Countdown to Blastoff: Florida's Deadline for Spaceport Zoning Laws

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I. INTRODUCTION

Today, approximately 238 general aviation aircraft will take off and land from Naples Municipal Airport, the self proclaimed “best little airport in the world.”¹ Many of the planes flying in and out of the Paradise Coast are fixed-wing, single engine prop planes, which are used for sightseeing, pilot training, and personal recreation.² While still the sun-drenched beaches, world class shopping, challenging golf courses, and the countless amenities of Naples, Florida lure the ultra wealthy and their private, turbofan jets.³ Flying in and out of Naples Municipal Airport (“KAPF”) offers scenery unparalleled to many other airports in Florida, with lush wetlands and beautiful coastline views immediately visible once airborne. The airport itself offers pilots conveniently long runways, premier aircraft services, sophisticated navigation systems, and many more aviation conveniences.⁴ But whether it is a four-seat trainer or a multi-million dollar luxury jet, the flight path for a typical approach to runway twenty-three at KAPF brings low flying aircraft over the densely populated Golden Gate and Briarwood communities of northeast Naples.

³ Id.
⁴ Id.
Approximately six miles northeast of the airfield sits Golden Gate Estates, one of the fastest growing residential communities in the Naples real estate market.\textsuperscript{5} In fact, it is estimated that over sixty percent of all Collier County residents will reside in this area east of Interstate 75 by the year 2020.\textsuperscript{6} Residents in Golden Gate Estates such as Paul Darrow however, find themselves reaching for ear plugs every time another aircraft is cleared for takeoff or landing at KAPF.\textsuperscript{7} One of the many outspoken residents that joined a coalition to reduce the amount of air traffic noise in the community, Darrow claims that “[the rumble from the planes] is like every five minutes, and they’re pretty low…some are pretty large planes and I could pretty much hit them with a slingshot.”\textsuperscript{8} Tom Laughlin, a nearby homeowner reports that ”[he has] been startled several times by planes in the night…[i]t is so intense, it is so noisy, that you cannot help but snap your head up and look; what is that going over head?”\textsuperscript{9} As a result, these residents have made every attempt possible to try and restrict airport operations to an absolute minimum.\textsuperscript{10} These complaints have lead to restrictions on the size of aircraft allowed to operate at KAPF, as well as placing curfews on aircraft operations.\textsuperscript{11} With these restrictions in place, the hopes of one day attracting a commercial carrier such as Delta to the Naples area is somewhat squashed.\textsuperscript{12}

\textsuperscript{6} Id.\textsuperscript{7} Aisling Swift, \textit{Naples Airport Runway Extension Brought More Noise Complaints, For a Month}, Marco Eagle (Mar. 2, 2012).
\textsuperscript{8} Id.
\textsuperscript{10} Id.
\textsuperscript{11} Jenna Buzzacco-Foerster, \textit{Naples Airport Attempting (Again) to Land Commercial Airline Service}, Marco Eagle (Apr. 7, 2010).
\textsuperscript{12} Id.
Perhaps, however, the residents of Golden Gate Estates and the surrounding communities are trying to have their cake and eat it too. In 1987, Collier County threw caution to the wind and moved to rezone the land immediately north and adjacent the airport from light industrial and agricultural uses to permit planned unit developments ("PUD") consisting of single family and multifamily residential units.\textsuperscript{13} The City of Naples Aviation Authority ("NAA") argued that this type of development was incompatible for use adjacent an airport and that noise levels generated by the airport would make these PUDs an unpleasant place to live.\textsuperscript{14} Nonetheless, the court held that while zoning of this nature can be controversial, there was substantial, competent evidence to support the county's rezoning decision.\textsuperscript{15}

Despite the court’s ruling, development progressed northeast of the airport and noise complaints started to become the biggest issue in Collier County. In an attempt to stifle the noise issues at KAPF, The NAA implemented extensive Federal Aviation Administration ("FAA") noise abatement programs.\textsuperscript{16} Most important is that the FAA in February 1989 conducted research pursuant 14 C.F.R. part 150 to determine how the noise at KAPF affected nearby residents. 14 C.F.R. part 150 “prescribes single systems for—(a) measuring noise at airports and surrounding areas that generally provides a highly reliable relationship between projected noise exposure and surveyed reaction of people to noise; and (b) determining exposure of individuals to noise that results from

\textsuperscript{13}City of Naples Airport Auth. v. Collier Dev. Corp., 513 So.2d 247, 248 (Fla. 1st DCA 1987).
\textsuperscript{14}Id.
\textsuperscript{15}Id. at 249.
the operations of an airport." This study gave the City of Naples and Collier County the necessary information to properly zone the airport with an overlay noise ordinance, prohibiting future noise-sensitive land uses near the airport and requiring dedication of aviation easements and/or non-suit covenants. However, this overlay was put in place too late to fully benefit the community.

The foregoing is a brief example of how airport and community planning are intertwined; meaning municipalities must implement zoning regulations in a timely manner or else incompatible land uses may surround the airport and as a result eliminate any chances for further airport development. Generally, land around an airport is the proverbial “gold mine” for developers as it provides the contiguous open-space that an airport can provide, particularly in the midst of heavily-populated areas. Furthermore, when airports are not profitable for the agencies that operate them, and a community’s resources are drained, new residential and commercial developments can be a source of revenue for those communities. One commentator indicated that

Most major airports were built and designed in the 1930s and did not incorporate plans for future growth or adequate buffer zones to insure compatibility with adjacent uses. More importantly, from the standpoint of future expansion, most communities had not enacted zoning regulations which might have prevented residential and commercial development from encroaching on airport borders. [Thus,] airports in the United States have become ‘bulls eye’ facilities with insufficient buffers between airports and adjacent incompatible land uses.”

19 Id.
21 Id.
Consequently, unless there are stringent zoning laws in place, the temptation to improperly develop airport adjacent land is too tempting for developers and governments. Unfortunately, the City of Naples and Collier County will forever serve as a reminder for local governments to have foresight for the future of aviation in the community and to implement zoning laws before development renders them useless.

Nonetheless, many Florida municipalities that are still footing the bill for past mistakes in airport zoning, may now have a chance to redeem themselves. The new race to space is coming to the State of Florida and every local government is at the ground floor for development. The private exploitation of space, be it for tourism or payload launches, has been gaining immense traction nationwide ever since the retirement of the Space Shuttle program in 2010.\textsuperscript{23} In that, private launch companies like SpaceX and Sir Richard Branson’s Virgin Galactic has signed up hundreds of people for $200,000 suborbital flights, and the European Aeronautic and Defense Company has even been studying the feasibility of a space hotel.\textsuperscript{24} Industry forecasters predict that space tourism, like early airline travel, initially will be reserved for wealthier individuals, but that nearly 13,000 passengers may participate in orbital and suborbital space tourism by 2021, creating approximately $700 million in revenue.\textsuperscript{25}

The emergence of the private spaceflight industry has got lawmakers in Tallahassee excited about the economic frontier space now poses for Florida. As a result, they are making every effort to lure developing space enterprises to the State. For instance, Florida was one of a handful of states to pass a law requiring informed consent for

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  \item \textsuperscript{23} Timothy M. Ravich, 2010 Space Law in the Sunshine State, 84 Fla. B.J. 24, 24 (2010).
  \item \textsuperscript{24} Id. (citing see generally Virgin Galactic, http://www.virgingalactic.com).
  \item \textsuperscript{25} Id. (citing Futron Corp., Suborbital Space Tourism Demand Revisited 4 (Aug. 2006), available at http://futron.com/pdf/resource_center/white_papers/SpaceTourismRevised.pdf.).
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spaceflight, which releases spaceflight carriers from liability for injury or death arising from “the inherent risks of spaceflight activities.”

Lawmakers are hoping that these pro-business space laws will be a feather in Florida’s cap when companies like Virgin Galactic and Scaled Composites come looking for a place to plant a space hub.

In 2010, the state legislature recognized Florida’s potential as a platform for global, private aerospace activities by enacting the Space Florida Act, F.S. §331.302(1) (2010), which declares “the aerospace industry of this state [to be] integral to the state’s long-term success in diversifying its economy and building a knowledge-based economy that is able to support the creation of high-value-added businesses and jobs.”

The nucleus of the Space Florida Act is “Space Florida,” an independent district created to be the representative for aerospace activities and the liaison between federal and state agencies, the military, universities, and the private sector. Through its president, board of directors, and committees, Space Florida will be attracting, retaining, and growing a healthy space and aeronautics industry in Florida. As a result, Space Florida has significant authorities and economic development powers as a matter of statutory law.

Nonetheless, Space travel brings with it a number of challenges for the state, namely, how can “spaceports” successfully be incorporated into Florida communities? While similar to airports, spaceports present unique land use challenges, most of which are new to the majority of Florida municipalities. In that, the implementation of increased requirements for runways, infrastructure, noise abatement, environmental constraints,

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26 Fla. Stat. §331.501(2)(c) and (3)(b) (2010).
28 Id.
29 Id.
30 Id.

