

Orange County Advanced Air Mobility (AAM) Feasibility Study

Feasibility Analysis and Recommendations

PREPARED FOR



Orange County Government
201 S. Rosalind Avenue
Orlando, FL 32801-1393

PREPARED BY



Landmark Center Two
225 E Robinson Street, Suite 300
Orlando, FL 32801-4326

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Table of Contents

1	Introduction	1
2	Methodology Summary	2
2.1	Land Use, Zoning and Property Rights Concerns	2
2.2	Airspace	3
2.3	Environmental	3
2.4	Connectivity	3
2.5	Other Factors	4
2.6	International Drive CRA	4
3	Feasibility Analysis Results	5
3.1	Countywide Analysis	5
3.2	I-Drive CRA Analysis	10
4	Optimal Areas	12
4.1	Countywide Analysis	12
	South of UCF/Central Florida Research Park	12
	South of Oak Ridge (Sand Lake Road and Orange Blossom Trail)	13
	Goldenrod Corridor	13
4.2	I-Drive CRA	14
5	Recommendations and Next Steps	18
5.1	Land Use Compatibility	19
	Countywide Avoidance, Minimization, and Mitigation Strategies	19
	I-Drive CRA Avoidance, Minimization, and Mitigation Strategies	20
5.2	Air Rights and Future Development Entitlement	20
	Legal and Property Rights Dimensions	21
	Airspace Entitlement Analysis and Avigation Easement Assessment	22
5.3	Transportation Connectivity Recommendations	25
5.4	Fire and Safety	25
5.5	Utilities and Energy	26
5.6	Development Review	27

List of Maps

Map No.	Description	Page
Map 1A:	Countywide Vertiport Suitability (Orange County Code, in effect)	8
Map 1B:	Countywide Vertiport Suitability (Orange Code, pending resolution).....	9
Map 2:	I-Drive CRA Map	11
Map 3:	Optimal Area 1: South of UCF/Central Florida Research Park	15
Map 4:	Optimal Area 2 South of Oak Ridge (Sand Lake Road and Orange Blossom Trail).....	16
Map 5:	Optimal Area 3: Goldenrod Corridor.....	17



1

Introduction

This technical memorandum documents the Feasibility Analysis and Recommendations for the Orange County Advanced Air Mobility (AAM) Feasibility Study. This builds upon previous work efforts to document existing conditions within unincorporated Orange County, with focused context for the International Drive Community Redevelopment Area (I-Drive CRA), as well as the methodology for assessment of feasibility of AAM within the County. Findings presented here include optimal subarea locations for vertiport development and operations, but are not intended to be parcel-specific.

The Feasibility Analysis and Recommendations technical memorandum summarizes the findings of the analysis conducted by VHB in accordance with the methodology established for this study. A brief description of the methodology and screening factors is included in the next section, followed by a description of the geospatial analysis, and finally recommendations for optimal locations for AAM development and operations. The data layers and results can be reviewed at this web map location: [Orange County Advanced Air Mobility \(AAM\) Feasibility Study](#).

2

Methodology Summary

The Orange County Advanced Air Mobility (AAM) Feasibility Study Methodology established a screening framework for identifying areas in unincorporated Orange County that may be suitable for future vertiport development and AAM operations. The report is not intended to designate final vertiport sites or flight paths; rather, it provides a parcel-based, GIS-driven methodology to support later analysis, public engagement, and site-specific review by Orange County staff from relevant departments. The methodology recognizes that Orange County's authority is centered primarily on land use and surface transportation, while the Federal Aviation Administration retains authority over airspace, aviation safety, and flight operations.

The methodology is designed to evaluate potential vertiport suitability through a layered geospatial analysis of parcels and contiguous "subareas" across unincorporated Orange County. The framework applies screening categories: land use, zoning, and property rights; airspace; environmental conditions; connectivity; and other strategic factors such as economic development potential and partner agency project alignment. The VHB team performed the analysis and generated a "heat map" that visually differentiates areas meeting more screening criteria from those meeting fewer criteria. These findings were published an interactive web map located here: [Orange County Advanced Air Mobility \(AAM\) Feasibility Study](#).

In addition to the unincorporated County-wide analysis, VHB prepared a supplemental methodology for the International Drive Community Redevelopment Area (I-Drive CRA) to incorporate the unique characteristics of this district.

The screening criteria are summarized briefly below. The full Methodology document is included as **Appendix A**.

2.1 Land Use, Zoning and Property Rights Concerns

The methodology gives substantial weight to zoning and entitlement conditions because these are among the County's most direct regulatory tools. VHB evaluated both the existing Orange County Code (in effect) and the Orange Code (pending resolution) to determine where vertiports are allowed either by right or by special exception. Areas where vertiports are permitted by right, or as a permitted use with additional standards, are treated as more suitable than areas requiring special exception approval. Under the current Orange County Code (in effect), industrial zoning

districts allow vertiports by-right and are considered more suitable, while several agricultural, rural estate, and commercial districts would require special exception review. Under the Orange Code (pending resolution), vertiports are permitted with additional standards in **LI** and **HI** districts and require special exception in **T2 Rural, T5 Center, and T6 Urban Core**. All other zoning categories are excluded from the land use analysis. Landowners or vertiport proponents may petition the County to change their zoning through the standard rezoning process.

2.2 Airspace

Airspace layers (including Airspace Classifications, flight obstructions, and navigable surfaces) are provided for informational purposes only. The exclusive authority to regulate airspace, including flight paths, rests with the Federal Aviation Administration.

2.3 Environmental

The methodology applied a conservative 10,000-foot proximity screen¹ using a filtered subset of FDEP's authoritative Solid Waste Facilities layer. The full FDEP point layer is shown in the web map for context, while the scoring buffer excludes inactive or not clearly active records, records with a null facility class, Disaster Debris Management Sites, and Recovered Materials Processing Facilities (RMPFs). RMPFs are treated separately because qualifying RMPFs are not automatically considered solid waste management facilities under Florida's statutory framework. The screen identifies parcels that may require further review under Florida aviation site approval and wildlife-hazard considerations, with site-specific review needed to confirm facility type, operating status, and wildlife-attractant relevance. Parcels located entirely within wetlands, floodplains, or conservation areas were deemed unsuitable and screened out. Noise was acknowledged as an important issue, but the methodology does not use noise as a suitability determinant due to limited available eVTOL noise data. In addition, the County is precluded from regulating aviation-related noise, as exempted in 15-185 (d) *Aircraft and airport activity conducted in accordance with federal laws and regulations* of the Orange County Code of Ordinances.

2.4 Connectivity

A core premise of the methodology was that vertiports should function as part of a broader multimodal transportation system rather than as isolated aviation facilities. To assess this, the methodology created **½-mile buffers** around major transportation assets identified in Vision 2050 and related planning documents, including SunRail stations, LYNX Superstops, transit centers, park-and-ride locations, high-capacity corridors, major transit trip generators, future LYNX routes, and warehouse/distribution terminals. Parcels overlapping these buffers are considered more suitable as potential vertiports, with additional emphasis placed on fixed origins and destinations such as major transit nodes and trip generators.

¹ Rule 14-60.005(5)(i), Florida Administrative Code (FAC)

2.5 Other Factors

The methodology also considers whether potential vertiport subareas align with Orange County's regional partners. Candidate areas may receive additional support if they are geographically aligned with the County's five-year Capital Improvement Program or related investments by MetroPlan Orlando, FDOT, the Central Florida Expressway Authority, and the Florida Turnpike Enterprise. The hospitality sector is considered in the International Drive CRA, described in the next section. Alignment with these factors was not quantitatively scored but was considered to identify the three optimal locations for AAM development and operations.

2.6 International Drive CRA

The methodology includes a specialized framework for the International Drive Community Redevelopment Area (I-Drive CRA), recognizing that it is the County's most intense tourism and employment district. The area includes major attractions, hotels, restaurants, entertainment destinations, and the Orange County Convention Center, and it is shaped by overlapping planning layers including the I-Drive CRA, the I-Drive District Overlay, and the pending Orange Code. Similar to the countywide methodology, successful AAM integration in this district would require treating vertiports as components of a multimodal visitor mobility system, consistent with planning goals for walkability, mixed use, placemaking, and economic development.

