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Gregory S. McNeal

William Goodwin

Sezen Jones

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WARRANTLESS OPERATIONS OF PUBLIC USE DRONES: CONSIDERATIONS FOR GOVERNMENT AGENCIES

*Gregory S. McNeal, William Goodwin, and Sezen Jones**

ABSTRACT

The benefits of drones continue to transform our lives and nowhere is this more apparent than with the use of drones by local governments. While these benefits are tremendous, residents often express privacy concerns and fear of persistent surveillance associated with law enforcement's deployment of drones. In response, critics have made knee jerk reactions to attempt to apply warrant requirements prior to police use of drones. Outside the law enforcement context, civic uses of drones face similar challenges to deployment, so long as government actors must operate under a traditional administrative warrant analysis.

*This Article advocates that well established aerial surveillance law is applicable to both law enforcement use of drones as well as other public uses of drones. According to well established case law starting with *California v. Ciraolo*,¹ observations made by law enforcement are allowable sans warrant if they occur in public navigable airspace or from a place where the officer had a right to be. Such an analysis should be applicable to civic uses of drones when determining whether an administrative warrant is required prior to deploying*

* Gregory S. McNeal, J.D., Ph.D., is Professor of Law and Public Policy at Pepperdine University and co-founder of AirMap. Dr. McNeal is an expert on drones and served on the Federal Aviation Administration's Micro Unmanned Aircraft Systems Aviation Rulemaking Committee, and on the Federal Aviation Administration's UAS Registration Task Force, Aviation Rulemaking Committee. William Goodwin, J.D., is an expert in the area of local and state unmanned aircraft system policy. He is General Counsel and Director of Public Policy at AirMap. Mr. Goodwin has significant experience in technology transactions and a broad litigation practice. Sezen Jones, J.D., M.B.A., is an Attorney and Senior Public Policy Manager at AirMap. Ms. Jones has significant litigation experience and focuses her policy practice on technology and transportation issues.

1. 476 U.S. 207 (1986).

public use drones for code enforcement and other municipal inspections. This Article also explores how government agencies can change negative perceptions of drones in their communities through adoption of proper policies and procedures.

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INTRODUCTION

The evolution of drones, from military weapons to commercial tools, continues to transform civic life and nowhere is that more apparent than in the use of drones by cities themselves. Across the world, drones are becoming increasingly popular for public use. Cities like Modesto, California use drones to assist search-and-rescue efforts and deliver aerial imagery to law enforcement during criminal pursuits;² the Tampa Bay Port Authority Board of Commissioners intends to use drones to survey properties and construction projects;³ the Minnesota Department of Transportation is using drones to inspect bridges and highways;⁴ and Somerville, Massachusetts uses

2. Kay Recede, *Modesto Police Unveil New Crime-fighting Drones*, FOX40 (Aug. 9, 2016), <http://fox40.com/2016/08/09/modesto-police-unveil-new-crime-fighting-drones/> [http://perma.cc/AK47-WGHT].

3. Yvette Hammett, *Port Sees Drones as a Way to Save Money*, TAMPA BAY TIMES (Dec. 16, 2015), <http://www.tbo.com/news/business/port-sees-drones-as-a-way-to-save-money-20151216/> [http://perma.cc/VWY4-K2UZ].

4. *Unmanned Aerial Vehicle Bridge Inspection Demonstration Project*, MINN. DEP'T OF TRANSP. (July 2015), <http://www.dot.state.mn.us/research/TS/2015/201540.pdf> [https://perma.cc/ERA8-NSHT].

drones to survey municipal buildings for snow build-up.⁵ Other intended public uses of drones operated by government agencies include:

- Aerial photography and filming of city events to be used for marketing purposes;
- Property inspections, code enforcement, and appraisals;⁶
- Firefighting activities;⁷
- Accident or crime scene investigation;⁸
- Ambulance and defibrillator drones;⁹
- Agricultural inspections;¹⁰
- Scientific research¹¹ on natural resources, wildlands, and waterways;¹²
- Tactical advantage and use in hazardous and hostile situations.¹³

The way private businesses use drones will illuminate new and more cost-effective ways of carrying out government business, while

5. Steve Annear, *Somerville Using Drones to Survey Snowy Building Roofs*, BOS. GLOBE (Feb. 19, 2015), <https://www.bostonglobe.com/metro/2015/02/19/somerville-using-drones-survey-snowy-building-roofs/qYXOJ6X3iBaur854JFnuPJ/story.html> [http://perma.cc/D7TM-NJ67].

6. *Drones Come Home, Privacy Concerns Fly High*, NPR (Mar. 5, 2013), <http://www.npr.org/2013/03/05/173532173/drones-come-home-privacy-concerns-fly-high> [http://perma.cc/JA6R-32PX].

7. Rick Rojas, *New York City's Firefighting Arsenal Will Soon Include Drones*, N.Y. TIMES (Sept. 8, 2016), <https://www.nytimes.com/2016/09/09/nyregion/new-york-city-fire-department-drones.html> [http://perma.cc/8XHH-D343].

8. Michelle Fredrickson, *Drones Add a New Dimension to Crime Scene Investigations*, HUFFINGTON POST (Oct. 24, 2014), http://www.huffingtonpost.com/pro-journo/drones-add-a-new-dimensio_b_6033392.html [http://perma.cc/NA9X-6EKS].

9. Michelle Starr, *Ambulance Drone Delivers Help to Heart Attack Victims*, CNET (Oct. 28, 2014), <https://www.cnet.com/news/ambulance-drone-delivers-help-to-heart-attack-victims/> [http://perma.cc/7N5G-36Q9].

10. *FACT SHEET: Enabling a New Generation of Aviation Technology*, WHITE HOUSE (June 21, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/06/21/fact-sheet-enabling-new-generation-aviation-technology> [http://perma.cc/9LPB-SU68].

