



# VA- FIX:

## Technology for Good Governance

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# Background

- Department: 1979
- ~5 years ago: Identified Need
  - 2018 created Manager of Aviation Technology Position
  - 2019 Position Filled
- Education and Awareness
  - Commercials; ICON A5; MAM Drone Camp
- Acquired first 2 drones: Spring 2019
- Aerospace Advisory Board (2007): 19 members
- SB 307: DOAV UAS Work Group (GA 2018)
- #1 State for UAS Business: 2019 & 2020
  - Business Facilities Magazine
- Legislative Session 2020
- VA- FIX



# Bottom Line Up Front

- Need to ensure safe UAS operations, answer needs of government and maintain Virginia as a “UAS Friendly” state
  - Share information between State and Local Agencies
  - Share advisories with UAS Operators and industry
  - Ensure consistency for UAS Operators and Industry
- Virginia Flight Information Exchange is managed by Department of Aviation and is a central point of access
- Makes things clearer and less ambiguous for operators and industry
- Leverages existing federal standards and technology to deploy quickly and cheaply; industry can leverage almost immediately
- Gaining rapid adoption



# Identified Need

**DOAV UAS Work Group:** Members of the State and Local Government Sub-Working Group of the Virginia UAS Working Group identified the need for information sharing:

1. Provide guidance to operate, coordinate and collaborate UAS flight operations at the State and Local Government level
2. Promote/enable awareness and information sharing (the establishment of data standards) between government and to UAS Operators
3. Support recommendations of the Virginia UAS Working Group

These needs focus on information sharing between state and local authorities, as well as sharing advisory information from state and local government to UTM providers, USSes, and UAS Operators



# Emerging Needs

As a result of the VA FIX Pilot Project and FIX User Group meetings, we have also identified additional emerging needs:

1. A need for the Department of Aviation (DOAV) to provide a mechanism for the consistent, clear, accessible publication of Local Government advisories to UAS operators
2. Specific support for information sharing by and between Public Safety agencies in Virginia



