

Drones Flying By Your City

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Invasion of the Drones

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Drones go by a number of names – from Remotely Operated Aircraft ("ROA") and Unmanned Aerial Vehicles ("UAV"), to Unmanned Aircraft ("UA") and Unmanned Aircraft Systems ("UAS").¹ In addition, drones come in many different sizes – they may have a wingspan as large as a jet airliner or as small as two inches across.² Despite the wide variation in names and sizes, one thing is for sure: drones are appearing everywhere, and they're not flying away anytime soon. One industry organization estimates that drone sales in 2016 may increase by 145% from 2015 sales, and numerous companies are jumping on these forecasts by planting various stakes in the commercial and recreational drone market.³ As drones become more pervasive, cities and other local agencies are increasingly being asked: "What, if anything, can be done to regulate drone usage?" This paper discusses the regulatory landscape currently surrounding drones, recommendations regarding public agency regulation of private drone usage, as well as legal considerations for public agency use of drones. While some of the concepts in this paper may be applied more broadly, the primary focus will be on California cities' regulation and use of drones.

I. <u>Federal Regulation</u>

With more drones hovering through the air, concern is rising over the safety of drone operations. As of August 2015, pilots from manned aircraft reported more than 780 sightings of drone operations, compared to a mere 238 reported sightings in 2014. Some of these sightings were at altitudes of up to 10,000 feet.

http://www.morrisoninnovations.com/product/nano-drone-worlds-smallest-quadcopter/.

https://www.cta.tech/News/News-Releases/Press-Releases/2015-Press-Releases/IoT-Will-Drive-Consumer-Tech-Industry-to-\$287-Bill.aspx; Bloomberg News, *E-commerce drone delivery could take off in a few years, a Google exec says*, INTERNET RETAILER, (Jan. 11, 2016, 4:16 PM),

https://www.internetretailer.com/2016/01/11/google-e-commerce-drone-delivery-could-take-few-years; Bloomberg News, *Slumping sales send GoPro into a nosedive, but a drone is coming*, INTERNET

¹ See COA: Frequently Asked Questions, FEDERAL AVIATION ADMINISTRATION, (Nov. 14, 2012, 5:25 PM), https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organization_ns/uas/coa/faq/.; P.L. 112-095 § 331.

² See Federal Aviation Administration, *Fact Sheet Unmanned Aircraft Systems (UAS)*, FAA NEWS (updated March 2015), *available at* http://www.faa.gov/uas/faq/media/1009_UAS_Fact_Sheet.pdf; Nano Drone – World's Smallest Quadcopter, MORRISON INNOVATIONS,

³ See IoT Will Drive Consumer Tech Industry to \$287 Billion in Revenues, an All-Time High, According to Consumer Technology Association, CONSUMER TECHNOLOGY ASSOCIATION, (Jan. 4, 2016),

RETAILER, (Jan. 14, 2016, 11:56 AM), https://www.internetretailer.com/2016/01/14/slumping-sales-send-gopro-nosedive-drone-coming.

The FAA is tasked with regulating the use of navigable airspace, and thereby has authority over all drone uses to protect the national airspace system.⁴ Consistent with this authority, the FAA Modernization and Reform Act of 2012 ("Modernization Act") was enacted on February 14, 2012.⁵ The Modernization Act recognizes three primary categories of drones:

- (1) civil (used for commercial purposes);
- (2) public (used by a government agency); and
- (3) model aircraft (used for recreation or hobby purposes only) ("hobby drones").⁶

1. **Regulations Applicable to All Small Drones**

While different rules apply to drones depending on their use category (civil, public, and model aircraft), beginning in December 2015 the FAA started implementing registration requirements that apply to all small drones (drones weighing between 0.55 pounds and 55 pounds, including attached equipment). Operators may register their small drones through the FAA's website, and once completed, operators must carry proof of their FAA registration certificate whenever operating a small drone.

Details of the streamlined registration process include the following:

- The minimum age for electronic registration is by an owner who is 13 years or older. If the owner is under 13 years old, the drone must be registered by a different individual who is at least 13 years old, on behalf of the owner.
- For small civil drone owners: once registered, a Certificate of Aircraft Registration and unique registration number will be issued for each small civil drone that the owner intends to use for commercial purposes.
- For hobby drone owners: once registered, a single Certificate of Aircraft Registration and single registration number will be issued to the owner, constituting registration for all of the hobby drones the owner intends to use for recreation only.
- Once the electronic registration is complete, the Certificate of Aircraft registration will be delivered to the drone owner through the same web-based platform, and will immediately become effective. Renewal must be completed every three vears.
- All small drones must display a "unique identifier," which may either be the FAAissued registration number or the drone serial number.

⁴ 49 U.S.C. § 40103. ⁵ P.L. 112-095, *available at* https://www.gpo.gov/fdsys/pkg/CRPT-112hrpt381/pdf/CRPT-112hrpt381.pdf.

⁶ P.L. 112-095 §§ 332, 334, 336.

Failure to register a drone can result in civil or criminal penalties. The FAA may assess civil penalties up to \$27,500 and criminal penalties may include fines up to \$250,000 and/or imprisonment for up to three years.⁷

While this new streamlined registration process will help to identify problematic drone operators, it only applies to small drones. Drones weighing more than 55 pounds will still need to register using the traditional Aircraft Registration process available under 14 Code of Federal Regulations Part 47.⁸ Moreover, all drones must still comply with the rules applicable to their use category, outlined below.

