

# UAS Package Delivery Opportunities: Possible Threats and Opportunities for State and Local Governments

Daniel Friedenzohn

Associate Professor and Associate Dean, College of Aviation

Embry-Riddle Aeronautical University

[friedend@erau.edu](mailto:friedend@erau.edu)





Source: Popular Science, March 4, 2013

## The FAA's Focus is on Safe Operations

“Congress has provided the FAA with exclusive authority to regulate aviation safety, the efficiency of the navigable airspace, and air traffic control, among other things. State and local governments are not permitted to regulate any type of aircraft operations, such as flight paths or altitudes, or the navigable airspace.”

Source: FAA, Press Release, July 20, 2018, Press Release – FAA Statement– Federal vs. Local Drone Authority, available at [https://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=22938&omniRss=press\\_releasesAoc&cid=102\\_P\\_R](https://www.faa.gov/news/press_releases/news_story.cfm?newsId=22938&omniRss=press_releasesAoc&cid=102_P_R)

# Why UAS Delivery is so Appealing

- Cargo is lightweight & compact
- Efficient
  - 3 minute trip versus a 30 minute drive
- Lower costs
- Reduction in automobile traffic
- Potential access to some goods for individuals who face transportation-related challenges
  - Limited public transportation
  - Disability



**Source:** UPS just beat out Amazon, FedEx, and Uber to make America's first revenue-generating drone delivery, [Rachel Premack](https://www.businessinsider.com/ups-first-revenue-generating-drone-delivery-with-matternet-2019-3), Mar. 26, 2019, 12:30 PM, available at <https://www.businessinsider.com/ups-first-revenue-generating-drone-delivery-with-matternet-2019-3>

**Source:** UPS DRONES ARE NOW MOVING BLOOD SAMPLES OVER NORTH CAROLINA, April 1, 2019, available at <https://www.wired.com/story/ups-matternet-drone-delivery-north-carolina/>

# Where is Public Sentiment with Respect to UAS Delivery Operations?

2016 USPS OIG Report on Public Perception of Drone Delivery Revealed:

- The American public anticipates that drone delivery will be offered within the next 5 to 10 years
- More Americans like the concept of drone delivery than dislike it, but a large number have yet to decide
- Malfunction is the public's primary concern about drone delivery — far more than fears about intentional misuse
- Exposure to information about drone delivery correlates with greater interest in the idea



**Source:** NASA, Unmanned Aircraft System (UAS) Traffic Management (UTM) Enabling Civilian Low-altitude Airspace and Unmanned Aircraft System Operations, <https://utm.arc.nasa.gov/index.shtml>

**Source:** Public Perception of Drone Delivery in the United States, Report Number RARC-WP-17-001 October 11, 2016, available at [https://www.uspsoig.gov/sites/default/files/document-library-files/2016/RARC\\_WP-17-001.pdf](https://www.uspsoig.gov/sites/default/files/document-library-files/2016/RARC_WP-17-001.pdf).

# Uber Elevate is seeking Regulatory Relief from 16 Rules to Provide Food Delivery Service in San Diego

- The majority of the comments oppose this proposal
- Most of the feedback is based on:
  - Safety
  - Privacy
  - Noise
  - Perception of congested airspace
  - Tort concerns
    - Insurance requirements
    - Indemnification for the city

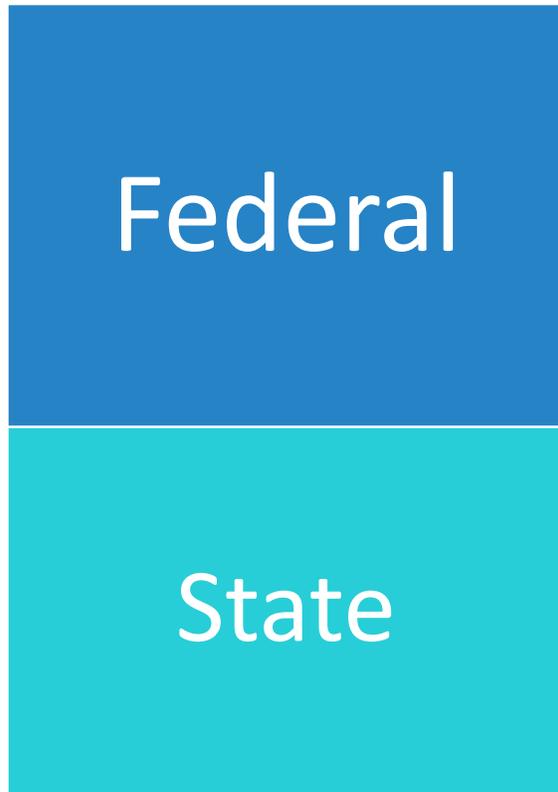


Source: Uber, as provided <https://www.freightwaves.com/news/uber-seeks-approval-for-san-diego-drone-deliveries>

