

Welcome MACTA
2024 Minnesota FAA Safety Team (FAASTeam) Drone Pro sUAS Updates
July 31, 2024



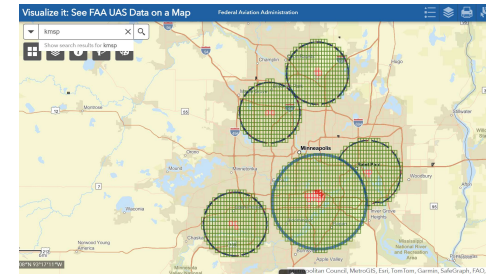
Faasafety.gov

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Our Agenda – Note sUAS is for Drones < 55 lbs.



- Introductions – Who We Are, Why We Are Here
- Resources and Links – Additional Resources
- General Reminders – License, Registration, Insurance
- Basic sUAS Reminders – Airspace, Weather, Rules of The Air
- New, Emerging Topics and Trends – Rules, Technologies, Polices
- Real-world Experiences – Cautionary Tales, Tips, Recommendations
- Q&A – We will also be available after this session

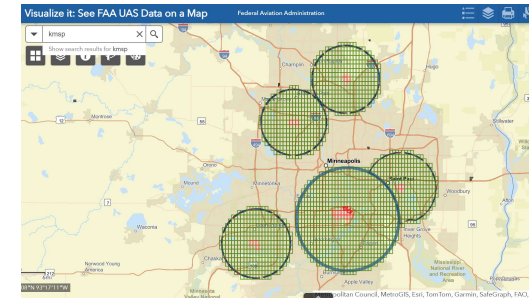


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Introductions – Who We Are, Why We Are Here



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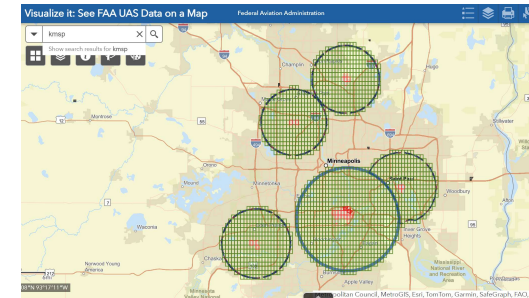
- We are members of the FAA Safety Team (FAASafety Team) of Minnesota and Drone Pros.
 - Greg Schulz – greg@picturesoverstillwater.com (612) 810-9890
 - Alexander John Aman - alexanderjohn@newera4k.com (763) 742-4474
 - Jim Sandahl – jimbobway293@gmail.com (612) 720-4899
- We are out reach safety advocates, volunteers (we don't work for the FAA)
 - Learn more at <https://faasafety.gov>
- We are FAA Part 107, TRUST certified, MnDOT Licensed operators
- We are experienced with waivers, general and special airspace authorizations, event coverage, construction, engineering, real estate, inspections, operating in various environments and situations, daylight and night, year around and other activities using various aircraft (drones) around the state, including providing real-time aerial video feeds for broadcasts of events.
- We are here to provide updates, insights, share experiences and answer questions.

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2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Flying Smart, Flying Safe – Various Resources



<https://www.faasafety.gov/>

The screenshot shows the FAA Safety Team website homepage. At the top, there is a navigation bar with links for Home, About the FAASafety Team, and a search bar. Below this, there are tabs for Activities, Courses, Seminars & Webinars, Maintenance Hangar, Pilots, and Resources. The main content area is divided into several sections:

- Featured Courses:** Lists courses like 'Eam WINGS or AMT Credit by completing one of our featured online courses!' and 'Pilot Deviations: Root Cause Analysis'.
- Hot Topics:** Features a 'Possible Assistance Needed' banner.
- Upcoming Seminars:** Announces 'Thousands of aviation safety seminars take place annually around the nation. Find one near you.' with a zip code search field.
- AMT Awards:** Promotes the 'The AMT Awards program encourages AMTs and employers to take advantage of initial and recurrent training by issuing awards based on training received.' and notes '16,791 AMT Awards Earned in 2023'.
- WINGS:** Promotes 'WINGS - Learn More!' and 'Quick WINGS Log In'.
- Instructor Portal:** States 'By virtue of holding instructor privileges, instructors can validate or give immediate WINGS credit through this portal.' and provides a link to the 'WINGS Flight Instructor Guide'.
- WINGS Achievements:** Celebrates 'We are excited to report that 60,101 pilots have earned at least one phase in the WINGS - Pilot Proficiency Program, and these pilots have earned a total of 255,056 phases.' and includes a link to 'See the list and find your name'.
- FAASafety Team Directory:** Includes a search bar for phone number, first or last name, city or state, position or keywords.
- FAASafety Team Industry Members:** Lists 'International Aviation Safety Foundation' and 'International Helicopter Safety Team'.
- FAA YouTube:** Features a video player with the FAA logo.
- Footer:** Contains a grid of links for Offices, Forms, Handbooks & Manuals, FAA For..., Aircraft Certificates, Accidents & Incidents, Regulations & Guidelines, Web Policies, Government Sites, and Contact Us.

