



Airport Activity/Emerging Trends Survey Results

Appendix C

Airport Activity/Emerging Trends Survey Results

The functional roles of airports within the Florida Aviation System are pivotal in the overall success of securing funding for projects, prioritizing projects per airport, implementing sustainable measures, and supporting new technologies to the degree that the Florida Department of Transportation Aviation Office (FDOT AO) desires to continue meeting user needs and interests as the system continues to thrive and grow. Following the analysis of current conditions related to electrification, sustainable fuels, and aviation gas (avgas), the FDOT AO sought stakeholder input regarding the types of activity and emerging trends each airport is experiencing. Identifying the most prevalent types of activity within each functional role along with emerging trends being observed at the airports gives the FDOT AO the data needed to inform strategic direction for planning the future improvements for the overall system. This document contains the highlights from stakeholder responses regarding the types of activity and emerging trends observed at Florida airports.

Background

The FDOT AO issued a survey to all public-use airports in late Summer 2022. Responses from more than 85 percent of the airports were received.

The survey questions prompted airport management to assess whether specified airport services and aircraft activities at their airports occurred at no level (none), minor levels, moderate, or significant levels. **Attachment A** contains a copy of the survey template. Additionally, survey respondents were asked to assess whether the timing of anticipated impacts of emerging trends and technologies to their airports would be immediate, near-term, mid-term, long-term, or would not have an impact at all. Survey highlights are outlined below.

Airport Activities

The survey inquired about the presence of activity levels in these categories:

- Airport service facilities.
- Alternate aircraft activities.
- Community outreach.
- Flight activities.

Airport Service Facilities

- Managers were asked if they had some level of maintenance, manufacturing, maintenance/repair/overhaul (MRO), sales, and avionics activity at their airport. These activities offer the mutual benefit of providing revenue opportunities for the airport and on-site services for users. While many airports indicated they had more than one of these activities present on their airfield, the activities that were reported the most at each airport type included:

- Fifty-eight percent of Commercial Service airports reported having aircraft maintenance activities.
- Forty-four percent of General Aviation (GA) airports reported having MRO services.

Flight Activities

Managers were asked to comment on their level of air cargo flights, military operations, charter operations, and flight instruction. Noteworthy highlights for these activities consist of the following:

Air Cargo

- Commercial service airports had significant air cargo activity with 68 percent reporting this activity, while the majority of GA airports had limited or no air cargo activity.

Charter Activity

- Commercial service airports saw significant levels of charter aircraft activity (68 percent), while approximately 12 percent of GA airports reported significant air charter activity.

Military Operations

- Commercial service airports saw equal amounts of minor to moderate military operations, while the majority of GA airports (48 percent) experience minor levels of military activity.

Flight Instruction

Flight instruction results were segmented into three categories: Private, Part 61, and Part 141.

- Commercial service airports reported their highest levels of flight training with Part 141 activities with 32 percent of the airports having this type of instruction.
- At GA airports, nearly a quarter of the respondent's report Part 141 training, and over 60 percent report at least minor or moderate levels of private flight instruction, and just under 25 percent report significant levels of Part 61 instruction.

Alternate Aircraft Types

There are a range of types of aircraft that can be found operating at airports across the state of Florida. As such, the survey also addressed the levels of activity for powered parachutes, skydiving, ultralight, gyrocopter, and other alternate types of aircraft. Notable results include the following:

- Commercial service airports report having little activity in these categories.
- GA airports also experience only minor activity in all of these categories.

Community Outreach

Community outreach is a tool that facilitates community involvement and support, and it is often a means to help the community understand the significant role airports play in terms of local and regional economy and access. Respondents were asked to comment on the levels of training and education occurring at or through airports, civil air patrol activities, community events and fly-ins,

and Experimental Aircraft Association (EAA) club activity. Highlights from the survey results include:

Career Training/Education

Career training/education and youth education opportunities were the focus of survey questions.

- All commercial service airports reported some level of training and education activities.
- More than 70 percent of GA airports experience some level of career training and youth education activity, with the remaining 20 percent experiencing significant levels.

Civil Air Patrol Activities

Civil Air Patrol (CAP) activities are fairly limited at both commercial service and GA airports, with no CAP activity occurring at most of these airports.

