Memorandum

To: Jacques Coulon, AICP
Transportation Planning Projects Coordinator
City of Orlando

Date: April 19, 2022

Project #: 63588.02

From: Curt Ostrodka, AICP, LEED AP,
Director of Smart Communities

Re: Advanced Air Mobility (AAM) Transportation Plan: Economic Impact Analysis Summary

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Introduction

As part of the City of Orlando Advanced Air Mobility (AAM) Transportation Plan, the VHB team prepared an Economic Impact Analysis of a conceptual downtown urban vertiport located at Geico Garage. The VHB team performed stakeholder interviews with Lilium, an electric vertical takeoff and landing (eVTOL) manufacturer, and researched publicly available information (typically investment reports) from other AAM manufacturers and operators to determine reasonable assumptions for capital costs, operating costs, and revenue projections. These assumptions were then presented during the NASA AAM Community Integration Workshop on December 15, 2021. The VHB team then collaborated with the Orlando Economic Partnership (OEP) to prepare an analysis of potential economic impact using the IMPLAN model. Please see **Attachment A** for the full technical memorandum summarizing the analysis.

IMPLAN Input Assumptions:

This study anticipated that the Geico Garage is part of a network of 14 total Vertiports throughout the State of Florida, including one vertiport at Lake Nona. Estimated revenue from passengers, capital cost, number of employees, and employment compensation were input into IMPLAN for analysis.

The VHB team used **$30M as a capital cost assumption to retrofit Geico Garage**. This includes the electric charging infrastructure, passenger and crew facilities, maintenance repair and overhaul (MRO) facilities, and vehicle gates, and contingency for structural reinforcement. Because Geico Garage was not originally designed to support structures on the roof deck, structural reinforcements would likely be necessary. A detailed structural assessment is outside the scope of this assignment, and would be needed to fully understand the cost implications and risks associated with retrofitting the roof deck to vertiport use.

No cost-sharing or revenue sharing agreements between the City and a development partner/AAM operator are assumed.

Key City Considerations:

VHB communicated with the City of Orlando Parking Division to determine the utilization of parking and potential revenue losses associated with converting the top level of the Geico Garage from its present use to vertiport use. Mr. Scott Zollars, Parking Division Manager, estimated approximately **$600,000 to $1M of lost annual parking revenue** (assuming 100 events per year, 300 repurposed roof deck parking spaces, and a range of $20-$30 per space). A parking lease agreement (500 spaces per game) with the Orlando Magic would also need to be re-negotiated.

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Memorandum

However, the annual lost parking revenue may be offset through a Ground Lease Agreement with an AAM operator. The analysis suggests that the City could lease the roof deck to an AAM operator at $2.1M/year, which would offset the parking revenue loss. This potential ground lease was not included as an input for the IMPLAN analysis.

Economic Impact Analysis Results

The economic impact assessment was completed using the IMPLAN input/output model to study impacts on all sectors and at all levels of an economy. IMPLAN uses input output analysis to estimate the spending patterns for every industry in a region.

Table 1: IMPLAN Results

Economic Impacts (during operations)			Fiscal Impacts, Tax Revenue (during operations)		
	Employment	**Value Added (GDP) (1)**		**10 years**	**20 years**
City of Orlando	50	$22,319,795	**City of Orlando**	$2,833,310	$4,373,283
Orange County	95	$8,258,229	**Orange County**	$9,593,416	$14,807,671
Florida	57	$5,300,192	**Florida**	$29,287,264	$45,205,605
Total	202	$35,878,216	**Federal**	$24,595,239	$37,963,351

Notes:
(1) Gross Domestic Product (GDP) is defined as the total value of all domestic final goods and services produced within a specified period (typically a year). This amount is equal to annual passenger revenue estimates for the first full year of operations. The annual value-added to the economy resulting from the vertiport operations at the local, county, and state level is summarized

The findings suggest that the proposed vertiport location at the Geico Garage is expected to provide economic benefits at the local, state, and federal levels.

Recommendation

While the economic impact analysis shows the potential for positive economic growth for new employment, gross domestic product, and tax revenue over a 10-20 year period, it is not recommended that the City self-finance the Geico Garage improvements without a development partner to share capital costs and contribute ground lease payments. The potential costs ($30M capital cost, $0.6-$1M/annual parking revenue loss,) outweigh the direct fiscal impacts back to the City ($4.3M tax revenue over a 20 year period, as estimated by IMPLAN).

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To move forward, the City should negotiate an agreement with an AAM operator, detailing cost-sharing responsibilities, revenue sharing (if applicable), performance measures, and ground lease payments back to the City. This will help the City to understand the return on investment (ROI) before making capital investments.

There may be alternative surface parking locations within Downtown Orlando that prove to be more cost-effective solutions. The cost to construct an at-grade vertiport on a vacant site is anticipated to be significantly lower, at approximately $5-10M. Depending on the site chosen, these alternatives may feature a lower capital costs and reduced parking revenue losses (in comparison to utilization of Geico Garage).

