



# DELAWARE STATEWIDE

## Operations Counting 2021 Program Update



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# ***Delaware Statewide Airport Operations Counting Program Update - 2021***

## **Final Technical Report**

*Prepared for:*

Delaware Department of Transportation  
Federal Aviation Administration

*Prepared by:*



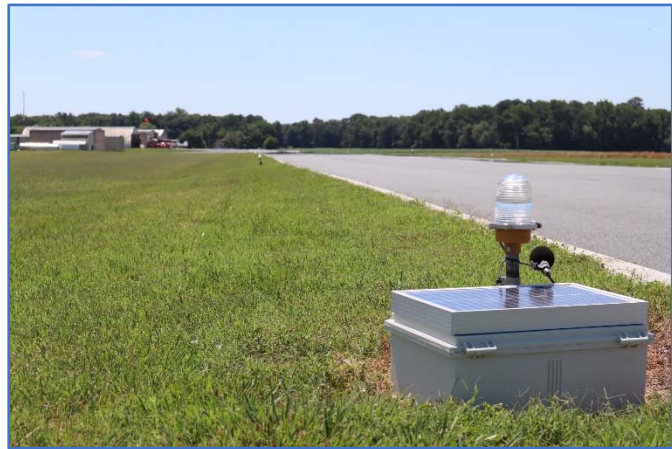
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# DELAWARE STATEWIDE AIRPORT OPERATIONS COUNTING PROGRAM UPDATE

## 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 2021:

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



Noise Counter at Chorman 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 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 report will be to add Summit to the DelDOT counting program for those years not undertaken by DVRPC.

- **Delaware Airpark:** Is home to Delaware State University's flight training program, which has recently expanded its fleet of aircraft. The new 4,200-foot instrument runway provides a good training 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

DelDOT 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 Estates:** Is located near Dover, north of Dover AFB. The airport serves private general aviation and an agricultural spray operator.
- **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 counters 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.
- **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. As shown later, activity in 2021 was up significantly from 2020 operations.

Of these airports, Chorman Airport, home to a spray operation is the busiest, followed by Laurel (also a Chorman spray operation location), and more distantly by the others.

### 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:** Batteries sometimes did not hold their charge for the entire survey target period. Counters were collected after two weeks and some batteries had only lasted a few days, which made the data unusable for estimating annual counts. This problem has been recently 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. Now, it is possible to record two continuous weeks or more of data during a sampling period.



Noise Counter at Laurel Airport

- **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.
- **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.



Noise Counter Device

- **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 Summit and Delaware Coastal Airport, which have based helicopters.

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

## 1.4 SUMMARY RESULTS

Table 1 presents a summary of the 2021 operation counts and compares them to 2020 levels. Airports with significant gains in operations counts included New Castle Airport, Delaware Airpark, Smyrna, and Delaware Coastal airports. Chorman Airport had the largest decrease with 2,100 less operations from the prior year. Overall, there was a statewide increase of 10.7 percent in aircraft operations (13,436 additional operations). It should be noted that 2020 was a down year due to the effects of Covid on transportation and commerce. Thus, a rebound of sorts was expected in 2021.

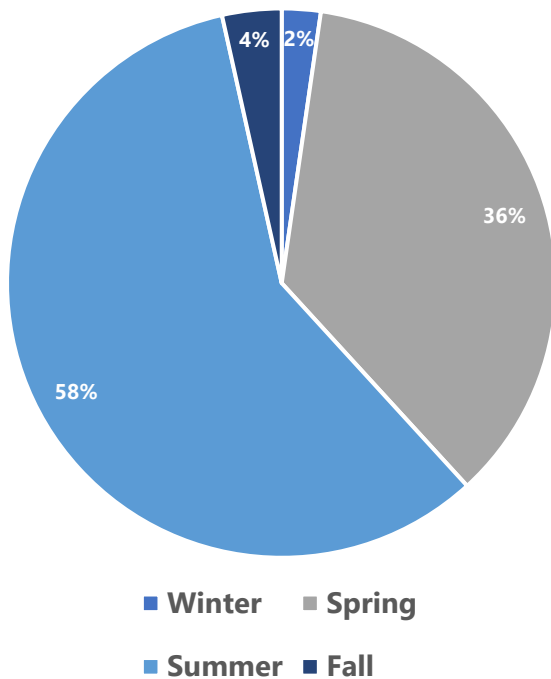
**Table 1 – Summary of Aircraft Operations Counts: 2020-2021**