Now is the time for the Florida legislature to help local governments plan for and integrate spaceports into their communities. But what can be done this early in the space race to prevent land use issues with spaceports? The President and CEO of Space Florida, Frank DiBello, commented in June 2013 that spaceports “ought to be compared to a commercial-aviation field...[in other words], rocket launches are becoming routine, and the need to establish launch sites miles from human habitation — in case the rocket blows up — is over.”\footnote{32 Mark Matthews & Kevin Spear, \textit{Space Florida Says Launch Pad is Like an Airport}, Orlando Sent. (June 12, 2013) (available at http://articles.orlandosentinel.com/2013-06-12/news/os-spacex-shiloh-launch-closure-20130528_1_orbital-sciences-launch-complex-space-florida/).} Florida, thus finds itself in the same situation it did nearly seventy years ago, as airports were being introduced to the State. The Florida legislature enabled municipalities to zone for airports through the “Airport Zoning Law of 1945,” thus allowing busy, international airport to be conveniently located in heavily populated areas, while being compatible with nearby land uses.\footnote{33 Fla. Stat. §333.14 (2013).} Likewise, zoning enabling legislation and regulation is needed such that local governments can properly integrate spaceports into Florida communities, and as a result make spaceports convenient and economically stimulating for urban and rural areas alike.

II. THE MODEL: FLORIDA’S AIRPORT ZONING LEGISLATION\footnote{34 1945 Fla. Laws ch. 333.}
A. The Power to Zone: Preventing Airport Hazards and Incompatible Uses

The FAA creates and enforces standards for the engineering, design, and construction of various airport-related equipment, facilities, and structures; however, the FAA does not have the power to prohibit or limit proposed construction it deems dangerous to air navigation and aircraft operations. Regulation of land near airports such as this is left to states and usually, in the absence of state preemption or the creation of some special state land use airport authority, is exercised by local zoning ordinances. Municipalities may regulate land adjacent an airport via zoning regulations pursuant only to the authority granted to local governments by the state. This authority is granted to local governments through either a state statute or a state constitutional provision.

Thus, through the “Airport Zoning Law of 1945” (“Airport Zoning Law”) the Florida legislature granted to its municipalities the power to zone for airports. Specifically, the statute provides that, “[i]n order to prevent the creation or establishment of airport hazards, every political subdivision having an airport hazard area within its territorial limits shall adopt, administer, and enforce, under the police power and in the manner and upon the conditions hereinafter prescribed, airport zoning regulations for such airport hazard area.” The legislature intended for this statute to be broad reaching, as they further empowered political subdivisions when airport hazards are “located wholly

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36 Id.
37 Id. (citing Fountain v. City of Jacksonville, 447 So. 2d 353 (Fla. 1st DCA 1984)(finding that an “overlay zone” controlling the development and use of land in the vicinity of an airport a zoning ordinance and invalid for failure of the municipality to follow the procedural requirements for the adoption of zoning ordinances).
or partially outside the territorial limits of said political subdivision. In that, by either interlocal agreement or the creation of a joint airport zoning board, municipalities are given the power to work in concert to adopt, administer, and enforce airport zoning regulations applicable to the airport hazard area.

As a result, airport zoning boards have become quite prevalent in the State of Florida, both on the city and county levels. And perhaps in an attempt to create uniformity among these zoning boards, the legislature has put noticeable effort into pinpointing what is considered an “airport hazard.” Through the “definitions” statute, the legislature attempted to classify these “hazards” as:

“any structure or tree or use of land which would exceed the federal obstruction standards as contained in 14 C.F.R. ss. 77.21, 77.23, 77.25, 77.28, and 77.29 and which obstructs the airspace required for the flight of aircraft in taking off, maneuvering, or landing or is otherwise hazardous to such taking off, maneuvering, or landing of aircraft and for which no person has previously obtained a permit.”

In the “definitions” statute of the “Airport Zoning Law,” the language seems to only challenge those land uses that would obstruct or otherwise hamper an airplane from landing, taking off, or maneuvering around an airport. However, further on in the law, there is a shift in the language that implicates that proximity to an airport may be hazardous to property owners as well. The statute states in part that:

“an airport hazard endangers the lives and property of users of the airport and of occupants of land in its vicinity and also, if of the obstruction type, in effect reduces the size of the area available for the taking off, maneuvering, or landing of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein.”

40 Fla. Stat. §333.03(b) (2013).
Here, the language of this provision seems more balanced, as it attempts to protect property owners from the adverse affects of airports hazards while supplying municipalities with the means by which to allocate the availability of land necessary for airport safety and maneuverability.

It is important to note, however, that in order to prevent an “airport hazard,” a municipality must consequently eliminate proximate land uses that are incompatible with the continuation of normal airport operations including the landing and takeoff of aircraft.\textsuperscript{44} While not enumerated as an “airport hazard,” incompatible land uses are hazardous for airport operations because of the potential noise and environmental issue that may arise. In that, if incompatible land uses are placed adjacent an airport, noise and environmental complaints will surely impact airport operations through regulations and restrictions. The legislature formally recognized this factor and declared that the removal of particular land uses serves a public purpose, in that:

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“(a) That the creation or establishment of an airport hazard and the incompatible use of land in airport vicinities are public nuisances and injure the community served by the airport in question;  
(b) That it is therefore necessary in the interest of the public health, public safety, and general welfare that the creation or establishment of airport hazards and incompatible land uses be prevented; and  
(c) That this should be accomplished, to the extent legally possible, by the exercise of the police power, without compensation.”\textsuperscript{45}
\end{quote}

This provision of the statute tends to be quite airport friendly, as it justifies municipalities in condemning incompatible nearby land uses as a reasonable and proper exercise of

\textsuperscript{44} Fla. Stat. §333.01(5) (2013).

\textsuperscript{45} Fla. Stat. §333.02(1) (a)-(c) (2013).
police power. Thus, municipalities are given a great deal of power when it comes to preventing “airport hazards,” through zoning and condemnation.

B. The Primary Benefit of Zoning Laws: Protecting Communities and Fostering Airport Development

Municipalities in a sense serve two masters: aviation and the community. Nevertheless, the proper zoning laws are the vehicles for making these two entities mesh. Zoning generally works because it controls incompatible land uses and keeps community tension at bay. Incompatible uses have been determined by the “Airport Zoning Law” as “uses, activities, or construction within runway clear zones, including uses, activities, or construction in runway clear zones which are incompatible with normal airport operations or endanger public health, safety, and welfare by resulting in congregations of people, emissions of light or smoke, or attraction of birds.” In practice, however, residential encroachment is the most prevalent form of an incompatible land use. In other words, while many airports are under significant pressures to expand, most are surrounded by encroaching land uses that hinder or prevent growth plans. Sometimes it only makes sense to surround the airport with

47 See Broward County v. Ellington, 622 So. 2d 1029 (Fla. 4th DCA 1993) (finding that there where there was a reasonable necessity for the taking of Ellington’s property due to an airport expansion project, the County could condemn the property). See also Test v. Broward County, 616 So. 2d 111, 114 (Fla. 4th DCA, 1993) (finding that Broward County was sanctioned to condemn Test’s residential property adjacent the airport for airport expansion purposes, due to the language of Fla. Stat. §333.02(3) (2013), which declares the removal of a particular use as serving a public purpose). The court clarifies the relationship between airport zoning and condemnation. In both cases, the County was attempting to rezone an area directly west of Fort Lauderdale – Hollywood International Airport, from residential to commercial. Evidence was presented that sheds light on how the power to zone carries over much power to condemn. In that, here the court found that merely rezoning the property for commercial use would not be effective; rather, it was necessary to condemn appellee’s property to guarantee the resulting commercial uses were airport related and compatible with airport operations.
development, as the airport is an economical hub for the community. Nonetheless, if proper zoning laws are put into place, the airport-residential relationship can work.

For example, in 2008, the Miami-Dade Aviation Department commissioned a study to determine to what extent the Miami-Dade County Airport System (Miami International Airport and 5 smaller, general aviation airports) impacted South Florida’s economy.  The study indicated that overall, the aviation industry generated 282,000 jobs, over $1 billion of state and local taxes, and $645.5 million of federal aviation-specific taxes. Miami-Dade Aviation Department’s in-house statistics indicate that in 2012, Miami International Airport (“MIA”) handled over 387,000 flights, managing over 39.5 million passengers. Among U.S. airports, MIA ranked as the number 1 busiest airport for international freight operations and number 2 for international passengers.