This screenshot shows the directory page on faasafety.gov. It features a search bar at the top with the text 'faasafety.gov/FAASTApp/directory/default.aspx'. Below the search bar, there is a section for selecting a position: 'Select at least one or the following positions in your report'. The options are:

- NFM
- Nat'l Admin
- RPOC
- FPM
- Lead Rep
- Rep
- Service Provider
- Industry Member
- Unassigned

 A 'Search' button is located below these options. There is also a checkbox for 'Click to Hide Map'. Below the search options is a map of the United States with the instruction 'Click a State to view find FAASafety Team leaders by state.' The map shows various states highlighted in different shades of blue.

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Flying Smart, Flying Safe – Various Resources

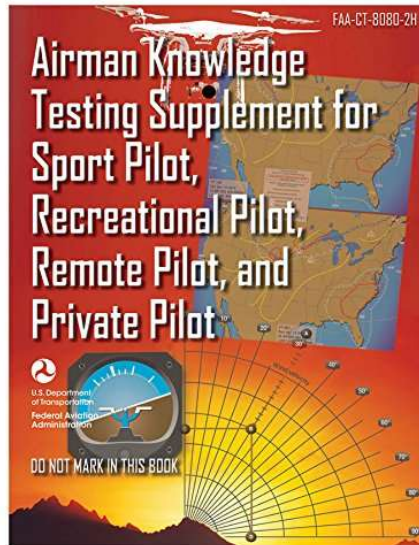


Some Drone Sites and Resources

- FAA Safety Site <https://faasafety.gov>
- Federal Aviation Administration (FAA) Drone sites [Faa.gov/uas](https://faa.gov/uas) & faasafety.gov
- Drone registration for Hobby (> .55lbs) and part 107 (anything under 55 lbs.)
<https://faadronezone.faa.gov/#/> (Watch out for fake or over priced sites)
- Rec/hobby 44809 TRUST test (online, its free, follow the links)
https://www.faa.gov/uas/recreational_fliers/knowledge_test_updates/
- B4UFLY (FAA Free App, Info, LAANC authorizations) - faa.gov/uas/getting_started/b4ufly
- DJI Virtual Flight Simulator (Free) - dji.com/downloads/djiapp/dji-virtual-flight
- MnDOT Aviation (Commercial Drone License & Registration dot.state.mn.us/aero/drones
- Facebook: The Mighty Drones – FPV Drone Racing facebook.com/groups/themightydrones
- Facebook: MN sUAS facebook.com/groups/1860070477555048

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Flying Smart, Flying Safe – Various Resources



Additional Tools, Apps & Links:

- ✓ B4UFLy and UAV Forecast and FAA Visualize It
- ✓ Aloft App (Air Control) – LAANC
- ✓ FAA TFR Map - tfr.faa.gov/tfr2/list.html
- ✓ [FAA The Recreational UAS Test \(Trust\)](https://www.faa.gov/uas/remote_pilot_test)
- ✓ [Skyvector.com](https://www.skyvector.com) & [vfrmap.com](https://www.vfrmap.com)
- ✓ <https://faadronezone-access.faa.gov/#/>
- ✓ <https://faasafety.gov>
- ✓ [PicturesOverStillwater.com/links](https://www.picturesoverstillwater.com/links)

ASA 2024 Test Prep - Via Amazon <http://tinyurl.com/msxv3ws7>

Part 107 Small Unmanned Aircraft Systems (small UAS) Recurrent
<https://www.faasafety.gov/gslac/ALC/CourseLanding.aspx?cID=515>

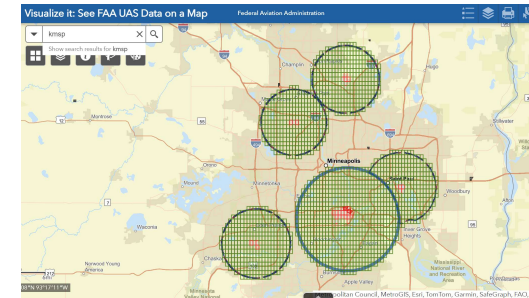
Part 107 Small Unmanned Aircraft Systems (small UAS) Initial
<https://www.faasafety.gov/gslac/ALC/CourseLanding.aspx?cID=451>

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2024 Minnesota FAASafety Team Drone Pro sUAS Updates

General Reminders



Who Are You?