| Airport                       | 2020           | 2021           | Change        | % Change     |
|-------------------------------|----------------|----------------|---------------|--------------|
| Chandelle Estates Airport     | 726            | 1,400          | 674           | 93%          |
| Chorman Airport               | 10,744         | 8,643          | -2,101        | -20%         |
| Civil Air Terminal, Dover AFB | 330            | 457            | 127           | 39%          |
| Delaware Airpark              | 16,434         | 21,430         | 4,996         | 30%          |
| Delaware Coastal Airport      | 30,888         | 31,998         | 1,110         | 4%           |
| Jenkins Airport               | 198            | 103            | -95           | -48%         |
| Laurel Airport                | 5,016          | 5,000          | -16           | 0%           |
| New Castle Airport            | 34,846         | 41,453         | 6,607         | 19%          |
| Smyrna Airport                | 1,122          | 2,911          | 1,789         | 159%         |
| Summit Airport                | 24,793         | 25,138         | 345           | 1%           |
| <b>Total</b>                  | <b>125,097</b> | <b>138,533</b> | <b>13,436</b> | <b>10.7%</b> |

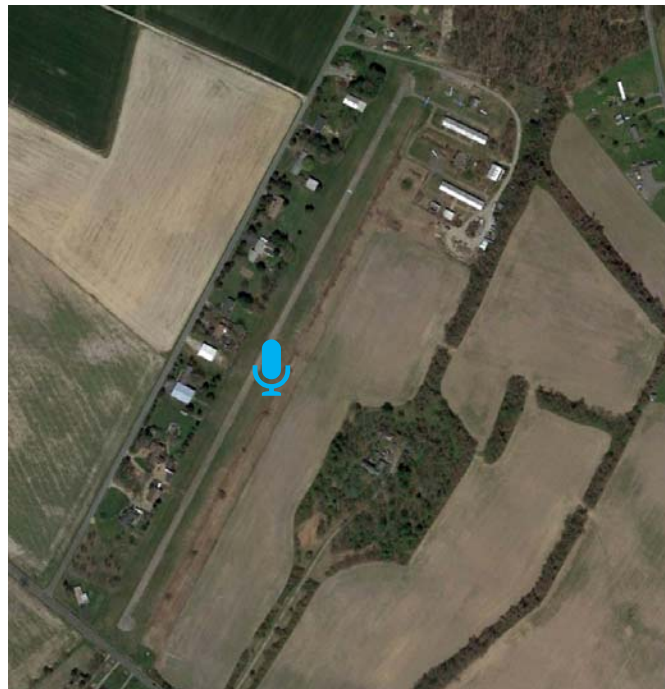
## CHANDELLE ESTATES

| Chandelle Estates (0N4) Seasonally Adjusted Summary- 2021 |      |                          |                           |                                 |
|---|------|--------------------------|---------------------------|---------------------------------|
| Season  | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter  | 2021 | 0.4                      | 32                        | 2%                              |
| Spring  | 2021 | 5.5                      | 503                       | 36%                             |
| Summer  | 2021 | 8.9                      | 816                       | 58%                             |
| Fall  | 2020 | 0.5                      | 49                        | 4%                              |
| Annual Operations:  |      |                          | <b>1,400</b>              |                                 |
| Margin of Error:  |      |                          | 465                       | 33.2% at 95% Confidence         |

