

Note: Developed by Widener Law students as an example of what similar municipal ordinances might look like. Borough council should confirm with their solicitor first.

Airspace of Tomorrow: A Workable Legal Framework for Local Drone Regulation

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I. Introduction

Over the past 10 years there has been an explosion in the drone¹ market.² With the rising popularity of drones, lawmakers on all levels are struggling to create laws to keep with the ever-changing legal landscape. Drones need to be regulated because of the many problems that unregulated use can create.³ Local governments must create regulations to deal with drones while not conflicting with the federal rules propagated by the Federal Aviation Agency (FAA) earlier this year. While the FAA regulations are a great starting point, they fail to fully regulate drones. FAA has even encouraged local and state governments to supplement the FAA regulations as long as they do not interfere with the federal rules.⁴

This paper will address key factors that lawmakers must face when creating drone regulation. Issues addressed are 1) problems that unregulated drone use cause; 2) why current local ordinances fall short of fixing the problem; 3) how drone regulations have been handled by

¹ “Drones, also known as Unmanned Air Systems (UAS), are aircrafts without a human pilot onboard – instead, the UAS is controlled from an operator on the ground.” Fact Sheet – Unmanned Aircraft Systems (UAS), FAA (August 29, 2016) <https://www.faa.gov/uas/>; The term drone and Unmanned Air System are synonymous and will be used interchangeably in this paper.

² There has been a 63% increase in sales of drones from 2015 to 2016 alone. Jacob Pramuk, *Why registry may not make drones much safer*, CNBC (January 20, 2016) <http://www.cnbc.com/2016/01/20/faa-drone-registry-may-not-be-enough.html>; Worldwide UAS production will rise from \$4 billion annually to \$14 billion. Bill Canis, Unmanned Aircraft Systems (UAS): Commercial Outlook for a New Industry 1 (Cong. Res. Service 2015) (R44192)

³ Major problems will be address later in this paper. However unregulated drone use poses concern for privacy, public safety, and social tranquility.

⁴ Law Enforcement Guidance for Suspected Unauthorized UAS Operations, FAA, (August 11, 2016), https://www.faa.gov/uas/resources/law_enforcement/media/FAA_UAS-PO_LEA_Guidance.pdf

federal, state and local lawmakers; 4) policy concerns that anyone wanting to regulate drones must keep in mind. Finally, a draft model ordinance, addressing these concerns, is attached. This model ordinance is geared towards municipalities in Pennsylvania, so they have a robust and workable drone ordinance.

II. The Drone Problem

Drones give their operators unprecedented movement and freedom in the air. Local governments must be aware of the negative and positive aspects of drones in order to properly tailor any ordinance to reduce those negative aspects without hampering positive uses. With the increasing popularity of drones⁵ municipalities are forced to confront the best ways to regulate their use, while not running afoul of federal regulations. Drones are becoming cheaper than ever before and as their price drops; the number of drones in use will only increase. Local governments must be proactive when creating drone ordinances. With the rapidly developing drone market, individuals and companies are finding ever expanding new ways to use drones. As such, local governments must create workable drone ordinances that are flexible enough to not only regulate drone usage now, but far into the future.

While drones are beneficial, unregulated use of drones can lead to a multitude of problems. In recent years, drones have almost collided with medical helicopters,⁶ smuggled drugs into prisons,⁷ prevented firefighters from fighting wildfires,⁸ collided with skyscrapers,⁹

⁵ Small Unmanned Aerial Vehicles for Aerial Imaging, Recreation, and Aerial Games: Global Market Analysis and Forecasts, Tractica, <https://www.tractica.com/research/consumer-drones/> (Lasted Visited September 26, 16)

⁶ Kelly Choate, Close Call: *Drone Nearly Collides with Medical Helicopter*, WBRE, (November 21, 2014 11:11PM) <http://www.pahomepage.com/news/close-call-drone-nearly-collides-with-medical-helicopter>

⁷ Craig Whitlock, *Rogue drones a growing nuisance across the U.S.*, The Washington Post, (August 10, 2015) https://www.washingtonpost.com/world/national-security/how-rogue-drones-are-rapidly-becoming-a-national-nuisance/2015/08/10/9c05d63c-3f61-11e5-8d45-d815146f81fa_story.html

⁸ "Pilot reports of interactions with suspected unmanned aircraft have increased from 238 sightings in all of 2014 to 780 through August of this year [2015]." Unmanned Aircraft Fact Sheet – FAA Airspace (December 17, 2015)

http://www.faa.gov/uas/resources/uas_regulations_policy/media/uas_fact_sheet_final.pdf

and even injured spectators at an outdoor music festival.¹⁰ The use of drones in populated areas also raises important individual privacy concerns. Drones can easily intrude upon the privacy of a citizen lounging by their pool, sunbathing in the yard, or even changing inside their home with the blinds open, all while going virtually undetected by that person. These privacy violations can lead to violent reactions by homeowners, with at least one case leading to a homeowner using a shotgun to shoot at, and disable, an unwanted drone.¹¹ Finally, several people have actually attached firearms to drones, which can create serious public safety risks.¹² However, while drones have caused many problems, they can also be beneficial.

One of the biggest advantages of drones is their ability to efficiently aid in many different situations. Drones have been used to document accident scenes, take aerial photography, map farmland, evaluate real estate, and a multitude of other applications, all while being more efficient than traditional methods.¹³ The trick for local governments is to strike a balance between the need to regulate drones; and allowing for their beneficial usages. An outright local ban on drones may be politically untenable and ignores all of the benefits that drones can

⁹ Liam Stack, *New Jersey Man Is Arrested After Drone Hits Empire State Building*, New York Times, (February 5, 2016) <http://www.nytimes.com/2016/02/05/nyregion/new-jersey-man-is-arrested-after-drone-hits-empire-state-building.html>

¹⁰ Ryan Reed, *Watch Muse Drone Crash into Audience During Concert*, Rolling Stone, (April 15, 2016), <http://www.rollingstone.com/music/news/watch-muse-drone-crash-into-audience-during-concert-20160415>

¹¹ A Hillview Kentucky resident believed a drone was spying on his 16-year-old daughter. He used a shotgun to disable the drone. He was charged with wanton endangerment for discharging a firearm within city limits. Charges were later dismissed. Chris Matyszczyk, *Judge rules man had right to shoot down drone over his house*, CNET, (October 28, 2015) <https://www.cnet.com/news/judge-rules-man-had-right-to-shoot-down-drone-over-his-house/>

¹² An 18-year-old college student attached a handgun to his drone, and was able to fire the gun remotely. Michael Martinez, *Handgun-firing drone appears legal in video, but FAA, police probe further*, CNN (July 21, 2015) <http://www.cnn.com/2015/07/21/us/gun-drone-connecticut/>

¹³ Alan Levin, *FAA: Small Drones Will Provide Significant Benefits*, Bloomberg (February 14, 2015) <http://www.bloomberg.com/news/articles/2015-02-14/small-drones-to-provide-significant-benefits-faa-says>

provide. Local governments must create workable and intelligent regulations that can adapt to ever changing drone technologies.

III. Why drone ordinances are needed

The existing local ordinances in Pennsylvania, and most of the country for that matter, that regulate drones fail to address the key concerns created by drones. Most of the ordinances pertaining to drones in the Commonwealth simply try to curtail their usage by banning drones within certain areas.¹⁴ Additionally several Pennsylvania municipalities bans the use of drones under a certain altitude above property not owned by the drone operator, unless the operator received permission from the landowner.¹⁵ Single focus ordinances will not be fully able to regulate the wide use of drones. While these examples are good starts, they do not prevent many of the negative impacts of drones.