11. *Id.*

12. Joanna Simon et al., *Drones and Environmental Monitoring*, 47 ENVTL. L. REP. NEWS & ANALYSIS 10101, 10101 (2017).

13. Frank Stoltze, *Sheriff Launches First Police Drones in LA County*, 89.33 KPCC (Jan. 12, 2017), <http://www.scpr.org/news/2017/01/12/68076/sheriff-launches-first-police-drones-in-la-county/> [http://perma.cc/2Y3C-6BYU].

increasing efficiency and reducing the risk of death or injury to government personnel.¹⁴

Despite the apparent benefits of drones, as drone use has become more prevalent in communities, concerns about their use have been raised to lawmakers, at the federal, state, and municipal level.¹⁵ These concerns have led to a variety of public reactions, including, in some cases, a push for legislation to prohibit public use of drones absent a warrant, largely in the law enforcement context. In fact, privacy advocates have succeeded in over a dozen states, passing laws prohibiting law enforcement use of drones; the majority of those states ban government use of drones without a warrant.¹⁶ Lawmakers who often do not agree on other issues are enacting laws in both red states (Alabama, Alaska, Idaho, Kansas, and South Carolina) and blue states (California, Massachusetts, New Jersey, New York, and Washington).¹⁷

At the federal level, the rulemaking process has yet to touch on these questions. The federal government has, after repeated delays, issued the long-awaited rules for unmanned aircraft operations under Part 107.¹⁸ And the FAA is purportedly developing a process to

14. *FACT SHEET: New Commitments to Accelerate the Safe Integration of Unmanned Aircraft Systems*, WHITE HOUSE (Aug. 2, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/08/02/fact-sheet-new-commitments-accelerate-safe-integration-unmanned-aircraft> [<http://perma.cc/QT2A-89SR>].

15. Greg S. McNeal, *Drones and the Future of Aerial Surveillance*, 84 GEO. WASH. L. REV. 354, 354 (2016) (for a lengthier discussion of these issues and legal analysis of some concepts addressed in this Article).

16. For a summary and analysis of the legislation, see Michael L. Smith, *Regulating Law Enforcement's Use of Drones: The Need For State Legislation*, 52 Harv. J. on Legis. 423 (2014); see also 3 FLA. STAT. § 934.50 (2013), IND. CODE § 35-33-5-9 (2014), UTAH CODE ANN. § 63G-18-103 (2014), IOWA CODE ANN. §§ 321.492B, 808.15 (2014), IDAHO CODE ANN. § 21-213 (2013), MONT. CODE ANN. § 46-5-109 (2013), OR. REV. STAT. § 837.310 *et. seq.* (2013), 2013 N.C. Sess. Laws 1040, TENN. CODE ANN. § 39-13-609 (2013), TEX. GOV'T. CODE ANN. § 423.002 (2013), 2013 Va. Acts 1408, WIS. STAT. § 175.55 (2014).

17. Marc Jonathan Blitz et al., *Regulating Drones under the First and Fourth Amendments*, 57 WM. & MARY L. REV. 49, 64 (2015).

18. The Department of Transportation finalized Part 107, known as the "Small UAS" (unmanned aircraft systems) rule, in 2016. Part 107 establishes baseline rules for drone operations weighing less than fifty-five pounds.

prohibit flights over critical infrastructure to protect privacy,¹⁹ while considering a proposed rule for flights over people.²⁰

Nonetheless, many legislators are not waiting for further guidance. Between December 2016 and January 2017 alone, legislatures in New Mexico (New Mexico Senate Bill 167),²¹ New Hampshire (New Hampshire House Bill 97),²² and New York (New York Assembly Bill 901)²³ all introduced bills prohibiting government use of drones absent a warrant, and Oklahoma proposed similar restrictions on government use of drones (Oklahoma Senate Bill 630).²⁴ These legislative efforts, whether current or pending law, are largely aimed at restricting the government's use of drone technology.

Privacy advocates argue there is a real threat of pervasive surveillance with public use drones because they are an inexpensive means for government agencies to gather data or conduct business.²⁵ While drones may be relatively less expensive compared to other manned aircraft employed by local, state, and federal government, they are significantly less capable than their manned counterparts. Drones used by cities or counties are typically small quadcopters with very limited flying time. Generally, they are equipped with less sophisticated equipment than manned aircraft or military Predator drones, meaning they are less intrusive to one's privacy.²⁶

19. *FAA Extension Act*, U.S. CONG. (Jan. 4, 2016), <https://www.congress.gov/114/bills/hr636/BILLS-114hr636enr.pdf>. [<https://perma.cc/4ZBQ-7ZMS>].

20. Michael Huerta, *Drones: A Story of Revolution and Evolution*, FAA (Jan. 6, 2017), https://www.faa.gov/news/speeches/news_story.cfm?newsId=21316 [<https://perma.cc/G68T-YY2R>].

21. *New Mexico Senate Bill 167*, LEGISCAN (2017), <https://legiscan.com/NM/bill/SB167/2017> [<http://perma.cc/FK53-C99Q>].

22. *New Hampshire House Bill 97*, LEGISCAN (2017), <https://legiscan.com/NH/bill/HB97/2017> [<http://perma.cc/5AWP-XUTE>].

23. *New York Assembly Bill 901*, LEGISCAN (2017), <https://legiscan.com/NY/bill/A00901/2017> [<http://perma.cc/SA3Z-KU2L>].

24. *Oklahoma Senate Bill 630*, LEGISCAN (2017), <https://legiscan.com/OK/bill/SB630/2017> [<http://perma.cc/UN59-C78X>].

25. Richard Whittle, *Drone Skies: The Unmanned Aircraft Revolution is Coming*, POPULAR MECHS. (Sept. 9, 2013), <http://www.popularmechanics.com/military/a9407/drone-skies-the-unmanned-aircraft-revolution-is-coming-15894155/> [<http://perma.cc/6KWX-DZUQ>].