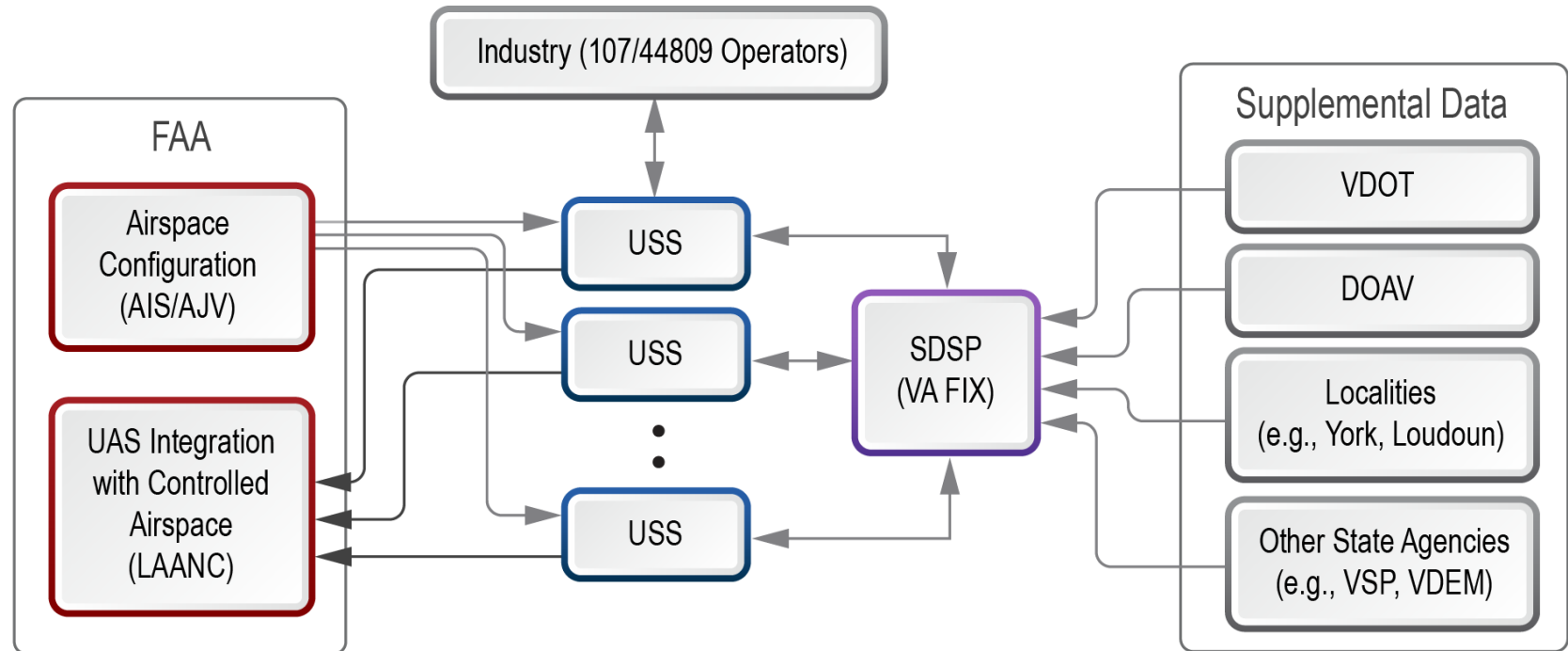
# Virginia DOAV as SDSP

- Part of the FAA UTM Concept envisions Supplemental Data Service Providers (SDSPs) that provide additional information (e.g., weather, event schedules) to UTM providers to assist in managing UAS flight operations
- State and Local Governments have a wealth of information that can be provided to UTM providers and UAS operations, including public safety information
- State and Local Governments are the logical authoritative source for governance and provision of this information (since UAS operations are highly local)
- However, without coordination and standardization, there is a risk UTM providers and UAS operators have to deal with a “patchwork” of advisories and regulation
- VA FIX is designed to solve this problem by creating a central clearing house for advisories and regulation under the Department of Aviation – it will provide a central point State and Local government to publish UAS advisory information and for UTM providers and USSes to consume advisory information
- All advisory information is published under a common set of guidelines governed by DOAV