Hosting Community Events and Fly-Ins

Community events and fly-ins provide opportunities to introduce or promote the amenities and other benefits an airport provides a local community, boost the local or regional economy, and generally foster stronger partnerships and relationships across the airport's community stakeholders, whether decision-makers or the general public. Survey highlights for these categories are as follows.

- The majority of commercial service airports reported having minor or moderate levels of the hosting of community events.
- Approximately 75 percent of GA airports reported host community events at some level.
- Nearly two-thirds of the commercial service airports report that they do not host airshows or fly-ins, which is not

Daytona Beach International Airport is known for pilot training with Embry-Riddle Aeronautical University based there. In the previous FDOT Economic Impact Study, ERAU had a \$1 billion economic impact on the Daytona Beach region alone.

The Sarasota Bradenton International Airport is actively working with outside partners to provide facilities for K-12 Aviation Magnet school.

Palm Beach County Park Airport (Lantana) is the original location of the Civil Air Patrol - set up to help look for German submarines.

Orlando International Airport hosts a variety of community and charity events throughout the year, including job fairs, performances by the Orlando Philharmonic, and events associated with the Special Olympics.

Lakeland Linder International Airport (LAL) is the home of the annual Sun 'n Fun Aerospace Expo, which draws 150,000 people from 85 different countries and over 2,000 aircraft to LAL each spring.

Arcadia Municipal Airport hosts Taco Tuesday, a weekly fly-in with two or three food trucks coupled with avgas reduced by \$0.10 per gallon. In the 3 years of its existence, the members of the community have begun driving out for the event, changing what was once a fly-in, to a fly-in/drive-in event.

- surprising given the activity levels and security issues at commercial service airports.
- Nearly half of GA airports also report that they do not host airshows or fly-in activities.

EAA Clubs

The majority of commercial service airports and just over half of the GA airports report no EAA Club activity.

Emerging Trends and Technology

The survey also investigated the amount of activity related to the following emerging trends:

- Electrification of vehicles.
- Equipment innovations.
- Resiliency and sustainability.

Electrification of Vehicles

The interest in electrification of airports has already generated funding opportunities, project development, planning for future projects, and investment in upgrading electrification capacity. The survey addressed when airport management staff anticipated aircraft charging, ground support equipment (GSE) charging, and the charging of personal or rental vehicles would impact their airports. Respondents indicated if they thought the impacts would be immediate, near-term, mid-term, long-term, or if there would be no impact.

Aircraft Charging

- Twenty-five percent of commercial service airports anticipated near-term impacts, with another quarter anticipating mid-term impacts.
- Just under half of GA airports expect no impacts, with just over a quarter expecting the impacts to be long-term.

GSE Charging

- Close to half of commercial service airports expect impacts to be near-term, with nearly one-third anticipating mid-term impacts for GSE charging.
- GA airports see this as a much longer-term issue with less than 10 percent indicating an immediate impact.

Passenger Vehicle Charging

- The overwhelming majority of commercial service airports anticipate either immediate or near-term impacts, accounting for nearly 90 percent of the airports.
- Approximately 60 percent of the GA airports anticipate impacts in the immediate to near-term periods.

Equipment Innovations

Emerging technologies are offering airports the opportunity for improved data collection or monitoring of conditions around the airport. To that end, the survey addressed equipment innovations for counting aircraft, alternate weather reporting, and remote airport traffic control tower (ATCT) operations.

Solutions for Counting Aircraft Operations (ADS-B, etc.)

- More than half of the commercial service airports anticipate impacts immediately or in the near term for counting aircraft operations with emerging technologies.
- Over one-third of the GA airports anticipate immediate impacts.

Alternative Weather Reporting (SayWeather, Micro Tower, etc.)

- Since many commercial service airports already have FAA-certified weather reporting, only a third report having any sort of near-term impacts with alternative weather reporting options.
- Among GA airports, nearly 60 percent anticipate some type of impact, with the impacts occurring over the near- and long-term periods.

Remote Airport Traffic Control Towers (ATCTs)

- One-third of commercial service airports expect long-term impacts from the use of remote ATCTs.
- Approximately 20 percent of GA airports anticipate long-term impacts at their facility.

Resiliency and Sustainability

Resiliency and sustainability are becoming more critical to consider in planning and development. For that reason, the survey asked managers to comment on the topics of alternative power sources, impacts from weather events, impacts to the Florida system from implementation of sustainable aviation fuels, and the use of unleaded avgas. Highlights for each of these topic areas include:

Solar, Wind, and Geothermal Power

- About 60 percent of commercial service airports anticipate mid- to long-term impacts with these alternative power sources.
- GA airports are almost evenly split, reporting their anticipated impacts to be spread over the immediate, near-, mid-, and long-term timeframes.