26. *Dow Chem. Co. v. United States*, 476 U.S. 227, 238 (1986); Dan Gettinger, *Lawkeepers: Police Drones*, CTR. FOR THE STUDY OF THE DRONE AT BARD COLL. (Nov. 30, 2013), <http://dronecenter.bard.edu/lawkeepers-police-drones/> [<http://perma.cc/C2YD-QFKG>]; see also *Kyllo v. United States*, 53 U.S. 27, 40 (2001), where the Supreme Court held “[w]here, as here, the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a ‘search’ and is presumptively unreasonable without a warrant.” As such, instruments attached to a

When considering the greater good of public safety, it becomes easily apparent why a warrant requirement for public use drones is unlikely to be the best approach. Such a requirement would prevent law enforcement from performing reasonable measures to ensure public safety at large events, such as marathons, parades, or summer concert series. In light of terrorist attacks like the Boston Marathon bombing or the Nice, France promenade attack on Bastille Day, the potential value of drone-enabled observation of public events is an obvious opportunity for drones to increase public safety without compromising personal privacy. One can easily understand why law enforcement may want to fly drones over such events. In order to do so, however, law enforcement would be required to file an application with a judge, supported by a sworn, detailed statement made by the police officer.²⁷ The warrant must be based on probable cause, meaning that the officer, based on facts and circumstances in her knowledge, has reason to believe a crime has or is about to be committed.²⁸ In addition, law enforcement must identify with particularity the place to be searched or the persons to be surveyed.²⁹ In the context of monitoring a public event such as a parade, marathon, or concert to ensure public safety, these requirements pose significant hurdles for an officer seeking a warrant, and suggest that alternative approaches³⁰ may be better suited for balancing the privacy and public safety interests.

Outside the law enforcement context, civic uses of drones face similar challenges to deployment, so long as government actors must operate under a traditional administrative warrant analysis. While the justification of preventing potential terrorist attacks may not be applicable for code enforcement drone activities, such as investigating city code violations for public nuisance, we should not jump to the conclusion that administrative warrants must be obtained for all drones uses.

drone, like thermal imaging devices used in *Kyllo* to detect heat coming from a home, would likely be considered an unconstitutional search.

27. *Carroll v. United States*, 267 U.S. 132, 156 (1925); *Johnson v. United States*, 333 U.S. 10, 14 (1948).

28. *Carroll*, 267 U.S. at 149, 161.

29. U.S. CONST. amend. IV.

30. Such alternative approaches will be discussed later in this Article, but include means to balance privacy concerns. Prior to law enforcement's deployment of drones, appropriate policies and procedures should be implemented to identify the purpose of the agency's drone use and outline procedures to increase transparency to the community. Restrictions on data storage and internal access should be detailed to further protect privacy.

This Article looks at well-established case law pertaining to law enforcement's aerial observations without prior warrants and evaluates whether the same rules are applicable to other public uses of drones, taking into account protections afforded under the Fourth Amendment. In order to determine when and where public use drones can operate, Part I surveys the current federal framework for unmanned aircraft. Part II examines aerial surveillance law and Fourth Amendment considerations pertaining to law enforcement's aerial observations. Part III explores public use drones, focusing on code enforcement and other municipal inspections, and whether administrative warrants are required prior to deploying public use drones for such inspections. Part IV suggests how municipalities can change the perception of drones in their communities by increasing transparency and accountability through proper policies and procedures.

I. CURRENT FEDERAL FRAMEWORK FOR UNMANNED AIRCRAFT

In 2012, Congress passed the FAA Modernization and Reform Act ("FMRA"), which gave the Federal Aviation Authority ("FAA") the responsibility to develop rules for safe integration of drones into our airspace. While the rules were supposed to be complete in 2014,³¹ the Department of Transportation finalized the "Small UAS" (unmanned aircraft systems) rule, otherwise known as Part 107, on June 21, 2016 (which became effective on August 29, 2016).³² In the interim, the FAA created a "Section 333 Exemption," which allowed the agency to authorize certain uses of drones that it deemed "safe."³³ Section 333 Exemptions became relatively common while the drone industry awaited the announcement of Part 107. Upon issuance of a Section 333 Exemption, an operator could operate under the exemption, subject to minor baseline rules. The baseline rules paved the way for Part 107.³⁴ Section 333 Exemptions are generally valid for two years, and because most were issued in the last year or two, operators have a choice to either fly under Part 107 or their 333 Exemption, which may allow the operator to complete more extensive operations but requires the operator to have a pilot's license.³⁵

Part 107 established a new pathway for drone operators to access airspace, including recreational, commercial, and public uses. To

31. Joanna Simon et al., *supra* note 12, at 10102.

32. *Id.*; see also 14 C.F.R. § 107 (2016).

33. Joanna Simon et al., *supra* note 12, at 10102.

34. *Id.*

35. *Id.*

become a Part 107 operator, an individual must be sixteen years of age or older and pass a simple knowledge test.³⁶ The overwhelming majority of those who take the test are expected to pass: the FAA estimates a ninety percent pass rate for first-time takers and that all test takers will pass on the second attempt.³⁷ In short, Part 107 allows operators to:

- Fly any drone up to fifty-five pounds, up to one hundred miles per hour, for any purpose including public use;
- Fly up to four hundred feet above ground level or within four hundred feet of a structure;
- Fly anywhere within line of sight;
- Fly in controlled airspace as long as they have authorization from air traffic control.³⁸

Public use drones are drones operated by public agencies or for a government purpose. They may operate under Part 107 or may be eligible to conduct operations under a Certificate of Authorization (“COA”) for which the agency would need to apply.³⁹ A COA is an authorization issued by the Air Traffic Organization to a public operator for a specific drone activity.⁴⁰ The FAA reviews the application submitted and, if necessary, may impose limitations as part of the approval.⁴¹

While Part 107 provides general rules on the operation of unmanned aircraft in U.S. airspace, most of the provisions only provide a broad framework, leaving many questions unanswered as to how legislatures should treat privacy and surveillance concerns, especially for flights operating under four hundred feet yet within the limits of Part 107. In fact, when Part 107 was published, the White House pointed out this lacuna of law, noting that while the rules prohibited flights over people for safety reasons, questions remained on how to best protect privacy.⁴²

36. See 14 C.F.R. § 107.61 (2016).

37. Huerta, *supra* note 20.

38. See *generally Fact Sheet—Small Unmanned Aircraft Regulations (Part 107)*, FAA (June 21, 2016), https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20516 [<http://perma.cc/VJE7-QP5Y>].