# FIX as SDSP for UTM?

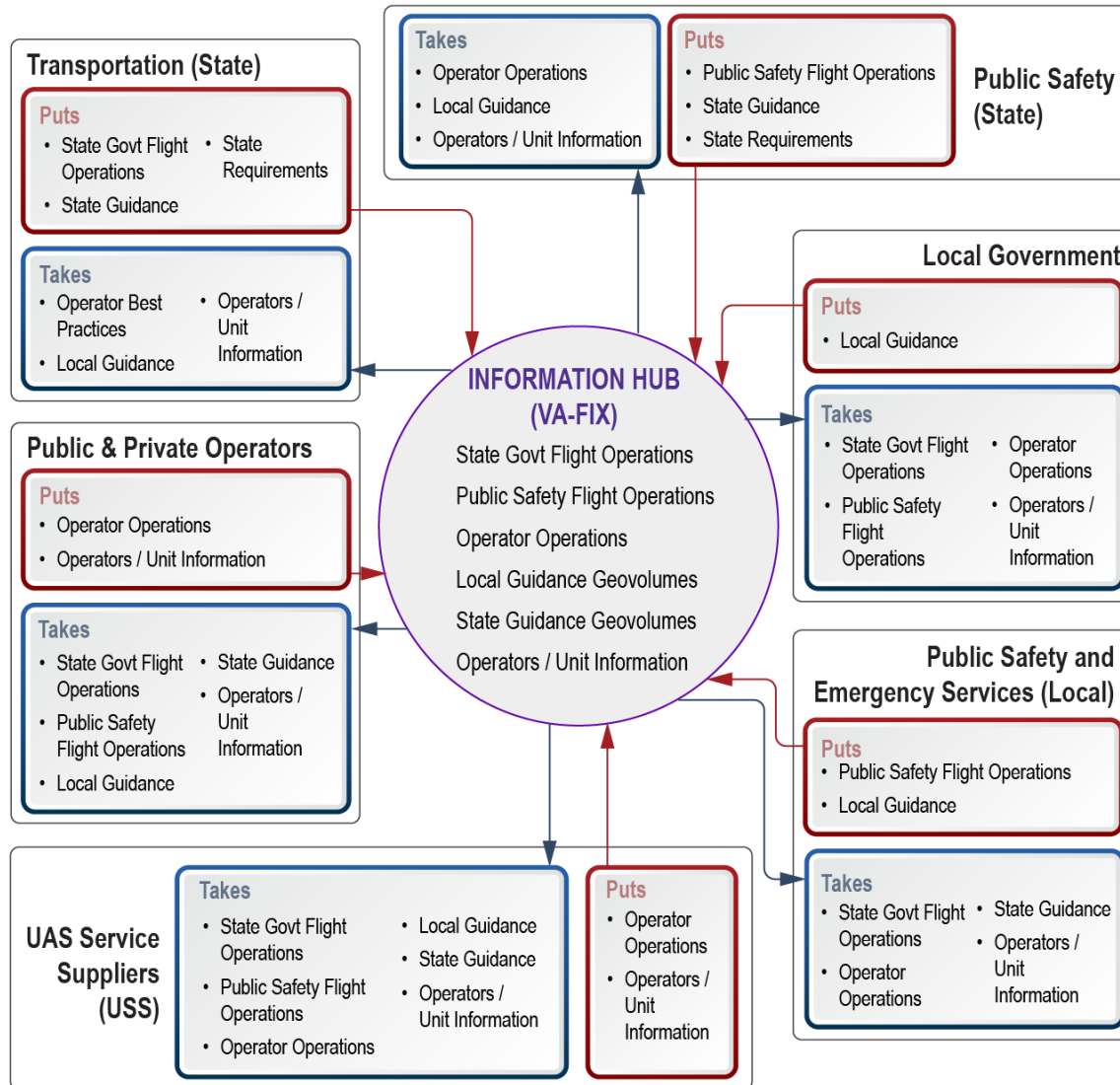
- FAA already has infrastructure and programs in place to build UTM infrastructure
- FAA has already created concepts of UAS Service Suppliers (USSes) and Supplemental Data Service Providers (SDSPs) integrating into the NAS and UTM
- Virginia focused on value added Authoritative Data and sharing in support of these through the Virginia Department of Aviation