The infrastructure needed to support MIA is significant. The airport consumes 3,230 acres of precious Miami-Dade property, of which provides space for a 259 room hotel, a total of 8,724 parking spaces, a 3.4 million square foot rental car center, an elevated train that connects MIA with the rental car center and Miami Intermodal Center, and a sprawling passenger terminal which occupies over 7.5 million square feet of space and houses nearly 70 designer shops and 70 restaurants. MIA’s cargo facilities encompass 18 cargo buildings with over 3.4 million square feet of warehouse, office

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50 Id.
52 Id.
53 Id.
What is even more notable is that the airport maintains four runways, each over a mile long, with the longest being 13,000 feet long.55

The foregoing showcases MIA as a major engine driving the economy and culture of South Florida. Consequently, residential development around MIA would seem logical and desirable, giving airport employees a short commute to and from work. Even businesses have much to gain from operating near the airport, as airport employees and passengers are optimum clientele for hotels, restaurants, rental car agencies, apparel stores, etc. Furthermore, despite its already gargantuan size, the airport will be expanding, adding more room additional airlines, etc. In a situation like this, however, urban and commercial development surrounds the airport, and then residents and business owners typically begin complaining about airport noise. What is more is that when it comes time for airports to further expand, they have no room to spread their proverbial “wings.” Litigation may ensue and airport closure is a possible result of either a lawsuit or continued public pressure to reduce noise, etc.56

Nonetheless, the “Airport Zoning Law” gave Miami-Dade County the power to anticipate these encroaching, incompatible land uses that thus pose as an “airport hazard.” For instance, chapter 33 of Miami-Dade’s zoning codes provides a system by which the county can screen for nonconforming land uses:

“[a]pplications for development permits in incorporated areas of Miami-Dade County that are located within any airport zone or sub-zone established in Section 33-336 [(this section of the ordinances provides the areas which fall within protected “airport zones”)] shall be reviewed by the appropriate municipal board(s) or official(s) for the purpose of assuring compliance with the minimum

54 Id.
55 Id.
Applications for development permits in the unincorporated areas of Miami-Dade County that are located within any airport zone or sub-zone shall be reviewed by the appropriate County board(s) or official(s) for the purpose of assuring compliance with the minimum airport land use zoning standards set forth in this article. In all such instances, whether in the incorporated or unincorporated areas, a copy of the application for development permit shall be provided to the Director of the Miami-Dade Aviation Department and the Director of the Miami-Dade Planning and Zoning Department at the time such application is submitted. The directors of MDAD and the Planning and Zoning Department shall submit in writing, to the appropriate board or official, any objections they may have to an application for development permit regulated by this article. The Director of MDAD and the Director of the Planning and Zoning Department are authorized to appeal or otherwise legally contest decisions of any municipality or other governmental agency granting a development permit regulated by this article for failure to comply with the airport land use zoning standards of this article.”

In this instance, Miami-Dade County has been able to create and manage the largest airport in the State of Florida while still maintaining minimal noise complaints from nearby land owners. Thus, municipalities benefit from the power to zone airports, as zoning is a two-edged sword which local governments may use not only to protect airports from the encroachment of noise-sensitive residential developments, but also to protect residential communities from the encroachment of noise-generating airports.

C. Purpose in Practice: The Minimum Requirements for Airport Zoning Regulations

The cannon of statutes known as the “Airport Zoning Law of 1945” are not only an enabling act by from which municipalities receive the power to zone for airports. Rather, the “Airport Zoning Law” serves as a comprehensive handbook for local governments to use as they develop and implement specific zoning laws. As a result, these guidelines have encouraged uniformity and improved community relations with

airports across the State. The statute entitled “Airport Zoning Requirements” gives local governments direction on a broad scale. Here, the legislature enumerates four areas which require attention from local governments as they implement new zoning laws: reasonableness, independent justification, nonconforming uses, and the adoption of airport master plans.\(^{59}\) Before any new laws go into place, municipalities must assure that these enumerated concerns have been given consideration. The crux of the statute, however, is that airport zoning laws shall be reasonable in nature and “none shall impose any requirement or restriction which is not reasonably necessary to effectuate the purposes of [the] chapter.”\(^{60}\)

Furthermore, the chapter includes statutes that enumerate guidelines on the procedures of implementing airport zoning laws.\(^{61}\) Here, the legislature focuses on how local governments should not enact new laws unless “there has been a public hearing at which parties in interest and citizens shall have an opportunity to be heard.”\(^{62}\) Furthermore, the citizens need “notice of the hearing, [which] shall be published at least once a week for 2 consecutive weeks in an official paper, or a paper of general circulation, in the political subdivision or subdivisions in which are located the airport areas to be zoned.”\(^{63}\) Another example of how specific these guidelines are, is found in the requirement that municipalities appoint airport zoning commissions prior to adoption of any zoning regulation. The relevant part of the statute states that:

“[p]rior to the initial zoning of any airport area under this chapter the political subdivision or joint airport zoning board which is to adopt the regulations shall

\(^{60}\) Id.
\(^{62}\) Id.
\(^{63}\) Id.
appoint a commission, to be known as the airport zoning commission, to recommend the boundaries of the various zones to be established and the regulations to be adopted therefor. Such commission shall make a preliminary report and hold public hearings thereon before submitting its final report, and the legislative body of the political subdivision or the joint airport zoning board shall not hold its public hearings or take any action until it has received the final report of such commission, and at least 15 days shall elapse between the receipt of the final report of the commission and the hearing to be held by the latter board.

Similar elaboration can be found throughout the statutes on such topics as permits and variances, the administration and enforcement of zoning, boards of adjustment, appeals, judicial review, and even the acquisition of air rights.

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64 Fla. Stat. §333.05(2) (2013).
65 Fla. Stat. §333.07 (1)(a) (2013). The statute states that an airport zoning regulation “may require that a permit be obtained before any new structure or use may be constructed or established and before any existing use or structure may be substantially changed or substantially altered or repaired.” Furthermore, this statute reiterates the purpose of the chapter, to eliminate “airport hazards.” In that, the statute states that “no permit shall be granted that would allow the establishment or creation of an airport hazard or would permit a nonconforming structure or tree or nonconforming use to be made or become higher or to become a greater hazard to air navigation than it was when the applicable regulation was adopted or than it is when the application for a permit is made; Fla. Stat. §333.07 (1)(b) (2013). Here the legislature is concerned with “structures or trees that are abandoned or 80 percent torn down, destroyed, deteriorated, or decayed.” In that, there shall be no permit granted that would allow said structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.” When these permits are applied for, the legislature prompts agencies to take “appropriate action, [and] compel the owner of the nonconforming structure or tree, at his or her own expense, to lower, remove, reconstruct, or equip such object as may be necessary to conform to the regulations.” If a owner of the nonconformity fails to comply with the zoning ordinance, then the political subdivision may lowered, removed, reconstructed, or equipped, and assess the cost and expense thereof upon the object or the land whereon it is or was located”); Fla. Stat. §333.07(2)(a) (2013). This section of the chapter contains details on how municipalities may incorporate variances into airport zoning. In that “[a]ny person desiring to erect any structure, increase the height of any structure, permit the growth of any tree, or otherwise use his or her property in violation of the airport zoning regulations adopted under this chapter or any land development regulation adopted pursuant to the provisions of chapter 163 pertaining to airport land use compatibility” must apply for a variance. The applicant must forward to the department via certified mail, with return receipt requested, a copy of the variance application. The department then has 45 days in which to review the application and provide its comments or waiver of that right to the applicant or zoning board. Then the board of adjustment may continue with its issuance of the variance. Nonetheless, “[s]uch variances may only be allowed where a literal application or enforcement of the regulations would result in practical difficulty or unnecessary hardship and where the relief granted would not be contrary to the public interest but would do substantial justice and be in accordance with the spirit of the regulations and [the] chapter”; Fla. Stat. §333.07(3)(a) (2013). This element of the statute states that when a municipality does grant a variance or permit of any sort “the administrative agency or board of adjustment shall require the owner of the structure or tree in question to install, operate, and maintain thereon, at his or her own expense, such marking and lighting as may be necessary to indicate to aircraft pilots the presence of an obstruction.”
66 Fla. Stat. §333.09 (2013). In this statute, the legislature is hoping to establish administrative boards that can provide an opinion in zoning matters, but have powers different than those of the board of adjustment. The statutes states in part that All airport zoning regulations adopted under this chapter shall provide for the administration and enforcement of such regulations by an administrative agency which may be an agency created by such regulations or any official, board, or other existing agency of the political subdivision adopting the regulations or of one of the political subdivisions which participated in the creation of the joint airport zoning board adopting the regulations, if satisfactory to that political subdivision, but in no case shall such administrative
The foregoing elements of the “Airport Zoning Law” guide local governments on how to develop and process zoning laws; however, the legislature elaborates further and provides minimum expectations for specific zoning laws around airports in Florida. In the zoning enabling statute, the legislature hinges the power to zone on the requirement that municipalities implement as a minimum the following airport zoning regulations:

“1. A variance for the erection, alteration, or modification of any structure which would cause the structure to exceed the federal obstruction standards as contained in 14 C.F.R. ss. 77.21, 77.23, 77.25, 77.28, and 77.29;
2. Obstruction marking and lighting for structures as specified in s. 333.07(3);
3. Documentation showing compliance with the federal requirement for notification of proposed construction and a valid aeronautical evaluation submitted by each person applying for a variance;
4. Consideration of the criteria in s. 333.025(6), when determining whether to issue or deny a variance; and
5. That no variance shall be approved solely on the basis that such proposed structure will not exceed federal obstruction standards as contained in 14 C.F.R. ss. 77.21, 77.23, 77.25, 77.28, or 77.29, or any other federal aviation regulation.”

