



DeIDOT
AERONAUTICS



DELAWARE STATEWIDE Operations Counting 2023 Program Update



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Delaware Statewide Airport Operations Counting Program Update - 2023

Final Technical Report

Prepared for:

**Delaware Department of Transportation
Federal Aviation Administration**

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DELAWARE STATEWIDE AIRPORT OPERATIONS COUNTING PROGRAM UPDATE

1. INTRODUCTION

SINCE THE DELAWARE AIRCRAFT OPERATIONS COUNTING PROGRAM began in 2008, the data collected has been given to each airport to help in their planning efforts and has been used by DelDOT for system planning, FAA Form 5010 Airport Master Record data inputs, economic impact studies, annual reports, and funding considerations. The following airports were surveyed in 2023:

- Chandelle
- Chorman
- Delaware Airpark (NPIAS)
- Delaware Coastal (NPIAS)
- Jenkins
- Laurel
- Smyrna



Boeing Business Jet at Delaware Coastal Airport

The sampling plan for Delaware airports involved the placement of a Rion Sound Level Meter NL-42 sound meter acoustical counter (SMAC) at each airport for at least two weeks during each quarter of the year. The SMACs record noise events at each airport which are then processed with software provided by the manufacture. The software uses the maximum decibel level of the event to determine if it was an aircraft operation. The operations are then manually checked for errors and extrapolated into seasonal and annual operations.

1.1 NPIAS AIRPORTS

Specifics for National Plan of Integrated Airport Systems (NPIAS) airports in Delaware are described below.

- **New Castle Airport:** Is the only airport in the State that has an Air Traffic Control Tower. However, the tower is not staffed between 11 pm and 6:30 am. Thus, any night-time operations during this period go uncounted. To date, New Castle Airport has not been sampled for these night operations.
- **Summit Airport:** Currently, the Delaware Valley Regional Planning Commission (DVRPC) counts operations at Summit Airport every three to four years. Recent communications with DVRPC indicates the most recent year for survey counts is 2020. These counts, updated by FAA Terminal Area Forecast growth rates, are included in this study (see Table 1). Currently, DelDOT does not sample operations at Summit during the intermediate years

of DVRPC sampling. It should be noted that although Summit is a National Plan of Integrated Airport Systems (NPIAS) airport, it is privately owned and has not received any grants from FAA for more than 20 years. A recommendation of this and a previous report is to add Summit to the DeIDOT counting program for those years not undertaken by DVRPC. Contact with Summit Airport management is the first step in this process.

- **Delaware Airpark:** Is home to Delaware State University's flight training program, which has recently expanded its fleet of aircraft. DSU recently partnered with the U.S. Army Cadet Command to expand its Aviation Program into helicopter flight training for ROTC students and regular undergraduate aviation majors. This program started in the 2023 fall semester. In addition to normal training of college student pilots, DSU hosts their Junior Reserve Officers' Training Corps (JROTC) Summer Flight Academy for eight weeks in the summer. The 4,200-foot instrument runway provides a good training



Entrance Sign at Delaware Airpark

- base for the flight school. Although owned by the State, DRBA has a long-term lease for the airport, providing management and funding for improvements.
- **Delaware Coastal Airport:** Is located in Georgetown, Delaware. The airport is owned and operated by the county government and serves general aviation, corporate aviation, the military, and the state police. There is a large Maintenance/Overhaul/Repair (MRO) facility on the airport (ALOFT), that performs aircraft modifications, paint, and interior completions. Delaware Coastal Airport has a non-intersecting crosswind runway, requiring that two counters be placed at the airport. One counter was placed on each runway to ensure that all operations are counted.

1.2 OTHER PUBLIC-USE AIRPORTS

DeIDOT regularly samples operations at privately-owned, public-use airports in the State, using their own resources to perform these counts. Airports that have been sampled include:

- **Chandelle Airport:** Is located near Dover, north of Dover AFB. The airport serves private general aviation and an agricultural spray operator. The airport is under new management and has shown a significant uptick in operational activity since 2022.
- **Chorman:** Is located at the border of Kent and Sussex Counties in a rural area. The airport serves as a significant base for agricultural spray operations, aircraft maintenance, and storage. The airport has significantly increased its based aircraft population in recent years and aircraft operations counts are important to maintain to track activity.