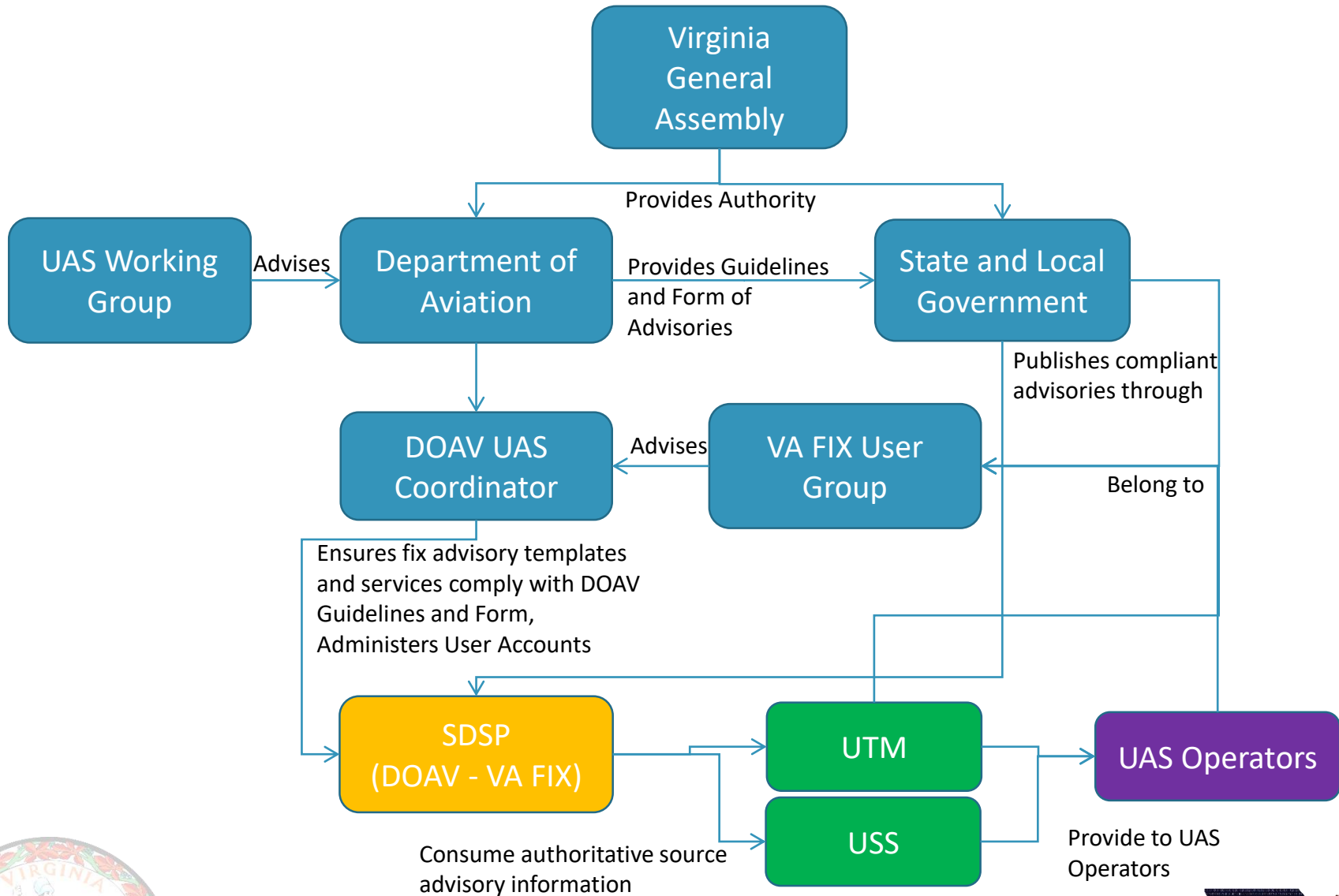


# Governance Model

A value-based system of give and take for shared benefit.



# Governance Model



# Key Stakeholders

- Department of Aviation (DOAV)
  - Responsible agency; manages user accounts and privileges and sets the guidelines for how advisories are published so all information is consistent and supports safe UAS operations
- Department of Transportation (VDOT)
  - Supporting agency; owns significant infrastructure to which advisories may relate, also a substantial UAS operator
- State and Local Public Safety Agencies
  - Responsible for public safety; empowered to manage UAS operations around incidents; substantial UAS operations
  - Virginia Department of Emergency Management, York County Fire Department, Loudoun County Sheriff's Department, Stafford County Sheriff's Department
- State and Local Agencies
- DOAV UAS Working Group
  - Advises Virginia Department of Aviation
- VA- FIX User Group
  - Advises DOAV on Requirements and System Design
- UTM and USS Providers
  - Will consume advisories from VA FIX
- UAS Operators
  - Will consume advisories through UTM and USS providers



# Pilot Rollout and Evaluation

- Partners: DOAV, VA DOT, CIT and ATA, LCC
- User Group Established and on-boarding requirements developed late 2019
- Aerospace Legislative Day: January 2019
- User Group input on prototype in April 2020
- USS input in May 2020
- Finished Beta Version in May 2020
- Soft launch in June 2020
- July 21, 2019: First active operation (Virginia Department of Forestry)
- Launched program August 2020
- Began onboarding technical sessions for USSes in October 2020
- Conducting demonstration and measurement exercises through Dec 2020
- December 2020: Conclusion of the Pilot Program