### SEASONAL PERCENTAGE



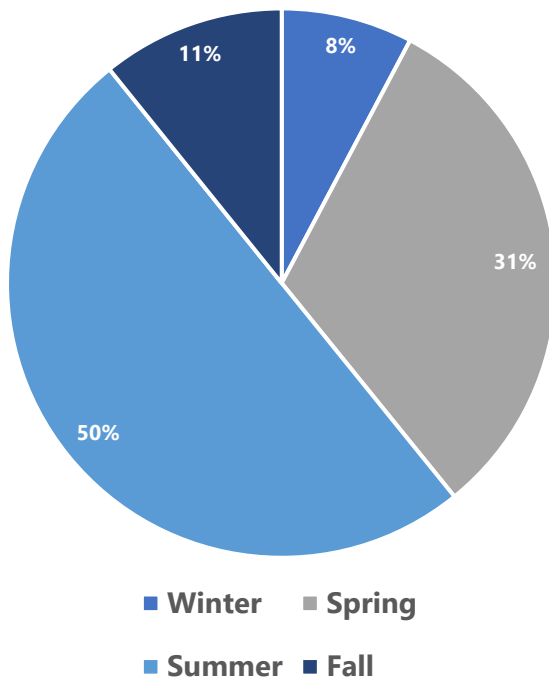
### COUNTER LOCATION



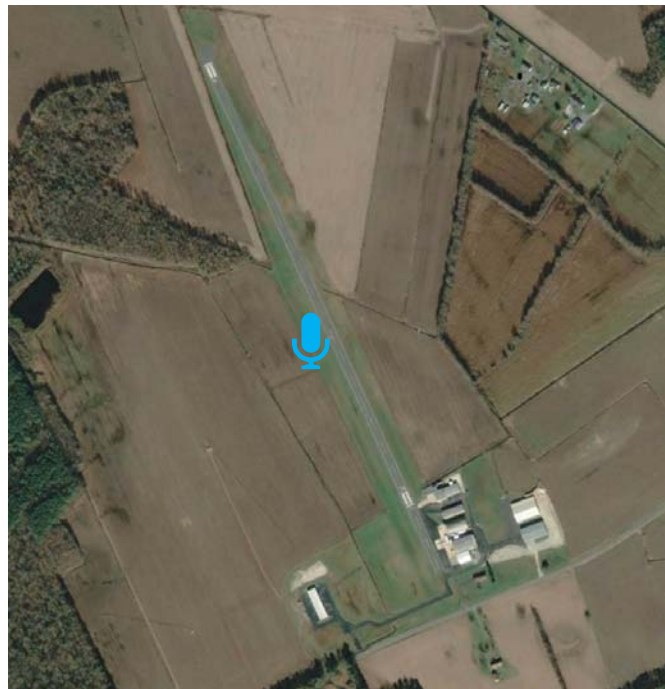
## CHORMAN AIRPORT

| Chorman Airport (D74) Seasonally Adjusted Summary- 2021 |      |                          |                           |                                 |
|---|------|--------------------------|---------------------------|---------------------------------|
| Season  | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter  | 2021 | 7                        | 669                       | 8%                              |
| Spring  | 2021 | 30                       | 2,717                     | 31%                             |
| Summer  | 2021 | 47                       | 4,324                     | 50%                             |
| Fall  | 2021 | 10                       | 933                       | 11%                             |
| Annual Operations:                                      |      |                          | <b>8,643</b>              |                                 |
| Margin of Error:  |      |                          | 2,761                     | 31.9% at 95% Confidence         |

