



Unmanned Aircraft Systems (UAS)

TECH BOX

Unmanned Aircraft Systems (UAS) are commonly referred to as drones. UAS was one of APWA's Top Trending Technologies in Public Works for 2018 and APWA has created a variety of educational offerings about UAS. APWA has created this tech box to share with you so that you can learn more about UAS/Drones.

PUBLIC WORKS PROFESSIONALS USE UNMANNED AIRCRAFT SYSTEMS (UAS) FOR:

- Bridge Inspections
- Pipe Inspections
- Damage Inspections
- Special Events – Emergency Management
- Disasters – Emergency Management
- Surveying
- Construction Observation/Monitoring
- Zoning Observations

ENGINEERING AND TECHNOLOGY COMMITTEE GUIDANCE STATEMENT

[Local Agency Usage of Unmanned Aerial Systems](#)

APWA EDUCATION AND CREDENTIALING BLOGS

[Top 10 Things to Know Before You Fly a Drone](#)

[Preparing for Takeoff: what public works needs to know about UAV courses](#)

APWA REPORTER ARTICLES

January 2021

[Former gamer now playing professionally – with drones](#)

January 2020

[Applications of Unmanned Aerial Systems in engineering](#)

August 2019

[Drones: Can they benefit public works](#)

July 2019

[What's the buzz about drones?](#)

March 2019

[Considerations for Public Works Drone Programs](#)

June 2016

[Drones as a tool for bridge inspections](#)

CLICK, LISTEN & LEARN WEBINARS

[UFO or UAV? The Welcome Invasion of Drones in the Public Works World](#)

Just a few short years ago the sight of a multi-rotor, Unmanned Aerial Vehicle with flashing colored lights may have invoked a reaction similar to spotting a flying saucer. Now there are an estimated 600,000 Small UAVs—or drones as they are commonly called—registered with the Federal Aviation Administration.

CLL Managing Change and Improvement with Technology Tools

A group of speakers will discuss how various current and trending technologies such as GIS, aerial drones, asset management systems, smart vehicles, and others are changing how Public Works leaders are managing their responsibilities. The discussion will cover how to prepare to use, implement, and sustain the technology in a range of settings and operations. The speakers will discuss the requirements for skills and tools, along with management support, that must be in place prior to implementation and utilization of technology, and to institutionalize the capability.



Continued on next page

TALKING TOP TECH WEBINAR

[Talking Top Tech: Unmanned Aircraft Systems \(UAS\)/Drones](#)

This presentation will take a look at UAS/Drones through the perspective of different lenses including Public Works, Consultants, and industry. Leaders in each field will participate in a panel discussion and answer APWA member questions.

PWX EDUCATION SESSIONS

[Unmanned Aircraft Systems \(UAS\) for Bridge Inspection](#)

The Minnesota Department of Transportation (MnDOT) has conducted a research project to evaluate unmanned aerial system (UAS) technology, safety, and effectiveness for bridge inspection. They've looked into the effectiveness of the technology, current and proposed FAA rules regarding UAV safety, and a cost comparison between UAS and traditional inspection tools.

[What's the Buzz about Drones \(UAS\)? Examine Everything from Licensing, Operations, Uses, Apps and Current Equipment Along with an Update on FHWA's EDC5- UAS Initiative](#)

Drones have quickly become a common tool for various public works functions. Join us for this examination of the process for getting a UAS (Unmanned Aircraft Systems FAA Part 107 License and the FAA UAS Regulations for Commercial Drone Pilots. We'll also review the various operational/field uses for drones, including construction/project management, inspection operations, engineering design, and surveying. We'll also explore the available app and websites for data integration with your phone, tablet, and laptop.

[Dare to Ask Presentation: Game of Drones: Innovation is Coming](#)

Pierce County, Washington, uses drones for asset management functions including tracking and verifying quantities of stock, assessing high risk areas (mudslides, hazard slopes, etc.), and performing levee inspections. Discover how using drones improves workforce safety and efficiency and explore how your agency can make use of drone technology and navigate the policy considerations that need to be addressed.

[A Peculiar Way to Survey Sewers – Using Drone Technology](#)

Unmanned Aerial Vehicles (UAVs) are having positive effect on the design and maintenance of public facilities and infrastructure. UAVs (drones) combined with 3-D technology are being used to upgrade surveying and construction drawing development. The City of Peculiar, Missouri, used drone and 3-D photography to enhance the surveying for the new 28,000-foot sewer interceptor design and installation. Costs were lowered approximately 30% from traditional surveying techniques.

[Virtual Surveyor – Bridging the Gap Between Drone and CAD!](#)

Surveying by unmanned aerial vehicles (known as UAVs or drones adds additional complexity to your workflow. Discover how Virtual Surveyor software helps bridge the gap between drone data and computer-aided design (CAD) by helping you create lines, breaklines, select points, triangulate contours, and more. You can fly around and look from different angles to make sure that your survey is accurate. It's like being in the field yourself.

[Taking Flight to the Next Level – Practical Public Works Applications of Unmanned Aerial Vehicles](#)

Explore how the City of Rancho Palos Verdes, California, has used UAV technology to create 3D maps of a local landslide, and employed them as part of parks and building maintenance and disaster response and damage assessment. UAVs were integrated into a summer intern program to engage local high school students to expose them to real-world public works issues.

SNOW CONFERENCE EDUCATION SESSION

[New Technology Trends for Winter Maintenance](#)

There are many evolving technologies that transform winter maintenance operations. This session will highlight two initiatives: The first will discuss thermal mapping, which provides a method to show locations of cold and warm spots in the roadways. The second presentation reviews advancements being made in applications of Unmanned Aerial Vehicles (UAV) for accommodating the Michigan Department of Transportation (MDOT) with its asset management condition assessment and operational needs.

For more information at APWA's Top Trending Technologies in Public Works please visit www.apwa.net/topotech.