- Drone Enthusiast
- RPC/Pilot/Operator
- Photographer
- Videographer
- Photogrammetry
- Subject / Topic Specialist (Real Estate, Construction, Agriculture, Journalist, Other)

Whats Your Intent/Objective

Hobbyist/Recreational
(e.g. TRUST cert & CBO
Fly just for fun, not for work
or anyone else or betterment)

Registration

No < 250g (.55lbs)

Yes >= 250g

RID = Yes if registered

Non-Hobby
(Part 107, Commercial & Fun
For others & Betterment
Ability for waivers & privs.
MnDOT License/Reg in MN)

Registration

Yes 0 to 55lbs

RID = Yes

Operating Regulations

Where to Fly
Airspace - UAS Regs, TFRs - FAA
Ground – Private, City, Cty, State, Fed

What & Where Is Your Subject

Weather Conditions
Day, Night, Wind
Clouds, Visibility

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General Reminders



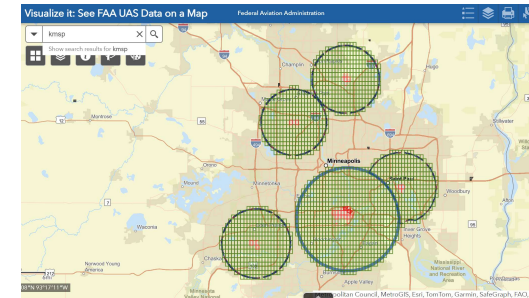
- License/Certification** TRUST for Recreational/Hobbyist, Part 107 & MnDOT for others
Question: We are a non-profit and only capture images for our website, do we need to be part 107? If the imagery provides betterment for your organization Yes.
Question: Do we need to have our license or certification with us when we fly? Yes, especially for part 107 and if asked by LEO provide your license/cert card and picture ID.
- Aircraft Registration** FAA & MnDOT (Minnesota) required for all Part 107 aircraft
Also required for Hobbyist aircraft > 249 grams
Question: Does Mavic Mini need registration? Yes for part 107
- Insurance** Liability needed for Minnesota (e.g. MnDOT requirement)
- Recurrency** TRUST is Lifetime (Unless you lose your card)
Part 107 every two years retest (its free at FAASafety.gov)

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Basic sUAS Reminders



- Bright Strobe Lights** For night flights, bright strobe light visible 3nm away. Suggest using white as blue tends to blend in with night sky.
- Don't Interfere** With manned aircraft, or emergency first responders
- Don't call airport** Don't Call the Tower for airspace authorization unless explicitly told to do so as part of a waiver or special authorization.
- Watch the WX**
 - Keep an eye on the weather before and during flights
 - Precipitation – Rain, sleet, snow, fog
 - Air Quality Index (AQI), haze, smoke
 - Temperature – Absolute and heat index/wind chill
 - Wind – Surface and at altitude, steady and gusts, direction
 - Visibility (3 statute miles)
 - Ceiling 500' below clouds, 2000' horizontal from clouds
 - Cloud conditions, KP factor, visible satellite via appAlso [1800wxbrief.com](https://www.1800wxbrief.com) & [aviationweather.gov](https://www.aviationweather.gov)

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Basic sUAS Reminders



Weather

Time	Temp (F)	Temp (C)	Humidity (%)	Wind Speed (MPH)	Wind Dir (Deg)	Clouds (%)	Visibility (Miles)
00:00	55	13	85	10	240	10	10.00
01:00	54	12	86	10	240	10	10.00
02:00	53	11	87	10	240	10	10.00
03:00	52	11	88	10	240	10	10.00
04:00	51	11	89	10	240	10	10.00
05:00	50	10	90	10	240	10	10.00
06:00	49	9	91	10	240	10	10.00
07:00	48	9	92	10	240	10	10.00
08:00	47	8	93	10	240	10	10.00
09:00	46	8	94	10	240	10	10.00
10:00	45	7	95	10	240	10	10.00
11:00	44	7	96	10	240	10	10.00
12:00	43	6	97	10	240	10	10.00

Stay 500' below clouds, 2000' horizontal from clouds, 3 statute mile visibility, e.g. basic Visual Flight Rules (VFR)

Question: Can you fly during rain & snow? If you are 500' below clouds, with 2000' horizontal distance from clouds and have 3 statute mile visibility. Use visual references and various apps.

Altitude



400AGL absolute or published altitude for airspace

Question: What about part 107 going higher? With a waiver, **OR**, if within 400' of structure **AND** no higher than 400' above structure **AND** only for part 107 **AND** only in uncontrolled airspace).