Within the I-Drive CRA, the land use analysis follows the countywide approach, but now includes high-intensity transects such as T6 General, T6 I-Drive, and T6 Universal from the Orange Code (pending resolution), as well as buffered consideration of Special Zone Theme Park and Special Zone Civic areas. However, the methodology excludes all parcels within the I-Drive District Overlay, which prohibits helicopter commercial enterprises such as heli-tours or similar uses. This restricts the vast majority of parcels within the I-Drive CRA that would have scored favorably otherwise. At present, "vertiports" and "advanced air mobility" are not specifically listed in the I-Drive District Overlay, and it would be possible for a determination to be made, consistent with the I-Drive Code, that this use is an "Unlisted Dissimilar Use" and permitted in the District. This private sector initiated process would require an application to the Development Review Committee (DRC) and a hearing before the Orange County Board of County Commissioners.

3

Feasibility Analysis Results

Using the methodology described in the previous section, VHB performed a geospatial analysis on the data layers identified in the Existing Conditions Technical Memorandum. Each parcel in unincorporated Orange County was included in this analysis, and parcels that were wholly within sensitive environmental features (wetlands, floodplain, conservation area), had proximity to solid waste facilities, or were without zoning permissive of a vertiport were screened out of the next phase of analysis. Parcels were then quantitatively scored based upon zoning classification (vertiport permitted; or allowed as special exception) and proximity to connectivity factors (SunRail Stations, LYNX stops, etc.). This resulted in a subset of parcels, ranging from 3 points (special exception use, not within a ½ mile buffer of a connectivity factor) to 8+ points (permitted use, within a ½ mile buffer of one or more connectivity factor).

While the analysis was completed using parcel-based data, the Feasibility Study is not intended to identify potential vertiports at the parcel or site-specific level. Therefore, the VHB team created a “heat map” to differentiate subareas in generalized geographic areas. The heatmap depicts the spatial distribution of potential vertiport subareas (comprised of multiple parcels) that appear more suitable (meeting more criteria) and appear less suitable (meeting fewer criteria). Map 1 shows the potential vertiport suitability heatmap in unincorporated Orange County.

In addition, the Feasibility Analysis is not intended to depict where Orange County “wants” vertiport development to occur. No public investments are planned for vertiport development at this time, although the County will pursue the appropriate coordination measures by participating in collaborative discussions with landowners, vertiport operators, and partner agencies like the Florida Department of Transportation. The County is not directing potential vertiport locations, only enhancing readiness to appropriately review market-driven proposals.

3.1 Countywide Analysis

Several prominent patterns appear on **Map 1A (Orange County Code, in effect)**, including:

- Northwest Orange County (North of Apopka, west of Wekiwa Springs State Park). This subarea is primarily agricultural, meaning that vertiports are allowed by special exception. There is a cluster of industrial parcels along the US 441 corridor, north of the Orlando Apopka Airport. This area is limited in multi-modal connections between potential future vertiports and surrounding uses.
- North of Rosemont and Fairview Shores. This subarea features many industrial and commercial parcels along the Lee Road and Edgewater Drive corridors, with proximity to the LYNX Rosemont Super Stop.
- Goldenrod Road corridor. This subarea includes many industrial parcels, which allow vertiports as a permitted use.
- South of University of Central Florida (UCF)/Central Florida Research Park. This subarea includes many industrial parcels that are within the buffer of an Activity Center, as depicted on the Vision 2050 Comprehensive Plan Map 2A Major Transit Trip Generators.
- East of the Econlockhatchee River. This portion of the County is primarily agricultural (vertiport as a special exception) with very low-density rural development. There are scattered subareas that are potentially suitable for potential vertiports, but they are disconnected from existing or planned multimodal transportation. The low-density nature of this area does not suggest high tempo vertiport operations. However, the area may include less use and structure conflicts while also providing more connections to and from rural communities
- South of Oak Ridge (Sand Lake Road and Orange Blossom Trail). This subarea, anchored by Florida Mall, has one of the biggest concentration of Industrial sites (vertiport as permitted use) in the County, as well as proximity to the LYNX Florida Mall Super Stop.
- Pine Castle (North of Sand Lake Road and S. Orange Ave). This subarea features a high concentration of Industrial sites (vertiport as permitted use) and close proximity to the Sand Lake Road SunRail Station.

Map 1B (Orange Code, pending resolution), displays similar patterns to the existing Orange County Code (in effect). In this analysis, the existing code zoning classifications are substituted with Light Industrial (LI) and Heavy Industrial (HI) districts (vertiports are permitted with additional standards) and T2 Rural, T5 Center, and T6 Urban Core (vertiports require special exception). The Orange Code (pending resolution) would increase overall vertiport development potential within the County (653 by right parcels increased to 1,140 parcels; and 4,355 special exception parcels increased to 7,520 parcels).

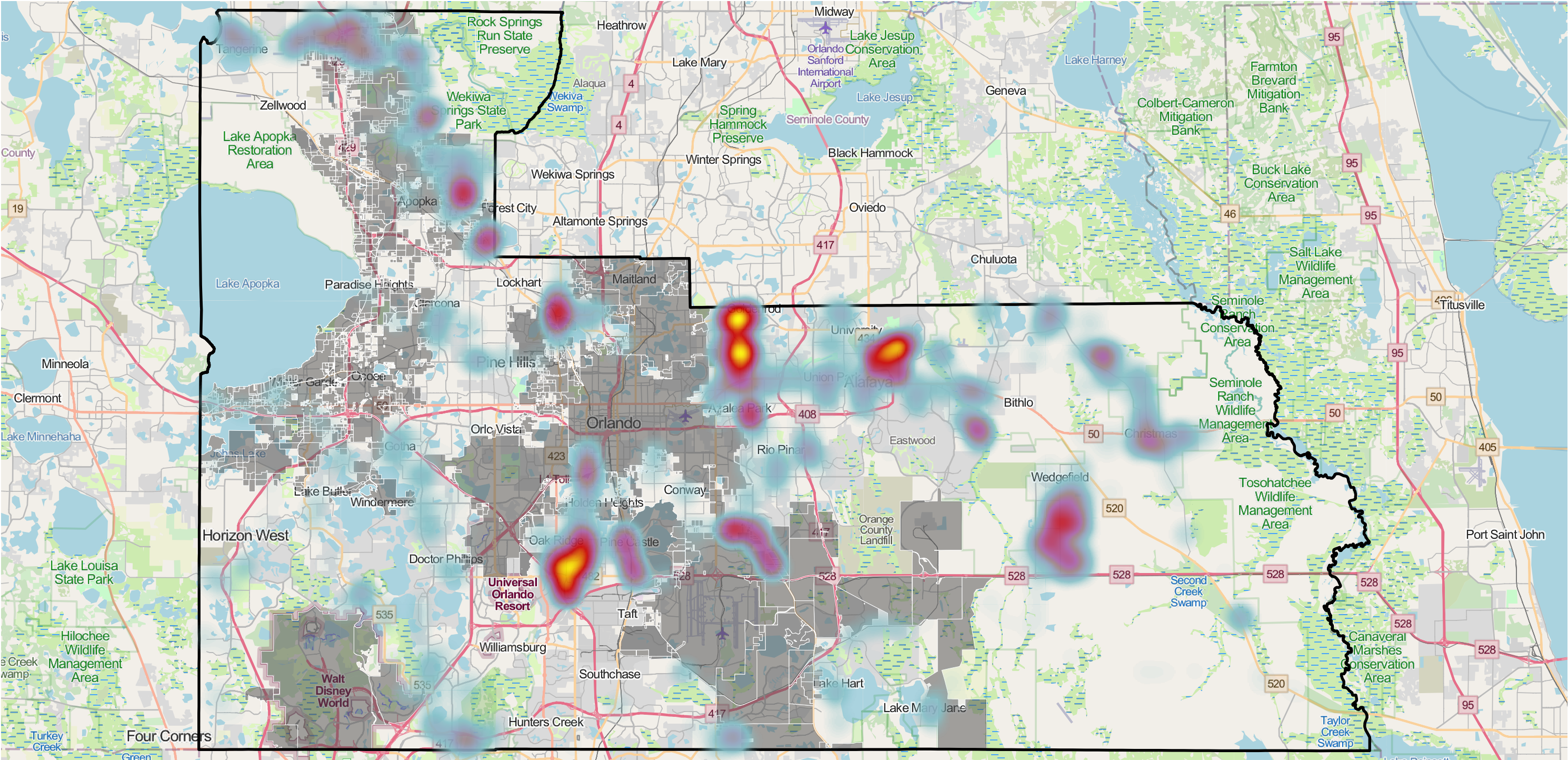
Additional potentially suitable vertiport subareas include the following:

- North of Fairview Shores (centered on US 441 / Orange Blossom Trail, John Young Parkway, and Edgewater Drive). This subarea features Light Industrial, Heavy Industrial and T5 parcels. The LYNX Rosemont Super Stop is approximately ½ mile southwest from the intersection of Edgewater Drive and John Young Parkway, while Lake Weston Elementary School is located approximately ¼ mile to the northeast.
- North of Orlando International Airport (Hoffner Avenue and Narcoossee Road corridor). This subarea features a high concentration of Light Industrial and Heavy Industrial parcels. The proximity to Orlando International Airport may present

logistical advantages due to synergy other aviation related uses and industries; however, it may also present airspace conflict challenges, to be determined at the time of vertiport application.