Another factor affecting current laws from effectively regulating drones is the rapid pace in which drones have gained popularity. The use of drones greatly outpaces lawmakers' ability to regulate them.¹⁶ Laws that just try to regulate drones in one way, e.g. altitude limits, are not able to adapt to ever changing drone uses. Simply limiting use over a certain area, or under a certain attitude will not prevent many of the problems discussed earlier. While issues can arise in

¹⁴ In Pittsburgh drone usage is banned within the city's parks and playgrounds. Pittsburgh, Pennsylvania, Mun. Code Title XI, Chapter 473.04, (f) (2015).

¹⁵ East Goshen Township, Chester County Pennsylvania. The ordinances restricted drone flight to no lower than 200 feet above property no owned by the operator, without expressed permission. East Goshen Township, Pennsylvania, Ordinance No. 129-B-2015 (2015); Conroy Township, Lancaster County was the first township in Pennsylvania to pass a drone ordinance. It makes "[t]he operation of remote controlled or other non-tethered aircraft over property not owned by the operator and without permission of the property owner" a crime. Interestingly this one line is buried in an ordinance pertaining to the nuisance created by junked cars. Conroy Township, Pennsylvania, Ordinance No. 1-3-14 (2013)

¹⁶ Richard Whittle, *Drone Skies: The Unmanned Aircraft Revolution Is Coming*, Popular Mechanics, (September 9, 2013) <http://www.popularmechanics.com/military/a9407/drone-skies-the-unmanned-aircraft-revolution-is-coming-15894155/>

relation to the height at which drones are flown, this is just one part of a larger picture. With the growing number of drones, and their expanding applications, there is a need for new laws to regulate drones on the local level. New laws need to be created that are able to touch upon the issues caused by drones. Currently laws are wholly inadequate to deal with the privacy, safety, and social problems discussed earlier. Better ordinances will be able to address the problems associated with drones, while insuring their continued use.

Creating better local drone laws will not only increase safety but will also increase the well-being, safety, and privacy of local communities. There must be integrated decisionmaking,¹⁷ taking into account all aspects, to create a fully workable drone ordinance. Simply creating regulations that addresses only one specific concern only leads to other problems in the future. For example, creating an ordinance that is only aimed at protecting privacy may cause issues with safety of airspace later on. Local governments are better suited to create ordinances that are tailored to their unique location than the federal and state legislators. An outright ban on drones will also not be workable. Drones provided too much of a positive impact to simple be banned by a municipality.

Finally, many local ordinances, enacted before the FAA regulations, are no longer legal. While discussed in great depth later in this paper, many local ordinances are preempted by the new FAA regulations. With many local ordinances potentially preempted, there is a need for local lawmakers to start over from step one, and recreate ordinances that comply with the new FAA framework. Drones also need to be regulated because the positive benefits of drones are too great to lose, by simply enacting an outright ban on drones.

¹⁷ “Integrated decisionmaking would ensure that environmental considerations and goals are integrated or incorporated into the decisionmaking processes for development, and are not treated separately or independently.” John C. Dernbach, *Achieving Sustainable Development: The Centrality and Multiple Facets of Integrated Decisionmaking*, 10 IND. J. GLOBAL LEGAL STUD. 247 (2003)

Drones can be used to increase safety of residents living within a municipality. Several police departments nationwide have deployed drones to track wanted criminals, and perform search and rescue functions.¹⁸ Municipalities can create ordinances that encourage, and guide public safety agencies in the use of drones. Through their police powers, local governments could create ordinances that make sure that drones are not used in violation of the 4th amendment. Local governments can require that warrants are required before police may use drones in certain situations. Local ordinances will also have a major impact on the social wellbeing of a community.

Drones also have a positive impact on the environment as well. Drones can be used in the oil and gas industry to both increase productivity and reduce the overall negative environmental impact.¹⁹ Drones could also be used by governmental agencies to ensure compliance with regulations such as the Clean Air Act (CAA).²⁰ The Environmental Protection Agency (EPA) could use drones to monitor air quality in defined areas, these measures may be more accurate than current measuring methods.²¹ Traditional measurement practices cannot reach the same areas that drones can. Finally, drones could be used by the EPA at major spills and emissions “to quickly assess and record the entire scene, then sending back real-time video and data analysis so agencies can put together an immediate action plan prior to first responders arriving at the scene of the accident.”²²

¹⁸ Mesa County has been a leader in drone use by law enforcement. Since January 2010 the Mesa County Sheriff’s Department has logged over 171 flight hours with two drones. Susan Greene, Huffington Post, (June 6, 2013) http://www.huffingtonpost.com/2013/06/06/mesa-county-colo-a-nation_n_3399876.html

¹⁹ Lucas Satterlee, *Climate Drones: A New Tool for Oil and Gas Air Emission Monitoring*, 46 ELR 11069 (2016)

²⁰ Id.

²¹ Id.

²² Id.

Local governments can also benefit from the use of drones. Drones can be used instead of helicopters to provide an aerial view of a crime scene, and marijuana growing areas.²³ Other municipalities are looking at using drones to identify problem traffic areas.²⁴ Additionally, the state of Utah has looked into using drones for several environmental monitoring purposes.²⁵ Due to their ease of use and relative inexpensive operational costs, drones are the perfect tools for municipalities.

Drone ordinances will promote a sustainable²⁶ community. Sustainability doesn't only apply to the sustainable use of natural resources, but also to creating livable and long-lasting communities. Intelligent regulation of drones can lead to a decrease in disputes between neighbors, and concerns over privacy.

IV. How Drones Are Regulated

When discussing how other jurisdictions have regulated drones, there is a three-tier approach that must be utilized. Drones are regulated on the federal, state, and local levels. Looking at how each has chosen to limit drones can shed insight into what an effective ordinance will look like. Current drone laws fall short of effectively regulating drones. They are either too narrow in scope and do not address the overarching issues that drones cause. Additionally, others

²³ “[P]olice officers in Shelby County (Memphis), Tenn., estimate that they could fly the drones for \$3.80 an hour, compared to \$600 per hour to fly a large helicopter, including fuel and personnel costs. The Shelby County officers want to buy two small drones that they plan to use in finding missing persons, investigating traffic accidents and spotting illegal marijuana crops.” Elaine S. Povich, *More States, Cities Look to Test Drones*, *Governing Magazine* (May 5, 2012) <http://www.governing.com/topics/technology/col-more-states-cities-look-to-test-drones.html>

²⁴ “[Drones provide] an alternative for spotting traffic and sending information back to our VDOT (Virginia Department of Transportation) Smart Traffic centers, and being able to observe backups” *Id.*

²⁵ “Waterfowl management, tracking invasive plant species and using the unmanned systems to monitor rivers and creeks.” *Id.*

²⁶ “Sustainability is a framework for decision-making based on promotion of environmental protection, social justice, and economic/financial responsibility at the same time, with the overall objective of promoting human well-being for present and future generations.” AMERICAN BAR ASSOCIATION TASK FORCE ON SUSTAINABLE DEVELOPMENT, FINAL REPORT 2 (July 31, 2015), http://www.americanbar.org/content/dam/aba/administrative/environment_energy_resources/resources/final_sdtf_ab_a_annual_08-2015.authcheckdam.pdf

are too broad and are unable to handle to local problems caused by drones. A “perfect” ordinance would fall directly in the middle of this spectrum.