39. *Unmanned Aircraft Systems (UAS) Frequently Asked Questions/Help*, FAA, <https://www.faa.gov/uas/faqs/> [<http://perma.cc/TS3G-WJB7>].

40. *Certificates of Waiver or Authorization*, FAA, https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organizations/uas/coa [<http://perma.cc/RG52-E4PT>].

41. *Id.*

42. See WHITE HOUSE, *supra* note 10.

Because the federal framework is permissive in nature rather than restrictive, we must analyze the Fourth Amendment and the current state of aerial surveillance law to determine whether public use of drones without a warrant is allowable.

II. AERIAL SURVEILLANCE LAW UNDER THE FOURTH AMENDMENT AND PROPERTY RIGHTS AS APPLIED TO LAW ENFORCEMENT

The Fourth Amendment is the primary source of privacy protection in the American justice system.⁴³ In general, the Supreme Court has ruled that aerial observations of the curtilage of a home are not prohibited by the Fourth Amendment, so long as the government is conducting the surveillance from a place where the officer “has a right to be,”⁴⁴ “in a physically nonintrusive manner,”⁴⁵ and the government conduct does not reveal “intimate details connected with the use of the home or curtilage.”⁴⁶ This principle comes from a long line of cases dating back to the 1980s.

Considering law enforcement’s aerial observations at 1000 feet, in *California v. Ciraolo*, the Supreme Court held that “[t]he Fourth Amendment was not violated by the naked-eye aerial observation of respondent’s backyard.”⁴⁷ The police officer’s observations were in public navigable airspace, “from a public vantage point where he had the right to be.”⁴⁸ In the same year that *Ciraolo* was decided, the Court held in *Dow Chemical Co. v. United States* that “the use of an aerial mapping camera [by the Environmental Protection Agency] to photograph an industrial manufacturing complex from *navigable airspace* similarly does not require a warrant under the Fourth Amendment.”⁴⁹ Just a few years later, in 1989, the Supreme Court took up the issue of aerial surveillance again, but this time through the use of helicopters in *Florida v. Riley*.⁵⁰ The Court in *Riley* ruled that *Ciraolo* controlled and held the “Fourth Amendment does not

43. See RONALD JAY ALLEN ET AL., CRIMINAL PROCEDURE: INVESTIGATION AND RIGHT TO COUNSEL, 337 (2011).

44. *California v. Ciraolo*, 476 U.S. 207, 213 (1986).

45. *Id.* at 208.

46. *Florida v. Riley*, 488 U.S. 445, 452 (1989).

47. *Ciraolo*, 476 U.S. at 207.

48. *Id.* at 213.

49. *Id.* at 215 n.3 (emphasis added); see also *Dow Chem. Co. v. United States*, 476 U.S. 227, 239 (1986) (emphasis added) (“taking of aerial photographs of an industrial plan complex from navigable airspace is not a search prohibited by the Fourth Amendment”).

50. 488 U.S. 445 (1989).

require the police traveling in the public airways at an altitude of 400 feet to obtain a warrant in order to observe what is visible to the naked eye.”⁵¹

Thus, for the last twenty-eight years, the law has allowed police or government agencies to conduct surveillance while flying in “public navigable airspace” or from a place “[they] had a right to be.”⁵² Law enforcement officers have not been required to ignore evidence of criminal behavior simply because they observed it from an aerial vantage point and without a warrant. The police, just like any member of the public on a private or commercial plane can look down and observe the backyards of their fellow citizens. With case law supporting their actions, law enforcement officers are able to take information obtained from aerial observations (sans warrant) and then, based on that information, obtain a warrant to conduct further investigations on foot. This same principle should be applied to law enforcement use of drones.

In the case law discussed above, the Supreme Court held that the aerial observations in question did not violate the Fourth Amendment because they occurred from “public vantage point[s] [where an officer] had a right to be,” or from public navigable airspace.⁵³ The Court did not, however, consider aerial observations made at low altitudes (i.e., below four hundred feet) and whether such surveillance would violate the Fourth Amendment. The distinction between low altitude and public navigable airspace is important in the context of drones, because per Part 107 (or through a Certificate of Authorization for public use drones), public use drones may fly at altitudes lower than four hundred feet.⁵⁴

Whether a police officer may conduct warrantless aerial observations over property at altitudes lower than four hundred feet, depends on whether or not a landowner can prevent the public from entry on that land. In *United States v. Causby*, the Court distinguished between two types of airspace: (1) public navigable airspace—the “public highway” in which the landowner cannot exclude aircraft from flying, and (2) the airspace below that extends down to the land, where, according to the Supreme Court, property owners have some right to exclude aircraft.⁵⁵

51. *Riley*, 488 U.S. at 445.

52. *Ciraolo*, 476 U.S. at 213; *see also Riley*, 488 U.S. at 449; *Dow Chemical Co.*, 476 U.S. at 228.

53. *Ciraolo*, 476 U.S. at 213; *Riley*, 488 U.S. at 449.

54. *See* 14 C.F.R. § 107.51 (2016); FAA, *supra* note 39; FAA, *supra* note 40.

55. *United States v. Causby*, 328 U.S. 256, 261, 265 (1946).

If a drone flying in the airspace immediately above the property owner's land is synonymous to walking on the land itself, then law enforcement may be precluded from flying a drone to observe the backyard of a person's home.⁵⁶ The drone deployed by police should be treated the same as if the officer walked onto that land, where she would be precluded from entry without a warrant.⁵⁷ As such, property owners may exclude members of the public, including law enforcement, from this low altitude airspace, just as they can preclude the public from trespassing into their backyard.⁵⁸

There are limitations, however, to extending a property rights approach to prevent low altitude drone surveillance over private property. While a landowner's property rights allow her to prevent entry on her land or in the airspace immediately above it,⁵⁹ aerial surveillance case law⁶⁰ would allow an officer to make observations—by drone or by the naked eye—from a neighbor's yard. Nothing would prevent an officer (or any other person) from asking a neighbor to use their property to get a better view next door, whether by flying a drone or by stepping onto a balcony to get a better vantage point.

