Utilizing UAVs (drones) for Regulatory Compliance

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What we plan to discuss today

- UAV basics
- Typical permit required inspections (CSWGP, ISGP, Muni, local)
- How we justified the need for UAVs in our inspection program
- Nuts and bolts of developing a UAV inspection program (training, certifications, documentation and policies)
- How adding UAVs has improved our process and our customer service
- Part I of this workshop will be classroom, Part II will be field demonstration

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About your presenters

Darren Podraza

- Background in municipal utilities management and GIS
- Currently serves as the City's GIS Coordinator / Utilities Inspector

Zack Holt

- Background in Environmental Science
- Currently serves as the City's Stormwater and Watersheds Program Manager

Before we get too far…

This is ***NOT*** the workshop for this type of UAV

This ***IS*** the workshop for this type of UAV

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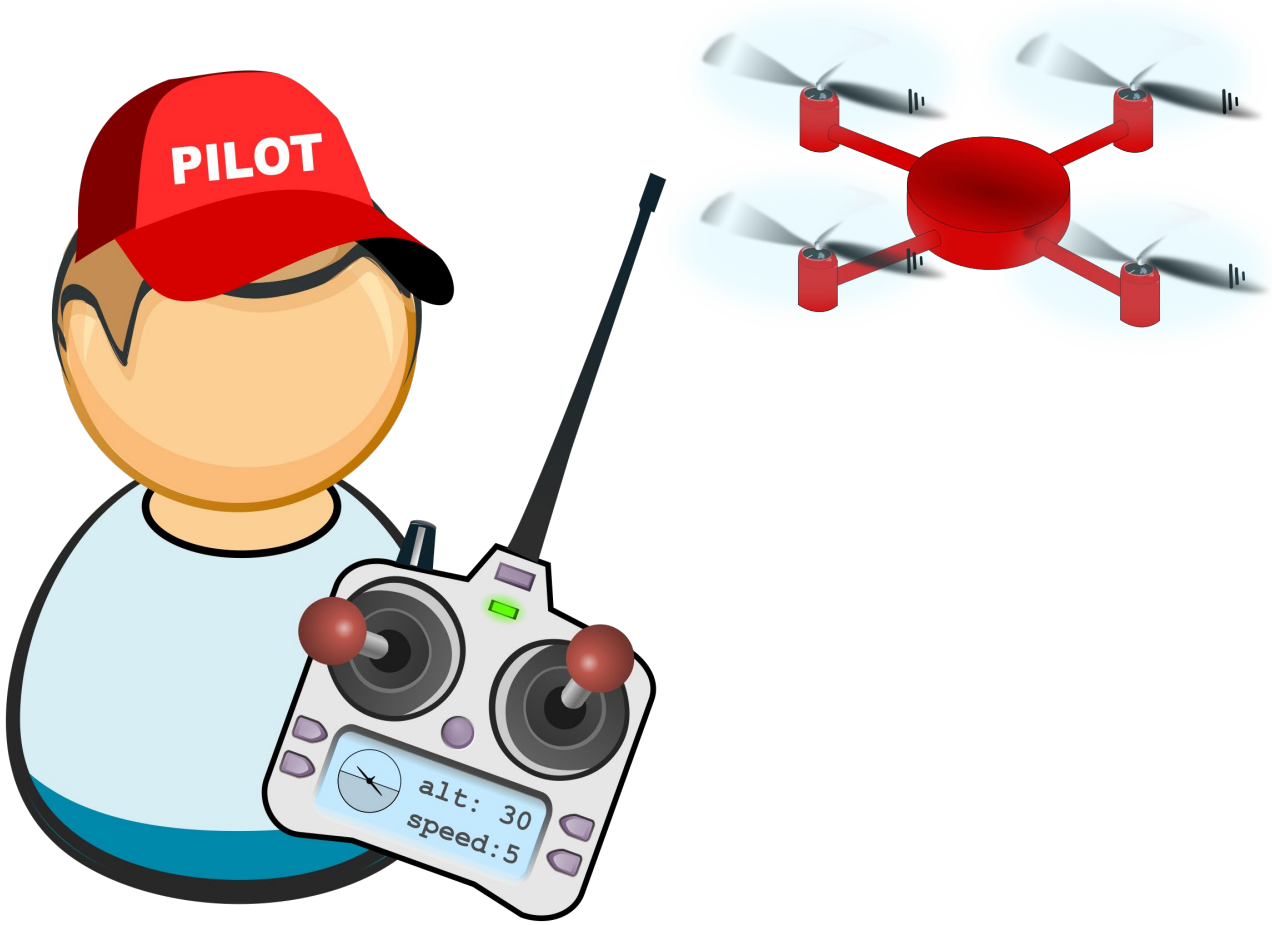
So, does anyone in this room currently use UAVs?