A. Federal Regulations

From the outset, it is important to note that since drone regulation is such a new topic, the FAA drone regulations only became effective August 29, 2016. Due to the recent release, it is quite unclear at this time what the effects of the regulations will be. It is impossible to judge if the regulations are being followed, if they having a positive impact, and if they are preventing any of the harms associated with drone usage. Drones are unique in their regulatory scheme because they are airborne. The federal government, through the FAA has the exclusive right to control the national airspace.²⁷ The FAA, in 2012, decided that drones fall under the definition of “aircraft” and therefore they have the jurisdiction to regulate them.²⁸ Since federal law is “the supreme law of the land,”²⁹ drone regulations under federal authority will be evaluated first.

The FAA has split their regulation for drones into two categories: commercial and noncommercial usages.³⁰ Commercial use includes any use of a drone for business, while noncommercial is strictly recreational use.³¹ Noncommercial users must follow guidelines created in Part 101 entitled Moored Balloons, Kites, Amateur Rockets, Unmanned Free Balloons, and Certain Model Aircraft. The small Unmanned Air System (UAS) Rule, also known as part 107, regulates commercial drones. Both commercial and noncommercial drones, weighting over 0.55 pounds must be registered with the FAA and the drone itself must be labeled with a unique registration number.³² Drones that weight between 0.55 pounds, and 55 pounds

²⁷ 49 U.S.C.A. § 40103 (West)

²⁸ FAA Modernization and Reform Act of 2012, PL 112-95, February 14, 2012, 126 Stat 11

²⁹ U.S. Const. art. VI, cl. 2

³⁰ 14 C.F.R § 101.41

³¹ Id.

³² Id.

can be registered online, while drones above 55 pounds must be registered by a paper application.³³ While both commercial and noncommercial uses share a similar regulatory scheme, there are many differences between the two.

1. Noncommercial Regulations, Part 101

For noncommercial drone flight, operators must follow the list of requirements in order to be in compliance with FAA Regulations.³⁴ 1) the aircraft must be flown strictly for hobby or recreational use; 2) the aircraft is operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization;³⁵ 3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization; 4) the aircraft is operated in a manner that does not interfere with and gives way to any manned aircraft; and 5) when flown within 5 miles of an airport, the operator of the aircraft provides the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport) with prior notice of the operation.

Additionally, there are several federal safety guidelines that noncommercial drone operators must follow: 1) fly above 400 feet above ground level (AGL); 2) keep drone within visual sight; 3) never fly near other aircraft, especially around airports; 4) never fly over groups

³³ 14 C.F.R § 101.41

³⁴ All the requirements to be considered noncommercial can be found in 14 C.F.R. § 101.41.

³⁵ A “nationwide community-based organization” is a third-party organization that created safety guideline for the safe operation of drones and other model aircraft. One example of such a group is Academy of Model Aeronautics (AAM). Their webpage can be found at: <http://www.modelaircraft.org>

of people; 5) never fly over stadiums or sports events; 6) never fly near emergency response efforts; 7) never fly under the influence; 8) be aware of airspace requirements³⁶ These guidelines are created to ensure safe operation of drones at all times. They were created with the help of several nationwide community-based organizations. All noncommercial drones must follow these guidelines while operation.

2. Commercial Drone Regulations, Part 107

Commercial drones are regulated under FAA Small Unmanned Aircraft Rule Part 107.³⁷ Commercial drones must follow the same operating guidelines that apply to noncommercial drones, as well as additional rules.³⁸ These are additional regulations that do not apply to noncommercial drones that are found in part 107: 1) commercial drones cannot weight over 55 pounds³⁹; 2) commercial drones cannot fly in excess of a ground speed of 100 MPH⁴⁰; 3) there must be a minimum weather visibility of 3 miles⁴¹; 4) commercial drones cannot be operated from a moving vehicle⁴²; 5) preflight inspection must be competed⁴³; 6) if external payload is attached to the drone it must be secured⁴⁴; 7) daylight-only operations, or civil twilight⁴⁵ with

³⁶14 C.F.R. § 101.41

³⁷ A small subsection of commercial drones may still be regulated under Certificate of Waiver or Authorization under Section 333. However, these waivers will not be renewed after their expiration date. The biggest difference between Section 333, and Part 107 is the requirement for Remote Pilot in Command. Section 333 vs. Part 107: What Works for You?, FAA (August 29, 2016) <https://www.faa.gov/news/updates/?newsId=86285>

³⁸ See requirements for noncommercial drones supra

³⁹ 14 C.F.R. § 107.3

⁴⁰ 14 C.F.R. § 107.51

⁴¹ 14 C.F.R. § 107.49

⁴² 14 C.F.R. § 107.25

⁴³ 14 C.F.R. § 107.49

⁴⁴ 14 C.F.R. § 107.3

⁴⁵ Civil Twilight is defined by the FAA as 30 minutes before official sunrise to 30 minutes after official sunset, local time. 14 C.F.R. § 107.29

appropriate anti-collision lighting⁴⁶; Additional to the requirements for a commercial drone, the FAA requires that operators of commercial drones receive remote pilot in command training.

Operators of commercial drones are required to hold a remote pilot in command certification.⁴⁷ Like noncommercial operators, remote pilots must be United States Citizens, but they must be over the age of 16 instead of 13.⁴⁸ Remote pilots must also pass an aeronautical knowledge test.⁴⁹ Certified pilots also have additional responsibilities to the FAA. Remote pilots in command must make inspection records available to the FAA upon request.⁵⁰ They must also report any accidents to the FAA that results in serious injury, or property damages of \$500 or more.⁵¹

Both Part 101 and Part 107 are the totality of federal regulation over drones. Many of the concerns that plague the drone market are not address by the federal regulations. The scope of the federal regulations is simply too limited to address some of the societal problems caused by drones. The FAA is concerned with the general use of drones, and any possible interference with the national airspace. The FAA regulations do not address some of the specific problems drones cause. Due to these reasons State and local governments must take a proactive step to create broader laws.

B. State regulation efforts.

⁴⁶ 14 C.F.R. § 107.29

⁴⁷ If a person would like to operate a drone for commercial uses, they must apply and obtain a remote pilot in command certification. This included a test on the rules of commercial drone usage. 14 C.F.R. § 107.65; 14 C.F.R. § 107.65

⁴⁸ 14 C.F.R. § 107.65

⁴⁹ Id.

⁵⁰ 14 C.F.R. § 107.19

⁵¹ 14 C.F.R. § 107.9

Almost every state in the country has at least considered legislation for drones.⁵² This paper will consider two states that have either enacted or proposed restrictions on drones. Like the Federal regulations evaluating the effectiveness of these laws will be difficult due to limited information available. Like the federal regulations, many state regulations are very limited in scope. They simply try to prevent one specific harm, e.g. invasion or privacy, while disregarding other issues with drones. The following overview of two states' laws or proposed laws will highlight this problem.