### SEASONAL PERCENTAGE



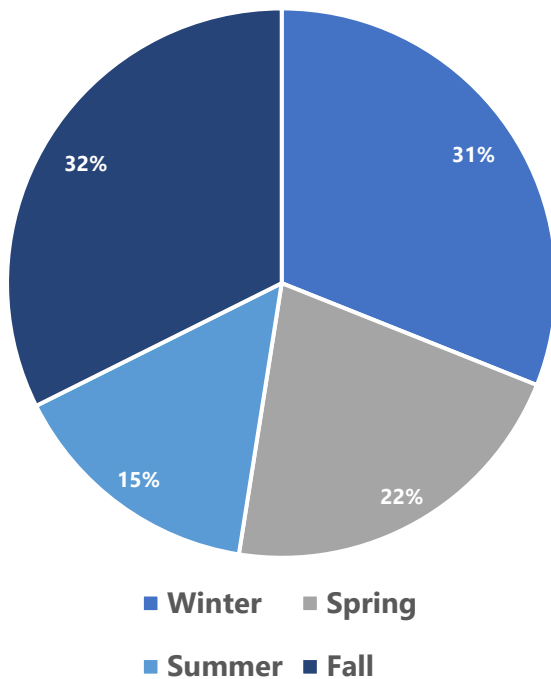
### COUNTER LOCATION



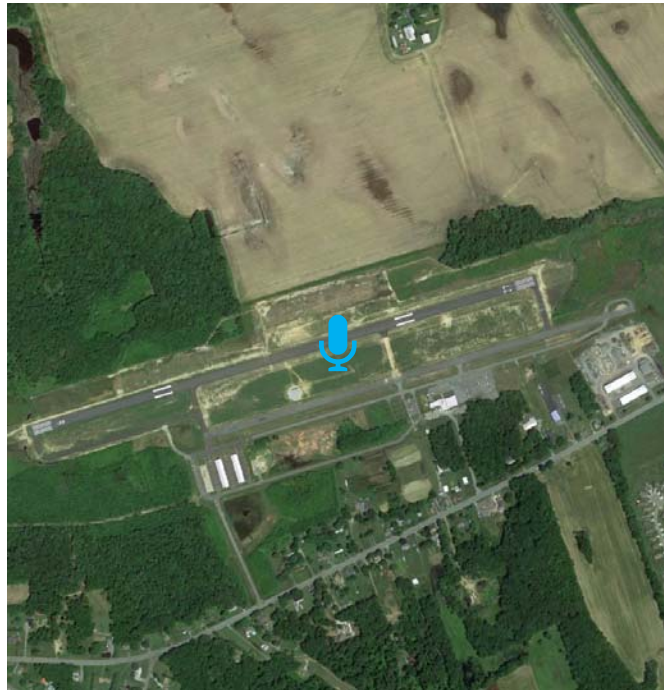
## DELAWARE AIRPARK

| Delaware Airpark (33N) Seasonally Adjusted Summary- 2021 |      |                          |                           |                                 |
|--|------|--------------------------|---------------------------|---------------------------------|
| Season   | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter   | 2021 | 74                       | 6,654                     | 31%                             |
| Spring   | 2021 | 51                       | 4,596                     | 21%                             |
| Summer   | 2021 | 35                       | 3,241                     | 15%                             |
| Fall   | 2021 | 75                       | 6,939                     | 32%                             |
| Annual Operations:                                       |      |                          | <b>21,430</b>             |                                 |
| Margin of Error:   |      |                          | 3,933                     | 18% at 95% Confidence           |

### SEASONAL PERCENTAGE



### COUNTER LOCATION

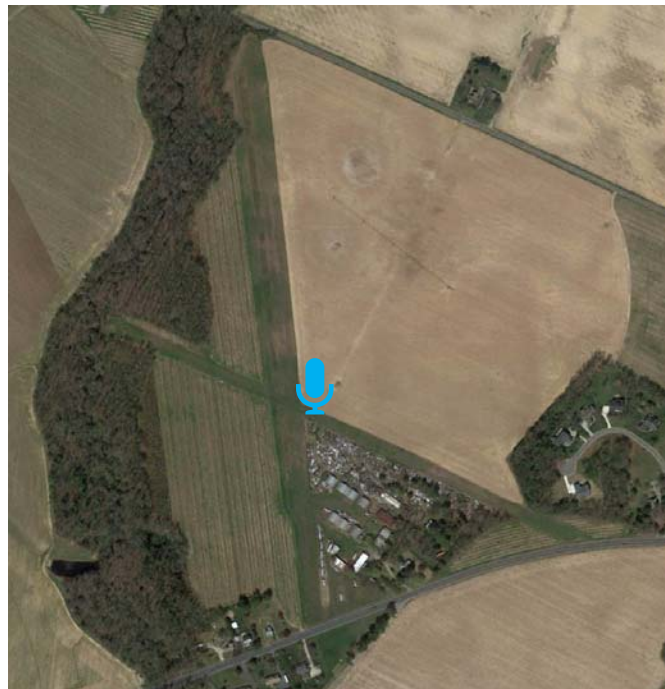
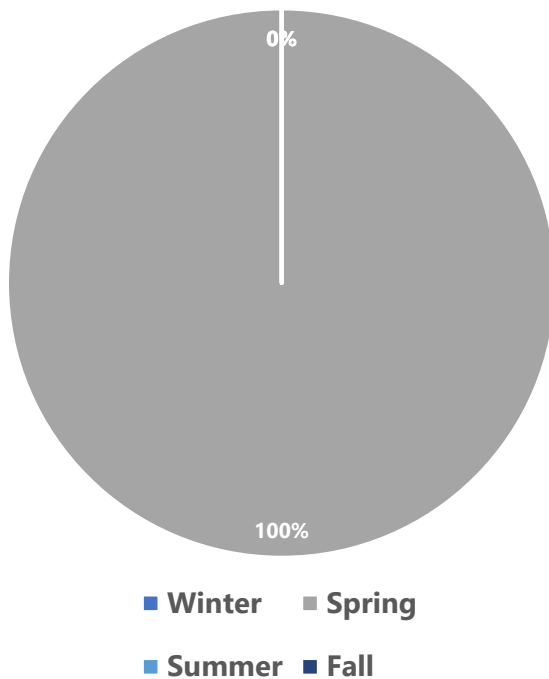


