DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION (FAA)

CERTIFICATE OF WAIVER OR AUTHORIZATION (COA)

ISSUED TO
University of Colorado Boulder — Part 91

ADDRESS
University of Colorado Boulder
3100 Marine St.
Room 653
Boulder, CO 80309

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate, except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED
Operation of the CopterSonde 3 unmanned aircraft system (UAS) operating at speeds of less than 87 knots (100 mph) in Class E and G airspace at or below 2,000 feet above ground level (AGL) in the vicinity of Holland and Saugatuck, Michigan under the jurisdiction of Great Lakes (AZO) Terminal Radar Approach Control. See Special Provisions and Attachments.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
N/A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the FAA or of any state or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

Note: This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any state law or local ordinance.

SPECIAL PROVISIONS

Special provisions A through H are set forth on the reverse side hereof.

This certificate is effective from **June 7, 2024,** to **June 6, 2026,** and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

DALLAS W LANTZ
Digitally signed by DALLAS W LANTZ
Date: 2024.06.05 11:25:02 -05'00'

FAA, Central Service Area
(Region)

Dallas W. Lantz
(Signature)

Tactical Operations Team Manager (A) (AJV-C23)
(Title)

Purpose: To prescribe UAS operating requirements in the National Airspace System (NAS) for the purpose of Public Aircraft Operations. The holder of this COA will be referred herein as the "Proponent."

Public Aircraft

1. A public aircraft operation is determined by statutes 49 U.S.C. § 40102(a)(41) and § 40125.
2. All public aircraft flights conducted under a COA must comply with the terms of the statute.
3. All flights must be conducted per the declarations submitted in the application and as specified in the following standard/special provisions.
4. This COA provides an alternate means of complying with Title 14 CFR § 91.113(b) for unmanned aircraft operations.
5. All operations will be conducted in compliance with Title 14 CFR § 91 and the conditions of the authorization issued herein. If the operator cannot adhere to any of these requirements, a separate FAA Form 7711-2 waiver application may be required.

SPECIAL PROVISIONS

A. General.

1. All personnel connected with the UAS operation must read and comply with the contents of this authorization and its provisions.
2. A copy of the COA including the special limitations must be immediately available to all operational personnel at each operating location whenever UAS operations are conducted.
3. This authorization may be canceled at any time by the Administrator, the person authorized to grant the authorization, or the representative designated to monitor a specific operation. As a general rule, this authorization may be canceled when it is no longer required, if there is an abuse of its provisions, or when unforeseen safety factors develop. Failure to comply with the authorization is cause for cancellation. The proponent will receive a written notice of cancellation.
4. During the time this COA is approved and active, a site safety evaluation/visit may be accomplished to ensure COA compliance, assess any adverse impact on air traffic control (ATC) or airspace, and ensure this COA is not burdensome or ineffective. Deviations accidents/incidents/mishaps, complaints, etc., will prompt a COA review or site visit to address the issue. Refusal to allow a site safety evaluation/visit may result in cancellation of the COA.

   Note: This section does not pertain to agencies that have other existing agreements in place with the FAA.
5. Radiofrequency spectrum authorization is independent of the COA process and requires the proponent to obtain Federal Communications Commission (FCC) equipment certification (47 CFR Part 2, Subpart J and 47 CFR Part 87, Subpart D) and frequency licenses (47 CFR Part 87) in the Aeronautical Radionavigation, Aeronautical Mobile (Route), or Aeronautical Mobile Services, as appropriate, for the control link, ATC radios, transponders, detect and avoid systems, and navigation systems used to support this COA. For systems operating exclusively below 400 feet, and within visual line of sight, the control link equipment may be licensed under 47 CFR Part 15 (Radio Frequency Devices). Equipment licensed under 47 CFR Part 5 (Experimental) does not provide the protection necessary for NAS operations.

B. Operations.

1. Unless otherwise authorized as a special provision, a maximum of one UA will be controlled:
   a. From a single control station; and
   b. By one pilot at a time.
2. When necessary, transit of airways and routes must be conducted as expeditiously as possible. The UAS should not plan to loiter on Domestic VOR Federal airways (Victor airways), Jet Routes, United States Area Navigation Routes (Q and T routes), or IFR and VFR Military Training Routes (IRs and VRs).
3. For flights operating on an instrument flight rules (IFR) clearance, the pilot in command (PIC) must ensure positional information in reference to established National Airspace System (NAS) fixes, navigational aids (NAVAID), and/or waypoints are provided to ATC. The use of latitude/longitude positions is not authorized, except oceanic flight operations.