- Wedgefield area. This subarea features a high concentration of T2 Rural parcels. Wedgefield is served by LYNX NeighborLink 621 for on-demand mobility and provides connectivity to Waterford Lakes Town Center.

Map 1A: Countywide Vertiport Suitability (Orange County Code, in effect)



Orange County Code (in effect) Heatmap

Less suitable

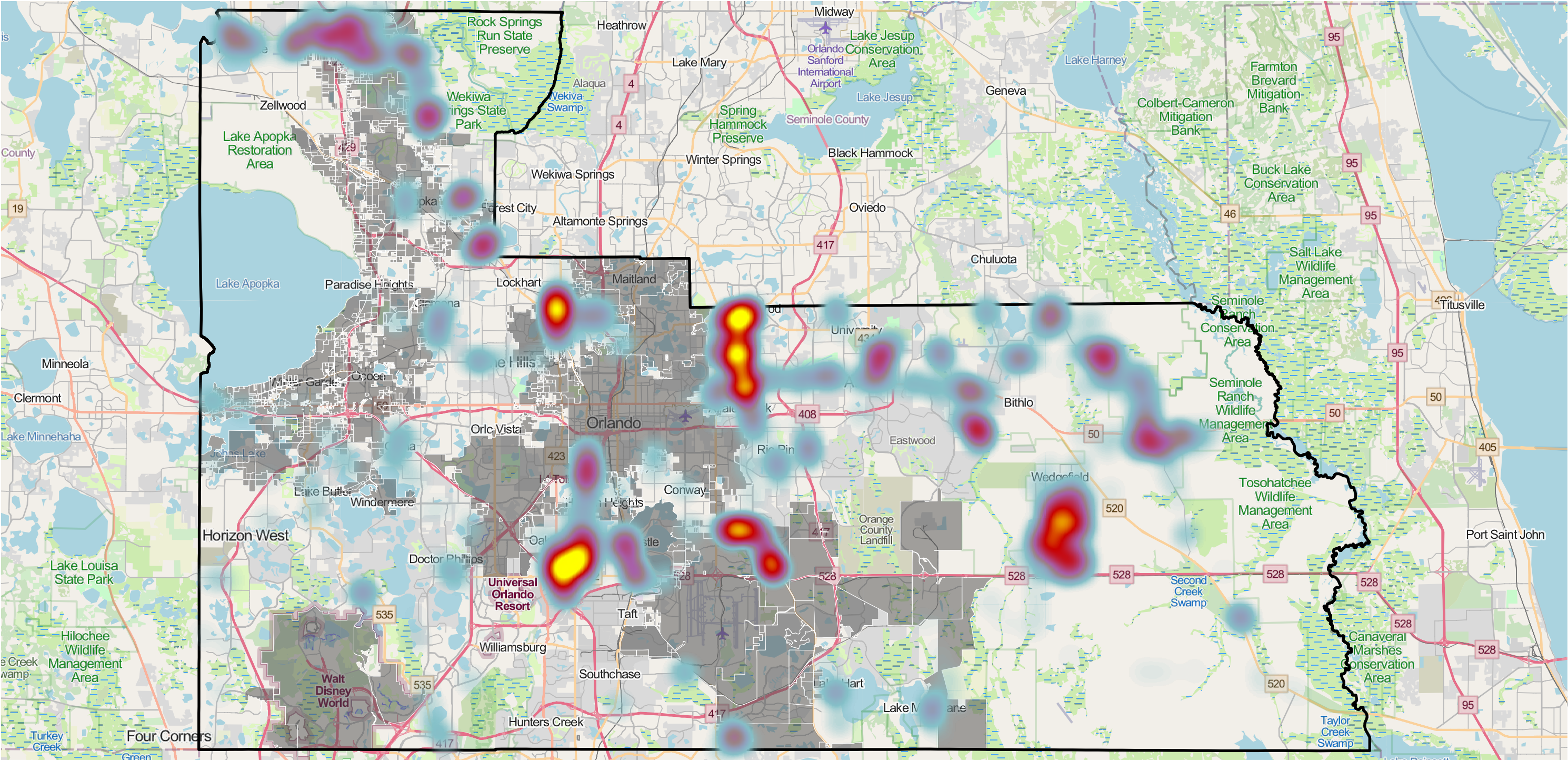
More suitable

Orange County

Jurisdictions



Map 1B: Countywide Vertiport Suitability (Orange Code, pending resolution)