Waste Reduction

- Commercial service airports are equally split on the topic of waste reduction with nearly one quarter reporting this being an immediate, near-term, mid-term, or long-term impact.
- Approximately 75 percent of GA airports anticipate waste reduction impacts in the near-term to mid-term period.

Weather-Related Impacts (Hurricanes, sea-level rise, etc.)

- Much like waste reduction, commercial service airports are equally split on the topic of weather-related impacts, with nearly one quarter each reporting this being an immediate, near-term, mid-term, or long-term impact.
- GA airports also rated weather-related impacts to be evenly spread across the immediate, near-, mid-, and long-term periods.

Sustainable Aviation Fuels (SAF)

- Approximately 75 percent of commercial service airports see SAF as an issue in the mid-term to long-term period.
- GA airports are much more aggressive with this topic with 60 percent reporting SAF being an impact in the immediate to near-term period.

Unleaded Avgas

- Commercial service airports are split in their anticipated impacts of unleaded avgas with about half seeing it as an issue in the immediate to near term and half seeing it as an impact in the mid- to long-term timeframe.
- GA airports are equally split on the impact of unleaded avgas being an issue in the immediate, near-, mid-, and long-term period.

Advanced Air Mobility, Urban Air Mobility, and electric Vertical Takeoff and Landing

Advanced Air Mobility (AAM), Urban Air Mobility (UAM), and electric Vertical Takeoff and Landing (eVTOL) aircraft have been in development for some time. As these innovative aircraft and their market continue to develop and expand, there is tremendous potential for a wide range of uses, but airports must be planning for their implementation or impacts to their airports. The survey addressed the timing of these impacts to Florida airports as well. The following statements present some of the survey highlights.

- Eighty-five percent of the commercial service airports expect near- or mid-term impacts related to AAM/UAM/eVTOL at their facilities.
- GA airports report equal impacts across the near-, mid- and long-term periods.

Conclusion


Understanding the prevalence of a variety of airport activities and facilities allows the FDOT AO to proactively assess the needs necessary to accommodate existing and future flight activities within the airport system. Having the ability to evaluate demand by an assortment of flight activities, coupled with the ability to identify where aviation-related facilities are and are not available will allow the FDOT AO to be better positioned to accommodate them in future airport programming efforts.

In addition, the FDOT AO plays an important role with developments in emerging trends and technologies by being involved to represent the interests and challenges of airports across the state. By doing so and implementing recommendations from this emerging trend paper, Florida will be well positioned to accommodate the dynamic changes in the areas of electrification of vehicles, equipment innovations, and resiliency and sustainability.

Likewise, airports of the Florida system can learn and develop from each other in the fields of community outreach and education. Understanding how other airports have been successful in gaining community appreciation and fostering the need to improve aviation education to provide for future aviators and other aviation professionals alike is critical to accommodate the demand for a skilled aviation industry workforce in the future.

Attachment A – State of Florida 2022 Airport Activity Inventory

STATE OF FLORIDA 2022 AIRPORT ACTIVITY INVENTORY


 Airport Name: _____ ID: _____
 Name of Person Completing Survey: _____ Phone: _____
 Email: _____

Part 1 - Identifying Current Activity Level

As an airport manager, we know that you understand what happens at your airport better than anyone. As part of the update to the Florida Aviation System Plan (FASP), we want to capture all of the activities that take place across the entire system and that starts with your airport.

Please place a ✓ to note the amount of activity your airport experiences for each type of activity.
 Provide any comments on activity type and include any additional activities at the bottom of the page.
 Please return this survey by September 9, 2022 via email to Mike.McClure@dot.state.fl.us
 or complete online using the following link: <https://www.surveymonkey.com/r/7PDJKCF>

Type of Activities	Level of Activity (choose only one per activity)				Comments
	Significant Amount	Moderate Amount	Minor Amount	None	
Types of Flights					
Commercial Airline Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Charter Aircraft Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corporate Aircraft Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Air Cargo Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Agricultural Spraying Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Personal/Recreational Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flight Club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sightseeing Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Emergency Medical Flights/Air Ambulance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Law Enforcement Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Traffic or News Reporting Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Appendix C – Airport Activity/Emerging Trends Survey Results

