Unmanned Aerial Systems

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AASHTO

UTDOT
Keeping Utah Moving
Future?
What Can We Do With UAS?
Tools are Changing
Outdoor Advertising

- New Perspective
- Easy to Obtain
Exhibits

- Accurate Dimensions (Gore, Barrier, etc.)
- Improvement from Google Earth
- Area
Access Control

- Flow of Traffic
- Assessment of Property
Land Surveying

- Imagery
- High Resolution Detailed Point Cloud
Automation Tools
• Silt Fence
• Environmental Fence
Structures

Bridge Inspection

- Delamination (Thermal)
- Mapping
- Inspection

- Increase Frequency
- Improved Documentation
- Supplement
- Safety Near Traffic
How Do I Get Started?

- CFR
- Remote Pilot
- Unmanned Aircraft
- Rotorcraft
- Quadcopter
- UAS
- Sensors
- Fixed Wing
- Drones
- Unmanned Aerial Systems

[Image of a person with arrows pointing to different options.]
Why do you need a Remote Pilot License?

1.4 Million Registered Drones
• 130,000 Commercial Remote Pilots
• 4 to 1 vs manned aviation
Structure Inspections?
How To Get Started?

• Policy and Procedures
• Part 107 Remote Pilot License
• Acquisition of sUAS
• Flight Training
• LAANC
• FAA Waiver/COA Process (If Needed)
“Successful Approaches for the Use of Unmanned Aerial Systems (UAS) by Surface Transportation Agencies”

Findings, Conclusions and Recommendations
NCHRP UAS Domestic Scan 17-01
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Peer Exchange Workshop

Scan participants reviewed applications of UAS by Surface Transportation Agencies from 12 states:

- Alaska
- California
- Colorado
- Georgia
- Iowa
- Kentucky
- Michigan
- Minnesota
- New Jersey
- Ohio
- North Carolina
- Utah
Summary of Initial Findings

Findings presented here were gleaned from four days of presentations, group discussions and participant notes.

The scan team settled on the seven themes below for “Getting Started with UAS”

1) Executive Support
2) Organizational Structure
3) Policy and Regulation
4) Safety and Risk Management
5) Training and Crew Qualifications
6) Public Relations
7) Application and Operation

Report can be downloaded at:
Obtaining Buy-in and Support

- Low Hanging Fruit
- Safer
- Time Savings
- Improved Data

Showcase Easy Wins

- Keep Good Documentation
- Find Articles/Reports Showcasing Return on Investment
- Vocalize What You Are Doing!

Document Savings

- Showcase How You Can Help Them
- Side By Side Comparison of Existing Data Versus UAS

Improve Someone's Day

LTDOT - Keeping Utah Moving
UDOT UAS Website

UAS Program Users

2016 – 1 Remote Pilot
2018 - 10 Remote Pilots
2019 – Q2 40 Prospective

LEGEND:
- Trained Part 107 UAS Pilot in Division
- Prospective UAS Pilots
- Current UAS Users

Unmanned Aerial Systems
Current Users

- Structures
- Aeronautics
- Traffic and Safety
- Central Construction
- Hydraulics
- Environmental
- Communications
- Central Maintenance
- Learning
- Region 1
- Region 2
- Region 3
- Region 4
- GIS

- Inspection
- Geotechnical
- Urban Air Mobility
- Airport Inspection

- Pre-Construction
- Construction
- Project Managers
- Pre-Construction
- Right of Way
Capabilities of Aircraft

- Winds
- Aircraft Limitations
Capabilities of Aircraft

- Performance
- Battery
- Max Speed
- Max Wind Performance
Integrating, Managing, Sharing Data

Plan for LARGE Data Sets
Have Adequate Storage
Utilize Document Management System
Utilize GIS Tools
Find Multi-Uses for Data
SHARE!!!
Urban Air Mobility
We’re All Growing!

What is a Solution?
In the past 12 months, industry has averaged one new Urban Air Mobility vehicle concept introduced per month.
When?

- Imminent: Small package (<10lbs) delivery by drone
- 2020: First piloted Uber Air test flights in Dallas and Los Angeles
- 2021: Large package (~ 500lbs) delivery by drone
- 2023/4: Airbus and Workhorse ready for full integration of autonomous Vertical Take Off and Landing (VTOL) human transportation
UAS Build Structure
https://www.youtube.com/watch?v=g4tv899wm94
What is Possible?

UAS Bridge

https://youtu.be/CCDIu2U0ETc

primary structure
Recruit Next Generation
QUESTIONS?

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