1. Kansas

SB 319, which amended Kansas Protection from Stalking Act, became effective on July 1, 2016.⁵³ The law's biggest aim is to deal with privacy concerns surrounding drones. Under SB 319 Kansas' harassment statute was amended to read; "Harassment shall include any course of conduct carried out through the use of an unmanned aerial system over or near any dwelling, occupied vehicle or other place where one may reasonably expect to be safe from uninvited intrusion or surveillance."⁵⁴ Like with many other drone laws this bill only address one problem relating to drones. Nothing here would stop a person from interfering with emergency services, or attaching firearms to their drone. However, Kansas has also taken another interesting step in dealing with drones.

⁵² Current Unmanned Aircraft State Law Landscape, National Conference of State Legislatures, September 9, 2016, <http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>

⁵³ S. 319, 2016, Reg. Sess. (Kan. 2016)

⁵⁴ Sec. 23. K.S.A.60-31 a 02

SB 249 appropriates funding to the Kansas Department of Transportation to conduct research into new applications for the state to use Drone technology.⁵⁵ This is interesting because the state is taking a proactive stance to determine what benefits the state could gain from the use of drones. This at least shows that the Kansas' legislator is aware that drones may provide some benefits for their state. While updating the harassment law, and allocating funding for drone research is a good start, the Kansas law falls short of addressing the many problems drone usages can cause. It is clear that drone laws in Kansas only aim to prevent invasion of privacy, and do not address the other problems with drones.

2. Louisiana

Louisiana lawmakers have tried to tackle the problem drones present with four different and unique laws. SB 73 would make it a crime to cross a police cordon with a drone.⁵⁶ Moreover "if the flight of a UAS into the cordoned area endangers the public or an officer's safety, law enforcement personnel or fire department personnel are authorized to disable the UAS."⁵⁷ It is interesting to note that the proposed law does not give direction on how emergency personnel are to go about disabling a wayward drone. Which in itself could lead to a negative outcome. This may help prevent some of the public safety concerns associated with drones, the Louisiana Legislator was also focused on privacy concerns.

Currently Louisiana Legislator are considering three bills that would focus on the privacy concerns surrounding drones. SB 19 prohibits the use of drones to conduct surveillance, take

⁵⁵ S. 249 (36) (b), 2016, Reg. Sess. (Kan. 2016)

⁵⁶ S. 72 (e), 2016, Reg. Sess (La. 2016)

⁵⁷ S. 72 (e) (iv), 2016, Reg. Sess (La. 2016)

photos or video, or collect information from schools, school premises, or correctional facilities.⁵⁸ HB 635 changed the definition of voyeurism, video voyeurism, and peeping tom to include the use of drones.⁵⁹ Finally SB 141 would make surveillance by unmanned aircraft constitute a criminal trespass under certain circumstances.⁶⁰ The Louisiana Legislator is obviously concerned about the privacy issues that drones create. While Louisiana has one of the most evolved laws dealing with drones, they have not addressed all of the key problems associated with drones. In order to be a useful law, the scope of Louisiana's drone laws must be much broader and address other issues plaguing the use of drones. While drones can be regulated on both the federal and state levels, local ordinances are also important to prevent the negative impacts of drones.

C. Example of Local Regulation

In addition to the ordinances discussed earlier, East Goshen Township, Conroy Township Pennsylvania; several other localities around the country have created drone ordinances. Of the many locations that have regulated the use of drones, Manhattan, Will County, Illinois will be highlighted. Their ordinance is by far one of the most comprehensive ordinances passed on the local level. While Manhattan has one of the most comprehensive local drone ordinance but, it doesn't go far enough.

The Village of Manhattan has a very expansive ordinance dealing with drones. However even as robust as they are, there are still several issues not address. The ordinances do not touch upon possible privacy concerns, interference with public safety, and possible miss use by law enforcement agencies. The Manhattan Illinois ordinance achieves drone regulation in several ways. First, it creates three different categories of drone usage; recreational, advanced

⁵⁸ S. 19, 2016, Reg. Sess (La. 2016)

⁵⁹ H.R. 635, 2016, Reg. Sess (La. 2016)

⁶⁰ H.R. 141, 2016, Reg. Sess (La. 2016)

recreational, and commercial use.⁶¹ In addition to the noted weight restrictions, recreational drones must follow several guidelines: 1) flight shall be restricted over private property with consent of the property owner; 2) flight is prohibited over public property, unless explicit permission is given; 3) the attachment of anti-personnel devices (projectile, chemical, electrical, directed-energy, explosive, and firearm) is prohibited; 4) flights must be below fifty (50) feet and remain clear of surrounding obstacles; 5) the operator must maintain a visual line of sight of the UAS at all times with vision unaided by any device other than corrective lenses; 6) flight is prohibited near or over gatherings of people; 7) daylight (official sunrise to official sunset) operations only; 8) careless or reckless operation is prohibited. It is clear that Manhattan has tried to create an ordinance that address all the problems associated with drones. They have even created more restrictions for “advance” drones.

In contrast advance drones must comply with the following requirements: 1) flights are prohibited over property zoned R-1, R-2, and R-3;⁶² 2) flights are limited over private or public property not less than two (2) acres in size with consent of the owner; 3) flights over roads, streets, sidewalks, railroads, and bike paths are prohibited; 4) flights must be below one hundred (100) feet; 5) the operator must maintain a visual line of sight of the UAS at all times with vision unaided by any device other than corrective lenses; 6) the attachment of anti-personnel devices (projectile, chemical, electrical, directed-energy, explosive, and firearm) is prohibited; 7) flight is prohibited near or over gatherings of people; 8) daylight (official sunrise to official sunset) operations only; 9) careless or reckless operation is prohibited; finally, commercial drones, under

⁶¹ Village of Manhattan, Manhattan Drone Regulations, (Accessed Last September 27, 2016) http://www.villageofmanhattan.org/index.asp?SEC=3B750702-0BDE-429D-BFE9-F5366835E495&DE=78B5D7B6-6640-4987-9292-50337D91FD66&Type=B_PR; Recreation use are for drones under 3 pounds, advance recreational use is for drones over 3 pounds but under 55 pounds, commercial use is all use that is not recreation in matter. Id.

⁶² R-1 Single-family residence district, R-2 Multi-family residence district, and R-3 Multi-family residence district Manhattan Illinois, Ordinance No. 4-4-1 B (2015)

the village ordinance must comply with FAA rules part 107, and provide the village clerk with a proof FAA remote pilot certification. The difference in the treatment of drones is the weight of the drones. The restrictions on advance drones are tighter than those of recreation drones. However, they do allow for a higher altitude of flight.

Unlike the federal and state laws, the ordinance of Manhattan is very broad, but still fails to address the problems created by drone usage. They almost mirror the federal regulations on drones. Local governments must strike a happy medium somewhere between the two extreme of a very specific ordinance and a very broad one.

As will any ordinance local governments must have the power to create the ordinances. Next this paper will evaluate the legal framework behind Pennsylvania's boroughs and townships ability to create ordinances.

D. Pennsylvania Boroughs and Township Power to Regulate⁶³

Township and boroughs must possess the legal authority, from the state, to create ordinances.⁶⁴ There are two different statutes that authorize both township and boroughs to create ordinances. Both of these statutes would allow Pennsylvania townships and boroughs to enact ordinances pertaining to drones.