Orange Code (pending resolution) Heatmap

Less suitable

More suitable

Orange County

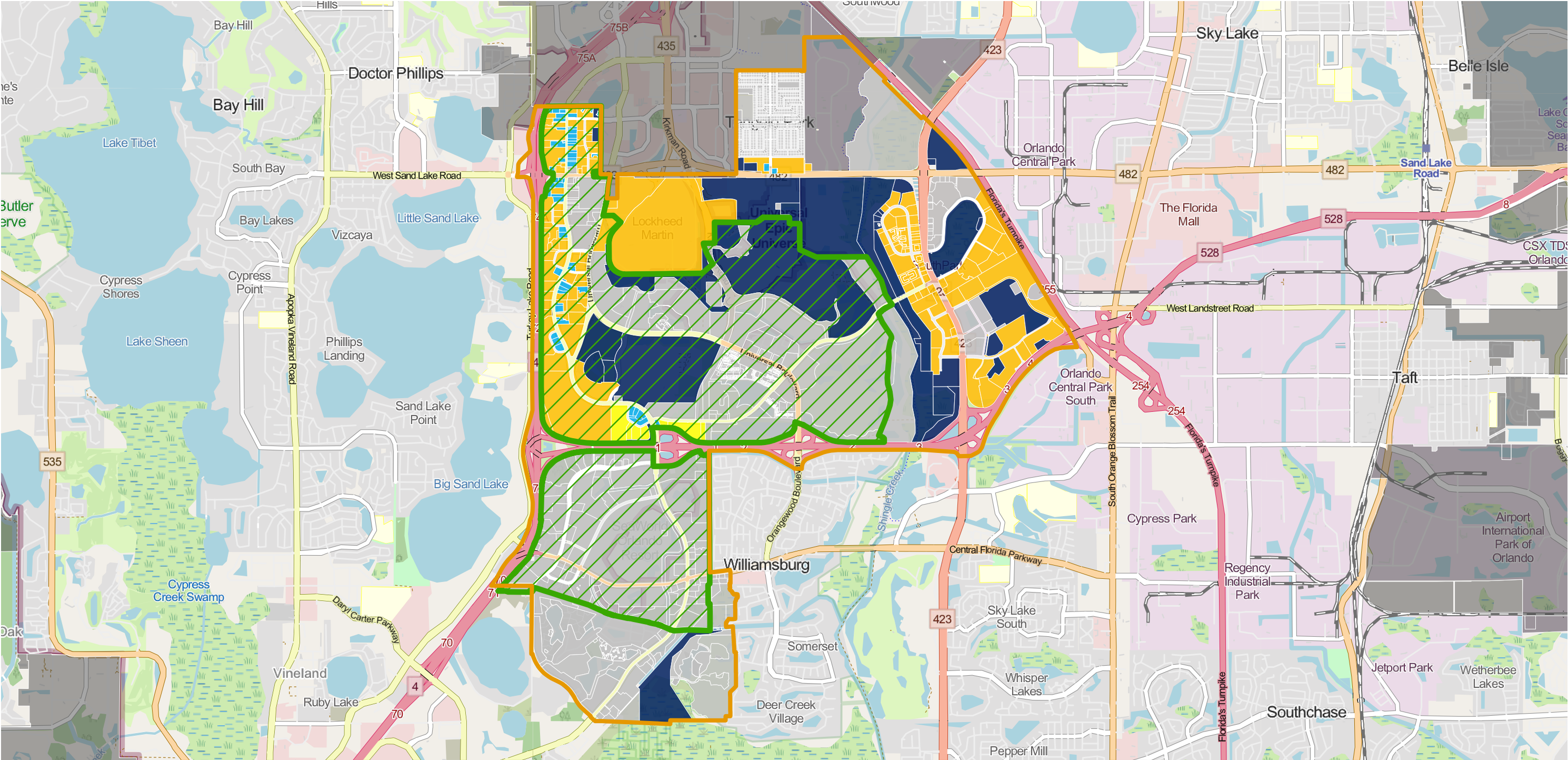
Jurisdictions



3.2 I-Drive CRA Analysis

As stated previously, the I-Drive District Overlay Zone prohibits helicopter commercial enterprises, including heli-tours or similar uses. This Overlay Zone applies to the vast majority of eligible parcels within the I-Drive CRA, including the Orange County Convention Center (OCCC), theme parks, and hotel areas. Potential vertiport subareas outside of the I-Drive District Overlay Zone are depicted on **Map 2** and are centered on Destination Parkway and S John Young Parkway. Additional potential subareas are depicted on Sand Lake Road, adjacent to the Tangelo Park community. If a vertiport was proposed in this area, the land use compatibility and buffering strategies described in **Section 5** should be required. Other areas within the CRA but not the I-Drive District Overlay include several large parcels owned by Lockheed Martin.

Map 2: I-Drive CRA Map



- Excluded (Parcel Size)

Excluded (Wetlands/Flood Zone)

Excluded (Zoning)

Scored (Low to Moderate Opportunity)

Scored (Moderate to High Opportunity)
- Orange County

Jurisdictions

I-Drive CRA

I-Drive District Overlay (Helicopter Commercial Enterprises prohibited)



4

Optimal Areas

4.1 Countywide Analysis

Using the heat map analysis and current zoning (Orange County Code, in effect), the VHB team examined different factors to select three areas of the County that appear suitable for potential vertiport locations. Although not a quantitative screening criteria of the methodology, proximity to schools and neighborhoods was qualitatively reviewed to promote land use compatibility. Early research by OEMs and NASA² suggests that eVTOL aircraft may produce lower noise levels than some conventional aircraft in certain operating conditions, but there is not yet a settled industry consensus on expected noise levels, community impacts, or standardized noise thresholds. As previously stated, the County cannot regulate aviation noise that operates in accordance with federal standards per Ch. 15, Orange County Code.

South of UCF/Central Florida Research Park

This subarea (shown on **Map 3**) includes many industrial parcels that are within the buffer of an Activity Center, as depicted on the Vision 2050 Comprehensive Plan Map 2A Major Transit Trip Generators. It also has strong regional roadway access, including SR 408; SR 50 / Colonial Drive; Alafaya Trail; University Boulevard; and access near SR 417. There is existing bus service and high travel demand associated with UCF and nearby activity centers.

This is one of Orange County's strongest non-downtown employment and institutional centers. Nearby anchors include University of Central Florida and Central Florida Research Park, and

² Acoustic Testing of the Joby Aviation Propeller in the National Full-Scale Aerodynamics Complex 40- by 80-Foot Wind Tunnel.
https://rotorcraft.arc.nasa.gov/Publications/files/Schatzman_AIAA_2025.pdf

multiple defense, simulation, aerospace, technology, and research employers; institutional and professional office uses; and student, faculty, visit

or, and business travel demand. The employment density and innovation-oriented economy make this area especially well-suited for an early AAM node. Economic development opportunities in this subarea include advanced mobility research and demonstration projects; university-industry partnerships; aerospace, defense, simulation, and technology-sector mobility; workforce development tied to aviation, electrification, autonomy, and advanced transportation; and the potential for business travel between UCF, Downtown Orlando, Orlando International Airport and the tourism corridor.

There are a number of schools and residential areas in the general vicinity, so a potential vertiport must be carefully sited internal to large industrial, office, flex, or employment-focused parcels of the Central Florida Research Park, along major arterials rather than local residential streets, and away from K-12 schools, student housing, and residential subdivisions.

South of Oak Ridge (Sand Lake Road and Orange Blossom Trail)

This subarea (shown on **Map 4**), anchored by Florida Mall, has one of the biggest concentration of Industrial sites (vertiport as permitted use) in the County, as well as proximity to the LYNX Florida Mall Super Stop. It is well connected to the multimodal network, including Sand Lake Road; Orange Blossom Trail / US 441; John Young Parkway; Orange Avenue, SR 528 / Beachline Expressway; I-4; Orlando International Airport access corridors; and Florida Mall LYNX Super Stop. The subarea is close to major employment and activity centers, including Florida Mall; South Orlando retail and service-sector employment; airport-support commercial areas; industrial and warehouse districts; hotels and visitor-serving uses; and nearby access to the tourism corridor and Downtown Orlando. This gives the area a strong practical demand base for workers, visitors, airport users, and commercial travel.

A vertiport in this subarea could support economic development through redevelopment of older commercial corridors; commercial reinvestment around Florida Mall and Sand Lake Road; and business, visitor, and logistics-related AAM services. There are many schools and neighborhoods in Oak Ridge and Pine Castle, and therefore site selection should focus on large commercial, industrial or warehouse parcels, transit-adjacent parcels near bus routes, and fronting major arterials or expressway ramps.

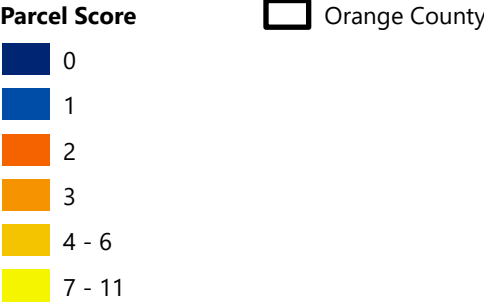
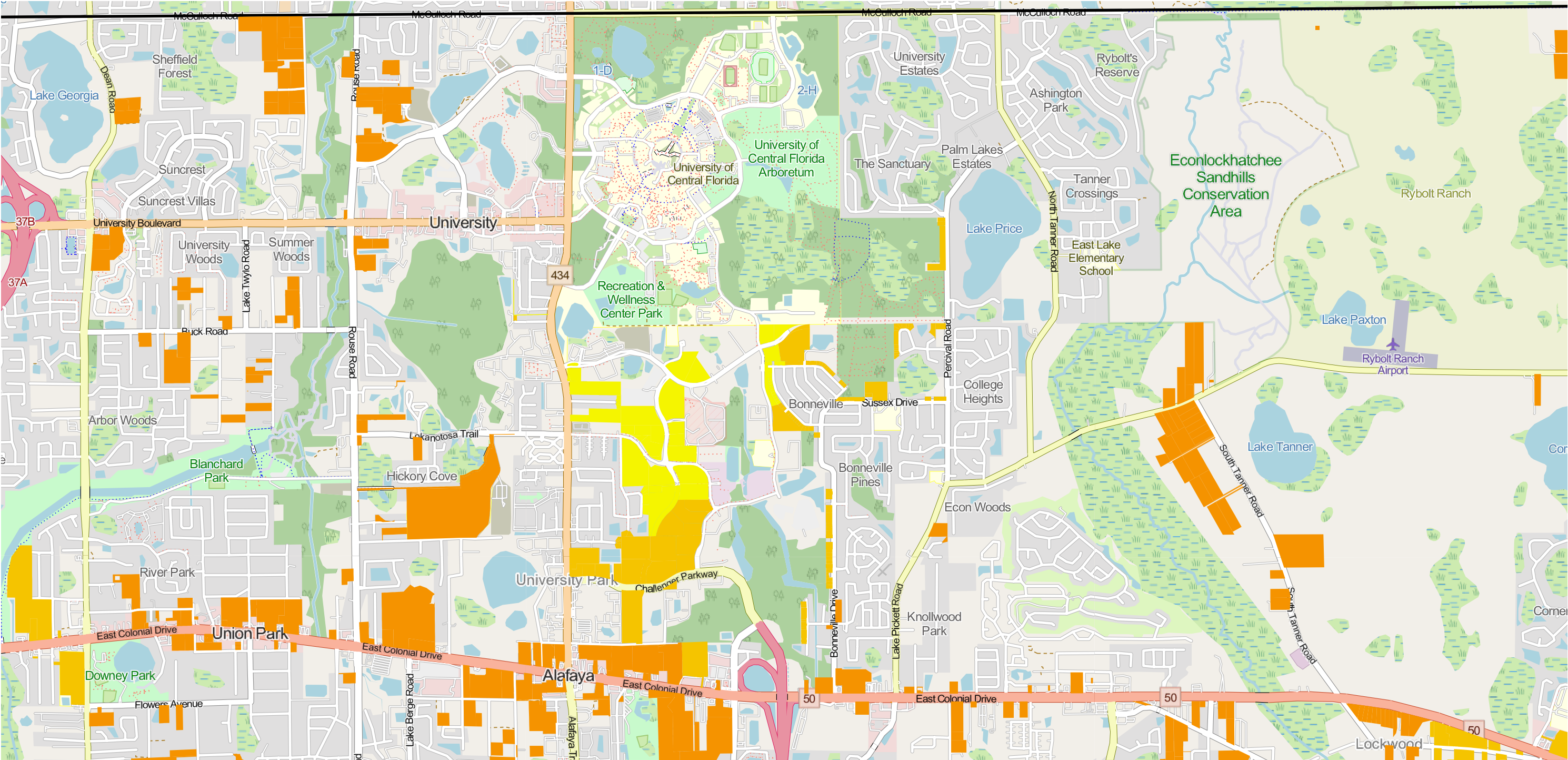
Goldenrod Corridor

