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WHITE PAPER

IMPACTS OF FEDERAL RESTRICTIONS ON FOREIGN-MADE UNCREWED AIRCRAFT SYSTEMS (UAS) ON STATE TRANSPORTATION AND AVIATION AGENCIES

Executive Summary

Recent federal actions, including Office of Management and Budget Memorandum M-26-02, Federal Highway Administration (FHWA) guidance, and Federal Communications Commission (FCC) Covered List interpretations, have materially altered the operating environment for state transportation and aviation agency UAS programs. While national security objectives underpin these policies, the practical effect has been a widespread disruption of established UAS-enabled workflows across engineering, surveying, construction inspection, emergency response, and public communications.

Based on responses from more than twenty state agencies, this white paper documents the scope, scale, and nature of these impacts. The findings show that the absence of a coordinated transition strategy, combined with uneven interpretations of federal guidance and limited availability of functionally equivalent compliant systems, has resulted in grounded fleets, deferred projects, increased costs, and heightened operational risk.

Purpose and Scope

The purpose of this white paper is to:

- Document the operational and financial impacts of recent federal UAS restrictions on state agencies;
- Identify common themes and systemic challenges;
- Quantify fleet, cost, and operational exposure where data is available; and,
- Inform federal, state, and stakeholder discussions on mitigation strategies and policy alignment.

This paper is based on qualitative and quantitative responses provided by state departments of transportation, aviation agencies, and related entities.

Federal Policy Context

Key federal actions influencing state UAS operations include:

- OMB Memorandum M-26-02;
- FHWA guidance on UAS eligibility for federally funded projects;
- FCC Covered List determinations affecting foreign-made UAS and components; and,
- Existing NDAA procurement restrictions.

While these policies are intended to reduce national security risk, their combined effect has expanded restrictions beyond procurement into day-to-day operational use, particularly where federal funding is implicated.

Quantitative Summary Tables

TABLE 1. STATE PARTICIPATION AND REPORTED IMPACT LEVEL

Impact Level	States
Severe (Majority or full fleet grounded)	OR, GA, WI, IN, NY, CO
Moderate (Partial grounding, segregation by funding)	WA, MN, ID, NE, AL, AR, CA, IL
Minimal or No Impact	SC, TX, WY, MD (partial), TN

TABLE 2. REPORTED FLEET IMPACTS AND INVESTMENT EXPOSURE

State	% Fleet Impacted	Airframes Impacted	Reported Investment at Risk
Oregon	~95%	21	>$250,000 (estimated)
Georgia	~80%	34	~$225,000
Wisconsin	100%	1	~$12,000
Indiana	~85%	20–30	~$400,000
Minnesota	~84%	~60	$150,000–$200,000
Nebraska	~86%	13	~$45,000

State	% Fleet Impacted	Airframes Impacted	Reported Investment at Risk
New York	~92%	23	~$150,000
Alabama	~75%	16	~$125,000
Arkansas	~15%	5	~$100,000
California	~30%	91	Not centralized

Note: Figures reflect reported estimates and are not comprehensive lifecycle costs.

TABLE 3. BUDGET READINESS FOR FLEET REPLACEMENT

Budget Status	States
No dedicated replacement budget	OR, GA, IN, MN, NE, ID, NY, WI
Partial or phased replacement possible	CA, WA, AL, AR, TN
Fully prepared / compliant	SC, TX

Operational Impact Analysis

ENGINEERING, SURVEYING, AND PLANNING

UAS platforms have become integral to modern engineering and planning workflows, enabling high-resolution mapping, photogrammetry, and lidar collection in complex terrain. Multiple states reported that grounded fleets eliminate their ability to collect current, high-accuracy datasets, forcing reliance on dated or lower-resolution alternatives. This shift increases project risk, reduces design accuracy, and reintroduces safety hazards associated with manual fieldwork.

CONSTRUCTION INSPECTION AND CONTRACT ADMINISTRATION

UAS-enabled inspection programs were widely credited with reducing disputes, accelerating inspections, and lowering project costs. Restrictions now prevent UAS use on federally funded projects in many states, undermining dispute resolution processes and increasing exposure to claims and change orders.

EMERGENCY RESPONSE AND RESILIENCY

States emphasized that UAS restrictions impair rapid damage assessment, landslide monitoring, wildfire response, and FEMA reimbursement documentation. In several cases, agencies noted that data collected with restricted platforms cannot be used if an incident escalates to federal funding, reducing operational flexibility during emergencies.

COMMUNICATIONS AND PUBLIC INFORMATION

UAS imagery has become a core public-facing tool for construction updates and emergency communications. Grounding of communications fleets diminishes transparency and reduces the ability to convey complex information to the public in an accessible manner.