2. Civil Drones

i. Notice of Proposed Rulemaking for Operation and Certification of Small Drones (Civil or Commercial Uses)

Under the Modernization Act, the FAA is charged with determining whether certain drones may operate safely in the national airspace system and if so, establishing requirements for safe operations.⁹ As a result, in February 2015 the FAA issued a Notice of Proposed Rulemaking ("NPRM") for the operation and certification of small drones (defined by statute as weighing less than 55 pounds¹⁰).¹¹ If adopted, the proposed rules will establish safety regulations for **routine civil drone operations only**. Major provisions of the proposed rules include:

- Drones must weigh less than 55 pounds;
- Drones may only fly if the operator or visual observer maintains visual line of sight over the drone;
- Drones must be flown close enough to the operator for the operator to see the drone with vision unaided by any device other than corrective lenses;
- Drones may not operate over any people who are not directly involved in the operation;
- Drones may only fly during daylight hours (sunrise to sunset);

⁷ Registration and Marking Requirements for Small Unmanned Aircraft, Interim final rule, 80 F.R. 241 (Dec. 16, 2015), pp. 78594 et seq., available at

https://www.federalregister.gov/articles/2015/12/16/2015-31750/registration-and-marking-requirements-for-small-unmanned-aircraft.

⁸ See Aircraft Registry, FEDERAL AVIATION ADMINISTRATION, (Mar.31, 2016, 10:45 AM) https://www.faa.gov/licenses_certificates/aircraft_certification/aircraft_registry/UA/.
⁹ P.L. 112-095 § 333.

¹⁰ P.L. 112-095 § 331.

¹¹ Operation and Certification of Small Unmanned Aircraft Systems, Notice of proposed rulemaking, 80 F.R. 35 (Feb. 23, 2015), pp. 9544 et seq., available at https://www.gpo.gov/fdsys/pkg/FR-2015-02-23/pdf/2015-03544.pdf ("NPRM").

- Operators must yield right of way to other manned or unmanned aircraft;
- Operators may use a visual observer but are not required to do so;
- First-person view cameras do not satisfy the visual line of sight requirements or the requirement that operators must maintain vigilance while operating so as to see-and-avoid other aircraft;
- Maximum airspeed of 100 mph;
- Maximum altitude of 500 feet;
- Minimum weather visibility of 3 miles from control station;
- Restrictions and limitations on flying within Class A, B, C, D, E, & G airspace;
- An individual may not act as an operator or visual observer for more than one drone at a time;
- No operation from a moving vehicle or aircraft, except a watercraft on the water;
- No careless or reckless operations;
- Operator must conduct preflight inspection;
- An individual may not operate if he or she knows or has reason to know of a physical or mental condition that would interfere with safe operations;
- Operators must:
 - Pass initial aeronautical knowledge test and recurrent tests every 2 years;
 - Be vetted by TSA;
 - Obtain an unmanned aircraft operator certificate with a small drone rating;
 - Be at least 17 years old;
 - Make drone available to FAA upon request for inspection/testing, as well as any records required to be maintained;
 - Report accidents to FAA within 10 days of any operation resulting in injury or property damage;

- FAA airworthiness certificate is <u>not</u> required, but drone must be maintained in condition safe for operation. Aircraft registration <u>is</u> required;
- Aircraft markings required on drone.¹²

As of the closing date for comments on the NPRM, the FAA received over 4,600 comments from interested stakeholders.¹³ Already it's clear that there are complaints about the proposed rules being unworkable and not in tune with current technology. For instance, Amazon is developing a drone that can deliver packages. However, under the proposed rules, the visual line of sight requirement would seem to prohibit that use. In addition, organizations representing electrical utilities (Edison Electric Institute, American Public Power Association, and National Rural Electric Cooperative Association) have filed comments complaining about the visual line of site rule interfering with the ability to use drones to inspect power lines. These organizations also objected to the rules prohibiting flights over people and restricting flight to only daytime hours since maintenance and emergency repairs will often require drones to fly at night and in a manner that would violate these rules.

The NPRM does not address privacy concerns that are raised by the increased use of drones. However, on the same day the NPRM was issued, President Obama issued a memorandum, similar to an executive order, directing federal departments and agencies to develop policies on federal domestic drone use that will safeguard privacy, civil rights, and civil liberties.¹⁴

ii. Section 333 Exemption and Certificate of Waiver or Authorization for Civil Drones

Until the proposed rules are adopted, civil drones may operate by obtaining FAA authorization through an exemption from generally applicable operating rules issued pursuant to Section 333 of the Modernization Act ("Section 333 Exemption").¹⁵ While each Section 333 Exemption is issued with specific conditions of operation attached, most Section 333 Exemptions have the following conditions in common:

- Drones must operate below 500 feet;
- Drones may only operate during daylight hours;
- Drones must be operated within the operator's visual line of sight;

¹² *Id.* p. 9546.

¹³ See Operation and Certification of Small Unmanned Aircraft Systems, REGULATIONS.GOV, http://www.regulations.gov/#!documentDetail;D=FAA-2015-0150-0017.

¹⁴ Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems, 80 F.R. 34 (Feb. 20, 2015), pp. 9355-9358, *available at* https://www.gpo.gov/fdsys/pkg/FR-2015-02-20/pdf/2015-03727.pdf.

¹⁵ *Petitioning for Exemption under Section 333*, FEDERAL AVIATION ADMINISTRATION, (Mar. 29, 2016, 12:09 PM), https://www.faa.gov/uas/legislative_programs/section_333/how_to_file_a_petition/.

• Operator must have an agreement with the Airport Operator if the drone is flown within five nautical miles of an airport.

Once a Section 333 Exemption is granted, the operator must apply for a Certificate of Waiver or Authorization ("COA").¹⁶ As of March 2015, the FAA will automatically grant a blanket COA to an operator who has a Section 333 Exemption for drone flights that comply with the following:

- Fly at or below 200 feet;
- Drone weighs less than 55 pounds;
- Operate only during daytime;
- Operate within the visual line of sight of the operator;
- And stay certain distances away from airports or heliports.¹⁷

As of June 2015, 556 Section 333 Exemptions had been granted. This number is rising exponentially, as evidenced by the over 4,000 Section 333 Exemptions granted as of March 2016.¹⁸ These civil drone operations are being used for activities such as photography, inspections, agriculture, real estate, and inspection of power transmission lines.

