# Unmanned Aircraft System Update





### **UAS-DFR Program Recap:**

#### Aviation Administrator

**UAS Program Manager** 

#### UAS Program Assistant (Decision Package)

Direct supervision of the Departments Unmanned Aircraft System (UAS) Program,
Monitors compliance FAA Regulation, FAA authorizations & waivers, MPD Policy relevance,

UAS Pilot initial & recurrent training, UAS Pilot coverage,

UAS model vs. mission requirements,

UAS effectiveness / usage,

UAS maintenance requirements.

#### UAS-DFR Program Recap

5 RRPIC Pilots / 2 drones Pilots based in RTCC / UAS based 20 E. Main

#### UAS Program Recap

75 RPIC Pilots / 57 drones AirData Software

#### > FAA Authorization

FAA Certificate of Waiver / Authorization



# **Drone First Responder (DFR) 2.0:**

### Program Description

RMS-CAD CFS
Based at Mesa City Plaza
No Rooftop Personnel
RRPIC in RTCC
Automated vs. Autonomous

### Program Inception

May 2024 (1.0) March 2025 (2.0)

### > DFR Staffing

5 RRPIC's (RTCC) 1 Program Sgt.



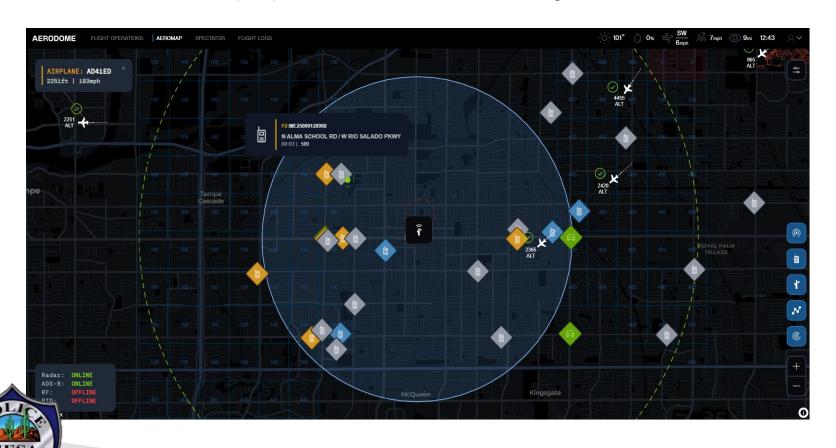
### ➤ UAS / Drone / Hangar-Docking Station

1 Hextronics Atlas Hangar / Docking Station (55x43x39 / 415 lbs) 1 M350RTK (51 mph / Battery Life 45-50 min / 32 inches square / 20.2 lbs)

## **Drone First Responder (DFR) 2.0:**

Radar Collision Avoidance Area / Detect and Avoid (DAA)

RPIC - VO Monitor / 2.5nm (2.8m) radius / FR-BVLOS-w/o VO, 400' AGL Radar - DAA - 3.7nm (4.2m) Collision Avoidance / FCC License - Pending Authorization



# **Drone First Responder (DFR) 2.0:**





# **QUESTIONS**







DRONES IN PUBLIC SAFETY:
ADVANCING FIREFIGHTING, SEARCH &
RESCUE, AND WILDLAND PREVENTION

Public Safety Committee
June 24, 2025
Assistant Fire Chief John Locklin
Fire Captain Cody Clark

### MODERN TOOLS FOR MODERN CHALLENGES

- Mesa Fire integrates advanced tech to protect our community.
- Unmanned Aerial Systems (UAS), or drones, are a key asset.

## MESA FIRE DRONE ASSETS

• 1 DJI M30T – Long-range, thermal & zoom, all-weather capable (122 degrees, 33mph wind, rain)



• 3 DJI M3T – Compact, fast deployment, thermal imaging



• 1 DJI M3E – Used by certified fire investigators for mapping, investigation & documentation



### 24/7 UAS COVERAGE ACROSS THE CITY

- FAA Part 107 Certified Pilots on Battalions 202, 203, 204
- All 3 shifts covered for 24/7 drone response
- Pilots maintain FAA standards through regular training

# DRONES ENHANCE FIREGROUND SAFETY &

**STRATEGY** 

- Thermal imaging reveals hotspots through smoke
- Overhead views support tactical decisions
- Safe structural fire support from a distance
- Improves situational awareness at incident start



# FASTER FINDS, SAFER RESCUES

- Reduced search time in lost person & flood cases
- Payload allows rapid delivery of hydration or floatation devices
- Thermal & spotlight for night ops
- Ability to pre-program victim GPS coordinates or search patterns



### PROACTIVE WILDFIRE RISK MANAGEMENT

- Mapping interface areas to monitor fuel loads
- Tracking vegetation overgrowth and risk areas
- Supports prevention strategies and planning
- Multiple neighborhoods signing up for Firewise program
- <a href="https://cloud.pix4d.com/dataset/2168507/map?shareToken=211acd61-4086-4037-bf55-9b8ebeef410a">https://cloud.pix4d.com/dataset/2168507/map?shareToken=211acd61-4086-4037-bf55-9b8ebeef410a</a> (Madrid map)

# SHARED AIRSPACE, SHARED MISSION

- Interoperable with Gilbert, Tempe, Queen Creek, Phoenix, Police and Fire departments.
- Joint drone missions and unified live video feeds

  (ability to stream to any of the listed cities command and receive their feed, steam to the RTCC. and alarm room)
- Airspace deconfliction protocols in place via shared mission.





### **EXPANDING CAPABILITIES**

- Future immediate response from multiple locations controlled via Drone First Responder
- Additional devices for heavier payloads and ability to fly indoors
- AI-assisted hazard detection and predictive mapping

# MESA FIRE DRONE PROGRAM: A FORCE MULTIPLIER

- Enhances firefighter safety
- Accelerates search and rescue
- Improves wildfire preparedness
- Enables multi-agency operations
- 24/7 mission-ready coverage

# THANK YOU

- Thank you for supporting innovation in public safety.
- Questions?