Here, the legislature provides detailed and extensive measurements for the proximity of various land uses to runways and provides exceptions for the expansion of existing sites. What is more is that the statute encourages intergovernmental coordination when it comes to airport zoning laws. For instance, these regulations require that local governments create zoning laws that are not only in agreement with FAA regulations, but also with the comprehensive plan of the municipality.

If the regulations provided by the legislature in the “Airport Zoning Law” are implemented into a public entity’s comprehensive plans in a timely fashion, these municipalities stand to benefit immensely. It is not enough merely to turn all aviation-related matters over to an able airport manager. Those communities which, in the short term, fail to integrate such issues into local planning and decision making can expect increased costs later on in retaining adequate airport services. Thus, implementation of airport zoning laws before development has time to encroach and other “airport hazards” arise, is critical for a prosperous airport and content community.

III. THE NEED: ZONING ENABLING LAWS FOR SPACEPORTS

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74 Id.
A. Welcome to the Rebirth of Space in Florida

For nearly 5 decades, the State of Florida has essentially dominated the space industry;\(^{75}\) making its persistent sunshine, availability of wide open spaces, and proximity to flourishing beaches nearly synonymous with “outer space.” Consequently, when most people think of the term “outer space,” visions of intergalactic discovery, NASA, the International Space Station, the Space Shuttle program and invariably images of bright, sunshiny Florida come to mind. The State’s booming space industry from 1962 to 2010 can originally be credited to the first Space Race, in which the U.S. so vehemently fought with the Soviet Union for the ideological superiority of being the first to achieve various landmarks in space exploration.\(^{76}\) Authorized in 1958, what is now known as Kennedy Space Center (“KSC”) in Merritt Island, Florida became the launching pad for many of the early space race programs.\(^{77}\) This virtually uninhabited area in eastern Florida was not chosen for these iconic launches on a whim or by mistake. Instead, America’s “first spaceport” was purposefully placed in Merritt Island for three reasons: Florida is close to the equator;\(^{78}\) the site for KSC is on the east coast and...


\(^{77}\) NASA, *1960s: From Dream to Reality in 10 Years*, http://www.nasa.gov/centers/kennedy/about/history/timeline/60s-decade.html, (accessed on Oct. 31, 2013). Launches from programs such as Mercury, Gemini, and Apollo took place at Kennedy Space Center during this time. While NASA does occupy other areas for payload and military launches in California, Texas, the Marshall Islands, and Alaska, KSC is the only launch zone capable of carrying payload, military equipment, and humans into space.

\(^{78}\) Scientific American, *Why Does NASA Launch Space Shuttles from Such a Weather-Beaten Place?*, http://www.scientificamerican.com/article.cfm?id=space-shuttle-weather-florida (accessed on Oct. 29, 2013). This article indicates that “the linear velocity of Earth’s surface is greatest at the equator, much as a ceiling fan blade slices through the air faster at its tip than at its center hub, conferring a fuel-saving boost to spacecraft attempting to escape Earth’s gravity.”
close to the ocean; and at the time KSC was built, the area was uninhabited, but did have some infrastructure from nearby military bases.

As the U.S. inched ahead in the Space Race, the 1980s brought Florida a newly envisioned form of space travel: the Space Shuttle. At this point, the workforce and facilities at KSC’s spaceport were geared toward preparing and launching this revolutionary new spacecraft that would further advance the country’s capabilities in orbit. However, the Space Shuttle program also brought with it incredible influence on the already successful tourism industry in Florida. The excitement of seeing a launch in person, while still getting in touch with a sense of space travel nostalgia lured tourists to the KSC visitor complex from all over the world. A study conducted by NASA concludes that in 2006 alone, at least 836,000 out-of-state tourists traveled to Florida in order to visit Kennedy Space Center, collectively spending a little over $46 million on goods and services provided by the Visitor Center.

As the Space Shuttle program ended in 2010 with virtually no program poised to replace it, however, the landscape of Florida’s space industry forever changed. As of 2010, space travel has become an endeavor for the private market, where private

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79 Id. The advantage of being close to the ocean according to this article is that launching spacecraft over the ocean would minimize the risk that people on the ground would be killed as things dropped off or blow up.

80 Id. While the population density of Brevard County was quite low during the integration of KSC, there were good logistics in place from nearby army and navy bases. As a result, this allowed for easier access to the area when the time came for increased development at KSC.


83 Id.

84 NASA, Solving Today’s Challenges for Tomorrow’s Future, http://www.nasa.gov/centers/kennedy/about/history/timeline/2010_beyond.html (accessed on Oct. 31, 2013). NASA had planned to replace the Space Shuttle program with the Constellation Program, which would hopefully send astronauts to the International Space Station, the Moon, and eventually Mars. Nonetheless, in 2010 the Obama Administration canceled the program for policy reasons. As a result, no government program currently exists which carries humans into space.
investors are funding the development and construction of spaceport facilities to serve a new generation of privately owned, reusable launch vehicles and support a commercial human space flight market. Consequently, Florida is no longer the default state for launching humans into space; rather, the space industry in the State is now at the mercy of private corporations and their willingness to place spaceports in Florida.

Some are hopeful that spaceports in Florida will work to retain the State’s space industry and even further it in ways never before seen. One commentator indicates that, “Florida has an outstanding opportunity to lead a new era in aerospace commerce and the expectation of a commercial space tourism industry that is comparable to that of commercial aviation is not unreasonable.”

B. The Game Changer: Spaceports

The term “spaceport” is not defined in either international or U.S. Federal law; however, the State of Florida has defined “spaceport” under the Space Florida Act to mean:

“any area of land or water, or any manmade object or facility located therein, developed by Space Florida under this Act, which area is intended for public use or for the launching, takeoff, and landing of spacecraft and aircraft, and includes any appurtenant areas which are used or intended for public use, for spaceport buildings, or for other spaceport facilities, spaceport projects, or rights-of-way.”

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The services spaceports provide are far more reaching than this statute suggests. In that, a spaceport must support launch and reentry vehicles with mission-specific facilities such as launch pads (for vertical launches), exceptionally long and wide runways (for horizontal launches), payload processing and integration plants, telemetry sites, tracking and control centers, and additional facilities to serve spaceflight participants and crew (terminals).  

Crucial to the analysis of how spaceports can be incorporated into local land use laws is the idea of dividing commercial spaceports into two categories: 1) spaceports that specialize in supporting reusable launch vehicles (“RLVs”), spaceflight participants, and horizontal take-off and landing vehicles (“HTOLs”) and 2) spaceports that specialize in supporting expendable launch vehicles (“ELV”) or spacecraft that breaks up during launch and is not reusable. For the most part, space corporations are looking to develop and construct category 1 spaceports because their infrastructure supports activity similar to that of an airport. In that, unlike spacecraft used for payload missions, it is not as cost-effective for space travel corporations to use expendable vehicles for tourism purposes. The ability to operate reusable spacecraft with frequency and temporarily house passengers in comfortable facilities like an airport is the goal for most space travel operators. Thus, it is most likely that Florida will see more of an influx of category 1 rather than category 2 spaceports as the industry develops and takes off in the State.

90 Id.
Before companies like SpaceX or Virgin Galactic can waltz into a state and start launching spacecraft from a spaceport, however, the FAA must grant the facility licensure to operate and control spacecraft operations. In fact, spaceports that operate for the purpose of providing a service to the general public are regulated as commercial spaceports by the FAA similar to airports, regardless of whether they are owned by government or private entities. 92 Consequently, understanding the FAA licensing process is a good reference point for integrating commercial spaceports into Florida municipalities. The steps involved in a spaceport or planned spaceport obtaining such licensure begins with a pre-application to the Space System Development Division of the Office of Commercial Space Transportation ("AST"). 93 This application primarily focuses on three things: safety, environmental, and policy issues. 94

Traditionally, as with KSC, safety concerns were addressed by placing the spaceport close to the ocean so as to reduce the risk to human populations in the worst-case scenario of a launch or reentry failure and to use the ocean as a receptacle for parts and debris. 95 Nonetheless, with the increase in commercial space activity, spaceports are being planned and developed in inland areas, which is raising much concern for safety. 96 Thus, licensure depends greatly on location and design of the spaceport facility, as well as the planned trajectory route for spacecraft. 97

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94 Id.
95 Id.
96 Id.
97 Id.
Environmental issues for spaceport licensing are a multiagency concern. In that, licensing a launch site constitutes a “major federal action” under the National Environmental Policy Act (NEPA) and is subject to the review procedures mandated by NEPA, including the requirement to develop an Environmental Impact Statement (EIS).\(^9\) Finally, the policy aspects of the review focus, among other things, on consideration of the United States' international obligations, health and safety, and national security and foreign policy interests.\(^9\) Furthermore, AST, as part of the review process, consults with the Department of State, Department of Defense, and NASA.\(^1\) Then once issued, a spaceport license is valid for five years.\(^1\)

As of 2013, the FAA has registered 8 active launch site operator licenses, as follows:

1. Kodiak Launch Complex in Kodiak Island, Alaska\(^1\)
2. Spaceport Systems International at Vandenburg Air Force Base in California\(^1\)
3. Mohave Air and Spaceport in Mohave, California\(^2\)
4. Oklahoma Spaceport in Burns Flat, Oklahoma\(^3\)
5. Mid-Atlantic Regional Spaceport in Wallops Island, Virginia\(^4\)

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\(^9\)Id.
\(^9\)Id.
\(^1\)Id.
\(^1\)Id.
\(^1\)Id.
\(^1\)Id.
\(^1\)Id. This spaceport is co-located on a federal range. The commercial spaceport can accommodate a variety of vehicles including the Delta II and Minotaur IV.
\(^1\)Id. This spaceport is designed to support suborbital launches and reentries of RLVs.
\(^1\)Id. This spaceport is designed to support horizontal take-off and landing RLVs.
\(^1\)Id. This spaceport is co-located on a federal range offering space for payload processing and launch services to private and government users. This spaceport supports a variety of mission profiles and can accommodate a variety of small and medium ELVs.
(6) Spaceport America in Sierra County, New Mexico,

(7) Cape Canaveral Spaceport in Cape Canaveral, Florida

(8) Cecil Field Spaceport in Jacksonville, Florida.