Boroughs in Pennsylvania obtain their power from 8 Pa. Stat. and Cons. Stat. Ann. § 1202. This section outlines the specific powers of boroughs.⁶⁵ Boroughs have the broad powers

⁶³ This section is in response to a question posed, about Pennsylvania municipalities power to create drone ordinances, at the presentation of both the narrative and ordinance on 11/19/16

⁶⁴ "Borough or other municipal corporation is not sovereign with inherent powers, but, rather creature of state; as such, it is completely subject to state legislature's authority and may do only those things which legislature has placed in its power." Warner Cable Commc'ns Inc. v. Borough of Schuylkill Haven, 784 F. Supp. 203, 211 (E.D. Pa. 1992); "Municipal authorities, like any other municipal corporation, are agents of the state, invested with certain subordinate governmental functions for reasons of convenience and public policy. They are created, governed, and the extent of their powers determined, by the legislature." London Grove Twp. v. Se. Chester Cty. Refuse Auth., 102 Pa. Cmwlth. 9, 14, 517 A.2d 1002, 1004 (1986)

⁶⁵ 8 Pa. Stat. and Cons. Stat. Ann. § 1202 (West)

to create ordinances, from the operation of parking meters to the removal of dangerous structures.⁶⁶ Pertaining to drones, boroughs have the ability to create ordinances as necessary “for the health, safety, morals, general welfare and cleanliness and beauty, convenience, comfort and safety of the borough.”⁶⁷ As discussed previously in this paper, drones pose a unique problems that can harm both the safety and comfort of a community. Boroughs would be able to enact ordinances pertaining to drones to insure the safety and comfort of their communities. Like boroughs, townships also derive their power from statute.

Townships in Pennsylvania are divided in to two classes, first and second.⁶⁸ Statutes outline the power Townships of first and second class have to create ordinances.⁶⁹ In general Townships may create ordinances that maintain the peace of the community and safety of the citizens.⁷⁰ As with boroughs, townships would have the authority to create drone ordinances to ensure that their communities are safe, and peaceful places.

E. Effectiveness of Federal, State and Local Regulations

1. Federal Regulation

There is little evidence about the effectiveness of the FAA regulations. Since Part 107 only became effective August 29, 2016 there is little empirical evidence out there.⁷¹ However the FAA regulations do require the registration of drones over 0.55 pounds and pilot certifications for commercial drones. Evaluating how many drones have already been registered, and how many applications for remote pilot certifications have been filed, are a good yardstick to determine how well the regulations are being followed. The FAA already requires the

⁶⁶ Id.

⁶⁷ Id.

⁶⁸ See generally Title 53

⁶⁹ 53 Pa. Stat. Ann. § 56502 (West) (pertaining to townships of the first class); 53 Pa. Stat. Ann. § 66506 (West) (pertaining to township of the second class)

⁷⁰ Id.

⁷¹ Unmanned Aircraft Systems, FAA (August 29, 2016) <https://www.faa.gov/uas/>

registration of drones. As of September 16, 2016, there have been more than 550,000 registered with the FAA.⁷² Additionally, more than 13,710 people have applied to become remote pilots in command.⁷³ While these statistics do not tell how well the operational restrictions have been followed, they do show that the public is aware of the regulation and are at least complying with the registration requirement. As mentioned earlier, the Federal Government is not the only jurisdiction regulating drones; several States have also passed some form of laws pertaining to drones.

2. State and Local Effectiveness

Like the federal regulation, there is virtually no evidence out there about the effectiveness of drone regulations. This is simply due to the fact that drones, and the regulation of them, is such a new topic that is almost impossible to determine their effectiveness. One of the issue that plague both the state and local measure of effectiveness is the scope of current laws. As describe above most of the current laws are either very specific, regulation just one aspect of drones,⁷⁴ or very board.⁷⁵ It is impossible to get a good picture of the effectiveness of an ordinance when the ordinance either address nothing or everything at once.

V. Key Policy Concerns: Scope, Preemption, Funding, and Enforcement

When a local government creates any law, there are a host of policy considerations they are confronted with, regulations on drones is no different. Any governing body that wants to

⁷² Associated Press, *Over 550,000 drones registered with FAA just 9 months into program*, News Day, (September 16, 2016) <http://www.newsday.com/news/nation/faa-says-550-000-drones-have-been-registered-with-agency-in-9-months-1.12326724>

⁷³ Id.

⁷⁴ *Supra* Fn. 59

⁷⁵ *Supra* Fn. 15

regulate drones will be faced with three major policy concerns: scope, preemption, funding and enforcement.

A. Scope

Local government must keep the scope of the regulation in mind. The purpose of creating drone ordinances is to ensure the use of drones do not clash with the enjoyment of the community. Local governments must strike a balance between being over broad and too specific. As seen with the previous highlighted ordinances ones that are too specific or broad usually do not achieve their stated purpose. The drone ordinance must be tailored to the problems that are plaguing the local community. This cannot be achieved by a broad ban on drones within the community. Local government will need to take time and do some research to determine how to best regulate drones. Once the scope of the ordinance is determined, the local government must make sure not to run into any federal preemption issues.

B. Preemption

Local governments must be keenly aware of preemption when creating new ordinances. Preemption can trace its origins to The Supremacy Clause of the United States Constitution.⁷⁶ In the most basic terms preemption means if the local and federal government both try to regulate the same thing, the federal law will nullify the local law. There are two types of preemption that local governments must be aware of, expressed and implied. This paper will give a brief overview of both.

1. Expressed Preemption

⁷⁶ U.S. Const. art. VI, cl. 2

Expressed preemption is triggered by specific statutory language to the effect that state and local governments lack the power to regulate a specific area.⁷⁷ Congress has stated that “[t]he United States Government has exclusive sovereignty of airspace of the United States.”⁷⁸ However courts have failed to find this provision as an express grant of preemption and further assert that there is no expressed preemption anywhere in the Federal Aviation act.⁷⁹ Since courts are unlikely to find any expressed preemption in the Federal Aviation Act, we must discuss the other source of preemption.

2. Implied Preemption

Implied preemption comes in two varieties, conflict and field. Conflict preemption mandates that when a local and federal law conflict the federal law will prevail. Conflict preemption exists when “a state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress in enacting the federal law.”⁸⁰ Field preemption exists when “federal law so thoroughly occupies a legislative field ‘as to make reasonable the inference that Congress left no room for the States to supplement it.’”⁸¹ In order to demonstrate field preemption, the government must show that congress intended to fully occupy a field, that there is no room for additional state or local laws.⁸²

3. Preemption and Local Regulation

As discussed above, a local law must not run afoul of federal law, or it will run the risk of a preemption challenge. Part 101 and Part 107 lay out a comprehensive framework for the use of drones. While both parts are pretty expansive there are two arguments against preemption. First,

⁷⁷ Capital Cities Cable, Inc. v. Crisp, 467 U.S. 691, 699 (1984)

⁷⁸ 49 U.S.C. § 40103 (2016)

⁷⁹ Montalvo v. Spirit Airlines, 508 F.3d 464, 470 (9th Cir. 2007)

⁸⁰ Montalvo v. Spirit Airlines, 508 F.3d 464, 470 (9th Cir. 2007)

⁸¹ Id.

⁸² Capital Cities Cable, Inc. v. Crisp, 467 U.S. 691, 699 (1984)

as discussed earlier, courts have failed to find expressed preemption in the Federal Aviation Act.⁸³ Secondly, as expansive as the regulations from the FAA are, they do not cover all aspects of drone usage, and therefore field preemption would not apply.⁸⁴ As long as the local law did not come in direct conflict with a federal law⁸⁵, there should be no preemption problems. The FAA has even adopted an official position on this topic.