Looking Forward

It is important that the City continues to encourage the development of an AAM ecosystem in the Central Florida region. In addition to the economic development benefits that can be realized by the City and neighboring communities, AAM provides a new mobility choice that can ease roadway congestion and reduce greenhouse gas emissions. By becoming a hub for AAM operations, Orlando can potentially attract high wage jobs and future manufacturing and support facilities. In the future, after FAA approval of aircraft and airspace operations, the City could enter into an agreement with an AAM operator, with provisions for ground lease terms, performance measures, and cost sharing.

The introduction of AAM operations is inevitable, and the City is well positioned to educate its residents and businesses, minimize risk by understanding future trends, and inform policy and decision-making at the state and national level.

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Jacobs

Subject	**Future Ready Orlando – AAM Plan – GEICO Garage Vertiport Economic Analysis**
Project Name	Geico Garage - Vertiport
From	Jacobs
To	VHB
Date	April 1st, 2022

1. Executive Summary

The City of Orlando (the City) released a Future-Ready City Plan in 2021 with a vision to become America's premier Future-Ready City by staying ahead of the city's opportunities and ensuring the city remains a global destination where everyone can thrive. The plan identified strategies as short-term priorities to achieve that vision, which included future Electric Vertical Takeoff and Landing (eVTOL) operations. The eVTOL strategy is to be implemented through Advanced Air Mobility (AAM). AAM is an aviation transportation system that will use highly automated aircraft to transport passengers or cargo at lower altitudes within urban and suburban areas and incorporates use cases not specific to operations in urban environments. Currently, the City is assessing the economic impacts for a potential downtown vertiport location, conceptually located at Geico Garage. A high-level economic impact assessment for the potential downtown vertiport location was completed by Jacobs in collaboration with VHB and Orlando Economic Partnership (OEP). The economic assessment was completed using the IMPLAN input/output model. The results of the assessment completed are provided in Table 1 below.

Table 1: IMPLAN Results

Economic Impacts			Fiscal Impacts, Tax Revenue		
	Employment	**Value Added (GDP)**		**10 Years**	**20 Years**
City of Orlando	50	$22,319,795	City of Orlando	$2,833,310	$4,373,283
Orange County	95	$8,258,229	Orange County	$9,593,416	$14,807,671
Florida	57	$5,300,192	Florida	$29,287,264	$45,205,605
Total	**202**	**$35,878,216**	**Federal**	**$24,595,239**	**$37,963,351**

The findings contained within this memo conclude that the AAM market is an emerging market and the proposed vertiport location at the Geico Garage is expected to provide economic benefits at the local, state, and federal levels. However, as the study completed was limited to passenger revenue and employment, we recommend that the City complete a detailed business case to quantify the socio-economic benefits expected and validate the overall cost and revenue information.

Jacobs

2. Introduction

This memo is intended to support the City with assessing the economic benefits and anticipated impacts associated with the introduction of AAM through a regional connectivity plan. The economic development analysis was completed for the target vertiport location, Geico Garage. As part of the Scope of Work the following tasks were completed:

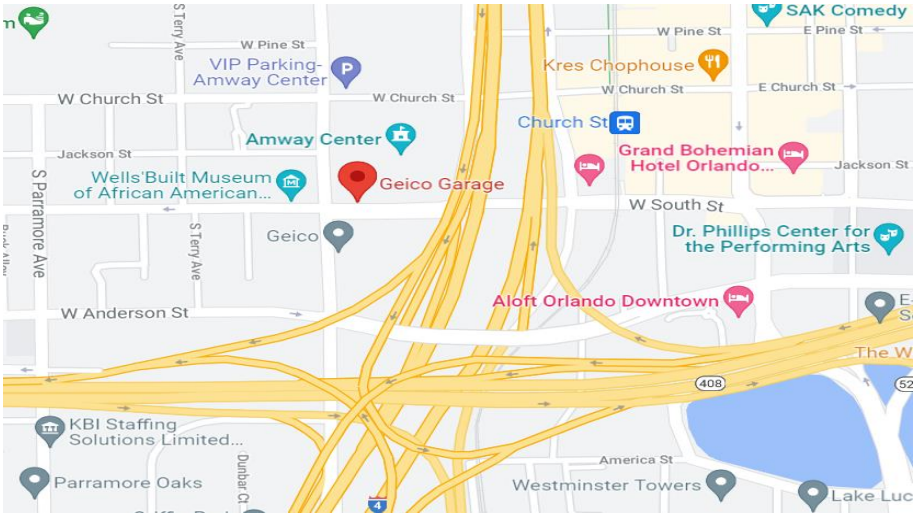
- **Operator Engagement:** Engaged with the Geico Garage operator to understand the current operations and discuss the impacts the project may introduce. This will include identifying the footprint of the garage, assessing the current throughput, identifying key access points, and any revenue displacement.
- **Direct Economic Impacts:** Identified and analyzed the economic impacts that are a direct result of the investment (i.e., capital impact and direct job creation, parking revenue). In addition, this analysis will estimate direct employment and government revenue (federal, state, and local).
- **Indirect or Induced Economic Impacts:** Performed an analysis of economic impacts that are an indirect result of the investment (i.e., adjacent business activity). In addition, this analysis will estimate indirect employment and government revenue (federal, state, and local).
- **Engagement with Advisory Team:** Collaborated with VHB and OEP; this included additional information request (where applicable) and report on progress.
- **Risks and Opportunities:** Jacobs identified any strengths, weaknesses, opportunities and/or threats that may exist including future considerations for the City.