This subarea (shown on **Map 5**) includes many industrial parcels, which allow vertiports as a permitted use. It has regional connectivity to SR 408; SR 50 / Colonial Drive; SR 436 / Semoran Boulevard; Goldenrod Road; SR-417; the Cady Way trail; and existing LYNX bus service. It has proximity to employment centers and institutional clusters, including Full Sail / Winter Park-area institutional and creative economy assets; UCF and the University area; Central Florida Research Park; East Orlando office, medical, commercial and retail corridors; and Downtown Orlando via Colonial or SR 408. Like the previous subarea, this corridor would benefit from redevelopment of older commercial uses, and vertiport siting should focus on large commercial, industrial or warehouse parcels, transit-adjacent parcels near bus routes, and frontage on major arterials.

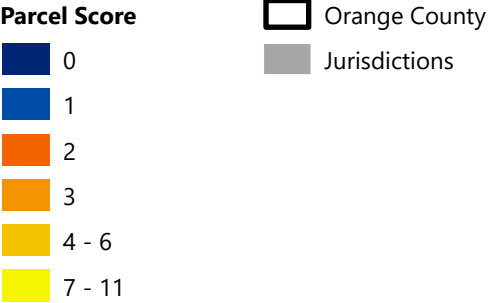
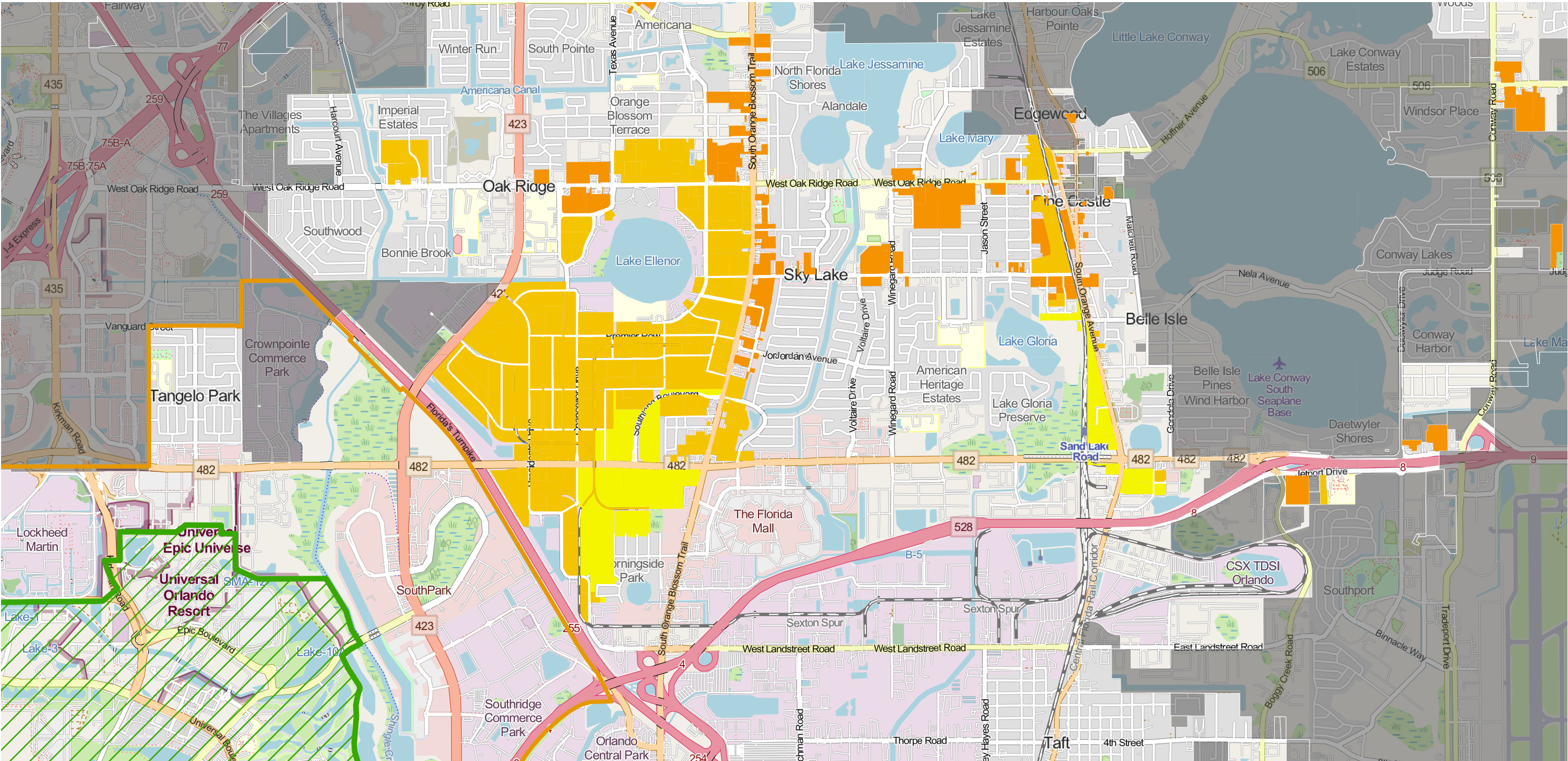
4.2 I-Drive CRA

The most suitable remaining potential vertiport subarea in the I-Drive CRA is along the eastern or northeastern edge of the CRA, outside the I-Drive CRA District Overlay, near Sand Lake Road / International Drive / I-4 / SR 528 access area. This area appears to retain some moderate-to-high opportunity parcels while avoiding the overlay prohibition on helicopter commercial enterprises, maintaining proximity to the tourism and convention market, and providing strong regional roadway access. Please refer to **Map 2: I-Drive CRA District**.

