



# Fairfax County Public Safety Unmanned Aircraft Systems (UAS) Program Overview Public Information Session

**February 4, 2019**

# Welcome / Administrative

- In an emergency
- Handout
  - Presentation summary
- Public Meeting
  - Notes
  - Questions / Comments / Webpage

# Opening Remarks

Dave Rohrer

Deputy County Executive for Public Safety

# Introductions

- Roy Shrout – Deputy Coordinator (Emergency Management)
- John Burton – Assistant County Attorney
- Christian Quinn – Major (Police Department)
- Trice Burgess – Assistant Fire Marshal (Fire and Rescue Department)

# Agenda

- Administrative / Introductions
- Static Display
- Elements of the Fairfax County Public Safety UAS Program
  - Draft Program Manual
- Steps
- Mission Profiles
- Public Outreach
- Part 107/COA
- Airspace
- Equipment / Costs
- Next Steps
- Questions

# Why implement a UAS program

- UAS has been adopted around the United States by local and state agencies as a platform to take cutting edge flight and visual technology and integrate into daily operations to support and gain advanced real-time situational awareness.
- Purchase and operating costs are minimal.
- Safety of County personnel and the public.
- Live streaming high definition imagery and photographic capability with post flight analysis on site.
- UA can be tasked quickly, and re-tasked as needed. Coordination between the Incident Commander and the UAS team is direct/face-to-face.
- Provide an enhanced level of documentation for use in recovery reimbursement efforts.
- UAS is a force multiplier to work with existing resources.