- **Jenkins:** In recent years, activity at Jenkins Airport has declined, due in part to the closure of the primary runway. The crosswind runway remains open and placement of the noise counter has been examined to ensure the capture of noise events on that runway.
- **Laurel:** This airport has been leased for use by the owners of Chorman Airport, with the primary purpose of adding a southern location for the spray operation. Both refueling and chemical storage at Laurel Airport shorten the flight times for aircraft spray operations. The airport is busiest during the non-winter spraying seasons.
- **Smyrna:** Is located just east of the city of Smyrna near Route 1. The airport has served as a training strip, glider base, and as a home for private aviation aircraft.



Office and Hangars at Smyrna Airport

1.3 AIRPORT OPERATIONS COUNTING PROGRAM CHALLENGES

In past years, there have been a number of challenges in collecting the data for each airport including:

- **Battery Life:** In 2021, issues related largely to battery life were overcome through the use of solar power. In this regard, each SMAC is equipped with a solar panel which continuously recharges the unit during daylight hours, so it is now possible to record two continuous weeks or more of data during a sampling period.
- **Recording Accurate Data:** Depending on weather conditions and location of the counter, some counters have picked up false positives (aircraft operations that did not actually occur), or they missed some aircraft takeoffs. Sometimes a thunderstorm will trigger false positives. These cannot always be detected. However, study of the data can reveal the time stamp of the event. If these occurred after dark, most of the privately owned public use airports would not be able to accommodate significant traffic at that time. The counts can be manually edited for these problems.



Noise Counter at Laurel Airport

- Water-Related Challenges:** The counters are housed in cases designed to protect the sensitive equipment from the elements. However, in environments with high humidity or precipitation, water can seep into these cases, leading to internal condensation. This moisture can interfere with the electronic components, leading to short circuits, corrosion, or other forms of damage. When water gets into the circuitry, it can cause the noise counter to malfunction, resulting in the loss of recorded data.
- Labor Intensive Process:** Software in the counters records the maximum decibel level for every minute the counters are deployed. Depending on location, the noise threshold may be different. Thus, the review of these records is very labor intensive.
- Software Limitations:** The software included with the equipment provides the user with the date and time of the event (i.e., takeoff) recorded and its Lmax (maximum sound pressure level). No individual aircraft characteristics are provided, which makes it difficult to determine whether or not false positives have been recorded.
- Helicopter Operations:** Helicopter flight data is not counted by the acoustical counters. Thus, the operational count is not complete, particularly at airports such as Delaware Airpark which offers helicopter flight training, and Summit and Delaware Coastal Airport, which both have based helicopters.



Noise Counter Device

These challenges to the data collection program present issues that ultimately must be overcome, in order to increase the accuracy of the results.

2. INDIVIDUAL AIRPORTS

THE COLLECTION OF TAKEOFF DATA IS A sampling of the annual fixed-wing takeoffs, using the acoustical counters. The timing of deployment schedules at survey airports varies due to a number of issues, including the number of active counters, the weather, and the availability of intern staff. Often there is a variation in the final sample size from one airport to the next. However, this sample serves as the basis for establishing both the average daily operations by season and the full estimated annual operations.

The observed sample data includes only takeoff events. Estimated average daily operations, estimated seasonal operations, and estimated annual operations are calculated from the observed takeoffs. The following tables show these metrics:

- Estimated Average Daily Operations: (Average Daily Takeoffs) x 2
- Estimated Seasonal Operations: (Estimated Average Daily Operations) x (Days in Season)
- Estimated Annual Operations = Winter + Spring + Summer + Fall Operations

On the following pages are sampling results of the acoustical counters for each sampled airport. In some cases, samples were not available for all four seasons. In those instances, a seasonal average or previous year data was used to project total aircraft operations. It should also be noted that the Civil Air Terminal, New Castle Airport, and Summit Airport were not included in the sampling process. Operations from the Civil Air Terminal were provided by Delaware River and Bay Authority and were actual counts. New Castle Airport operations counts were taken from FAA control tower records. Summit Airport operations counts were taken from the TAF growth rate applied to the 2020 counts from DVRPC.