In conclusion, to determine whether law enforcement may conduct aerial surveillance, the observation in question must be from public navigable airspace, or from a public vantage point where they have a right to be. Law enforcement (or the public) cannot fly aircrafts, including drones, at altitudes so low that they would violate the property owner's rights and thus no longer be in a public vantage point.

III. CODE ENFORCEMENT USE OF DRONES WITHOUT ADMINISTRATIVE WARRANTS

Code enforcement is a function of municipal government used as a means to protect interests such as property values and environmental health.⁶¹ Generally, a code enforcement officer is tasked with investigating violations of local laws, regulating public nuisance,

56. The Supreme Court in *Causby* held, "the flight of airplanes, which skim the surface but do not touch it, is as much an appropriation of the use of the land as a more conventional entry upon it." 328 U.S. at 264.

57. *Id.* at 264-65.

58. *Id.* at 265.

59. *Id.*

60. *See generally* Florida v. Riley, 488 U.S. 445 (1989); Dow Chem. Co. v. United States, 476 U.S. 227 (1986); California v. Ciraolo, 476 U.S. 207 (1986).

61. *What is Code Enforcement*, CAL. ASS'N OF CODE ENF'T OFFICERS, <http://www.caceo.us/?10> [<http://perma.cc/TBQ9-K9B4>].

public health, safety, welfare, and land use, including zoning violations.⁶²

Similar to law enforcement investigative searches, administrative searches for health and safety code violations must be based on probable cause.⁶³ Generally, the type of probable cause needed for an administrative warrant is not the same as that required for a search warrant.⁶⁴ Notably, the Supreme Court in *Camara v. Municipal Court of City and County of San Francisco* distinguished the two types of warrants:

Unlike the search pursuant to a criminal investigation, the inspection programs at issue here are aimed at securing city-wide compliance with minimum physical standards for private property. The primary governmental interest at stake is to prevent even the unintentional development of conditions which are hazardous to public health and safety. Because fires and epidemics may ravage large urban areas, because unsightly conditions adversely affect the economic values of neighboring structures, numerous courts have upheld the police power of municipalities to impose and enforce such minimum standards even upon existing structures. In determining whether a particular inspection is reasonable—and thus in determining whether there is probable cause to issue a warrant for that inspection—the need for the inspection must be weighed in terms of these reasonable goals of code enforcement.⁶⁵

In addition to the above, probable cause also exists if there is specific evidence of a violation.⁶⁶

There are, however, exceptions when administrative warrants are not required for code enforcement purposes. These areas are particularly intriguing when we consider the abundant uses of drones for administrative agencies.⁶⁷ Are code enforcement officers able to fly drones over property to determine if there is a violation? While the law is well settled as to when law enforcement may conduct aerial surveillance without a warrant,⁶⁸ does the same rule hold true for

62. *Id.*

63. *See generally* *Camara v. Mun. Ct. of City and Cty. of San Francisco*, 387 U.S. 523 (1967).

64. *See generally* *In re Establishment Inspection of Wedgewood Vill. Pharmacy, Inc.*, 270 F. Supp. 2d 525 (D.N.J. 2003), *aff'd*, 421 F.3d 263 (3d Cir. 2005).

65. *Camara*, 387 U.S. at 535.

66. *See generally* *Marshall v. Barlow's, Inc.*, 436 U.S. 307 (1978).

67. Public uses of drones include agricultural inspections, bridge and building repairs, search and rescue operations, firefighting activities, property inspections, and crime scene investigations.

68. *See generally* *Florida v. Riley*, 488 U.S. 445 (1989); *Dow Chem. Co. v. United States*, 476 U.S. 227 (1986); *California v. Ciraolo*, 476 U.S. 207 (1986).

observations made by other public use drones, such as code enforcement? Next we will look at several exceptions to the administrative warrant requirement and determine if they apply when the action is employed with a drone.

A. Public Vantage Points

As explained in Part III, a law enforcement officer may conduct naked eye observations from any public place where she has a right to be. Such observations, including aerial observations in navigable airspace, do not require warrants.⁶⁹ Similarly, code enforcement officers, just like any member of the public, may make observations from anywhere they have a right to be.⁷⁰ Considering *Ciraolo*,⁷¹ if the public (and law enforcement) can make an observation from a particular vantage point, then so can a code enforcement officer when operating a drone.

The public vantage point rule for code enforcement would also extend to common areas of private buildings. Courts have held that residents do not have a reasonable expectation of privacy in common areas of apartment complexes because they are shared spaces.⁷² Accordingly, code enforcement officers may observe code violations from these areas without first obtaining a search warrant; such observations are not considered “searches” in violation of the Fourth Amendment.⁷³

In the context of drones, the same holds true. If a code enforcement officer may investigate common areas with her naked eye sans warrant (from a “point where [s]he has a right to be”),⁷⁴ she may also do the same by employing a drone. That is, however, assuming the drone is not equipped with specialized equipment or technical devices that may enhance the code enforcement officer’s observations. If the drone is equipped with specialized equipment to enhance the officer’s observations, it is likely those observations would be considered unreasonable and thus, unconstitutional, if made without a warrant.⁷⁵

69. *Riley*, 488 U.S. at 450; *see also Dow Chem. Co.*, 476 U.S. at 238-39; *Ciraolo*, 476 U.S. at 208, 215.

70. *Ciraolo*, 476 U.S. at 213.

71. 476 U.S. 207

72. *United States v. Eisler*, 567 F.2d 814, 816 (8th Cir. 1977); *United States v. Correa*, 653 F.3d 187, 190-91 (3d Cir. 2011).

73. *See Maryland v. Macon*, 472 U.S. 463, 469 (1985); *Air Pollution Variance Bd. v. Wester Alfalfa Corp.*, 416 U.S. 861, 865 (1974).

74. *Ciraolo*, 476 U.S. at 213, 215.

75. *Kyllo v. United States*, 533 U.S. 27, 34-35, 40 (2001).