# VA-FIX Response

- VA-FIX User Group
  - Love the product, working on the ConOps and how to integrate it into their workflows
- USS/UTM Engagement
  - Excited and think the Authoritative SDSP idea is a winner
- Engagement with Other States
  - Strong outreach and response from other states, interest in the governance model
- Federal Engagement
  - FAA, DHS, NASA reached out, see VA-FIX as a solution to certain Federal problems that need authoritative data
- UAS Operators
  - See benefits of VA-FIX
- Public Safety
  - Sees the value and uses the tool



# VA-FIX Status

- VA-FIX User Group
  - 15 State and Local Government Agencies
  - 50+ User Accounts, 30+ “line” users
  - Most users still have not filed an advisory – focus on training and engagement
- USS/UTM Engagement
  - 3 FAA- approved UAS LAANC providers; 2 on-boarded
- Engagement with Other States
  - Currently engaging with approximately other states on implementing shared governance
- Federal Engagement
  - FAA, DHS, NASA
- VA-FIX Marketing and Communications (MARCOM)
  - USAV, AAC, CIT Advisory Board, Xponential, NASAO, Hampton Roads UAV Working Group (Public Safety), InterDrone, others
  - DroneResponders and VABA events in process

- Virginia Department of Aviation
- Center for Innovative Technology
- Virginia Department of Transportation
- Virginia Department of Energy Management
- Secretary of Public Safety and Homeland Security
- Virginia State Police
- Virginia Department of Forestry
- Fairfax County
- Loudoun County
- Stafford County
- York County
- City of Fredericksburg
- Virginia Beach Fire Department
- Gloucester County Sheriff's Office
- Virginia Beach Police Department
- DroneResponders



# FIX for National Data Governance

- Many other states reaching out and engaging: see opportunity to create a national working group for consistent state and local data for UAS:
  - For example, under NAIC states harmonize rules and data for insurance
  - States retain sovereignty but industry knows the rules framework is consistent from state-to-state, locality-to-locality
- FAA, NASA, DHS, other states like Authoritative SDSP concept:
  - Supports multiple use cases
  - Provides a legitimate, official source of information that supports FAA and DHS regulations
  - Demonstrates NASA UTM ConOps
- Fine-grained governance of flight information exchange data and users at the state levels in the works:
  - Two key pieces – Governance and Advisory
  - State regulator governs the Information Exchange (manage users and advisory parameters)
  - State/Local Authorities provide information and advisories (state and local agencies publish actual advisories)
- Engage at all levels (State, County, City, State and Local Agencies)



# Use Cases

- Local Government Advisory
  - Provide local government a voice for local preferences (e.g., safety in operations over people, privacy, environmental concerns) while providing guidance to industry in a consistent, harmonized manner managed through DOAV
- State or Local Agency Site Data Collection
  - Make the public and UAS operators aware of operations so that we can reduce operational interference which improves safety while also reducing public concerns about the use of the UAS through transparency
- Public Safety Large Audience Events
  - Provide needed data to UAS Operators and USS providers to assist in compliance with Federal Rules about operations over people
- Public Safety Hazmat
  - Inform operators and the public about an area of personal hazard or aircraft contamination risk – manage flight in the air and deconfliction on the ground
- Public Safety Traffic Crash Reconstruction
  - Inform operators and the public about an area of personal hazard – manage flight in the air, deconfliction on the ground
- Public Safety Natural Disaster (e.g., Wildfire, Hurricane)
  - Inform operators and the public about an area of personal hazard, aircraft contamination risk, or risk of catastrophic damage to UAS – manage flight in the air, deconfliction on the ground, and help with creating a TFR







## Welcome to VA FIX!

The Virginia Flight Information eXchange (FIX) is an information hub focused on providing authoritative state and local data to foster collaboration for the benefit of public safety and transparency. FIX is a Supplemental Data Service Provider (SDSP) as described in the Federal Aviation Administration's Unmanned Aircraft System (UAS) Traffic Management (UTM) Concept of Operations (ConOps).