What is a UAV?

Acronym for Uncrewed (or unmanned) Aerial Vehicle

Also referred to as a drone, Remote Piloted Vehicle (RPV), etc.

For the purpose of this workshop we will call the vehicle a drone and the program a UAV Program

From Oxford Languages Dictionary:
noun
noun: **UAV**; plural noun: **UAVs**; noun: **unmanned aerial vehicle**; plural noun: **unmanned aerial vehicles**

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Why use drones?

- Streamlined inspections
- Consistent observations from the air
- Recorded video/photo inspection record and GPS coordinates
- Beneficial to code enforcement processes

Port Orchard now has two UAV programs

Public Works/DCD

- Construction/environmental/Utility oriented
- Regulatory compliance driven

Police

- Different mission/requirement than Public Works, hence separation

Do you have any Environmental Permits?

Do you have any Boatyard Permits?

Do you ever have any Corps Permits?

Do you have any Federal Permits?

Do you have any Vinyard Permits?

Do you inspect capital projects?

Show of Hands from the Room…

Do you have any Dam Safety Permits?

Do you have any Construction General Permits?

Do you have a Municipal Permit?

Do you have any Shoreline Permits?

Do you have any Sand and Gravel Permits?

Do you have any Industrial Permits?

Do you like Piña Coladas?

Do you issue and inspect Local Permits?

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If yes, utilizing drones may be beneficial to your organization

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Typical inspections for Port Orchard

- Utility installation
- Regulatory compliance
  - NPDES (CSWGP, ISGP, Municipal)
  - ODW (Reservoir inspections)
  - Critical areas
- Capital Projects
- Buffer investigations
- Environmental/spills issues

Why Port Orchard chose to pursue drones

Problem sites…

Traditional regulatory inspections take time

- Lots of walking, note taking, photographing
- With multiple sites, time consuming work, lots of documentation
- Walking is necessary for clearing limits, pre-clearing ESC inspections and required regulatory inspections

Volume and type of inspection needs kept growing

- Number of inspections needed has grown exponentially
- Amount of time needed to inspect hasn’t changed
- Rate of development increased, staffing levels did not
- Larger projects

Audience question(s)…

- So, have you found your jurisdiction in a similar situation?
- Have a hard time justifying more staff when potential economy crashes weigh heavily on the minds of your decision makers?
- Have you had to think outside the box to continue meeting regulatory compliance?
- A UAV inspection program might be beneficial to your jurisdiction!

So… do we hire more inspectors or…

- Find reasonable alternatives!
  - Still need to conduct routine inspections, so how do we streamline the rest of the follow-up inspections and code enforcement actions?
- Find sustainable alternatives to additional hiring
- Find a way to reduce all the WALKING!

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Do we need to walk EVERY time?

- NO! So why not use a drone?

  *(disclaimer: drones don't substitute for a full, **required** construction site field inspection)*

- Ideal for covering known ground quickly and checking for changes to plats and construction sites, status of ESC BMPs, etc.

- Useful for repeated documentation (same flight path) to show changes over time

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Now, to convince decision makers…

- Cost savings (reduction in FTE time)
- Increase in productivity and efficiency
- Increased customer satisfaction
- Developer satisfaction
- Transparent code enforcement data

…It was a pretty quick and easy yes from them.