B. Consent

Code enforcement officers may generally search private property without a warrant when they have first obtained consent from the property owner. The Supreme Court in *Illinois v. Rodriguez* held that governmental agents may obtain consent “either from the individual whose property is searched, or from a third party who possesses common authority over the premises”⁷⁶ In the context of drones, however, if a property owner first provides consent to fly a drone over her property, and thereafter withdraws that consent, the code enforcement officer must halt operations.⁷⁷ Arguably, the code enforcement officer must land her drone if she is flying it at a sufficiently low altitude over the property such that it could be considered a trespass, but must she do so if she is flying at a higher altitude, say four hundred feet? Based on guidance from the Supreme Court in *Dow*, *Ciraolo*, and *Riley*, the code enforcement officer may continue her search (without a warrant) only if she is flying the drone in public navigable airspace or from a public vantage point.⁷⁸ Anything short of that, absent consent, may be considered a trespass.

C. Home and Property Inspections

While observations made by code enforcement from public vantage points do not require an officer to obtain a warrant in advance, the analysis changes with respect to a home inspection. In *Camara*, a municipal health inspector requested to enter and inspect plaintiff’s property without a warrant.⁷⁹ The Supreme Court held administrative searches of the home, authorized and conducted without a warrant procedure, are a significant intrusion upon an individual’s privacy interest protected by the Fourth Amendment.⁸⁰ The Supreme Court noted that while a routine administrative inspection of the “physical condition of private property is a less hostile intrusion than the typical policeman’s search for the fruits and instrumentalities of crime . . . it is anomalous to say that the individual

76. *Illinois v. Rodriguez*, 497 U.S. 177, 181 (1990).

77. See *Criminal Trespass*, BLACK’S LAW DICTIONARY (10th ed. 2014) (defining criminal trespass as remaining on the property after being ordered off by a person authorized to do so).

78. See generally *Florida v. Riley*, 488 U.S. 1058 (1989); *Dow Chem. Co. v. United States*, 476 U.S. 227 (1986); *Ciraolo*, 476 U.S. 207.

79. *Camara v. Mun. Ct. of City and Cty. of San Francisco*, 387 U.S. 523, 525-26 (1967); see also *Bd. of Cty. Comm’rs of Johnson Cty. v. Grant*, 954 P.2d 695, 701 (Kan. 1998); See *v. City of Seattle*, 387 U.S. 541, 542-43 (1967).

80. *Camara*, 387 U.S. at 534.

and his private property are fully protected by the Fourth Amendment only when the individual is suspected of criminal behavior.”⁸¹ In *See v. City of Seattle*, the Supreme Court extended the rule of *Camara* to commercial property, barring prosecution of the occupant who refused to permit a warrantless code enforcement inspection of the property.⁸²

If home (or business) inspections without a warrant are not permitted absent consent, inspections of surrounding land by code enforcement drones might not be permissible either. Applying *Ciraolo*, *Dow*, and *Causby* to aerial observations made by a code enforcement or a municipal inspector, these would be allowed without a prior warrant if the observation took place from (1) public navigable airspace or (2) from a vantage point where the officer had a right to be. According to University of Washington School of Law Professor Ryan Calo, if a code enforcement officer flew her drone down the middle of a public street, in either public navigable airspace or from a place where the officer had a right to be, then a warrant is not required and the inspection is permitted.⁸³

As discussed above, a code enforcement officer cannot, however, fly her drone at low altitudes over a property owner’s land without the owner’s consent as this would be in violation of *Causby*. *Causby* found that a property owner may exclude members of the public, from this low altitude airspace, just as a person can preclude the public from trespassing into her backyard.⁸⁴ Thus, if a code enforcement officer flies her drone 150 feet over a homeowner’s backyard for the purposes of viewing a pool which may be in violation of municipal code, the warrantless low altitude aerial surveillance would likely not be permitted and considered a trespass. The same code enforcement officer, could, however, operate her drone at four hundred feet in navigable airspace to obtain the same information without a warrant. Alternatively, the officer could also get the consent of a next-door neighbor, and fly the drone from the neighboring property. All would be permissible uses and would not violate a person’s reasonable expectation of privacy per existing case law.

81. *Id.* at 530.

82. *City of Seattle*, 387 U.S. at 545-46.

83. NPR, *supra* note 6 (considering whether code enforcement officers could use drones to evaluate city code violations, Professor Ryan Calo stated, “as a matter of constitutional law, again as long as they’re [code enforcement officer] flying the drone along in a public airway, and they’re looking at something that’s viewable from a public vantage, then yeah, they can do it.”).

84. *United States v. Causby*, 328 U.S. 256, 265 (1946).

IV. GOVERNMENT AGENCIES SHOULD CREATE CLEAR POLICIES AND PROCEDURES FOR PUBLIC USE DRONES

As law enforcement and administrative agencies consider increasing the public use of drones, they will need to develop associated policies and procedures. Creation of said policies should not only ensure the use is consistent with both state and federal laws, but that agency use addresses reasonable privacy or persistent surveillance concerns. Accordingly, government agencies should tailor their internal policies with the below issues in mind.

A. Transparency and Accountability Measures

To ensure transparency and accountability, government agencies should develop a robust set of internal policies that lead to citizen-facing accountability tools.⁸⁵ Without transparency and accountability measures in place, citizens are apt to assume the worst and raise privacy complaints when they see a drone flying nearby.⁸⁶ In a worst case scenario, uncontroversial and life-saving drone uses, such as search and rescue operations conducted by a sheriff's Search and Rescue ("SAR") team, may be precluded from operating due to the concern by the public that such benign activities will inform or transform into more controversial behavior, such as persistent surveillance.⁸⁷

To address these concerns, agencies should permit and encourage public visibility into their drone usage, subject to reasonable controls.⁸⁸ Key elements of transparent policy include usage logs

85. See Matt Kenyon, *Law Enforcement Drone Policy: New Technologies Take Civilians and Police to the Skies*, POWERDMS, <http://www.powerdms.com/blog/law-enforcement-drone-policy/> [<http://perma.cc/WD2C-XCEW>].