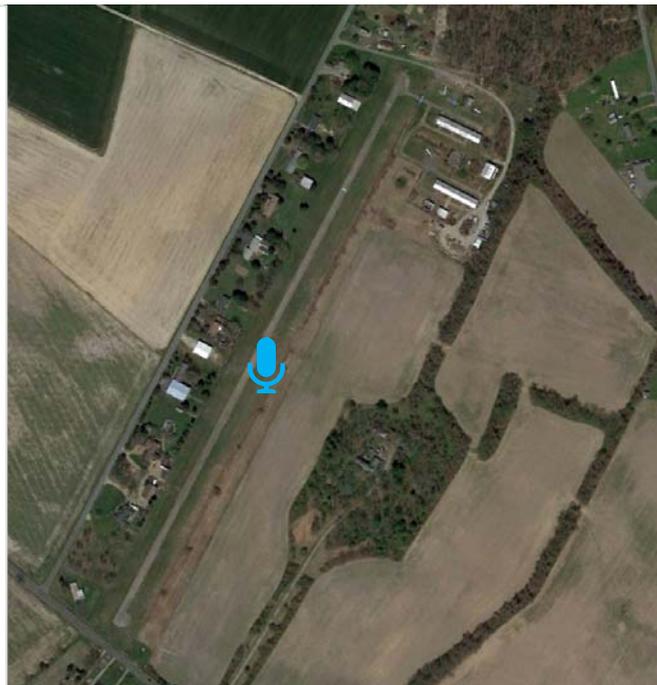
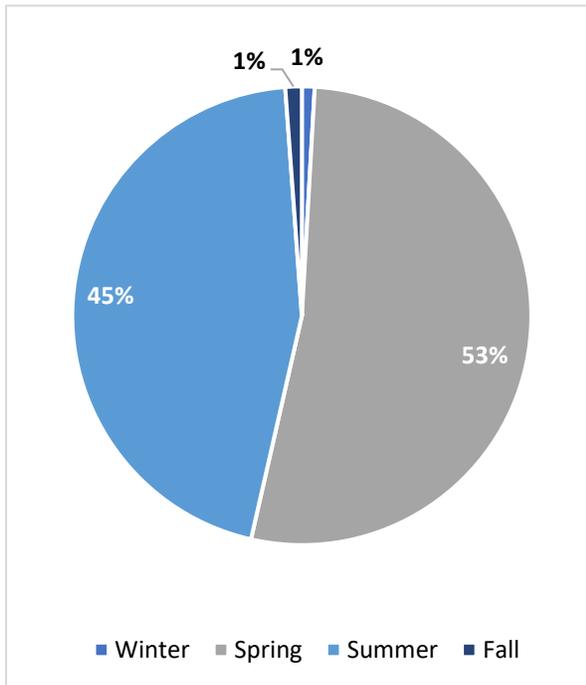
Chorman Airport

CHANDELLE AIRPORT

Chandelle Airport (0N4) Seasonally Adjusted Summary- 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2023	0.4	36	1%
Spring	2023	23	2,098	53%
Summer	2023	20	1,805	45%
Fall	2023	0.5	46	1%
Annual Operations:			3,986	