3. Public Drones

i. FAA Rulemaking and Publicly-Issued COA

The Modernization Act directed the FAA to establish operational and certification requirements for public drones in the national airspace system by December 31, 2015.¹⁹ However, the FAA has yet to release such requirements for public drone operations.²⁰ While the NPRM will not apply specifically to public drone operations, once the proposed rules are finalized public drones will have the option of either obtaining authorization to fly through a COA <u>or</u> declaring an operation to be a civil operation and flying in compliance with the proposed rules.²¹

- ¹⁸ Section 333, FEDERAL AVIATION ADMINISTRATION, (Feb. 11, 2016, 11:37 AM),
- https://www.faa.gov/uas/legislative_programs/section_333/.

¹⁶ Id.

¹⁷ *FAA Streamlines UAS COAs for Section 333,* FEDERAL AVIATION ADMINISTRATION, (Mar. 24, 2015, 12:46 PM), https://www.faa.gov/news/updates/?newsId=82245.

¹⁹ P.L. 112-095 § 334.

²⁰ This information is current as of April 2016.

²¹ NPRM, *supra* at 9554.

Until then, however, public drone operators must continue to petition the FAA for a COA in order to operate. Once an application is submitted, the FAA conducts an operational and technical review of the proposed drone specifications and use, and provides a formal response within 60 days.²² Currently, only 74 COAs have been publicly released, primarily to universities, armed services, and some large cities.²³ Although these COAs are reviewable by the public, some of the proposed uses and conditions attached to such COAs have been redacted.

ii. Apply for Section 333 Exemption Instead

As an alternative to what appears to be a more onerous process, several public agencies have chosen to apply for a Section 333 Exemption to operate their drones in a civil/commercial capacity. One of the first cities to successfully petition for a Section 333 Exemption was the City of McAllen, Texas.²⁴ McAllen sought to use drones for:

- Inspections of city-owned storm water canal systems;
- Inspections of city-owned road rights of way;
- Periodic inspections of city-funded infrastructure improvement projects;
- Bridge inspections;
- Assistance with damage assessments or situational status reports during emergency response operations;
- Evaluations within the city related to flora and fauna (vegetation and wildlife) issues;
- Support to law enforcement and fire departments during response operations; and
- Assistance with site security during city-sponsored events (i.e., 4th of July, New Years, parades, etc.).²⁵

The FAA granted the City of McAllen's Section 333 Exemption in June 2015. Since then, at least two other cities have been granted Section 333 Exemptions.²⁶ In

²² Certificates of Waiver or Authorization (COA), FEDERAL AVIATION ADMINISTRATION, (Nov. 14, 2014, 1:20 PM),

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organizatio ns/uas/coa/.

²³ Freedom of Information Act Responses, FEDERAL AVIATION ADMINISTRATION, (Nov. 3, 2015, 10:28 AM), https://www.faa.gov/uas/public operations/foia responses/.

²⁴ Letter from John S. Duncan, Director, Flight Standards Service, Federal Aviation Administration, to Yvette Barrera, P.E., CFM, City Engineer, City of McAllen (June 5, 2015) available at

https://www.faa.gov/uas/legislative_programs/section_333/333_authorizations/media/City-of-McAllen-Texas-11744.pdf. ²⁵ *Id.*

addition, many universities and specific departments within public agencies have obtained similar Section 333 Exemptions.

4. Model Aircraft (Hobby Drones)

Under the Modernization Act, hobby drones are exempt from FAA regulation if they meet the following requirements:

- Flown within the operator's visual line of site;
- Flown for hobby or recreational use only;
- Operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization;
- Weigh no more than 55 pounds;
- Operated in a way that does not interfere with and gives way to any manned aircraft: and
- When flown within five miles of an airport, the drone operator provides the airport operator and air traffic control tower with prior notice of the operation.²⁷

As a result, the FAA may not enforce any further regulations specific to hobby drones that fall within the above categories. Hobby drones are nevertheless prohibited from endangering the safety of the national airspace system,²⁸ and therefore the proposed rules under the NPRM would codify the FAA's enforcement authority over hobby drones that violate this prohibition.²⁹ FAA also takes the position that hobby drones are subject to regulations that apply to all drones.³⁰

To facilitate the requirement that hobby drones must be flown in accordance with a community-based set of safety guidelines, the FAA has partnered with several industry associations to promote guidelines for the safe operation of recreational drones. The following guidelines were created by the Association for Unmanned Vehicle Systems International (AUVSI) and the Academy of Model Aeronautics (AMA), and include a sampling of their recommendations:

Fly below 400 feet and remain clear of surrounding obstacles;

²⁶ See Authorizations Granted Via Section 333 Exemptions, FEDERAL AVIATION ADMINISTRATION, (Apr. 6, 2016, 11:54 AM), https://www.faa.gov/uas/legislative_programs/section_333/333_authorizations/. ²⁷ P.L. 112-095 § 336.

²⁸ P.L. 112-095 § 336(b).

²⁹ NPRM, *supra* at 9555.

³⁰ See Interpretation of the Special Rule for Model Aircraft, Notice of interpretation with request for comment, 79 F.R. 122, (Jun. 25, 2014), p. 36173, available at https://www.gpo.gov/fdsys/pkg/FR-2014-06-25/pdf/2014-14948.pdf.

