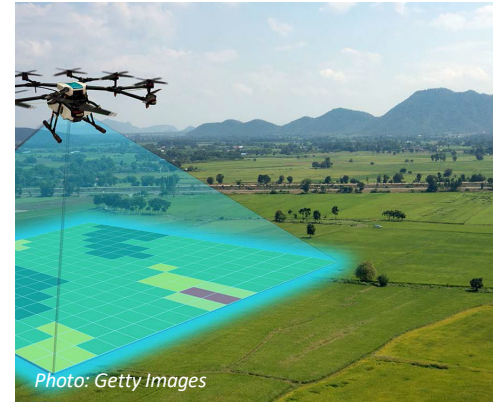
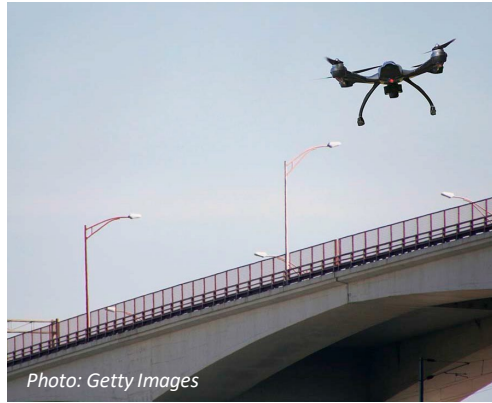




U.S. Department of Transportation
Federal Highway Administration



FHWA OVERVIEW OF Unmanned Aerial Systems (UAS)

*Federal Government Aviation Weather Technical Interchange Meeting
October 5, 2021*

James S. Gray, PE

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Program Resources: www.fhwa.dot.gov/uas

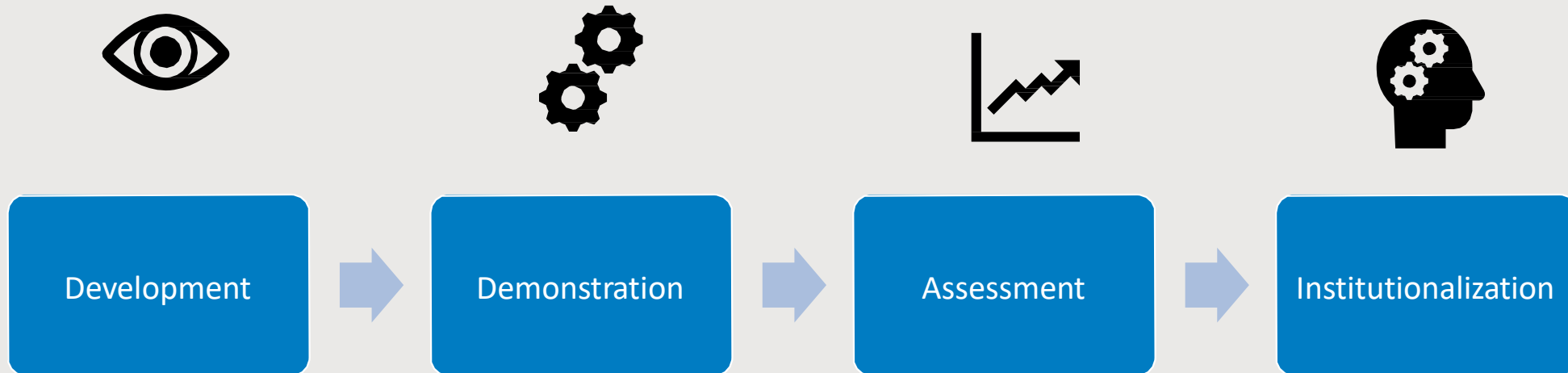


Except for the statutes and regulations cited, the contents of this presentation do not have the force and effect of law and are not meant to bind States in any way. This presentation is intended only to provide clarity regarding existing requirements under the law or agency policies.



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Integration of UAS – a Multi-phase Process



UAS is adding *value* to a broad range of stakeholders in *surface transportation*.

100% of U.S. State DOTs self-reported using UAS.

Unmanned Aerial Systems - Use Cases

Construction Inspection



- Surveying
- Routine Inspection
- Construction Quantities
- Pre-Construction Quantities
- Work Zone Traffic Monitoring

Structural Inspection



- Supplementing Bridge Inspection
- High Mast Lighting
- Confined Space
- Retaining Walls
- Tunnels

Emergency Response



- Flooding Events
- Wind Events
- Landslides/Mudslides
- Fire Events
- Earthquakes

- ✓ Identify Mature Use Cases
- ✓ Facilitate Peer-to-Peer Learning
- ✓ Technology Exchange
- ✓ Disseminate Practices

FHWA UAS Program Resources

✓ Technical Briefs

✓ Webinars

✓ Peer Exchanges

Program Resources: www.fhwa.dot.gov/uas

DECEMBER 2019
FHWA-HIF-20-026

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Unmanned Aerial Systems

Library
Webinars
Peer Exchanges

Home / Programs / Unmanned Aerial Systems / Webinars

Webinars

Date	Presenter	Organization	Topics/Link of recording
2/7/2017	Jennifer Wells	MnDOT	Review current bridge inspection practices and discuss how UAS can be incorporated as another tool for bridge engineers and inspectors. Review the scope and results of MnDOT's Phase I and Phase II Utilizing UAS for Bridge Inspection Research Projects
	Barrett Lovelace	Collins Engineering	Recording: https://connectdot.connectsolutions.com/p43i0qpfqs/
3/3/2017	Dave May	FAA	Certificate of Waiver/Authorization (COA) approval for unmanned Aircraft Systems by Federal, State, County, and City law enforcement/Fire and First Responder agencies and the coordination of air traffic requirements for manufactures applying for Special Airworthiness. UAS

