

Introduction

This document is the technical companion to the Minnesota Department of Transportation's (MnDOT's) [Unmanned Aircraft Systems Policy](#). All MnDOT employees and third parties working on behalf of MnDOT must comply with these procedures.

Definitions

Flight (UAS Flight)

An individual operation of an Unmanned Aircraft System from takeoff to landing.

Note: Each flight must have defined parameters for area of operation, altitudes, flight path and length of flight.

Indian Country

A legal term of art referring to lands held in trust for Indians and Indian tribes. Indian country goes beyond reservation boundaries. It includes reservations, some off-reservation allotments, and "dependent Indian communities" (i.e., land that is federally supervised and set aside for the use of Indians, this is usually found on off-reservation trust land).

Mission (UAS Mission)

The specific details and justification for the particular use of a particular aircraft.

Examples of missions include bridge inspections, aerial photography, salt pile measurements, etc.

Pilot (UAS Pilot)

The designated operator of an Unmanned Aircraft System.

Note: UAS pilots must meet the FAA requirements for the type of operation they are conducting. Pilots flying under 14 CFR §107 **must be certificated** as remote pilots with a small UAS rating. If the operation is being conducted under a Certificate of Authorization (COA), then the pilot additionally must meet the requirements as required by the COA. All MnDOT staff piloting small UAS are required to have a remote pilot certificate with small UAS rating issued by the FAA. Additional training will be required to comply with a COA or Operations Manual.

Project (UAS Project)

A specific task with a specific purpose, timeframe and defined location.

Note: A project may require multiple flights to complete.

Unmanned Aircraft Vehicle (UAV)

The flying portion of an Unmanned Aircraft System (UAS), flown by a qualified pilot via a ground control system, or autonomously through use of an on-board computer, communication links and any additional equipment that is necessary for the UAV to operate safely.

Note: The use of the term “unmanned” is not intended to be exclusive. It is the terminology used in federal regulations to describe remotely operated aircraft.

Unmanned Aircraft System (UAS)

An Unmanned Aircraft Vehicle (UAV) and all the associated support equipment, control station, data links, telemetry, communications and navigation equipment necessary to operate the aircraft.

Procedures

MnDOT Contracting Process for UAS Approval

Offices or districts contracting for UAS use *must* complete a [MnDOT Unmanned Aircraft System Use \(UAS\) application](#). The information captured in this document must include:

- the office or district requesting to use the UAS;
- the particular consultant, the purpose, time, manner, and location of use;
- an analysis that identifies the benefit of using a UAS;
- a flight and safety plan that addresses the risks and outlines the risk mitigation processes for Office of Aeronautics approval; and
- a communications plan to make the public aware of the operation .

The application shall be emailed to: UASRequest.DOT@state.mn.us or submitted using the [online form](#).

The Office of Aeronautics must review and approve contractor flight and safety plans prior to flight operations. At the discretion of the UAS Program Administrator reviewing the flight and safety plans, a blanket authorization may be issued to a contractor that has demonstrated the ability to conduct safe flights. The funding plan is the responsibility of the requestor and not subject to the review and approval by the Office of Aeronautics.

UAS Purchase Process

Prior to purchase, the office or district *must*:

- identify the mission and complete an analysis that identifies the MnDOT benefits of using the UAS;
- specify the UAS intended for purchase; and
- identify the personnel that will operate the UAS.

The request must be emailed to: UASRequest.DOT@state.mn.us

Prior to operating the UAS, the office or district *must*:

- submit an aircraft operations manual that provides the pilot with emergency procedures, UAS maintenance procedures, and all relevant flight planning information for all types of aircraft used in that district.
- Comply with the Office of Aeronautics [sUAS Operations Manual](#) or other manual approved by the Office of Aeronautics.

Purchase of a new UAS requires an update to the aircraft operations manual to cover the maintenance and operation of the new UAS. On approval of the purchase, the Office of Aeronautics will coordinate federal approval with the requesting MnDOT office or district for UAS use.

FAA Approval

Generally, prior FAA approval is not required for flights which fully comply with 14 CFR §107. The most common exception is flights which occur within controlled airspace. With some exceptions, airspace authorization may be obtained at time of flight using a third-party Low Altitude Authorization and Notification Capability (LAANC) application. The Office of Aeronautics will provide assistance with selecting and operating a LAANC application on request.