SEASONAL PERCENTAGE

COUNTER LOCATION

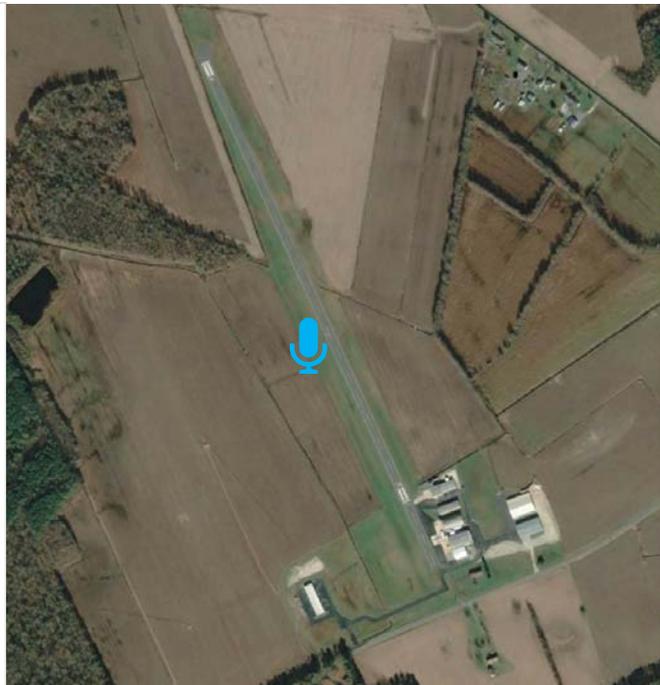
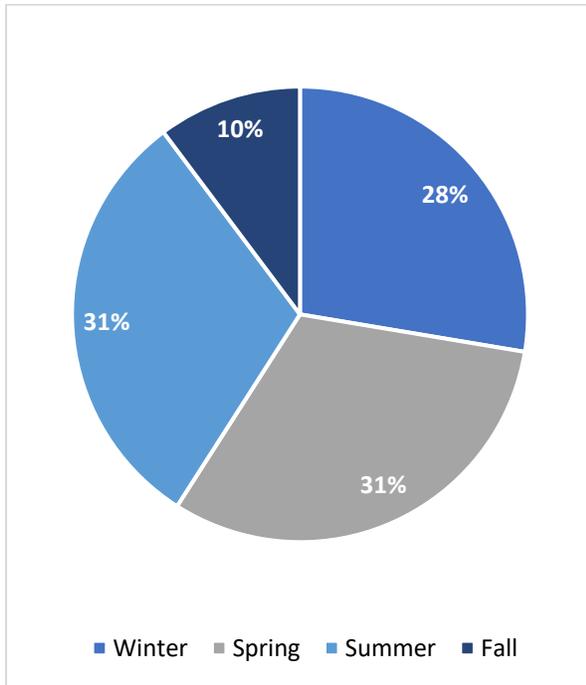


CHORMAN AIRPORT

Chorman Airport (D74) Seasonally Adjusted Summary- 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2023	33.12	2,981	28%
Spring	2023	37.26	3,391	31%
Summer	2023	36	3,312	31%
Fall	2023	12	1,104	10%
Annual Operations:			10,787	

SEASONAL PERCENTAGE

COUNTER LOCATION

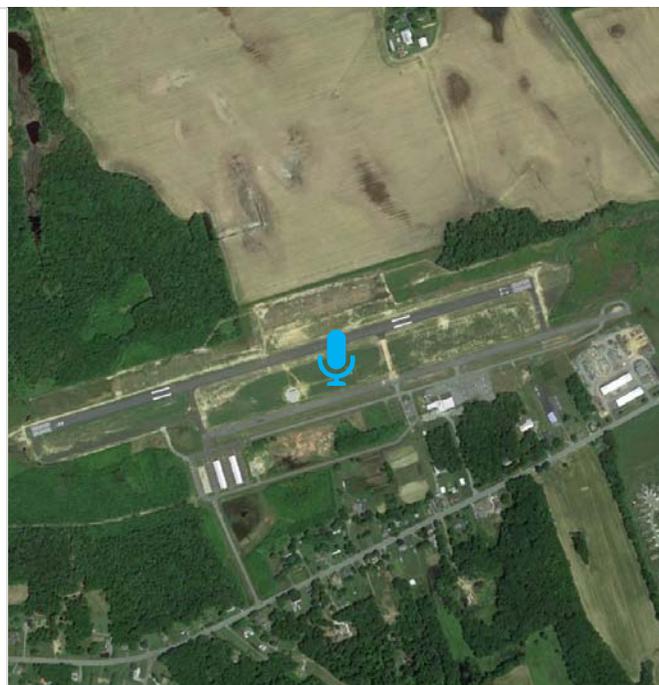
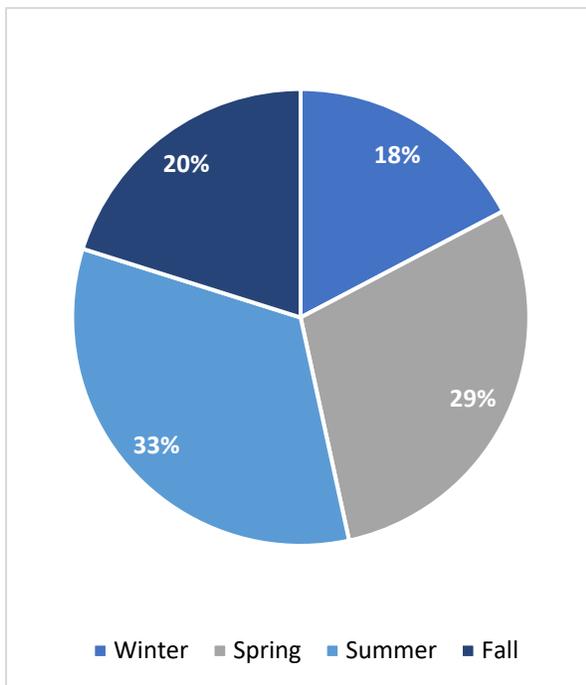