# Natural Disasters



# Structure Fire



# Outside Fire



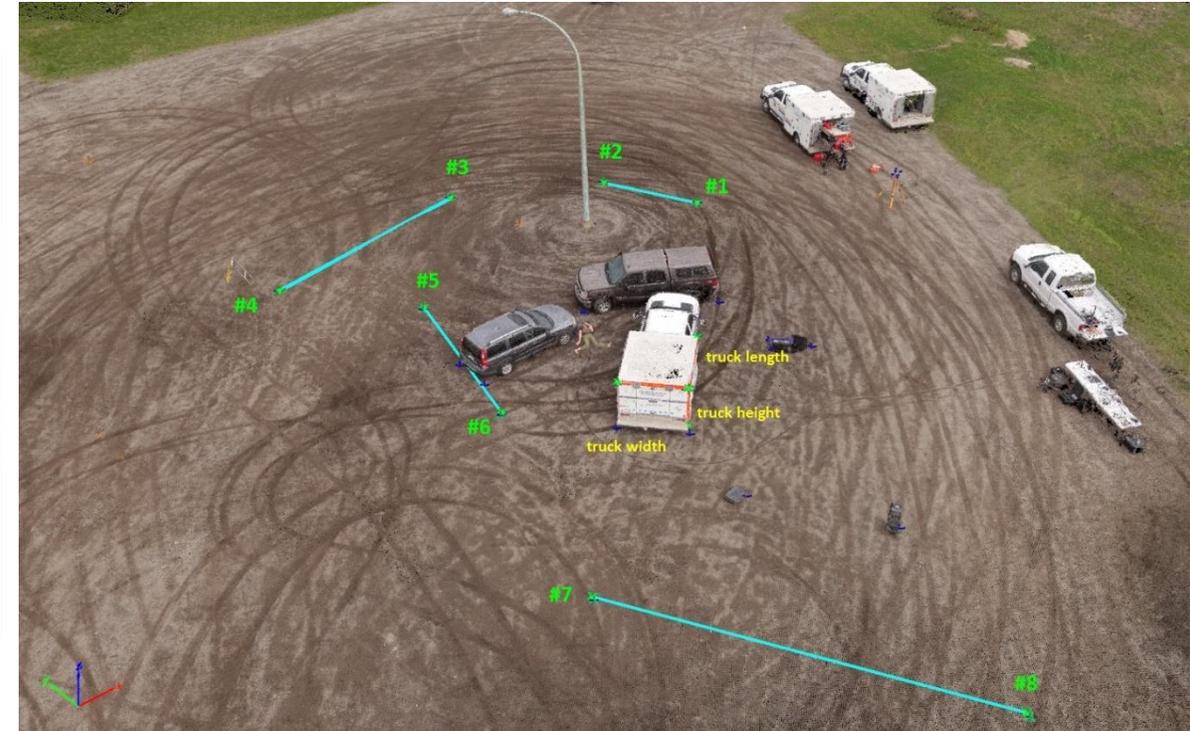
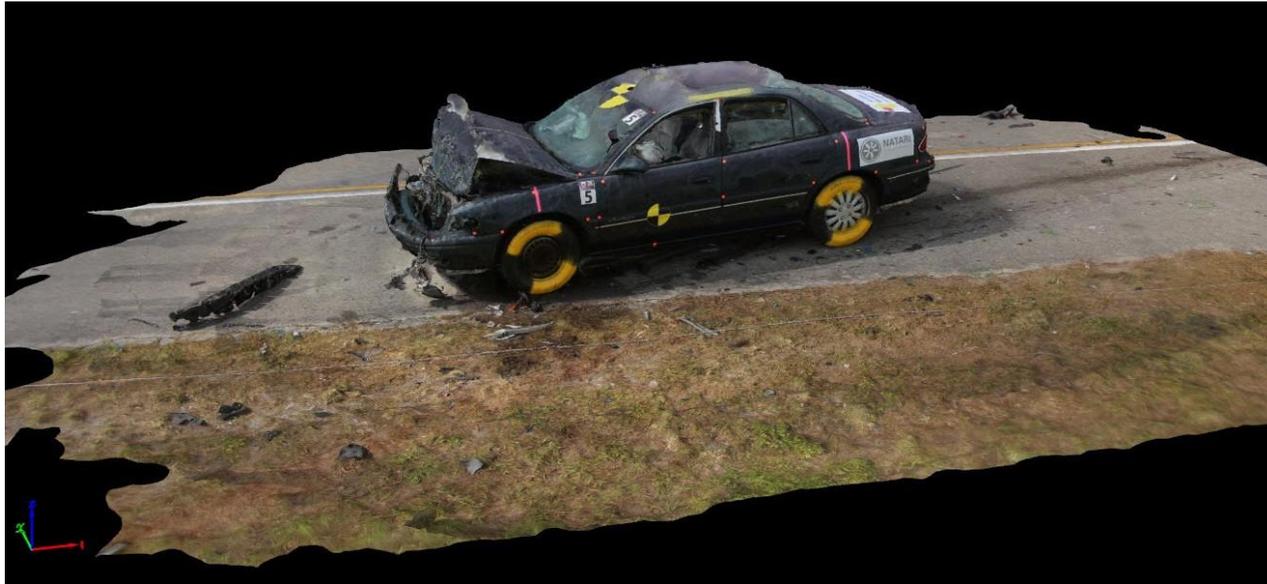
# Fire Investigations



