# HOUSE OF REPRESENTATIVES STAFF ANALYSIS

**BILL #:** HB 1433 Drones
**SPONSOR(S):** Yarborough, Watson, C. and others
**TIED BILLS:** **IDEN./SIM. BILLS:** CS/SB 520

| REFERENCE | ACTION | ANALYST | STAFF DIRECTOR or BUDGET/POLICY CHIEF |
|---|---|---|---|
| 1) Criminal Justice Subcommittee | 12 Y, 0 N | Frost | Hall |
| 2) State Affairs Committee | 21 Y, 0 N | Johnson | Williamson |
| 3) Judiciary Committee | | | |

## SUMMARY ANALYSIS

Florida law defines a drone as a powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload. Florida law restricts the use of drones to conduct surveillance. Law enforcement may not use a drone to gather evidence or other information, with certain exceptions. When law enforcement has reasonable suspicion that swift action is needed for one of the following reasons, drone use is permitted:

- To prevent imminent danger to life or serious damage to property;
- To forestall the imminent escape of a suspect or the destruction of evidence; or
- To achieve purposes including facilitating the search for a missing person.

Other exceptions authorizing drone use include, among others, countering terrorist attacks, effecting a search warrant, aerial mapping, and certain lawful business activities licensed by the state.

The bill expands the exceptions to the prohibition on drone surveillance to permit the use of a drone:

- To provide a law enforcement agency with an aerial perspective of a crowd of 50 people or more.
- To assist a law enforcement agency with traffic management, except that a drone may not be used to issue a traffic infraction citation based on images or video captured by the drone.
- To facilitate a law enforcement agency's collection of evidence at a crime scene or traffic crash scene.
- By a state agency or political subdivision:
  - To assess damage due to a flood, wildfire, or natural disaster; or
  - For vegetation or wildlife management on publicly owned land or water.
- By certified fire department personnel to perform tasks within the scope and practice of their certification.

The bill may have a positive fiscal impact on the state and local governments.

## FULL ANALYSIS

## I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

**Background**

Drones

Under Florida law, a drone is a powered, aerial vehicle that:

- Does not carry a human operator;
- Uses aerodynamic forces to provide vehicle lift;
- Can fly autonomously or be piloted remotely;
- Can be expendable or recoverable; and
- Can carry a lethal or nonlethal payload.[1]

The entire system of a drone and its associated elements, including communication links and components used to control the drone, is called an unmanned aircraft system.[2]

Drones can range vastly in size and weight and may be controlled manually or through an autopilot that uses a data link to connect the drone's pilot to the drone. Drones can also be equipped with infrared cameras[3] and "LADAR" (laser radar).[4]

Public Safety Uses for Drones

Drones have proven useful to law enforcement and governmental entities. A study by the Center for the Study of the Drone at Bard College estimates that at least 910 state and local police, fire, emergency medical services, and other public safety agencies have acquired drones in recent years.[5] Two-thirds of the public safety agencies using drones are law enforcement agencies.[6] Some available capabilities include searching for missing persons;[7] enhancing situational awareness in active shooter, hostage, or barricaded suspect incidents;[8] and assisting with border patrol operations.[9]

In traffic accident reconstruction, a drone can capture photographs from above a crash site for highly accurate reconstructions using composite images.[10] The North Carolina Department of Transportation (NCDOT) found that by utilizing drones and advanced imaging software, law enforcement can greatly