Question: What if you need to go higher than published altitude in given location? Request via LAANC or DroneZone for special authorization which might take longer time so plan ahead.

Question: Can other operators see if a LAANC is in same area? No

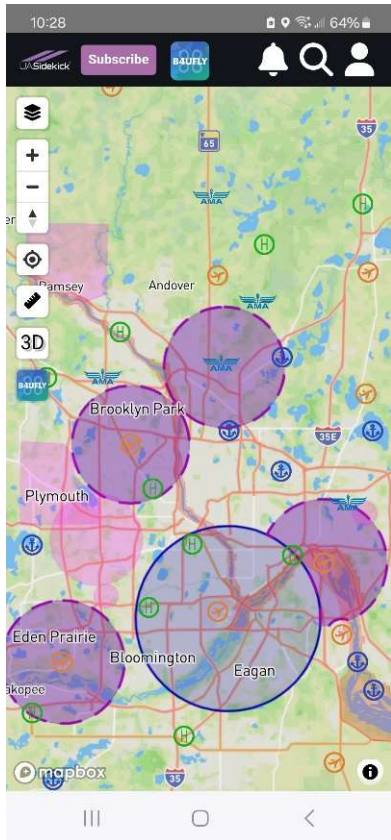
Question: Can multiple people have LAANC for same area? Yes

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Basic sUAS Reminders



Airspace



Authorization needed for within controlled airspace (e.g. use LAANC provider [Aloft Aircontrol, UASidekick, many others] or DroneZone. Note you might also need an DJI Unlock code.

Question: Can a person, organization, event, city, county or state close or restrict airspace? No, only the FAA who manages the airspace can issue a TFR or airspace restriction. However control of the ground (and water) is a different story.

Question: What's a TFR, how do I find them? Temporary Flight Restrictions appear on various apps as well as FAA TFR sight (See resources). They are for security (POTUS/VPOTUS), safety as well as events (e.g. State Fair, Twins/Vikings/Gopher outdoor games) and other situations. Expect many TFRS now through fall 2024.