- Keep the drone within visual line of sight at all times;
- Remain clear of and do not interfere with manned aircraft operations;
- Do not intentionally fly over unprotected people or moving vehicles, and remain at least 25 feet away from individuals and vulnerable property;
- Do not fly within five miles of an airport unless you contact the airport control tower before flying;
- Do not fly in adverse weather conditions such as in high winds or reduced visibility;
- Do not fly under the influence of drugs or alcohol;
- Ensure the operating environment is safe and that the operator is competent and proficient in the operation of the drone;
- Do not fly near or over sensitive infrastructure or property such as power stations, water treatment facilities, correctional facilities, heavily traveled roadways, government facilities, etc.;
- Check and follow local laws and ordinances before flying over private property;
- Do not conduct surveillance or photograph persons in areas where there is an expectation of privacy without the individual's permission;
- Operators may not fly while under the influence of alcohol or drugs that could adversely affect the operator's ability to safely control the drone; and
- May not attach weapons or other pyrotechnic devices to drones.³¹

II. <u>State Regulation</u>

1. Sampling of Current State Legislation

As the wait continues for more definitive federal regulation, states have begun to introduce and enact legislation directed at drone operations. In 2014, 35 states considered drone legislation and 10 states enacted new laws, primarily to limit the use

³¹ "Know Before You Fly" campaign brochure, *available at* http://knowbeforeyoufly.org/wpcontent/uploads/2015/12/KBYF_Brochure_WEB.pdf; Academy of Model Aeronautics, *sUAS Flight Safety Guide* (2014), *available at* http://suas.modelaircraft.org/ama/images/sUAS_Safety_Program_web.pdf.

of drones by law enforcement.³² In 2015, 45 states considered 168 bills related to drones. Among those states, 20 enacted new laws, five adopted resolutions related to drones, and Virginia's governor signed an executive order establishing a commission on drones.³³ While much of the legislation imposes limits on law enforcement use of drones, there are no standard rules being applied consistently throughout the states. A brief sampling of the laws include:

- Arkansas HB 1349 prohibits using drones to commit voyeurism;
- Maryland SB 370 preempted county and municipal authority to enact laws to prohibit, restrict, or regulate the testing or operation of drones;
- Michigan SB 54 prohibits using a drone to interfere with or harass hunters; and
- New Hampshire SB 222 prohibits using drones to hunt, fish, or trap.³⁴

2. California Legislation

In California, the only recent legislation relating to drones that has been approved by the Governor was Assembly Bill 856, which amended California Civil Code section 1708.8.³⁵ Under the law, a person may be liable for physical invasion of privacy if a drone (or other device) is used to knowingly enter into the airspace above the land of another without permission to capture certain images, sound recordings, or other physical impressions of an individual engaging in private, personal, or familial activities.³⁶ Although other bills have passed both houses of the Legislature, Governor Brown has vetoed all of them.³⁷

Until more specific drone legislation is enacted or local ordinances adopted, enforcement efforts must use existing laws to prohibit and deter problematic drone activities. For example, under California law, the following sections may help to restrict drone activities interfering with emergency responders:

³² 2014 State Unmanned Aircraft Systems (UAS) Legislation, NATIONAL CONFERENCE OF STATE LEGISLATURES, (Jul. 2, 2015), http://www.ncsl.org/research/transportation/2014-state-unmanned-aircraftsystems-uas-legislation.aspx.

³³ Current Unmanned Aircraft State Law Landscape, NATIONAL CONFERENCE OF STATE LEGISLATURES, (Mar. 25, 2016), http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx.

³⁴ *Id.*

³⁵ Cal. Assembly Bill No. 856 (2015), *available at* http://www.leginfo.ca.gov/pub/15-16/bill/asm/ab_0851-0900/ab_856_bill_20151006_chaptered.pdf.

³⁶ See Cal. Civil Code § 1708.8.

³⁷ Patrick McGreevy, *With strong message against creating new crimes, Gov. Brown vetoes drone bills*, Los ANGELES TIMES, (Oct. 3, 2015, 3:24 PM), http://touch.latimes.com/#section/-1/article/p2p-84594211/.

- California Penal Code §148.2: makes it a misdemeanor for any person to willfully interfere with firefighting or emergency rescue personnel who are discharging official duties; and
- California Penal Code §402: makes it a misdemeanor for any person to impede emergency personnel in the performance of their duties.

When seeking enforcement mechanisms, don't think drones, but rather think normal police powers. For example most cities have ordinances that prohibit discharging a gun within city limits. A person, who shoots a drone out of the air, may be charged under such an ordinance.

III. Local Regulation

In addition to state regulation, cities are beginning to enact regulations relating to drone activities. While there is variation among all local ordinances, it appears that several local jurisdictions have focused on supplementing or codifying recommendations from community-based safety guidelines (such as those described above). The following non-exhaustive overview describes some of the local regulations currently enacted.

As one of the first California cities to regulate drones, Beverly Hills adopted an ordinance in October 2014 which restricts drones from recording or transmitting certain visual images and audio recordings from within the City. The ordinance also has requirements for law enforcement use of drones.³⁸

In October 2015, the City of Los Angeles adopted a drone ordinance that mirrors several of the community-based guidelines for hobby drones and makes it a misdemeanor to violate those rules.³⁹ For instance, under the Los Angeles ordinance, hobby drones must only be flown during daylight hours and may not operate higher than 400 feet above the ground.

Shortly thereafter in November 2015, the City of Chicago approved an ordinance that also codifies many of the community-based guidelines for hobby drones, as well as distance requirements from sensitive areas such as schools and water and electric infrastructure.⁴⁰ In addition, the Chicago ordinance authorizes the operation of public or civil small drones within the City consistent with any authorization specifically granted by the FAA.

In January 2016, the City of West Hollywood approved a drone ordinance codifying several community-based guidelines.⁴¹ The ordinance also implements a permitting scheme for drones operated within the City. However, the ordinance

³⁸ See Beverly Hills Municipal Code § 5-6-604.

³⁹ See Los Angeles Municipal Code § 56.31.

⁴⁰ See Chicago Municipal Code § 10-36-400.

⁴¹ See West Hollywood Municipal Code Chapter 9.30.

exempts civil/commercial drones operated pursuant to FAA authorization in conjunction with a City-issued film permit, as well as public drones operating in compliance with FAA authorization.

Many other cities are following suit and considering local drone regulations. As cities begin to draft such regulations, it will be important to be mindful of potential preemption issues with Federal law (see below).