3. Project Background

The City released a Future-Ready City Plan in 2021 with a vision to become America's premier Future-Ready City by staying ahead of the city's opportunities and ensuring the city remains a global destination where everyone can thrive. The plan identified strategies as short-term priorities to achieve that vision which included future eVTOL operations. The eVTOL strategy includes developing a plan to engage private sector eVTOL companies to connect activity centers within the central Florida regions (city taxi model) and connect Orlando to other cities in the southeast. The benefits of eVTOL include reducing congestion, providing for centralized economic development at and around eVTOL locations and providing a more environmentally sustainable method of transportation.

The eVTOL strategy is to be implemented through AAM. AAM is an aviation transportation system that utilizes highly automated aircraft to transport passengers or cargo at lower altitudes within urban and suburban areas and incorporates use cases not specific to operations in urban environments (i.e., commercial inter-city, cargo delivery, public services, private / recreational). The Lake Nona Vertiport was announced in partnership with the City and Lilium and is anticipated to be the hub for state-wide urban and regional air mobility network as it provides the opportunity to connect more than 20 million Floridians within a 186-mile radius. Currently, the City is assessing the economic impacts for a potential downtown vertiport location, conceptually located at Geico Garage. Geico Garage is a parking garage located downtown Orlando and is owned by the City. A few key features of the Geico Garage include close proximity to the Amway Center, a 20,000 seat sports and entertainment arena that is home to the NBA's Orlando Magic, located under 10 miles from the airport and easily accessible via car (access from SR408 and I-4) and public transportation (SunRail and Lymmo BRT). The garage's location and its surroundings are provided in Figure 2.1 below.

Figure 3-1. Geico Garage - 400 West South Street, Orlando, FL 3280



4. Economic Impact Assessment

A high-level economic impact assessment for the potential downtown vertiport location, Geico Garage, was conducted using a systematic approach that enables multiple stakeholders to gain a shared understanding of the proposed project, helps to identify and agree upon appropriate priorities based on different viewpoints, and ultimately arrives at a consensus regarding the economic feasibility of AAM and vertiport operations at the Geico Garage.

Figure 4-1. Approach

The process was completed in coordination with VHB and OEP, and the results, risks and opportunities identified for consideration by the City are further detailed in the sections below.

4.1 Workshops

As a part of the study, workshops were held that allowed the team to gather critical feedback and information from various stakeholder groups. A summary of the workshops held, and outcomes is provided in Table 2 below.

Table 2: Workshop Summary

Workshop	Participants	Objective
Operator Engagement Workshop	Lilium, VHB, Metric and Jacobs	The objective of the workshop held included discussing data and elements that can be used in the City of Orlando AAM Transportation Plan Geico Garage Economic Impact Study. The discussion was

Workshop	Participants	Objective
		split into three parts: operational, facility and constructability questions. The workshop meeting notes are included in Appendix A.
Economic Inputs Workshop	VHB, Metric and Jacobs	Workshops were conducted to review the preliminary CapEx, OpEx and revenue inputs developed. All inputs are assumed based on publicly available information.
Orlando Economic Partnership Workshops	OEP, VHB and Jacobs	OEP was engaged to complete the economic impact assessment using the IMPLAN input/output model where inputs were provided by VHB and Jacobs. Workshops were conducted to review the inputs provided by VHB/Jacobs and outcomes of the IMPLAN analysis. The results of the IMPLAN analysis are provided in Section 3.3 of this memo.
NASA AAM Community Integration Workshop	VHB, Jacobs, Crown Consulting, NASA, City of Orlando, CAMI	Workshop was held to provide an overview of the economic model inputs (CapEx, OpEx and revenue) to receive feedback from NASA and their consultants. The workshop presentation is included in Appendix B.

4.2 Economic Inputs

The economic inputs developed were based on desktop research, workshops conducted, and publicly available information reviewed by the project team. The inputs developed included annual operational expenses (OpEx), capital expenses (CapEx) and passenger revenues resulting from vertiport operations at the Geico Garage. The economic inputs assumed for the analysis are summarized in Table 3 below.