Notable is the fact that 2 of the 8 licensed spaceports are in Florida, with Cecil Field Spaceport in Jacksonville being the newest licensed spaceport in the country.

Without a doubt, spaceports are heavily regulated by various agencies within the federal government. On the state level, Florida further controls the safety, environmental, and policy concerns of Florida’s spaceports through the “Space Florida Act” and “Space Florida,” an independent special district and subdivision of the state which the “Space Florida Act” creates. Before state level assistance can be provided for spaceports, however, the spaceport must be designated “spaceport territory” by the Space Florida board of directors and then recognized as such through legislation. Generally, before property may be deemed a spaceport in legislation, the spaceport must have already received licensure from the FAA.

Once a property is considered a spaceport, Space Florida has considerable power with regards to the development and preservation of the territory. In that, the statute within the “Space Florida Act” entitled “Powers of Space Florida” enumerates the

107 Mária Zulick Nucci & Joanne Irene Gabrynowicz, The Issue Is: What Is a Spaceport?, 24 Air & Space Law. 9 (2011). This is currently America’s premier spaceport including common facilities and services comparable to those of traditional airports: runways, emergency facilities, fuel storage and delivery facilities, perimeter security, and concessions.

108 Michael C. Miniero, Law and Regulation Governing U.S. Commercial Spaceports: Licensing, Liability, and Legal Challenges, 73 J. Air L. & Com. 759, 760 (2008). This spaceport is co-located on a federal range providing space for payload and launch services for private and government users. Spaceport facilities include an RLV support complex. Only small ELVs can be supported.


22 matters over which Space Florida has authority. Within the list, the most pertinent include the ability to acquire property in fee simple as the board of directors deems necessary, make contracts with persons or spaceport users in order to facilitate any space endeavor, acquire the means to distribute energy to spaceports, set aside and maintain wildlife conservation areas within spaceport territories, and create public safety measures for spaceport territories including guard shacks and things of the like.\textsuperscript{112} As follows, subsection 11 of the statute gives Space Florida immense power to:

\textbf{“own, acquire, construct, develop, create, reconstruct, equip, operate, maintain, extend, and improve launch pads, landing areas, ranges, payload assembly buildings, payload processing facilities, laboratories, aerospace business incubators, launch vehicles, payloads, space flight hardware, facilities and equipment for the construction of payloads, space flight hardware, rockets, and other launch vehicles, and other spaceport facilities and other aerospace-related systems, including educational, cultural, and parking facilities and aerospace-related initiatives.”}\textsuperscript{113}

This element of the statute gives the State of Florida broad power to not only create and maintain spaceports, but also to engage in the business of space travel itself.

Furthermore, the “Space Florida Act” outlines extensive guidelines for how Space Florida shall promote aerospace business development by facilitating business financing, spaceport operations, research and development, workforce development, and innovative education programs.\textsuperscript{114}

\textbf{C. The Need: Zoning Enabling Acts for Spaceport Zoning}

\textsuperscript{113} Fl. Stat. §331.305(11)(2013).
\textsuperscript{114} Fl. Stat. §331.302(1)(2013).
Despite all its enumeration and specificity, the “Space Florida Act” still fails to at any point take into account zoning or how spaceports will affect nearby land uses. Through the “Space Florida Act,” the Florida legislature has contributed great efforts to seeing that spaceports in Florida are successful. However, as space travel becomes more like air travel, spaceports will be in higher demand, as Florida communities (large and small) will crave the economic stimulation and convenience of a hometown spaceport. Perhaps in the future there will even be a desire from some smaller municipalities to have spaceports that straddle city or county lines, which would benefit multiple communities at once and require local governments to work in cooperation with one another. Unfortunately, the Florida legislature is setting these spaceports up for failure. Without the ability to specifically zone for spaceports, as is the case with airports, spaceports will most likely be poorly planned and placed in bad locations. And because municipalities will be powerless to control nearby land uses, incompatible uses with encroach on the land that surrounds the spaceport, causing unsafe conditions for spacecraft operations, environmental hazards, nuisance complaints, and policy struggles. Neighbors will most likely begin complaining about loud spacecraft flying overhead and the unsightly antennas that surround the spaceport, etc. If spaceports straddle city or county lines, issues may arise which these local governments cannot resolve together.

Nonetheless, if the Florida legislature passed a spaceport zoning enabling act, municipalities could better anticipate spaceports within their communities. Local governments could plan for the integration of spaceports and for their future development, resist the encroachment of incompatible land uses, properly develop
nearby areas so as local businesses and spaceport employees may benefit from the economic stimulation of the spaceport, ensure safety, protect environmental concerns, and thwart spaceports from failing and becoming an abandoned eye sore for the community.

In 2012, the State of Florida through Space Florida requested 150 acres of NASA’s land located at the north end of KSC.115 This area of uninhabited land is situated on the cusp of North Brevard County and South Volusia County, where there was an active community named Shiloh until it was abandoned at the turn of the 19th century.116 Space Florida’s goal is to acquire this piece of land and develop it into a purely commercial spaceport, in hopes to especially lure the commercial payload market from competing states such as Texas and California and countries such as China and Russia.117 Space Florida argues that this so called “Shiloh Spaceport” is a necessity if Florida desires to lead the commercial space market, as the spaceport will provide commercial satellite operators a launch environment that ensures their payload will have priority and schedule assurance.118 The Space Florida officials believe that the move from NASA’s facilities to Shiloh is what commercial outfits are looking for.119 Space Florida’s website indicates that:

“[b]ased on what [Space Florida officials] know from talking with commercial operators, most believe that they can be best served by an environment outside of a federal enclave. A dedicated commercially oriented spaceport that can quickly and reliably get payloads to space will help bring back to the United States launches that are now occurring from foreign spaceports. Although there are facilities at KSC and the Cape Canaveral Air Force Station, the commercial

116 Id.
117 Id.
118 Id.
119 Id.
market knows that future NASA missions and national security imperatives will inevitably impede the smooth flow of their business model. That is why they are looking in Texas, Georgia and elsewhere, where that risk does not exist.”

The foregoing shows that Space Florida has the power to designate this area as a spaceport through the “Space Florida Act.”

The spaceport would provide enough room for up to two launch pads and relative processing facilities, as well as bring approximately 200 jobs to the area. In that regard, the spaceport will require more space than just the 150 requested for the spaceport itself. Rather, additional land will be required as hotels, restaurants, space industry facilities, and other business try to fee off of the spaceport. Furthermore, nearby residential areas will no doubt need to be developed so as to house the approximately 200 spaceport employees. Nonetheless, Space Florida’s website claims that after an “exhaustive evaluation” of Florida’s East Coast from the Keys all the way to the Georgia border, it was determined that Shiloh would be the best location for the proposed new spaceport for three reasons:

1. Shiloh is far enough away from KSC’s launch complexes so as to avoid interference with current launch operations as well as any future expansion of KSC;

2. Shiloh will be regulated by the FAA’s Office of Commercial Space Transportation rather than NASA or any other military entity;
(3) Shiloh is located within close proximity to both the government and commercial sector, which would provide critical close-pollination opportunities.\textsuperscript{125} Unfortunately, the proposed Shiloh Spaceport serves as an early example of how spaceports cannot be placed just anywhere and how laws on the local level could help keep spaceports from being developed in places that could pose hazardous for the spaceport or community.

