

# Maryland Unmanned Aerial Systems (UAS) Information Exchange Forum

December 4, 2018  
Columbia, MD



Images courtesy of the FHWA Center for Accelerating Innovation

## Update from Federal Highway Administration on Unmanned Aerial Systems (UAS)



U.S. Department of Transportation  
**Federal Highway Administration**  
Office of Infrastructure

CONNIE YEW, P.E.  
TEAM LEADER, CONSTRUCTION MANAGEMENT  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

# FHWA Every Day Counts (EDC)

2

*Market-ready + Proven + Underutilized*

**EDC**  
**2011-2012**  
**14**  
***Innovations***

**EDC-2**  
**2013-2014**  
**13**  
***Innovations***

**EDC-3**  
**2015-2016**  
**12**  
***Innovations***

**EDC-4**  
**2017-2018**  
**11**  
***Innovations***

**EDC-5**  
**2019-2020**  
**10**  
***Innovations***

Visit FHWA Website: [https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_5/](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/)

# Launching EDC-5

3

## Safety

Rural  
Roadway  
Departure

STEP 2.0

## Mobility

Crowd-  
sourcing

Weather-  
Response

## Shortening Project Delivery

Project  
Bundling

Value  
Capture

## Quality

UAS

Advanced  
Geotech

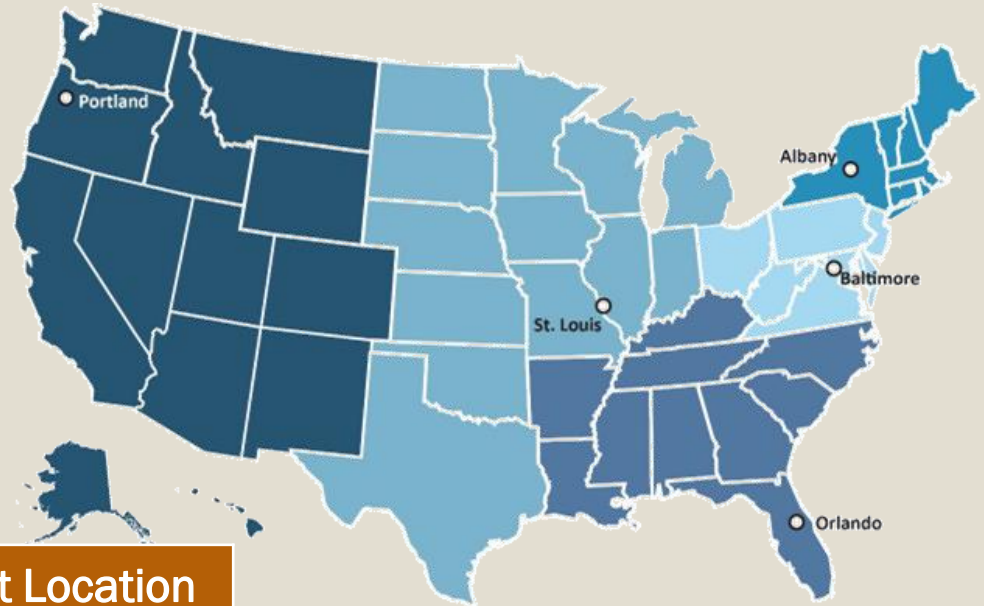
CHANGE 2.0

## Environment

Virtual  
Public  
Involvement

# EDC-5 Summits

4



Area	Date	Event Location
Mid-Atlantic	Oct 18-19	Baltimore, MD
Northeast	Oct 24-25	Albany, NY
Mid-America	Oct 29-30	St. Louis, MO
West	Nov 8-9	Portland, OR
South	Nov 27-28	Orlando, FL

# Unmanned Aerial Systems

5

- **What are they?**
  - “Drones”
  - Multi-use aircraft controlled from a licensed operator on the ground
  - Coupled with sensors such as high definition cameras and LiDAR
- **What are they used for?**
  - Enhanced data acquisition for:
    - Structural Inspection
    - Construction Inspection
    - Emergency Response

# Benefits

6

- Improved Safety
- Increased Efficiency
- Increased Quality
- Reduced Costs

*“An average cost savings of 40% over traditional inspection methods”*

*- Minnesota DOT*

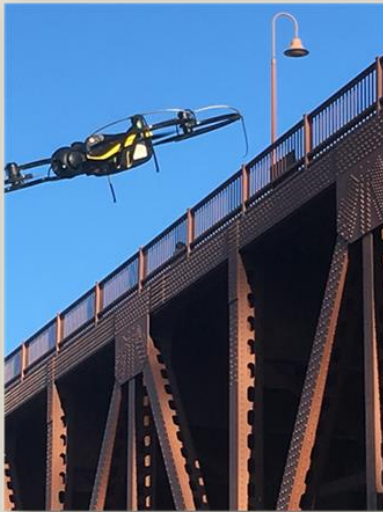


Image: FHWA

*“Workforce was 45% more productive and the project was completed ahead of schedule”*