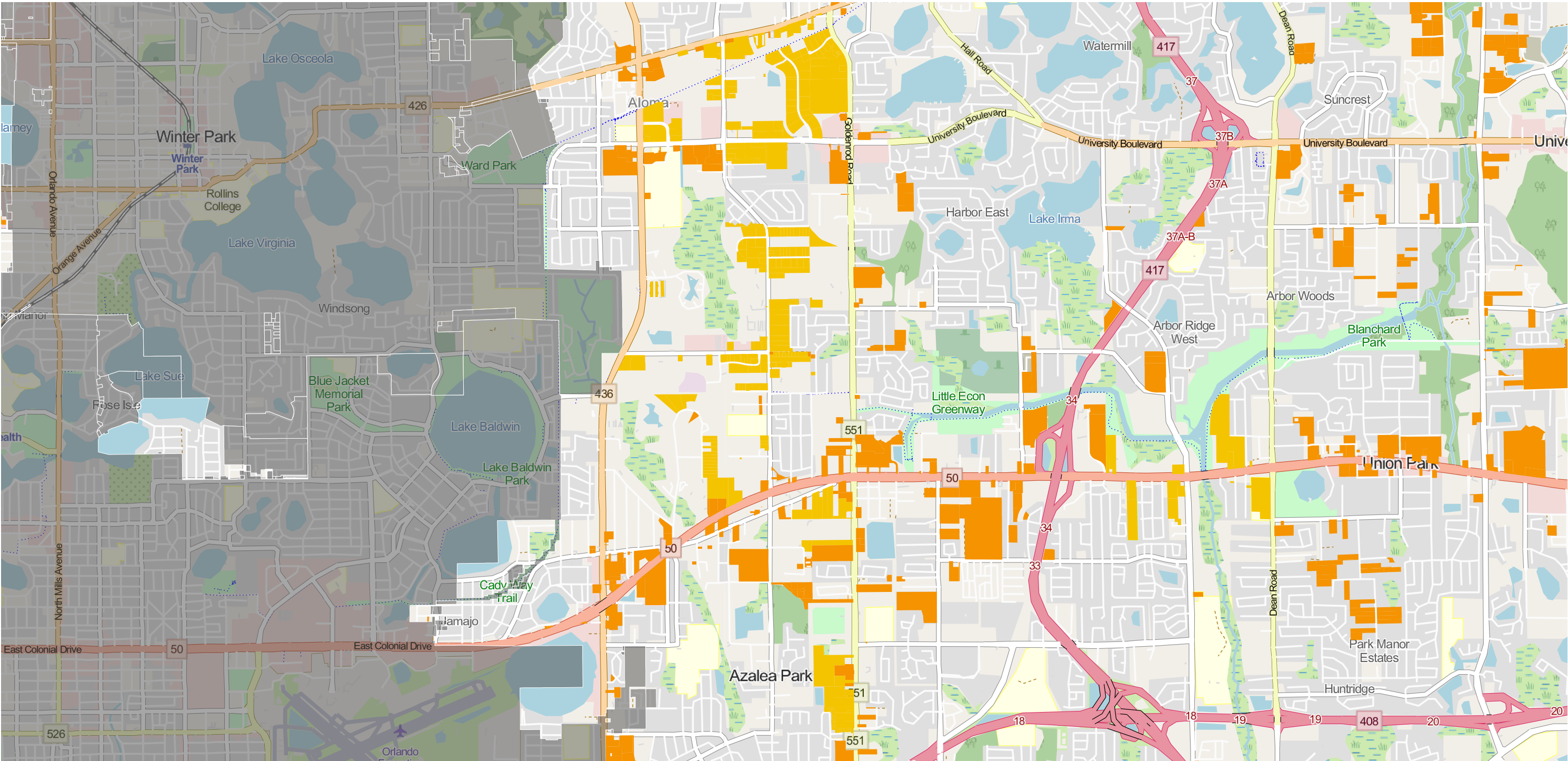
Map 3: Optimal Area 1: South of UCF/Central Florida Research Park



Map 4: Optimal Area 2 South of Oak Ridge (Sand Lake Road and Orange Blossom Trail)



Map 5: Optimal Area 3: Goldenrod Corridor



Parcel Score

- 0
- 1
- 2
- 3
- 4 - 6
- 7 - 11

Orange County

Jurisdictions



5

Recommendations and Next Steps

The heatmap and optimal subareas described in the previous sections identify areas where vertiports may be developed consistent with the current Land Development Code. The subareas are not intended to represent customer demand or vertiport operator business plans but do represent areas of the County with high travel patterns, economic activity, and connectivity to the existing or planned multimodal transportation network that may be of interest to the private-sector for proposed vertiport development.. Mapping these subareas is an important step towards proactive planning to maximize community benefit and minimize community impacts resulting from the potential introduction of AAM into Orange County.

It is widely believed that early AAM operations will use existing airports, including Orlando International Airport (MCO) and other General Aviation (GA) airports³. This is supported by the FAA AAM Implementation Plan (Innovate 28), which states *"To enable near-term operations, operators and manufacturers desire to use existing infrastructure, including commercial service airports, underutilized GA airports, and helicopters."*⁴ As the industry matures, it is anticipated to shift focus to dense urban environments, providing a new form of mobility that does not currently exist in these areas today.

³ Remarks from eVTOL manufacturers, operators, and vertiport developers at the May 2026 Florida Advanced Air Mobility Symposium hosted at Embry Riddle Aeronautical University.

⁴ FAA Advanced Air Mobility (AAM) Implementation Plan: <https://www.faa.gov/sites/faa.gov/files/AAM-l28-Implementation-Plan.pdf>

The Feasibility Analysis was limited to parcels without certain environmental constraints and that have current land use rights (permitted, or by special exception) for vertiports today. However, landowners have the option to apply for a rezoning to change their property zoning classification from one that does not allow vertiports to one that does. A rezoning application would be reviewed by Orange County's Planning Division and other County departments and would require public hearings before the Orange County Planning and Zoning Commission and the Orange County Board of County Commissioners. The rezoning application review process addresses consistency with the Comprehensive Plan, compatibility with adjacent land uses, traffic impacts, public facilities and infrastructure capacity, environmental constraints, and other conditions. Therefore, it is possible that future vertiports may be developed in areas not shown in the Feasibility Analysis, and the County may need to supplement the Land Development Code with additional strategies to avoid or minimize impacts on existing communities. In all cases, County planners and administration should review future vertiport siting applications with the context that they should support—not constrain—the County's long-term growth management, redevelopment, placemaking, and public investment objectives, including Vision 2050's Intended and Targeted Growth Sectors, transit-oriented development goals, compact urban form, fiscal sustainability objectives, and the County's multimodal transportation network.

5.1 Land Use Compatibility

The following strategies were included in the Feasibility Study Methodology technical memorandum:

Countywide Avoidance, Minimization, and Mitigation Strategies

Orange County's land use regulatory authority has the greatest impact on this methodology and future vertiport locations, as airspace and other federal aviation preemptions limit the County's ability to affect aviation operations and potential community impacts.

Potential strategies to limit adverse impacts on communities include the following:

- Amend the Land Development Code to require the Air Rights and Future Development Entitlement evaluation and documentation process, and further described in Section 5.2.
- Require public meetings for all potential vertiport projects. All residents, property owners, and stakeholders within 1 mile of a proposed vertiport should be notified.
- At the time of vertiport application, coordinate with the FAA and FDOT to recommend that proposed flight paths avoid existing residential uses, to the extent practicable. The FAA will have final approval authority of airspace related matters.

I-Drive CRA Avoidance, Minimization, and Mitigation Strategies

The following strategies should be considered during site selection and vertiport permitting within the I-Drive CRA to reduce the likelihood of adverse impacts of AAM on adjacent uses and residents.

- Policy ID5.1.1 of the I-Drive Element states *"Buffer techniques and varied development densities and intensities shall be employed to ensure land use compatibility and provide transitional land use activities within and adjacent to the International Drive Activity Center consistent with the objective."* Consistent with this Policy, the County should ask vertiport proponents to describe how AAM operations will be buffered from existing uses, such as residential, schools, and parks. In addition, the proponent should demonstrate the effectiveness of the proposed method of buffering through comparative video footage, three-dimensional modeling, or other data that allows the County to evaluate the proposed buffering method.
- Policy ID5.1.3 of the I-Drive Element states *"The International Drive Activity Center Development Guidelines shall include effective land use buffering regulations to provide for the protection of the Lake Willis single family homes."* Consistent with this Policy, the County should ask vertiport proponents to describe any potential impacts to these residences resulting from anticipated AAM operations. If negative impacts are anticipated, the proponent should describe strategies for mitigation.
- Tangelo Park is located immediately adjacent to C-2 zoning, which permits vertiports as a special exception. If a private vertiport is proposed in this location, County authorities should require visual buffering, community engagement, noise modeling studies, and other mitigation strategies as potential conditions of approval.
- SeaWorld Orlando is home to many different forms of animals and marine life. If a private vertiport is proposed in near proximity, County authorities should require the proponent to coordinate with SeaWorld and the FAA to determine potential impacts of AAM operations on animal health and develop mitigation strategies.