Question: Do FPV drones need airspace authorizations? Yes*

2024 Minnesota FAASTeam Drone Pro sUAS Updates

Basic sUAS Reminders - TFRs

Via notams.aim.faa.gov/notamSearch/nsapp.html#/

Also see tfr.faa.gov/tfr2/list.html

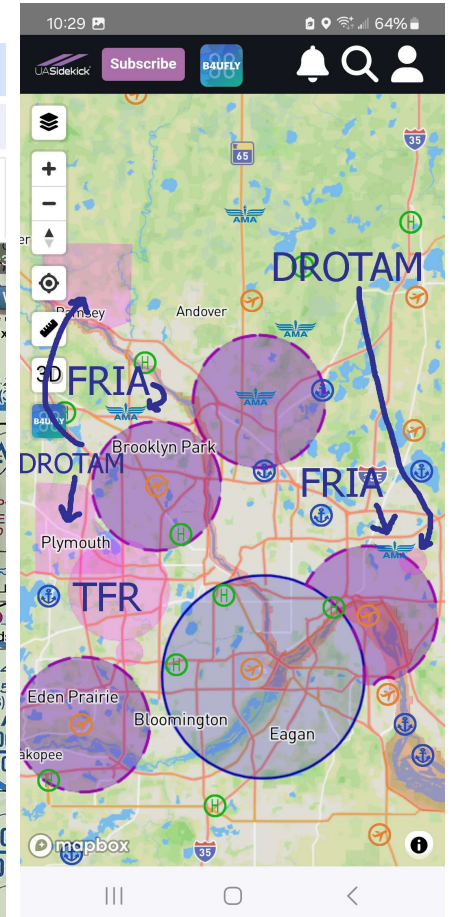
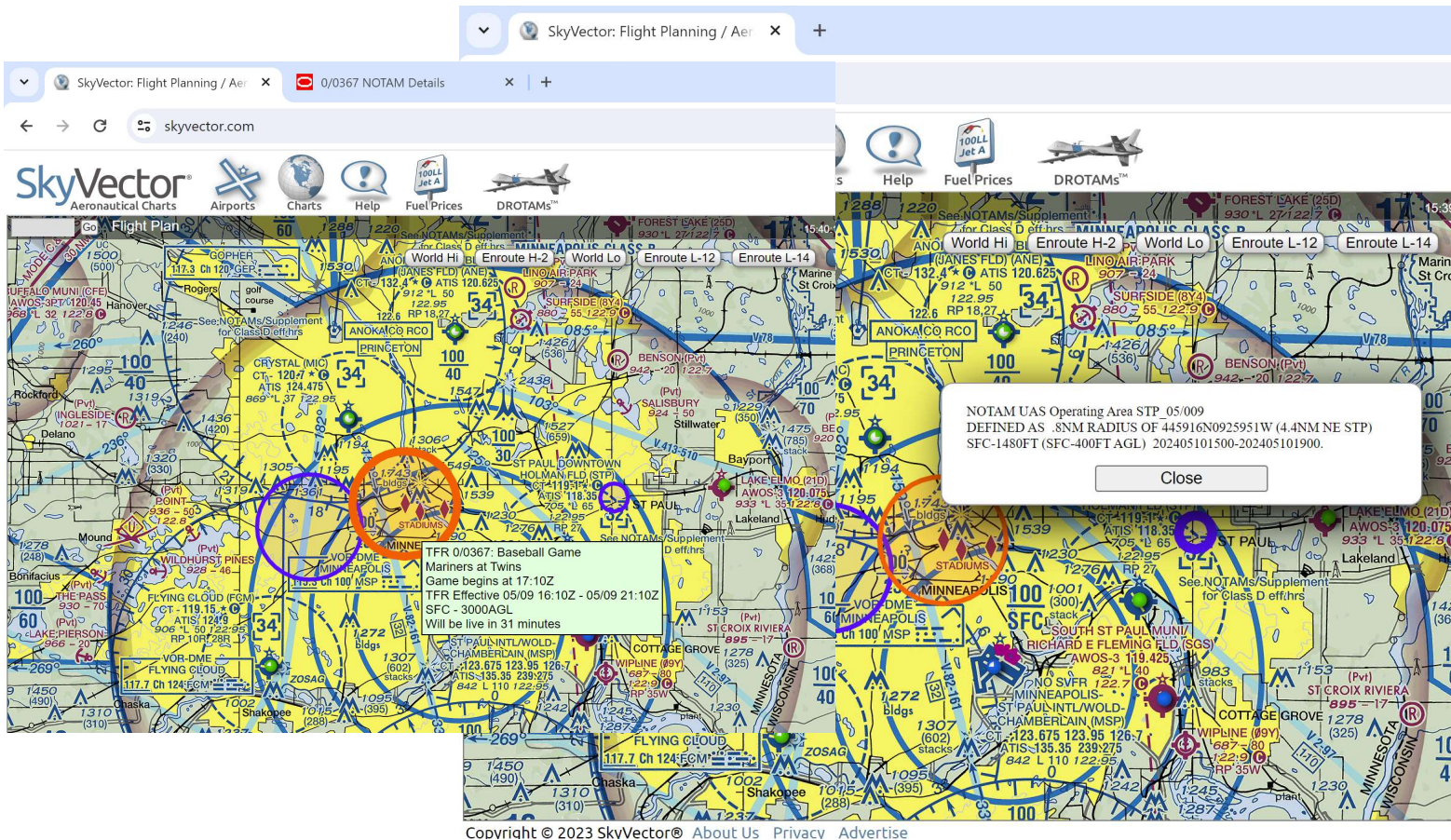
The screenshot shows the FAA NOTAM Search interface. The search criteria are set to 'STP' and '16 NOTAM(s) found'. The results table lists various NOTAMs, with the entry for STP 05/009 highlighted in blue. The entry details are: STP 05/009, Class: Airspace, Start Date UTC: 05/10/2024 1500, End Date UTC: 05/10/2024 1900, and Condition: AIRSPACE UAS WI AN AREA DEFINED AS .8NM RADIUS OF 445916N0925951W (4.4NM N...).

Location	Number	Class	Start Date UTC	End Date UTC	Condition
STP	04/012	Obstruction	04/25/2024 1200	04/24/2026 2200	OBST CRANE (ASN 2023-AGL-12598-OE) 445719N0930522W (1.8NM NW STP) 899FT (130FT AGL) FLAGGED AND LGTD 2401231920-2405152300
STP	3/8113	Procedure	12/20/2023 1634	12/20/2025 1634EST	SID STP 13: STP
STP	4/7458	Procedure	04/05/2024 1921	09/30/2024 1921EST	ODP STP PROCEDURE
STP	04/006	Obstruction	04/11/2024 0111	08/09/2024 0111	STP OF U/S 240
STP	03/001	Obstruction	03/05/2024 0600	07/03/2024 0600	STP OF U/S 240
STP	05/002	Services	05/01/2024 1238	05/30/2024 2000EST	RWY 3: STP
STP	05/003	Services	05/01/2024 1239	05/30/2024 2000EST	RWY 1: STP
STP	03/034	Obstruction	03/26/2024 0240	05/26/2024 2359	OBST 1 240326
STP	01/072	Obstruction	01/23/2024 1920	05/15/2024 2300	OBST CRANE (ASN 2023-AGL-12598-OE) 445719N0930522W (1.8NM NW STP) 899FT (130FT AGL) FLAGGED AND LGTD 2401231920-2405152300
STP	05/004	Communications	05/12/2024 0400	05/12/2024 1000	COM REMOTE TRANS/REC 121.675 U/S 2405120400-2405121000
STP	05/009	Airspace	05/10/2024 1500	05/10/2024 1900	AIRSPACE UAS WI AN AREA DEFINED AS .8NM RADIUS OF 445916N0925951W (4.4NM NE STP) SFC-400FT AGL 2405101500-2405101900
STP	05/008	Services	05/09/2024 1500	05/09/2024 1800	AD AP RVR ALL U/S 2405091500-2405091800
STP	LTA-M98-17	LTA	02/01/2023 0900	02/01/2025 0859	VFR Practice Instrument Approaches