Table 3: Inputs (USD '000s)

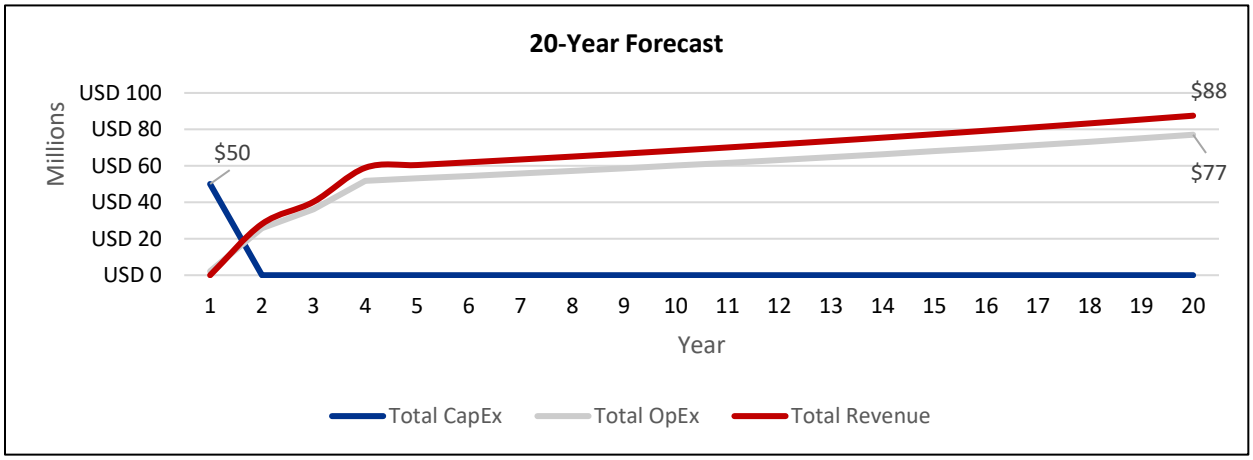
Input	Annual Estimate (USD)	Assumption
CapEx		
eVTOL Vehicles	$17,626	Capex/Jet = $2.5 million (jets are to be manufactured in Germany)
Ground Infrastructure	$30,000	Assumed based on Lilium estimate
Air Traffic Management System Integration	$ -	Assumed Vertiport would rely on existing infrastructure
Staffing	$2,400	Assumed 60 Employees
OpEx		
eVTOL	$40,532	US$1.75/ passenger mile*

Input	Annual Estimate (USD)	Assumption
Ground Lease	$2,100	Assumed vertiport land cost to be ~US$16-US$26 per square foot, based on average cost of underutilized space.
Staffing (Site only)	$332	Assumed 5 on-site staff
Utilities - Building Only	$210	Assumed 0.1x building lease cost
Income Taxes	$-	*To be confirmed with City*
Ground Infrastructure Maintenance	$10	10,000 annually and 50,000 every 10 yrs.
Revenue		
Passenger Revenue	$52,113	US$2.25/ passenger mile

** Costs are 50% Fixed (0.4 Infrastructure/0.3 Pilots/0.1 Data Cost and Air Traffic Fees) and 50% Variable (0.2 Maintenance & Spares/0.2 Tax/0.1 Depreciation/0.1 Customer Acquisition/ 0.1 Battery Replacement/0.1 Energy).*

The annual CapEx, OpEx and revenue projections beyond the base year 2023 (Year 1) were developed by applying a 2.5% inflation factor to the base year amounts. In addition, a phased in approach was assumed, where construction is completed in Year 1 and full operational utilization of the vertiport is achieved in Year 4 (2026). The CapEx, OpEx and revenue projections over a 20-year period is illustrated in Figure 3.2 below.

Figure 4-2. Forecast



4.3 Economic Impact Assessment – IMPLAN Analysis

The economic impact assessment for the potential downtown vertiport location, Geico Garage, was completed using the IMPLAN input/output model. IMPLAN is a recognized modeling tool used to study impacts on all sectors and at all levels of an economy. IMPLAN uses input output analysis to estimate the spending patterns for every industry in a region. Dollars used as inputs are "bounced" around within an economy, moving from business to business and household to household until the remaining cents can no longer be spent. Dollars are also spent outside the region of direct activity, resulting in leakage if

the larger geographies are not included in the model. The IMPLAN analysis was completed on the following basis:

- The construction and operations phase impacts were individually analyzed as construction impacts are considered one time impacts that can regarded as job "supported" in the economy.
- Multi-Region Input Output (MRIO) analysis applied, this allows for the expansion of inputs beyond the initial geography (in this case, the City of Orlando) without double-counting results. The values shown for Orange County and Florida, in the result tables below do not include the outputs shown for the City of Orlando. Hence, there are no direct impacts in these geographies.

The results of the IMPLAN analysis include the economic impact (direct, indirect, and induced) on Gross Domestic Product (GDP), employment and taxes resulting from the constructions and operations of the Geico Garage Vertiport. The key assumptions and results are detailed in the sub-sections below.