DELAWARE AIRPARK

Delaware Airpark (33N) Seasonally Adjusted Summary- 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2023	51	4,545	17%
Spring	2023	85	7,696	29%
Summer	2023	95	8,740	33%
Fall	2023	58	5,291	20%
Annual Operations:			26,272	

SEASONAL PERCENTAGE

COUNTER LOCATION

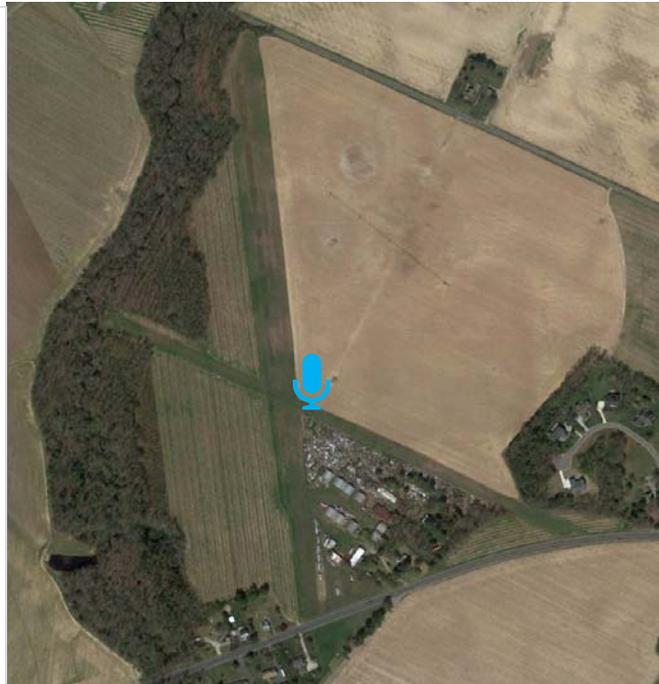
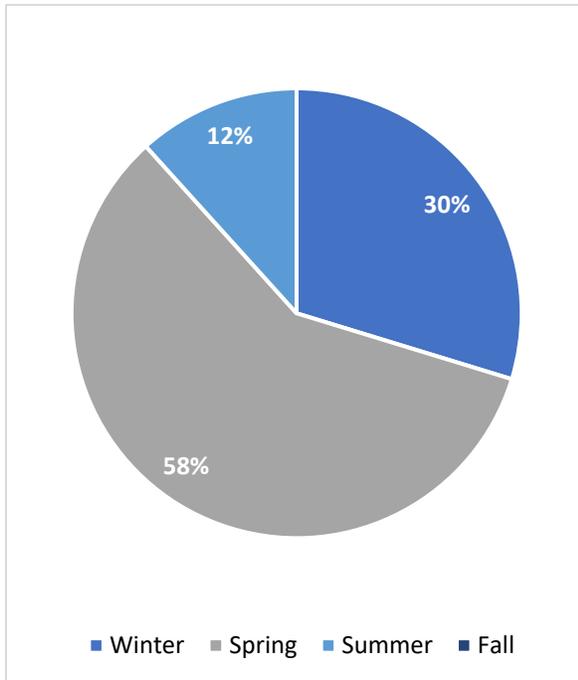