A coalition of Florida environmentalists is calling upon every top Florida and U.S. official to immediately bar the development of the Shiloh Spaceport.\textsuperscript{126} It seems as though environmentalists are concerned because Shiloh Spaceport will lie within the 140,000-acre sanctuary known as the Merritt Island National Wildlife Refuge.\textsuperscript{127} The coalition is concerned that the spaceport would cause problems for migratory birds, as well as rare wildlife such as the scrub-jay, and the recreational boaters and anglers could lose access to Mosquito Lagoon. The coalition which is appropriately named “Save Our Lagoon” (“SOL”), argues that development of the spaceport will deny birders, duck hunters, fishermen, kayakers, professional fishing guides, eco-tour kayaking companies and crabbers, and local businesses access to areas in and around the wildlife conservation.\textsuperscript{128} SOL opines that 14,000 local jobs tied to environmental recreation and the annual $3.7 billion those industries traditionally produce will be

\begin{itemize}
\item \textsuperscript{125} Id.
\item \textsuperscript{126} Mark Matthews, \textit{Environmentalists: Don't Allow Spaceport to Be Built in Wildlife Refuge}, Orlando Sent. (July 10, 2013).
\item \textsuperscript{127} Id.
\item \textsuperscript{128} Save Our Lagoon, \textit{Help Protect the Shiloh Track of the Merritt Island Wildlife Refuge}, (accessed on Nov. 12, 2013) (available at http://saveourlagoon.org/).
\end{itemize}
eliminated if the spaceport is built on the Shiloh Track. Furthermore, SOL as well as various historical and archaeological groups are concerned that development of the spaceport will destroy the remnants of early Spanish development, which is a part of the rich history of the island.

The FAA is responding to these complaints by conducting an environmental study which is expected to last at least a year and likely will examine a wide range of issues, from the spaceport’s effect on endangered species to which areas of the refuge, and nearby Canaveral National Seashore, would be closed to the public during launches. There is very little being said by Space Florida or the FAA, however, with regard to future and auxiliary development of the spaceport. As the State of Florida targets the California company SpaceX as the initial occupant of the spaceport, the question becomes where will buildings such as business offices, warehouses, payload development, spacecraft hangars, housing for employees, etc. be located? Many are fearful that this kind of future development that will surely surround the spaceport will not be sustained due to the fragile nature of the island’s environmental and historical fragility. Why would commercial space companies create a hub at the Shiloh Spaceport if they could not plan for expansion or have a developed community nearby to support the needs of their businesses? In other words, tight restraints on development are not enticing for companies that could otherwise utilize spaceports located in Texas, California, or any other state.

129 Id.
130 Dinah Pulver, Shiloh Caught in the Middle of Spaceport Debate, Daytona Beach News-Journal (July 15, 2013).
If the State of Florida empowered Brevard and Volusia Counties with the ability to zone for spaceports, it is likely that the issues surrounding the development of the Shiloh Spaceport would have been thwarted in the first place. The ability to properly zone would have meant that the counties would have already set aside appropriate areas for spaceport development. These would be areas which could support spaceport development at its maximum capacity and not pose a threat to the environment, existing development, future development, human safety, etc. In that, these areas would be “roped off” so to speak for spaceports, such that spaceports could foster carefully planned development nearby, and municipalities could benefit from the economic stimulation that spaceports bring with them. Instead, Brevard and Volusia Counties had no tools to properly integrate the spaceport into their municipalities, but dared not turn down the invitation to have an economically beneficial spaceport in their backyard, despite the gnashing of teeth from the community. In this instance, it is possible that Space Florida would have never even considered the Shiloh area if it was not appropriately zoned for spaceport activity. Nonetheless, if municipalities could zone for spaceports, the search for the perfect location for a spaceport would be more efficient and receive the appropriate support from communities, which would also give Florida a competitive edge over other states and countries in the commercial space industry.

D. An Example: Space Takes Off in New Mexico

A great case study of how zoning laws could greatly benefit spaceports is Spaceport America in New Mexico, “the world’s first built, commercial spaceport, designed to enable affordable, efficient and effective space access and unlock the
potential of space for everyone."\textsuperscript{132} Spaceport America is a $209 million project which is attracting worldwide attention due to its bold premise, eye-catching architecture, and the fact that it is home to the world’s first commercial passenger space line company, Sir Richard Branson’s Virgin Galactic.\textsuperscript{133} Spaceport America’s website details the current status of the spaceport:

“[d]esigned, built and operated by the New Mexico Spaceport Authority (NMSA), Spaceport America is nearing completion of the first phase of construction, which includes basic operational infrastructure such as an airfield, launch pads, terminal / hangar facility, emergency response capabilities, utilities, and roadways. The site will be capable of accommodating the activities of both vertical and horizontal takeoff space launch vehicles, serving as the base for pre-flight and post-flight activities, and providing a tourism experience for interested visitors and spectators.”\textsuperscript{134}

More specifically, Spaceport America consists of a 12,000 foot runway, a 100,000 square foot passenger terminal, a Spaceport Operations Center, a fuel storage depot, a wastewater treatment plant, a 1.3 million gallon water storage facility and booster station, a communication/security station, internal roads, fencing and gates, its own electrical substation and 7 miles of distribution lines, as well as an automated weather observing system.\textsuperscript{135}

One of Spaceport America’s most standout features is its gigantic, sinuously shaped terminal building. Designed to have minimal embodied carbon and few additional energy requirements, the terminal building has been designed to achieve the
prestigious LEED Gold accreditation. The low-lying form is dug into the desert landscape to exploit the thermal mass, which buffers the building from the extremes of the New Mexico climate as well as catching the westerly winds for ventilation. Natural light enters via skylights, with a glazed façade reserved for the terminal building, establishing a platform for the coveted views onto the runway.

What is more is that the Spaceport is completely capable of supporting Virgin Galactic’s technologically advanced, sightseeing spacecraft: “Spaceship Two.” The Spaceship Two is designed for frequent, horizontal launches. A typical spaceflight on the spacecraft will start with six passengers strapped in to their single-file seats, which itself is attached to a larger "carrier aircraft" simply known as “Eve.” After ascending to about 50,000 feet (the same cruising altitude of the Concorde), Spaceship Two is released from the “carrier ship,” “Eve.” Following a countdown, its rockets fire, and Spaceship Two hits the speed of sound within six seconds. It’s an event that sounds like the most dramatic part of the flight, but it’ll end abruptly as the ship cuts its engines and hits zero-gravity. As a result, the spaceport was designed with a sprawling runway, so that “Eve” could successfully lift both spaceships off Earth’s surface and so as to afford pilots extra distance when negotiating the spacecrafts back to Earth with no engine power. Virgin is also pushing for long-haul aviation at the spaceport.

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137 Id.
138 Id.
139 Id.
140 Nathan Ingraham, Virgin Galactic Hopes its Spacecrafts Might Someday be Used For Superfast Flights Across the Earth, The Verge (Oct. 18, 2013).
141 Id.
142 Id.
143 Id.
144 Id.
means that spacecraft would use low-orbital flight for travel between two points on Earth’s surface.\textsuperscript{145} For instance, a flight between London and Australia would take as little as 2.5 hours, which would save time and be better for the environment, since emissions would be released outside of the Earth's atmosphere rather than within it.\textsuperscript{146} The spaceport’s runway is built to sustain the frequent launches that would occur should such “airline like” travel occur.

Even so, Spaceport America in all its technological glory is rather ironically located in one of the country’s most barren, desert locations, where even running water and electricity are considered a blessing. Sierra County, New Mexico, where Spaceport America is located, is a rural county with a population of under 11,000 people.\textsuperscript{147} Approximately 36 percent of the population is over 65 years old, and approximately 25 percent of the population is below the Federal poverty level.\textsuperscript{148} As of right now, the County’s greatest amount of employment comes from the government, agriculture, and tourism.\textsuperscript{149} The County is 4,700 square miles in area (which is larger than Rhode Island and Delaware combined).\textsuperscript{150} The Federal government controls 55 percent of the land area, the State of New Mexico controls 12 percent, and the remaining 33 percent is controlled by private land ownership.\textsuperscript{151} The majority of the private land in the County, including the majority of the private land immediately north of Spaceport America, is owned by the famed entrepreneur Ted Turner.\textsuperscript{152}

\begin{footnotes}
\footnotetext[145]{Id.}
\footnotetext[146]{Id.}
\footnotetext[147]{Interview with Mark Huntzinger, Co. Manager of Sierra Co., N. M. (Nov. 1, 2013).}
\footnotetext[148]{Id.}
\footnotetext[149]{Id.}
\footnotetext[150]{Id.}
\footnotetext[151]{Id.}
\footnotetext[152]{Id.}
\end{footnotes}
The land which the spaceport occupies is owned by the State of New Mexico, and except for Ted Turner’s land, nearly all of the surrounding area is occupied by the Federal Bureau of Land Management. Historically, the State has promoted the land to be used for ranching purposes and Federal land has even been leased to ranchers for grazing. Development in Sierra County can be rather difficult due to the natural barriers developers must hurdle. The largest of all barriers is that rain is minimal in this desert area, with an annual average of 11.67 inches per year. Before Spaceport America was built, Sierra County just hoped rain would be sufficient enough to support the livestock industry. In the years in which rainfall is ample, it takes about one section of land (1 square mile or 640 acres) to provide sufficient vegetation for one cow-calf unit. Now, the issue for Sierra County is providing enough clean water to meet the needs of Spaceport America, as well as any development that may spring up around the port. It does not help that this area has been in a severe drought for approximately five years.