IV. <u>Recommendations for Local Regulation of Third-Party Use of Drones</u>

As the wait continues for federal and state legislation to catch up to the growing number of drones flying over local neighborhoods, cities and other local agencies may wish to consider adopting local ordinances regulating third-party use of drones. While there are no clear guidelines for such an ordinance, local agencies should be mindful of federal preemption and vagueness issues as they begin to draft regulations.

1. Federal Preemption Concerns

At this time, federal law is in flux and it's unclear whether proposed laws will be approved that may foreclose the ability of local jurisdictions to regulate drone operations. However, under current federal statutory schemes, there are viable arguments that local rules may regulate drone operations in areas that federal law has left untouched.

The federal preemption doctrine derives from the Supremacy Clause of the Constitution⁴² and preemption may be express or implied. Generally, there are three categories of federal preemption: (1) express preemption; (2) conflict preemption; and (3) field preemption.⁴³ The analysis for federal preemption is identical for evaluating both the validity of state laws and local ordinances.⁴⁴

Under the doctrine of express preemption, state or local law is preempted if Congress enacts a statute explicitly containing its intent to supersede local law.⁴⁵ For example, the Airline Deregulation Act expressly preempts state laws **relating to** domestic prices, routes or services.⁴⁶ Where a federal law expressly preempts local laws "relating to" a certain subject, such preemption is given broad effect.⁴⁷ By contrast, when federal laws expressly preempt local laws by employing the phrase "covering the same subject matter" as the federal law, local laws are only preempted, if the federal regulations substantially subsume the subject matter.⁴⁸

⁴² U.S. Const. art. VI.

⁴³ English v. General Elec. Co. (1990) 496 U.S. 72, 78-79.

⁴⁴ Wisconsin Public Intervenor v. Mortier (1991) 501 U.S. 597, 605.

⁴⁵ See Arizona v. United States (2012) 132 S.Ct. 2492, 2500-01.

⁴⁶ 49 U.S.C. 41713(b)(1); *Northwest, Inc. v. Ginsberg* (2014) 134 S.Ct. 1422, 1428-29.

⁴⁷ Morales v. Trans World Airlines, Inc. (1992) 504 U.S. 374, 383-84.

⁴⁸ See, e.g. Ishikawa v. Delta Airlines, Inc. (2003) 343 F.3d 1129.

A law is invalid under conflict preemption (a type of implied preemption) if it actually conflicts with federal law, so that it is either impossible for an individual to comply with both state and federal requirements, or the state law stands as an obstacle to the execution of the full purpose and objective of Congress.⁴⁹

Finally, field preemption (also a type of implied preemption) exists where a federal statute regulates a field that Congress intended to be occupied solely by the federal government.⁵⁰ Under field preemption, federal law will exclude even local laws that are complementary or parallel to the federal statutory scheme.⁵¹ For instance, in <u>Pennsylvania v. Nelson</u>, the Supreme Court struck down a criminal state sedition law that was identical to the criminal federal sedition law.⁵²

In the context of aviation, courts have held that local regulation of air safety and commerce is field preempted where Congress has "pervasively regulated" that area under the Federal Aviation Act.⁵³ The Third Circuit, however, has held the entire field of airline safety is field preempted by the Federal Aviation Act, not just areas that are pervasively regulated.⁵⁴

At least one commentator has opined that once the FAA's NPRM (proposed rulemaking for small civil drones) is finalized, the rules will serve to preempt local laws addressing subjects covered by the NPRM under the field preemption doctrine.⁵⁵ However, because federal law specifically prohibits FAA regulation of certain hobby drones (as discussed above),⁵⁶ there is an argument that this subject area may be left open for local regulation.⁵⁷ Some cities have appeared to take this approach by drafting local regulations applicable to hobby drones, while exempting commercial and public drone activities otherwise regulated and authorized by the FAA.

In December 2015, the FAA released a Fact Sheet with an overview of its position on preemption, which appears to focus on concerns about a "patchwork quilt" of different state-by-state drone regulations.⁵⁸ The FAA cited a number of cases involving field preemption however, none of these authorities deal specifically with drone

⁴⁹ Gade v. Nat'l Solid Waste Mgmt Ass'n (1992) 505 U.S. 88, 98; Freightliner Corp. v. Myrick (1995) 514 U.S. 280, 287.

⁵⁰ Freightliner Corp. v. Myrick (1995) 514 U.S. 280, 287.

⁵¹ See Pennsylvania v. Nelson (1956) 350 U.S. 497.

⁵² Id.

⁵³ *Gilstrap v. United Air Lines, Inc.* (9th Cir. 2013) 709 F.3d 995; *Martin ex rel. Heckman v. Midwest Exp. Holdings, Inc.* (9th Cir. 2009) 555 F.3d 806, 811.

⁵⁴ Abdullah v. American Airlines, Inc. (3rd Cir. 1999) 181 F.3d 363, 367-68.

⁵⁵ See Henry H. Perritt Jr., One centimeter over my back yard: where does federal preemption of state drone regulation start?, (2015), available at

http://scholarship.kentlaw.iit.edu/fac_schol/845/?utm_source=scholarship.kentlaw.iit.edu%2Ffac_schol%2 F845&utm_medium=PDF&utm_campaign=PDFCoverPages.

⁵⁶ P.L. 112-095 § 336.

⁵⁷ See Perritt, *supra*.

⁵⁸ Federal Aviation Administration, *State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet* (Dec. 17, 2015), *available at*

https://www.faa.gov/uas/regulations_policies/media/UAS_Fact_Sheet_Final.pdf.

regulation and do not seem on point. Regardless of the lack of specific case law support, the FAA specified that "no state or local government may impose an additional registration requirement on the operation of UAS in navigable airspace without first obtaining FAA approval." ⁵⁹

According to the FAA Fact Sheet, no state or local jurisdiction should enact laws without consulting with the FAA if the laws deal with:

- Drone operational restrictions on flight altitude or flight paths, operational bans, or any regulation of the navigable airspace. An example includes any ordinance banning drone operations within city limits or within certain distances of landmarks.
- Mandating equipment or training for drones related to aviation safety, such as geo-fencing.