# JENKINS AIRPORT

| Jenkins Airport (15N) Adjusted Summary- 2021 |      |                          |                           |                                 |
|--|------|--------------------------|---------------------------|---------------------------------|
| Season                                       | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter                                       | 2021 | N/A                      | 0                         | 0%                              |
| Spring                                       | 2021 | 1                        | 103                       | 100%                            |
| Summer                                       | 2021 | N/A                      | 0                         | 0%                              |
| Fall   | 2021 | N/A                      | 0                         | 0%                              |
| Annual Operations:                           |      |                          | <b>103</b>                |                                 |
| Margin of Error:                             |      |                          | 61                        | 60% at 95% Confidence           |

## SEASONAL PERCENTAGE

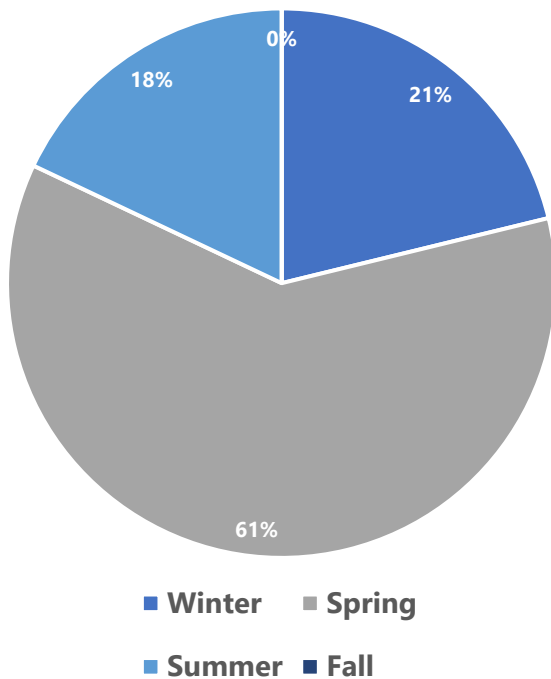
## COUNTER LOCATION



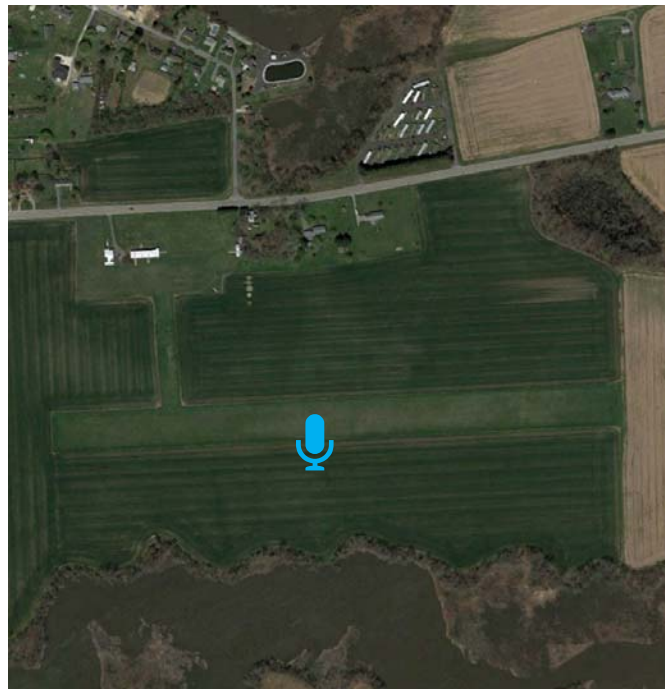
## SMYRNA AIRPORT

| Smyrna Airport (38N) Seasonally Adjusted Summary- 2021 |      |                          |                           |                                 |
|--|------|--------------------------|---------------------------|---------------------------------|
| Season   | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter   | 2021 | 7                        | 617                       | 21%                             |
| Spring   | 2021 | 19                       | 1,771                     | 61%                             |
| Summer   | 2021 | 6                        | 523                       | 18%                             |
| Fall   | 2021 | N/A                      | 0                         | 0%                              |
| Annual Operations:                                     |      |                          | <b>2,911</b>              |                                 |
| Margin of Error:                                       |      |                          | 632                       | 22% at 95% Confidence           |