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[1] S. 934.50(2)(a), F.S.
[2] S. 330.41(2)(c), F.S.
[3] Infrared cameras can see objects through walls based on the relative levels of heat produced by the objects. Congressional Research Service, *Drones in Domestic Surveillance Operations: Fourth Amendment Implications and Congressional Response*, Apr. 3, 2013, available at www.fas.org/sgp/crs/natsec/R42701.pdf (last visited Jan. 7, 2020).
[4] The research and development laboratory at the Massachusetts Institute of Technology has developed airborne ladar systems that generate detailed 3D imagery of terrain and structures, including those beneath dense foliage. The lab reports that the micro-ladar could be used under both clear and heavy foliage conditions for surveillance and reconnaissance missions as well as for humanitarian assistance and disaster relief operations. Massachusetts Institute of Technology, *Micro-ladar*, available at https://www.ll.mit.edu/r-d/projects/micro-ladar (last visited Jan. 7, 2020).
[5] Dan Gettinger, Center for the Study of the Drone at Bard College, *Public Safety Drones: An Update* (May 2018), https://dronecenter.bard.edu/files/2018/05/CSD-Public-Safety-Drones-Update-1.pdf (last visited Jan. 29, 2020).
[6] *Id.*
[7] Associated Press, *Lost horse riders found with drone* (Jan. 26, 2019), https://www.wctv.tv/content/news/Lost-horse-riders-found-with-drone-504913522.html (last visited Jan. 24, 2020).
[8] Los Angeles Police Department, *Small Unmanned Aerial System Pilot Program Deployment Guidelines and Procedures* (Oct. 13, 2017), http://www.lapdpolicecom.lacity.org/101717/BPC_17-0410.pdf (last visited Jan. 29, 2020).
[9] David Bier and Matthew Feeney, *Drones on the Border: Efficacy and Privacy Implications*, Cato Institute (May 1, 2018), https://www.cato.org/publications/immigration-research-policy-brief/drones-border-efficacy-privacy-implications (last visited Jan. 29, 2020).
[10] Bob Susnjara, *How drones help Lake County police investigate crashes, get roads open faster*, DAILY HERALD (May 7, 2017), http://www.dailyherald.com/news/20170506/how-drones-help-lake-county-police-investigate-crashes-get-roads-open-faster (last visited Jan. 29, 2020).

accelerate accident investigations at a lower cost and with less risk to motorists and investigators.[11] In one study, NCDOT simulated a two-car crash and found that a drone was able to map the scene in 25 minutes while a terrestrial scanner, traditionally used for such mapping, took one hour and 51 minutes.[12] Other departments cite similar time-saving benefits to drone use, which consequently saves resources and helps reopen roads more quickly.[13]

Another potential use for drones is in traffic management, where the need for timely information on traffic flow and incidents is essential.[14] A 2004 study from the University of Florida, in conjunction with the Florida Department of Transportation, found that drone use in data collection and other tasks could drastically improve traffic management.[15] More recently, the Georgia Department of Transportation conducted a feasibility study to determine the economic and operational benefits of using drones.[16] The study noted that current traffic surveillance technologies are either inflexible, such as fixed traffic sensors, or labor intensive;[17] however, drones provide a low-cost means of observing traffic aerially and thus improve response times and outcomes for a number of different traffic events.[18] In 2018, the Ohio Department of Transportation launched a three-year study on the potential for coordination and communication between smart vehicles, transportation infrastructure, and drones.[19]

Drones also promote efficiency in responding to natural disasters. A drone can quickly assess damage to buildings and infrastructure.[20] During Hurricane Harvey in Houston in 2017, drones were used to monitor levees, predict flooding, estimate how long an area would be underwater, and create detailed maps to help emergency management agencies.[21] Following Hurricane Michael in 2018, the University of Florida Institute of Food and Agricultural Sciences used drones to determine agricultural crop damage and yield reduction to provide a more accurate account of the damage caused by the storm.[22] Drones may also provide vital assistance to fire departments by using thermal cameras to find victims trapped in a fire, assess how a fire is spreading, or to make emergency supply deliveries.[23]

Federal Drone Regulation

The Federal Aviation Administration (FAA) regulates use of navigable airspace.[24] The FAA has allowed drone use for essential public operations such as firefighting, disaster relief, search and rescue, law enforcement, border patrol, and scientific research since 1990.[25] In February 2012, the Congress

