Drone Technology in Environmental Assessment

Frequently Asked Questions (FAQ)

OVERVIEW

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) first started using drones in the spring of 2017. Internal technical and subject matter experts from the field divisions collectively comprise the EGLE Unmanned Aircraft System (UAS) Program and are led by a UAS Program Coordinator positioned within the Materials Management Division. The program functions under EGLE Policy 02-006, which provides direction on issues such as private property and facility consent, training requirements, mission planning, execution, and reporting. The policy helps ensure UAS use in EGLE is conducted safely, legally, and ethically.

The EGLE UAS-Drone Program is growing based on the needs of divisions, programs, and staff in the field. Eight (8) of EGLE's ten (10) District Offices have at least one RPIC pilot and aircraft available. The EGLE UAS Program is currently expanding its field capabilities beyond photometry, to incorporate thermal and chemical assessment as part of future UAS Operations. Staff are continuing to find applications for drones that improve on the ability, safety, accuracy, and level of information collected in the field.

BY THE NUMBERS

Technology: 25 Federal Aviation Administration (FAA) Registered UAS Aircraft, ranging from the DJI Spark up to the DJI M600P, as well as Parrot, Yuneed, and Splashdrone models

Pilots: 15 Certified Remote Pilots in Command (RPIC); with 13 more in training

Missions: 190+ to date (since 2017)

Statutory authority and governance: FAA Part 107, Michigan Public Act 436 of 2016, EGLE Policy 02-006

FREQUENTLY ASKED QUESTIONS

How is EGLE using drone technology (i.e., what types of inspections or monitoring can be done)?

Examples of EGLE UAS-Drone applications include:

a. Develop current and accurate basemaps used for remediation or site assessments.
b. Observe areas that are difficult or impossible to get to (e.g. when conducting wetlands surveys or responding to pollution response calls).
c. Conduct site inspections (e.g. scrap tire piles, open fill areas, landfill covers, or for dam safety).
d. Perform real time thermal, chemical, and radiation monitoring in the field, useful for identifying groundwater seeps and radiation protection.
e. Capture before and after imagery, helping to tell the EGLE story (e.g. Brownfield Redevelopment Program).

What are the benefits for using drone technologies?

There are three primary benefits to using drone technology. The use of drones allows EGLE to (1) collect better data (2) in a safer and (3) more efficient manner. This is evident in a variety of cases including aerial observation of tire piles where the spatial data collected provides better volume determination and does not require EGLE staff to physically climb and measure the piles.

What kinds of drone technologies are being used?

EGLE has 25 FAA Registered UAS Aircraft, ranging from DJI Spark up to DJI M600P, as well as Parrot, Yuneec, and Splashdrone models.

What is EGLE's process for using drones in the field?

EGLE conducts UAS Missions in accordance with FAA Part 107, Michigan's Public Act 436 of 2016, and our EGLE Policy 002-06. This process includes the advanced development of a detailed mission plan; prior consent from the landowner or facility authorized representative; and, if required FAA Part 107 and Airspace Waiver Requests.

What is done to assure safe operations?

All EGLE RPICs are certified under FAA Part 107. In addition, EGLE RPICs must first demonstrate proficiency with training designated drones in indoor and field environments before piloting flights. Initial missions are also flown under the supervision of an experienced UAS program member.

EGLE staff from the Gaylord district flying a drone over Lake Margrethe on September 18,

What is the role of the regulated facility, and what do I need to know or do?

Regulated facilities are an important part of the drone mission process. First, facility consent is required before flying over any private property. Without facility consent, EGLE will not conduct a drone flight inspection. The only exception to this is flights can be conducted without consent in response to an emergency situation where authorized by law or permit (e.g. spill event impacting health or safety). EGLE works with facilities such that if there are images that would be beneficial to the facility, RPICs will include the capture of those images as part of the mission plan.

What will happen to the data after the drone is used? Is it shared with any other agencies or can it be made public?

Release of UAS imagery and data is governed by Michigan Public Act 436 of 2016. The relevant section MCL259.307 indicates, "(5) Any data, including videos, photographic images, or geospatial data, collected by the operation of an unmanned aircraft system concerning a facility described in subsection (1) shall be furnished promptly to the facilitys owner or operator upon request and shall be rebuttably presumed to be not subject to disclosure under the freedom of information act, 1976 PA 442, MCL 15.231 to 15.246."

As such, EGLE shares all imagery with the private entities where drone inspections occur in a timely manner and generally does not publish or share data with the public.

What other agencies should I contact if I suspect that there has been an unauthorized drone flight over my facility?

Facilities should contact their local law enforcement agency should they suspect unauthorized or unsafe drone flights.