The FAA did acknowledge that laws traditionally related to state and local police powers – including land use, zoning, privacy, trespass, and law enforcement operations - would generally not be subject to federal preemption. Examples of laws that the FAA has deemed appropriate for local regulation include:

- Requirements for police to obtain a warrant prior to using a drone for surveillance;
- Prohibiting drone operations for voyeurism;
- Prohibiting drone operations for hunting or fishing, or for interfering with/harassing hunters or fisherman; and
- Prohibiting drones with firearm or other similar weapon attachments.

To muddy the waters even more, Congress is currently considering the Federal Aviation Administration Reauthorization Act of 2016 ("Reauthorization Act"). The Senate version of this bill was approved by the Senate Committee on Commerce, Science, and Transportation on March 16, 2016.⁶⁰ Section 2142 of the proposed Senate's Reauthorization Act would create express federal preemption of any law "relating to the design, manufacture, testing, licensing, registration, certification, operation, or maintenance of an unmanned aircraft system, including airspace, altitude, flight paths, equipment or technology requirements, purpose of operations, and pilot, operator, and observer qualifications, training, and certification." The effect of such a

⁵⁹ *Id.* at 2.

⁶⁰ See Commerce Approves FAA Reauthorization Bill, U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE & TRANSPORTATION, (Mar. 16, 2016), http://www.commerce.senate.gov/public/index.cfm/2016/3/commerce-approves-faa-reauthorization-bill; see proposed S. 2658 at

http://www.commerce.senate.gov/public/_cache/files/992cabb4-bd39-474e-b8a7-8056ddd11ca9/DC007B30B900E86BC8D72E87BA555A73.faa-bill-text.pdf.

law would most likely result in broad preemption of local regulation of any drone operation activity, including hobby drones. While this version of the Reauthorization Act includes specific carve-outs for preservation of the following state and local regulations, such regulations may not specifically relate to drones, but must be applied generally: nuisance, voyeurism, harassment, reckless endangerment, wrongful death, personal injury, property damage, other illegal acts arising from the use of drones, and common law rights and remedies for civil relief. Civil Code section 1708.8, which protects personal privacy interests, is an example of a statute that would meet the exception of the pending Senate bill.

Until there is some definitive legislation or judicial interpretation of the extent of federal preemption over drone operations, cities and other local jurisdictions should be mindful of the preemption principles in evaluating the merits and risks of any proposed local regulation.

2. Vagueness

Given the large network of enacted and proposed statutes, rules, and informal recommendations for drone operations, it's easy to encounter variations in terminology, definitions, and safety requirements. However, local agencies should consider potential vagueness issues when drafting local regulations. As explained by the California courts:

'It is well settled that 'a statute which either forbids or requires the doing of an act in terms so vague that people of common intelligence must necessarily guess at its meaning and differ as to its application violates the first essential of due process of law.' [Citations.] This principle applies not only to statutes of a penal nature but also to those prescribing a standard of conduct which is the subject of administrative regulation. [Citations.] The language used in such legislation 'must be definite enough to provide a standard of conduct' for those whose activities are prescribed as well as a standard by which the agencies called upon to apply it can ascertain compliance therewith. [Citation.]⁶¹

Not only will unambiguous drafting help make citizens aware of what is permissible, it will also help enforcement efforts when determining whether a certain activity violates a local ordinance. Tying regulation of drone operations to concepts such as places where individuals have a "reasonable expectation of privacy" (for purposes of locational restrictions) may not be as clear as the vagueness doctrine requires, particularly due to the lack of definitive case law on point. For now, agencies should strive to clearly define the scope of local regulations, rather than leave regulations open to arbitrary interpretations. Lastly, to address ease of enforcement, prohibitions should be written to be general intent and not specific intent crimes.

V. <u>Cities Employing Drones</u>

⁶¹ Habitat Trust for Wildlife, Inc. v. City of Rancho Cucamonga (2009) 175 Cal.App.4th 1306, 1325 (quoting McMurtry v. State Board of Medical Examiners (1960) 180 Cal.App.2d 760, 766).

1. Privacy Concerns

Shifting the focus from local regulation of privately used drones to local use of publicly operated drones, a seemingly attractive area within public drone use includes assistance with law enforcement efforts. From a quick review of headlines throughout the country, proposed law enforcement uses of drones include aiding in search and rescue missions, police chases, geographic mapping, crime scene reconstruction, aerial surveillance, facial recognition, and infrared surveillance. There are many positive arguments for such uses, including improving efficiency, cutting costs, and reducing risks to officers. There are, however, concerns about the real potential for invasion of personal privacy.

Why are we so suspicious of drones? From neighbors swatting down drones flying past their property, to fathers shooting down drones hovering over their children, it appears that the general public is extremely anxious about drones invading privacy. Although the courts and state and federal governments have yet to tackle this issue, a review of existing case law involving personal privacy demonstrates the ways in which the law currently protects individual privacy, as well as how it falls alarming short of advances in technology (including drones). Cities and other local jurisdictions should be mindful of these principles as they endeavor to use drones for governmental purposes.

The United States Constitution and the California Constitution protect the peoples' right to be secure from "unreasonable" searches and seizures by the government. ⁶² This means that police generally may not search individuals or their property unless (1) a valid search warrant has been obtained or (2) the search falls within several judicially recognized exceptions to the warrant requirement (for example, an individual voluntarily consents to be searched; the search is conducted incidental to a lawful arrest; the search is of items in plain view while conducting an otherwise lawful search; exigent circumstances exist.) To determine if an unlawful search occurs, the Courts employ what has become known as the <u>Katz</u> test. Courts typically ask whether the individual had (1) a subjective expectation of privacy; and (2) if so, whether that expectation of privacy is one that society is willing to recognize as reasonable.⁶³

i. Aerial Surveillance Cases – Lawful Law Enforcement Activity

In 1986, the U.S. Supreme Court decided <u>California v. Ciraolo</u>.⁶⁴ <u>Ciraolo</u> involved the warrantless observation by law enforcement of a fenced-in backyard during a fly-over conducted from 1000 feet above ground, within navigable airspace. While conducting the fly-over, law enforcement officials observed illegal marijuana growing in the backyard. In concluding that no warrant was required to conduct this aerial surveillance, the Court found that traditionally, the Fourth Amendment has never required law enforcement to shield their eyes when passing by a home on a public

⁶² U.S. Const. Amend. 4; Cal. Const. Art. I §13.