[11] North Carolina Department of Transportation, Aviation Division, *Collision Scene Reconstruction and Investigation Using Unmanned Aircraft Systems* (August 2017), https://www.ncdot.gov/divisions/aviation/Documents/ncshp-uas-mapping-study.pdf#search=traffic%20reconstruction%20drone (last visited Jan. 29, 2020).
[12] *Id.*
[13] Jenni Bergal, Pew Charitable Trusts, *Another Use for Drones: Investigating Car Wrecks* (August 6, 2018), https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2018/08/06/another-use-for-drones-investigating-car-wrecks (last visited Jan. 29, 2020).
[14] Florida Department of Transportation, *Use of Unmanned Aerial Vehicles in Traffic Surveillance and Traffic Management: Technical Memorandum*, pg. 1 (May 12, 2005), https://www.i95coalition.org/wp-content/uploads/2015/03/Report_TechMemo_UAV_FL.pdf (last visited Jan. 29, 2020).
[15] *Id.* at 4.
[16] Javier Irizarry and Eric Johnson, *Feasibility Study to Determine the Economic and Operational Benefits of Utilizing Unmanned Aerial Vehicles (UAVs): Final Report* (May 6, 2014), https://smartech.gatech.edu/bitstream/handle/1853/52810/FHWA-GA-1H-12-38.pdf (last visited Jan. 29, 2020).
[17] *Id.* at 13.
[18] *Id.*
[19] Matt Leonard, *Ohio plans to integrate drones into traffic management*, GCN (Jun. 19, 2018), https://gcn.com/articles/2018/06/19/ohio-drone-traffic-management.aspx (last visited Jan. 29, 2020).
[20] Matthew Hutson, *Hurricanes Show Why Drones Are the Future of Disaster Relief* (Sep. 9, 2017), https://www.nbcnews.com/mach/science/hurricanes-show-why-drones-are-future-disaster-relief-ncna799961 (last visited Jan. 29, 2020).
[21] *Id.*
[22] Beverly James, *Florida Panhandle: Drones Used to Assess Hurricane Michael Damage* (Oct. 30, 2018), https://agfax.com/2018/10/30/florida-panhandle-drones-used-to-assess-hurricane-michael-damage/ (last visited Jan. 29, 2020).
[23] Zacc Dukowitz, *7 ways Fire Departments Use Drones in the Field* (Apr. 25, 2018), https://uavcoach.com/drones-fire-departments/ (last visited Jan. 29, 2020).
[24] 49 U.S.C. § 40103 (2019).
[25] FAA, *Fact Sheet – Unmanned Aircraft Systems*, (Feb. 15, 2015), https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=18297 (last visited Jan. 29, 2020).

passed the Federal Aviation Authority Modernizing and Reform Act (Act), which required the FAA to safely open the nation's airspace to drones by September 2015.

Under the authority granted in the 2012 Act, the FAA issued its regulations on the operation and certification of small (less than 55 pounds at take-off) unmanned aircraft systems in June 2016.[26] The 2016 small drone regulations facilitated civilian drone use in the navigable airspace and included airspace restrictions and a waiver mechanism allowing for deviations from drone operational restrictions upon application and authorization by the FAA. These regulations, which are currently in effect, also include a maximum altitude of 400 feet above the ground or a structure, a requirement that the operator maintain visual line of sight of the aircraft, and a prohibition on operating a drone at night.

In 2017, the FAA launched the Unmanned Aircraft Systems Integration Pilot Program.[27] One objective of this pilot program is to test and evaluate various models of state, local, and tribal government involvement to develop and enforce federal regulation of drone operations. Current pilot program participants are exploring package delivery, delivery of life-saving medical equipment, pipeline inspection, airport security, and border protection.[28] These proposals require the FAA to waive some regulations controlling drone operation.

On January 18, 2019, the FAA announced a new proposed regulation for the use of drones that would allow drone operators to routinely fly over people and fly at night.[29] The proposed regulation creates a risk-assessment model based upon the weight and design of the drone, and considers mitigation of the drone design to prohibit serious injury or property damage should the drone make contact with a person or property on the ground.[30] The FAA began accepting public comment on the proposed regulation on February 13, 2019, and has yet to complete a final draft.[31]

Fourth Amendment Considerations

The Fourth Amendment of the United States Constitution guarantees:

- The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures shall not be violated; and
- No warrants shall issue without probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.[32]

Under Fourth Amendment jurisprudence, a search occurs whenever the government intrudes upon an area in which a person has a reasonable expectation of privacy. If there is no reasonable expectation of privacy in the area, Fourth Amendment protections do not apply. However, if the activity qualifies as a search because there is a reasonable expectation of privacy in the area, either the government must secure a warrant or an exception to the warrant requirement must apply.[33]