FIX provides authoritative state and local data sharing for local and state agencies and to UAS Service Suppliers (USS) and UAS pilots for improved planning and safety analysis. FIX is a publicly available platform that gives agencies in the Commonwealth the ability to securely publish and share zoning, operational, emergency, safety, and quality of life advisory information with each other, with unmanned system service providers, unmanned system operators, and the public.

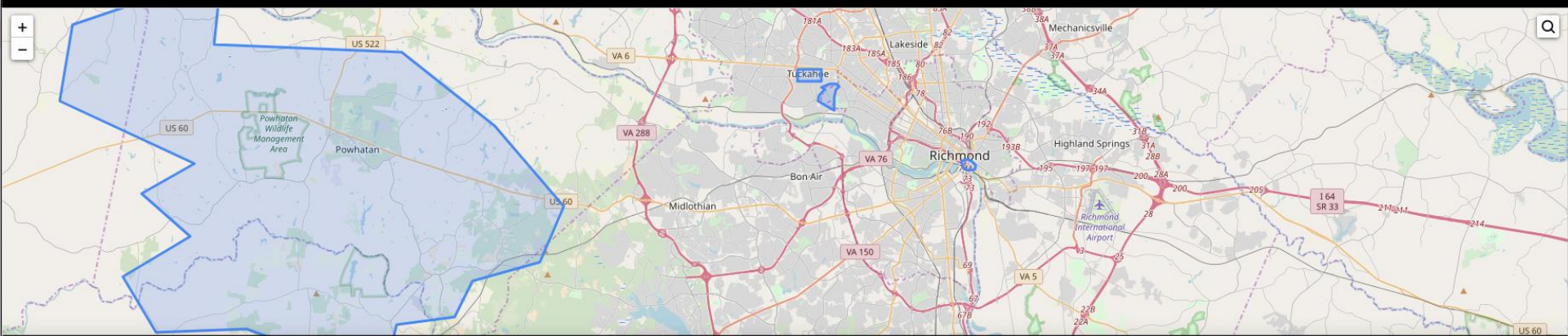
[Search Advisories](#)

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# FLIGHT INFORMATION EXCHANGE



## Advisories

Search Results **My Advisories**

<input type="checkbox"/>	Advisory Name	Advisory Type	Incident Operation	Publishing Agency	Start Time	End Time
<input checked="" type="checkbox"/>	Main street station	Public Safety Large Audience Event	true	Virginia Aviation Business Association	2020-02-03T12:00:00Z	2020-02-03T18:00:00Z
<input checked="" type="checkbox"/>	Fire Emergency	Public Safety First Responder Emergency Incident Activity	true	Fire Department	2020-02-05T12:00:00Z	2020-02-05T18:00:00Z
<input checked="" type="checkbox"/>	Earthquake	Public Safety Disaster Management	true	Virginia Department of Emergency Management	2020-02-07T00:00:00Z	2020-02-09T23:59:00Z
<input type="checkbox"/>	Hazmat	Public Safety Hazardous Materials Incident	true	Virginia Department of Environmental Quality	2020-02-06T10:00:00Z	2020-02-07T18:00:00Z
<input checked="" type="checkbox"/>	U of R Safety Restriction Advisory	Local Government Advisory		U of R Public Safety	2020-01-29T18:00:00Z	2020-01-29T18:00:00Z



### Intersection

The submitted advisory intersects with other advisories:

Advisory Name	Advisory Type	Incident Operation	Publishing Agency	POC First Name	POC Last Name	POC Phone Number	Start Time	End Time
Main street station	Public Safety Large Audience Event	true	Virginia Aviation Business Association	John	Smith	5555555555	2020-02-03T12:00:00Z	2020-02-03T18:00:00Z

Acknowledge

Cancel

# Lessons Learned & Next Steps:

- SB 307 Final Report: October 2020
- HB 742: January 1, 2021
- SJ 30: Spring 2021
- Education & Awareness
- Collaboration w/ States
- Supporting Safety Seminars on UAS
- Partnering w/ UAS Industry: Town Halls
- Legislative Session 2021
  - Aircraft Registration Bill
- VA- FIX
  - Phase II
  - Governance Paper





# Thank you!

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