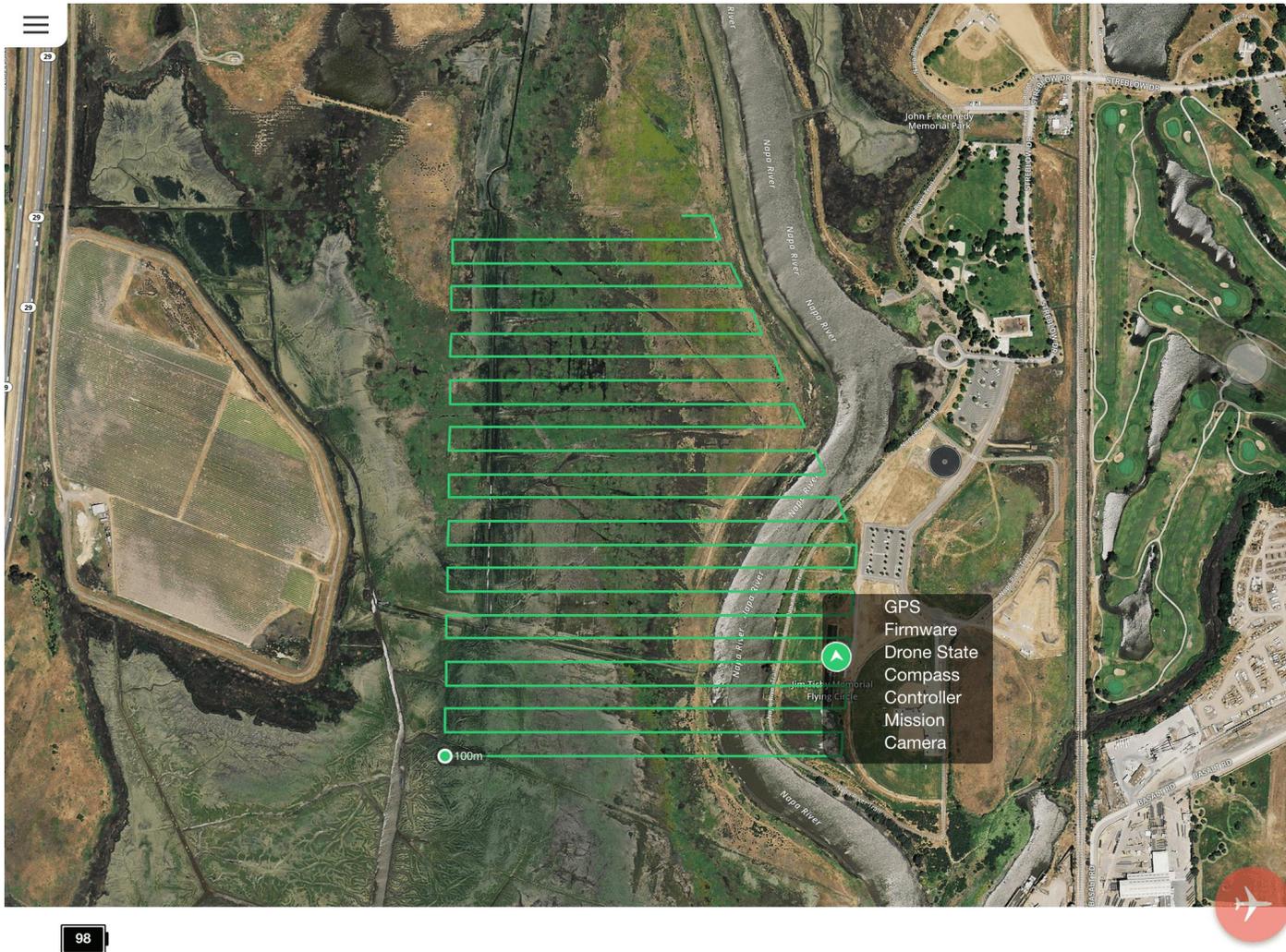
# Hazardous Materials / Highway Management



# Crash Reconstruction / 3D Modeling



# Search / Mapping



# First Step

- UAS Program workgroup formed in May 2017
  - Focus: How to effectively and safely implement a UAS program in Fairfax County.
  - Membership: Emergency Management, County Attorney, Risk Management, Public Affairs, Park Authority, Fire & Rescue, Police (Dive team and Search and Rescue), Sheriff's Office and the Urban Search and Rescue Team (VA-TF1).
  - Best practices
  - Develop mission profiles
  - Site visits / Workshops:
    - Air Traffic Control Facilities (Potomac TRACON, Dulles Airport)
    - FAA Symposium, PVCC UAS Public Safety Workshop
  - Standing regional programs (Loudoun, Stafford County, VDEM)