⁶³ Katz v. United States (1967) 389 U.S. 347; see California v. Ciraolo (1986) 476 U.S. 207.

⁶⁴ California v. Ciraolo (1986) 476 U.S. 207.

thoroughfare (i.e., observing the home from a public vantage point). Therefore, where private and commercial flight in public airways is routine, the Court believed it was unreasonable to expect that an uncovered outdoor backyard was protected from observation by the naked eye from public navigable airspace.

On the same day as <u>Ciraolo</u>, the Court decided <u>Dow Chemical Co. v. United</u> <u>States</u>.⁶⁵ In this case, the U.S. Environmental Protection Agency ("EPA") conducted aerial surveillance of a chemical company's plant complex. The EPA employed the use of an aerial photographer, using a precision aerial mapping camera, to photograph the complex from altitudes of 1200-12000 feet (all within navigable airspace). In concluding that the aerial surveillance was not a search for Fourth Amendment purposes, the Court emphasized that the sense enhancing technology (camera) did not reveal "intimate details" about the company so as to raise constitutional concern (as opposed to technology that could penetrate walls to hear confidential discussions or trade secrets). The Court also noted that the surveillance wasn't of an area immediately adjacent to a private home, where privacy expectations are heightened (in spite of the recent decision in <u>Ciraolo</u>). Interestingly, the dissenters in this case ominously predicted events to come:

"Under this holding, the existence of an asserted privacy interest apparently will be decided solely by reference to the manner of surveillance used to intrude on that interest. Such an inquiry will not protect Fourth Amendment rights, but rather will permit their gradual decay as technology advances."⁶⁶

Several years after <u>Ciraolo</u> and <u>Dow Chemical</u>, the Court had the opportunity to evaluate an aerial surveillance case involving a helicopter flying within navigable airspace, but significantly lower than previous aerial surveillance activities, at just 400 feet above the ground. At issue in <u>Florida v. Riley</u> was law enforcement's use of a low-flying helicopter to observe a greenhouse within an enclosed backyard that was growing illegal marijuana.⁶⁷ The Court, in a plurality decision, reaffirmed <u>Ciraolo</u> and found that an individual did not have a reasonable expectation of privacy in contents of a greenhouse that were observable from navigable airspace. However, Justice O'Connor's concurrence argued that while she didn't believe a violation had occurred, she felt the reasonableness of the privacy expectation shouldn't be tied to whether the aircraft is flying within permissible navigable airspace alone – instead the question should focus on whether the aircraft is in public airways at an altitude at which members of the public travel with sufficient regularity.

Even more striking, the dissent in <u>Riley</u> implored the plurality to consider the following:

"Imagine a helicopter capable of hovering just above an enclosed courtyard or patio without generating any noise, wind, or dust at all - and, for good measure,

⁶⁵ Dow Chemical Co. v. United States (1986) 476 U.S. 227.

⁶⁶ *Id.* at 240.

⁶⁷ *Florida v. Riley* (1989) 488 U.S. 445.

without posing any threat of injury. Suppose the police employed this miraculous tool to discover not only what crops people were growing in their greenhouses, but also what books they were reading and who their dinner guests were. Suppose, finally, that the FAA regulations remained unchanged, so that the police were undeniably 'where they had a right to be.' Would today's plurality continue to assert that '[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures' was not infringed by such surveillance?"⁶⁸

ii. Recent Technology Cases - Unlawfully Conducted Search

Moving out of the aerial surveillance jurisprudence and into further advances in technology, in 2001 the Court decided <u>Kyllo v. United States</u>.⁶⁹ In <u>Kyllo</u>, law enforcement used a thermal imager to scan a triplex to determine whether heat was emanating from a home in a manner consistent with the use of high intensity lamps to grow marijuana. The scan was performed from the passenger seat of a vehicle parked across the street from the home. In finding that an improper search occurred, the Court pointed out that at the core of the Fourth Amendment is an individual's right to retreat into his own home and be free from unreasonable government intrusion. Here, the information gathered involved details about the interior of a home that could not otherwise be obtained without a physical intrusion. Moreover, the Court was particularly concerned that the sense-enhancing technology used (thermal imager) was not in general public use. Since thermal imaging wasn't "routine," it would be unreasonable to assume that an individual would anticipate being subject to such types of observation.

In <u>U.S. v. Jones</u>, the Court found it was improper for law enforcement to install a GPS tracking device onto a vehicle and use the device to monitor the vehicle's movements for 28 days, without a warrant.⁷⁰ In <u>Jones</u>, Justice Scalia's analysis of the Fourth Amendment intrusion considered the fact that the GPS device physically occupied and therefore intruded on protected property. However, the concurring opinions acknowledged the long length of the surveillance activity. Generally the concurring justices felt that the longer-term monitoring of a vehicle's movements on public streets would violate an individual's reasonable expectation of privacy, whereas shorter-term monitoring may not rise to the level of an unreasonable warrantless search.

Justice Sotomayor's concurrence raised the issue of informational privacy, noting that it may be time to question the premise that "an individual has no reasonable expectation of privacy in information voluntarily disclosed to third parties [citations omitted]."⁷¹ Justice Sotomayor believed this approach was ill suited for the digital age, where people reveal a large amount of information about themselves to third parties in the course of completing mundane tasks, and opined that secrecy should not be

⁶⁸ *Id.* at 462-63.

⁶⁹ *Kyllo v. United States* (2001) 533 U.S. 27.