### SEASONAL PERCENTAGE



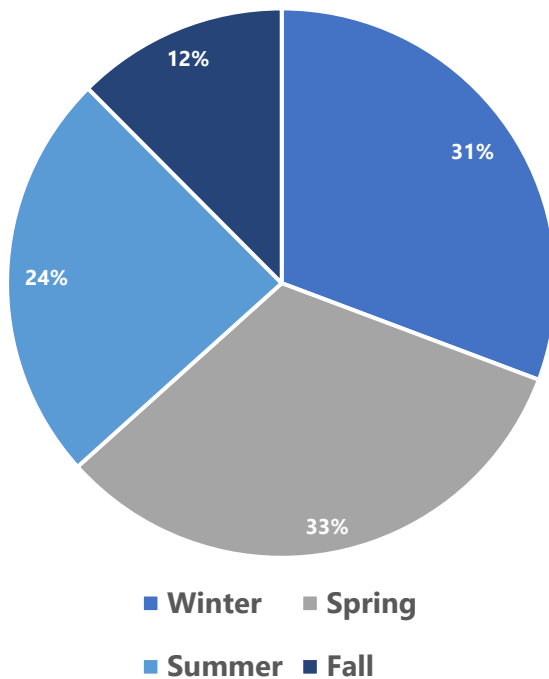
### COUNTER LOCATION



## DELAWARE COASTAL AIRPORT

| Delaware Coastal Airport (GED) Seasonally Adjusted Summary- All Runways |           |                          |                           |                                 |
|---|-----------|--------------------------|---------------------------|---------------------------------|
| Season  | Year      | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter  | 2021/2022 | 109                      | 9,832                     | 21%                             |
| Spring  | 2021      | 115                      | 10,436                    | 41%                             |
| Summer  | 2021      | 84                       | 7,743                     | 22%                             |
| Fall  | 2021      | 43                       | 3,987                     | 16%                             |
| Annual Operations:  |           |                          | <b>31,998</b>             |                                 |
| Margin of Error:  |           |                          | 6,567                     | 21% at 95% Confidence           |

### SEASONAL PERCENTAGE



### COUNTER LOCATION



## LAUREL AIRPORT

| Laurel Airport (N06) Seasonally Adjusted Summary- All Runways |      |                          |                           |                                 |
|---|------|--------------------------|---------------------------|---------------------------------|
| Season  | Year | Average Daily Operations | Total Seasonal Operations | Percentage of Annual Operations |
| Winter  | 2021 | 5                        | 500                       | 10%                             |
| Spring  | 2021 | 16                       | 1500                      | 30%                             |
| Summer  | 2021 | 27                       | 2500                      | 50%                             |
| Fall  | 2021 | 5                        | 500                       | 10%                             |
| Annual Operations:  |      |                          | <b>5,000</b>              |                                 |
| Margin of Error:  |      |                          | N/A                       | N/A                             |

### SEASONAL PERCENTAGE

### COUNTER LOCATION