*Searches from the Navigable Airspace*

The United States Supreme Court held that a person does not have an expectation of privacy in the navigable airspace above otherwise protected areas, such as a home. In 1986, the Court held in *California v. Ciraolo* that police officers who flew a private plane 1,000 feet over a yard to observe marijuana growing within did not conduct a search under the Fourth Amendment.[34] The Court reasoned

[26] 81 Fed. Reg. 42063 (2016).
[27] FAA, UAS Integration Program, *Program Overview* (Oct. 25, 2017), https://www.faa.gov/uas/programs_partnerships/integration_pilot_program/ (last visited Jan. 29, 2020).
[28] Federal Aviation Administration, *Integration Pilot Program Lead Participants*, https://www.faa.gov/uas/programs_partnerships/integration_pilot_program/lead_participants/ (last visited Jan. 29, 2020).
[29] Safe and Secure Operations of Small Unmanned Aircraft Systems, 84 Fed. Reg. 3732 (February 13, 2019) (to be codified at 14 CFR Part 107), available at https://www.govinfo.gov/content/pkg/FR-2019-02-13/pdf/2019-00758.pdf (last visited Jan. 7, 2020).
[30] *Id.*
[31] *Id*.
[32] U.S. Const. amend. IV.
[33] Examples of exceptions to the warrant requirement include exigent circumstances, searches of motor vehicles, and searches incident to arrest.
[34] *California v. Ciraolo*, 476 U.S. 207 (1986).

that a person does not have a reasonable expectation of privacy under these circumstances because "[a]ny member of the public flying in this airspace who glanced down could have seen everything that these officers observed."[35] Of note, the officers' observations in *Ciraolo* were naked-eye.

During the same term as *Ciraolo*, the Court considered *Dow Chemical Co. v. United States*, in which the federal Environmental Protection Agency (EPA) employed a contractor to conduct aerial surveillance of a chemical plant using an airplane and aerial mapping camera.[36] The Court noted that the photographs used by the EPA are commonly used in mapmaking, further reasoning that "any person with an airplane and an aerial camera could readily duplicate them."[37] The Court signaled, however, that more sophisticated technologies might give rise to Fourth Amendment protections:

> It may well be, as the Government concedes, that surveillance of private property by using highly sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed absent a warrant. But the photographs here are not so revealing of intimate details as to raise constitutional concerns. Although they undoubtedly give EPA more detailed information than naked-eye views, they remain limited to an outline of the facility's buildings and equipment. The mere fact that human vision is enhanced somewhat, at least to the degree here, does not give rise to constitutional problems.[38]

*Governmental Use of Advanced Technologies*

In 2001, the Court held in *Kyllo v. United States* that police use of sense-enhancing technology not generally available to the public constituted a search under the Fourth Amendment when used to intrude into a constitutionally protected area.[39] The technology at issue in *Kyllo* was a thermal-imaging sensor, which police used to scan a home to detect marijuana cultivation within. Although the police did not physically enter the home, the Court held that using a device not in general public use to explore details of the home that would previously have been unknowable without physical intrusion was a search that was presumptively unreasonable without a warrant.[40]

The Court has not addressed drones and the Fourth Amendment. Importantly, civilian hobbyist and commercial drone use has increased in recent years along with law enforcement use. The FAA estimates the market for commercial drones will triple by 2023.[41] As drone flight is available to the general public, it follows under both the *Ciraolo* line of cases regarding aerial surveillance and *Kyllo* that drone observations would not constitute a search. However, the Court has recently changed course in Fourth Amendment jurisprudence with several key cases addressing new technological capabilities in other areas, such as with cell phones, mobile trackers, and cell site tracking.[42] These cases addressing new technologies suggest a trend towards increasing privacy protections beyond the traditional analyses used in the *Ciraolo* and *Kyllo* era, making it difficult to predict with any precision how the courts will handle drones and privacy issues.