86. *The Rise of Domestic Drones*, RADIO TIMES WITH MARY MOSS-COANE (Aug. 25, 2014), <http://why.org/cms/radiotimes/2014/08/25/the-rise-of-domestic-drones/> [<http://perma.cc/F957-4HPE>]; see also *Voluntary Best Practices for UAV Privacy, Transparency and Accountability*, NAT'L TELECOMM. & INFO. ADMIN., U.S. DEP'T OF COM. (May 18, 2016), https://www.ntia.doc.gov/files/ntia/publications/uas_privacy_best_practices_6-21-16.pdf [<https://perma.cc/2YDS-U7XT>].

87. Colleen O'Connor, *Privacy Worries May Stall Commercial Use of Drone Aircraft*, DENVER POST (Feb. 2, 2013), <http://www.denverpost.com/2013/02/02/privacy-worries-may-stall-commercial-use-of-drone-aircraft/> [<http://perma.cc/AW2L-WGFF>]; Eli Richman, *The Rise (and Fall) of Drones*, GOVERNING THE STS. AND LOCALITIES (Dec. 2012), <http://www.governing.com/topics/public-justice-safety/gov-rise-and-fall-of-drones.html> [<http://perma.cc/7BUH-M3SV>].

88. Jared Whitlock, *The Sheriff's Department Quietly Launched a Drone Program with No Public Notice*, VOICE OF SAN DIEGO (Dec. 15, 2016), <http://www.voiceofsandiego.org/topics/public-safety/sheriffs-department-quietly-launched-drone-program-no-public-input/> [<http://perma.cc/WT45-NCXN>].

detailing the qualifications of the drone operator, what agency operated the drone, the date and time of the operation, where it was located and for what purpose. Legislators or government agencies through their policies and procedures may even mandate that public use drones come equipped with software that allows for generation of flight logs and ease of exporting said data. This information will allow privacy advocates to hold agencies accountable by monitoring how public use drones are being used.

Publication of all flight logs, however, may not be advisable in circumstances which may reveal confidential or sensitive information, such as tactical information about how the agency conducts surveillance. In these cases, the agency operating the drone may keep their logs confidential until the investigation is closed and thereafter make them public.

In addition to publishing flight logs, agencies may want to publish the GPS location of government drones for certain purposes. For example, if the city is using a drone to inspect snow pile up on top of government buildings, publication of the foregoing would be helpful to residents in the area, so that they do not assume “big brother”⁸⁹ is watching.⁹⁰ As drone technology matures at an increasing pace, the opportunity to provide real-time intelligence about where and why a drone is operating could solve the majority of citizen concerns around civic drone use.

When drafting policies, agencies should consider a community engagement process to further promote transparency. Such methods could include (1) publishing their policies and procedures for community review as they are being drafted, (2) incorporating a stakeholder consultative process, (3) reaching out to city council or other legislative bodies, and (4) informing the media of the same.⁹¹ By incorporating a community engagement process, residents will not only become educated about the benefits of drones and the goals for

89. GEORGE ORWELL, *NINETEEN EIGHTY-FOUR* (1949). The term “big brother” or “big brother is watching” is from George Orwell’s dystopian novel, in which the government engages in abusive surveillance of its citizens.

90. In Somerville, Massachusetts, local officials use drones to survey municipal buildings for snow build up. In winter months, this surveillance is likely frequent and one could easily imagine a scenario where nearby businesses or homeowners would begin to complain about persistent surveillance if they were uninformed of the purpose of the drone flights. For more information on Somerville’s drone use, see Annear, *supra* note 5.

91. See INT’L ASS’N OF CHIEFS OF POLICE, *RECOMMENDED GUIDELINES FOR USE OF UNMANNED AIRCRAFT* (Aug. 2012), http://www.theiacp.org/portals/0/pdfs/IACP_UAGuidelines.pdf [<https://perma.cc/4EBW-QYDM>].

the agency's use, but drones will no longer seem as worrisome once citizens feel like they have a voice to raise concerns or recommend changes.⁹²

B. Data Retention

To put government agencies in the most defensible position against concerns raised by privacy advocates, agencies should include the data generated and retained through drone operations as part of a comprehensive internal policy scheme.⁹³ Privacy advocates are not only concerned with the government conducting surveillance but also by how long government will maintain the data collected and who within the agency will have access to said data.⁹⁴ However, the interests that inform privacy and accountability concerns in this context are comparable to those that have been raised in other technology-enabled policing debates.⁹⁵ Thus, government agencies may consider policies that address collection and retention of information generally, rather than specifically for unmanned aircraft.

Privacy advocates often argue that the data collected and recorded, no matter the technology, will consist of innocent behavior on the part of both police (i.e., body cameras, dashboard cameras) and the public (CCTV cameras, drones, etc.), with significant privacy implications.⁹⁶ To protect citizens against pervasive surveillance, data should not be retained for longer than necessary and access to it should become more difficult as time passes.⁹⁷ For the vast majority of images collected by law enforcement, whether by drone or body camera, there will be no reason to access that information, and it should be destroyed.⁹⁸ Thus, as time passes agencies should establish a predetermined period after which data should be destroyed.

92. *Id.*; Kenyon, *supra* note 85.

93. NAT'L TELECOMM. & INFO. ADMIN., *supra* note 86.

94. *Surveillance Technologies*, ACLU, <https://www.aclu.org/issues/privacy-technology/surveillance-technologies> [<http://perma.cc/DCV6-L27D>]; *see generally*, *Domestic Drones: Technical and Policy Issues*, UNIV. OF WASH., TECH. & PUB. POL'Y CLINIC (2013), <https://www.law.washington.edu/clinics/technology/reports/droneslawandpolicy.pdf> [<https://perma.cc/WU3B-CJHS>].

95. *See, e.g.*, Jay Stanley, *Police Body-Mounted Cameras: With Right Policies in Place, A Win for All: Version 2.0* (Mar. 2015), https://www.aclu.org/sites/default/files/assets/police_body-mounted_cameras-v2.pdf [<https://perma.cc/S2AH-YY4Y>].