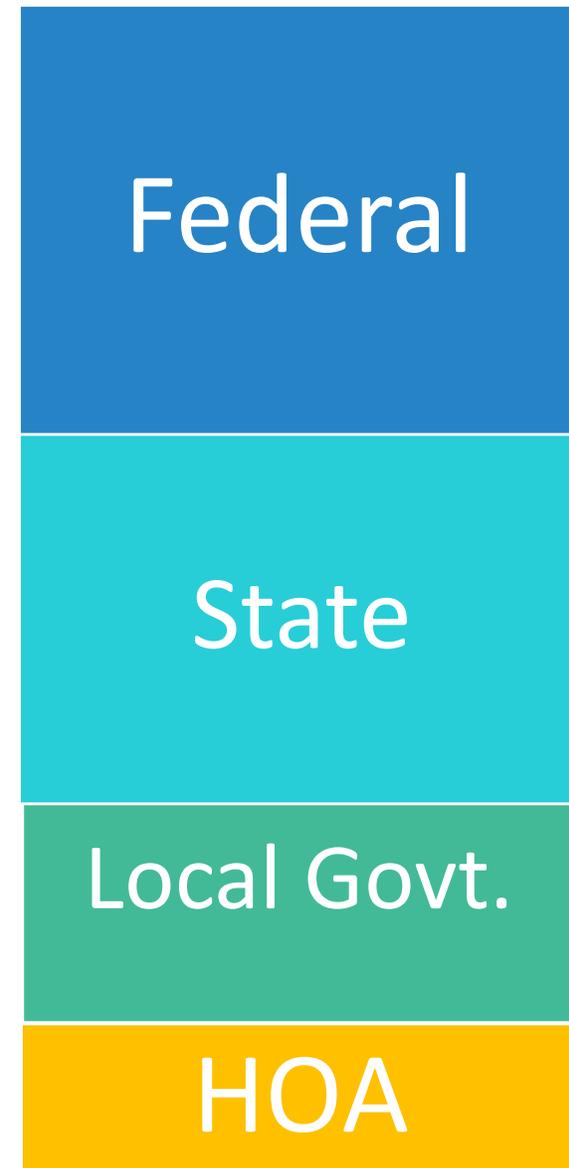
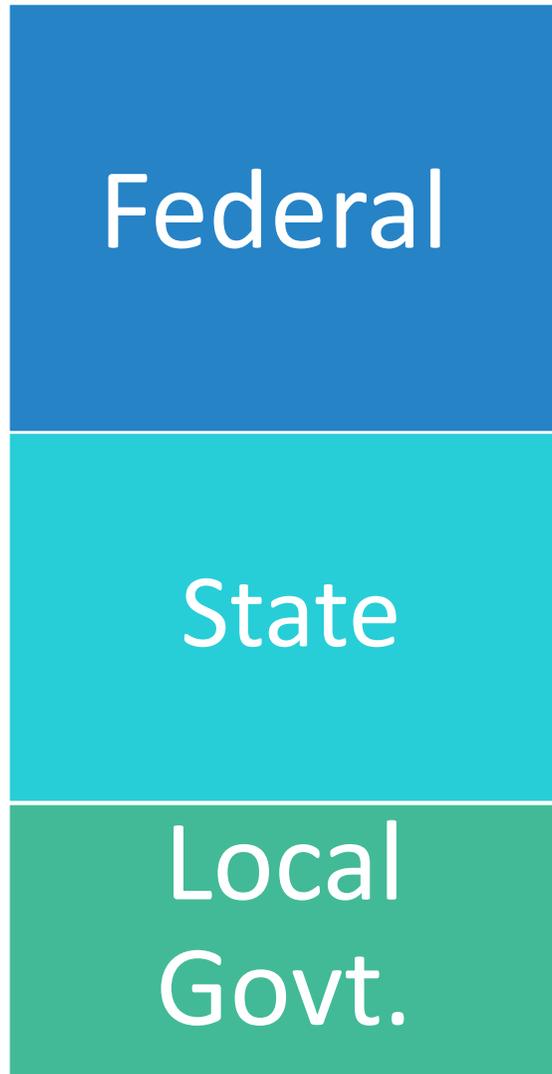
# States and Local Government have the Right to Regulate Certain Laws Impacting UAS Operations

- Police powers
- Zoning
  - Where can a UAS depart or land?
- Safe operations
  - Criminal trespass
  - Tort law
  - Assault
- Privacy
  - *Does the UAS operator have the right to fly over my property?*
  - *Does the UAS operator have the right to record images of my property?*

Source: LAW ENFORCEMENT GUIDANCE FOR SUSPECTED UNAUTHORIZED UAS OPERATIONS Version 5 – Issued 8/14/2018, available at [https://www.faa.gov/uas/public\\_safety\\_gov/media/FAA\\_UAS-PO\\_LEA\\_Guidance.pdf](https://www.faa.gov/uas/public_safety_gov/media/FAA_UAS-PO_LEA_Guidance.pdf)



One Size Fits All  
Approach????