2024 Minnesota FAA Team Drone Pro sUAS Updates

Basic sUAS Reminders - TFRs

Via Skyvector and UASidekick



MN FAAS Team Drone Pro sUAS Updates for MACTA

7/2/24 Working Draft

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

Basic sUAS Reminders



Visual Line of Sight VLOS is required by the operator and/or Visual Observer (VO)
Question: How far can you fly a drone? As far as you or your VO can directly see the aircraft.

Question: Does FPV flown outside a FRIA need a VO? Yes

Remote ID (RID)



DB120 RID Module

Is required for all part 107 operators and their aircraft either standard (built-in) or using an add on module.

Question: Is RID required for hobbyist/recreationalist? Yes if their aircraft is registered.

Question: Does RID enable you to operate over people (OOP)? Not by itself as there are additional requirements.

Question: Does RID record information about your flight that is used by the FAA? No

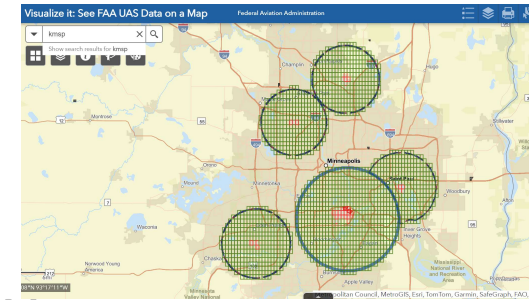
Question: Are there tools to see RID information? Yes, Dronetag, Drone Observer, OpenDrone ID and others.

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New, Emerging Topics and Trends



OOP

Operating over people can be done under certain conditions:

1. With a waiver for part 107, or, based on CBO rules if TRUST(1)
2. Or, Meet Category 1 requirements for part 107
 - ✓ Standard RID enabled, on and functioning
 - ✓ No exposed rotating parts (e.g. need prop guards)
 - ✓ Aircraft takeoff weight < 249 grams including all attached items
 - No hovering over groups of people or moving vehicles
 - ✓ Maintain VLOS (you need a VO if flying FPV)
3. Or, Meet one of three other categories for part 107

Question: Can I fly an FPV drone over people? See above conditions

Question: Can Mavic Mini OOP? Adding prop guards would exceed weight limits.

Question: Can a DJI Avata OOP? Not without a waiver

Question: How to capture event without OOP? Wait a few minutes for tips & tricks 😊

2024 Minnesota FAASafety Team Drone Pro sUAS Updates

New, Emerging Topics and Trends



Possible DJI Ban

The Proposed Legislation Is In Congress

“Might” (TBD) apply to new drones manufactured after a date

If concerned, don't enable uploads via DJI (or other manufacture)

Use 3rd party platforms such as Airdata for logs with direct uploads

Also if concerned, check your other apps, tools, phones to

determine who you are giving access to your data and telemetry

Reach out to congress person and state senators to voice concerns

Local Regulations

Remember, only the FAA manages the airspace

Individuals, entities, cities, counties, states can regulate the ground

Private property, local, county, state and federal parks

Some parks with regulations also have permit process

Also remember “ground” means where you stand, park, or on water

There are other local regulations around privacy, recklessness, etc.