96. Jay Stanley, *Police Body-Mounted Cameras: With Right Policies in Place, A Win for All* (Oct. 2013), https://www.aclu.org/files/assets/police_body-mounted_cameras.pdf [<https://perma.cc/K5AR-SF4S>].

97. Kenyon, *supra* note 85.

98. INT'L ASS'N OF CHIEFS OF POLICE, *supra* note 91.

Data should be deleted after the identified time-period expires unless that data has been flagged. Policies should be crafted to identify the types of data that should be flagged and how to treat such data so that it is not subject to destruction.⁹⁹ Flagging could be used with data collected from law enforcement's aerial surveillance, but also with other technologies like police body cameras. For example, flagging could occur automatically for the following incidents: those involving use of force, surveillance that leads to procurement of a warrant, or whether a formal complaint has been filed on the basis of the data.¹⁰⁰

In addition to the above, when considering data retention policies, government agencies should identify where the data will be stored. While many agencies may have their own servers, to avoid mishandling of data, including deletion of files, agencies should consider contracting with a reputable third party to store data.¹⁰¹ By doing so, citizens and privacy advocates will feel more comfortable knowing that data is secure with a third party out of agency personnel's reach.¹⁰² Policies should identify who would have access to the data and outline procedures providing agency personnel with clear audit trails to maintain a chain of custody should the data be used for evidentiary purposes in a court proceeding.¹⁰³

C. Safety and Training

Prior to any agency personnel employing a drone for government purposes, a clear policy should be set identifying credentials required prior to flight, who is authorized to approve flights, and for what public safety purposes flights are allowed.¹⁰⁴ It should be noted, however, that local or state governments should not pass regulations mandating constraints such as equipment or training requirements for

99. See Stanley, *supra* note 95, for a discussion on policies for data retention pertaining to law enforcement using body cameras which has applicability to data obtained from drones and how to consider shaping policies.

100. *Id.*

101. See INT'L ASS'N OF CHIEFS OF POLICE, *supra* note 91; see, e.g., *Microsoft Azure Government*, MICROSOFT, <https://azure.microsoft.com/en-us/overview/clouds/government/> [<http://perma.cc/36M7-UZZX>]; MICROSOFT, POLICE BODY-WORN CAMERA: LESSONS FROM THE EARLY ADOPTERS (2015), http://www.nascio.org/events/sponsors/vrc/Police%20Body-Worn%20Cameras_Lessons%20from%20the%20Early%20Adopters.pdf [<https://perma.cc/S68R-LUN2>] (while this report is specifically about body cameras, the recommendations on data retention are applicable to the context of law enforcement use of drones and data retention policies).

102. See INT'L ASS'N OF CHIEFS OF POLICE, *supra* note 91; Stanley, *supra* note 95.

103. MICROSOFT, *supra* note 101; INT'L ASS'N OF CHIEFS OF POLICE, *supra* note 91.

104. INT'L ASS'N OF CHIEFS OF POLICE, *supra* note 91; Kenyon, *supra* note 85.

drones, as federal courts have found that state regulation in the these areas is preempted by federal regulatory requirements.¹⁰⁵

Thus, when a public agency purchases a drone for public use, it should develop a plan for its use and secure an operator whose credentials satisfy FAA requirements.¹⁰⁶ Such plans may contain educational courses so operators can become FAA compliant. While the FAA has established rules to certify operators, Part 107 does not address proficiency.¹⁰⁷ Training courses can be used to identify specific scenarios that law enforcement or first responders may encounter in the scope of their employment. Such training modalities may help agency personnel using drones better prepare for those situations and make their response more effective.

We also recommend that agencies identify specific procedural safeguards that operators must complete prior to takeoff of each flight. Such checklists could be automated through an app, in which the agency identifies specific requirements such as placing barricades, or cones to prevent civilians from entering an area in which a public use drone is operating. Compliance with the pre-flight checklist could be done electronically, allowing operators working in the field to confirm they have completed the pre-flight checklist by sending a digital notification or confirmation prior to flight.

Implementing safety precautions is critical to mitigate operational risks, but also to minimize a city's legal risk. In the event of a crash, a city must be prepared to defend itself against claims such as failure to supervise the use of the drone, trespass, or reckless behavior. Having clear policies, such as automated pre-flight checklist requirements, real-time awareness of drone operation and purpose, and subsequent flight logs, will put a city or government in the best position to defend against such claims.

105. *See* *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 740 (E.D.N.C. 2008); *Air Evac EMS, Inc. v. Robinson*, 486 F. Supp. 2d 713, 722 (M.D. Tenn. 2007); *see also State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet*, OFF. OF THE CHIEF COUNSEL, FAA (Dec. 17, 2015), https://www.faa.gov/uas/resources/uas_regulations_policy/media/UAS_Fact_Sheet_Final.pdf [<https://perma.cc/MLE6-5CK9>].

106. Drones should be registered with the FAA and operators should pass Part 107 exam. Public agencies can also obtain Certificate of Authorizations from the FAA for their intended use. *See generally* FAA, *supra* note 38; FAA, *supra* note 40.

107. *See, e.g., Becoming a Pilot*, FAA, https://www.faa.gov/uas/getting_started/fly_for_work_business/becoming_a_pilot/ [<http://perma.cc/5NZ3-DAUD>] (while a small unmanned aircraft pilot must take an initial knowledge exam, no further exam such as performing a flight, is required).

CONCLUSION

The emergence of drones raises many issues for government agencies wishing to employ them. While there are great benefits to public use drones, Fourth Amendment concerns require creative policy and legislative solutions. Based on existing aerial surveillance law as applied to law enforcement, it is clear both law enforcement and code enforcement officers may employ drones without a warrant if they are operating from (1) public navigable airspace or (2) from a vantage point in which they have a right to be. Rather than prohibiting code enforcement officers from using drones unless they obtain an administrative warrant beforehand, municipalities should rely on existing aerial surveillance law with a focus on property rights. Application of these principles to public use drones will provide clear guidance for agencies wishing to use drones while protecting privacy rights and also mitigating litigation risk.