The FAA has stated that federal law would preempt certain local ordinances. Local ordinances that would try to regulate drones thought additional pilot training, or requiring additional safety equipment would likely be preempted.⁸⁶ Moreover the FAA suggests consultation with their agency for any local ordinance that sees to regulate “flight altitude, flight paths; operational bans; any regulation of the navigable airspace.”⁸⁷ During research into local drone ordinances, it was interesting to note that a great majority of them included language that would quite possibly run afoul of the Federal power. Many local ordinances, like ones discussed earlier in this paper, try to limit the altitude, flight paths, or create total operational bans. The ordinance previously discussed in East Goshen Townships, Pennsylvania limits drones to heights no more than to 200 feet above ground level. These are the exact actions that the FAA has stated may be preempted. At the very least local governments should consult with the FAA before passing such regulations. While certain laws are preempted by the FAA regulation, others are wholly within state and local government police power.

⁸³ Henry H. Perritt, Jr. & Albert J. Plawinski, *One Centimeter Over My Back Yard: Where Does Federal Preemption of State Drone Regulation Start?*, 14 NC . J. LAW. & TECH. 17–2 (December 2015)

⁸⁴ *Id.*

⁸⁵ e.g. creating a local ordinance that mandates that drones can fly up to 500 feet, or can be operated while not in the direct line of sight of the operator.

⁸⁶ “Courts have found that state regulation pertaining to mandatory training and equipment requirements related to aviation safety is not consistent with the federal regulatory framework.” Unmanned Aircraft Fact Sheet – FAA Airspace (December 17, 2015)

http://www.faa.gov/uas/resources/uas_regulations_policy/media/uas_fact_sheet_final.pdf

⁸⁷ *Id.*; “Federal courts strictly scrutinize state and local regulation of overflight.” *Id.*

The FAA is clear that local and state governments can regulate uses of drones that fall clearly within the “local police power.”⁸⁸ Areas that are traditionally left to states to regulate, such as land use, would not be preempted by the FAA regulations.⁸⁹ The FAA has also proposed several regulations that local governments may be interested in adopting⁹⁰: 1) requirement for police to obtain a warrant prior to using a UAS for surveillance; 2) specifying that UAS may not be used for voyeurism; 3) prohibitions on using UAS for hunting or fishing, or to interfere with or harass an individual who is hunting or fishing; 4) prohibitions on attaching firearms or similar weapons to UAS.

Much of the regulations from the FAA touch upon the major legal and social problems associated with drone usage. However, there is room for additional local regulations that can supplement the existing regulations, while not ruining the risk of a preemption challenge. It is clearly evident that while local governments must be careful when creating drone regulation, it is possible to craft regulations that address local problems, while not risking a preemptive challenge.

C. Enforcement

While operating drones may not be easy, the enforcement of any drone ordinance will not. The problem is simple, with the fast growth of drones, coupled with their size and speed it is almost impossible for local law enforcement to enforce any ordinance. Consider the following scenario. A drone owner is flying at 550 feet, while not in visual sight, and over 100 MPH ground speed. It would be nearly impossible for law enforcement to determine where the drone was or how fast it was moving simply from observation of its flight path. In fact, the FAA is already

⁸⁸ *Id.*

⁸⁹ Zoning, privacy, trespass, and law enforcement operations, are other areas that make the list of non-preempted areas. *Id.*

⁹⁰ Unmanned Aircraft Fact Sheet – FAA Airspace (December 17, 2015)

http://www.faa.gov/uas/resources/uas_regulations_policy/media/uas_fact_sheet_final.pdf.

request local law enforcement help with enforcing their regulations.⁹¹

The FAA suggests a number of ways that regulations can be enforced. These include interviewing of potential witnesses to violations, evaluating pictures from the site of the possible violation, and officer recording suspected violations.⁹² Local governments will need to evaluate and come up with intelligent ways to enforce their ordinances. Once the enforcement aspect is determined, local governments must determine the best way to fund such ordinances.

Local governments could require local operators to submit their information about their drones to local databases. This would create an easily accessible registry that local law enforcement could use to identify the owner of a drone. Local governments could also require law enforcement to undergo special training, that will highlight the negative and positive aspects of drones, while giving advice on how to better enforce the regulations. Addition, like the FAA, local lawmakers could create quick reference guides to help law enforcement.⁹³ While enforcing local ordinances can be problematic, just picking a department to handled enforcement is a challenge.

There are not many, or even any, local municipalities that have a department of aviation. Therefore, local governments would need determine who is best suited to enforce drone ordinances. While the police department is an obvious source of ordinance enforcement this does not work for the municipalities that do not have a police department. The local government would need to determine who would hold the power to enforce drone ordinances. In fact, the

⁹¹ Law Enforcement Guidance for Suspected Unauthorized UAS Operations, FAA, (August 11, 2016), https://www.faa.gov/uas/resources/law_enforcement/media/FAA_UAS-PO_LEA_Guidance.pdf; Although the FAA retains the responsibility for enforcing FAA’s regulations, FAA aviation safety inspectors, who are the agency’s principal field elements responsible for following up on these unauthorized and/or unsafe activities, will often be unable to immediately travel to the location of an incident.” Id.

⁹² Id.

⁹³ The FAA has created a law enforcement reference card, to assist law enforcement with investigation and reporting requirements of UAS regulations. The card can be access in PDF from here: https://www.faa.gov/uas/resources/law_enforcement/media/FAA_UAS-DRONE-LE_reference_card.pdf

model ordinance attached to this narrative allows the local government to determine who would enforce this ordinance. While determining who to enforce the ordinance is a problem local governments must face they also need to determine how to enforce their ordinances. Once municipalities are able to determine how and who will enforce their drone ordinances.

Municipalities must determine how to best fund their ordinance.

D. Funding

Local governments may run into several obstacles when trying to fund drone regulation. There is only one main way to fund drone ordinances and that is through fines. While a registry scheme would be a way to fund drone regulation that would most likely be preempted by the federal registry. However local governments could keep a registry of drone users within their community. This would not be like the federal registry; the user would simply have to submit the information already issued by the FAA to the local government in order to keep track of local users. There are however several other options.

A local ordinance could create a fee for local businesses that would like to use drones for commercial purposes. This would not amount to a registry, but simply a way to ensure that businesses are complying with federal drone regulation. Businesses interested in using drones would need to register with the local department that oversees drone enforcement. Upon submitting all the proper paper, and paying a small fee, the business owner could use his drone within the local community. This fee could be sent directly to the local government to help pay for the ordinance.

Fines for violation of local drone ordinances would be one of the best sources for funding. With the rapid increase in drone ownership, even if only a small percentage of drone owners violate an ordinance, that could mean a steady stream of fines to support the ordinance.

Also, local governments could impose a fee for any emergency service response triggered by drones. This would at least ensure that the community is not incurring extra costs to cover responses to accidents.

Moreover, drone ordinance would likely not cost local governments much to enforce. There are few proactive steps that need to be taken in order to enforce a drone ordinance. In Pennsylvania townships and municipalities, at all levels, are able to create fines for violations of their ordinances.⁹⁴ While not much small fines, over time, could lead to a fully self-funded ordinance.

