flight training and flight evaluations. All pilots must follow KPUD procedures



for the operation of drones. Seven members of the KPUD engineering staff are FAA certified for drone operation.

KPUD's distribution and transmission infrastructure is comprised of more than 30,300 poles and 2,200 miles of line, in sometimes remote and difficult-to-access areas. The remote locations of many of these lines and the size of the structures make it challenging to get close inspections of the critical hardware from the ground.

Drones allow operators to quickly obtain close-up, high-resolution images of each structure from many different vantage points. These images are reviewed in the field and by engineering staff back in the office, where more time is spent on each image. If deficiencies are found, they are prioritized based on severity, and the work is scheduled for repair or replacement.

KPUD proactively carries out vegetation management along power line rights-of-way. Drones have proven to be a valuable asset when inspecting ROW. As part of our normal infrastructure inspection process, we identify vegetation encroachment issues. Imagery is collected, then locations are identified and prioritized for treatment.

We also use drones in our scheduled cycle trimming program. KPUD collects imagery for areas that are scheduled for treatment. Once treatment has occurred, we can recheck the ROW to confirm treatment has been completed.

During storm outages, crews often must walk or snowshoe along power lines to find the exact location of damage to repair it. By using drones, the



flight crew can access these same remote areas more safely.

Staff can avoid potential injury during storms or in rugged terrain by accessing and inspecting infrastructure with a drone. The operator can send detailed information to the office so warehouse staff can pull the proper materials. Field crews can be dispatched to the exact location of the problem to make the necessary repairs.

By doing this, KPUD can more quickly identify the cause, repair the issue and restore power to customers.

Not only does the program provide cost savings, it also provides more detailed data for line crews to use. Drone operators are involved with vegetation management and help plan for line extensions in timbered areas.

Additionally, we have deployed drones to help locate underground water leaks in KPUD-owned water systems. Data is used to provide visual aids to crews. This allows them to discuss where work needs to be completed without going to



**ABOVE: Drones help crews view hard to reach places in inclement weather. TOP: KPUD drone pilots, from left: Brandon Johnson, Phillip McMillen, Justin Beierle, Aaron Estey, Jared Balcom, Mark Garner and Nathaniel Hill. OPPOSITE: Rather than walking lines to find outages, drones can help crews quickly check where issues could be.**

a remote site.

KPUD's drone inspection team will continue mitigating risk and improving efficiency and reliability in day-to-day operations. Staff is using the

technology to proactively assess KPUD systems and implement work plans. ■