# States and Local Governments have been Active in Enacting Laws Regulating some types of UAS Activity

<b>Number of States Taking Action Addressing UAS Activity</b>		
<b>Year</b>	<b>Bills &amp; Resolutions Considered</b>	<b>Enacted Laws</b>
<b>2013</b>	<b>43</b>	<b>13</b>
<b>2014</b>	<b>35</b>	<b>10</b>
<b>2015</b>	<b>45</b>	<b>17</b>
<b>2016</b>	<b>32</b>	<b>18</b>
<b>2017</b>	<b>38</b>	<b>18</b>

- Local Governments have been active as well
- 133 localities across 31 states have enacted laws
- Covers over 30 million people
  - Three ordinances appear to have enacted UAS activity

Source: Local and State Drone Laws, Arthur Holland Michel, March 2017, Bard College.

Source: Essex, A. (2016). *Taking Off: State Unmanned Aircraft Systems Policies*. Denver: National Council of State Legislatures and Source: NCSL, "[Taking Off: State Unmanned Aircraft Systems Policies](http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx#1), 2016 and Current Unmanned Aircraft Landscape, <http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx#1>

# Some Local Government Ordinances May be Subject to a Legal Challenge

§ 137-3. Regulations; restrictions.

A. **Small unmanned aircraft shall not operate in any airspace below 400 feet within the Borough:**

- (1) Over private property, without the permission of the private property owner;
- (2) Over any street;
- (3) Over any Borough building, without the permission of the Mayor and Council;
- (4) Between dusk and dawn; and
- (5) Over any persons not directly participating in the operation of the aircraft, or where there are persons not directly participating in the operation of the aircraft located within 100 feet of the perimeter of the area over which the aircraft is being operated.

B. All other uses of public property shall have priority over use of public property for the operation of small unmanned aircraft.

# Some Local Government Ordinances May be Subject to a Legal Challenge

## § 137-4. Exceptions.

- A. This chapter shall not prohibit any federal, state, county or municipal agency including, but not limited to, any law enforcement agency or emergency services organization from the use of small unmanned aircraft for any lawful and authorized purpose pursuant to and in accordance with applicable regulations.
- B. This chapter shall not prohibit individuals and entities from the use of small unmanned aircraft during daylight hours for business purposes in the airspace over private commercial or residential property with the property owner's consent, except that data collection shall be limited to data collection of and relating to the properties that provide consent thereto alone.
- C. This chapter shall not prohibit the authorized and lawful operation and use of small unmanned aircraft for commercial, business, educational, scientific, research, environmental, and personal purposes pursuant to and in accordance with applicable regulations.

# Some States have also Preempted Local Governments from Regulating UAS

- Arizona, Connecticut, Florida, Maryland, Oregon, Virginia have enacted state laws prohibiting local governments from regulating UAS activity
- Does the “one size fits all” approach make sense?
  - Urban needs
  - Rural needs

**Source:** Hillary B. Farber and Marvin J. Nodiff, Protecting Homeowners’ Privacy Rights in the Age of Drones: The Role of Community Associations, 44 Fordham Urb. L.J. 623 (2017). Available at: <https://ir.lawnet.fordham.edu/ulj/vol44/iss3/2>

**Source:** Hillary B. Farber and Marvin J. Nodiff, Protecting Homeowners’ Privacy Rights in the Age of Drones: The Role of Community Associations, 44 Fordham Urb. L.J. 623 (2017). Available at: <https://ir.lawnet.fordham.edu/ulj/vol44/iss3/2>

# Homeowners Associations will also be Interested in Regulating UAS Activity

- HOAs may also want to regulate UAS activity to meet their residents' needs
- Protecting residents' privacy
  - Safety
  - Use of property
- Protect residents' right to enjoy their property
  - Limits on this authority
- Designating a common area to accept deliveries
  - Impact design of developments
  - Buildings