VI. Conclusion

The first thought when discussing sustainability is the environment, this is simply not the case. Sustainable development has many different aspects.⁹⁵ Sustainability is not only geared towards creating a sustainable environment but also policies that create happier and healthier communities. Drones are unique because they incorporate several different aspects of a sustainable community. Drones touch upon privacy concerns, environment impacts, public safe concerns, and over all happiness of the community. Creating workable and intelligent drone ordinances is just one aspect of creating sustainable communities. While creating drone ordinances local governments must keep one very factor in mind; integrated decisionmaking.

Integrated decisionmaking simply means that local governments must not only focus on one principle when creating drone ordinances.⁹⁶ Local governments must combine several

⁹⁴ See generally 53 Pa. Stat. Ann.

⁹⁵ "Sustainability is a framework for decision-making based on promotion of environmental protection, social justice, and economic/financial responsibility at the same time, with the overall objective of promoting human well-being for present and future generations." AMERICAN BAR ASSOCIATION TASK FORCE ON SUSTAINABLE DEVELOPMENT, FINAL REPORT 2 (July 31, 2015), http://www.americanbar.org/content/dam/aba/administrative/environment_energy_resources/resources/final_sdtf_ab_a_annual_08-2015.authcheckdam.pdf

⁹⁶ "Integrated decisionmaking would ensure that environmental considerations and goals are integrated or incorporated into the decisionmaking processes for development, and are not treated separately or independently."

different principles when creating drone, or for that matter, any ordinance. Local governments must consider the environmental, economical, and social impacts together when creating drone ordinances. Consider one at a time can lead to local governments missing the mark, and creating an unworkable ordinance. The goal of this ordinance is to create an happy and healthy community that can used drones in a positive way, with as little negative impacts as possible.

Drone regulation on the local level is needed. The problems that drones can cause are many. Drones have the ability to affect almost every part of a community. From the privacy of your home, to the scene of emergency, soon no place may be safe from drones. However, drones can have many positive impacts on the local community. Local governments must strike a balance between the two. The one way to counteract some of the negative aspects of drones is to have strong and intelligent local ordinances. During the decision-making process, local lawmakers must be keenly aware of the policy concerns behind drones, the existing federal regulations, and the positive benefits drones can have. If all these are considered in an integrated decisionmaking model, sustainability is truly achievable within a community.

John C. Dernbach, *Achieving Sustainable Development: The Centrality and Multiple Facets of Integrated Decisionmaking*, 10 IND. J. GLOBAL LEGAL STUD. 247 (2003)

ORDINANCE (NUMBER)

**AN ORDINANCE OF (MUNICIPALITY) AMENDING THE (MUNICIPAL CODE) BY
ADDING (NEW CODE SECTION NUMBERS), REGULATIONS RELATED TO THE
OPERATION OF UNMANNED AERIAL VEHICLES.**

**BE IT ORDAINED BY THE (MUNICIPAL LEGISLATIVE BODY) OF
(MUNICIPALITY):**

Section 1.

WHEREAS – the use of unmanned aerial vehicles in the United States is becoming increasingly popular and affordable;

WHEREAS – the Federal Government through the Federal Aviation Administration regulates the national airspace;⁹⁷

WHEREAS – the Federal Aviation Administration has allowed for some regulation of unmanned aerial vehicles by state and local governments;⁹⁸

WHEREAS – the use of unmanned aerial vehicles can make search and rescue and many other emergency responses much quicker and more efficient;

WHEREAS – responsible and safe drone use is an increasingly popular recreational activity, particularly among amateur photographers, and promotes technological innovation, economic growth and job creation;⁹⁹

⁹⁷ State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet, Federal Aviation Administration Office of the Chief Counsel, 12/17/2015.

⁹⁸ *Id.*

⁹⁹ Proposed amendment to title 10 chapter 10-36 of the municipal code, City of Chicago 7/29/2015.

WHEREAS – unmanned aerial vehicles can be equipped with highly sophisticated surveillance technology that threatens privacy;

WHEREAS – unmanned aerial vehicles are capable of carrying many illicit or dangerous objects such as drugs or firearms;

WHEREAS – the prevalence and unregulated use of drones throughout (municipality) poses a threat to the public health, safety and welfare and has created public health, safety and welfare concerns, including, but not limited to, privacy, nuisance and trespass concerns.

Section 2. (Municipal code number) of (municipal code name) and any other ordinance that is inconsistent with this ordinance is repealed.

Section 3. (Municipal code number) of the (Municipal code name) is amended to add a chapter to read:

Definitions.

Unless the context clearly indicates otherwise, the following words or phrases used in this Chapter shall have the meanings given to them in this section

“Commercial use.” Any use of a UAV within (political subdivision) for a commercial purpose including aerial photography, aerial mapping, geospatial imaging.¹⁰⁰

“Commercial user.” Any person operating a UAV for Commercial Use.¹⁰¹

“Cooperating municipality.” A municipality which has entered into an Intergovernmental Agreement, as defined by this section, with another municipality.

“Database.” The information collected by the Department for permitting and registration.

“Department.” (whichever government agency, department, etc. which the political subdivision decides it wishes to have administer the registration and permitting requirements set forth below.)

¹⁰⁰ Ordinance 691, Paradise Valley, California. <http://uavs.insct.org/local-regulation/>.

¹⁰¹ Id.

“Emergency personnel.” Police, Emergency Medical, or Fire Department personnel in performance of their official duties, or any person authorized and requested by Police, Emergency Medical, or Fire Department personnel to assist in an emergency situation.

“Emergency situation.” Any event to which emergency personnel have been dispatched or are present.

“Emergency zone.” Any location which is the site of an emergency situation and which emergency personnel have designated, cordoned off, or otherwise taken authority over for the duration of the emergency situation.

“FAA.” The Federal Aviation Administration of the United States.

“Harass.” To approach or be near any person or animal for the purpose of annoying, intimidating, or otherwise disrupt that person or animal.

“Intergovernmental agreement.” Any compact, contract, or document entered into by this municipality and a cooperating municipality, which governs the use of any UAV’s by any person within this municipality and the cooperating municipality.

“Municipal worker.” Any person who is employed by this municipality or any emergency personnel dispatched within this jurisdiction and whose operation of a UAV is in pursuance of their employment duties.

“Operate.” To fly, control, or otherwise manipulate a UAV.

“Private Land.” means any land which is owned by a private person or which is owned by a public body but which the general public does not have access to such as schools or government buildings, or any airspace above that land up to four hundred feet.

“Public land.” Any land which the general public would be free to enter onto such as a public right of way or public park, including any airspace above that land up to four hundred feet in altitude.

“Surveillance.” The gathering, without permission, of visual images, physical impressions, sound recordings, data or other information involving the private, personal, business or familial activities of another person, or that otherwise intrudes upon the privacy, solitude or seclusion of another person, regardless of whether a physical trespass onto or above real property owned, leased, or otherwise lawfully occupied by such other person.¹⁰²

“UAV.” Any device, object, or contrivance which can be flown without a pilot or operator in physical contact with any part of the device, object, or contrivance.

“Utility.” Any line, pole, device or object that is above ground and used for the distribution of electricity, gas, oil, telecommunications, or water.

¹⁰² City of Chicago, Proposed Amendment.

“Weapon.” Any instrument, article or substance that, under the circumstances in which it is used, attempted to be used, or threatened to be used, is readily capable of causing death or serious physical injury.