# Program Elements

- Program Manual / Agency SOP / General Orders
- Operator training and certification – Part 107
- Flight and maintenance logs
- Transparency
- Data Management
- Privacy Protection
- Legislation Review / Law Enforcement Use
  - Va. Code Ann. §19.2-60.1 (2015). This section provides that a local government agency having jurisdiction over criminal law enforcement or regulatory violations may not use an unmanned aircraft system except during the execution of a search warrant or an administrative or inspection warrant, unless certain exceptions apply
- Public information



# Next Steps

- Public Safety Committee Presentation (January 30, 2018)
  - Board of Supervisors
- Board of Supervisors Meeting (July 31, 2018)
  - Final decision was deferred
  - Create UAS Task Force
  - Public outreach and opportunities to comment

# UAS Task Force

- Formation of the UAS Task Force
    - Membership: ACLU, FAA, Leadership Fairfax, Fairfax Area Disability Services Board, Audubon Society, Fairfax County Communities of Trust, George Mason University, NAACP, McLean Citizen Association, County agencies and others.
  - Assignment
    - Review and make changes to the Draft UAS Public Safety Program Manual
      - Meetings: October 17, 30, and December 11, 2018 / February 11, 2019 Scheduled
      - Summary report for the Board of Supervisors
      - Community engagement / Comments
      - Presentation to Public Safety Committee on March 12, 2019
- \* Implementation of a Public Safety UAS program will require Board of Supervisor approval*

# UAS Task Force – Community Engagement

- Community Engagement Strategy
  - County webpage: [www.fairfaxcounty.gov/uas/](http://www.fairfaxcounty.gov/uas/)
  - County email: [uas@fairfaxcounty.gov](mailto:uas@fairfaxcounty.gov)
  - 30 Day Comment period
    - January 7 – February 8
  - Public Information Sessions
    - 6 scheduled
  - Social Media (Twitter, Facebook, Nextdoor)
  - Media – Video (Fox5, NBC4)
  - Media – Print / Electronic (Fort Hunt Herald, WTOP, Insidenova, Tysons Reports, AUVSI Unmanned system magazine, VDEM Daily Briefing)
  - Fairfax County Media - NewsCenter article, emergency blog

# Public / Media Awareness Strategy

- Contingent on Board approval of UAS program
- Media event (program overview, talk with officials, equipment)
- Fairfax Alerts UAS group for notifications of UAS operations
- County web page for UAS (video clips, equipment information, operational missions, Q&A)
- UAS Summit – ½ day
  - Board Auditorium
  - Focus on public and commercial users
  - Presentations by County officials, FAA, airport operations
  - Training, certifications
  - Places to fly (Fairfax County Parks, airspace restrictions)



# Draft UAS Public Safety Program Manual

- Provides a complete review of the proposed UAS program
  - Mission Statement
  - Overview of the program
  - Regulatory
  - Administration
  - Protection of Privacy, Civil Rights and Civil Liberties
  - Data Management
  - Operations Positions
  - Safety
  - Operational Training
  - General Operating Procedures
  - Glossary of Terms, Acronyms, Sample Retention Schedules

# Legislation – Virginia Code § 19.2-60.1

§ 19.2-60.1. Use of unmanned aircraft systems by public bodies; search warrant required.

A. As used in this section, unless the context requires a different meaning:

"Unmanned aircraft" means an aircraft that is operated without the possibility of human intervention from within or on the aircraft.

"Unmanned aircraft system" means an unmanned aircraft and associated elements, including communication links, sensing devices, and the components that control the unmanned aircraft.

B. No state or local government department, agency, or instrumentality having jurisdiction over criminal law enforcement or regulatory violations, including but not limited to the Department of State Police, and no department of law enforcement as defined in § 15.2-836 of any county, city, or town shall utilize an unmanned aircraft system except during the execution of a search warrant issued pursuant to this chapter or an administrative or inspection warrant issued pursuant to law.