5.2 Air Rights and Future Development Entitlement

When a heliport or vertiport proponent submits FAA Form 7480-1 (Notice of Landing Area Proposal), the FAA evaluates airspace compatibility under Advisory Circular 150/5390-2 and Part 77 of the Federal Aviation Regulations. That review is a snapshot in time: it captures existing obstacles and proposed structures at the moment of filing. It does not account for future development potential on adjacent parcels.

This creates a structural gap with direct implications for vertiport siting, airspace permitting, and long-term operational viability. Specifically:

- FAA Form 7480-1 requires the height of buildings and obstacles and their distance from the helipad, but only as they currently exist.

- No mechanism exists within the 7480-1 or 7460-1 (Notice of Proposed Construction) process to require or evaluate the maximum allowable height under current zoning entitlements on adjacent parcels.
- A FAA “no objection” determination is not a recorded encumbrance against neighboring properties. It conveys no restriction on future development to those heights.
- Landowners hold air rights up to their zoned maximum height as property entitlement, regardless of whether they have built to that height.
- Engineering Brief 105A provides design guidance for the planning, design and construction of vertiports, but does not address whether a proposal creates an air navigation or obstruction issue.

Legal and Property Rights Dimensions

The underlying legal framework traces to *Causby v. United States* (1946), in which the Supreme Court held that landowners possess airspace above their property to a “reasonable height”, but that government overflight at low altitude can constitute a taking requiring just compensation. Zoning height maximums represent the ceiling of a property owner’s reasonable, legally protected air rights.

For vertiport planning, three distinct legal risks arise:

Regulatory Taking

If a flight path or approach/departure surface is established over a parcel, and local authorities subsequently restrict that parcel’s development height to protect the flight path, the landowner may have a claim for a regulatory taking under the Fifth Amendment or potential issue with Florida’s Bert J. Harris Act.

Avigation Easement Gap

Avigation easements, recorded instruments that convey the right of aircraft overflight across private airspace, are standard practice at commercial airports. They are rarely pursued for heliports, and almost never considered in current vertiport planning efforts.

Without an avigation easement, the vertiport operator holds no recorded right to the airspace over adjacent parcels and cannot prevent future structures from penetrating flight paths.

Inverse Condemnation Exposure

If a vertiport’s established operations effectively prevent a property owner from developing to their zoned maximum height, reducing the value of their air rights, that owner may seek inverse condemnation relief without the government or operator having formally acquired those rights.

Airspace Entitlement Analysis and Avigation Easement Assessment

VHB recommends that Orange County adopt the following **Airspace Entitlement Analysis and Avigation Easement Assessment process** to proactively address potential air rights issues associated with vertiport development. This analysis will extend beyond the current FAA requirement of existing obstacle identification to explicitly evaluate and avoid adverse impacts to the vertical development rights (air rights) of surrounding properties.

Step 1- Part 77 Surface Generation and Mapping

For each potential vertiport site, the vertiport proponent shall generate the applicable FAA Part 77 obstruction surfaces using proposed vertiport layout, orientation, and operational parameters. These surfaces shall be modeled in three dimensions and exported to GIS for spatial analysis.

- Inputs: Proposed vertiport pad elevation, runway/Final Approach and Take-Off Area (FATO) orientation, declared distances, and instrument approach procedure types (Visual Flight Rules (VFR) or Instrument Flight Rules (IFR)).
- Output: 3D GIS layer set of all Part 77 surfaces, clipped to parcel boundaries within the study area.

Step 2- Zoning Entitlement Mapping

All parcels within and immediately surrounding the Part 77 surface footprint shall be mapped against their maximum allowable heights under current Orange County zoning designations and the I-Drive CRA District land development regulations. In addition, the vertiport proponent shall review Section 38-77 Use Table of the Orange County Code to identify sensitive uses that may be incompatible with aviation operations.

This step establishes the full envelope of legally protected air rights and permitted or special exception uses, including pending or future sensitive uses, that each adjacent parcel is entitled to develop to in the future.

- Data sources: Orange County Property Appraiser parcel data; Orange County zoning and I-Drive CRA District land development regulations; Orange County airport height zoning map and GIS layers; FAA OE/AAA, ADIP/NASR, and Part 77 criteria; FDOT Aviation Office airport facility, runway, and airport protection zoning resources.
- Output: Parcel-level GIS layer with attributes for current structure height, maximum zoned height, parcel ownership, and current zoning classification. List of permitted or special exception uses, including sensitive facilities such as schools, adult and child care facilities, places of worship, and nursing facilities.

Note: Height entitlements shall include base zoning maximums plus any applicable bonus heights from density bonuses, Planned Development agreements, or special exception approvals of record.

Step 3 - Air Rights Conflict Analysis

The Part 77 surface GIS layers (Step 1) shall be intersected with the zoning entitlement layer (Step 2) to identify parcels where future buildout to the allowable maximum would penetrate one or more Part 77 surfaces. Each conflict parcel shall be classified by conflict type and severity:

- **Class 1: Approach/Departure Surface Penetration:** Most operationally critical; could limit or preclude future vertiport IFR operations, if pursued, or require procedure design changes. Current operations are anticipated to occur under visual flight conditions, meaning weather and visibility are sufficient for pilots to operate visually.
- **Class 2: Transitional or Horizontal Surface Penetration:** Operationally significant; may affect visual approach categories or traffic pattern altitudes.
- **Class 3: Conical Surface Penetration:** Lower operational impact; requires FAA notice (7460-1) if structure is built but does not preclude operations.

For each conflict parcel, the analysis shall calculate the penetration height (difference between the Part 77 surface elevation at the parcel and the maximum zoned building height), the horizontal extent of the conflict, and the estimated volume of airspace at issue.

Step 4 - Avigation Easement Boundary Definition and Cost Assessment

For all Class 1 and Class 2 conflict parcels, the vertiport proponent shall be responsible for developing recommended avigation easement boundaries and a preliminary cost assessment for easement acquisition. Avigation easements are recorded real property instruments that grant the vertiport operator (or a public entity) the perpetual right of aircraft overflight through defined airspace above a parcel and may include height restriction covenants limiting future vertical development to a specified maximum.

- **Easement boundary definition:** Legal metes and bounds descriptions of the airspace volume to be encumbered, referenced to parcel boundaries and Above Ground Level (AGL) elevations, suitable for recordation in the Orange County Official Records.
- **Preliminary valuation methodology:** Assessment of the diminution in property value attributable to the height restriction, using comparable avigation easement transactions and/or appraisal-based air rights valuation methods, for use in owner negotiations and budget planning.
- **Ownership and title review:** Identification of all fee simple owners, leaseholders, and mortgage holders of record whose consent or subordination may be required to encumber the parcel.
- **Output:** Easement Assessment memorandum per conflict parcel, for use by the vertiport proponent in evaluating project feasibility, with recommended boundary, estimated acquisition cost range, and recommended sequencing relative to vertiport permitting milestones. This assessment shall not imply County responsibility for easement acquisition, funding, or negotiation.

Step 5 - Orange County Code and Overlay Zoning Evaluation

The vertiport proponent shall evaluate existing Orange County regulatory provisions for their adequacy in protecting existing, pending, or future sensitive uses and vertiport airspace from future development conflicts and identify gaps requiring code amendment or new overlay provisions. This evaluation shall address:

- Airport height zoning (Orange County Code §§7-11 and 7-12): Assessment of whether these provisions, which require FAA 7460-1 review for structures exceeding 200 feet AGL near established airports, would extend to vertiport approach surfaces and, if so, under what conditions.
- Land use compatibility: Assessment of sensitive uses permitted by zoning classification (schools, adult and childcare facilities, places of worship, etc), whether existing, pending, or future, are affected by noise, vibration, light, or other negative impacts and, if so, propose site specific mitigation measures.
- I-Drive CRA regulations: Review of whether I-Drive CRA height standards, setbacks, and development review processes include any provisions compatible with vertiport airspace protection, or whether new standards are warranted.
- Vertiport airspace protection overlay: Using materials provided by the vertiport proponent, Orange County shall draft the framework for a dedicated overlay district that would: (1) map the Part 77 surface footprint of approved vertiports as a recorded regulatory boundary; (2) subject development applications within that boundary to mandatory airspace compatibility review; and (3) establish a height cap tied to the applicable Part 77 surface elevation, with variance procedures requiring FAA coordination.