§ 101 – GENERAL USES PROHIBITED

(a) General Rule – an individual may not operate a UAV:

1. Which has a weapon attached to any portion of the UAV.
2. To harass.
3. For the purpose of surveillance, when the target of surveillance would have an expectation of privacy.
4. In a reckless manner that causes a real or reasonably perceived threat to persons or property or actually causes damage to persons or property.
5. In a careless manner that causes a real or reasonably perceived threat to persons or property or actually causes damage to persons or property.
6. Above four hundred feet in altitude from the ground.
7. Within five feet of a utility.
8. In violation of any FAA regulation.

§ 102 – USE ON PRIVATE PROPERTY

(a) Except as provided in subsection (b) and (c), an individual may not operate a UAV above private property between zero feet and four hundred feet in altitude from the ground without express permission from the owner of that private property which the UAV is operating above.

(b) Notwithstanding subsection (a), an individual may operate a UAV between zero feet and four hundred feet in altitude above private property if they:

1. Are the owner of that private property.
2. Have the express permission of that private property.

(c) Notwithstanding subsection (a), a municipal worker may operate a UAV without the express permission of the owner of private property if either of the following conditions are met:

1. The operation is for the resolution of an emergency situation and the operation takes place within an emergency zone or within a reasonable distance from an emergency zone.
2. The operation is by law enforcement personnel executing a valid warrant.

§103 – USE ON PUBLIC PROPERTY

(a) A person may not operate a UAV on public property unless all of the following conditions are met:

1. The person has a permit issued by the department for that use.
2. The person is not operating the UAV within twenty-five feet of a utility.

(In the alternative)

§103 – USE ON PUBLIC PROPERTY

(a) A person may not operate a UAV on public property.

§104 – EMERGENCY SITUATIONS

(a) General Rule – except as provided in subsection (b), no person may operate a UAV in any of the following conditions:

1. Within fifty feet of the emergency zone.
2. Within two thousand feet of any UAV or other aircraft being operated by emergency personnel.
3. If the operation of a UAV in any other way interferes with the resolution of the emergency situation.

(b) Exception – notwithstanding subsection (a), a municipal worker may operate a UAV in an emergency zone for the purpose of resolving an emergency situation, as long as the operation is in accordance with the policies set forth by the department.

§ 105 – USE FOR COMMERCE

(a) General rule – except as provided in subsection (b), a person may not operate a UAV for the purpose of commercial use within the limits of (political subdivision) unless all of the following conditions are met:

1. The commercial user has registered as a commercial user with the department and been issued a commercial use permit.
2. At least four hours prior to operating the UAV the commercial user informs the department (or another agency, office, etc. which the political subdivision would like to be informed) of the location of its operation and the approximate duration of its operation.

- (b) Exception – notwithstanding subsection (a), a person may operate a UAV for commercial use if that use is in accordance with an intergovernmental agreement and the person operating the UAV is a permit holder from the cooperating municipality.

§106 – USE BY MUNICIPAL WORKERS

- (a) No municipal worker may operate a UAV for surveillance unless such surveillance is in execution of a valid search warrant.¹⁰³
- (b) A municipal worker may not operate a UAV without either
1. Satisfying the requirements for a UAV operator in 14 CFR 107; or
 2. A certificate of waiver or authorization issued by the FAA.¹⁰⁴

§ 107 – SEIZURE OF EVIDENCE¹⁰⁵

- (a) General rule – if (municipality’s police department) or an enforcement officer for the department, have a reasonable basis to believe that any UAV is or has been operation in violation of this section, that UAV may be seized by an authorized enforcement official. The seizure may last until the owner of the UAV reimburses the (municipality) for the actual costs incurred and any reasonable fee determined by the department, in connection with the seizure and storage of the UAV.
- (b) Reimbursement required – any person who has had their UAV seized shall reimburse the (municipality) for the actual costs incurred and any reasonable fee determined by the department, in connection with the seizure and storage of the UAV.

¹⁰³ As courts, have not yet clearly weighed in on 4th amendment implications from drones, this is to protect the municipality from potential liability.

¹⁰⁴ https://www.faa.gov/uas/beyond_the_basics/#gov

¹⁰⁵ We have envisioned the reasonable basis here to be the Constitutional standard (or if there is a stricter statutory standard applicable) so as to avoid any potential liability from the seizure.

§ 108 – PENALTIES

- (a) A first violation of this chapter shall be a civil violation with a fine not to exceed five hundred dollars.
- (b) Any violation which is either:
 - 1. A subsequent violation; or
 - 2. A violation of § 1(a)(1)-(4).

The charge or violation shall be (whatever the maximum penalty a municipality can enforce).

§201 – COMMERCIAL PERMITS

- (a) General Rule – the department shall issue a permit for commercial use when the commercial user has applied for such a permit and all of the following have occurred:
 - 1. The commercial user has paid all the fees required for the commercial use permit.
 - 2. The commercial user has reasonably demonstrated to the department that they are authorized by the FAA for commercial use according to 14 CFR 107 or have been granted a certificate of waiver or authorization by the FAA.¹⁰⁶
 - 3. The commercial user gives the department the FAA registration information on the UAV to be used for commercial use.
- (b) Written explanation required – if the department determines not to issue a permit under subsection (a), the department shall provide a written explanation of why the permit was denied.
- (c) Fees – the department may charge reasonable fees for any of the following:
 - 1. The application for a permit to be issued under subsection (a).
 - 2. The issuance of a permit under subsection (a).

¹⁰⁶ FAA requirements, https://www.faa.gov/uas/getting_started/fly_for_work_business/

§202 – PUBLIC PROPERTY PERMITS

- (a) General Rule – the department may issue a permit to any person to operate a UAV on public property if the department determines the issuance will not be harmful to the public.
- (b) Issuance – to determine if the issuance will be harmful to the public, the department shall consider the following factors:
1. The location on the public property where the person will operate the UAV.
 2. Any potential large gatherings of people near the location of operation on the public property.¹⁰⁷
 3. The UAV experience of the applicant.
- (c) Written explanation required – if the department determines not to issue a permit under subsection (a), the department shall provide a written explanation of why the permit was denied.
- (d) Fees – the department may charge reasonable fees for the issuance for a public property permit. This fee may be different based on whether the use will be recreational or commercial.

¹⁰⁷14 CFR 107.39 already provides a general prohibition against flying over any person not directly involved in flying the UAV or who is protected by a building or vehicle.

§203 – EMERGENCY GUIDELINES

- (a) The department shall issue guidelines to all municipal workers for the use of a UAV during an emergency situation.

§204 – INTERGOVERNMENTAL AGREEMENTS

- (a) A municipality may enter into an intergovernmental agreement with a cooperating municipality if all of the following conditions are met:
 1. The cooperating municipalities have similar rules and permitting requirements.
 2. The intergovernmental agreement contains a provision granting reasonable access to information within the cooperating municipality's database in the event of an incident by a permit holder from the cooperating municipality.
 3. The intergovernmental agreement is in accordance with all substantive and procedural requirements of any local, state or federal law.

§ 205 – SEIZURE HEARING

- (a) Notification – following a seizure of a UAV under section 107, the department shall notify the owner of the seized UAV within seven calendar days and give the owner an opportunity for an administrative hearing to review the appropriateness of the seizure.
- (b) Return of UAV – if it is determined that the seizure of the UAV was not reasonable, the department shall return the UAV to the owner as soon as reasonably possible.

Section 4. If any section, subsection, sentence, clause, phrase or portion of this ordinance or any part of these amendments to (municipal code name) adopted herein by reference is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 5. The provisions of this ordinance will be effective 60 days after its passage.