⁷⁰ Ú.S. v. Jones (2012) 132 S.Ct. 945.

⁷¹ *Id.* at 957.

equated with privacy under Fourth Amendment analysis.⁷² The concurrence suggested that the amount of personal information that could be gathered from the GPS device should be taken into account when determining whether a reasonable expectation of privacy exists.

This principle was extended in <u>Riley v. California</u>,⁷³ where the Supreme Court was faced with applying Fourth Amendment jurisprudence of search incident to arrest to cell phones. In this unanimous opinion, the Court held that the police had to secure a warrant before searching an arrestee's cell phone. The majority was concerned with the broad array of information stored on cell phones and referenced Justice Sotomayor's concurrence in <u>Jones</u>. This case highlights the recent potential shift in the Court's reasoning in regards to privacy and technology.

iii. So What is Allowed?

Based on these cases one can glean that police may engage in the following activities without a warrant: fly a drone within legally permissible airspace to conduct visual surveillance of outdoor property (<u>Ciraolo</u>, <u>Dow Chemical</u>, <u>Riley</u>); use senseenhancing technology to observe certain exterior details of property, as long as technology is in general public use (<u>Dow Chemical</u>, <u>Kyllo</u>); and conduct short-term ongoing surveillance (some period less than 4 weeks) (<u>Jones</u> concurrence). However, from a private citizen's perspective, such usage may be unsettling.

The FAA hasn't set minimum flight altitudes for drones . However, the FAA has recommended that civil drones fly <u>below</u> 500 feet and community based guidelines suggest that hobby drones fly below 400 feet. Based on these standards and the cases discussed above, arguably government drones may legally hover just above private property and conduct visual surveillance without a warrant.

In addition, even taking into consideration recent cases where the Court favored protecting individual privacy, there are many questions left unanswered. In <u>Jones</u>, the Court left unanswered how long would be too long for ongoing surveillance to last, and drones could potentially observe individuals for some period of time that is less than four weeks. More alarmingly, under <u>Kyllo</u>, the idea of a permissible search being tied to using technology in "general public use" leaves us with the unsettling conclusion that, as drones (and other technology) become more widespread, our reasonable expectations in privacy begin to erode.

iv. Need for Legislative Safeguards

Perhaps this is not what the justices intended, but until the jurisprudence evolves, the current legal landscape highlights the need for legislative safeguards to protect individual privacy rights and clearly define outer limits of government drone operations. Justice Alito's concurrence in <u>Jones</u>, which was joined by three others justices,

⁷² Id.

⁷³ *Riley v. California* (2014) 134 S.Ct. 2473.

recognized this and opined that "[i]n circumstances involving dramatic technological change, the best solution to privacy concerns may be legislative."⁷⁴ While the Court's privacy analysis in <u>Riley v. California</u> may evidence a shift towards an evaluation of the scope and breadth of information that may be gathered by advanced technology, it's too early to tell how courts will evaluate drone operations under Fourth Amendment jurisprudence.

2. Policy for Cities' Drone Use

Given the uncertain nature of privacy case law and the public's general mistrust of drone usage, we recommend that government entities adopt a policy on drone usage prior to deploying drones for government purposes. A policy may not only help elected officials and employees understand how and to what extent drones will be used, but it may also educate citizens on what to expect. As with anything that local government does, including the public early on in the process will be key to a smooth implementation process. By way of example, more than two years ago a major California city's police department received a gift of two drones from another agency. After great public outcry concerning privacy rights, the City Council directed the Police Commission to adopt a policy on the police department's use of drones. To this day, no policy has been adopted and no drones have been deployed.

Past proposed state legislation provides some guidance into what California cities may wish to consider including in a drone policy.⁷⁵ Each city, however should take into consideration unique issues that may face their particular jurisdiction. In general, we believe the following considerations should be taken into account when drafting a drone usage policy:

- Specify how the drone will be used. While some uses may be more generally acceptable, others may raise privacy concerns and require more vetting prior to implementation.
- Describe limitations on how drones will be used.
 - Will any safeguards be implemented to restrict use that is overly invasive of privacy? Policies may specifically narrow the scope of government use (i.e., "Police Department will not use drones to conduct surveillance of private property unless the Department obtains a search warrant or an exigent circumstance exists.") or may describe government use in broader strokes (i.e., "Police will only use drones for surveillance where the use comports with state and federal law.").
 - Will departments provide notice to residents prior to operating drones?
 - Will drones only be flown during certain times of the day?

⁷⁴ Jones, supra at 964.

⁷⁵ See, e.g., Cal. Assembly Bill 56 (Quirk) 2015.

- How much information will drones record?
- Think about issues related to data retention.
 - Who will be the official custodian of records for the information gathered by a drone?
 - How long will the city retain such information?⁷⁶
 - What types of records will be disclosable under the Public Records Act?
- Establish procedures to receive, investigate, and address privacy concerns as well as civil rights and civil liberties complaints.
- Implement procedures to ensure accountability.
 - Implement oversight procedures, such as annual audits, to ensure drones are being used consistent with existing agency policies and regulations.
 - Establish procedures for reporting misuse/abuse.
 - Consider maintaining flight logs of daily activity.
 - Potentially post a schedule of government-operated drone flights on city's website to inform the public about where drones will fly, and for what purpose.

VI. <u>Conclusion</u>

Because there is currently no clear authority governing what cities may or may not do regarding drone regulation and usage, cities are in a unique position to weigh in on the changing state and federal legal landscape by making their interests known through locally-adopted rules and policies. While it's certain that laws will change and cities may have to adjust their practices to accommodate future statutory and legal advances, drone operations will continue to expand and cities may eventually need to decide whether to wait for further direction or take proactive steps to address this evolving area of technology.

⁷⁶ Until there is adopted state legislation, drone video footage or photos captured by cities should be retained for two years under California Government Code §34090; one year retention for videos doesn't apply (See Cal. Gov. Code §34090.6).

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