JENKINS AIRPORT

Jenkins Airport (15N) Seasonally Adjusted Summary- 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2023	0.8	70	30%
Spring	2023	1.5	138	59%
Summer	2022	0.3	28	12%
Fall	2022	N/A	0	0%
Annual Operations:			236	

SEASONAL PERCENTAGE

COUNTER LOCATION

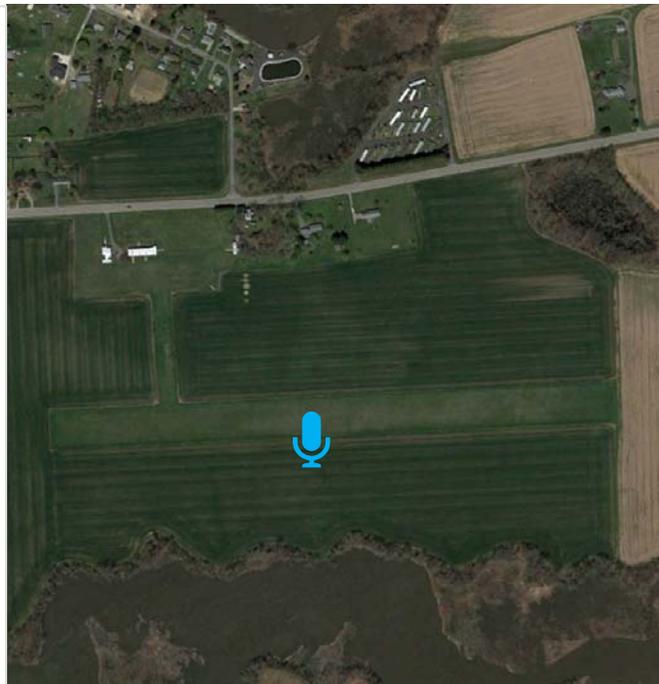
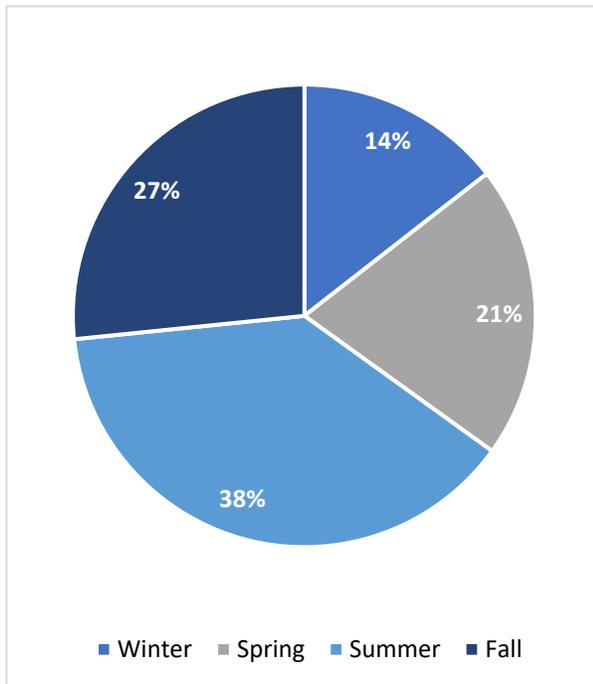


SMYRNA AIRPORT

Smyrna Airport (38N) Seasonally Adjusted Summary- 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2022	5	450	14%
Spring	2022	7	637	20%
Summer	2022	13	1196	38%
Fall	2022	9	828	27%
Annual Operations:			3,111	

