U.S. Department of Transportation

Unmanned Aerial Systems (UAS)

UAS (i.e., drones) are multi-use aircrafts controlled by a licensed operator on the ground. These systems offer several transformative benefits for highway transportation, enhancing safety and productivity and reducing cost.[1] UAS can aid in traffic incident and weather disaster management, streamline infrastructure inspections, and support first mile and last mile deliveries.

The featured benefits and lessons learned are based on ITS project evaluations contained in the ITS Databases at: www.itskrs.its.dot.gov. **Click on each example to learn more.**

Traffic Incident Management (TIM)

In North Carolina, a field test of UAS equipped with 3D imaging technology enabled investigators to reduce crash reconstruction time by about 75%.

In Washington, UAS reduced road closure times by 75% when deployed for TIM, saving the State's economy $350 per minute.

Weather Disaster Management

In Montana, using Road Weather Information System measurements and UAS-based ice detection technology improved adverse weather forecasting accuracy by 32%.

In Louisiana, Texas, North Carolina, and Florida, UAS were used extensively to support all emergency support functions, including searches for damage and missing persons during hurricanes.

Infrastructure Inspection

In Utah, UAS increased sign inspections from 2-3 to 16 per day, saving one project over $100,000 through productivity increases.

In South Carolina, UAS for bridge inspections effectively observed 91% of inspection points and resulted in an estimated cost savings of nearly 28%.

First Mile/Last Mile

In North Carolina, UAS technology reduced blood sample and medical supply delivery time from a hospital to a lab by 78%.

In Illinois, modeled results showed UAS delivery led to up to 60% cost savings compared to traditional last-mile truck delivery.

1. FHWA. Unmanned Aerial Systems Factsheet.

Last modified on October 1, 2024