Step 6 - Air Rights Risk Matrix and Site Comparison

Orange County shall synthesize the outputs of Steps 1–5 into a multi-site Air Rights Risk Matrix that enables direct comparison of candidate vertiport locations based on air rights exposure. The matrix shall score each site across the following dimensions:

- Number and classification of conflict parcels (Class 1, 2, or 3)
- Estimated total aviation easement acquisition cost
- Development pipeline pressure (active building permits, entitlement applications, and market vacancy on conflict parcels)
- Regulatory adequacy of existing County code provisions
- Composite air rights risk score (Low / Moderate / High / Critical)

The risk matrix shall be presented in a decision-support format suitable for use by Orange County Planning staff, the Aviation Authority, and prospective vertiport developers in comparative site selection.

5.3 Transportation Connectivity Recommendations

Multimodal connectivity at vertiports is important for functionality as part of the broader transportation system, not as stand-alone aviation facilities. The methodology described previously assigns greater weighting to potential vertiport subareas that could be integrated with existing or planned multimodal transportation facilities. Vertiports should be planned with first/last mile connectivity in mind, to enable seamless travel from vertiport to a destination, such as a place of employment or activity center,

To further promote this connectivity during Vertiport site review and approval, it is recommended that Orange County require the following information and actions.

- i. Vertiport Operator to provide anticipated daily and annual passenger counts to frame market demand. This will help the County understand the volume of passengers on a daily or annual basis or would benefit from connectivity to other modes or destinations.
- ii. Vertiport proponent to provide traffic study / trip generation to determine impacts on existing network, such as signalization improvements, driveways, or access management improvements. This will be an important element if the vertiports primary purpose is freight, rather than passenger service.
- iii. Vertiport proponent to provide site connectivity to contiguous pedestrian and bicycle infrastructure (if existing).
- iv. If vertiport ridership analysis demonstrates adequate demand at site, the County may coordinate with LYNX during service planning for route or stop modification (if service is not already provided at the site).
- v. The County may expand its Mobility Hub program to serve vertiport sites. Mobility hubs can provide features such as bicycle lockers, water fountains, furniture, and other pedestrian and cyclist amenities.
- vi. The County may create a micromobility district to provide service around the vertiport. This may consist of an automated transit network, fixed shuttle service (similar to I-Drive Trolley, operated by a private business) or on-demand vanpool service (similar to SCOUT in Seminole County).

Because the I-Drive Overlay District (as shown on Map 2) prohibits helicopter commercial enterprises (and therefore vertiports), it is important to consider connectivity from vertiport sites outside of the Overlay to destinations within, such as the Orange County Convention Center, theme parks, I-Drive businesses, and hotels. This could include expansion of the I-Drive trolley service, tour bus operations, micromobility options, and pedicab operations.

5.4 Fire and Safety

The Vertiport proponent shall submit a Fire Safety Plan and Hazardous Materials Management Plan for review by the Orange County Fire Rescue Department. These plans must identify the specific aircraft, battery technologies, charging systems, utility infrastructure, fire protection equipment,

emergency access, hazardous-material storage and handling, damaged battery isolation, shipping, recycling, and disposal procedures, and demonstrate consistency with applicable National Fire Protection Association (NFPA) standards, including but not limited to the following:

- NFPA 400 Hazardous Materials Code
- NFPA 418 Standard for Heliports and Vertiports
- NFPA 70 provisions relevant to energy storage systems (ESS) and electric vehicle charging systems
- NFPA 855 for stationary energy storage
- NFPA 110 for emergency and standby power
- 2024 International Fire Code

Please refer to Appendix B: Orange County AAM Framework for a detailed list of federal, state, and industry safety standards.

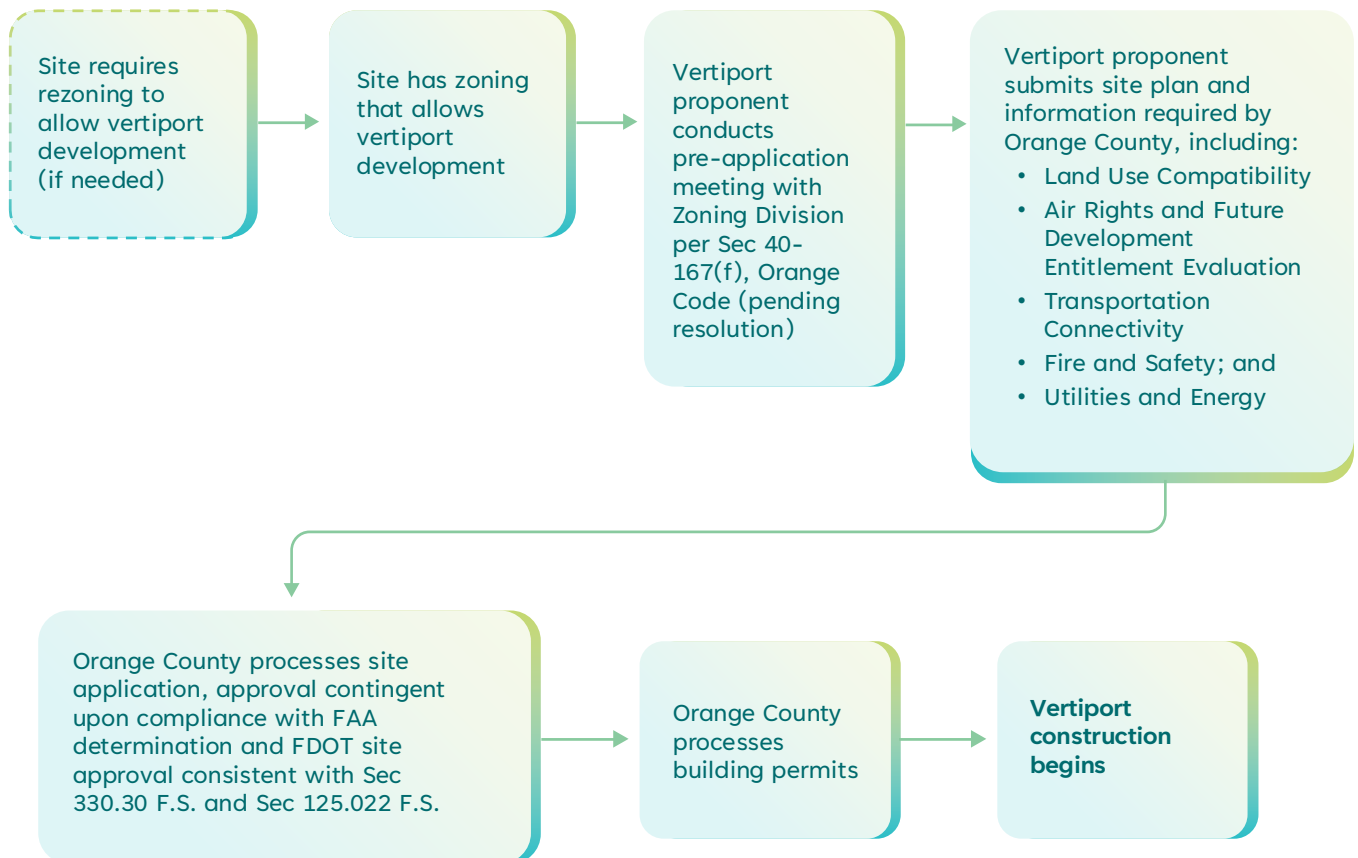
5.5 Utilities and Energy

The Vertiport proponent shall submit a Utility Capacity Analysis at the time of site plan application. This report will evaluate projected electrical load, peak demand, growth scenarios, local grid capability, needed upgrades (on-site or off-site), outage resilience, emergency power needs, and feasibility of supplemental power sources including solar, storage, or microgrids. The Proponent must provide confirmation of coordination with the utility provider (Duke Energy or Orlando Utilities Commission).

Please refer to Appendix B: Orange County AAM Framework for a detailed list of federal, state, and industry energy and utility planning standards.

5.6 Development Review

The flowchart below depicts the general sequencing of potential vertiport review and approval. This process is adapted from the Florida Department of Transportation Aviation Office: Advanced Air Mobility Land Use Compatibility and Site Approval Guidebooks, September 2024. It is important to note that vertiport operations and construction cannot begin without interagency review by FAA and FDOT, pursuant to Sec 330.30, Florida Statutes. The recommendations of this report should be discussed at the pre-application meeting and submitted with the application package.



Appendix A:

AAM Feasibility Study Methodology Technical Memorandum

Appendix B:

Orange County AAM Framework Technical Memorandum