C. Notwithstanding the prohibition in this section, an unmanned aircraft system may be deployed without a warrant (i) when an Amber Alert is activated pursuant to § 52-34.3; (ii) when a Senior Alert is activated pursuant to § 52-34.6; (iii) when a Blue Alert is activated pursuant to § 52-34.9; (iv) where use of an unmanned aircraft system is determined to be necessary to alleviate an immediate danger to any person; (v) by a law-enforcement officer following an accident where a report is required pursuant to § 46.2-373, to survey the scene of such accident for the purpose of crash reconstruction and record the scene by photographic or video images; (vi) by the Department of Transportation when assisting a law-enforcement officer to prepare a report pursuant to § 46.2-373; (vii) for training exercises related to such uses; or (viii) if a person with legal authority consents to the warrantless search.

D. The warrant requirements of this section shall not apply when such systems are utilized to support the Commonwealth or any locality for purposes other than law enforcement, including damage assessment, traffic assessment, flood stage assessment, and wildfire assessment. Nothing herein shall prohibit use of unmanned aircraft systems for private, commercial, or recreational use or solely for research and development purposes by institutions of higher education and other research organizations or institutions.

E. Evidence obtained through the utilization of an unmanned aircraft system in violation of this section is not admissible in any criminal or civil proceeding.

F. In no case may a weaponized unmanned aircraft system be deployed in the Commonwealth or its use facilitated in the Commonwealth by a state or local government department, agency, or instrumentality or department of law enforcement in the Commonwealth except in operations at the Space Port and Naval/Aegis facilities at Wallops Island.

G. Nothing herein shall apply to the Armed Forces of the United States or the Virginia National Guard while utilizing unmanned aircraft systems during training required to maintain readiness for its federal mission or when facilitating training for other U.S. Department of Defense units.

# Emergency Management Mission Profiles

- Damage Assessment (Pre-and Post-Disaster Surveys)
- Situational Awareness (EOC Operational Information)
- Response Priority (Resource Management)
- Enhanced 3D mapping

# Law Enforcement Mission Profiles

- Locating critical missing persons
- Forensics documentation
- Enhancing safety during water operations
- Crash reconstruction
- Enhancing safety during critical incidents
- Necessary to alleviate an immediate danger to any person

*\* Any law enforcement or regulatory agency operations will be in strict compliance of Virginia Code § 19.2-60.1*

# Fire and Rescue Mission Profiles

- Enhanced situational awareness over fire ground operations
  - Public safety
  - Evaluate additional exposures
- Personnel accountability
- Fire, post-blast investigations
- Blasting site inspections
- Fireworks shoots
- Search & Rescue / Swift water operations / Rescues
- Hazardous materials response / Identification
- Preplans

# Additional Mission Profiles

- Wildlife population estimates / terrain mapping / movement corridors
- Assessment of critical infrastructure (pipelines, bridges, storm drain systems, antenna towers)
- Stream and water management
- Aerial mapping

# Two Approaches for Public Agencies

- Public Use – Title 49
  - COA – Certificate of Authorization
  - Letter of Declaration
  - Self certification for remote pilots
  - Remote pilot and UAV must be registered
  - UA technology must be owned by the locality
- Commercial Use – Part 107
  - Part 107 rules in effect
  - Aircraft must be less than 55lbs
  - Waivers required to exceed blanket FAA rules
  - Remote pilot (16 yoa +) must pass FAA Part 107 examination (\$150/person)
  - UA must be registered with FAA



# COA Requirements – Title 49

- Training Program / Documentation
- Operational proficiency
- Airworthiness of each UAS
- Maintenance
- Documented policies and procedures
- Data planning
- Liability insurance
- Understanding UAS flight limitations, weather, national air space flight restrictions and temporary flight restrictions