Florida Law

Section 934.50, F.S., restricts the use of drones by individuals and government entities to conduct surveillance. The law recognizes that a real property owner is presumed to have a reasonable expectation of privacy on his or her privately owned real property if he or she cannot be seen by

[35] *Id.* at 214-15.
[36] *Dow Chemical Co. v. U.S.*, 476 U.S. 227 (1986).
[37] *Id.* at 231.
[38] *Id.* at 238.
[39] *Kyllo v. U.S.*, 533 U.S. 27, 34 (2001).
[40] *Id.* at 40.
[41] Federal Aviation Administration, *FAA Aerospace Forecast: Fiscal Years 2019-2039*, https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2019-39_FAA_Aerospace_Forecast.pdf (last visited Jan. 29, 2020).
[42] *Riley v. California*, 134 S.Ct. 2473 (2014); *United States v. Jones*, 565 U.S. 400 (2012); *Carpenter v. United States*, 138 S.Ct. 2206 (2018).

persons at ground level who are in a place they have a legal right to be.[43] Thus, law enforcement may not use a drone to gather evidence or other information, with certain exceptions. When law enforcement has reasonable suspicion that swift action is needed, drone use is permitted to:

- Prevent imminent danger to life or serious damage to property;
- Forestall the imminent escape of a suspect or the destruction of evidence; or
- Achieve purposes including facilitating the search for a missing person.[44]

Other exceptions authorizing drone use include:

- Countering terrorist attacks;
- Effecting search warrants authorized by a judge;
- Lawful business activities licensed by the state, with certain exceptions;
- Assessing property for ad valorem taxation purposes;
- Capturing images of utilities for specified purposes;
- Aerial mapping;
- Cargo delivery;
- Capturing images necessary for drone navigation; and
- Routing, siting, installation, maintenance, or inspection of communications service facilities.[45]

Section 934.50, F.S., further provides that evidence obtained or collected by a law enforcement agency using a drone is not admissible in a criminal prosecution in any court of law in the state, unless it is permitted under one of the statute's exceptions.[46]

**Effect of Proposed Changes**

The bill expands the exceptions to the prohibition on drone surveillance. Specifically, the bill authorizes the use of drones:

- To provide a law enforcement agency with an aerial perspective of a crowd of 50 people or more.
- To assist a law enforcement agency with traffic management, except that a drone may not be used to issue a traffic infraction citation based on images or video captured by the drone.
- To facilitate a law enforcement agency's collection of evidence at a crime scene or traffic crash scene.
- By a state agency or political subdivision:
  - To assess damage due to a flood, wildfire, or natural disaster; or
  - For vegetation or wildlife management on publicly owned land or water.
- By certified fire department personnel to perform tasks within the scope and practice of their certification.

The bill creates opportunities for law enforcement and state agencies to improve efficiency by authorizing drone use to accomplish tasks currently performed by manned aircraft. As with any surveillance activity, governmental actors are bound by Fourth Amendment protections. Though the bill allows the government to use drones, the manner of use must comport with constitutional privacy protections.

B. SECTION DIRECTORY:

**Section 1:** Amends s. 934.50, F.S., relating to searches and seizure using a drone.

**Section 2:** Provides an effective date of July 1, 2020.

[43] Ss. 934.50(3)(a) and 934.50(4), F.S.
[44] S. 943.50(4)(c), F.S.
[45] S. 943.50(4)(a)-(b), and (d)-(j), F.S.
[46] S. 934.50(6), F.S.

## II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

Drones have proven to be more efficient than traditional on-the-ground or manned aircraft efforts in several public safety operations. Authorizing their use for more purposes may reduce costs for state agencies performing these operations, such as the Florida Highway Patrol and the Department of Agriculture and Consumer Services.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

None.

2. Expenditures:

Drones have proven to be more efficient than traditional on-the-ground or manned aircraft efforts in several public safety operations. Authorizing their use for more purposes may reduce costs for local law enforcement and fire departments.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

None.

D. FISCAL COMMENTS:

None.

## III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. This bill does not appear to require counties or municipalities to spend funds or take action requiring the expenditures of funds; reduce the authority that counties or municipalities have to raise revenues in the aggregate; or reduce the percentage of state tax shared with counties or municipalities.

2. Other:

Governmental action is subject to the requirements of the Fourth Amendment. Though the bill authorizes drone use in certain circumstances, the Fourth Amendment might control how the drone is used under a particular factual scenario, such as determining whether a warrant is required.

B. RULE-MAKING AUTHORITY:

The bill does not authorize or require rulemaking.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

## IV. AMENDMENTS/ COMMITTEE SUBSTITUTE CHANGES

None.