Some MnDOT business may require exemption from operating limitations of 14 CFR §107, such as 14 CFR §107.29 Daylight Operation. When applying for an exemption from 14 CFR §107 operating limitations, districts or offices should be aware that obtaining such an exemption may significantly increase the training and administrative overhead required to legally operate their UAS. Prior to transmittal to the FAA, MnDOT business units must submit waiver applications to the Office of Aeronautics for review and approval.

MnDOT units anticipating flights in support of emergency operations which may require exemption from operating limitations shall have personnel familiar with the FAA's Special Governmental Interest (SGI) process.

Districts or offices applying for an exemption or COA shall discuss the application with the Office of Aeronautics prior to transmittal to the FAA.

UAS Operations by MnDOT Personnel

In addition to regular field safety policies MnDOT operators must comply with the following requirements:

- All operators must meet the current FAA requirements. Pilots must hold appropriate certification from the FAA prior to MnDOT qualification. Each pilot is responsible for filing evidence of appropriate certification with the Office of Aeronautics. At present this means a copy of the pilot's Remote Pilot certificate. If the Remote Pilot certificate was initially issued more than 24 calendar months prior, the pilot must also provide evidence of compliance with 14 CFR §107.65.
- MnDOT pilots will complete a demonstration of proficiency (check-ride) evaluated by an Office of Aeronautics pilot (examining pilot) at least every two years.
 - a. The check-ride will consist of oral questioning and a practical demonstration. The check-ride may be suspended by the prospective pilot or the examiner at any time without penalty to the prospective pilot.
 - b. The oral questioning portion will focus on regulatory matters and preflight considerations specific to the aircraft the pilot is expected to operate.
 - c. The practical demonstration will incorporate both normal flight operations, operations specific to the mission the pilot is expected to fly, and simulated emergency procedures.
 - d. When practical, the examining pilot will train the prospective pilot to proficiency on any deficiencies noted in either the oral or practical portions of the check-ride. This may require rescheduling.
 - e. Line supervisors will not be permitted to observe check-rides, except at the request of the prospective pilot. On completion of a check ride, a prospective pilot's supervisor will be notified of the pass/retrain decision by the examining pilot.

- f. The examining pilot will document successful completion of the check-ride with a memorandum. The memorandum must identify which UAS the prospective pilot is qualified to fly for MnDOT business, what type of missions the pilot may fly, and the date on which the qualification expires. The qualified pilot will maintain a copy of this memorandum and provide it on request to appropriate authorities.
- g. Decisions of the examining pilot may be appealed to the manager of the Aviation Safety and Enforcement section of the Office of Aeronautics. The manager may, at their discretion: uphold the examining pilot's decision, order a new check-ride with a different examining pilot, or issue a qualification memorandum. If the examining pilot whose decision is being appealed is the manager of the Aviation Safety and Enforcement section, the decision may be appealed to the Director of Aeronautics or such person as the director designates.
- An Office of Aeronautics pilot or a mission-qualified pilot will supervise newly certified pilots on their first project flight in the field.
- Pilots are required to fly three flights per quarter to maintain their currency. MnDOT pilots who are not current must fly under the supervision of a qualified and current MnDOT pilot until they meet the currency requirements. Pilots shall maintain documentation to verify compliance and present such documentation to any qualified authority (including, but not limited to, the FAA, law enforcement officers, MnDOT Office of Aeronautics, or other MnDOT leadership) on request. The form and manner of documentation may be determined by the pilot.
- Prior to each flight, a flight and safety plan must be approved by the Office of Aeronautics. Offices or districts conducting repeated flights at the same location on multiple days, or flights that are substantially similar in nature at various locations in uncontrolled airspace may be granted a blanket approval by the Office of Aeronautics upon request.
- Portions of the flight and safety plan approval may be automated by flight management software. Use of flight management software for this purpose must be approved for use by the Office of Aeronautics.
- For flights in [Indian Country](#), ensure Tribal Nation is notified before flight.
- Contact the Office of Aeronautics, 651-234-7200 (office) or 1-800-657-3922 (toll free) for aviation safety and training, [MnDOT Office of Aeronautics and Aviation](#).

UAS operations by parties not working on MnDOT business flying over or near MnDOT Right-of-Way

In general, MnDOT does not have authority to prohibit flight over MnDOT right-of-way, projects, or facilities. MnDOT shall not provide affirmative authorization of any flight not conducted for MnDOT business. If a special circumstance seems to indicate the need for MnDOT authorization, contact the Office of Aeronautics prior to proceeding.