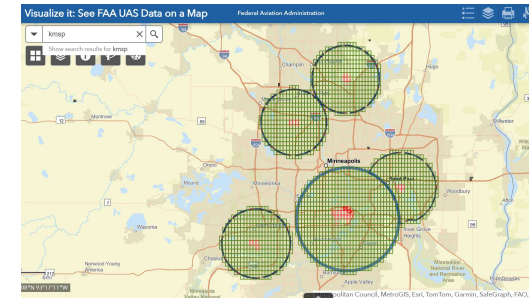
Don't fly over jails and prisons (there are state and federal laws)

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Real World Experiences, Tips and Recommendations



- Fly responsibly, watch out for being seen or perceived as flying reckless
- Stay heads up or have a VO to watch your aircraft, and, watch out for others
- Plan your missions and workflow, have checklists, pre- and post-flight
- Yield, don't interfere, and stay safe distance from first responders
- For High School sporting events, keep MSHSL regulations in mind
- Call FAA LEIDOS (8774876867) to file Drone NOTAM (DROTAM) to advise others if you will be flying in a given area. Likewise check for DROTAMS when you are flying.
- You are responsible for knowing rules, regulations...
- Flying around events and crowds – Comply with OOP or leverage work arounds
 - ✓ Think outside of the box, or stand on one with a gimbal camera and pole
 - ✓ Leverage camera zoom capabilities (digital, optical, 4K/6K/8K resolution)
 - ✓ Think ahead, plan ingress/egress routes, where to hover or capture from
 - ✓ Utilize structures that you can position above for that great view
 - ✓ Rethink does it need to be a drone shot, can you capture with gimbal camera?
 - ✓ Plan ahead for contingencies, what ifs, low batteries, weather, people, others

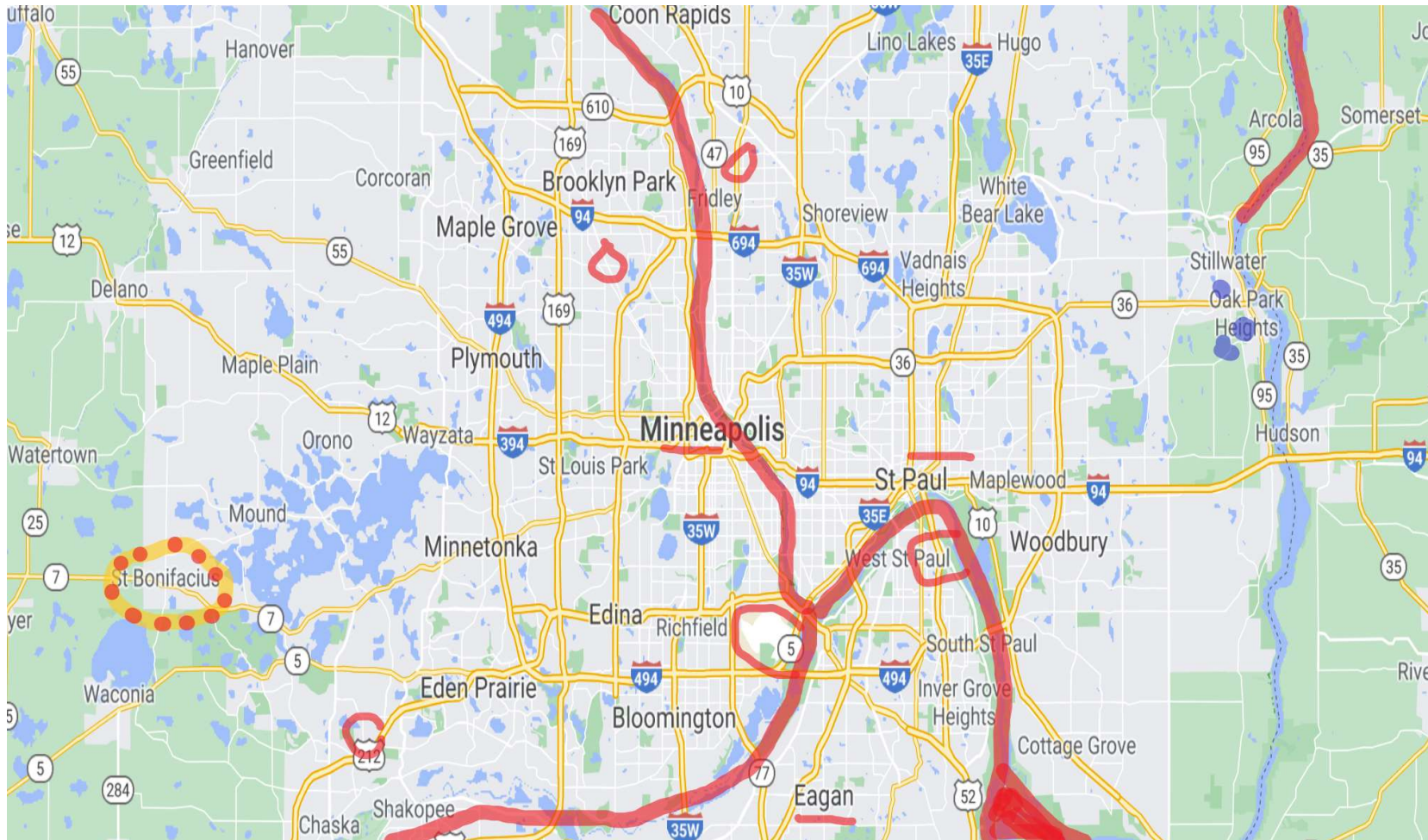


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Real World Experiences, Tips and Recommendations – Where Not Fly