4.3.1 Economic Impact – Gross Domestic Product (GDP)

GDP is defined as the total value of all domestic final goods and services produced within a specified period (typically a year). It is also known as value added, which according to IMPLAN, is defined as the difference between total output and the total value of intermediate inputs throughout an economy during a specified period.

The total output generated by the vertiport during the construction phase is equal to approximately US$30 million. This amount is equal to the estimated CapEx to upgrade and retrofit and the existing parking garage. The eVTOL vehicle CapEx was not considered as jets are to be manufactured in Germany. The value-added to the economy resulting from the construction of the Geico Garage vertiport at the local level is summarized in the table below.

Table 4: GDP Impacts – During Construction

GDP	Total
Direct	US$5,282,671
Indirect	US$1,390,874
Induced	US$725,592
Total	**US$7,399,137**

The total output generated during the operations phase is approximately US$52 million. This amount is equal to annual passenger revenue estimates for the first full year of operations. The annual value-added to the economy resulting from the vertiport operations at the local, county, and state level is summarized in the table below.

Table 5: GDP Impacts – During Operations

GDP	City of Orlando	Orange County	Florida	Total
Direct	US$19,073,040	US$-	US$-	US$19,073,040
Indirect	US$2,705,517	US$5,515,131	US$1,271,188	US$9,491,836
Induced	US$541,237	US$2,743,098	US$4,029,004	US$7,313,340
Total	**US$22,319,795**	**US$8,258,229**	**US$5,300,192**	**US$35,878,216**

**All amounts in USD*

Jacobs

4.3.2 Economic Impact – Employment

The jobs captured in the assessment include three tranches: the direct, indirect, and induced. The jobs gained directly from the Geico Garage Vertiport, the jobs gained indirectly by the supply-chain industries supporting AAM, and the subsequent jobs gained from induced spending in all sectors of the economy. A summary of the employment results during construction and operations are detailed in Table 6 and Table 7 below.

Table 6: Employment Impacts – During Construction

Impact	City of Orlando
Employment	
Direct	60
Indirect	13
Induced	8
Total	**81**
Labor Income	
Direct	US$4,880,009
Indirect	US$875,891
Induced	US$425,865
Total	**US$6,181,765**

Table 7: Employment Impacts – During Operations

Impact	City of Orlando	Orange County	Florida	Total
Employment				
Direct	5	0	0	5
Indirect	39	65	13	117
Induced	6	29	44	79
Total	**50**	**95**	**57**	**202**
Labor Income				
Direct	US$865,937	US$-	US$-	US$865,937
Indirect	US$1,927,020	US$3,402,164	US$831,951	US$6,161,136
Induced	US$321,681	US$1,450,223	US$2,147,013	US$3,918,917
Total	**US$3,114,638**	**US$4,852,387**	**US$2,978,964**	**US$10,945,989**

4.3.3 Economic Impact – Taxes

IMPLAN captured tax revenues at the local, state, and federal level. The local level represents totals for townships, cities, and counties for the entire state. Increased government revenues generally translate into additional government expenditures, which offers the state more investment opportunity into state infrastructure, economic and social programs, and so forth. The table below depicts the net present value of overall tax implications at the local, state, and federal levels over a 10- and 20-year period of full operations (beginning in 2025).

Jacobs

Table 8: Tax Impact – During Operations

Taxes	10 Years	20 Years
City of Orlando	US$2,833,310	US$4,373,283
Orange County	US$9,593,416	US$14,807,671
Florida	US$29,287,264	US$45,205,605
Federal	US$24,595,239	US$37,963,351

5. Risks and Opportunities

The Scope of Work is limited to supporting the City and is not intended to provide accounting, legal, financial, commercial, investment and/or insurance advice/recommendations. In addition, the Scope of Work was limited to revenue cash-flow impacts and job creation for the proposed Geico Garage Vertiport location; other economic factors and socio-economic impacts were not analyzed for the purposes of this assignment. The key risks and opportunities to be considered are detailed below:

- All economic inputs are developed based on desktop research, workshops conducted, and publicly available information. Therefore, all assumptions are high-level assumptions, and no detailed business case was completed using cost and revenue modelling tools to confirm the inputs.
- The AAM industry is an emerging market in the US therefore limited data sources for reference and benchmarking purposes exist.
- Challenges exist that could impact AAM's revenue growth potential and have not been considered in our assessment, such as legislative and regulatory changes, permitting, autonomous flight, the availability of take-off and connecting landing infrastructure (i.e., vertiports) and integration into airspace and other modes of transportation.
- IMPLAN analysis was limited to passenger revenues and employment. However, the implementation of the proposed vertiport at the Geico Garage is expected to provide many additional benefits to the community that have not been quantified and captured through the IMPLAN analysis. The additional benefits to be considered include the following:
  - Reducing overall congestion through high-speed regional air mobility options.
  - Providing for centralized economic development at and around eVTOL infrastructure (i.e., Geico Garage).
  - Connecting Floridians to activity centers and other cities in the Southeast in a manner that provides substantial time savings.
  - Providing a more environmentally sustainable method of transportation.
  - Exploring additional use cases i.e., cargo and emergency services.