SEASONAL PERCENTAGE

COUNTER LOCATION

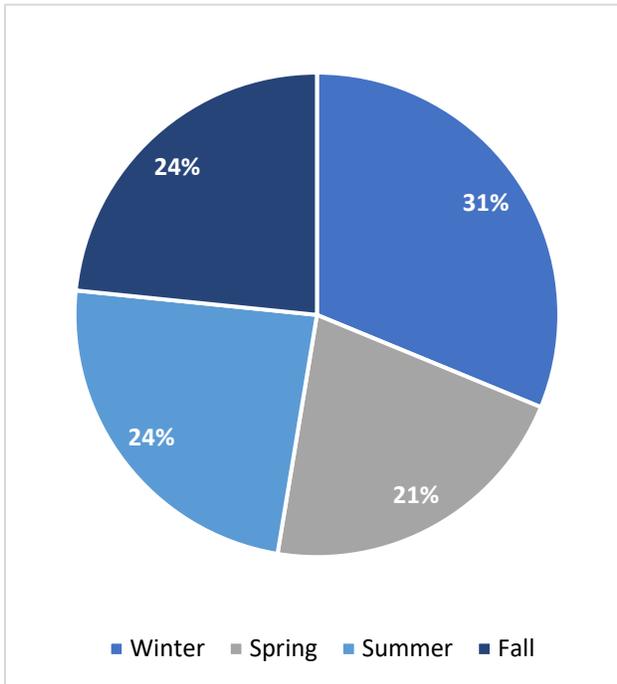


DELAWARE COASTAL AIRPORT

Delaware Coastal Airport (GED) Seasonally Adjusted Summary- All Runways - 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2023	126	11,299	31%
Spring	2022	85	7,735	21%
Summer	2023	94	8,690	24%
Fall	2022	92	8,464	23%
Annual Operations:			36,188	

SEASONAL PERCENTAGE

COUNTER LOCATIONS

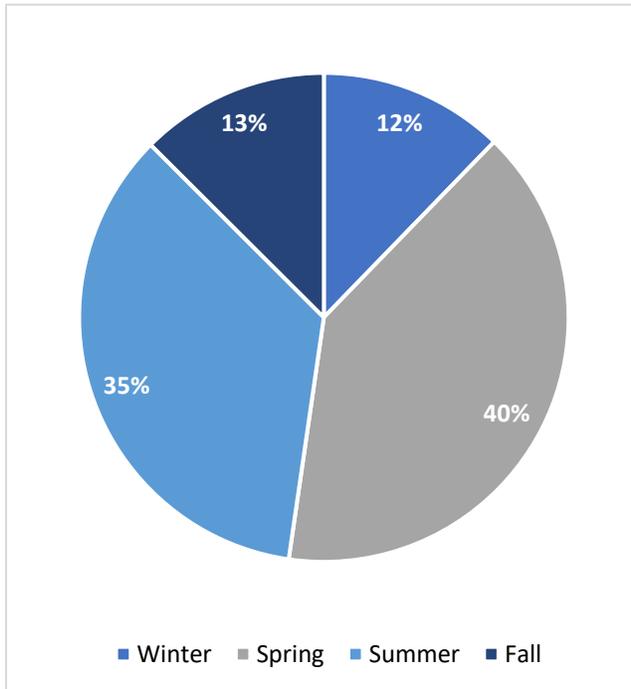


LAUREL AIRPORT

Laurel Airport (N06) Seasonally Adjusted Summary - 2023				
Season	Year	Average Daily Operations	Total Seasonal Operations	Percentage of Annual Operations
Winter	2022	6	540	12%
Spring	2023	19	1,765	40%
Summer	2023	17	1,551	35%
Fall	2022	6	552	13%
Annual Operations:			4,408	

SEASONAL PERCENTAGE

COUNTER LOCATION



3. SUMMARY RESULTS

TABLE 1 PRESENTS A SUMMARY OF THE 2023 operation counts and compares them to 2022 levels. Airports with significant gains in operations counts included Chandelle Airport, Chorman Airport, Delaware Coastal Airport, and New Castle Airport. Overall, there was a statewide increase of 3.66 percent in aircraft operations (5,647 additional operations).

Table 1 – Summary of Aircraft Operations Counts: 2022-2023

Airport	2022	2023	Change	% Change
Chandelle Airport	2,630	3,986	1,356	52%
Chorman Airport	9,937	10,787	850	9%
Civil Air Terminal, Dover AFB	236	152	-84	-36%
Delaware Airpark	30,050	26,272	-3,778	-13%
Delaware Coastal Airport	32,900	36,188	3,288	10%
Jenkins Airport	64	236	172	269%
Laurel Airport	4,057	4,408	351	9%
New Castle Airport	46,057	49,163	3,106	7%
Smyrna Airport	3,080	3,111	31	1%
Summit Airport	25,487	25,842	355	1%
Total	154,498	160,145	5,647	3.66%