Email Notification

- [Subscribe to UAS notifications](#)

More Information

- [Drones for Humanitarian and Environmental Applications](#)
- [FAA Low Altitude Authorization and Notification Capability \(LAANC\) Program](#)
- [FAA Unmanned Aerial Systems Site](#)
- [FHWA Center for Accelerating Innovation](#)
- [FHWA Office of Infrastructure](#)

Contact

Tech Brief
UNMANNED AERIAL SYSTEMS PEER EXCHANGE, GRAND FORKS, NORTH DAKOTA



FHWA UAS Operations



Current FHWA UAS Uses

- Aerial site photography and videography
- Topographic surveys
- Asset condition inventory along steep roads
- Rockfall analysis
- Rockfall change detection monitoring



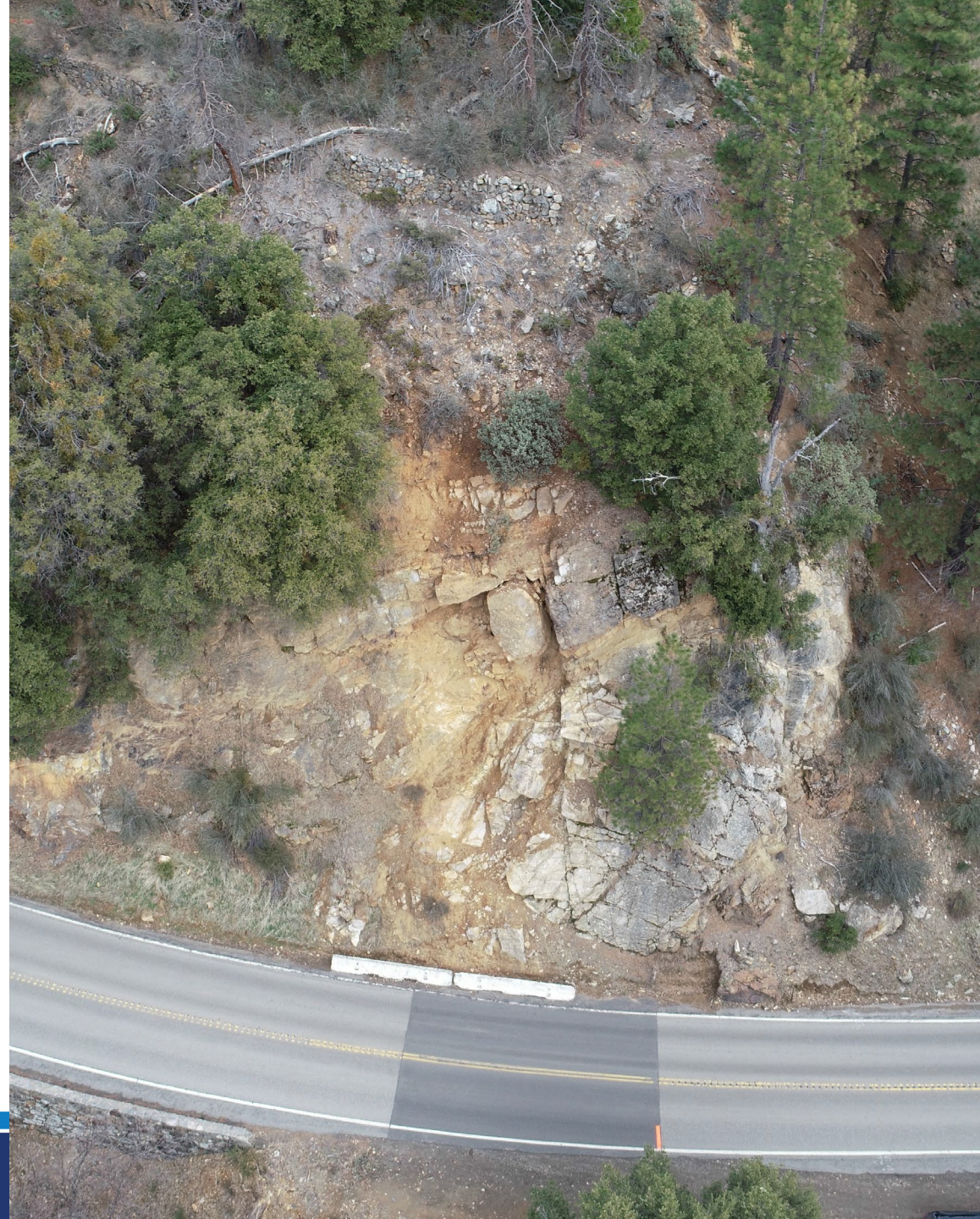


Future FHWA UAS Uses

- Construction support
- Material quantity monitoring
- Bridge inspection support
- Geothermal mapping
- Concrete delamination studies
- As-built surveys

Accomplishments

- Multiple Division Offices have completed flights using their own staff and their own aircraft
- Acquisition of a shared resource processing computer able to handle the large quantities of data produced by UAS
- License maintenance for 12 FAA Part 107 certified UAS pilots



Looking to the Future

- Continue to conduct missions for topographic survey and rockfall monitoring
- Fully stand up Bridge Inspection Support Program
- Ensure all UAS comply with security policies
- Continue to develop our relationships with Federal Land Management Agencies
- Adapt to whatever new challenges and opportunities arise