In addition, to the above the vertiport project aligns with the City's 2021 Future-Ready City Plan vision to become America's premier Future-Ready City by staying ahead of the city's opportunities and ensuring the City remains a global destination where everyone can thrive.

6. Next Steps

The AAM market is an emerging market and based on the analysis completed, the proposed vertiport location at the Geico Garage is expected to provide economic benefits at the local, state, and federal

levels. However, as the study completed was limited to passenger revenue and jobs, we recommend that the City complete a detailed business case to quantify the socio-economic benefits expected and validate the overall cost and revenue information.

The AAM passenger mobility market is an emerging market that is expected to reach US$57 billion by 2035 and is likely to experience significant growth between 2035 and 2040[1]. Therefore, it is recommended that the City continue to explore and develop its capabilities and infrastructure to support and/or deliver AAM products that are safe, accessible, secure, and readily available at scale.

1 https://www.aia-aerospace.org/wp-content/uploads/2021/02/AAM-Can-the-US-Afford-to-Lose-the-Race.pdf

Appendix A – Operator Engagement Workshop Meeting Notes

Subject	**Meeting Notes – Lilium Workshop – October 19, 2021**
Project	AAM Transportation Plan Geico Garage - Economic Impact Study
Participants	Lilium: Matthew Broffman and Anton Fredriksson VHB: Curtis Ostrodka, David Mullholland, Lorie Matejowsky Metric: Shelby Rivas and Aaron Zhou Jacobs: Dan Kirby, Madeline Almodovar, Nurez Damani, Jas Hundle

Notes

Meeting Overview: The discussion was split into three parts; operational, facility and constructability questions. However, lilium noted that the discussion will be restricted to publicly available information therefore, no proprietary data would be shared i.e., passenger demand.

Projected demand and revenue projected:

Unable to comment on exact projected demand however, noted that the Geico Garage is an ideal hub and will include 7 gates and 1 maintenance repair and overhaul (MRO) gate. For forecasting purposes Lilium has assumed 75% utilization and the average cost per mile is $2.25. The price assumed is an average and fluctuates based on time (i.e., shorter flights cost more than $2.25 as the most energy intensive cost is takeoff and landing).

Lilium will provide a premium experience and based on surveys completed it is expected that the majority of the riders will be people who are willing to pay the premium price in exchange for time savings. City of Orlando anticipated a demand-based model based on point-to-point travel and then establishing a mode split. However, City of Apopka has interest and Matt shared that this is where demand could be induced.

Dave asked if they were looking at phasing. Matt said not for public consumption, but that Lake Nona and attractions are interested. Could be one gate or no gates to enable service.

Operating Hours:

Initially visual flight rules will apply and will only operate in daylight hours, but soon will be IFR and some extended hours based on demand.

Charging:

The eVTOL requires a 15-minute recharge to achieve 80% battery and 30 minutes to achieve a full charge. Charging is a key factor in determining turnaround times.

Operator:

Lilium is the manufacturer therefore will not be operating the eVTOL. However, it will be operated by a Part 135 operator. A Part 135 operator provides commercial, non-scheduled aircraft operations – such as private air charter and air taxi flights

Use Cases:

At this time the use case is all passenger scheduled shuttle service at set times, not cargo or emergency use. Lilium will potentially sell the aircraft to some cargo customers however the infrastructure required for cargo vertiports will be different. The location of the vertiport is based on passenger demand.

Capital Improvements:

Lilium provided an estimate of $10 million as a surface cost for the vertiport. This will include 7 gates + 1 MRO gate, a terminal facility with holding rooms and a cafe with limited food service. Lilium is no trying to capture or incentivize spending while people are waiting, the aim is to get people on vehicles as quickly as possible. However, there could be some benefit to property owners or ground floor retailers for increased through put.

Palm Beach County agreed to lease nearly 5 acres on Palm Beach International's property for Ferrovial to build two vertiports for air taxis. Lilium is looking for the right property in the right place.

Geico Garage:

The garage is 100,000 SF and 50,000 SF will be airside and10,000 SF will be utilized for the terminal building. Capital spend also includes installing charging infrastructure, canopies and FF&E. Initially, the vertiport will be designed following the advisory circular (AC) guidelines for heliports as at this time there are no AC guidelines for electric vertiports therefore, working with the FAA through this process. As a result, the vertiport at Lake Nona still has not received approval however, it is anticipated that the process will be expedited as more permits are applied for. In addition, the heliport AC guideline are based off rotating blades therefore, it has different safety regulations.

Supply Chain:

The key supply chain for the vertiport includes ground infrastructure, AAM operators, AAM traffic management and AAM manufacturer. Lilium is not anticipating any remote operations. This could be possible in the future for larger hubs and for autonomous operations.