4. Unless installed as part of a detect and avoid (DAA) system, the use of a traffic collision avoidance system in traffic advisory or traffic advisory/resolution advisory modes while operating an UA is prohibited.

C. Safety of Flight.

1. The operator or delegated representative is responsible for halting or canceling activity in the COA area if, at any time, the safety of persons or property on the ground or in the air is in jeopardy, or if there is a failure to comply with the terms or conditions of this authorization.
   a. Any crew member responsible for performing see-and-avoid requirements for the UA must have and maintain instantaneous communication with the PIC.
   b. Visual observers must be used at all times except in Class A airspace, active restricted areas, and warning areas designated for aviation activities, or as authorized in the special provisions. Observers may either be ground-based or airborne in a chase plane.
      (1) Visual Observers:
         (a) Must be able to communicate distinctly to the pilot any instructions required to remain clear of conflicting traffic, using standard phraseology as listed in the Aeronautical Information Manual when practicable.
         (b) The PIC is responsible to ensure visual observers are able to see the aircraft and the surrounding airspace throughout the entire flight.
         (c) The PIC is responsible to ensure visual observers are able to provide the PIC with the UA's flight path, and proximity to all aviation activities and other hazards (e.g., terrain, weather, structures) sufficiently to exercise effective control of the UA to:
            - Comply with 14 CFR § 91.111, § 91.113, and § 91.115;
            - Prevent the UA from creating a collision hazard; and
            - Comply with all conditions of this COA.

D. Notice to Air Missions (NOTAM).

1. A Distant (D) NOTAM must be issued, not less than 24-hours but not more than 72-hours, in advance of conducting routine UAS operations, unless operations are contained within Class A airspace, active restricted areas, or warning areas that are designated on the appropriate aeronautical chart or airport directory. This requirement may be accomplished:
   a. Through the operator's local base operations or (D) NOTAM issuing authority; or
   b. By contacting the NOTAM Flight Service Station at 1-877-4-US-NTMS (1-877-487-6867). The issuing agency will require:
      (1) Name and contact information of the pilot filing the (D) NOTAM request;
      (2) Location, altitude, and operating area; and
      (3) Time and nature of the activity.
2. The area of operation defined in the (D) NOTAM must only be for the actual area to be flown for each day defined by a point and the minimum radius required to conduct the operation.

3. Operator must cancel (D) NOTAMs when UAS operations are completed or will not be conducted.
4. For first responders only. Due to the immediacy of some emergency management operations, the (D) NOTAM notification requirement may be issued as soon as practicable before flight. If the issuance of a (D) NOTAM may endanger the safety of persons on the ground, it may be excluded. If the (D) NOTAM is not issued, the proponent must be prepared to provide justification to the FAA upon request.

E. Reporting Requirements.

1. Documentation of all operations associated with UAS activities is required regardless of the airspace in which the UAS operates.
2. The proponent must submit the number of flights on a monthly basis through the COA application processing system (CAPS).

F. Special Use Airspace.

1. Coordination and de-confliction between Military Training Routes (MTR) and Special Use Airspace (SUA) is the operator's responsibility. When identifying an operational area, the operator must evaluate whether an MTR or SUA will be affected. In the event the UAS operational area overlaps an MTR or SUA, the operator will contact the scheduling agency in advance and as soon as practicable to coordinate and de-conflict. Approval from the scheduling agency is required for regulatory SUA, but not for MTRs and non-regulatory SUA. If there is no response to coordination efforts, the operator must exercise extreme caution and remain vigilant of all MTRs and/or non-regulatory SUAs.
2. Scheduling agencies for MTRs are listed in the Area Planning AP/1B, *Military Planning Routes, North and South America*. If unable to gain access to the AP/1B, contact the FAA with the instrument routes/visual routes affected at the following email address: 9-AJV-115-UASOrganization@faa.gov. The FAA will provide the scheduling agency information. Scheduling agencies for SUAs are listed in the FAA Order JO 7400.10, *Special Use Airspace.*