STATE of FLORIDA 2022 AIRPORT ACTIVITY INVENTORY
Part 1-Identifying Current Activity Level

Type of Activities	Level of Activity (choose only one per activity)				Comments
	Significant Amount	Moderate Amount	Minor Amount	None	
Military Exercises/Training Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Advertising/Banner Towing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Environmental/Natural Resource Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Prisoner Transport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Real Estate Tours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial Inspections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial Photography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flight Training					
Private (CFI offering private lessons)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Part 61 (small, flexible program)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Part 141 (larger, FAA structured, university)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Instrument Approach Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Visiting Training from Other Airports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Alternate Aircraft Types					
Powered Parachutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Skydiving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ultralights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Powered Paraglider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gyrocopter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Appendix C – Airport Activity/Emerging Trends Survey Results

STATE of FLORIDA 2022 AIRPORT ACTIVITY INVENTORY
Part 1-Identifying Current Activity Level

Type of Activities	Level of Activity (choose only one per activity)				Comments
	Significant Amount	Moderate Amount	Minor Amount	None	
Airport Service Facilities					
Aircraft Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aircraft Avionics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aircraft Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aircraft Manufacturing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Maintenance, Repair, and Overhaul (MRO)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Community Outreach					
Career Training/Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Youth Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Civil Air Patrol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hosting Community Events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Air Shows/Fly-ins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EAA Club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other Activities not previously listed:					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

STATE of FLORIDA 2022 AIRPORT ACTIVITY INVENTORY
Part 1-Identifying Current Activity Level

What is your airport known for? Does it have a niche? Please provide a brief description.

Please return survey by September 9, 2022 via email to Mike.McClure@dot.state.fl.us or complete online using link noted above.

Appendix C – Airport Activity/Emerging Trends Survey Results

STATE of FLORIDA 2022 AIRPORT ACTIVITY INVENTORY



Part 2 - Identifying Emerging Trends and Technology

As part of the update to the Florida Aviation System Plan (FASP), we want to identify emerging trends and technologies that may impact your airport or the statewide system so we can investigate possible ways to address these issues in future decision-making efforts.

Please place a ✓ to note the time-frame that you anticipate the following trends and technologies may impact your airport or the system as a whole and include any comments. Please provide any additional trends, technologies, or comments you wish to share at the bottom of the page.

Please return survey by September 9, 2022 via email to Mike.McClure@dot.state.fl.us or complete online using the following link: <https://www.surveymonkey.com/r/7PDJKCF>

Emerging Trends & Technologies	Anticipated Timeframe for Possible Impact					Comments
	Immediate Impact	Near-term Impact	Mid-term Impact	Long-term Impact	No Impact	
Electrification of Vehicles						
Aircraft Charging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground Support Equipment Charging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Passenger Vehicle Charging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Equipment Innovations						
Solutions for counting aircraft operations (ADS-B, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Alternative weather reporting options (SayWeather, Micro Tower, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Remote Air Traffic Control Towers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resiliency and Sustainability Issues						
Solar, wind and geothermal power options	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Waste reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Weather related impacts (hurricanes, sea-level rise, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sustainable Aviation Fuels (SAF)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Unleaded Avgas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Advanced Air Mobility (AAM) Concepts *						
AAM/UAM/eVTOL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other trends not previously listed:						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
General Comments:						

*AAM is a new concept of air transportation using electric vertical takeoff and landing (eVTOL) aircraft to move people and cargo between places not currently or easily served by surface transportation or existing aviation modes. eVTOL aircraft may be powered by hybrid electric systems, batteries or potentially hydrogen fuel cells. Sometimes AAM is also called urban air mobility (UAM), although potential applications for this form of transportation could extend beyond high-density urban centers. These aircraft, which will range in size from single-passenger aircraft to large shuttles, will bring accessibility to cities, underserved communities and geographically distant regions. Development of infrastructure in support of AAM is underway in cities today, with AAM expected to become an increasingly important part of our transportation system in the next several years. Source: "Advanced Air Mobility (AAM)." National Business Aviation Association, Retrieved from <https://nbaa.org/sites/default/files/2022-07/2022-07-01-Advanced-Air-Mobility-AAM.pdf>, 18 July 2022.

Please return survey by September 9, 2022 via email to Mike.McClure@dot.state.fl.us or complete online as noted at top of survey.