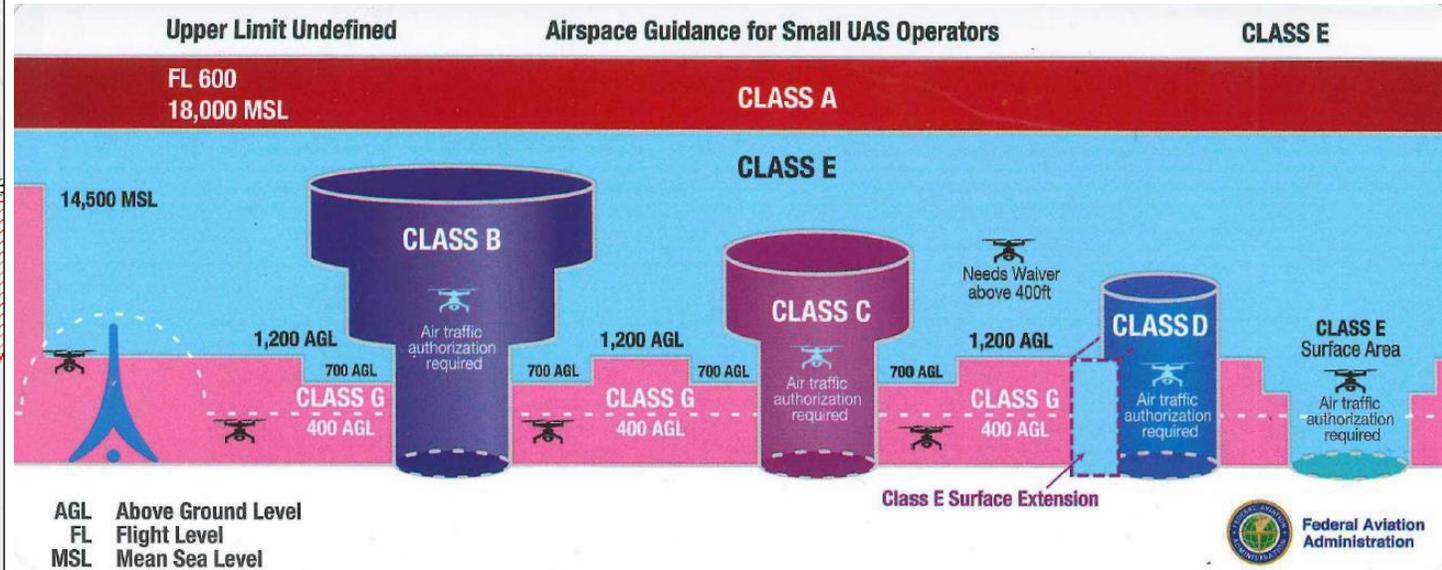
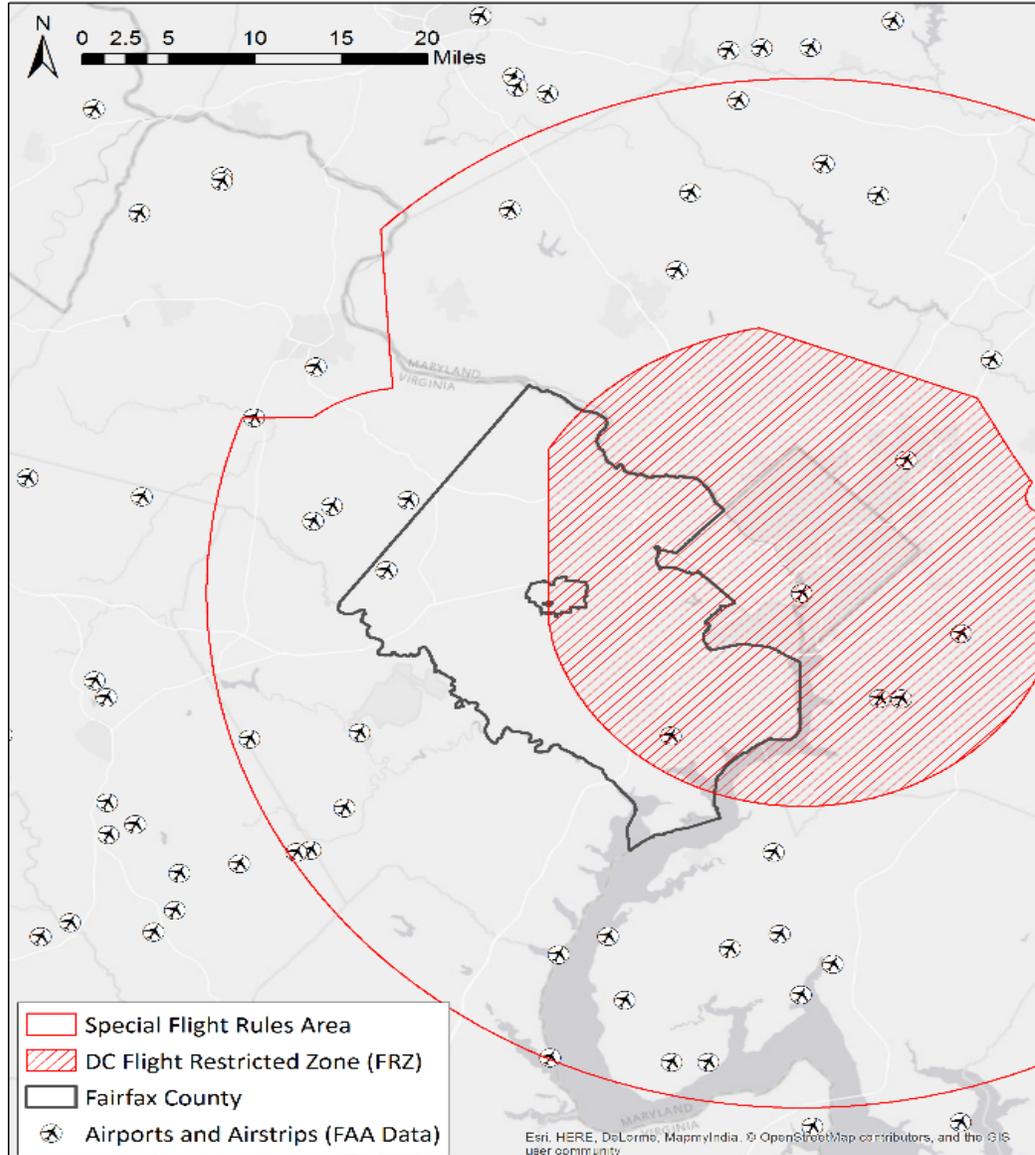
# Operating Rules - Part 107

- Remote Pilot Certificate
- Visual line-of-sight
- Daylight or civil twilight
- Not directly over people
- Must yield right-of-way to manned aircraft
- One UA per pilot in command
- Not flying under the influence
- Maximum groundspeed of 100 mph
- Maximum altitude 400' (ground or tallest structure)
- Contacting the airport and control tower if within 5 miles of an airport

# Part 107 – Waivers Under Consideration

- Daylight operation (107.29)
- Operation in certain airspace (107.41)

# Airspace Restrictions



# Equipment

- DJI Phantom 4 Professional V2.0
  - \$1,499 – Aircraft
  - \$1,500 – Accessories



# Equipment

- DJI Mavic 2
  - \$1,499 – Aircraft
  - \$1,500 - Accessories



# If Approved – Next Steps

- Complete and submit paperwork to the FAA
- Purchase equipment (6-8 aircraft)
- Formalize agency flight procedures
  - Notifications, check lists, maintenance procedures, call out process, data management
- Initiate flight training
  - Part 107 preparation course
  - Ground school (privacy, security, safety, operations, communications)
  - Flight training
- Updated webpage
- Flight notifications begin
- Transition workgroup into County steering committee (Program Manager)

# Questions / Comments