Job Creation:

The Lake Nona location is anticipated to create 143 jobs which includes 60 pilots/flight instructors, 55 ground ops and 8 customer services/admin. It is assumed that staff will be scheduled based on shifts.

CapEx/ OpEx projections:

Lilium did not share specific estimates however, provided the major OpEx categories which includes the ground lease, staffing, utilities, maintenance, and taxes. In addition, noted that the investor presentations do not provide the OpEx cost for the facility just the cost of the eVTOL which is $2.25/mile.

Aircraft:

It was noted that there are 200 aircraft in the Florida network however, at this time aircrafts are not assigned to a specific location. Currently, Lilium is working on a 6-seater passenger aircraft, aiming to receive certification by 2023 and begin service for 2024-25.

Brazilian Airline Azul Plans eVTOL Flight Network with 220 Lilium Jets. Brazilian airline Azul has agreed to buy 220 of Lilium's eVTOL aircraft and is in talks with the German company to develop a network of commercial flights that could start in 2025.

Currently manufacturing is completed in Germany however likely to think this expands to US.

Additional Comments:

Lilium is hopeful to work with the City for reduced or no cost rent on the lease in exchange for facility upgrades (i.e., retrofit elevators).

If Lilium will be cited in the report, please send a request for review and approval prior.

Appendix B – NASA AAM Community Integration Workshop Presentation

ORLANDO ADVANCED AIR MOBILITY

NASA AAM Community Integration Workshop #4

CITY OF ORLANDO

vhb

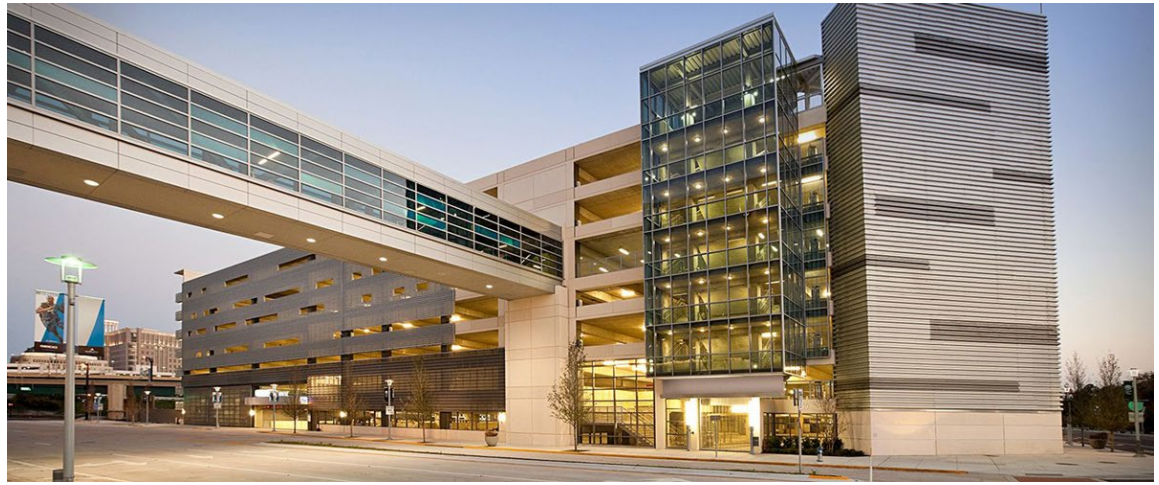
December 15, 2021

Overview

- Economic Development
  - Methodology
  - Preliminary Inputs
  - Additional Questions
  - Discussion

Economic Impact Analysis

- A specific economic development analysis will be conducted for the target location for a Vertiport location at the Geico Garage to analyze:
  - Direct impacts: capital impact and direct job creation, parking revenue
  - Indirect impacts: adjacent business activity, and
  - Induced impacts: response by the economy to the vertiport
- In addition, the plan will estimate direct and indirect employment and government revenue (federal, state and local collections)