G. Air Traffic Control Requirements.

1. Coordination Requirements.
   a. Coordination with Air Traffic Control (ATC) is not required.
2. Communication Requirements.
   a. For UAS operations in Class E and G airspace the PIC must monitor as necessary on the appropriate Common Traffic Advisory Frequency (CTAF) frequency.
3. Flight Planning Requirements.
   a. The proponent is responsible for reviewing the most current Chart Supplement at https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/search/ for the intended airport of operation to determine operating hours and class of airspace.

b. The operator is responsible for ensuring that proposed UAS operating area does not enter a UAS flight restricted areas as described under CFR 14 Part 99.7, Temporary Flight Restriction (TFR), Special Security Instruction (SSI). Location and contact information for the TFR SSI is depicted on the FAA website:

http://udds-faa.opendata.arcgis.com/. Proponent must request permission and receive authorization via the contacts listed on the website prior to entering a TFR SSI.

c. It is the operator's responsibility for obtaining authorization from the appropriate authority for any operations that that may result in launching and/or landing from lands or waters administered by a Federal, State, Tribal or Public Agency (e.g., National Parks, State Parks, Wilderness Area, and Wildlife Refuge, etc.)

d. Operations at night are not authorized within the provisions of this COA.

4. Procedural Requirements.

a. The unmanned aircraft (UA) must remain clear and yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultralight vehicles, parachute activities, parasailing activities, hang gliders, etc.).

H. Lost Link Emergency/Contingency Procedures.

1. Lost Link Procedures:

a. If Lost Link occurs while operating in controlled airspace in accordance with the UASFM, the UAS Lost Link profile will remain at or below the published altitudes and within the defined operating area and land.

b. The UAS will not transit or orbit over populated areas.

2. Fly-Away Procedures:

In the event of a fly-away toward an area or airport where the PIC has determined the UAS may create a hazard to aviation or persons on the ground, the PIC will immediately notify the appropriate ATC facility. The PIC will provide the following information:

a. Approximate location

b. Direction of flight

c. Last know altitude

d. Maximum remaining flight time

3. Loss of Sight:

If a VO loses sight of the UA, the PIC must be notified immediately. If the UA is visually reacquired, the mission may continue. If not, the PIC must immediately terminate the operation.

4. Loss of Communication between the PIC and VO:

The UAS will return to Lost Link Home point and land. If communications are reestablished, the mission may resume. If communication cannot be promptly re-established, the PIC must land as soon as practical.