Faasafety.gov



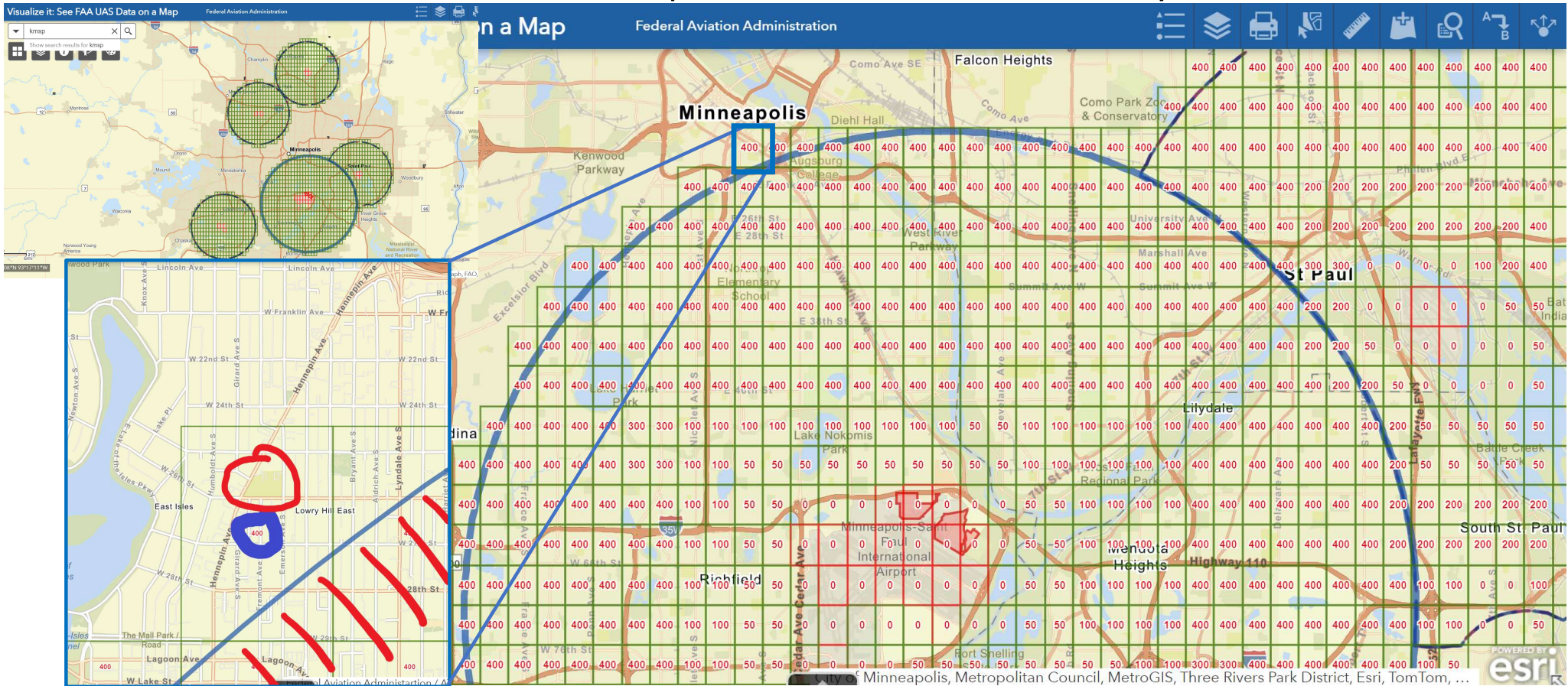
2024 Minnesota FAAS Team Drone Pro sUAS Updates

Real World Experiences, Tips and Recommendations – Airspace



Faasafety.gov

Via FAA Visualize It – To Get LAANC Airspace Authorization Use B4UFLy, Aloft, & Others



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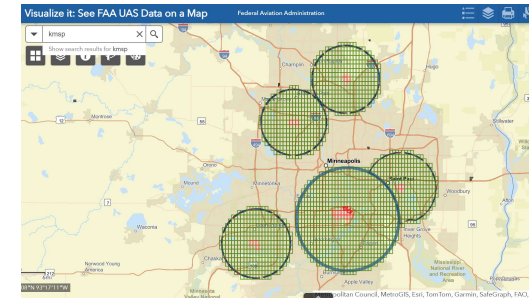
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