



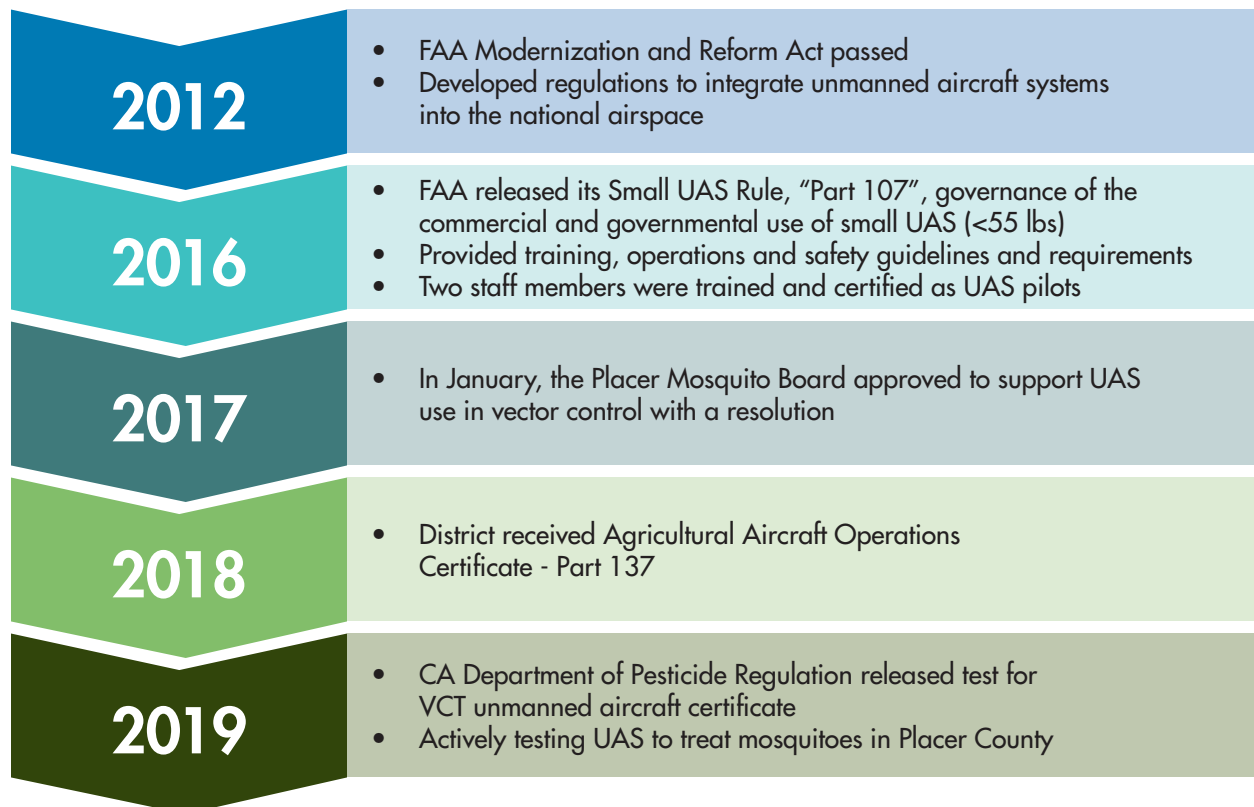
UNMANNED AERIAL SYSTEM CERTIFICATION TO APPLICATION

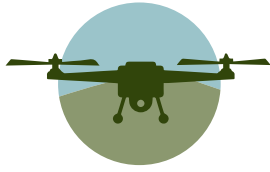
OVERVIEW

Our District's mission is to effectively and efficiently manage the risks from vectors and vector-borne disease in order to protect public health and improve quality of life in Placer County. Part of accomplishing this mission is to pursue, develop and evaluate technologies that can support our operations.

Since 2016, our unmanned aerial system has transformed from just a vector surveillance assessment into a mechanism to more effectively and efficiently treat mosquito populations and protect public health in Placer County. In 2017, former California Governor Edmund B. Brown Jr. signed AB 527 into law which allows FAA drone certified pilots to apply pesticides from UAS. Now, our UAS is in testing to make successful treatment operations throughout Placer County.

UAS CERTIFICATION TIMELINE





INTEGRATION INTO EXISTING DISTRICT PROGRAM

The District used a multi-phased project to evaluate and integrate UAS in our vector control program.

PHASE 1

Trained staff as UAS pilots

PHASE 2

Defined specific missions beneficial to District operations

Developed mission profiles

PHASE 3

Conducted multiple missions with District's three UAS

Explored logistics of other mission profiles

PHASE 4

Developing regulatory and technical capabilities to apply public health pesticides with UAS

Testing efficacy and conducted drone calibrations

Benefits

UAS offers many benefits like a zero footprint on marsh and sensitive lands, smaller and more precise aerial treatments, improved irrigation monitoring and increased detection of mosquito larvae. UAS reduces employee safety risk, noise and fuel emissions and cost of equipment and labor. Instead of a manned aircraft that requires a pilot, UAS are operated by a pilot-in-command on the ground who uses a remote transmitter, which reduces potential safety risk.

Equipment

DJI AGRAS MG-1S

Used for treatment with liquid larvicides only. Future capability will add granular application which would require the purchase of additional equipment. Specs:

- 2.64-gallon tank
- 8 motors
- 4 Teejet Nozzles
- 2 variable speed pumps
- Extended range fan, hollow cone nozzles
- Pump speed varies with UAS speed and swath

M210

Zoom camera to look for mosquito habitat and larval detection in water and to document with pictures.

HexH2O

Used for larval detection and lands on water.

Next Steps & Future Benefits

Our District will continue to evaluate treatments, conduct more efficacy testing and drone calibration trials to most effectively treat areas of concern.

A major future benefit of the UAS program is to complement associated technologies and innovations like our automated counter traps. This will provide data to inform our decision-making processes in ways we are not able to do with traditional methods and equipment. UAS treatments also fill a gap in our capabilities that exist between small hand-held applications and manned aircraft applications which makes our time management more precise.