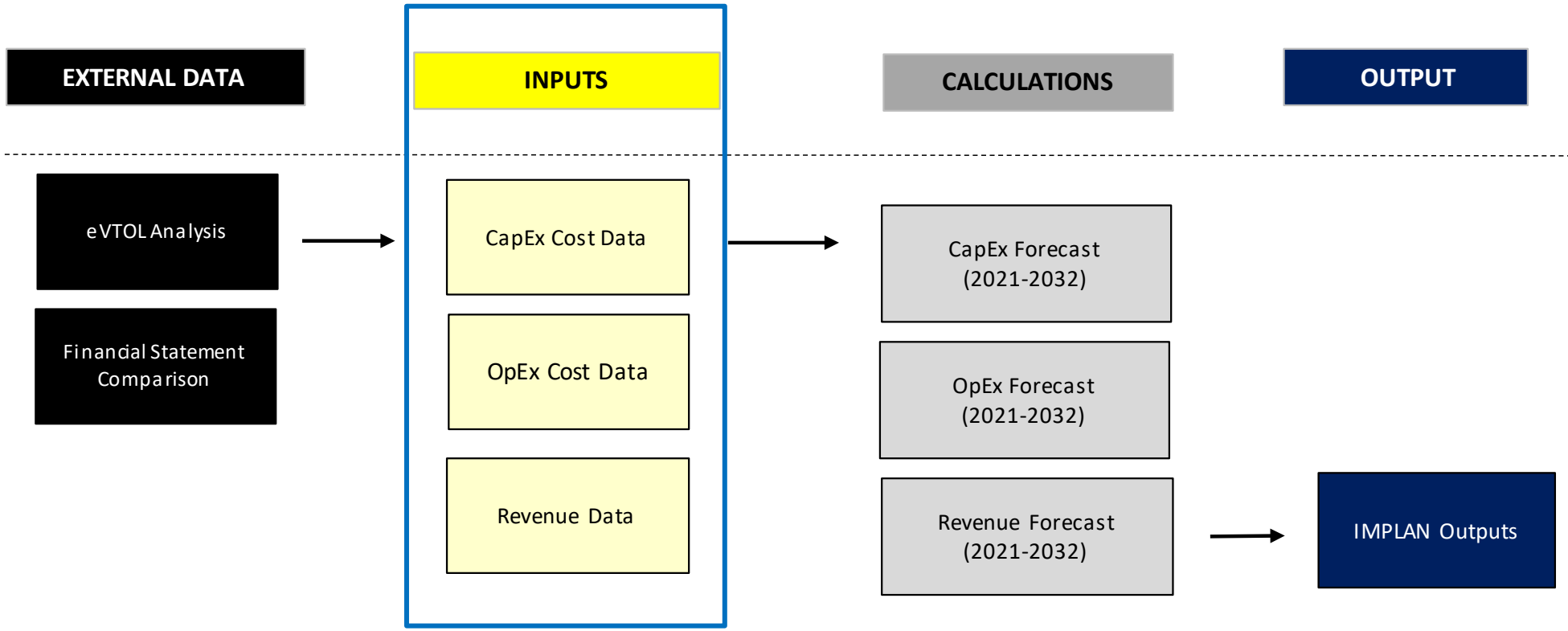


Methodology

- IMPLAN model, but considering REMI
- Working in partnership with Orlando Economic Partnership (OEP) and Jacobs
- Stakeholder interview with Lilium, then benchmarking with other manufacturer data
- Sources: publicly available investment reports (revenue and cost information)

ORLANDO ECONOMIC PARTNERSHIP

Model Map



Note: Preliminary Inputs are high level and based upon publicly available revenue and cost information

Preliminary CapEx Input assumptions

- eVTOL vehicles: $2.5M each. Entire FL network to require 200 jets
- Urban Garage Infrastructure: $20M (assumes 2x surface vertiport cost)
- Air Traffic Management System Infrastructure: NASA Urban Air Mobility market study (2018) assumes $30-50M in 2030 and $5-10M in 2017 - Costs include the creation of control towers, server management and vehicle add-ons as suggested by UAS and IoT experts
- Staffing: 50 employees

Preliminary OpEx Input assumptions

- eVTOL vehicles:
  - 4x lower operating costs vs helicopter
  - Price per passenger mile is 1.75 mile
  - Costs are 50% Fixed (0.4 Infrastructure/0.3 Pilots/0.1 Data Cost and Air Traffic Fees) and 50% Variable (0.2 Maintenance & Spares/0.2 Tax/0.1 Depreciation/0.1 Customer Acquisition/ 0.1 Battery Replacement/0.1 Energy)
- Ground Lease: NASA Urban Air Mobility market study (2018) assumes **$16-26/SF**
- Staffing: 5 on-site staff
- Building Utilities: **0.1x** building lease cost
- Income taxes: **21%** business tax
- Ground Infrastructure Maintenance: **$10k/year**

Preliminary Revenue assumptions

- $600m revenue projected with 125 jets in operation across florida network (10 sites)
- $5m annual revenue and $15K daily revenue per jet ($10/mile)
- 25 flights per jet anticipated with a 60 mile average trip distance
- 500,000 annual revenue miles per jet expected
- Assumed 4.5 out of 6 passenger seats filled

- Source: Lilium Capital Markets Day Presentation (August 2, 2021)

Additional Questions

- Vertiport Industry Trends
  - Publicly built and leased?
  - Single or multitenant?
  - Privately built and operated?

- Other examples of urban garage retrofits?

- Workforce Development:
  - CAMI estimates 30-50 full time positions at active vertiports, and 1.5-2.2x secondary jobs created. What programs and partnerships are needed to prepare Orlando residents for these positions?

- How are other cohort members treating Equity as part of the AAM planning process?

Discussion

CITY OF ORLANDO

orlando.gov/Our-Government/Future-Ready-City/Advanced-Air-Mobility