

Unmanned Aircraft System Update



June 24, 2025

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
- <https://cloud.pix4d.com/dataset/2168507/map?shareToken=211acd61-4086-4037-bf55-9b8ebee410a> (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, stream 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?