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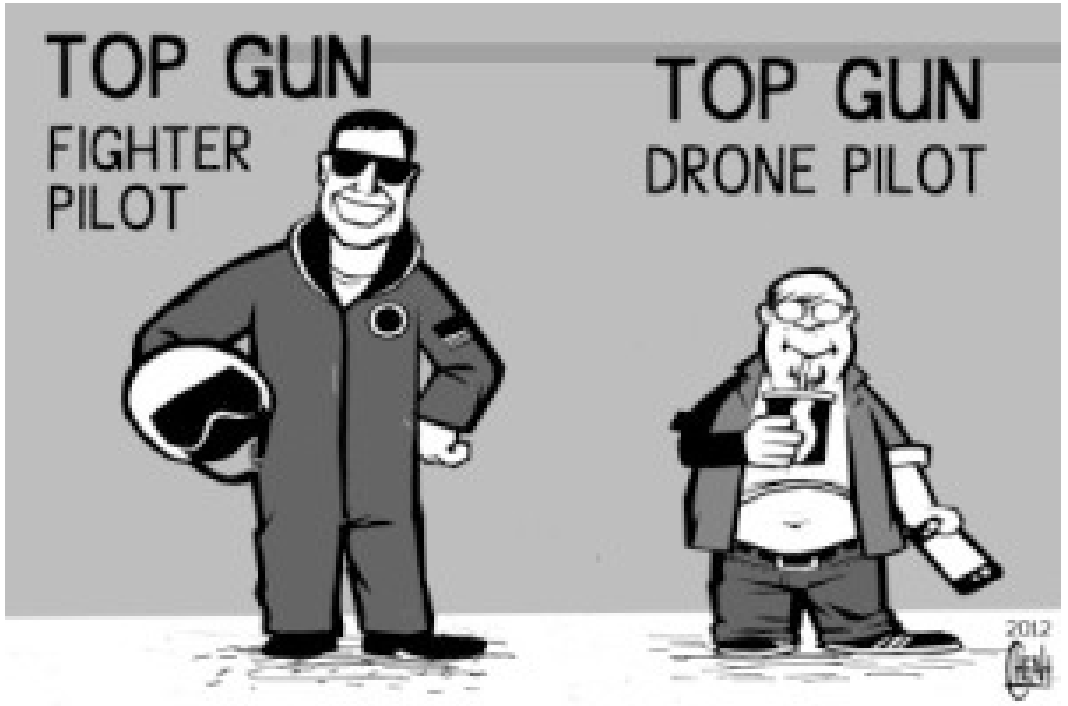
OK. So we have a drone. Now what?

- Develop a policy
- Hire or train a pilot
- Make sure the drone can do what you need it to do before you purchase one.



Establishing a policy

- Unique to each jurisdiction
- Determine limitations and allowable uses (usual use, emergency use, etc.)
- Establish privacy policy and allowable usage

Part 107 UAS Remote Pilot Licensing

- FAA information on UAS:

[Become a Drone Pilot (faa.gov)]

Documentation and Procedures

- Flight logs are a must (pre-flight checklist, flight record, etc.)
- Get prior authorization if needed to fly
- If a spotter is needed, plan ahead

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Stay current with part 107 updates

- Rules change on occasion, so it is important to be current on FAA updates
- Make sure your policy is updated to reflect changes

Now we have a UAV, policy, a pilot (or two) and a program. Was it worth the effort?

- YES! Since we implemented the UAV inspection program we have been able to SIGNIFICANTLY streamline our inspection procedures, our enforcement actions and our efficiency inspecting
- We are still completing our regulatory inspections and can supplement them with additional aerial footage – what used to take us countless days and hours of repeated site visits can now be done in minutes
- We have found that our UAV program compliments state regulatory inspections by providing our state partners with dated aerial video or photos, documenting issues for follow-up that assists them with their regulatory inspection programs

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Improvements to processes and customer service

- Increased time use efficiency for inspection
- Collect aerial imagery and photos for improved documentation
- Combine individual lot inspections with larger plat inspections
- Help identify out-of-sight problems not easily seen from the ground

Improvements to processes and customer service

- Assists with identifying issues before storm events (illegal discharges)
- Supplements regulatory inspections for sites struggling with compliance while minimizing additional effort
- Strengthens code enforcement actions by providing solid, time stamped data in addition to usual methods of data collection

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In closing…

- Implementing a UAV program has significantly aided Port Orchard with regulatory compliance
- It was easy to get approved
- It makes the life of inspectors less stressful and compliments their work products
- Our code enforcement officer greatly appreciates the drone when forming an enforcement case!

So now that you have an idea of how drones might be able to serve your program and mission, are they right for you?


Questions?
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