*- Utah DOT*

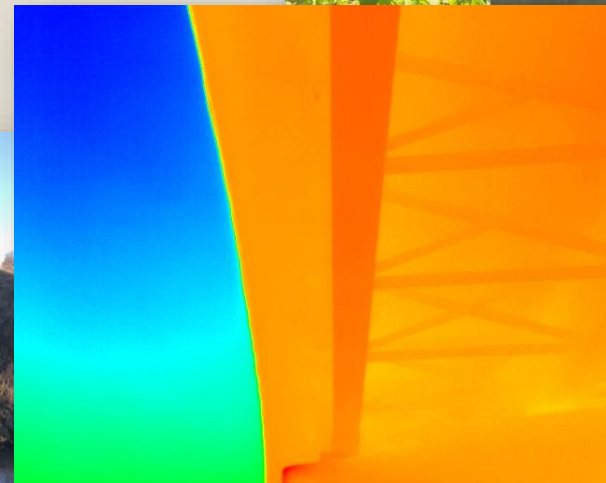
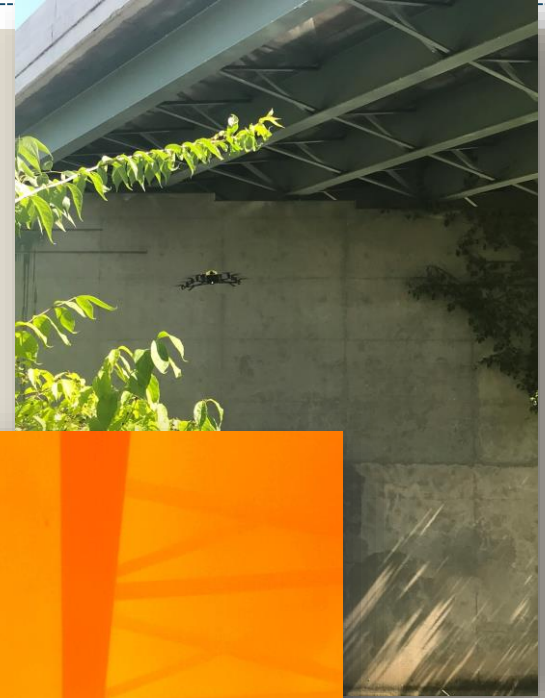
*“Reduced lane closures and increased safety for both workers and the traveling public”*

*- New Jersey DOT*

# Structural Inspection

7

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



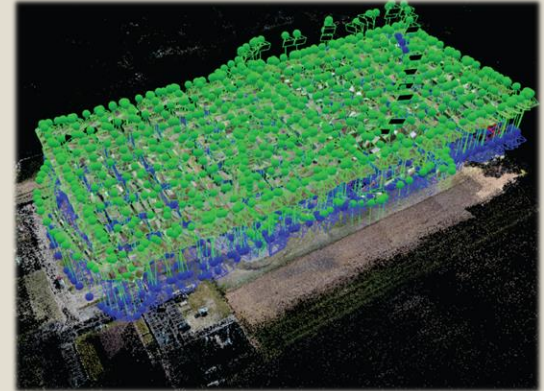
Images courtesy of Iowa State University



# Construction Inspection

8

- Surveying
- Routing Inspection
- Construction Quantities
- Pre-Construction/Project Scoping
- Work Zone Traffic Monitoring



Images courtesy of Iowa State University



# Emergency Response

9

- Flooding Events
- Wind Events
- Earth Movement (landslides, mudslides, volcanoes)
- Fire Events
- Earthquakes



Images courtesy of Iowa State University

# Core Implementation Team

10

**James Gray**  
Office of Infrastructure, FHWA



**Connie Yew**  
Office of Infrastructure, FHWA



**Dennis O'Shea**  
Bridge Safety,  
FHWA

**Sharon Gordon**  
Local Aid Support,  
FHWA

**John Haynes**  
Division Office,  
FHWA

**Fred Judson**  
Lead State Champion,  
Ohio DOT

**Jennifer Wells**  
Lead State Champion,  
Minnesota DOT

**Glenn Stott**  
Lead State Champion,  
New Jersey DOT

**Basil Yap**  
Lead State Champion,  
North Carolina DOT

**Paul Wheeler**  
Lead State Champion,  
Utah DOT

**Cameron Chasten**  
Army Corps of Engineers  
Representative

**Robin Murphy**  
Emergency Response  
Texas A&M University

**Rich Juliano**  
ARTBA Representative

**Brian Deery**  
AGC Representative

# Opportunities and Obstacles

11

Opportunities	Obstacles/Threats
<ul style="list-style-type: none"><li>• UAS FAA Pilot Program</li><li>• Public perception (Excitement)</li><li>• STIC and AID funding</li><li>• FAA regulations</li></ul>	<ul style="list-style-type: none"><li>• Lack of organizational structure at the State level</li><li>• Resistance to change</li><li>• No control over others using drones</li></ul>

# How to Achieve Our Mission?

12

Ongoing Efforts	Proposed Efforts
<ul style="list-style-type: none"><li>● FHWA National UAS Peer Exchange</li><li>● PIARC Report and Webinar</li><li>● Domestic SCAN</li><li>● TechBrief Development</li><li>● Bridge Inspection Data Management Project</li></ul>	<ul style="list-style-type: none"><li>● Peer exchanges</li><li>● Webinars</li><li>● Guide specifications</li><li>● UAS training programs</li><li>● Regional Workshops</li></ul>

# Thank You!

13

**Connie Yew, P.E.**

Team Leader, Construction Management

Office of Infrastructure

U.S. Department of Transportation

Federal Highway Administration

Email: [connie.yew@dot.gov](mailto:connie.yew@dot.gov)

Website: <https://www.fhwa.dot.gov/construction>



U.S. Department of Transportation

**Federal Highway Administration**

Office of Infrastructure