AUTHORIZATION

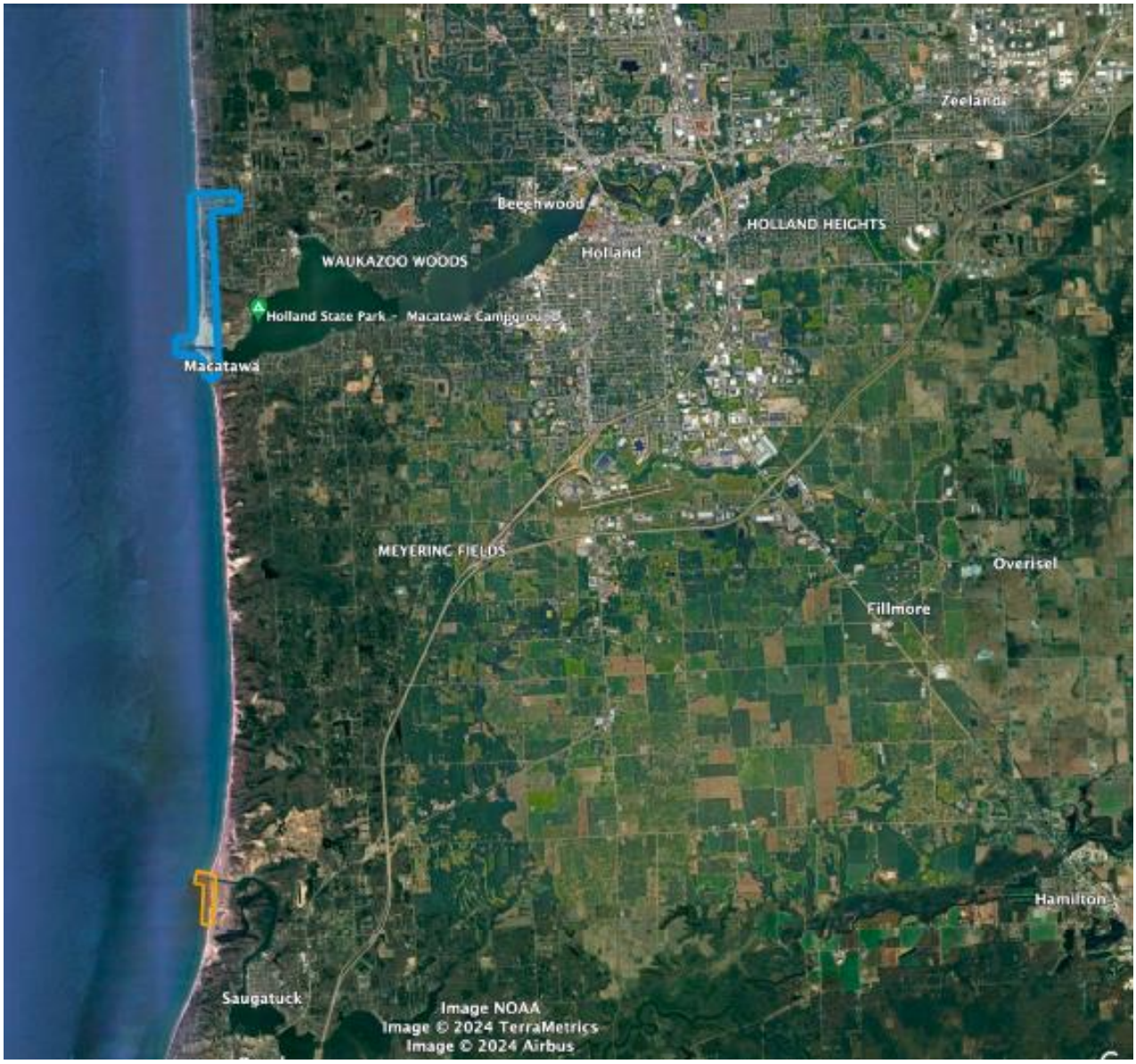
This COA does not, in itself, waive any Title 14 CFR not specifically stated, nor any state law or local ordinance. Should the proposed operation conflict with any state law or local ordinance, or require permission of local authorities or property owners, it is the responsibility of the proponent to resolve the matter. This COA does not authorize flight within Temporary Flight Restrictions, Special Flight Rule Areas, regulatory SUA, or the Washington DC Federal Restricted Zone without pre-approval. The Proponent is hereby authorized to operate UAS in the NAS within the areas defined in the Operations Authorized section of the cover page.

Attachment 1

Operating Location: Class E and G airspace in the vicinity of Holland and Saugatuck, Michigan, as defined in Attachment 3 and depicted below:

Operating Altitudes: At or below 2,000 feet AGL

Orange Area 1 Blue Area 2

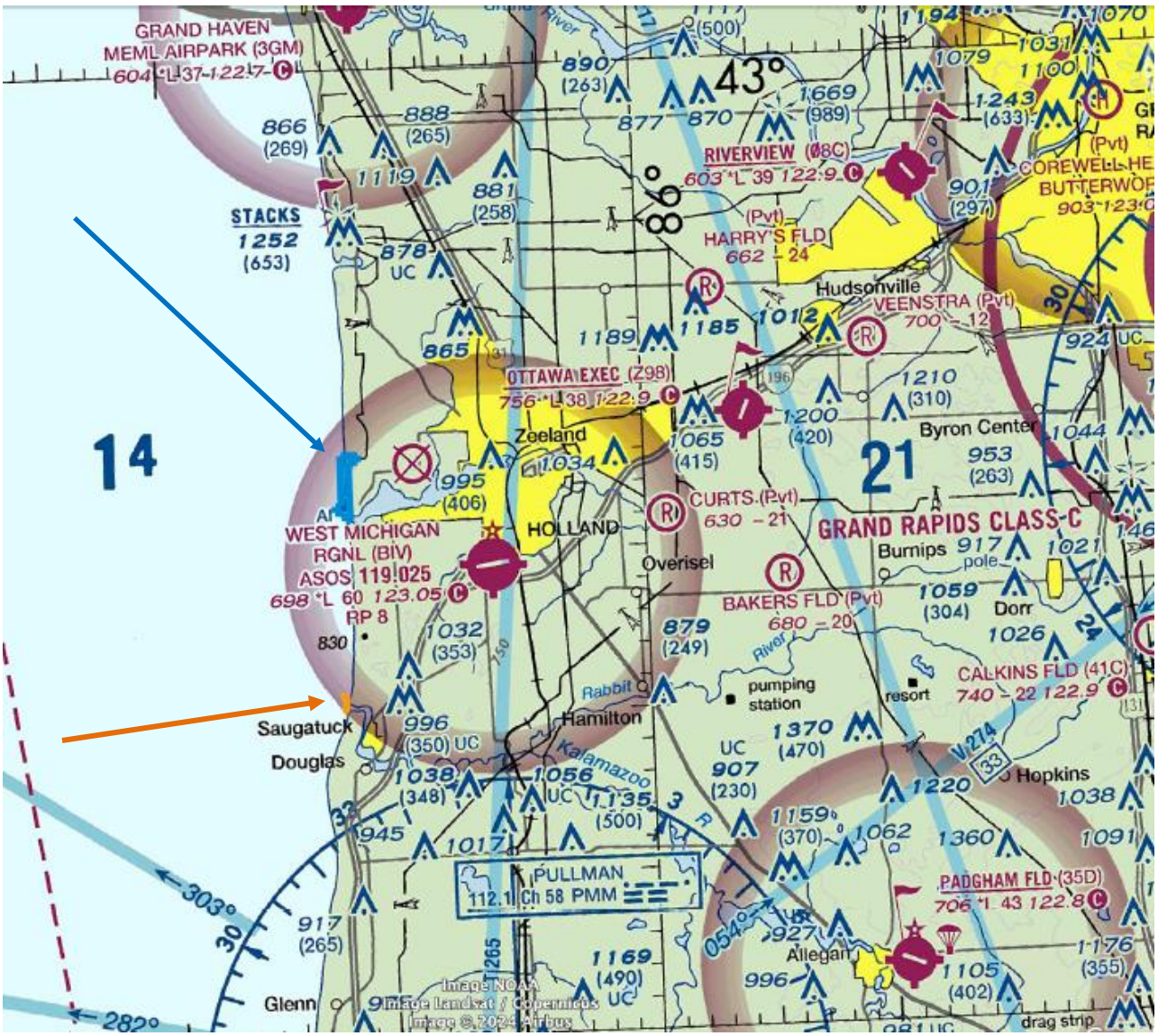


Attachment 2

Operating Location: Class E and G airspace in the vicinity of Holland and Saugatuck, Michigan, as defined in Attachment 3 and depicted below:

Operating Altitudes: At or below 2,000 feet AGL

Orange Area 1 **Blue Area 2**



Attachment 3

Operating Location: Class E and G airspace in the vicinity of Holland and Saugatuck, Michigan, as defined and depicted below:

Operating Altitudes: At or below 2,000 feet AGL

Orange Area 1 Defined

Point	Latitude	Longitude
1	-86.21722	42.6783744
2	-86.2178744	42.676087
3	-86.215616	42.6757873
4	-86.2164716	42.6686562
5	-86.2139169	42.6684984
6	-86.2130686	42.6718983
7	-86.2129234	42.6736456
8	-86.2126709	42.675314
9	-86.2125851	42.6775935
10	-86.21722	42.6783744

Blue Area 2 Defined

Point	Latitude	Longitude
1	-86.217491	42.7749316
2	-86.2176198	42.7717499
3	-86.21144	42.7715609
4	-86.2103242	42.7672449
5	-86.2071484	42.7675284
6	-86.207321	42.7975902
7	-86.2005829	42.7976308
8	-86.2005823	42.8008203
9	-86.2126846	42.8008833
10	-86.2131995	42.7752467
11	-86.217491	42.7749316
12	-86.217491	42.7749316