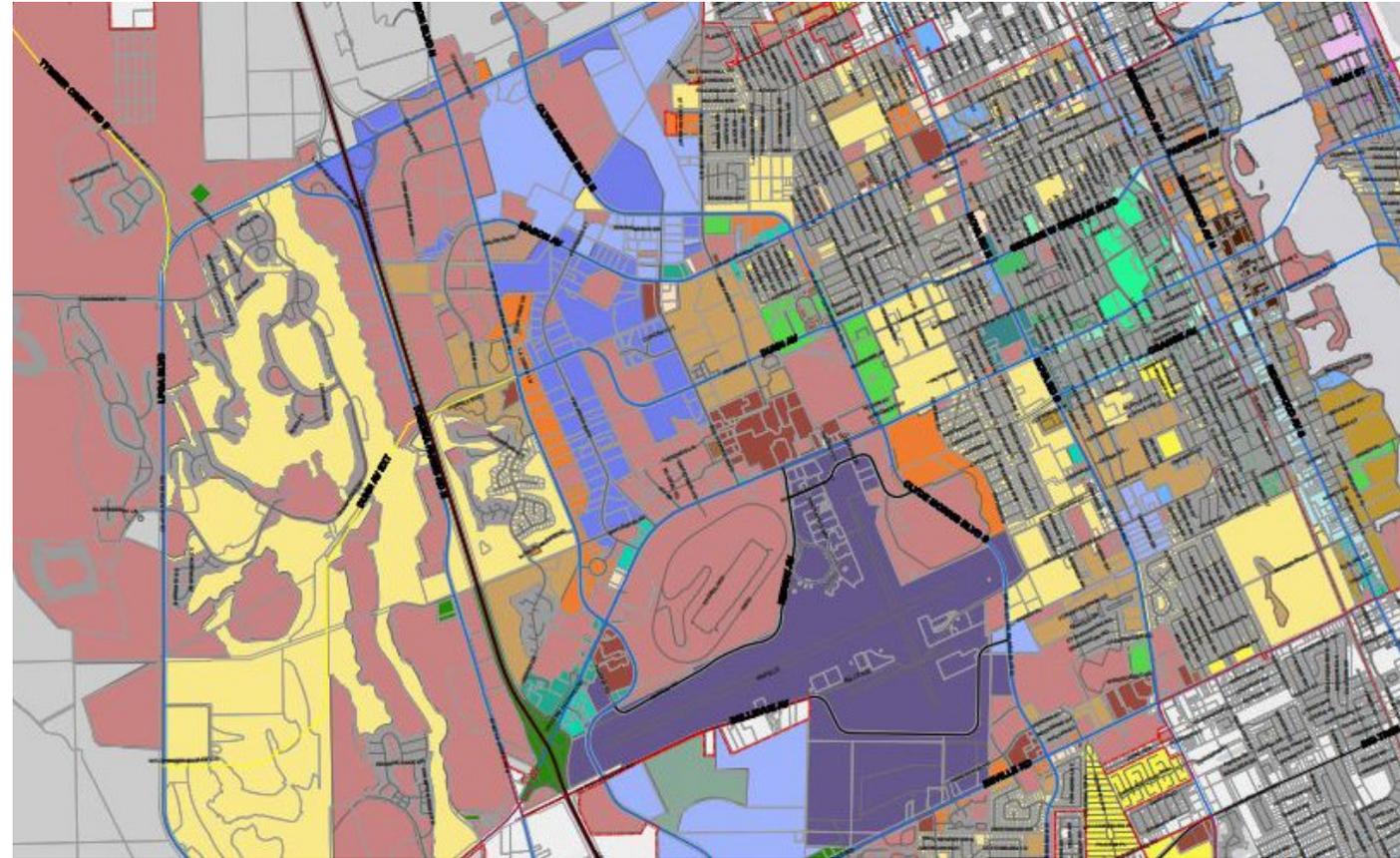
## 2017 Study by S.M. Shavarani et. al. Raised Important Issues to Consider

- Demand for UAS delivery services in high density areas
- Airspace issues
- Local governments have an interest in ensuring a zoning scheme in high density areas



**Source:** Shavarani, S. M., Nejad, M. G., Rismanchian, F., & Izbirak, G. (2017). Application of hierarchical facility location problem for optimization of a drone delivery system: a Case study of amazon prime air in the city of san francisco. *The International Journal of Advanced Manufacturing Technology*, 95(9), 3141-3153. doi: 10.1007/s00170-017-1363-1

# Daytona Sectional and Zoning



Source: SkyVector

# The Market for UAS Delivery will Develop

- FAA will foster the operational environment for UAS delivery operations
  - NAS integration
  - Beyond of line of sight
- States and local government will need to play a meaningful role in supporting these efforts
  - Balancing the needs of their residents who support UAS delivery operations
  - The needs of residents who oppose UAS flying over their homes
  - Commercial interests
- The FAA may not want UAS operations in certain areas
- Local governments may not want UAS operations in certain areas
  - The reasons may be different

# Thank You

Daniel Friedenzohn

Associate Professor and Associate Dean, College of Aviation

Embry-Riddle Aeronautical University

[friedend@erau.edu](mailto:friedend@erau.edu)