Population around the spaceport is sparse. The populated areas close to the spaceport are primarily to the west, with the small towns of Truth or Consequences, Elephant Butte, and Elephant Butte Lake State Park. During the summer and on holiday weekends Elephant Butte Lake State Park can have anywhere from 90,000 to 100,000 people. There are some small populated areas near the spaceport, which...
generally consist of half-dozen or so ranch houses. The largest populated area near the spaceport, however, is Las Cruces, approximately 70 miles south.

Despite its adversity, space travel is no longer a distant dream for Sierra County. Rather, the dream that the commercial space industry would put this area of the U.S. on the map, started coming to life when NBCUniversal announced an exclusive multi-platform partnership with Sir Richard Branson’s Virgin Galactic, to televise the inaugural commercial space flight of SpaceShipTwo. Next year, Sir Richard and his children, Holly and Sam, will be the first private passengers to travel into space on SpaceShipTwo from Virgin Galactic’s terminal at Spaceport America, likely creating one of the most memorable moments in television history. It is presumed that soon commerce will be desired around the spaceport and initially the ultra wealthy will be looking for hotels, residents, restaurants, and other types of commerce within a close proximity of the port. Eventually, as commercial space travel becomes more economical and affordable, Sierra County will not want the spaceport to be out in the middle of nowhere. Instead, there will be a desire for the spaceport to be close to an urban area, such that space travel can be a convenience and support for the economy, just like airline travel.

Already, Sierra County is beginning to see development in anticipation of Spaceport America’s success. In that, there has been considerable development by private entities in Truth or Consequences that is related to the spaceport, including

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162 Id.
163 Id.
165 Id.
several new chain hotels.\textsuperscript{166} A spaceport visitor’s center site in Truth or Consequences has been selected and the developer identified, however, construction has not yet commenced.\textsuperscript{167} Furthermore, a developer bought a large tract of land near Truth or Consequences, with spaceport related activity as one of the development components.\textsuperscript{168} Sierra County has even approved several housing sub-divisions in anticipation of the need for housing.\textsuperscript{169} Outside of building development, however, Spaceport America is spawning new commercial interests, including a greater tourism industry in the region.\textsuperscript{170}

Sierra County is in a unique position in which it can develop the land around Spaceport America basically from scratch. As most of the land is currently undeveloped around the spaceport, the County can essentially build a new city, with Spaceport America as the economic hub for development. As of 2013, development in the vicinity of Spaceport America is limited due to the land being controlled by the State and Federal governments, with the State Land Office (SLO) controls the State land in the vicinity of Spaceport America.\textsuperscript{171} Spaceport America is on a SLO lease and other SLO land in the area could be leased for spaceport related activities.\textsuperscript{172} Nonetheless, the Federal Bureau of Land Management owns land which could be traded with the SLO for the SLO to create developable parcels.\textsuperscript{173} The available private land in the vicinity of Spaceport America is limited, but could nonetheless be developed for spaceport related

\textsuperscript{166} Interview with Mark Huntzinger, Co. Manager of Sierra Co., N. M. (Nov. 1, 2013).
\textsuperscript{167} \textit{Id.}
\textsuperscript{168} \textit{Id.}
\textsuperscript{169} \textit{Id.}
\textsuperscript{170} \textit{Id.}
\textsuperscript{171} \textit{Id.}
\textsuperscript{172} \textit{Id.}
\textsuperscript{173} \textit{Id.}
The major limiting factor is water. Available water rights are scarce and the State Engineer generally does not approve the conversion of agricultural use to domestic use. The planned related development is in existing populated areas like Truth or Consequences, Las Cruces, and Hatch (between Truth or Consequences and Las Cruces) with an emphasis on other recreational and tourism links. Nonetheless, as land changes ownership from Federal and State entities to private owners and water resources are developed and become more accessible, land around the spaceport will become quite coveted.

Just like Florida or any other state for that matter, New Mexico has not enabled its municipalities to zone specifically for spaceports. Local governments have the power to zone within their boundaries and in New Mexico there is an extra-territorial zoning area where, very simply, a municipality has the power to approve development within 3 miles of their borders. A local government can zone state and federal land within their borders, but does not have the ability to enforce this zoning. Currently, Sierra County has no overall zoning ordinances at all. There is a sub-division ordinance that governs the development of housing sub-divisions. Even still, there is no political will to develop zoning in the County. Specific to airports, State statutes allow for a joint zoning commission between governmental entities when the airport

\[174 \text{ Id.} \]
\[175 \text{ Id.} \]
\[176 \text{ Id.} \]
\[177 \text{ Id.} \]
\[178 \text{ Id.} \]
\[179 \text{ Id.} \]
\[180 \text{ Id.} \]
\[181 \text{ Id.} \]
\[182 \text{ Id.} \]
\[183 \text{ Id.} \]
\[184 \text{ Id.} \]
impact area crosses boundaries. These have not been developed in Sierra County either. Most likely, zoning is generally not necessary in Sierra County due to its scarcity of population and lack abutting land uses. Nonetheless, Spaceport America is bringing activity to this County like never before seen, and the implementation of zoning laws may now be appropriate.

Spaceport America and Sierra County are a prime example of how spaceport zoning laws could work in Florida to effectually implement spaceports into municipalities and create bustling economies around the space industry. In this example, the first step would be for New Mexico to pass a zoning enabling law, in which the State would extend to municipalities the necessary police to create ordinances with the general purpose and intent that the public health, safety, and general welfare could be secure and substantial justice carried out. These laws would not only enable but to some extent guide municipalities on how to design and plan areas surrounding spaceports so as to promote uniformity across the State and compliance with State, Federal, and International space law standards. On the local level, it would be the responsibility of each political subdivision to act with forethought and pass ordinances with respect to a comprehensive plan. Ideally, these comprehensive plans would goals and procedures for how to develop spaceports despite natural development impediments, such as the lack of water resources and barren surroundings. Furthermore, these plans would account for environmental concerns, safety concerns, future development, etc. In practice, it would be important for these political subdivisions to create ordinances that

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185 Id.
186 Id.
187 Id.
188 Id.
are in strict compliance with the comprehensive plan. Spaceport zoning ordinances would mostly be concerned with three things: safety, development, and function. In that, these ordinances would ensure that there be no construction within specified takeoff and landing corridors, where not only would noise abatement be ensured, but also the population would be kept safe from falling debris in the event of a spacecraft exploding.

The ordinances would also foster commercial, industrial, and residential development near the spaceport, such that businesses could feed off of the port’s economic stimulation and housing could be conveniently located to the economic hub. A spaceports would be zoned as a “spaceport,” rather than as “industrial” or “commercial” and building restrictions would automatically apply in and around the “spaceport” zone. Zones designed for residential use would be subject to FAA noise compatibility studies, height restrictions, easements, and waiver of claim. While residential zones would be designed for convenience to the spaceport, they would ideally be the furthest zone away from the spaceport to ensure noise abatement and safety. With restrictions on development around “spaceport” zones, cities and counties can thwart the kind of development that encroaches upon spaceport land and ultimately becomes noise sensitive. Nonetheless, these residential zones would need to be large enough to provide residents with schools, police departments, fire departments, and other community needs, yet still provide a buffer zone for noise and safety purposes.

Commercial zones, however, would need to be closer to the spaceport, so as to provide hotels, restaurants, shopping, and office space for incoming and transient spaceport users. While these zones are still noise sensitive, the restrictions on development in these areas would be less stringent so as to promote economic support
for the spaceport. Additionally, these commercial zones would be large enough and
designed to accommodate the needs of the tourism industry, such that businesses like
hotels, restaurants, and shopping complexes, could also support the influx of tourists
that come to the area to tour the spaceport and view spaceflight operations. Industrial
zones would be the closest to the spaceport, allowing payload companies and the like
easy access to launch vehicles and spacecraft operations. Furthermore, the county or
city would be able to provide overlay districts for spaceports, so as to prevent hazards
such as tall structures and buildings or anything else that would otherwise impede the
operation of a spacecraft in the area.

In practice, zoning around a spaceport will need to be implemented on a case-by-
case basis, so as to allow for environmental concerns, geographical impediments, and
other community needs, etc. New Mexico and Spaceport America are a great working
example of how spaceport zoning can be easy and most effective if implemented before
development ever even exists near the spaceport. Unfortunately, a lot of locations in
Florida are not a blank canvass so to speak, where zoning laws can be implemented
before development surrounds a spaceport. Rather, in many cases, spaceports will be
implemented into already populated areas, where development is not as sparse as the
New Mexican desert wilderness. In these situations, it will largely be the responsibility of
the municipality to deny the approval of spaceports in areas that would not otherwise be
appropriate for a spacecraft activity.