Systemic Challenges Identified

- Inconsistent interpretation of federal guidance across FHWA divisions;
- Unclear treatment of legacy systems and state-funded operations;
- Limited availability and high cost of compliant alternatives;
- Capability gaps between restricted and approved platforms; and,
- Lack of federal funding to support mandated transitions.

Policy Considerations and Opportunities

The findings suggest a need for:

- Clear, uniform federal guidance on operational eligibility;
- Transitional allowances for legacy systems;
- Federal funding mechanisms to offset replacement costs;
- Capability-based evaluations rather than origin-based exclusions alone; and,
- Improved coordination between OMB, FHWA, FCC, and FAA.

Aggregate National Cost Estimates and Ranges

This section provides order-of-magnitude estimates for (1) near-term state agency fleet replacement exposure and (2) potential extension of the same constraints to local transportation agencies.

These estimates intentionally present ranges because the underlying dataset includes both quantified and unquantified responses, inconsistent central tracking across agencies, and differing interpretations of how restrictions apply to legacy systems and contractor operations.

METHODOLOGY AND ASSUMPTIONS

Data anchored in reported counts and costs. Where states provided airframe counts and/or investment figures, those values were used directly.

Replacement cost per airframe is modeled as a range. States reported replacement needs in the $15,000–$30,000 per airframe range in some programs, while other states described materially higher replacement costs and price escalation for compliant systems. For national modeling, this paper uses $20,000–$60,000 per airframe as a planning range to capture typical aircraft plus mission equipment, spares, batteries, software, and initial training.

State-level extrapolation is scenario-based. Scenarios vary the number of impacted states and average impacted airframes per state.

Local agency extrapolation is structural. Several respondents noted likely higher impacts at local and municipal levels. Local agencies are modeled as a distribution of county/city/municipal transportation programs that use UAS for documentation, inspection, survey support, incident response, and project communications.

TABLE 4. RESPONDENT-BASED REPLACEMENT EXPOSURE (STATES WITH COUNTABLE IMPACT)

Metric	Low	High
Impacted airframes counted in responses	319	329
Modeled replacement cost per airframe	$15,000	$60,000
Replacement exposure for counted respondents	$4.8M	$19.7M

These values represent a floor for the respondent group because multiple states explicitly stated they were still “gathering numbers,” were decentralized, or did not quantify impacts.

TABLE 5. NATIONAL STATE AGENCY REPLACEMENT EXPOSURE SCENARIOS (ORDER-OF-MAGNITUDE)

Scenario	Impacted states	Avg impacted airframes per impacted state	Modeled impacted airframes	Replacement cost range
Conservative	30	10	300	$6.0M–$18.0M
Mid	39	15	585	$11.7M–$35.1M
High	45	25	1,125	$22.5M–$67.5M

Interpretation: for state agencies alone, a reasonable planning range is roughly $10M–$50M, with a plausible upper bound approaching $70M depending on how broadly restrictions are applied to legacy systems, sensors, software ecosystems, and contractor operations.

EXTRAPOLATION TO LOCAL TRANSPORTATION AGENCIES

Many state DOT responses note that local and municipal impacts are likely higher, either because local agencies have less procurement capacity, higher reliance on legacy or off-the-shelf platforms, or because they operate under the same federal funding conditions through federal-aid projects.

A conservative structural model is:

- 20 local transportation agencies per impacted state with active UAS capability (counties, cities, MPO-related field teams, municipal public works);
- Average fleet of 3 airframes per participating local agency; and,
- 50% of those fleets impacted under Covered List or related restrictions.

This yields 30 impacted local airframes per impacted state. Applying this to 39 impacted states produces approximately 1,170 impacted local airframes.

TABLE 6. LOCAL TRANSPORTATION AGENCY REPLACEMENT EXPOSURE (ILLUSTRATIVE)

Modeled impacted local airframes	Replacement cost per airframe	Local agency replacement exposure
1,170	$20,000–$60,000	$23.4M–$70.2M

COMBINED STATE + LOCAL ORDER-OF-MAGNITUDE RANGE

Combining the mid-range state scenario with the local illustrative estimate yields a combined planning range of approximately $35M–$105M in replacement exposure, not including

secondary costs such as workflow redevelopment, certification/testing, data migration, and productivity loss.

Conclusion

Federal restrictions on foreign-made UAS have introduced significant operational, financial, and safety challenges for state transportation and aviation agencies. While the national security rationale is acknowledged, the absence of a coordinated transition framework risks degrading public-sector capabilities that directly support infrastructure delivery, emergency response, and public safety.

Without corrective policy alignment and transitional support, states will continue to experience uneven impacts, reduced efficiency, and increased costs, ultimately affecting the public they serve.

Appendix A. States Providing Input

Alabama, Arkansas, California, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Nebraska, New York, Oregon, South Carolina, Tennessee, Texas, Virginia, Washington, Wisconsin, Wyoming