

Local Government Policy and Planning for Unmanned Aerial Systems

Project 1823
April 2020

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North America is establishing itself as a leader in the commercial and civil use of Unmanned Aerial Systems (UAS), also referred to as drones. With applications ranging from aerial photography to autonomous delivery and surveillance and inspection, UAS transportation networks are expected to be an integral part of future urban planning and smart cities' design. But how will their use be regulated at the local level? Are local jurisdictions ready to deal with policy-making for these novel systems and with the public concerns that will ensue?

Study Methods:

In order to study priorities and highlighted regulatory concerns from local California policy-makers on UAS operations, the research investigative approach involved the use of a two-tiered stakeholder analysis process. The first-tier data collection involved the creation of a survey to be distributed to local agencies in the State of California. The survey questions addressed particular areas of concern on the topic of UAS

usage and regulation, including:

- usage, type, and accessibility to UAS for different departments
- interest in self-regulation of UAS operations
- timeline for major UAS deployment and the need for regulation
- privacy and environmental concerns and restrictions
- need for technical expertise; and
- federal regulations and best regulatory paths forward.

The second-tier data collection was carried out through an in-person focus group of experts who provided detailed responses through the use of a semi-structured interview method. The structure and flow of the discussion during the focus group were flexible and largely based on the responses from the group, with the researchers prompting the attendees on key topics of interest that were identified during the first tier of analysis.

Findings:

Survey and focus group activities showed trends and conclusions that were in agreement with each other. The following list highlights some of the major takeaways that were analyzed in this report:

- Law enforcement showed the highest rates of current use and UAS availability, followed by fire emergency response, and road inspection.
- Several shortcomings in the current regulatory structure and cooperation (or lack thereof) between the federal government and the local agencies were observed. In particular, local jurisdictions complained that the enforcement of rules is very limited (due to poor resources) at both federal and local levels.
- Local jurisdiction representatives indicated a reluctance to create local policy related to UAS operations in fear of it being preempted by federal supremacy in court. Furthermore, they pointed out that this reluctance was also related to the fast-paced changes of the federal regulations, and to the limited resources in their possession versus the amount of effort needed to remain up to speed with the evolving regulatory panorama. There was a consensus on the feeling captured by the question: “Why keep track of federal regulations if by the time we decide to act those will be changed again?”
- While the majority of the participants recognized the importance of UAS technology and the associated concerns for integration, they showed only moderate or little interest in the overall regulation of UAS.

Policy Recommendations:

In addition to the above findings, the following recommendations were offered:

- Survey-takers and focus group participants pointed to the need for more specialized training, at the local level, on which aspects related to UAS usage can and should be regulated locally. Moreover, this pointed to the need to establish better communication channels between the federal government and local agencies.
- Participants urged for more restrictive licensing, with the purpose of tracking users. The idea of “purchase permits” was explored and

brought forward by the focus group participants (especially the law enforcement representatives), whose vision of future UAS regulation was comparable with gun control laws.

- Participants from the focus group recognized that too many restrictions can have a counterproductive effect on users and could stimulate the increase of rogue operators. A primary concern noted about rogue operations was the need to ensure that usage of UASs could be restricted to appropriate locations only (e.g., non-congested areas). However, the concern of the participants was that if restrictions become so burdensome that operators cannot legally use their aircraft anywhere, alternative locations for operations have to be considered that still allow for user needs to be met. Specifically, participants in law enforcement suggested the need to ensure adequate spaces across the region where users could meet for flying UAS, as well as for exchanging tips and best practices for operations.

About the Authors

Dr. Tyler Spence and Dr. Francesca Favaro are Assistant Professors in the Department of Aviation and Technology in the College of Engineering at San Jose State University. Their research interests lie at the intersection between aviation, public policy, and the deployment of new technologies within the National Airspace. Dr. Spence is a certified flight instructor with a PhD in Aviation from Purdue University. Dr. Favaro is a student pilot and certified UAS Remote Pilot with a PhD in Aerospace Engineering from the Georgia Institute of Technology.

To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/1823



MTI is a University Transportation Center sponsored by the U.S. Department of Transportation’s Office of the Assistant Secretary for Research and Technology and by Caltrans. The Institute is located within San José State University’s Lucas Graduate School of Business.