The result may be that some cities will not have spaceports, due to the fact that
there is just no room within the municipality for that kind of development. However, if
municipalities had the power to zone specifically for spaceports, they could essentially
begin roping off areas for spaceport development. This is an important aspect of the proposed spaceport zoning laws, because political subdivisions could predetermine which areas within the municipality are best for spacecraft operations and thus would essentially have more leverage when denying or approving spaceport development. For example, imagine if SpaceX approached officials in the City of Tampa and indicated that they wanted to build a spaceport much like Spaceport America within Tampa city limits. In this hypothetical, Tampa’s officials have recently conducted noise studies, cleared nearby obstructions, and ultimately rezoned a particular area outside of downtown from “industrial” to “spaceport.” When SpaceX contacts the land use office and announces its intention to build a state of the art spaceport in Tampa, City officials will already have a plot of land waiting for development.

Consider on the other hand a situation in which Tampa did not have the power to specifically zone for spaceports and that there was no such “spaceport” zone in the City of Tampa. Would City officials turn down the economic invigoration a spaceport could bring to the Tampa Bay area just because there was really no room for it? It is most likely that City officials would try their best to find room for the spaceport, as turning down an offer from SpaceX could be economically detrimental. As a result, this spaceport would be placed in an area that is not appropriate for spacecraft operations and this will ultimately lead to noise complaints, safety issues, and possible closure of the spaceport. What is more is that the spaceport will not be able to thrive in this environment, and the City will not receive adequate return on its investment.

If Florida enabled municipalities to zone specifically for spaceports, situations like this would not happen, as it would empower municipalities to provide companies with
pre-determined areas for spaceports. If no such area exists within a particular municipality, the municipality’s officials could deny spaceport development, rezone for a spaceport (which may create an appropriate area for a spaceport), or refer the space company to the officials at the county level or in a nearby city (which would allow the city to still receive some benefit from the spaceport). Here, municipalities would not feel pressured into making haphazard decisions and as a result selecting an area of town that is not appropriate for a spaceport, just so it does not lose out on having a spaceport within the community. Rather, with spaceport zoning laws in place, municipalities can be assured that spaceports will receive minimal complaints from nearby residents and businesses, and spacecraft operators will have the freedom to expand and function more successfully.

IV. THE SIMILARITIES: FLORIDA’S ZONING ENABLING LAWS FOR SPACEPORTS SHOULD MIRROR FLORIDA’S ZONING ENABLING LAWS FOR AIRPORTS

Only eleven years after Wilbur and Orville Wright first flew the Wright Flyer at Kitty Hawk, the very first scheduled airline service began in the United States -- an 18-mile, 23-minute, one-passenger journey between Tampa and St. Petersburg for $5 one-way.190 As a result of an increased demand for air travel, Drew Field Municipal Airport, a general aviation facility, opened in 1928 when the city fathers of Tampa negotiated an arrangement with a well-known land developer and citrus planter, John H. Drew. The

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160 acres of desolate pine woods were nearly six miles west of Tampa. A local newspaper even had to print a map in the newspaper to guide the public to the grand opening of the airport. After a series of ups and downs, the airport was finally named Tampa International Airport (“TPA”) in 1952. The terminal facilities were situated near the intersection of old Columbus Drive and Westshore Boulevard. At its opening, this terminal served approximately 1,000,000 passengers per year.

Today, the Tampa International Airport is a vital part of the Tampa Bay area's economy. The Airport generates its own operating revenues; it remains an important economic catalyst for the community, without the need for local tax support. The airports (TPA, Peter O. Knight, Plant City, and Tampa Executive) operated by the Hillsborough County Aviation Authority directly and indirectly support nearly 18,000 jobs in the community and pump more than $1 billion annually into the economy. Tax collections generated annually are nearly $55,000,000, of which $23,500,000 million is collected by local governments in Hillsborough County.

Municipalities that desire to integrate spaceports into their communities have a lot to learn from airport operations. In that, just like the case of the Tampa International

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Airport, airports were once considered too dangerous and not beneficial enough to have in close proximity to the city center. Once developers realized that aircraft operations were safe and that airports could be flourishing economic centers within communities, development naturally started to follow airports. It wasn’t until 1945 that the Florida legislature realized zoning enabling laws would be necessary to protect airports from encroaching nonconformities.

In that same vein, spaceports are losing their mystery just like airports once did. Developers and political subdivisions are becoming conscious of the fact that spaceports have the potential for attracting enormous economic centers and all new industry. What is more is that commercial spaceflight is becoming far safer for operation in and around urbanized areas, meaning that spaceports no longer need to be “located beyond the city limits and accessible by only a few primitive streets and narrow, red-brick highways” as was the case with airports in their early days. As mentioned in the foregoing commentary, the President and CEO of Space Florida, Frank DiBello, recently commented that “rocket launches are becoming routine, and the need to establish launch sites miles from human habitation — in case the rocket blows up — is over.”

Beyond these sorts of broad similarities between airports and spaceports, spaceports and airports seemingly require most of the same kind of assistance from municipalities. Granted, spaceports have more need for assistance, as their operation will be on a much larger scale than airports, hence the need for spaceport specific laws. However, airports and spaceports equally need protection from any hazard that may

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exist or develop within a certain radius of the field. For instance, if placed on the glide path or within an instrument approach or safety zone, structures, trees, or otherwise tall objects can be lethal obstructions for both aircraft and spacecraft. What is more is that spaceports and airports are noise producing facilities. Special attention must be paid to both types of ports by the local government in order to keep harmony within the community and planes in the air. The similarities between the both are endless, reaching from their similar effects on the environment and local ecosystems to their concern for safety within the community.

Florida’s most recently licensed spaceport, Cecil Field in Jacksonville, is a great example of how spaceport and airport operations work hand in hand. In 2010, Cecil Field, an old naval airfield and current general aviation airport located approximately 25 miles southwest of downtown Jacksonville, became a dually licensed spaceport and airport. The FAA has licensed and permitted both aircraft and spacecraft to take off and land from the site’s 12,500-foot runway, making this a “combo port” so to speak. To the aviator, Cecil Field is just like any other general aviation airport, with the only exception being the field’s nearly 2 mile long runway. However, it is this extra long runway that made Cecil Field the obvious choice for a spaceport in Florida. Spacecraft will need almost every inch of the runway as the spaceport is licensed for “horizontal launches” only, however, Space Florida is seeking FAA approval for

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204 Id.
205 Id.
206 Id.
207 Id.
“vertical launches” at the spaceport. This means that a spaceship would take off like an airplane and fly east, but then rockets will ignite some 40,000 feet over the Atlantic Ocean to begin short, suborbital flights.

Spacecraft flying in and around Jacksonville will of course bring to the area more noise, new pollution and smog concerns, as well as questions of safety for the public on the ground. Once “vertical launches” are approved, noise problems within the surrounding area will become even more of an issue. However, officials at Cecil Field feel that spacecraft operations are similar enough to aircraft operations for the time being, that they can be treated essentially one in the same. Nonetheless, Jacksonville and Cecil Field planners are stuck in an awkward middle ground, where they have adequate laws for airport zoning, but nothing to protect spacecraft from hazards that may arise within the vicinity. If the City had the power to zone for a spaceport like an airport, “combo ports” could exist where zoning laws protect both aircraft and spacecraft simultaneously.

Cecil is surrounded by residential area, but there is a lot of commercial activity in the area. Like other airports, the field has a mixed bag of development surrounding it. On the east side of the field there is significant housing and to the north is a commerce center. While spaceport officials find that the spaceport works alright under the current airport zoning laws, there are some notable needs within the zoning

208 Id.
209 Id.
210 Interview with Rusty Chandler, Interim Chief of Cecil Field, (Nov. 4, 2013).
211 Id.
212 Id.
The most notable is that spaceports need more space for accident mitigation than airports do. In that, zoning laws can help create accident zones, where there is a narrow corridor for flight and debris impact on the public (in the case a spacecraft explodes) would be less severe. A need for land to be “roped off” for accident mitigation will be even larger once vertical launches are commenced.

While City planners are making do with the laws they have at their disposal, the general consensus is that it would be optimum if the City of Jacksonville had the power to set aside land specifically for the purpose of protecting and promoting spaceport activity. What is more is that once there is more of a demand for spaceports, there will be less airport and spaceport combinations and local governments will not want to apply airport zoning laws to spaceports. As is evident from the zoning laws in effect at Cecil Field, the Florida legislature should definitely look to airport zoning enabling laws when designing spaceport zoning enabling laws. Nonetheless, the differences between spacecraft and aircraft operations are great enough that municipalities should not have to fashion airport zoning laws onto spaceports.

V. CONCLUSION

Spaceports are already being incorporated into the State of Florida, with 2 of the 8 U.S. space facilities already licensed and operating in the Sunshine State. The legislature is in a momentous position, in which it could empower local governments to

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213 Id.
214 Id.
215 Id.
216 Id.
217 Id.
better plan and integrate more spaceports into the State, where the space industry
would become the economic center in many cities and towns, just like airports. By
looking to Florida’s already existing airport zoning laws, the legislature can take note on
how to “zone away” hazards and encroaching nonconformities. Nonetheless, time is
running out for the legislature, as spaceports will not be able to thwart nonconforming,
nearby land uses by itself. Instead, the sooner spaceport zoning laws are in place, the
sooner spaceports will be successful in the State and Florida will be the number one
spaceport state in America.